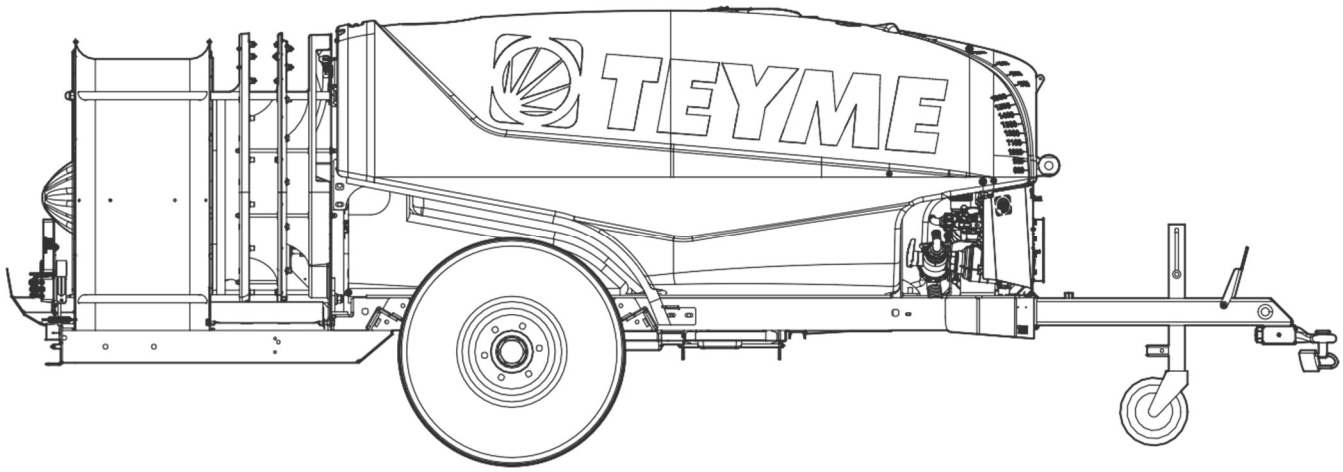
Trailed mistblower

Manual of instructions

T990000001 – 09.2018
ENG – 1.0 Version



www.teyme.es

TEYME TECNOLOGÍA AGRÍCOLA S.L. keeps its right to make changes in the design or to add new characteristics, without any compelling obligation concerning the purchased machines before or after these changes.

Contenido

1. Basics 6
1.1. Responsibility 6
1.2. Legal Warranty 6
1.3. Optional Accessories 6
1.4. Conformity Declaration 6
1.5. Identification Plate 6
2. Safety and Protection 8
2.1. Classification of symbols by dangerousness 8
2.2. Group of Addressees 8
2.3. Proper Use 8
2.4. Recommendations for Caution 8
2.5. Rules and Applicable Prescriptions 9
2.6. Allowed Weights of the machine 9
2.7. Obligations of the user 10
2.8. Safe workings of the machine 10
2.8.1. Basics 10
2.8.2. Staff qualification 10
3. Effects of certain agrochemicals over the machine 11
4. Description 12
4.1. General information 12
4.1.1. General View 12
4.1.2. Use of the sprayer 13
4.1.3. Road traffic 13
4.1.4. Frame 13
4.1.5. Tanks 13
4.2. Water Circuit 14
4.2.1. General Information 14
4.2.2. Water Circuit Diagram 14
4.2.3. Suction Valve 14
4.2.4. Suction Filter 15
4.2.5. Pumps 15
4.2.5.1. High Pressure Piston Pumps 15
4.2.5.2. High Pressure Diaphragm Pumps 15
4.2.6. Pressure Collector 15
4.2.7. Pressure Filter 15
4.2.8. Stirrers 15
4.2.9. Distributor 16
4.2.9.1. GRH Hand-operated Distributor 16
4.2.9.2. System 1 Electrical Distributor 16
4.2.9.3. System 2 Electrical Distributor 16
4.2.9.4. System 3 Electrical Distributor 16
4.2.9.5. Bravo 180S Electrical Distributor 16
4.2.9.6. MCK Sonar Electrical Distributor 16
4.2.10. Powder Mixer 16
4.2.11. Can Rinsing 17
4.2.12. Mixer/chemical inductor 17
4.2.13. Jets or nozzle-holders 17
4.2.14. Tank Rinsing Robot 17
4.3.1. General Information 18
4.3.2. Models of air units 18
4.3.3. Air Flow of the Units 18
4.3.4. Protection Grid 22
4.3.5. Gear Box 23
4.3.6. Impeller or Fan 23

4.3.7. Deflectors (Air Deflectors) 23
4.3.7.1. Models of Hand-operated Deflectors 23
4.3.7.2. Models of Hydraulic Deflectors 23
4.4.1. Hitching Tow Bars 24
4.4.1.1. Eye Tow Bar 24
4.4.1.2. Y-shaped Ball-and-Socket Turning Tow Bar 24
4.4.2. Axles 24
4.4.3. Park Chocks 24
4.4.4. Lights Kit 24
5. Adjustments and how to start up 25
5.1. Machine's Load or Unload 25
5.2. Tow Bar Adjustment 25
5.2.1. Tow Drawbar Length Adjustment 25
5.2.2. Eye Tow Bar Hitching 25
5.2.3. Y-Shaped Tow Bar Hitching 26
5.3. PTO Shaft 26
5.3.1. Configurations 27
5.3.2. PTO Shaft Coupling 27
5.4. Tyres 28
5.5. Hydraulic Plugs 29
5.6. Electrical Plugs 29
5.6.1. Basics 29
5.6.2. Lighting and Signs 29
5.6.3. Water Distributor 29
5.7. Water Circuit 30
5.7.1. Suction Filter 30
5.7.3. Diaphragm Pump 30
5.7.4. Air Tank 30
5.8. Air Unit 31
5.8.1. Gear Box 31
5.8.2. Fan 31
5.8.2.1. A Fan 31
5.8.2.2. B Fan 32
5.8.2.3. C Fan 32
6. Functioning 33
6.1. Water Circuit 33
6.1.1. Filling of the Main Tank 33
6.1.1.1. Filling through the Upper Lid of the Tank 33
6.1.1.2. Filling by Pump Suction 33
6.1.2. Filling of the Rinsing Tank 33
6.1.3. Filling of the Sanitary Water Tank 33
6.2. Emptying Valve 34
6.3. Introduction of Phytosanitary Product 34
6.3.1. Chemical Inductor/Mixer 34
6.3.2. Powder Mixer 34
6.4. Cleaning of the Water System 35
6.4.1. Cleaning of Filters 35
6.5. Controls 35
6.5.1. GRH Hand-operated Control 35
6.5.1.1. Pressure Adjustment: 35
6.5.1.2. Working 36
6.5.1.3. System 1 Electrical Distributor 36
6.5.1.4. Pressure and Self-compensating System Adjustment 36
6.5.2. Working 36
6.5.3. System 2 Electrical Distributor 36
6.5.3.1. Pressure and Self-compensating System Adjustment 36
6.5.3.2. Working 37
6.5.4. System 3 Electrical Distributor 37

Contenido

6.5.4.1. Pressure and Self-compensating System Adjustment 37
6.5.4.2. Working 37
6.5.5. Wireless Control 38
6.5.5.1. Start Up 38
6.5.5.2. General On/OFF Switches 38
6.5.5.3. Main Functions 38
6.5.5.4. Memory Function 38
6.5.5.5. Closing of Daily Work 38
6.5.6. Bravo 180S Electrical Distributor 38
6.5.6.1. Pressure and Self-compensating System Adjustment 38
6.5.6.2. Working 38
6.5.6.3. Quick Guide For Bravo 180 39
6.5.7. Sonar MCK Electrical Distributor 41
6.5.7.1. Control Basics 41
6.5.7.2. Pressure Adjustment 41
6.5.7.3. Automatic Adjustment of Opening and ClosingTimes 42
6.5.7.4. Working 42
6.5.7.4.1. Automatic Mode 42
6.5.7.4.2. Hand-operated Mode 43
6.6. Air Kit 43
6.6.1. Deflectors (Air Deflectors) 43
6.6.1.1. Hand-operated Deflectors 43
6.6.1.2. Hydraulic Deflectors Models 43
7. Maintenance 44
7.1. General Information 44
7.2. PTO Axle and PTO Shaft 44
7.3. Water Pumps 44
7.3.1. Ordinary Maintenance 44
7.3.2. Extraordinary Maintenance 45
7.4. Gear Box Unit 45
7.5. Fans 45
7.6. Filters and Fittings 45
7.7. Nozzles 46
7.8. Hitching 46
7.8.1. Eye Tow Bar Hitching 46
7.8.2. Y-shaped Tow Bar Hitching 46
7.9. Jackwheel 46
7.10. Wheel's Axle 47
7.11. Tyres 47
7.12. Winter Storage 47
7.13. Preparation of the Machine to use it after its Storage 47
7.14. Periods of Maintenance 48
7.14.1. Every 10 Working Hours. 48
7.14.2. Every 50 Working Hours 48
7.14.3. Every 100 Working Hours. 48
7.14.4. Every 250 Working Hours. 48
7.14.5. Every 1000 Working Hours 48
8. Failures Detection 49
8.1. General Information 49
8.2. Liquid Circuit 49
Notes 51

1. Basics

1.1. Responsibility

They are of application the “General Conditions of Contract and of Delivery” of Teyme Tecnología Agrícola, S.L. According to these conditions, it is excluded any responsibility on behalf of Teyme Tecnología Agrícola for personal and material damages caused by one or several reasons:

- Unadequate use of the machine.
- Not having read the instructions of use as well as the safety indications included on these.
- Constructive modifications of the machine made on one’s own.
- Defficient control of the pieces submitted to wear.
- Repair works which have not been correctly done or not done in the expected delays.
- Use of other spare parts which are not original from the company Teyme tecnología agrícola.
- Accidents or damages caused by external reasons or overwhelming forces.

1.2. Legal Warranty

They will be of application the “Conditions of contract and delivery” of the company Teyme Tecnología Agrícola, S.L..

The period of duration of the legal warranty includes a year since the machine has been received. We will solve the possible failures in the machine following the guidelines given by TEYME’s legal warranty.

1.3. Optional Accessories

The machines of TEYME can be supplied with optional accessories. The notice of use will describe the standard components as well as the optional ones.

We remind that these will differ depending on each variable of supplied machine.

1.4. Conformity Declaration

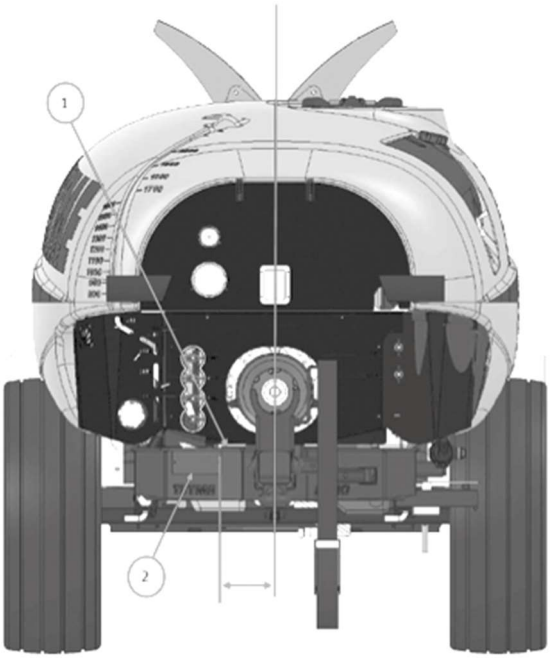
Fill in with the serial number and manufacture year for any enquiry.

See attached form >>

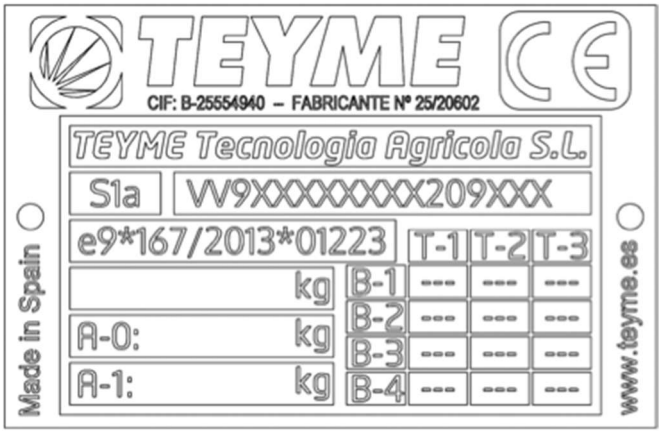
1.5. Identification Plate

The identification plate, located in the right from part of the machine and riveted to the frame structure, indicates the mark, the classification of the vehicle, the Vehicle Identification number (VIN), the number of homologation (for EU only), the outstanding Highest Allowed Mass in bar and in axle.

The Vehicle Identification Number is always found die-cast over the frame of the machine on the upper front part which there is next to the identification plate.



1	Position of the Chassis Number
2	Position of the Identification Plate



TEYME

Declaración "CE" de conformidad
"EC" declaration of conformity for machinery
Declaration "CE" de conformité
Dichiarazione "CE" di conformità

NOMBRE / BUSINESS NAME / NOM / NOME	**TEYME TECNOLOGÍA AGRÍCOLA, S.L.**
DIRECCIÓN / ADDRESS / ADRESSE / INDIRIZZO	**POL. IND. SAU-3, C/ GIRONA, s/n TEL. (34) 973 750 033 - (34) 973 750 539 - (34) 973 751 847 FAX (34) 973 751 581**
C.I.F.	**B-25554940**
FABRICANTE Nº / MANUFACTURER Nº / FABRICANT Nº / FABRICANTE Nº	**25/20602**
INSCRITO EN / REGISTERED IN / INSCRIT SUR / ISCRITO IN	**REGISTRE INDUSTRIAL CONSELLERIA D'INDÚSTRIA DE LA GENERALITAT DE CATALUNYA**
Declaramos que el producto / Herewith declares that / Nous déclarons que le produit / Dichiara che la macchina MARCA / MAKE / MARQUE / MARCA	**TEYME**
TIPO / TYPE / TYPE / TIPO	
Nº SERIE / SERIAL NUMBER / Nº SÉRIE / MATRICOLA N.	
AÑO FABRICACIÓN / YEAR OF CONSTRUCTION / ANNÉE FABRICATION / ANNO FABBRICAZIONE	

Corresponde a las exigencias básicas de la directiva de la CE sobre máquinas (Directiva 2006/42/CE), incluidas las modificaciones de la misma y la correspondiente transposición a la ley nacional. Is in conformity with the provisions of the Machinery Directive (Directive 2006/42/CE), as amended, and with national implementing legislation. Correspond aux exigences basiques de la directive de la CE sur machinerie (Directive 2006/42/CE), incluses les modifications et la correspondante transposition á la lo¡ nationale.Corrisponde alíe esigenze basiche delta direttiva delta CE sulle macchine (Direttiva 2006/42/CE), inclusi le modificazioni delta stessa e la corrispondente trasposizione alta legge nazionale.

Lleida, a _____ de _____ de _____

FIRMA / SIGNATURE / SIGNATURE / FIRMA

FERRAN ITURBE RECASENS
NIF. 40892839-N

TEYME
TECNOLOGÍA AGRÍCOLA, S.L.

2. Safety and Protection

2.1. Classification of symbols by dangerousness

	This symbol means DANGER. Be careful as your safety is in danger!
	This symbol means CAUTION Be aware as your safety is at stake!
	This symbol means ATTENTION. It will help you to an easy and safe use.

2.2. Group of addressees

This notice of use limits exclusively the use of the machine to qualified staff or workers, as well as well-instructed personnel.

2.3. Proper Use

The machine has been built up according to the latest technical advances and the recognized safety technical rules. However, it is probable that, during its use, may appear dangers for one's life and for the physical integrity of the operator or of third parties, as well as damages in the machine or other material impairments. Work only with the machine if you find it in a correct technical condition, use it properly, accordingly with the notice of use and being conscious about the safety and the dangers.

The proper use also includes the understanding of the instructions of use and the application of the work steps indicated in these.

The observance of the safety and caution signals in the machine.

- The observance of the limits of power of the tractor and machine.
- The observance of the indications of maintenance, as well as of the further verifications.
- The use of original spare parts.
- The use of indicated oil and accessory substances, as well as the suppression respectful with the Environment.

The safe working is only guaranteed if all indications, adjustments and valid power limits for the machine are respected.

The machine is only suitable for its use in agricultural works.

2.4. Recommendations for Caution

Please consider the following recommendations for caution.

- Read thoroughly this manual before using the machine. It is equally important that other users that will operate with the machine, read and understand this manual.
- Some local laws can require that the operator has a certificate to be able to use the machine. Please be ware of the law.
- Use suitable protection garment (gloves, helmet, waterproof clothes, etc).
- Clean and rince the machine after its use and before its revision.
- Do not ever check or repair the machine while this is working.
- Replace always the safety devices and protect them immediately after work.
- Do not eat, drink or smoke while you are spraying or working with the machine dirty.
- Clean and change your clothes after the spraying. Clean the used tools.
- In case of poisoning call the medical services. Do not forget to identify the chemicals.

- Keep children far from the machine.
- If some part of this notice of instructions is not completely clear to you, do not hesitate to contact your TEYME's dealer for a more extensive explanation before using the machine.
- Be careful not to hit people or surroundings while manoeuvring with the sprayer, specially while this one is turning.
- Diminish the speed while circulating on rough plots as there is danger of rollover.
- Check the pressure with clean water before carrying out the filling of chemicals.
- Disconnect the electric current and depressurize the machine after its use and before its checking.
- Do not try to enter the tank.
- Do not stay under the sprayer when this is not well secured to avoid some falling down or running over.
- If you use a welding arch on the machine, turn off all electrical devices before starting with the welding. Keep away from any explosive or inflammable material.
- Do not unplug any hose while the machine is working. Unplug the cleaner and the water supply before disassembling the high-pressure hose.
- The device of external cleaning should not be used when any important part of the machine is damaged, including safety devices, high pressure, etc.
- ON NO ACCOUNT the PTO shaft of the tractor must surpass the 540 r.p.m. due to the big danger of explosion of the air unit.

Stop the PTO shaft when very closed turnings must be done, even though you have homocinetic PTO shaft available. If you do not do like this, the turns of reduced radius with the PTO shaft turning may cause the breakage of the PTO shaft or the pump shaft and cause great vibrations in the gear box, even being able to cause the breakage of the fan or of the air unit.

2.5. Rules and Applicable Prescriptions

Herewith they are specified the valid applicable rules for each country, which must be taken into account during the machine's working life:

- Road Traffic code.
- The rules and regulations on labour safety
- The rules and regulations on road traffic safety.
- The rules and regulations on the user's protection.
- The rules and regulations on protection of the environment.
- The rules and regulations on proper handling of pesticide products.
- The rules and regulations on plants' protection technology.

2.6. Allowed weights of the machine

The weight of the machine is transmitted through the wheels and the tractor to the road.
For this reason, the following points must be considered for a safe working of the machine:

- The allowed supporting load of the bar for the tractor's hitching must not be exceeded.
- The allowed load of the axle must not be exceeded.
- The wheels being used (tyres and rim) must have the same or more loading capacity than the axle. If the tyres loading capacity is lower than the allowed axle loading one, the machine will be able to be loaded until the loading capacity which is allowed for the tyres
- The highest allowed speed arises from the applicable regulations specified in each country according to the wheels being used.

2.7. Requirements for the tractor

- The tractor must have a hitching tow bar appropriate for the machine.
- On basis of the established applicable regulations and of those concerning the brakes' devices of the machine, there must be an appropriate brakes' device available in the tractor.

2. Safety and Protection

- The allowed axle loads, the supporting load of the tow bar for the hitching, the total weight and the transport size must be respected.
- The tractor must have a protection for the PTO shaft which proves to be appropiate for the machine.
- The tractor's hydraulic system must be compatible with the machine.
- There must be available in the machine appropriate electrical connections.
- The allowed limit of power of the tractor must be respected.

2.8. Obligations of the User

Before starting up, read the handling instructions.

- Respect the indications of safety.
- To carry out all works, use the corresponding protection clothes. This one must fit the body.
- Respect and complete the handling instructions with the general legal regulation and other bonding regulations about accidents prevention and environmental protection.
- The handling instructions are an important component of the machine.
- Beware that the handling instructions are always available where the machine is working and that they are preserved during its full lifetime.
- In case of sale or owner's change, hand in the handling instructions with the machine.
- Keep all the safety and danger warnings in a readable and complete estatus. The warning and safety symbols give valuous information to work without danger. The observance is for its own safety.
- Modifications attached assemblies or any machine reconstruction which could damage safety can not be done without the authorisation of the manufacturer. Modifications done on one's behalf in the machine exclude any responsibility by the manufacturer for any ensuing damage.
    - Operate the machine with full respect for all connection and adjustment values determined by the manufacturer.
- Use only original spare parts.

2.9. Safe working of the machine

2.9.1. Basics

Before starting the work, get to know all devices and starting elements, as well as their fonctions.

- Turn on and start up the machine just if all the protection devices are mounted and whenever they are in protection mode.
- Assemble always the machine according to the current regulations and only in the couplings contemplated in these.
- Proceed most carefully to carry out the assembly and disassembly of the machine in or out of the tractor.

It is forbidden to remain in the dangerous area of the machine and step over this one while this is working.

In the parts triggered by external forces there may exist danger of squashing and cuts.

- Activate the hydraulic devices only when there is no person in the danger area.
- Do not stay in the area between the tractor and the machine. This is only allowed if the tractor and the machine are secured against rolling by means of the parking brake and stopping chocks.
- Keep the machine always clean to avoid danger of fire.

2.9.2. Staff qualification

- The driver of the tractor must have the corresponding driving license available.
- All the works in the machine must be exclusively done by instructed and trained staff. The personnel must not be under the effect of drugs, alcohol or medicines.
- The works of maintenance and care will only have to be carried out by instructed specialized staff or by people suitably trained.
- The works in the electrical parts must only be carried out by electricians according to the applicable electrotechnical regulation.

3. Effects of certain agrochemicals on the machine

Some admited pesticides and mixtures can have harmful effects on materials of the sprinkler. Basically, they are sprinkling means and mixtures with solvent.

	CAUTION! When using mixtures with sprinkling methods with acknowledged harmful effects, it is recommended to test the mentioned materials before starting the works, by means of inversion tests durins several hours. The pesticides or other products which use to become solid or sticky can not be used in the machine.
	CAUTION! Take into account necessarily the indications of the manufacturer of the pesticide before starting to work.

The following components of the machines can suffer from damages: hoses, sprinkling pipes, joints, tanks, pump’s diaphragms and nozzle-valves diaphragms.

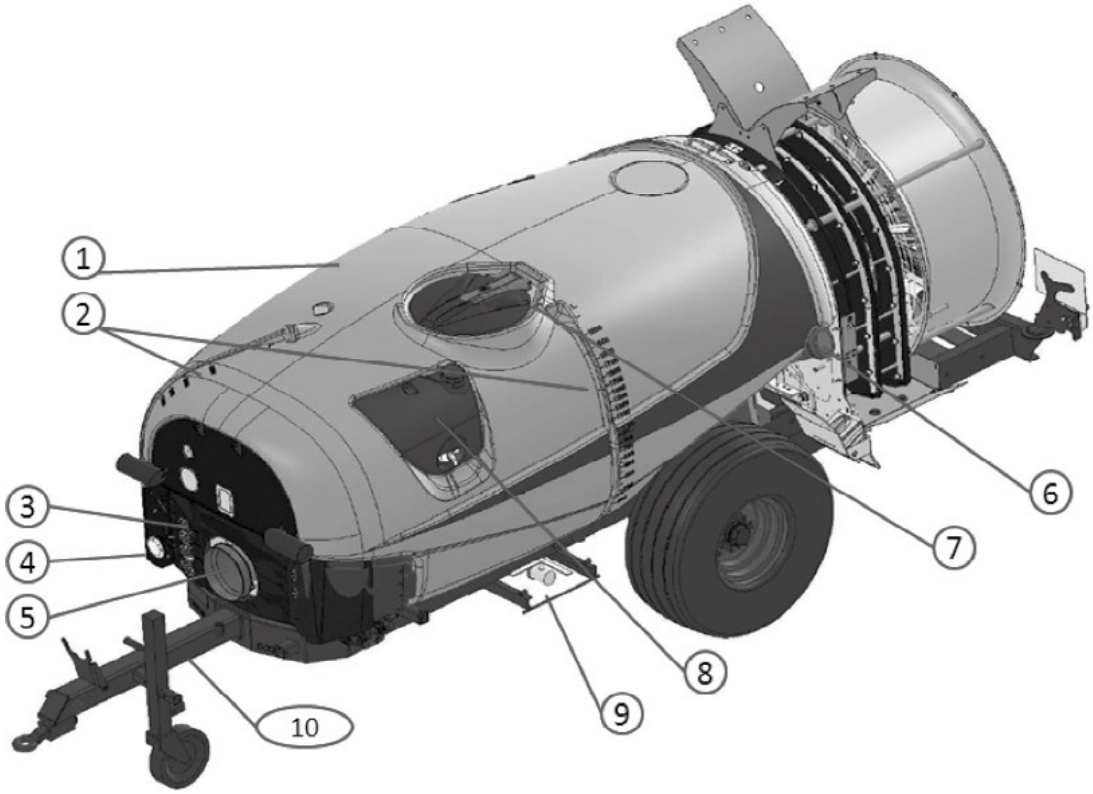
Too soft hoses or swollen joints or diaphragms are symptoms of these harmful effects. The damaged pieces must be immediately replaced. These pernicious effects can be avoided if, immediately after its use, an intensive cleaning is done (for example, some rinsing and suppression of the technical remains in the crop).

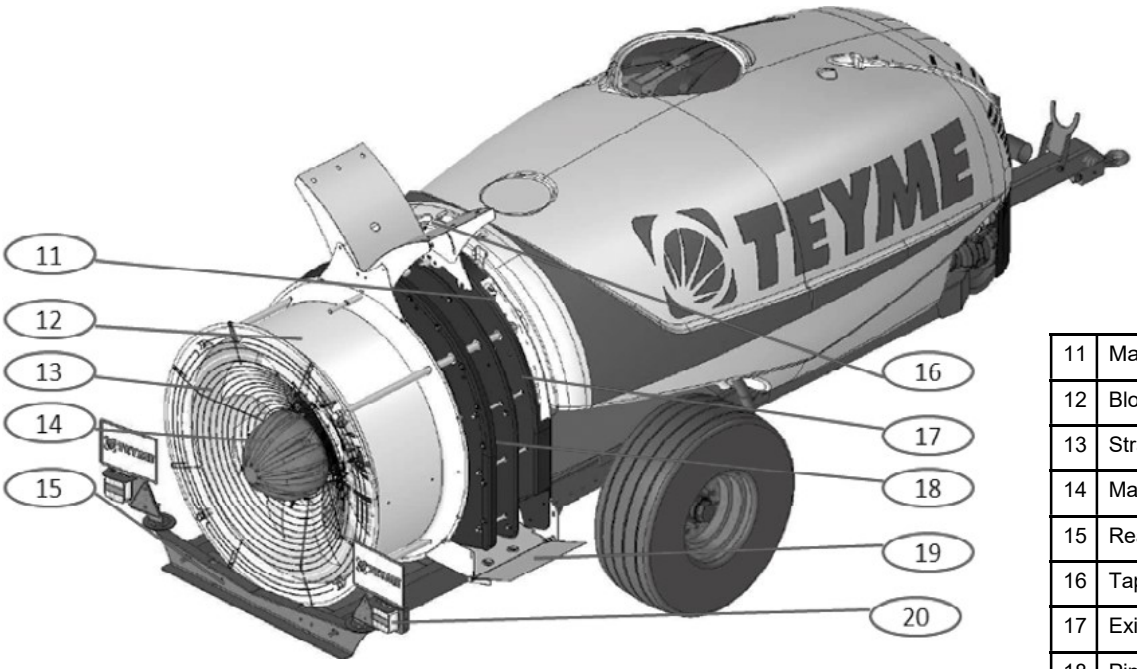
4. Description

4.1. General Information

4.1.1. General View

1	Main tank
2	Front and side gauge
3	Distributor
4	Suction Filter
5	Pump
6	Rinsing Can
7	Lid of the main tank
8	Sanitary Water Tank
9	Foot step
10	Tow bar





11	Main holder of the cone
12	Blower Housing
13	Straightening Deflectors
14	Main hub
15	Rear bumprt
16	Tap for gear box oil
17	Exit of air
18	Pipes and nozzles
19	Inferior Deflector
20	Position Lights Kit

4.1.2. Use of the sprayer

TEYME's sprayer is designed for the application of chemical products for crops' protection. The machine can be only used with this purpose. It is not allowed the use of this equipment for other purposes. If the local laws do not compel the operator to be certified, it is recommendable to be instructed in order to carry out a correct protection of crops and a safe handling of the chemicals to avoid an unnecessary risk for people and the environment while the spraying is done.

4.1.3. Road traffic

You should furnish your machine with and follow the next regulations when driving by public roads and other places where it is applicable the traffic code, or places where there are special laws and regulations about signs and lights on agricultural tools

	ATTENTION! The highest speed is 40 km/h for all models. This could change according to the current local legislation. Contact the local authorities to know the real highest traffic speed.

4.1.4. Frame

The frame consisting in spars of highly solid and resistant UPN profile accomplishes the usual normal as well as extreme-condition tasks. To protect it from corrosion a primer of epoxi is applied and covered by highly adhesive monolayer polyurethane painting.

4.1.5. Tanks

The main tank is made of polyethylene and resistant to impacts, to the UV rays and to chemical products. It has a round design without corners for a better cleaning and emptying. Nominal capacty 1000, 1500, 2000, 3000 or 4000 l. It has a transparent gauge located in the rigth front part and another in its left or right-side part depending on the tank. The front one can be seen from the tractor. The filling mouth/s is/are in the uppper part depending on the tank to the left or to the right. One can get access to it from a footrest step. That enables the filling of the tank and insertion of chemicals.

Next to the main tank it can be found a clean water tank or rinsing out of a capacity of the 10 % of the main tank. And a sanitary water tank of about 15 liters of capacity.

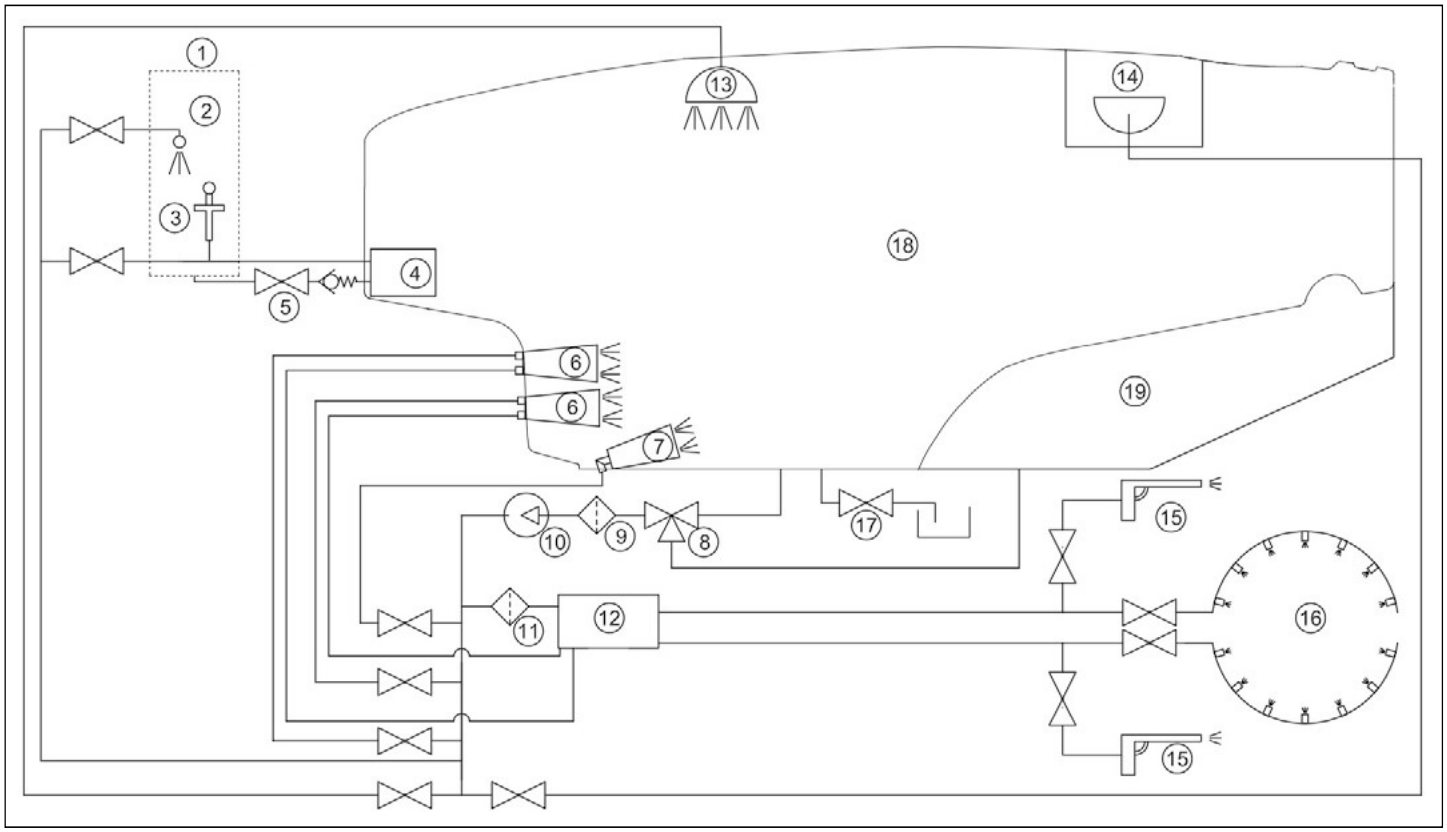
4. Description

4.2. Water Circuit

4.2.1. General information

All sprayers include a high-pressure water circuit to carry out an efficient treatment and to obtain an homogeneous mixture of the product.

4.2.2. Water Circuit Diagram



1	Mixer
2	Product stirrer - mixer
3	Can rinsing
4	Ventouri suction mixer
5	Draining valve mixer
6	Intermix (stirrer)
7	Bootmix (bottom stirrer)
8	Three ways valve
9	Suction filter
10	Water Pump

11	Pressure Filter
12	Water Distributor
13	Rinsing can Robot
14	Powder mixer
15	Spraying guns
16	Jets or nozzle-holders
17	Main tank draining valve
18	Main tank
19	Rinsing tank

4.2.3. Suction valve

The suction valve is placed to the right of the pump and allows to choose the tank from which the pump will suck, which can be the main tank to carry out the spraying tasks or the rinsing tank to clean the inside of the liquid circuit. The tank can be selected turning the lever of the valve towards the desired function.

4.2.4. Suction Filter

Next to the suction valve there is the suction filter with an inox grid of 50 mesh. They have an automatic closing valve for filter cleaning, auxiliary suction entry to fill in the tank and cap for valve's activation.

4.2.5. Pumps

4.2.5.1. High Pressure Piston Pumps

High pressure toughly-built-up pumps. Immersed pistons with ceramic cases. Parts with contact with fluid are manufactured in anodized aluminium.

Model of pump	Flow rate (l/min)	Highest pressure (bar)	Nº pistons
GAMMA 125 PUMP	122,5	60	4
YA 130 PUMP	91,5	50	6
YA 150 PUMP	113	50	6

4.2.5.2. High Pressure Diaphragm Pumps

High pressure toughly-built-up pumps. They include pressure accumulator and safety valve. NBR diaphragms, parts with contact with the liquid manufactured in anodized aluminium and AISI 303/304.

Model of pump	Flow rate (l/min)	Highest pressure (bar)	Nº diaphragms
APS 121S PUMP	115	50	3
APS 166 PUMP	163	50	5
APS-96 PUMP	88	50	4
BHA-200 PUMP	193,7	50	4
IDS 2001 PUMP	182	50	4
IDS 2200 PUMP	208	50	6
TEYME AR 150 PUMP	142,6	50	4
IDS-1701 PUMP	161	50	4

4.2.6. Pressure Collector

Manufactured in brass it is placed in the front part of the machine next to the pump. From this collector it is possible to activate the agitation (two euromix and one botmix), the powder mixer and the inside rinsing of the tank. In some models the pump has enough exits available so that the collector is not needed.

4.2.7. Pressure Filter

It is placed on the exit of the pump or placed in the middle of the distributor, with an inox grid VITON watertight o'ring sealed in the cap. Highest working pressure 50 bar. All the filters must be on perfect conditions and regularly cleaned. Beware for a proper combination of filter and grid mesh size. The grid mesh size must be always lower to the average total flow rate of the nozzles.

4.2.8. Stirrers

In the front part and at every side of the inside of the tank two trumpet-sized stirrers of 2 ways (Euromix) and 3 ways (Intermix) can be found depending on the capacity of the tank. These two stirrers are activated by means of two of the valves of the pressure collector and each include one or two return channels. In the left low side of the tank a one-way stirrer (botmix) is included, which stirs the bottom of the tank. It is activated by means of a pressure collector valve. In the inner lodge they include a restrictor.

4. Description

4.2.9. Distributor

The sprayer can be provided with different sorts of distributors to control the spraying.

4.2.9.1. GRH Hand-operated Distributor

Distributor with a single-control lever for the spraying selection. A grip is included to raise or lower pressure and a manometer.

⚠	DANGER! It is forbidden to use this sort of control in tractors with closed cab.

4.2.9.2. System 1 Electrical Distributor

Electrical distributor with control box which allows to open and close right and left side independently. It includes pilot light warning about the opening of sector. This distributor includes pressure compensation valves and pressure hand regulation.

4.2.9.3. System 2 Electrical Distributor

It has the same fonctions that system 1. Additionally, it achieves pressure regulation by an electrical valve and an added selector on the control board.

4.2.9.4. System 3 Electrical Distributor

With the same fonctions than system 2 with an added electrovalve which allows the opening and closing of the general circuit by means of an added selector to the control board. Warning pilot light is included. Possibility of replacing control board by a wireless control with identical fonctions.

4.2.9.5. Bravo 180S Electrical Distributor

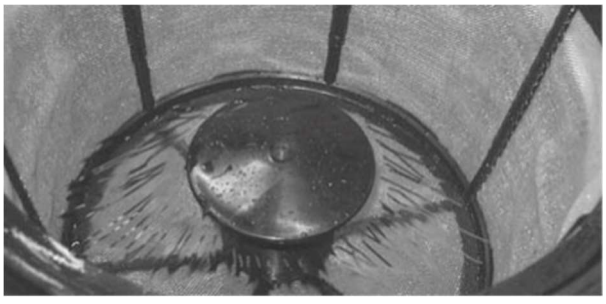
It has the same fonctions than System 3's, it includes a flowmeter in the distributor and a controlling computer in control board. For more automathized and informative processes, a tyre sensor or GPS aerial will have to be assembled for speed control, and a pressure sensor in the distributor to inform about working pression and a level sensor in the tank to obtain information at every moment about the remaining liquid volume in the tank. Para un mayor automatización e información se puede montar un sensor de rueda o un GPS.

4.2.9.6. MCK Sonar Electrical Distributor

Electrical distributor with monitoring computer which allows to open independently right and left sectors which are controlled by active sonar. This distributor includes hand-operated pressure regulation.

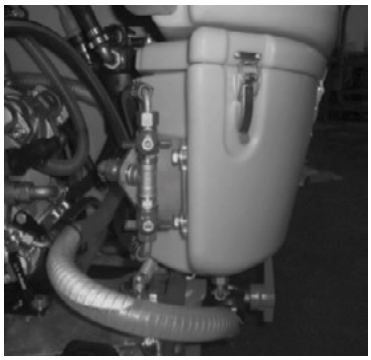
4.2.10. Powder Stirrer

It helps to rinse the sieve of the filling mouth of the main tank when we introduce powder products which do not end up dissolving in this or which cause lumps on their first contact with water. It is triggered by a valve of the pressure collector. After having used the powder stirrer, remember to disconnect it as a big amount of flow rate is used and would affect the rest of the liquid circuit.



4.2.11. Can Rinsing

It is used to rinse the used can one it has been emptied, sparing mostly all the product and avoiding damages in the environment. It is placed in the filling mouth of the tank. It is triggered by a valve of the pressure collector.



4.2.12. Mixer/chemicals inductor

It is placed in one of the lids of the tank or in the left front area of the machine. The one in the upper part has not draining valve. It only helps to transfer product in liquid or powder to the tank mixing it with water. It has set up as standard a can rinsing device, a flow stirring system which causes the mixture of phytosanitary product with the water of main tank and a ventouri system in the tank to empty the mixer.

4.2.13. Jets or nozzle-holders

Instalados en los arcos en el grupo de aire se instalan las boquillas median-de roscado. Llevan incorporado un sistema antigota, son giratorios regula-bles y orientables, se pueden encontrar para llevar 1 o 2 boquillas.

4.2.14. Tank Rinsing Robot

Optimal rinsing of tanks of spraying machines by means a turning rinsing robot strategically placed inside the tank.

4. Description

4.3.1. General Information

Depending on the capacity of the machine several air units are available all with blower housing made of painted steel, galvanized or stainless steel and with adjustable blades impellers bent in polyamide. Its reckoned aerodynamics ensures huge aire flow with a perfect distribution and restricted power absorption. The following chapter shows different sorts of air units and their main features.

4.3.2. Models of air units

The fowowing board identifies the essential features of the air units: kind of gear box with the speed ratios, whether they have clutch or not, sort of impeller with its diameter and the amount of blades of this one, amount of blades of the entry's deflector, width of the air exit channels, amount of jets or nozzle-holders and the blower housing with the definition of diameter width and the sort of material with its finish.

	Gear Box			Clutch	Impeller			Qty Deflector blades	Width exit channels				Qty jets	Blower Housing		
Grupo de aire	Model	1st ratio.	2ª ratio.	Yes/no	Type	Ø	Nº blades		1	2	3	Turbo		Ø	Width	Finish
STU6	BIMA MSA	4,6	---	NO	A	590	8	---	120	---	---	---	12	615	200	Painted Steel
STU7	DV-3600	3,5	4,125	NO	A	740	8	---	140	---	---	---	14	765	320	Painted Steel
STU8	DV-3600	3,5	4,125	NO	A	790	8	10	160	---	---	55	14	815	350	Painted Steel
STU9	DV-3600	3,5	4,125	NO	A	890	8	11	180	---	---	55	16	915	350	Painted Steel
STC9	DV-3600	3,5	4,125	YES	B	890	7	8	65	170	---	55	30	915	350	Painted Steel
GTU9	DV-3000	3,8	4,7	YES	B	890	7	11	180	---	---	55	16	915	350	Stainless Steel
GTU9S	DV-3000	3,8	4,7	YES	B	890	7	11	200	---	---	55	30	915	350	Stainless Steel
GTC9	DV-3000	3,8	4,7	YES	B	890	7	8	65	175	---	55	22	915	400	Stainless Steel
GTL9	DV-3000	3,8	4,7	YES	C	890	10	10	107	107	---	115	16	915	350	Galvanized Steel
GTL9S	DV-3000	3,8	4,7	YES	C	890	10	10	107	107	---	115	30	915	350	Galvanized Steel
GTE9	CONEC	3,5	4,5	YES	B	890	7	8	65	175	---	55	16	915	400	Stainless Steel
GTX9	DV-3000	3,8	4,7	YES	B	890	7	8			---	---	38	915	400	Stainless Steel
GTE10	CONEC R	3,5	4,5	YES	B	990	10	---	110	110	110	65	45	1015	500	Stainless Steel
GTE10A	CONEC R	3,5	4,5	YES	B	990	10	---	115	123	---	65	30	1015	500	Stainless Steel

ON NO ACCOUNT the 540 r.p.m. of PTO of the tractor must be exceeded because of the severe danger of air unit explosion.

DO NOT APPROACH the air entry or exit while the impeller is working. Some objects could be thrown away throught the air exit or some textile garment could be sucked through the air entry.

The air units are the most dangerous part of the machine. Do not try to modify any of their parts without following the advice of your local dealer.

4.3.3. Air Flow of the Units

The following boards show the performances of the different air units depending on the chosen turning speed of the PTO, gear box ratio and blades bending angle

See attached boards >>

STU6 AIR UNIT	AIR UNIT BOARD OF PERFORMANCES – DYNAMIC TESTS +/- 5%											
	PTO. (rpm)	Blade Position	A - 30º		B - 35º		C - 40º		D - 45º		E - 50º	
		Gear Box Speed	I	II	I	II	I	II	I	II	I	II
	400	Flow Rate (m^3/h)	---	---	---	---	---	---	---	---	---	---
		Speed (m/s)	---	---	---	---	---	---	---	---	---	---
		Power (HP)	---	---	---	---	---	---	---	---	---	---
	450	Flow Rate (m^3/h)	---	14.500	---	17.500	---	19.800	---	22.600	---	26.400
		Speed (m/s)	---	---	---	---	---	---	---	---	---	---
		Power (HP)	---	4	---	4,5	---	6	---	8	---	12
	540	Flow Rate (m^3/h)	---	1.800	---	21.400	---	24.600	---	27.200	---	31.400
		Speed (m/s)	---	---	---	---	---	---	---	---	---	---
		Power (HP)	---	7	---	8	---	10,5	---	15	---	20

STU7 AIR UNIT	AIR UNIT BOARD OF PERFORMANCES – DYNAMIC TESTS +/- 5%											
	PTO. (rpm)	Blade Position	A - 30º		B - 35º		C - 40º		D - 45º		E - 50º	
		Gear Box Speed	I	II	I	II	I	II	I	II	I	II
	400	Flow Rate (m^3/h)	---	18.400	---	24.200	---	27.700	---	30.000	---	33.500
		Speed (m/s)	---	17	---	22	---	25	---	28	---	30
		Power (HP)	---	4	---	8,4	---	10	---	12,5	---	18,3
	450	Flow Rate (m^3/h)	---	22.300	---	29.300	---	33.600	---	36.400	---	40.600
		Speed (m/s)	---	21	---	26	---	30	---	34	---	36
		Power (HP)	---	4,8	---	10	---	12	---	15	---	22
	540	Flow Rate (m^3/h)	---	24.600	---	32.300	---	37.000	---	40.100	---	44.800
		Speed (m/s)	---	23	---	29	---	34	---	38	---	40
		Power (HP)	---	8	---	16	---	22	---	26	---	35

STU8 AIR UNIT	AIR UNIT BOARD OF PERFORMANCES – DYNAMIC TESTS +/- 5%								
	PTO. (rpm)	Blade Position	A - 30º		B - 35º		C - 40º		D - 45º	
		Gear Box Speed	I	II	I	II	I	II	I	II
	400	Flow Rate (m3/h)	---	---	---	---	---	---	---	---
		Speed (m/s)	---	---	---	---	---	---	---	---
		Power (HP)	---	---	---	---	---	---	---	---
	480	Flow Rate (m3/h)	---	---	---	---	---	---	---	---
		Speed (m/s)	---	---	---	---	---	---	---	---
		Power (HP)	---	---	---	---	---	---	---	---
	540	Flow Rate (m3/h)	---	---	---	---	---	---	---	---
		Speed (m/s)	---	---	---	---	---	---	---	---
		Power (HP)	---	---	---	---	---	---	---	---

STU9 AIR UNIT	AIR UNIT BOARD OF PERFORMANCES – DYNAMIC TESTS +/- 5%								
	PTO (rpm)	Blade Position	A - 30º		B - 35º		C - 40º		D - 45º	
		Gear Box Speed	I	II	I	II	I	II	I	II
	400	Flow Rate (m3/h)	29.500	34.000	35.500	41.250	41.750	48.000	46.500	53.500
		Speed (m/s)	16,75	19,25	20	23,5	23,75	27,25	26,5	30,5
		Power (HP)	6	9	8	13	10,5	17	13,5	21,5
	480	Flow Rate (m3/h)	34.000	39.750	41.250	48.000	48.500	56.500	55.000	63.250
		Speed (m/s)	19,25	22,5	23,5	27,25	27,5	32	31	36
		Power (HP)	10	15,5	13,5	22	17,5	28,5	22,5	35,5
	540	Flow Rate (m3/h)	37.250	43.750	45.500	53.000	53.500	62.500	60.250	69.750
		Speed (m/s)	21,25	25	26	30	30,5	35,5	34,25	39,5
		Power (HP)	13,5	21,5	18	30	24,5	39,5	32	48

4. Description

STC9 AIR UNIT	AIR UNIT BOARD OF PERFORMANCES – DYNAMIC TESTS +/- 5%								
	PTO (rpm)	Blade Position	A - 30º		B - 35º		C - 40º		D - 45º	
		Gear Box Speed	I	II	I	II	I	II	I	II
	400	Flow Rate (m3/h)	30000	34500	36000	42000	42500	49000	47500	54500
		Speed (m/s)	14,5	17	17,5	20,5	20,5	24	23	26,5
		Power (HP)	6,5	10	8,5	14	11,5	18,5	14,5	23
	480	Flow Rate (m3/h)	34500	40500	42000	49000	49500	57500	56000	64500
		Speed (m/s)	16,5	19,5	20,5	24	24	28	27	31,25
		Power (HP)	10,5	16,5	14,5	23	19,5	30,5	24	37,5
	540	Flow Rate (m3/h)	38000	44500	46500	54000	54500	63500	61500	71000
		Speed (m/s)	18,5	21,5	22,5	26	26,5	30,5	30	34,5
		Power (HP)	14,5	23	19,5	31,5	26	41,5	33,5	50,5

GTU9 AIR UNIT	AIR UNIT BOARD OF PERFORMANCES – DYNAMIC TESTS +/- 5%								
	PTO (rpm)	Blade Position	A - 30º		B - 35º		C - 40º		D - 45º	
		Gear Box Speed	I	II	I	II	I	II	I	II
	400	Flow Rate (m3/h)	30.000	37.500	38.000	48.500	44.500	57.000	49.500	63.000
		Speed (m/s)	15	19	19,5	25	23	29	25	32
		Power (HP)	7,5	14	14,5	25,5	22	38,5	29,5	52,5
	480	Flow Rate (m3/h)	34.500	44.000	45.000	57.500	53.000	67.000	58.500	74.500
		Speed (m/s)	18	22,5	23	29,5	27	34,5	30	38
		Power (HP)	12	20,5	21	40,5	34	58	43	72,5
	540	Flow Rate (m3/h)	38.000	49.000	50.000	64.000	59.000	75.000	64.000	81.500
		Speed (m/s)	19,5	25	25,5	33	30	38,5	33	42
		Power (HP)	16,5	30,5	31,5	55	44	77	58	91

GTU9S AIR UNIT	AIR UNIT BOARD OF PERFORMANCES – DYNAMIC TESTS +/- 5%								
	PTO (rpm)	Blade Position	A - 30º		B - 35º		C - 40º		D - 45º	
		Gear Box Speed	I	II	I	II	I	II	I	II
	400	Flow Rate (m3/h)	30.000	37.500	38.000	48.500	44.500	57.000	49.500	63.000
		Speed (m/s)	15	19	19,5	25	23	29	25	32
		Power (HP)	7,5	14	14,5	25,5	22	38,5	29,5	52,5
	480	Flow Rate (m3/h)	34.500	44.000	45.000	57.500	53.000	67.000	58.500	74.500
		Speed (m/s)	18	22,5	23	29,5	27	34,5	30	38
		Power (HP)	12	20,5	21	40,5	34	58	43	72,5
	540	Flow Rate (m3/h)	38.000	49.000	50.000	64.000	59.000	75.000	64.000	81.500
		Speed (m/s)	19,5	25	25,5	33	30	38,5	33	42
		Power (HP)	16,5	30,5	31,5	55	44	77	58	91

GTC9 AIR UNIT	AIR UNIT BOARD OF PERFORMANCES – DYNAMIC TESTS +/- 5%								
	PTO (rpm)	Blade Position	A - 30º		B - 35º		C - 40º		D - 45º	
		Gear Box Speed	I	II	I	II	I	II	I	II
	400	Flow Rate (m3/h)	29.000	36.500	37.000	47.000	43.000	55.000	48.000	61.500
		Speed (m/s)	14	17,5	18	23	21	27	23,25	30
		Power (HP)	6	11	12	21	18	32	24	43
	480	Flow Rate (m3/h)	33.500	42.500	43.500	55.000	51.000	64.750	56.000	72.000
		Speed (m/s)	16,5	21	21,5	27	25	31,5	27,5	35
		Power (HP)	10	17	18	35	29	50	37	62
	540	Flow Rate (m3/h)	36.500	47.000	48.000	61.500	57.000	72.000	61.500	78.000
		Speed (m/s)	18	23	23,5	30	27,5	35	30	38
		Power (HP)	15	27	28	49	39	68	49	81

GTL9 AIR UNIT	AIR UNIT BOARD OF PERFORMANCES – DYNAMIC TESTS +/- 5%									
	PTO (rpm)	Blade Position	A - 30º		B - 35º		C - 40º		D - 45º	
		Gear Box Speed	I	II	I	II	I	II	I	II
	400	Flow Rate (m3/h)	33.000	41.500	38.500	49.500	43.000	55.000	47.000	60.500
		Speed (m/s)	16,7	21	19,5	25	22	28	24	30,5
		Power (HP)	8	15	13	24	17,5	32,5	24	44
	480	Flow Rate (m3/h)	38.000	48.500	45.000	58.000	50.000	64.500	55.000	71.500
		Speed (m/s)	19	24,5	23	29,5	25,5	32,5	27,7	36
		Power (HP)	13	22	22,5	38,5	30,5	52	38,5	66
	540	Flow Rate (m3/h)	42.000	54.000	50.000	64.000	55.500	71.000	61.000	78.500
		Speed (m/s)	21,5	27,5	25,5	32,5	28	36	31	39,5
		Power (HP)	18	33	32	52,5	43,5	71	56	89

GTL9S AIR UNIT	AIR UNIT BOARD OF PERFORMANCES – DYNAMIC TESTS +/- 5%									
	PTO (rpm)	Blade Position	A - 30º		B - 35º		C - 40º		D - 45º	
		Gear Box Speed	I	II	I	II	I	II	I	II
	400	Flow Rate (m3/h)	33.000	41.500	38.500	49.500	43.000	55.000	47.000	60.500
		Speed (m/s)	16,7	21	19,5	25	22	28	24	30,5
		Power (HP)	8	15	13	24	17,5	32,5	24	44
	480	Flow Rate (m3/h)	38.000	48.500	45.000	58.000	50.000	64.500	55.000	71.500
		Speed (m/s)	19	24,5	23	29,5	25,5	32,5		36
		Power (HP)	13	22	22,5	38,5	30,5	52	38,5	66
	540	Flow Rate (m3/h)	42.000	54.000	50.000	64.000	55.500	71.000	61.000	78.500
		Speed (m/s)	21,5	27,5	25,5	32,5	28	36	31	39,5
		Power (HP)	18	33	32	52,5	43,5	71	56	89

GTE9 AIR UNIT	AIR UNIT BOARD OF PERFORMANCES – DYNAMIC TESTS +/- 5%									
	PTO (rpm)	Blade Position	A - 30º		B - 35º		C - 40º		D - 45º	
		Gear Box Speed	I	II	I	II	I	II	I	II
	400	Flow Rate (m3/h)	31.100	41.000	43.700	53.200	48.500	60.100	56.700	73.500
		Speed (m/s)	12	15	16	20	18	23	19	24
		Power (HP)	6	11	10	19	13	25	18	35
	480	Flow Rate (m3/h)	36.950	48.750	52.100	63.500	57.850	71.750	68.500	87.200
		Speed (m/s)	14	18	19	23,5	21,5	27	22,5	28,5
		Power (HP)	9,5	18,5	15,5	29,5	21,5	40	32	58,5
	540	Flow Rate (m3/h)	42.000	55.400	59.500	72.500	66.100	82.000	77.900	99.200
		Speed (m/s)	16	21	22	27	25	31	26	33
		Power (HP)	14	25	22	42	30	56	46	77

GTX9 AIR UNIT	AIR UNIT BOARD OF PERFORMANCES – DYNAMIC TESTS +/- 5%									
	PTO (rpm)	Blade Position	A - 30º		B - 35º		C - 40º		D - 45º	
		Gear Box Speed	I	II	I	II	I	II	I	II
	400	Flow Rate (m3/h)	39.500	51.500	48.100	62.400	56.600	72.500	63.600	81.500
		Speed (m/s)	10,9	14,6	13,3	17,2	15,6	20	17,5	22,5
		Power (HP)	6	12,4	8,1	17,2	10,8	22,9	13,5	28,6
	480	Flow Rate (m3/h)	46.400	60.500	56.600	73.400	66.600	85.300	74.800	95.843
		Speed (m/s)	12,8	16,7	20,2	20,2	18,4	23,5	20,6	26,4
		Power (HP)	10,5	20,9	14,2	29	18,9	38,7	23,6	48,4
	540	Flow Rate (m3/h)	51.600	67.300	62.900	81.600	74.000	94.800	83.100	106.500
		Speed (m/s)	14,2	18,6	17,3	22,5	20,4	26,12	22,9	29,4
		Power (HP)	15,8	30,4	21,4	42,2	28,5	56,2	35,6	70,2

4. Description

	AIR UNIT BOARD OF PERFORMANCES – DYNAMIC TESTS +/- 5%									
GTE10 AIR UNIT	PTO (rpm)	Blade Position	A - 30º		B - 35º		C - 40º		D - 45º	
		Gear Box Speed	I	II	I	II	I	II	I	II
	400	Flow Rate (m3/h)	56.000	66.000	63.500	77.500	75.000	91.000	85.500	103.500
		Speed (m/s)	15	18	17	21	20	24,5	23	28
		Power (HP)	8,5	16,5	12	23	15	27	26,5	47
	480	Flow Rate (m3/h)	69.000	81.500	79.000	96.000	93.000	113.000	106.000	128.500
		Speed (m/s)	18,5	22	21,5	26	25	30,5	28,5	35
		Power (HP)	14,5	28	20,5	38,5	26,5	48	41,5	73,5
	540	Flow Rate (m3/h)	76.500	90.000	87.000	106.500	103.000	125.500	117.000	142.500
		Speed (m/s)	20,5	24,5	23,5	29	28	34	31,5	38,5
		Power (HP)	19,5	39,5	29,5	55,5	38	71	58	103,5

	AIR UNIT BOARD OF PERFORMANCES – DYNAMIC TESTS +/- 5%									
GTE10A AIR UNIT	PTO (rpm)	Blade Position	A - 30º		B - 35º		C - 40º		D - 45º	
		Gear Box Speed	I	II	I	II	I	II	I	II
	400	Flow Rate (m3/h)	48.000	57.500	56.500	68.250	65.750	79.000	75.000	90.000
		Speed (m/s)	18	21,5	21	25,5	24,5	29,5	28	33,5
		Power (HP)	13	22,5	17,5	30	21	35,75	36	58,75
	480	Flow Rate (m3/h)	55.500	66.500	65.500	79.000	76.000	91.500	86.500	103.500
		Speed (m/s)	20,75	24,75	24,25	29,25	28,25	34	32	38,5
		Power (HP)	21	36,25	29,25	49	34,5	58	59,5	85,75
	540	Flow Rate (m3/h)	61.000	73.000	72.000	87.000	83.250	100.000	95.000	112.500
		Speed (m/s)	22,5	27	26,75	32,25	31	37	35,25	41,75
		Power (HP)	31	49,5	43	69	49,5	82	77,5	113,5

4.3.4. Protection Grid

All air units are provided with protection grids following ISO rules. They are fundamental to avoid accidents or the introduction of external objects in the inside of air unit.

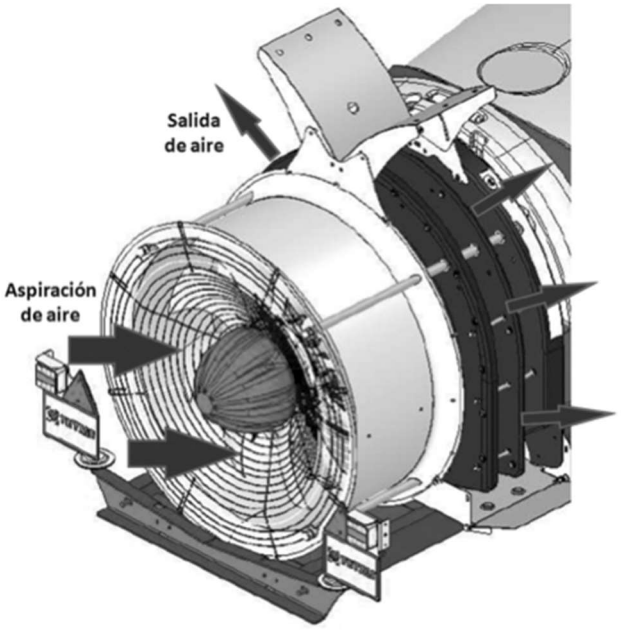
DANGER!
It is completely forbidden the use of the air unit without the protection grid.

In any way do come close to the impeller when this is working.

Do not introduce external objects through the grid when the impeller either is working or not.

Protect your ears from noise during your working hours with EN 352-1:1992 homologated helmets or similar ones.

In case of vibrations or blows, stop immediately the impeller.



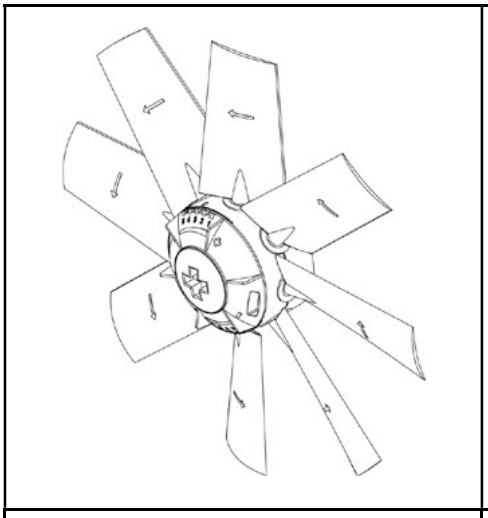
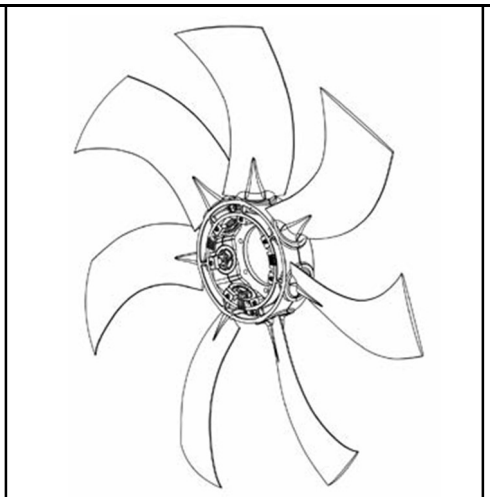
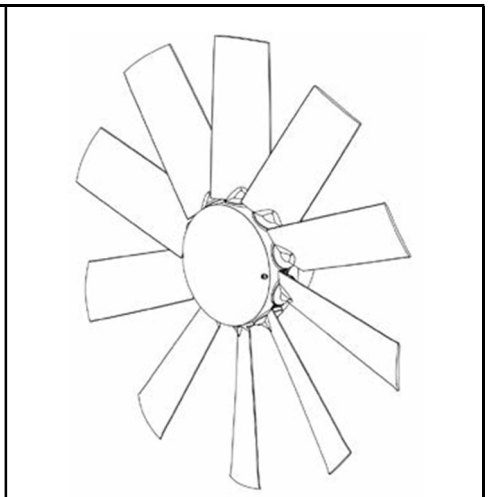
4.3.5. Gear Box

In the board of chapter 4.3.2. several models of assembled gear box are shown, classified according to the air unit and the number of speeds and ratios of long and short gear change. The gear boxes will go attached by the front part by means of bolts and nuts to the frame and depending on the model, they will be attached too in the low part by means of 4 screws. All are provided with a system of speeds selector which prevents the gear from jumping off during the progress or during the journey by road.

4.3.6. Impeller or fan

3 sorts of blades are assembled with different diameters depending on the air unit. In the board of chapter 4.3.2. the models of axial impeller are shown along with their diameter and the quantity of assembled blades.

The blades have 4 or 5 positions of assembly in order to change the air flow rate. To change the blades see the chapter “Impeller’s Adjustment”.

		
A Fan	B Fan	C Fan

4.3.7. Deflectors (Air Deflectors)

Depending on the model of air unit different kind of deflectors will be able to be assembled: whether hand-operated or hydraulic. Check with Teyme to see the possibility of attaching them to your air unit. They have the fonction of re-direct the air flow in order to improve the job adapting it to the crop to be treated.

4.3.7.1. Models of Hand-operated Deflectors

Extendable Deflector in “V”
“W” Deflector
GT9X Deflector
High Horizontal Deflector
Tall Trees Deflector
Tall Trees Deflector 1 side
Medium Horizontal Deflector
Banana Trees Deflector
Antibrotitrys Deflector

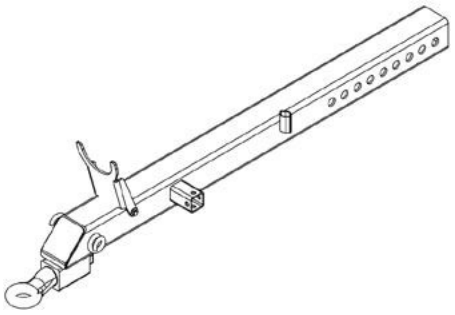
4.3.7.2. Models of Hydraulic Deflectors

GT9X Deflector
“W” Deflector
High Horizontal Deflector
Bergerac Deflector

4. Description

4.4.1. Hitching Tow Bars

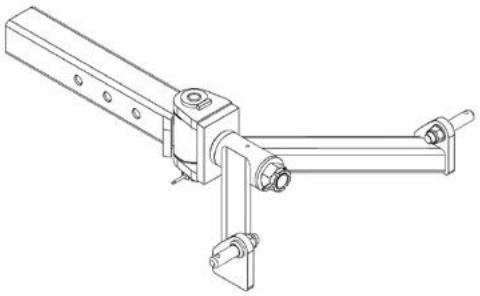
4.4.1.1. Eye Tow Bar



It consists of a large steel tube which is inserted into the frame of the mistblower and it includes a homologated eye mouth which is directly fastened to the tow bar of the tractor. The tube can be long or short depending on the use that wants to be given.
Both tubes include an anchoring system of chains for safety purposes in the event of the breakage of the hitching. The long-tube tow bar includes additionally a holder for the PTO and a fastening to place the jackwheel whether in working mode or in standby mode.
It is needed to assemble a homocinetic PTO shaft on the tractor's side.

⚠	DANGER! Stop always the PTO when making very closed turns even if you have a homocinetic PTO shaft available. If you do not do like this, the turns of reduced radius made with the PTO spinning may provoke the breakage of the PTO or of the pump's shaft and produce big vibrations on the gear box, to the extent of causing the fan's or the air unit's breaking.

4.4.1.2. Y-shaped Ball-and-Socket Turning Tow Bar



It consists of a long and large steel tube which is inserted into the frame of the mistbloer and includes a turning ball-and-socket bar which is fastened to both arms of the hydraulic of the tractor. It is the model of hitching bar which enables turnings with the most reduced angle.
It is needed to assemble a homocinetic shaft in the side of the mistblower.

4.4.2. Axles

It exists a big variety of axles depending on the capacity of the machine and the distance from wheel to wheel that is going to be set. All of them are fastened to the frame by means of screws. They are straight axles without shock-absorbing system.

4.4.3. Park chocks

They are built in galvanized sheet metal. Depending on the machine they can be found under the access footstep to the mouth of the main tank or in the mudscraper. They must be carried always in their support for a quick manipulation whenever the machine must be parked in a little sloped area.

4.4.4. Lights Kit

It comes assembled in a turning support in the bumper of the machine where we can turn it so that it does not disturb when working. The connection to the tractor is done by a ISO-1724 7 poles plug. The lights kit includes a complete set of retroreflectors (front, side and rear ones).

☝	ATTENTION! Lights are compulsory if the machine moves by public roads, whether urban or interurban. In case of breakage of some compenents, these must be immediately replaced. To get the device working, plug the pin to the base of the tractor adapted for this purpose.

5. Adjustments and How to Start-up

5.1. Machine's Load or Unload.

During the loading and unloading tasks of the machine in an out of the lorry, be sure of using straps or belts in good condition and resistant enough and of using suspension points as the ones indicated next.

5.2. Tow Bar Adjustment

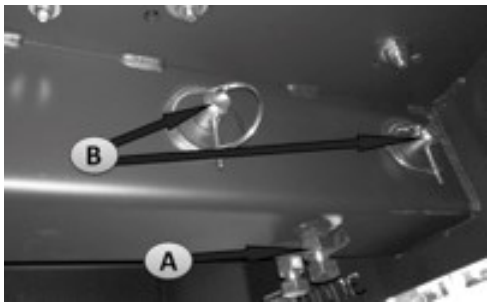
Before hitching the machine to the tractor, that one must be levelled using the jackwheel leaving it as much as horizontal as possible. Later it will be approached to the tractor revising the coupling heights. If needed, the tube will ve reversed increasing in this way the distance with the floor as all the hitchings are uncentered from the center of the tube.

⚠	DANGER! Carry out the tasks of hitching with the tractor and the contact key switched off.

5.2.1. Tow Drawbar Length Adjustment

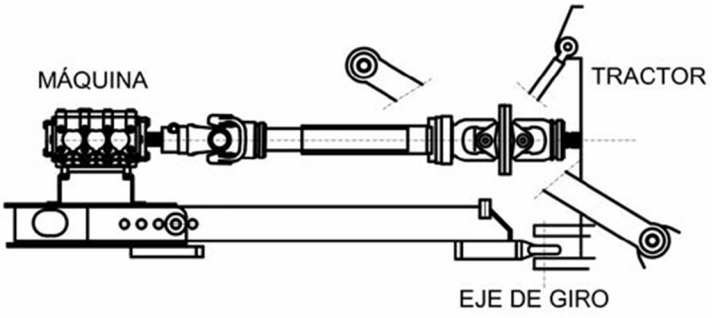
All the hitching drawbars can modify their total lenght until 250 mm in bits of 50 mm. The length will have to be changed so that the tractor's wheels do not touch the machine when this one turns.
To modify the length of the hitching bar the next steps must be followed:

1. To set the jackwheel in working position.
2. Loose the locknut/s and the tightening screw/s in the low part of the frame (A).
3. Dissamble the knuckle pin and the fixation bolt (B).
4. Place the hitching tow bar to the desired lenght.
5. Re-assemble the pin and the knuckle pin (B).
6. Tighten again the screw/s of the lower part and the locknut/s (A).



5.2.2. Eye Tow Bar Hitching

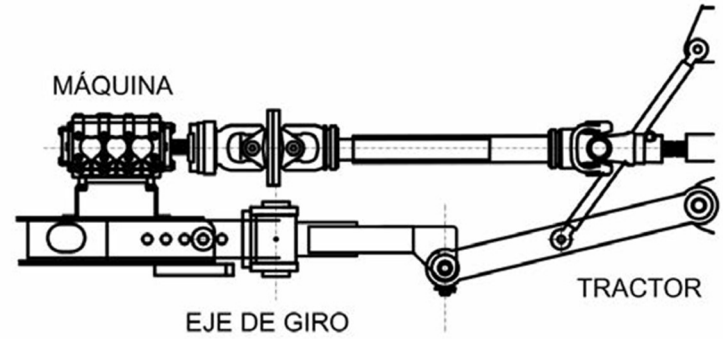
It has got the hitching point in the frame of the tractor. Before connecting the PTO, be sure of having tightened correctly the shaft of the tow bar and that the wheels of the tractor do not touch the mistblower when turning. A homocinetic PTO shaft is needed beside the tractor.

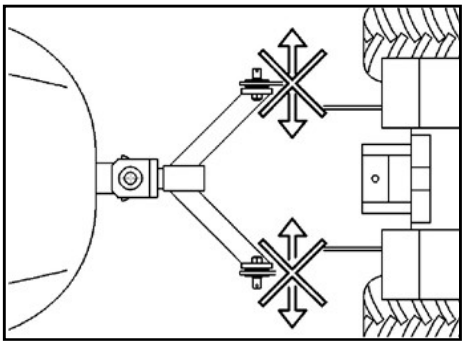


5. Adjustments and How to Start Up

5.2.3. Y-shaped Tow Bar Hitching

It is hitched in the lower arms of the three-point hydraulic of the tractor. Before connecting the PTO be sure that the diameter of the tow bar coincides with the diameter of the balls of the arms of the hydraulic and that the locking pins are assembled, apart from checking that the wheels of the tractor do not touch the mistblower when spinning. It is fundamental that the arms of the hydraulic are tightened, avoiding moves sidewards. This is the kind of hitching which allows the turns with the highest angle, but it also needs an homocinetic PTO shaft in the side of the machine.



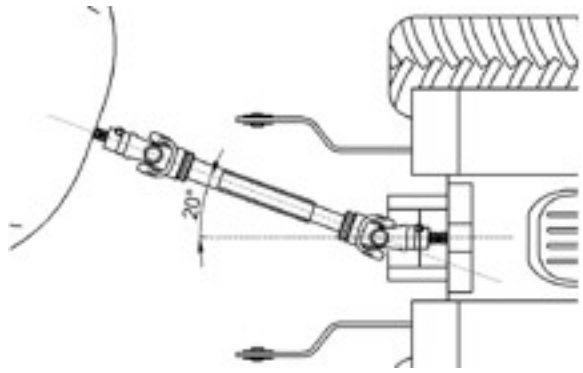


The turning axis will always have to stay much forwards in relationship with the homocinetic knot to avoid that this one makes too closed turns. If needed, an adjustment of the hitching bar will have to be made as it is explained in the chapter of drawbar adjustment.

5.3. PTO shaft

To avoid accidents and personal damages, take into account the following recommendations of prevention and practices for a safe handling:

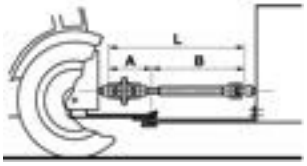
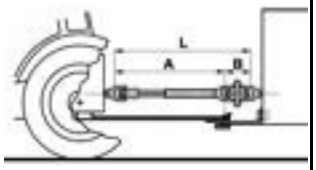
- Stop the engine before hitching the PTO shaft to the PTO of the tractor.
- Make sure that the locking pin is completely closed. Push and pull the shaft until it gets blocked.
- Make sure that the PTO shafts include the protection shields and the chains are intact, covering all turning parts.
- Do not touch or come close to the PTO shaft when it is spinning. Safety distance: 1,5 m.
- Tighten the chains of the protection shields to prevent these from spinning with the move of the shaft.
- Stop the engine and take out the contact key before carrying out the upkeep or the preparation of the PTO shaft or of fome of its parts.

	To ensure a long lifetime of the PTO shaft and avoid possible damages in the machine, it is recommended not to work with the PTO switched on with angles higher than 20º.	

5. Adjustments and How to Start-up

5.3.1. Configurations

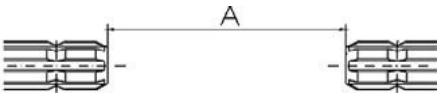
The model of PTO shaft to use depends directly on the sort of used hitching and the distance to the machine and to the tractor.

	Homocinetic Knot		Constant Angle		Provisory Angle	
	Tractor	Machine	Tractor	Machine	Tractor	Machine
 Eye long Hitching	Yes	No	25º	25º	65º	40º
 Ball and socket turning hitching	No	Yes	25º	25º	40º	65º

5.3.2. PTO Shaft Coupling

The initial assembly of the PTO shaft could imply having to cut the shaft to adapt it to the tractor to which this one is going to be hitched. To carry out the first hitching the next steps must be followed:

1. Stop the engine and take out the contact key.
2. Hitch the mistblower to the tractor keeping the lesser distance as possible between the PTO and the pump and following the instructions concerning the adjustment of drawbar.
3. If the PTO shaft must be cut, disassemble the two parts of the shaft. Introduce both sides of the shaft one to the tractor and the other to the shaft of the mistblower's pump and measure the length that must be cut. Mark the protection shields.
4. Measure the distance between the PTO and the pump. From this measure mark again the shield, cutting this one according to the next board:

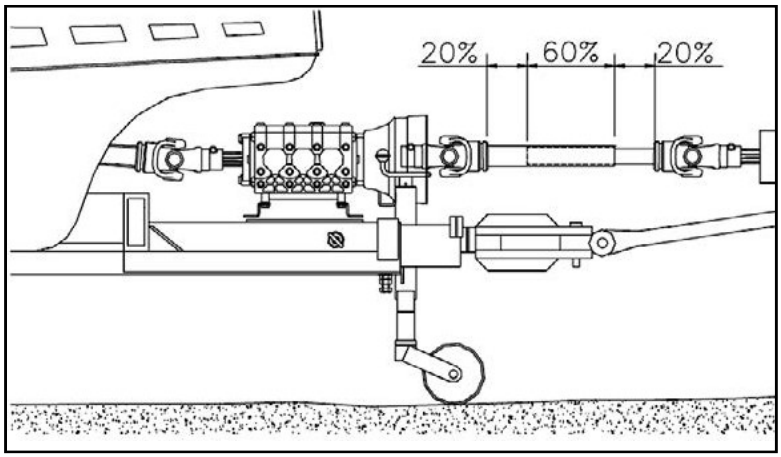
	
600	40 *
800	60 *
1000	80 *
1200	100 **
1400	140 **

* increase 10 mm when the machine has a homocinetic knot

** increase 20 mm when the machine has a homocinetic know

5. Adjustments and How to Start Up

5. Cut with a saw both parts of the shaft on the marked area leaving the same size of tube in both sides. Afterwards, polish all tubes to leave out all the burrs.
6. Check out that the ends of the tubes do not bump into the knots when the tractor turns in the narrowest angle.
7. Check that the tubes of the PTO shaft remain attached in at least a 60% of their working length with the machine and the tracto levelled and lined up as it is described in the picture:



8. Grease the tubes and assemble again the PTO shaft to the tractor and to the machine.

⚠	DANGER! Remember that all knots in the tractor and in the machine, as well as the PTO shaft, must be perfectly protected; in case of accident the user is the only responsible if the machine has not the adequate protections in perfect conditions of maintenance.

5.4. Tyres

There is a range of exchangeable wheels to work in plots with different conditions. Check with TEYME the conditions of the land plot to get recommendations about the wheels to be used.
The wheels of the machines must always have the correct pressure, since these act as a suspension method with the full tank. It must be controlled the pressure of these in cold and through the valve.

Tyres	Recommended inflating pressure (bar)
260/80-12”	4
260/75-15.3”	3,6
260/70-15.3”	3,6
300/80-15,3”	2,8
340/55-16”	4

Tyre	Recommended inflating pressure (bar)
340/65-18”	4
400/60 15,5”	3,6
400/55-17”	3,6
500/50-17”	2,8

Keep always the recommended pressure for a durability and normal wear of the tyres of the machine, thus avoiding the punctures and unnecessary efforts.

5. Adjustments and How to Start-up

5.5. Hydraulic Plugs

Make sure that the couplings are clean before mounting them.
The hydraulic couplings come marked with coulours depending on the activation position and with a sign which indications upwards or downwards direction.

Colour	Symbol	Activation	Move
Green	+	Left activator	Upwards
	-		Downwards
Blue	+	Right activator	Upwards
	-		Downwards
Red	+	Central or electrovalves block activator	Upwards
	-		Downwards

After activating the hydraulic systems and having filled up the system with oil, check the hydraulic oil level of the tractor and fill it up if necessary.

5.6. Electrical Plugs

5.6.1. Basics

If the machine includes some electrical components, some details will have to be born in mind to carry out correctly the connection and avoid problems during the work.
The voltage which the electrical components require is 12 V. Before connecting any of them, make sure that the polarity is the correct one.
Red Wire = 12V (+ positive) Cable
Black = (- negative)
The connectors assembled in the electrical components follow the standards of the big majority of the most modern tractors. If you have a tractor with another sort of power connector it will be necessary to disassemble the current connector and adapt it to the tractor's one.
All the electrical machines which are to be assembled will have protection fuses set up.

5.6.2. Lighting and Signs

Connect correctly the plug of 7 poles of the trailer to the pin of the tractor. The electrical circuit is protected against overintensities with a fuse included in the plug.
Check that the fuse is in good condition.
The supports of the rear lights will have to remain perpendicular to the marching sense when the machine moves through the public roads, whether urban or interurban.

5.6.3. Water Distributor

Search a place in the tractor's cab where it could be possible to adapt the control box to handle it in the most comfortable way. The most suitable place is at the right of the seat of the driver.

	The control box must be well attached to avoid any blow or excessive vibrations. The box includes self-rechargeable fuses.

5. Adjustments and How to Start Up

5.7. Water Circuit

5.7.1. Suction Filter

Check that the suction filter as well as the pressure filters are closed, contain the filtering cartridges and these are clean and complete.

The filter will be able to be replaced or cleaned, depending on necessity, unthreading directly the lid. The filters-bearer has a system which closes in the circuit the water which comes from the tank preventing this from overflowing in case the tank would have liquid. Check the o'ring joint before assembling again the lid and replacing it if this is damaged.

	ATTENTION! For a better watertightness of the lid and the o'ring joint, moist with grease all the area which fits the lid. Any small leakage or suction of air will be repaired.

5.7.2.Piston Pump

On no account this sort of pump should work in dry for more than 30 seconds. If that was the case, the pistons will finish burned and would have to be replaced.

Before starting check the oil level of the sump. It must be between the highest and lowest level of the rod which is placed in the upper part of the pump.

5.7.3. Diaphragm Pump

Before starting, check the oil level. It must be between the higuest and lowest level of the vase placedin the upper part of the pump.

	ATTENTION! For further instructions or more specific information, check the notice of instructions of the pump handed in with the machine.

5.7.4. Air Tank

The air tank included in the pumps it is adjusted according to default factory conditions to a pressure of 5-7 bar to cover spraying pressure from 10 to 20 bar.

Depending on the pressure with which we are going to work, the pressure of the air tank will have to change accordingly to what it is indicated in the following board:

Pump's working pressure	Accumulator's inflating pressure
2-5	2
5-10	2-5
10-20	5-7
20-50	7

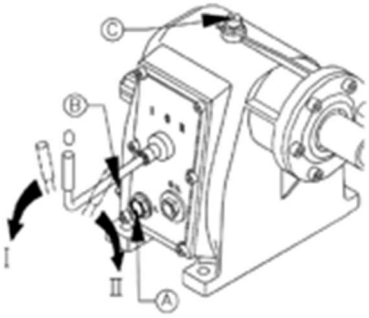
5. Adjustments and How to Start-up

5.8. Air Unit

Before adjusting the air unit, the needed air flow and speed will have to be determined for the treament of the plantation. Check with Teyme or make your own calculations by means of the calibration notice of instructions that Teyme will hand to you. Once we know the air flow rate to be applied, we look up the boards of this air unit in which depending on the speed of spinning of the PTO, the chosen speed gear of the gear box and the bending angle of the fan we will obtain the flow rate.

	ATTENTION! A biggest efficiency of the impeller is obtained with less spinning speed and bigger inclination of the fan blades.

5.8.1. Gear Box



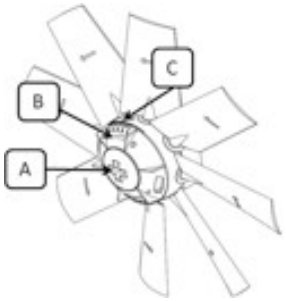
It allows to choose the long, short gear or neutral point of the gear box through a lever adapted for this purpose.
In the left rear part of the machine we can find the lever for gear selection. To change speed, make sure that the PTO is disconnected, turn the lever left or right depending on the required gear. The neutral point is in the middle part.

	DANGER! Verify the oil level by means of the A viewer.

5.8.2. Fan

The angle of the fan blades is adjustable depending on the kind of fan. As standard all fans come adjusted to 40º.
Reducing the angle of the blades (narrowest angle, pos. 1 (30º)), the air flow diminishes and the power absorption decreases. Increasing the angle (widest angle, pos. 4 (45º)) is possible to increase the air flow but increasing also the power absorption. In this way, the mistblower can adapt itself to different treatments as well as to the tractor's power.

5.8.2.1. A Fan



To change the position of the angle of the fan's blades the next steps must be followed:

1. Dissassemble the rear grid of the air unit.
2. Loose the central nut of polyethylene A without taking it out completely.
3. Turn the hub B. This hub is numbered from 1 to 5, being 1, 30º and 5, 50º of blade. Make the desired number coincide with the C mark of the immobile part.
4. Tighten the central nut A.
5. Assemble again the rear protection grid of the air unit. On no account the PTO must be activated if this grid is not assembled.

	DANGER! All blades must remain with the same angle, otherwise vibrations will occur, coming to the breakage of the air unit.

5. Adjustments and How to Start Up

5.8.2.2. B Fan

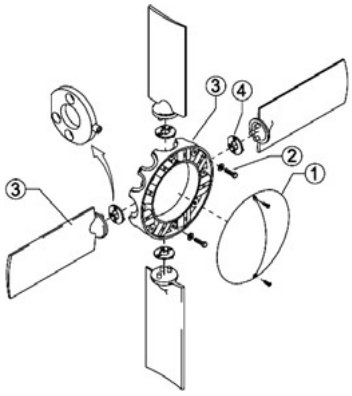
To change the position of the angle of the impeller's blades the next steps will have to be followed:

1. Dissassemble the rear grid of the air unit.
2. Take the hub shell out of the fan.
3. Loosen slightly the allen screws inside the hub so that the base of the blades could spin.
4. Take out the positioning red cues of the fan out of their lodge.
5. Assemble the cues depending on the needed air flow. The plastic cues distinguish themselves for the graved character A, B, C or D, A standing for 30º inclination and D for 45º one with rises of 5º. It is compulsory that all cues have the same character.
6. Turn each blade separately to lodge the cue in its place.
7. Tighten the allen screws of inside the hub of the fan.
8. Assemble the hub shell.
9. Re-assemble the rear protection grid of the air unit. On no account the PTO must be activated when the grid is not assembled.

⚠	DANGER! All the blades must remain with the same angle, otherwise vibrations will occur, coming to the breakage of the air unit.

5.8.2.3. C Fan

To change the position of the angle of the impeller's blades the next steps must be followed:



1. Disassemble the rear grid of the air unit.
2. Leave out the hubcap (1) previously getting the screws out.
3. Take all the screws (2) out of the rings' union, marking out the position of every one of them to prevent the impeller from getting unbalanced.
4. Separate both parts of the rings (3) where the blades are attached.
5. Take out the blades and change the disk (4) placing another with the corresponding grades.
6. Re-assemble all the system fastening the pieces in the same position to avoid unbalance.
7. Re-assemble the rear protection grid of the air unit. On no account the PTO must be activated when the grid is not assembled.

⚠	DANGER! All the blades must remain with the same angle, otherwise vibrations will occur, coming to the breakage of the air unit.

☝	ATTENTION! Maintain the balance washers laid in the hub of the impeller. We recommend that after having changed the angle of the blades, the air unit gets balanced anew.

6. Working

6.1. Water Circuit

6.1.1. Filling of the Main Tank.

The tank is possible to be filled in through the upper lid by gravity or by means of the pump's suction.

	ATTENTION! It is not advisable to leave the mistblower with liquid inside. Otherwise, all valves should be closed for safety reasons.

6.1.1.1. Filling through the Upper Lid of the Tank

The water is introduced into the tank leaving out the lid placed on the upper part of the tank and to which one gets access by the step. It is advisable to use water as clean as possible for a good spraying. Fill in always through the basket filter to avoid the particles to get inside the tank.

	CAUTION! Do not place the filling hose inside the tank. Keep it always out of the tank directed towards the inside. If the pressure hose is inside the tank and there is a pressure drop in the supply of water, the chemical product could siphon itself and pollute the supply line.

6.1.1.2. Filling by pump suction

All pumps are self-filling. The maximum height of suction by means of this system is 3 meters.
The next steps to use this system are:

1. Introduce the pine in the pool.
2. Unthread and leave out the yellow cap placed in the suctin filter.
3. Thread the fitting directly on the suction filter of the machine.
4. Set the PTO on spinning, opening the euromix and botmix taps, closing the sectors.

6.1.2. Filling of the rinsing tank.

Next to the main tank in the lower rear part we can find the rinsing tank. Take out the lid of this tank and fill in it with clean water. Afterwards, place the lid again.
The nominal capacity of these tanks is a 10% of the capacity of the main tank.
Fill in only with clean water. To avoid the formation of algae, rinse the liquid circuit with clean water if the machine is not going to be used during a long time.

6.1.3. Filling of the sanitary water tank

The sanitary water tank is placed in the right upper part of the main tank or in the left side of the air unit. It is used to clean hands, gloves, nozzles, etc. after having been in contact with the chemical product.

	CAUTION! Even though this tank can only be filled in with clean water, this one cannot be drunk.

6. Working

6.2. Emptying Valve

The valve for a safe emptying can be found below the step of access to the tank's lid. To have access to it you will have to fold out the step.
To empty the tank, the handle of the ball valve will have to be turned in paralled position to the exit of flow.
To fill in anew the tank, close the valve.

	CAUTION! When opening the valve be careful that the liquid does not spill your hands or your feet.

6.3. Introduction of phyto-sanitary product.

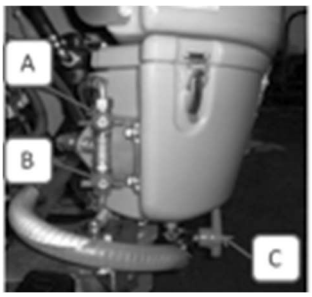
There are different systems to introduce the product in the tank. The next steps must be followed:

a) The tank must be filled in at 1/3 of its capacity with clean water before including the chemical product.
b) Activate the pump, automatically the stirring system will start. Check visually from the access mount to the tank that the system works correctly.
c) If your machine has no chemical inductor available, empty directly the liquid products inside the tank.
d) If your machine has no powder mixer available, et is convenable to dissolve previously the solid products in a can exclusively for this usage before introducing it to the tank.

	DANGER! Follow always the instructions which appear in the label of the product.

6.3.1. Chemical Inductor/ Mixer

1) Open the lid of the tank and include the product in liquid or powder with all the circuit valves closed.
2) Close the lid and open the mixing valve (A) caring that the mixer tank is not full.
3) Open the discharge-can-rinsing valve (B) and the draining valve (C) located in the lower part of the tank.
4) Valves will be opening and closing until the mixer tank remains empty and without traces of product.
5) The can will be cleaned introducing this one upside down and getting the opening of the can inside the T-shaped system of can rinsing inside the mixer tank and pushing the legs of the T with the can, with valves (B) and (C) open.



6.3.2. Powder mixer

1) Introduce the powder directly in the basket with grid located in one of the lids of the main tank.
2) Open the valve of the powder mixer located in one of the pump's exits or in the distributor.
3) Once all the powder is dissolved, close the valve.

6.4. Cleaning of the water system

Every time that the working time is finished or whenever the phytosanitary product is changed, a cleaning of all water system will have to be carried out. With the main tank empty and the clean water tank full of water withouth phyto-sanitary product, follow the next steps:

1) With the PTO disconnected, turn the 3-positions valve connecting the suction to the clean water tank.
2) Close all valves, the distributors' and the sectors' valves and open the valve of the rinsing nozzle/s (rinsing robot).
3) Connect the PTO, with the pump working and cleaning all the walls of the tank.
4) Stop the PTO when more than 1/3 of the clean water tank has been absorbed.
5) Change the position of the 3-ways valve to the main tank, close the valve of the rinsing nozzle (rinsing robot) and open the other valves.
6) Connect the PTO and open the sectors, throwing this water to the plantation we have been treating.
7) Repeat again all steps twice until emptying the clean water tank.

	ATTENTION! With these steps a correct cleaning of the whole circuit and the main tank is guaranteed. A good cleaning of the machine extends the lifetime of the components.

6.4.1. Cleaning of Filters

The cleaning of the filters assures that:

- The mistblower's components like the valves, the diaphragms and the distributor do not get obstructed or damaged while they are working.
- The nozzles do not get obstructed during the spraying work.
- The pump has a long lifetime. The obstruction of the suction filter will give as a result a cavitation of the pump. The suction filter is the element which protects all the main components of the sprayer. Revise this one regularly.

6.5. Controls

The sprayer can be supplied with different sort of controls to regulate spraying. Before starting the treatment, you must choose a model of nozzle to use and know at which pressure you are going to work (it is recommended working in a scope between 8-12 bar).
See the book "Spraying techniques".

	ATTENTION! All the distributors must be regulated with clean water before spraying with chemical products.

6.5.1. GRH hand-operated control

6.5.1.1. Pressure adjustment:

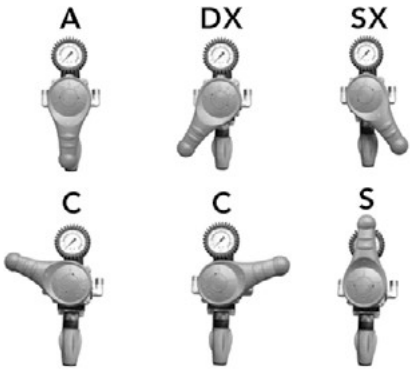
1) Turn the selection lever into by-pass devices position (S)
2) Plug the PTO to the working planned revolutions.
3) Turn the selection lever towards position of opening both sections (A)
4) Turn the lever of pressure to the desired pressure. Clockwise turn stands for raising pressure. Counterclockwise one for lowering pressure. If you spray only in one side of the machine place the lever in right position (DX) or left one (SX) and start again regulating the pressure by turning the lever towards the desired working pressure.

6. Working

6.5.1.2. Working

Graved on the lever several indications with the following meanings can be read:

- A position: both sectors are open.
- DX position: the right sector is open.
- SX position: the left sector is open.
- C position: the system is at pressure, and all the product goes to return.
- S position: the system is not at pressure, and all the product goes to return.

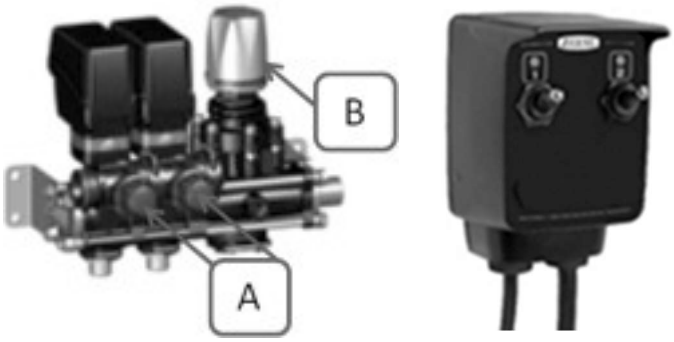


⚠	DANGER! Follow all the instructions which appear on the product's label.

6.5.2. System 1 Electrical Distributor

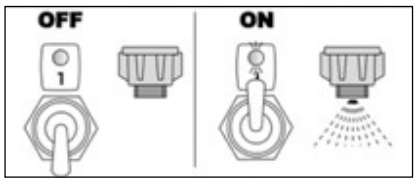
6.5.2.1. Pressure and Self-compensating System Adjustment

1. With the PTO disconnected, place the switches 1 and 2 of the control in OFF (lower position- turned off leds).
2. Turn the knobs of the regulators of the self-compensated system (A) in open position (0 position).
3. Connect the PTO to the working planned revolutions.
4. Place the switches 1 and 2 in ON (high position – turned on leds).
5. Turn the pressure knob (B) to the desired pressure, clockwise turn stands for raising pressure, counterclockwise turn for lowering pressure.
6. Close the sector 1 (left).
7. Turn the knob of the regulator of the self-compensated system of the closed sector (left) until the pressure achieved is the same as the one previously achieved with both sectors open.
8. Open again the sector and repeat the operation closing and compensating the right side.



6.5.2.2. Working

The electrical control consists of 2 switches 1 (left sector) and 2 (right sector). By moving each one of the switches upwards, spraying of the corresponding sector will be activated. The lit light signs indicate the activation of each sector.

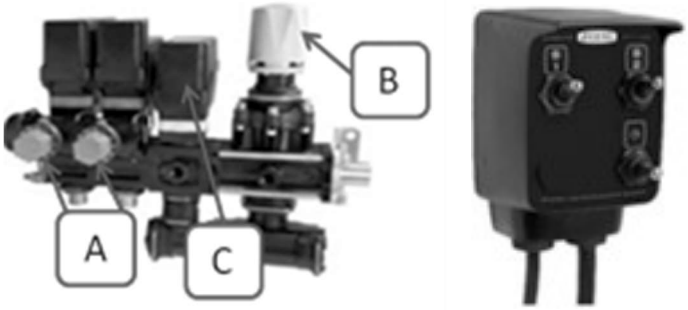


6.5.3. System 2 electrical distributor

6.5.3.1. Pressure and Self-compensating System Adjustment

1. With the PTO disconnected set the control switches 1 and 2 in OFF (lower position – turned off leds)
2. Keep the switch of pressure activated downwards for 5 seconds until leaving the electrical regulator without pressure (see manometer).
3. Turn the knobs of the regulators of the self-compensated system (A) in open mode (0 position).

4. Connect the PTO to the planned working revolutions.
5. Place the switches 1 and 2 in ON mode (upper position – turned on leds)
6. Turn the pessure knob (B) to the higuest desired pressure. Clockwise turn stands for increasing pressure, counterclockwise for diminishing pressure.
7. Close the sector 1 (left).
8. Turn the knob of the regulator of the self-compensated system (A) of the closed sector (left) until achieving the marked pressure with both sectors open.
9. Open again the sector and repeat the operation closing and compensating the right sector.
10. Open both sectors and adjust the desired pressure with the pressure switch.



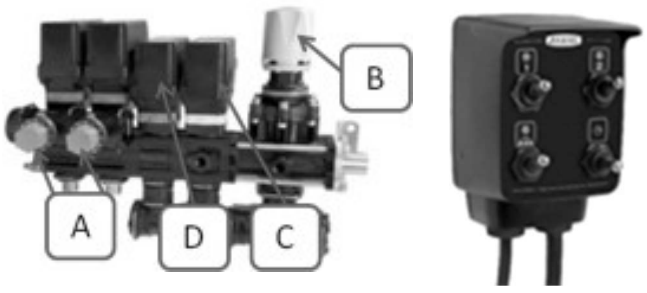
6.5.3.2. Working

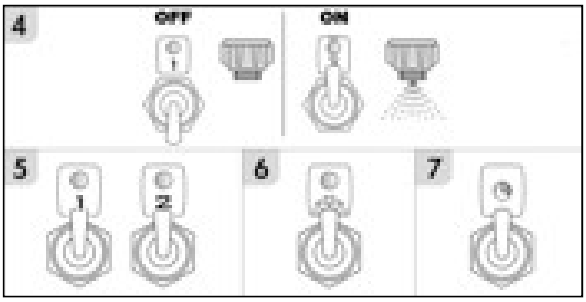
It has the same functions than system 1, besides pressure regulation by means of an electrical valve (C) and an added selector in the control box.

6.5.4. System 3 Electrical Distributor

6.5.4.1. Pressure and Self-compensating System Adjustment

1. With the PTO disconnected set the switches 1 and 2 (5) or the general (6) of the control in OFF (lower position – turned off leds).
2. Keep the pressure switch (7) activated downwards for 5 seconds in order to suppress the pressure of the electrical regulator.
3. Turn the knobs of the regulators of self-compensated system (A) in open mode (0 position).
4. Connect the PTO to the planned working revolutions.
5. Set the switches 1, 2 and the general in ON (upper position – turned on leds).
6. Turn the knob of pressure (B) to the highest desired pressure, Clockwise turn stands for increasing pressure, counterclockwise for diminishing pressure.
7. Close sector 1 (left).
8. Turn the knob of the regulator of self-compensating system (A) of the closed sector (left) until reaching the attained pressure with both sectors open.
9. Open again the sector and repeat the operation closing and compensating sector 2.
10. Open the two sectors or/and the general and adjust the desired pressure with the pressure switch.





6.5.4.2. Working

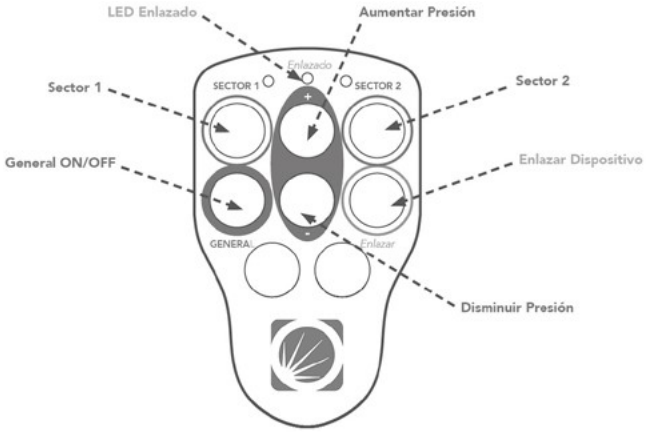
With the same functions than system 2, with an added electrovalve which allows the opening or the closing of general circuit by means of a selector added to the control box. Light indicator is included. There is the possibility of replacing the control box by a wireless control with identical fonctions. See “Quick guide of working of wireless control” in the following page.

6. Working

6.5.5. Wireless Control

6.5.5.1. Start Up

Set the control on working tapping the button "Link device". The "Linked LED" will blink in green colour at regular periods, indicating that the control is on and that the receiver can be contacted correctly. If the device does not get previously linked, the usage of the expected monitoring fonctions in the control will not be possible.



6.5.5.2. General On/OFF Switches

Tap the button "General ON/OFF" to activate the general electrovalve and allow the usage of the rest of fonctions. A second tap will disconnect the electrovalve and the sectors which are working. If the general electrovalve is not activated, the use of any of the control functions will not be possible, either the pressure regulation.

6.5.5.3. Main Fonctions

From this moment on, the sectors and the regulation of pressure can be activated individually, taping the buttons indicated in the scheme.

6.5.5.4. Memory Fonction

At any moment, the button "General ON/OFF" allows to "memorize" the last status of sectors opening; in a way that it is possible to control the partial closure fonctions when tractor is turning.

6.5.5.5. Closing of Daily work

When finished the daily work, the connection with the receiver must be cut off, taping the button "Link Device", the "Linked LED" turning briefly on in red colour. Since that point, the LED will give up blinking.

	ATTENTION! If the system loses the connectivity because of any circumstance, the receiver forces the closing of all electrovalves, as a safety measure.

6.5.6. Bravo 180S Electrical Distributor

6.5.6.1. Pressure and Self-compensating System Adjustment

The adjustment is done in the same way than system 3.

6.5.6.2. Working

It has the same fonctions than the system 3, it includes a flowmeter in the distributor and a computer which controls the processes with the control box. For more automatization and information, a wheel sensor or a GPS can be mounted for speed control, a pressure sensor in the distributor to inform about working pressure and a tank level sensor to obtain information at every moment about the remaining liquid volume.

To see the fonctions of the control, check the "Quick instructions guide of Bravo 180 for mistblowers" in the next pages.

6.5.6.3. Quick Guide for Bravo 180

bravo180S **Quick reference guide ORCHARD SPRAYER** GB

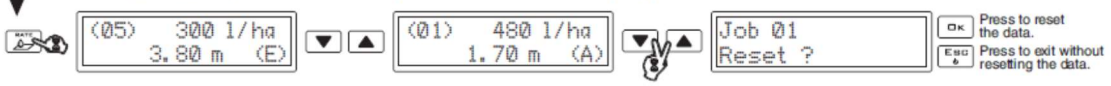
PREPARING THE TREATMENT

1 Job selection

From the Spraying Menu, press key and hold to select spraying job.

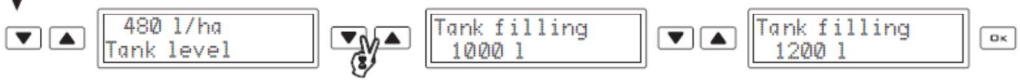
2 Reset total counters

From the Spraying Menu, press key and hold to select spraying job.



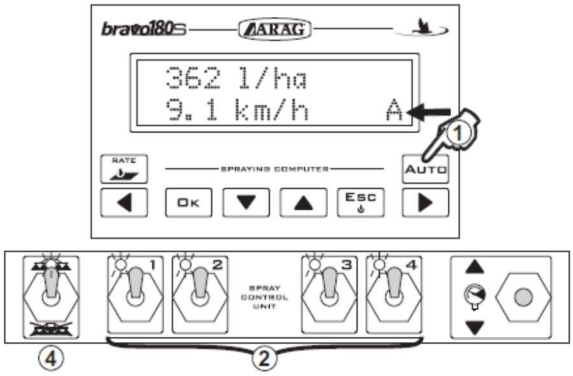
3 Tank Filling

From the Spraying Menu, press to select the value to be set.



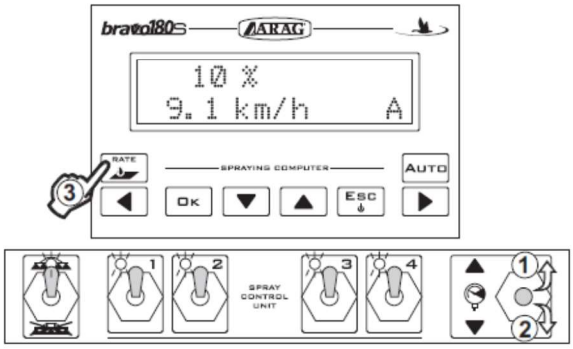
USE

1 Automatic treatment control



① Press to enable automatic mode.
② Turn on the section valves required.
③ Drive to the start of the field.
④ Set the main control switch up.
⑤ Run the treatment.

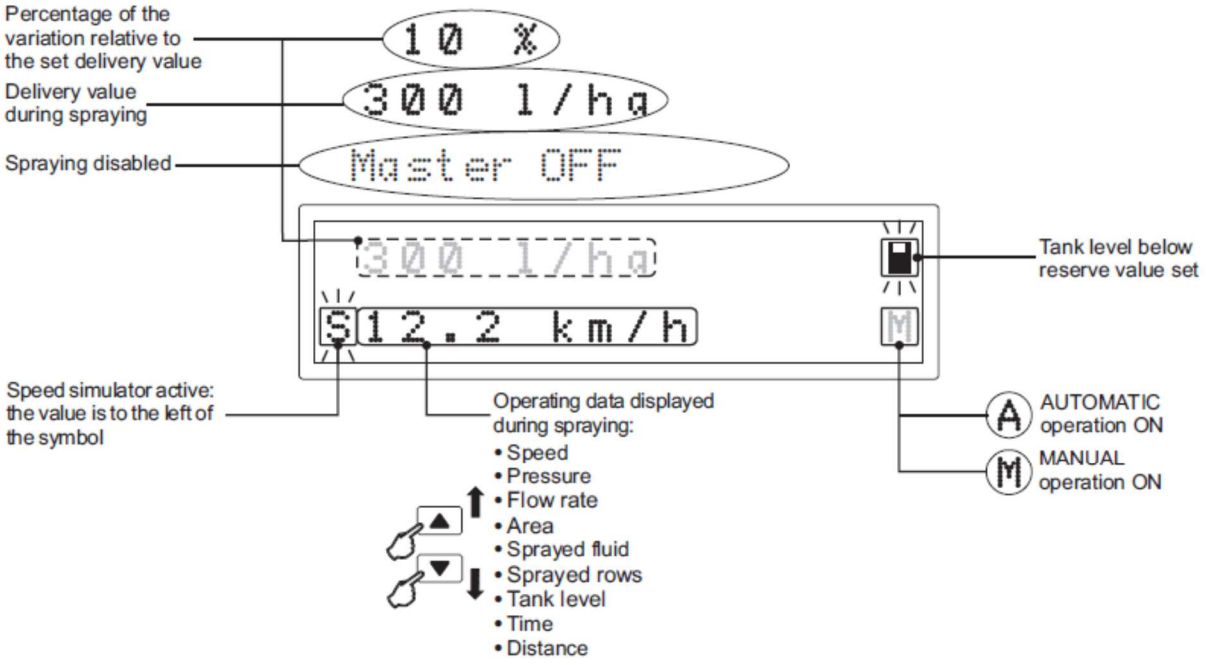
2 Temporary variation in rate



① Press the switch up to increase the delivery value.
② Press the switch down to decrease the delivery value.
③ Press to reset the rate variation percentage.

6. Working

KEY TO ITEMS ON DISPLAY



OPERATING ALARMS

• The computer is not receiving the speed of the tractor and spraying is enabled (main control switch "ON").
The messages shown flash alternating.

Machine stopped! 0.0 Km/h A	0.0 l/ha 0.0 Km/h A

• The computer detects zero flowrate and spraying is active (main switch valve "ON").
The messages shown flash alternating.

Missing flow! 0.0 l/min A	0.0 l/ha 0.0 l/min A

• Speed to high or low for the set dosage.

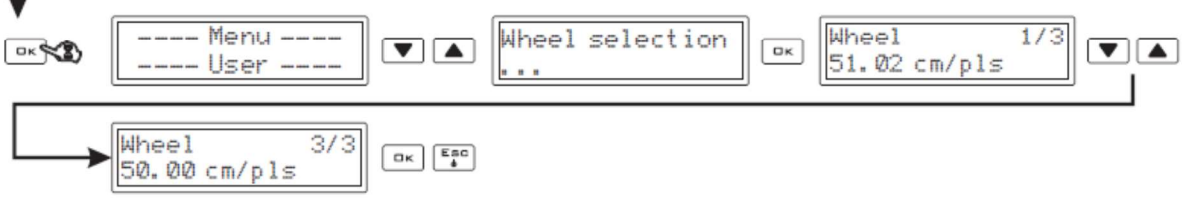
Accelerate! 3.2 km/h A	Slow down! 10.7 km/h A

• **For 4-section Bravo 180S only**
One section out of four or three sections out of four are closed, or the two upper or lower sections are closed: spray rate is changed to keep pressure constant.

300 l/ha ? 10.0 km/h A	-25% 10.0 km/h A

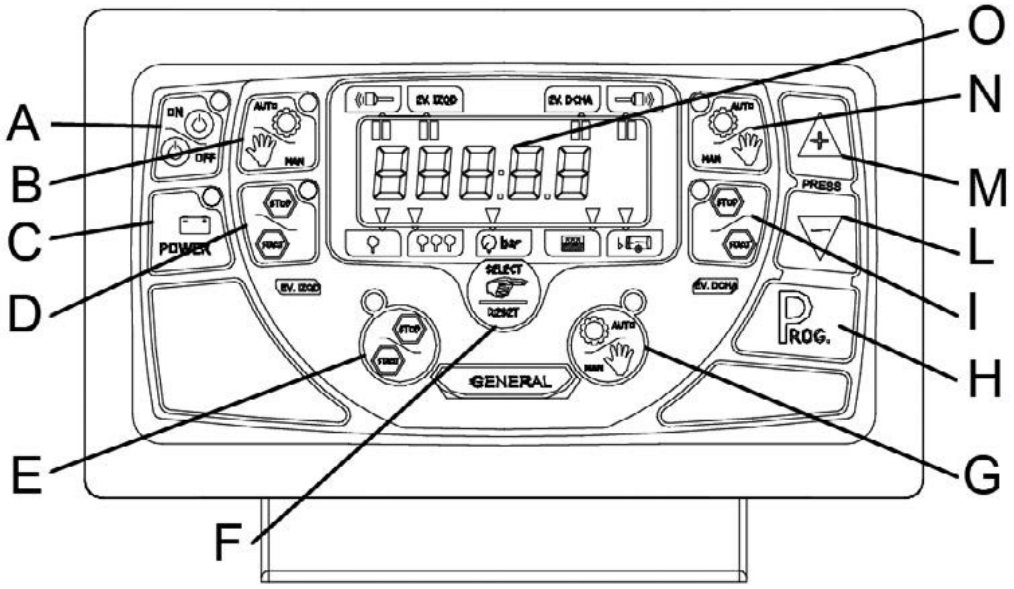
SELECTING THE WHEEL TYPE (CONSTANT)

From the Spraying Menu, hold down to access the User Menu.



6.5.7. Sonar MCK Electrical Distributor

6.5.7.1. Control Basics



A	ON-OFF general button with green led
B	Left “AUTO/MAN” button with green led
C	“POWER TENSION” green led
D	Left “START/STOP” button with red led
E	General “START/STOP” button with red led
F	“SELECT / RESET” button for display and reset indications
G	General “AUTO/MAN” button with green led
H	“PROG” button for constant programming
I	Right “START/STOP” button with red led
L	“–” button to diminish values in programming phase
M	“+” button to increase values in programming phase
N	Right “AUTO/MAN” button with green led
O	5 numbers back-lit LCD display with green leds to view

6.5.7.2. Pressure Adjustment

1. Switch on the control, tapping the ON button (A position).
2. Set the control on hand-operating mode (tap B and N buttons, if it is convenient, switching off thus the green leds).
3. Close the electrovalves of the sectors (tap D and I buttons, it it is convenient, switching on the red colour leds).
4. Connect the PTO and make it spin to the planned working revolutions.
5. Open the electrovalves of the sectors (tap D and I switching off the colour red leds).
6. Turn the pressure knob of the distributor to the wanted pressure, Clockwise turn stands for increasing pressure, counterclockwise for diminishing pressure.

6. Working

6.5.7.3. Automatic Adjustment of Opening and Closing Times

The time of opening and closing the sectors will have to be reckoned. For this, the distance between the sensor and the place where start the nozzles or nozzle-holders will have to be measured. If we know the speed to which the machine is going to work, an approximate reckoning of programmed closing and opening will be able to be done applying this formula:

t (seconds) = (sensor distance – jet (meters))/ working speed (km/h))·3,6:

$$t(seg) = \frac{distancia\ sensor - jet[m]}{velocidad\ trabajo\ \left[\frac{km}{h}\right]} \cdot 3{,}6$$

In the following board the approximate times are given depending on the capacity in liters of the machine and the working speed:

	Working Speed (km/h)													
Capacity (l)	4	4,5	5	5,5	6	6,5	7	7,5	7,5	8	8,5	9	9,5	10
2000	2,7	2,4	2,2	2,0	1,8	1,7	1,5	1,4	1,4	1,4	1,3	1,2	1,1	1,1
3000	1,6	1,4	1,3	1,2	1,1	1,0	0,9	0,9	0,9	0,8	0,8	0,7	0,7	0,6
4000	1,6	1,4	1,3	1,2	1,1	1,0	0,9	0,9	0,9	0,8	0,8	0,7	0,7	0,6

With the reckoned time we proceed to programme the control following the next steps:

1. Tap once the start up button (ON/OFF) and wait 5 seconds for the 3 (AUTO/MAN) green lights for being lighted up.
2. Tap once the GENERAL (START/STOP) button.
3. To programme the time of opening and closing of the sectors, keep tapped the (PROG) button until it appears (tO 0.3), “tO” is the time gap for the opening of sectors. With (+) y (-) right buttons,insert the value previously reckoned.
4. Tap the (PROG) button to change to screen (tC 0.3), “tC” is the gap time for the closing of the sectors. Proceed to introduce the reckoned value.
5. Tap thrice the (PROG) button, until going back to the main menu.

6.5.7.4. Working

Job will be able to be done in automatic mode (detection of presence of the tree by sonar) or hand-operated one.

In the control the general buttons of hand-operated/automatic and START/STOP (G and F Position) always will rule both sectors at once. Every sector will be able to be controlled separately with the buttons B/N and D/I.

6.5.7.4.1. Automatic Mode

1. Turn on the control tapping ON/OFF (A position).
2. Set the control in automatic working mode (tap B, N y G, if this is convenient, turning on the green colour leds.
3. To start working the START/STOP buttons must be in START position (tap D, I and E, if it is convenient, turning off the red colour leds).
4. If you want to desactivate both sectors at once tap general START/STOP (E position, turned on red led) if you want to desactivate one sector tap sector START/STOP (D and I positions, turned on red led).
5. To start activating again, tap again START/STOP switching off the red led.

6.5.7.4.2. Hand-operated Mode

With this mode, sectors will be able to be opened or closed when required without any sort of delay.

1. Set the control in hand-operated working mode (tap B, N y G, if this is convenient, turning off thus the green leds).
2. To open or close the sectors tap the START/STOP buttons (tap D, I and E, OPEN = TURNED OFF RED LED, CLOSED = TURNED ON RED LED).

6.6. Air kit

Select the short or long gear of the gear box through the lever adapted for this purpose depending on the air flow with which you want to work (see boards of performances of air units).

6.6.1. Deflectors (Air deflectors)

Depending on the model of air unit several deflectors will be able to be mounted whether with mechanical adjustment or hydraulic adjustment, check with Teyme for the possibility of attaching them to your air unit. They have the function of redirecting the air flow to optimize the work depending on the crop to be treated and its dimensions.

6.6.1.1. Hand-operated Deflectors

All the hand-operated deflectors will be adjusted loosening the fixation screws, placing the deflector in the wanted position and tightening again the screws and bolts.

6.6.1.2. Hydraulic Deflectors Models

These deflectors are adjusted through hydraulic movements from the tractor's cab.

	DANGER! These moves can eventually cause injures if you are not careful. Keep people away from the range of the air unit, whenever these moves are going to be triggered.

7. Maintenance

7.1. General information

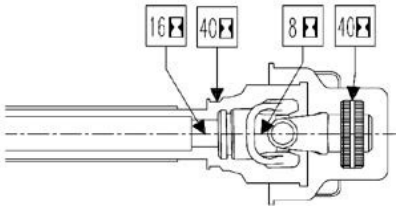
Keep all the lubricants clean and stored in a fresh and dry place to avoid pollution by dirt or condensated water. Clean the oil cans, funnels and grease pistols before storing them and the points of lubrication once they have been greased. Avoid contact for prolonged periods of time of the oil products with the skin.

Follow always the advice about recommended amounts. If the recommended amount is not shown, place grease until this is made visible. The pictogrammes about lubrication refer to the working hours before the next lubrication.

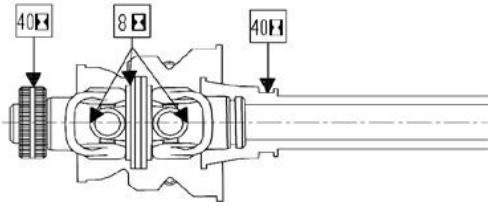
⚠	DANGER! If the mistblower is cleaned with a pressure water gun, lubrication on all the machine is recommended.

7.2. PTO Axle and PTO Shaft

Grease the knots of the PTO shafts (internal/external) every 8 working hours; the points of turning of the protector and the fixation of the PTO shaft will have to be greased every 40 hours. For a better gliding, it is necessary to grease the PTO shaft tubes every 16 hours.



In PTO shafts supplied with homocinetic shafts there are 5 greasing points.



Replace the protections if they are damaged or broken.

7.3. Water Pumps

7.3.1. Ordinary Maintenance

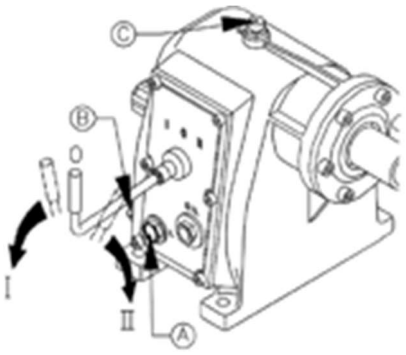
MAINTENANCE PERIOD	INTERVENTION
Every time it is used	• Level and oil estatus control • Suction Filter's Control and eventual Cleaning
Every 50 hours	• Control of inflating pressure of the accumulator • Control of the fixation of the pump to the structure that holds it

7.3.2. Extraordinary Maintenance

MAINTENANCE PERIOD	INTERVENTION
The first 50 hours (piston pumps) The first 300 hours (diaphragm pumps)	Carry out the change of oil
Every 300 hours	• Check that the pumps' screws are tight. • Check that the pressure limiting valve and the safety valve works. • Check that the valves of suction and delivery work. • Check status of o'rings joints in piston pumps and replace them if needed
Every end of the season or once a year	• Change of oil • Check and eventually replace diaphragms • Check and eventually replace joints in piston pumps.

7.4. Gear Box Unit

Check the oil level by means of the A viewer; the first oil change must be done after 100/150 hours and successive ones every 250/300 working hours.
Use for this purpose SAE-90EP oil emptying the oil with the B cap and filling with the C cap.



7.5. Fans

Check visually possible defects or notches, replacing the blade in case of severe defects which could cause excessive vibrations or even breakage of all the air unit.
Counterweight the fan every time a change of this one is done or whenever an excessive vibration of the air unit is observed.

7.6. Filters and Fittings

Check the filters every 50 working hours. Apart from being clean, check that the mesh is in perfect conditions. If not, the effectiveness of the filter will be non-existent.
Whenever you disassemble some filter or hose you will have to be careful not to pinch the o'rings assembled on these. When the fitting is put again in its place, spread oil and grease on the o'ring so that this fits easily its slot.

ATTENTION!
- To have the filters in bad conditions, may imply plenty of non-wanted stops during the working day and lengthen thus unnecessarily the working time.
- Every time that a fitting is dissassembled to check the condition of the joint or for any other need, remember to lubricate he closure joint with oil or grease to prevent this one from pinching itself and breaking when the fitting is placed again in its lodging
- The lack of grease of the pump would cause that this would overheat, and all internal mobile parts could become broken.

7. Maintenance

7.7. Nozzles

To clean or replace them you will have to help yourself with a key to unthread the bolt (D). Take out the nozzle and clean it with air, water or with a suitable brush.

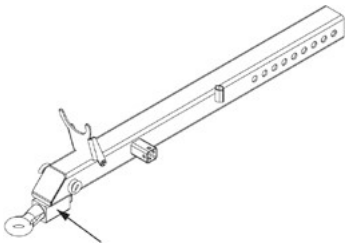
ATTENTION! Do not use ever a wire or needle because it would damage inevitably the nozzle.

If some nozzle drips when the sectors are being closed, you will have to replace the antidrip diaphragm (E).

7.8. Hitching

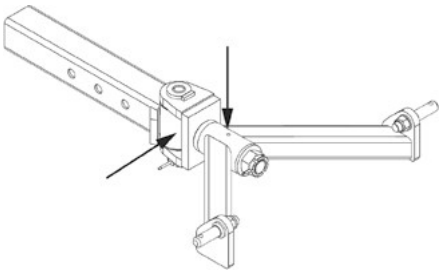
7.8.1. Eye Tow Bar Hitching

It includes a grease nipple in the right side of the turn, which holds the mouth of the eye. To avoid the wear and stiffness of the turning parts it will be necessary to maintain them always greased.



7.8.2. Y-shaped Tow Bar Hitching

It includes a grease nipple in the lower part. To avoid wear and stiffness of the turning parts it will be needed to keep them always greased.
In the axe of turning of the ball-and-socket there is a second nipple grease to ease the turns.

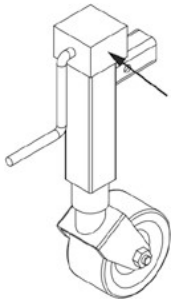


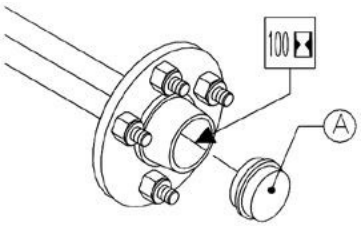
ATTENTION! The turning stopper welded over the ball-and-socket helps not to make turns in which the machine can be exposed to a certain breakage. In this case this stopper does not warrant that the machine remains completely protected against any breakage if the operator forces the machine to make abrupt turns forcing the safety stopper.

DANGER! Stop always the PTO at the moment of making very closed turns even if homocinetic PTO shaft is used. The turns of reduced radius with the PTO spinning can come to cause the breakage of the pump's shaft and create big vibrations in the gear box, until causing the breakage of the impeller or of the air unit.

7.9. Jackwheel

It includes a grease nipple in the upper part near the handle. It has to be kept greased to avoid excessive wear and gears' stiffness.
It is recommended to grease at least once a year.





7.10. Wheel's Axle

Grease every 250 hours the wheel's axles with consistent grease. To this purpose, take out the A cap and fill with grease the internal cavity, replacing again the protective cap.

7.11. Tyres

The trailed sprayers are provided with tyres with measures indicated in the board of the descriptions' chapter.

The following rules of maintenance must be respected:

- Verify the inflated pressure of the tyres before any season start up and with certain frequency.
- Check that the bolts that hold the wheels rim are well tightened.
- Check the condition of the wheels, in order to detect possible fissures or deformation of this one which could cause a puncture or explosion of the wheel, with the ensuing danger that this implies.
- Avoid the excessive accumulation of mud in wheels as well as in axles.

7.12. Winter Storage

Before storing your machine for the winter pause, it is advisable to give it a special care:

- Make sure that the tank is empty and free of wastes.
- Replace the joints and the possible losses.
- In areas where the temperature is prone to descending below 0°C, fill the tank with 50 liters of water mixed with antifreeze and set the pump on working with the jets closed, until being sure that the pump and all the circuit is full of antifreeze.
- Leave the tank with the charging mouth uncovered to avoid possible accumulation of gases.
- After a full cleaning of the machine, check the paint of the frame; repair the rusted places, as the phytosanitary products accelerate corrosion in damaged areas.
- Start a general greasing process and change the oil in the pump and in the gear box.
- Disassemble the manometer of pressure and keep it away of frosts and in vertical position.
- Keep the machine in a safe, aired and closed place.
- Make sure that the pressure regulation valve is in "zero" position.
- Check that all protections of the machine are in perfect condition.
- All the electrical connectors should be kept in plastic bags to protect them from humidity, dirt and corrosion.
- Disassemble the control box if the tractor has one, and keept in a dry and clean place.

7.13. Preparation of the machine to use it after its storage

After the storage period, the machine should be arranged to start the job of the new season with guarantees. For a correct start, follow the next steps:

- Assemble again the manometer of pressure. Replace the old teflon.
- Connect the machine to the tractor including electrical wires and hydraulic adapters.
- Check the brake.
- Empty the tank until no waste of freeze remains.
- Rinse completely the liquid circuit with clean water.
- Fill in the tank with clean water and check all fonctions.

7. Maintenance

7.14. Periods of maintenance

7.14.1. Every 10 working hours.

Fill in the tank with clean water, activate all fonctions and check losses using a bigger pressure than the usual one.
Check visually the cone of the nozzles to detect imperfections.
Clean the suction and pressure filters.
Control of level and condition of oil of the water pump.

7.14.2. Every 50 working hours.

Revise the condition of the PTO shaft protection. Replace damaged parts if there are any. Tighten again the screws of the wheels and of the areas which carry out bigger efforts or twisting.
Make sure that the pressure of the wheels and the air tank of the pump are correct.
Check the PTO shaft.
Check the fixation of the water pump.

7.14.3. Every 100 working hours.

Check and grease the PTO shaft tow bar or ball-and-socket tow bar.
Check that the turning axles are not obstructed or deformed.

7.14.4. Every 250 working hours.

Check the hubs of the wheels and the braking system and grease.
Check the hydraulic brake.
Check all hoses of the circuit.
Replace the gear box oil. Check the gear box holder and tighten again the attachment screws.

7.14.5. Every 1000 working hours

Make a full revision of all elements previously described.

8. Failures Detection

8.1. General Information

On practically all the failures, the same factors use to have some influence:

1. Small pores or air intakes in suction will reduce the capacity of the pump or will completely stop the suction.
2. An obstructed suction filter makes the pump not to suck correctly.
3. The obstructed pressure filters will make the pressure increase in the manometer but descend in the nozzles' exit.
4. External objects in the valves can cause that the valve does not close completely en las válvulas pueden provocar que la válvula no cierre totalmente. This will reduce the efficacy of the pump.
5. Bad assembly of the pump, specially the cases of the diaphragms, will cause air suction and therefore reduction or poor suction of the pump.

For this reason, check ALWAYS that:

1. The filters of section, pressure and nozzles ones are clean.
2. The hoses have not leaks or pores, particularly those of suction.
3. Joints and o'rings are in good condition.
4. The manometer marks perfectly. The correct dosage depends on it.
5. The distributor works correctly. Use clean water to prove it.

8.2. Liquid Circuit

FAILURE	PROBABLE CAUSE	POSSIBLE SOLUTION
When activating the system there is no spraying	Air in the suction	Compruebe la tórica del filtro de aspiración Compruebe el tubo de aspiración y racores
		Compruebe el montaje de las tapas de cárter de la bomba y los diafragmas.
	Air in the system	Cebe la bomba llenando la manguera con agua
	Suction/pression filters are obstructed.	Clean the filters
		Check the suction fitting and make sure that the mouth of this is not too close from the tank's bottom.
Loss of pressure	Incorrect Assembly	The spring of the safety valve is damaged
		The suction fitting is obstructed
		The suction filter is obstructed
	Clogged or worn out pump valves	Check obstructions and wear
	Defective manometer	Check if there is dirt in the entry
Saltos de presión	Clogged filters	Clean the filters. Clean with clean water. If you use powder, make sure that the stirring is activated.
	Worn-out nozzles	Check that the flow of the nozzles do not exceed the 10%
	Clogged tank's air vent	Check the air vent

8. Failures detection

FAILURE	PROBABLE CAUSE	POSIBLE SOLUCIÓN
Pressure blows	Air Suction	Reduce revolutions in the PTO or pressure of the circuit
Pressure increase	Obstructed pressure filters	Clean the circuits
Foam creation	Air in the circuit	Check o'rings, joints, hoses and suction fittings
	Excessive stirring	Reduce revolutions in the PTO or circuit pressure
		Check the tension of the safety valve of the self-cleaning filter.
		Make sure that there is return to tank.
		Use additive with against-foaming action
Loss of liquid of the pump	Damaged diaphragms	Replace
	Damaged pistons	Replace
The distributor does not work	Interrupted connection	Check cable rupture
		Check that the wires are well-connected
	The valves do not close correctly	Check obstructions in the valves
		Check the endings of paths
	There is not electrical current	Wrong polarity. Brown is pos. (+), Blue is neg. (-).
		Chec the electrical plate
		Check that the fuse makes good contact with your electrical support.

Notes

TEYME TECNOLOGÍA AGRÍCOLA, S.L.
Pol. Ind. SAU III · C/ Girona, 3
25131 TORRE-SERONA (Lleida) · SPAIN
T: (+34) 973 75 00 33 · F: (+34) 973 75 15 81
info@teyme.es
www.teyme.es