

ARBUS 500
ARBUS 500 GRAPE

English version - MI-0307

EDITION - 05/2006
CODE - 156638

Operator's Manual



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INTRODUCTION

The agrochemicals application is necessary to achieve higher and economical production.

However, as it is a work that can bring risks to the human being, environment and crops, Jacto has always been concerned with the proper use of its spraying machineries in an efficient and safe way.

Therefore, read carefully and understand thoroughly this manual before operating this sprayer and keep it always close at hand when handling this sprayer for quick consult in case you are not quite sure of some operation or adjustment.

Should your doubt persist, please contact your Jacto dealer.


MÁQUINAS AGRÍCOLAS JACTO S.A.
CONTRIBUTING TO THE AGRICULTURE DEVELOPMENT.

IDENTIFICATION PLATE

Your sprayer has a plate showing its model and serial number.

This information is very important so that Jacto can keep records of eventual modifications made on the material used and on its construction characteristics.

In requesting replacement parts or maintenance, always specify the model and serial number of your sprayer for prompt and efficient service.

| | | |
|--|--------------|-------------|
|  | jacto | MACHINE NO. |
| MACHINE: | | |
| MODEL: | | |
| SERIES: | WEIGHT | kg |
| <small>MÁQUINAS AGRÍCOLAS JACTO S.A. - CNPJ 55.064.562/0001-90 RUA DR. LUIZ MIRANDA Nº 1650 - CEP 17580-000 POMPEIA-SP WWW.JACTO.COM.BR MADE IN BRAZIL</small> | | |

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SAFETY INSTRUCTIONS

HANDLING AGRICULTURAL SPRAYERS

OWNER / OPERATOR:

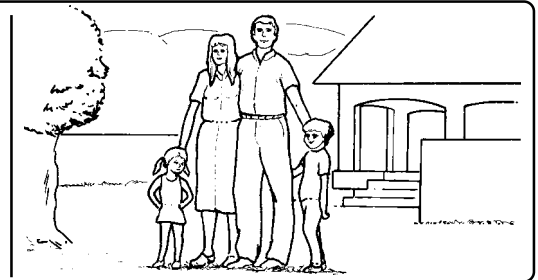
This sprayer was carefully designed and built so as to give you the maximum production, saving, easy operation and safety.

Therefore, you or anyone else who is going to operate, maintain and work around this sprayer must read and understand this manual thoroughly in order to be familiar with all the operating and maintenance procedures and safety information related to this sprayer. All accidents can be prevented if all the safety instructions are correctly followed.

Moreover, always keep this manual close at hand for quick review in case of doubt.



ATTENTION
FAILURE TO FOLLOW THE SAFETY INSTRUCTIONS PROPERLY WILL RISK YOUR OWN LIFE AS WELL AS THE LIFE OF PEOPLE WORKING AND LIVING AROUND YOU.



This safety alert symbol identifies important safety messages. When you see it, be alert to any possibility of personal injury or death. Keep all the decals on the sprayer and replace them if missing or illegible.

- Before operating this sprayer, read carefully and understand thoroughly this manual.
- Do not allow untrained people to operate this sprayer because this can cause serious injuries or fatal accidents.
- Do not modify this sprayer in any way because this can impair the function and risk your safety.
- Keep away children, aged people and animals while operating, servicing this sprayer and even when the sprayer is stored.
- In the delivery of your sprayer, have your Jacto dealer instruct you on the assembly, operation, maintenance and warranty in detail.
- Keep hands, feet and clothing away from moving parts.
- Never use loose clothing or mittens while working around the sprayer.
- Do not travel at high speeds.
- **Always stop tractor engine, disengage the PTO and wait for all moving parts to stop before servicing, adjusting or repairing the sprayer.**

ATTENTION: Do not touch PTO shafts, belts, fans or any other moving part while the sprayer is running.

- Only unhitch the sprayer on firm and level ground.
- Keep your sprayer in thorough repair.

SAFETY INSTRUCTIONS

HANDLING CHEMICALS

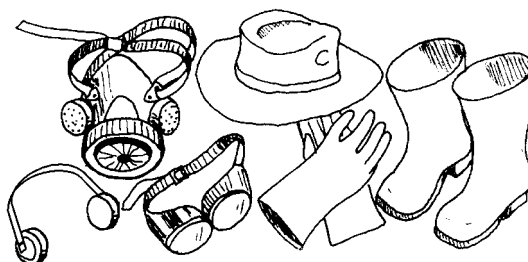
Chemical products are classified in four categories of toxicity. According to their toxicity level, there is a special recommendation of appropriate protective equipment.

As your safety concerns first, we list below all the protective equipment recommended for handling chemical products of the category 1 which includes high toxicity level chemicals.

This way, all the possibilities of serious illness and death are eliminated.

Obligatory individual protective equipment for handling and spraying chemicals:

- Long-sleeved working clothes
- Impermeable apron or coverall
- Impermeable gloves
- Impermeable wide-brimmed hat
- Boots
- Special protective masks equipped with appropriate filters for each type of product



CHEMICAL PRODUCTS CLASSIFICATION

| | TOXICITY LEVEL | | LABEL COLOR |
|----|----------------|----------|---------------------|
| | | | CHEMICALS CONTAINER |
| | I | HIGH | RED |
| | II | MODERATE | YELLOW |
| | III | LOW | BLUE |
| IV | LIGHT | GREEN | |

DIRECTIONS

- Read and follow all instructions on the chemicals manufacturer's label.
- Keep the chemical products closed and in a dry and ventilated place.
- Use the chemical products in agriculture only.
- Keep away children, untrained people and animals.
- Handle the chemicals following recommendations of a technician.
- Always handle chemicals in a ventilated place and equipped with individual protective equipment.
- Use the application rate as per instructions on the labels.
- Do not make spray applications in the wind or hot weather.
- Do not drink, eat or smoke while spraying or handling chemicals.
- Keep children, untrained people and animals away from the application areas.
- Never blow through nozzles strainers, valves or pipelines by mouth.
- Do not store or transport chemical products together with food, medicines, people, animals.
- Make sure rivers, lakes, etc. will not be contaminated when washing out the sprayer.
- After spraying, take off all protective clothing and take a shower.
- In case of intoxication, go see a doctor immediately and show him the chemical products label.
- Never medicine an unconscious person through mouth.
- **Do not re-use the chemical products containers for other purposes. Consult an agronomist on how to discard empty containers of chemical products.**

SAFETY INSTRUCTIONS

DECALS

Safety decals are placed on the equipment to reduce the risk of damages or accidents to the operator or to the equipment during the use.

Before operating the equipment, identify and understand the mean of all decals, through this page.

Keep them in good repair, clean and legible. Replade them immediately in case of damage by ordering them through the part numbers specified below.



P/N: 276220

ATTENTION: Lubrication point with grease.



P/N: 276238

ATTENTION: Area where the jack must be placed to lift the equipment.



P/N: 379040

ATTENTION: Risk of injuries. Keep away from the sprayer when it is running.



P/N: 379057

ATTENTION: Risk of serious injuries. Keep at a distance and do not make any kind of maintenance while the fan is in motion and the PTO is engaged.



P/N: 379248

ATTENTION: Read the operator's manual before operating the sprayer.



P/N: 379115

ATTENTION: Obligatory use of respirator.



P/N: 379123

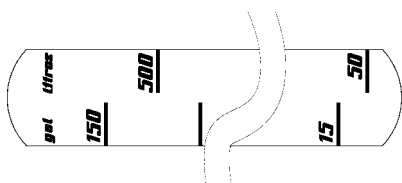
ATTENTION: Obligatory use of hearing protection.



P/N: 013169

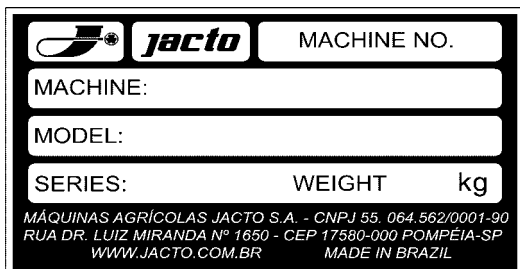
Final test of the equipment.

SAFETY INSTRUCTIONS



Level indicator of the main tank.

P/N: 090233



Sprayer identification plate.

P/N: 047035



Attention: Never pull the lever without the chemical container over the container rinse nozzle.

P/N: 169128



Sprayer description.

P/N: 088344

SAFETY INSTRUCTIONS



ATTENTION: THIS SAFETY ALERT SYMBOL IDENTIFIES IMPORTANT SAFETY MESSAGES. WHEN YOU SEE IT, BE ALERT TO ANY POSSIBILITY OF PERSONAL INJURY OR DEATH.

SAFETY MEASURES

- Keep all the protectors on their proper places.
- Remove the controls installed on the tractor before disconnecting the sprayer.
- Do not operate the pump without liquid.
- Clean and lubricate regularly the male and female parts of the PTO shaft to reduce the friction between them.
- Lubricate daily the grooved shaft of the tractor's PTO.
- Keep the hands, feet and clothes away from PTO shafts and any type of transmission, once they can cause serious injuries, even death.
- Never operate the sprayer if the PTO shaft, the sprayer and the tractor's PTO protectors are not in their proper place.
- Do not exceed 580 rpm at the PTO.
- The PTO shaft protector must always remain in good repair and fastened by the belts. The PTO shaft must work freely in its interior.
- The PTO shaft coupling ends must be locked on the tractor's PTO and sprayer's shaft.
- Make sure the drawbar and the sprayer end are properly engaged .
- Follow these recommendations strictly in order to avoid injuries or death .
- Check and change the worn and broken parts.
- Make sure that no one is close to the machine before running the engine.
- Stop the sprayer, tractor's engine and all moving parts before adjusting, maintaining, cleaning or lubricating any component of the sprayer, save other recommendation indicated on the operator's manual.
- Stop the sprayer and tractor's engine when there are people close to the equipment.
- Do not go up on the sprayer when it is in motion.

PRESENTATION OF SPRAYER / SPECIFICATIONS

| DESCRIPTION | ARBUS 500 / ARBUS500 WITH HITCH 4100 |
|--|---|
| | (1580-rpm fan) |
| ARBUS 500 | without hitch for AGRALE 4100 tractor |
| ARBUS 500 WITH HITCH 4100 | with hitch for AGRALE 4100 tractor |
| DIMENSIONS | |
| Length (m) | 2.80 |
| Width without deflector (m) | 1.09 |
| Height (m) | 1.17 |
| Weight (kg) - empty | 330 |
| AXLE | Adjustable |
| TRANSPORT | |
| Chassis | Trailer 500 |
| Adjustable track width (m) | Max: 1.21 / Min.: 0.89 |
| Tires | 175/70 R13 GPS2 |
| Tire pressure (psi) | 32/33 |
| Ground clearance (m) | 0.24 |
| MAIN TANK | |
| Capacity (liters) | 575 |
| Drain system | By valve |
| Material | Polyethylene |
| AUXILIARY TANKS | |
| Rinse tank (L) | 50 |
| Clean water tank (L) | 15 |
| Material | Polyethylene |
| FILTER | |
| Model | FVS-100 |
| Mesh (u) | 60 |
| PRESSURE REGULATOR CONTROL | |
| Model | VAR control |
| Pressure gauge | Glycerin-filled |
| NOZZLES | |
| Model | JA-2/JA-4 |
| Material | Ceramic |
| Working pressure (psi) | 60 to 300 |
| Flow rate (L/min at 150 psi) | JA-4= 1.9L/min - JA-2= 1.0L/min (150 psi) |
| Nozzle quantity | 16 |
| Nozzle holder | Bijet (2 nozzles) |
| AGITATION | Hydraulic agitator |
| FAN | |
| Diameter (mm) | 550 |
| Rotation (rpm) | 1,580 |
| Air volume without deflector (m ³ /h) | 14,000 |
| Air volume with deflector (m ³ /h) | 14,000 |
| Air speed without deflector (km/h) | 72 |
| Air speed with deflector (km/h) | 57 |
| PUMP | |
| Model | JP-50 V / piston |
| Working rotation (rpm) | 540 |
| Flow rate (L/min) | 50 |
| Power consumption (HP) at 28 kg/cm ² | 3.6 |
| Piston quantity | 3 |
| TUBING/NOZZLES BRANCHES | |
| | PVC flexible hose (pump conduction/tubes) - Quick fitting connection for gun or lance - Stainless steel tubes |
| POWER CONSUMPTION | |
| Maximum working rotation (rpm) | 540 |
| Fan power consumption (HP) | 2.6 |
| Pump power consumption (HP) at 28 kg/cm ² | 3.6 |
| Total power consumption (HP) | 6.2 |

PRESENTATION OF SPRAYER / SPECIFICATIONS

| DESCRIPTION | ARBUS 500 GRAPE / ARBUS 500 GRAPE WITH HITCH 4100 |
|--|--|
| | (1580-rpmfan) |
| ARBUS 500 GRAPE | With deflector and without hitch for AGRALE 4100 tractor |
| ARBUS 500 GRAPE WITH HITCH 4100 | With deflector and with hitch for AGRALE 4100 tractor |
| DIMENSIONS | |
| Length (m) | 2.80 |
| Width without deflector (m) | 1.09 |
| Width with deflector (m) | 1.84 |
| Height (m) | 1.17 |
| Weight (kg) - empty | 346 |
| AXLE | Adjustable |
| TRANSPORT | |
| Chassis | Trailer 500 |
| Adjustable track width(m) | Max: 1.21 / Min.: 0.89 |
| Tires | 175/70 R13 GPS2 |
| Tire pressure (psi) | 32/33 |
| Ground clearance (m) | 0.24 |
| MAINTANK | |
| Capacity (liters) | 575 |
| Drain system | By valve |
| Material | Polyethylene |
| AUXILIARY TANKS | |
| Rinse tank (L) | 50 |
| Clean water tank (L) | 15 |
| Material | Polyethylene |
| FILTER | |
| Model | FVS-100 |
| Mesh (u) | 60 |
| PRESSURE REGULATOR CONTROL | |
| Model | VAR control |
| Pressure gauge | Glycerin-filled |
| NOZZLES | |
| Model | JA-2/JA-4 |
| Material | Ceramic |
| Working pressure (psi) | 60 to 300 |
| Flow rate(L/min at 150 psi) | JA-4= 1.9L/min - JA-2= 1.0L/min (150 psi) |
| Nozzle quantity | 14 |
| Nozzle holder | Bijet (2 nozzles) |
| AGITATOR | Hydraulic agitator |
| FAN | |
| Diameter (mm) | 550 |
| Rotation (rpm) | 1580 |
| Air volume without deflector (m ³ /h) | 14000 |
| Air volume with deflector (m ³ /h) | 14000 |
| Air speed without deflector (km/h) | 72 |
| Air speed with deflector (km/h) | 57 |
| PUMP | |
| Model | JP-50 V / piston |
| Working rotation (rpm) | 540 |
| Flow rate (L/min) | 50 |
| Power consumption (HP) at 28 kg/cm ² | 3.6 |
| Piston quantity | 3 |
| TUBING/NOZZLES BRANCHES | |
| | PVC flexible hose (pump conduction /tubes) - Quick fitting connection for gun or lance - Stainless steel tubes |
| POWER CONSUMPTION | |
| Maximum working pressure (rpm) | 540 |
| Fan power consumption (HP) | 2.6 |
| Pump power consumption (HP) at 28 kg/cm ² | 3.6 |
| Total power consumption (HP) | 6.2 |

PRESENTATION OF SPRAYER / SPECIFICATIONS

| DESCRIPTION | ARBUS500 |
|--|--|
| | (2035-rpm fan) |
| DIMENSIONS | |
| Length (m) | 2.80 |
| Width without deflector (m) | 1.09 |
| Height | 1.17 |
| Weight (kg) - empty | 330 |
| AXLE | Adjustable |
| TRANSPORT | |
| Chassis | Trailer 500 |
| Adjustable track width (m) | Max: 1.21 / Min.: 0.89 |
| Tires | 175/70 R13 GPS2 |
| Tire pressure (psi) | 32/33 |
| Ground clearance (m) | 0.24 |
| MAINTANK | |
| Capacity (liters) | 575 |
| Drain system | By valve |
| Material | Polyethylene |
| AUXILIARY TANKS | |
| Rinse tank (L) | 50 |
| Clean water tank (L) | 15 |
| Material | Polyethylene |
| FILTER | |
| Model | FVS-100 |
| Mesh (u) | 60 |
| PRESSURE REGULATOR CONTROL | |
| Model | VAR control |
| Pressure gauge | Glycerin-filled |
| NOZZLES | |
| Model | JA-2/JA-4 |
| Material | Ceramic |
| Working pressure (psi) | 60 to 300 |
| Flow rate(L/min at 150 psi) | JA-4= 1.9L/min - JA-2= 1.0L/min (150 psi) |
| Nozzle quantity | 16 |
| Nozzle holder | Bijet (2 nozzles) |
| AGITATOR | Hydraulic agitator |
| FAN | |
| Diameter (mm) | 550 |
| Rotation (psi) | 2035 |
| Air volume (m ³ /h) | 20780 |
| Air speed (km/h) | 82 |
| PUMP | |
| Model..... | JP-50 V / piston |
| Working rotation (rpm) | 540 |
| Flow rate (L/min) | 50 |
| Power consumption (HP) at 28 kg/cm ² | 3.6 |
| Piston quantity | 3 |
| TUBING/NOZZLES BRANCHES | PVC flexible hose (pump conduction/tubes) - Quick fitting connection for gun or lance - Stainless steel tubes. |
| FILLER UNIT | |
| Optional - model | JP-75 |
| POWER CONSUMPTION | |
| Maximum working rotation (rpm) | 540 |
| Fan power consumption (rpm) | 4.6 |
| Pump power consumption (HP) at 28 kg/cm ² | 3.6 |
| Total power consumption (rpm) | 8.2 |

PRESENTATION OF SPRAYER / SPECIFICATION

| DESCRIPTION | ARBUS 500 GRAPE |
|--|---|
| | (2035-rpm fan) |
| DIMENSIONS | |
| Length (m) | 2.80 |
| Width without deflector (m) | 1.09 |
| Width with deflector | 1.84 |
| Height | 1.17 |
| Weight (kg) - empty | 346 |
| AXLE | Adjustable |
| TRANSPORT | |
| Chassis | Trailer 500 |
| Adjustable track width (m) | Max: 1.21 / Min.: 0.89 |
| Tires | 175/70 R13 GPS2 |
| Tire pressure (psi) | 32/33 |
| Ground clearance (m) | 0.24 |
| MAINTANK | |
| Capacity (liters) | 575 |
| Drain system | By valve |
| Material | Polyethylene |
| AUXILIARY TANK | |
| Rinse tank (L) | 50 |
| Clean water tank (L) | 15 |
| Material | Polyethylene |
| FILTER | |
| Model | FVS-100 |
| Mesh (u) | 60 |
| PRESSURE REGULATOR CONTROL | |
| Model | VAR control |
| Pressure gauge | Glycerin-filled |
| NOZZLES | |
| Models | JA-2/JA-4 |
| Material | Ceramic |
| Working pressure (psi) | 60 to 300 |
| Flow rate (L/min at 150 psi) | JA-4= 1.9L/min - JA-2= 1.0L/min (150 psi) |
| Nozzle quantity | 14 |
| Nozzle holder | Bijet (2 nozzles) |
| AGITATOR | Hydraulic agitator |
| FAN | |
| Diameter (mm) | 550 |
| Rotation (rpm) | 2035 |
| Air volume with deflector (m ³ /h) | 19600 |
| Air speed with deflector (km/h) | 77 |
| PUMP | |
| Model | JP-50 V / piston |
| Working rotation (rpm) | 540 |
| Flow rate (L/min) | 50 |
| Power consumption (HP) at 28 kg/cm ² | 3.6 |
| Piston quantity | 3 |
| TUBING/NOZZLES BRANCHES | PVC flexible hose (pump conduction/tubes) - Quick fitting connection for gun or lance - Stainless steel tubes |
| FILLER UNIT | |
| Optional - model | JP-75 |
| POWER CONSUMPTION | |
| Maximum working rotation (rpm) | 540 |
| Fan power consumption | 4.6 |
| Pump power consumption (HP) at 28 kg/cm ² | 3.6 |
| Total power consumption (HP) | 8.2 |

PRESENTATION OF SPRAYER / SPECIFICATION

| DESCRIPTION | ARBUS 500 / ARBUS 500 WITH HITCH 4100 |
|---|---------------------------------------|
| (tracking axle) | (1580-rpm fan) |
| ARBUS 500 | Without hitch for AGRALE 4100 tractor |
| ARBUS 500 WITH HITCH 4100 | With hitch for AGRALE 4100 tractor |
| DIMENSIONS | |
| Length (m) | 2.80 |
| Width without deflector (m) | 1.09 |
| Height (m) | 1.17 |
| Weight (kg) - empty | 345 |
| AXLE | Tracking |
| TRANSPORT | |
| Chassis | Trailer 500 |
| Track width (m) with 7.35-14 tire | 1.02 |
| Tires | 7.35-14 |
| Tire pressure (psi) | 24/26 |
| Ground clearance (m) | 0.24 |
| MAINTANK | |
| Capacity (liters) | 575 |
| Drain system | By valve |
| Material | Polyethylene |
| AUXILIARY TANK | |
| Rinse tank (L) | 50 |
| Clean water tank (L) | 15 |
| Material | Polyethylene |
| FILTER | |
| Model | FVS-100 |
| Mesh (u) | 60 |
| PRESSURE REGULATOR CONTROL | |
| Model | VAR control |
| Pressure gauge | Glycerin-filled |
| NOZZLES | |
| Models | JA-2/JA-4 |
| Material | Ceramic |
| Working pressure (psi) | 60 to 300 |
| Flow rate (L/min at 150 psi) | JA-4= 1.9L/min - JA-2= 1.0L/min |
| Nozzle quantity | 16 |
| Nozzle holder | Bijet (2 nozzles) |
| AGITATOR | Hydraulic agitator |
| FAN | |
| Diameter (mm) | 550 |
| Rotation (rpm) | 1580 |
| Air volume without deflector (m ³ /h) | 1400 |
| Air volume with deflector (m ³ /h) | 1400 |
| Air speed without deflector (km/h) | 72 |
| Air speed with deflector (km/h) | 57 |
| PUMP | |
| Model | JP-50 V / piston |
| Working rotation (rpm) | 540 |
| Flow rate (L/min) | 50 |
| Power consumption (HP) at 28 kg/cm ² | 3.6 |
| Piston quantity | 3 |
| TUBING/NOZZLES BRANCHES | |
| PVC flexible hose (pump conduction/tubes) - Quick fitting connection for gun or lance - Stainless steel tubes | |
| POWER CONSUMPTION | |
| Maximum working rotation (rpm) | 540 |
| Fan power consumption (HP) | 2.6 |
| Pump power consumption (HP) at 28 kg/cm ² | 3.6 |
| Total power consumption (HP) | 6.2 |

PRESENTATION OF SPRAYER / SPECIFICATION

| DESCRIPTION | ARBUS 500 GRAPE / ARBUS 500 GRAPE WITH HITCH 4100 |
|--|---|
| (tracking axle) | (1580-rpm fan) |
| ARBUS 500 GRAPE | With deflector and without hitch for AGRALE 4100 tractor |
| ARBUS 500 GRAPE WITH HITCH 4100 | With deflector and with hitch for AGRALE 4100 tractor |
| DIMENSIONS | |
| Length (m) | 2.80 |
| Width without deflector (m) | 1.09 |
| Width with deflector (m) | 1.84 |
| Height (m) | 1.17 |
| Weight (kg) - empty | 345 |
| AXLE | Tracking |
| TRANSPORT | |
| Chassis | Trailer 500 |
| Track width (m) with 7.35-14 tire | 1.02 |
| Tires | 7.35-14 |
| Tire pressure (psi) | 24/26 |
| Ground clearance (m) | 0.24 |
| MAINTANK | |
| Capacity (liters) | 575 |
| Drain system | By valve |
| Material | Polyethylene |
| AUXILIARY TANK | |
| Rinse tank (L) | 50 |
| Clean water tank (L) | 15 |
| Material | Polyethylene |
| FILTER | |
| Model | FVS-100 |
| Mesh (u) | 60 |
| PRESSURE REGULATOR CONTROL | |
| Model | VAR control |
| Pressure gauge | Glycerin-filled |
| NOZZLES | |
| Models | JA-2/JA-4 |
| Material | Ceramic |
| Working pressure (psi) | 60 to 300 |
| Flow rate (L/min at 150 psi) | JA-4= 1.9L/min - JA-2= 1.0L/min |
| Nozzle quantity | 14 |
| Nozzle holder | Bijet (2 nozzles) |
| AGITATOR | Hydraulic agitator |
| FAN | |
| Diameter (mm) | 550 |
| Rotation (rpm) | 1580 |
| Air volume without deflector (m ³ /h) | 1400 |
| Air volume with deflector (m ³ /h) | 1400 |
| Air speed without deflector (km/h) | 72 |
| Air speed with deflector (km/h) | 57 |
| PUMP | |
| Model | JP-50 V / piston |
| Working rotation (rpm) | 540 |
| Flow rate (L/min) | 50 |
| Power consumption (HP) at 28 kg/cm ² | 3.6 |
| Piston quantity | 3 |
| TUBING/NOZZLES BRANCHES | PVC flexible hose (pump conduction/tubes) - Quick fitting connection for gun or lance - Stainless steel tubes |
| POWER CONSUMPTION | |
| Maximum working rotation (rpm) | 540 |
| Fan power consumption (HP) | 2.6 |
| Pump power consumption (HP) at 28 kg/cm ² | 3.6 |
| Total power consumption (HP) | 6.2 |

PRESENTATION OF SPRAYER / SPECIFICATION

| DESCRIPTION | ARBUS 500 |
|--|---|
| (tracking axle) | (2035-rpm fan) |
| DIMENSIONS | |
| Length (m) | 2.80 |
| Width without deflector (m) | 1.09 |
| Height | 1.17 |
| Weight (kg) - empty | 345 |
| AXLE | Tracking |
| TRANSPORT | |
| Chassis | Trailer 500 |
| Track width (m) with 7.35-14 tire | 1.02 |
| Tires | 7.35-14 |
| Tire pressure (psi) | 24/26 |
| Ground clearance (m) | 0.24 |
| MAINTANK | |
| Capacity (liters) | 575 |
| Drain system | By valve |
| Material | Polyethylene |
| AUXILIARYTANK | |
| Rinse tank (L) | 50 |
| Clean water tank (L) | 15 |
| Material | Polyethylene |
| FILTER | |
| Model | FVS-100 |
| Mesh (u) | 60 |
| PRESSUREREGULATOR CONTROL | |
| Model | VAR control |
| Pressure gauge | Glycerin-filled |
| NOZZLES | |
| Models | JA-2/JA-4 |
| Material | Ceramic |
| Working pressure (psi) | 60 to 300 |
| Flow rate (L/min at 150 psi) | JA-4= 1.9L/min - JA-2= 1.0L/min |
| Nozzle quantity | 16 |
| Nozzle holder | Bijet (2 nozzles) |
| AGITATOR | Hydraulic agitator |
| FAN | |
| Diameter (mm) | 550 |
| Rotation (rpm) | 2035 |
| Air volume (m ³ /h) | 20780 |
| Air speed (km/h) | 82 |
| PUMP | |
| Model | JP-50 V / piston |
| Working rotation (rpm) | 540 |
| Flow rate (L/min) | 50 |
| Power consumption (HP) at 28 kg/cm ² | 3.6 |
| Piston quantity | 3 |
| TUBING/NOZZLES BRANCHES | PVC flexible hose (pump conduction/tubes) - Quick fitting connection for gun or lance - Stainless steel tubes |
| FILLER UNIT | |
| Optional - model | JP-75 |
| POWER CONSUMPTION | |
| Maximum working rotation (rpm) | 540 |
| Fan power consumption (rpm) | 4.6 |
| Pump power consumption (HP) at 28 kg/cm ² | 3.6 |
| Total power consumption (HP) | 8.2 |

PRESENTATION OF SPRAYER / SPECIFICATION

| DESCRIPTION | ARBUS 500 GRAPE |
|--|---|
| (tracking axle) | (2035-rpm fan) |
| DIMENSIONS | |
| Length (m) | 2.80 |
| Width without deflector (m) | 1.09 |
| Width with deflector | 1.84 |
| Height | 1.17 |
| Weight (kg) - empty | 345 |
| AXLE | Tracking |
| TRANSPORT | |
| Chassis | Trailer 500 |
| Track width (m) with 7.35-14 tire | 1.02 |
| Tires | 7.35-14 |
| Tire pressure (psi) | 24/26 |
| Ground clearance (m) | 0.24 |
| MAINTANK | |
| Capacity (liters) | 575 |
| Drain system | By valve |
| Material | Polyethylene |
| AUXILIARY TANK | |
| Rinse tank (L) | 50 |
| Clean water tank (L) | 15 |
| Material | Polyethylene |
| FILTER | |
| Model | FVS-100 |
| Mesh (u) | 60 |
| PRESSURE REGULATOR CONTROL | |
| Model | VAR control |
| Pressure gauge | Glycerin-filled |
| NOZZLES | |
| Models | JA-2/JA-4 |
| Material | Ceramic |
| Working pressure (psi) | 60 to 300 |
| Flow rate (L/min at 150 psi) | JA-4= 1.9L/min - JA-2= 1.0L/min |
| Nozzle quantity | 14 |
| Nozzle holder | Bijet (2 nozzles) |
| AGITATOR | Hydraulic agitator |
| FAN | |
| Diameter (mm) | 550 |
| Rotation (rpm) | 2035 |
| Air volume (m ³ /h) | 19600 |
| Air speed (km/h) | 77 |
| PUMP | |
| Model | JP-50 V / piston |
| Working rotation (rpm) | 540 |
| Flow rate (L/min) | 50 |
| Power consumption (HP) at 28 kg/cm ² | 3.6 |
| Piston quantity | 3 |
| TUBING/NOZZLES BRANCHES | PVC flexible hose (pump conduction/tubes) - Quick fitting connection for gun or lance - Stainless steel tubes |
| FILLER UNIT | |
| Optional - model | JP-75 |
| POWER CONSUMPTION | |
| Maximum working rotation (rpm) | 540 |
| Fan power consumption (rpm) | 4.6 |
| Pump power consumption (HP) at 28 kg/cm ² | 3.6 |
| Total power consumption (HP) | 8.2 |

MAIN COMPONENTS OF SPRAYER

SUCTION FILTER

Located between the tank and pump, the suction filter is specifically designed to prevent dirt or impurities from reaching the pump.

It has a quick shut off valve which allows easy filter cleaning, filtering elements changing and/or pump maintenance.

This valve must always remain open while the sprayer is running. If it remains closed, you will hear an unusual noise in the pump.



PUMP

The pumps mounted to these Jacto sprayers have flow rate of 50 liters per minute.

The ceramic liners ensure greater resistance to abrasion and agrochemicals' action.

Piston cup replacement becomes easier by removing the head assembly in a quick and simple operation with no need to remove the pump.



| PUMP | FLOW RATE (liters/minute) | MAXIMUM PRESSURE | |
|----------|------------------------------|------------------|---------------------|
| | | psi | kgf/cm ² |
| JP - 50V | 50 | 500 | 35 |

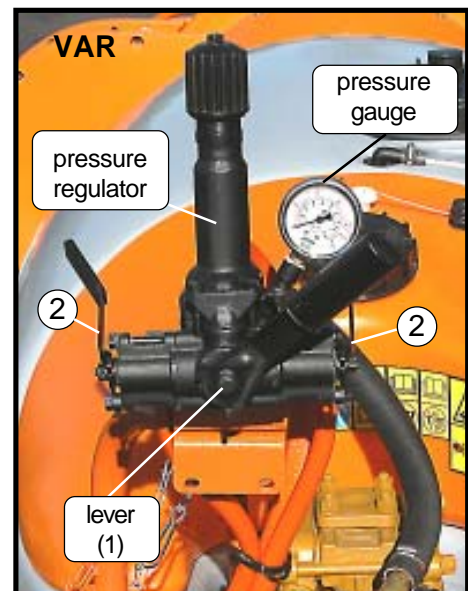
PRESSURE REGULATOR

The pressure regulator provides adjustments ranging from 2 to 35 kgf/cm² (30 to 500 psi), shown by the pressure gauge.

The lever (1) turns the chemical flow on and off and the levers (2) controls the chemical flow to both sides or to one only.

ATTENTION:

To ensure longer life of the pressure gauge, its valve should be closed and without retained pressure during the spraying. After calibrating the sprayer, use the lever (1) to release the pressure in the circuit and close the pressure gauge valve.



MAIN COMPONENTS OF SPRAYER

NOZZLES

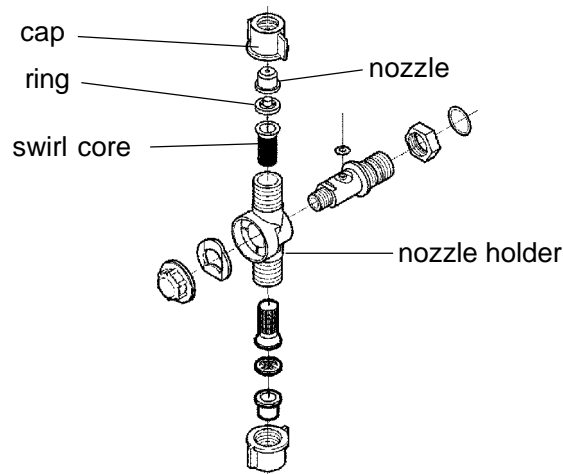
The nozzles have the job to generate droplets and distribute them uniformly over the surface being sprayed.

Flow, angle and droplet sizes vary according to working pressure. Operating with pressure over that recommended by the manufacturer will decrease the nozzles' life.

The nozzles holders with valve can be adjusted to desired angle and can be shut off individually.

This sprayer is equipped with alumina (ceramic) nozzles, very resistant to wear and to chemical action, and mounted as shown in the figures below.

DOUBLE NOZZLE HOLDER



DIRECTING THE NOZZLE

Loosen the nut (1) and set the desired nozzle at the mark (A) existing on the nozzle body.

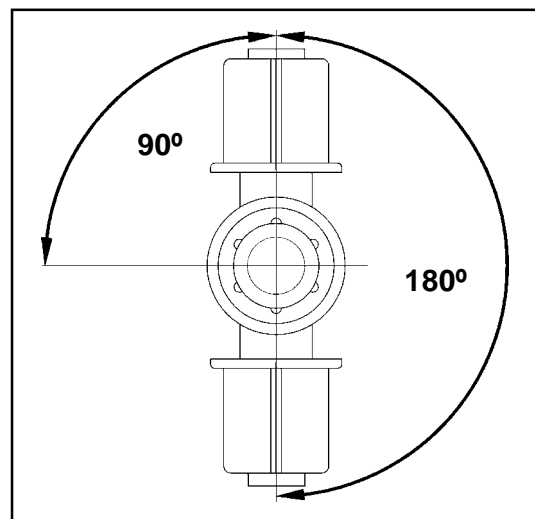
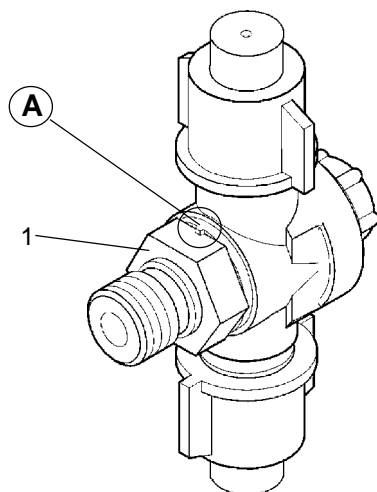
NOTE: This mark indicates the spray direction. So the nozzle at this mark is turned on.

CHANGING THE SPRAY VOLUME

With a simple 180° turn of the nozzle holder it is possible to turn off one nozzle and turn on the other.

SHUTTING THE FLOW

Just give the nozzle holder a 90° turn in relation to the mark (A) and the flow will be turned off.



MAIN COMPONENTS OF SPRAYER

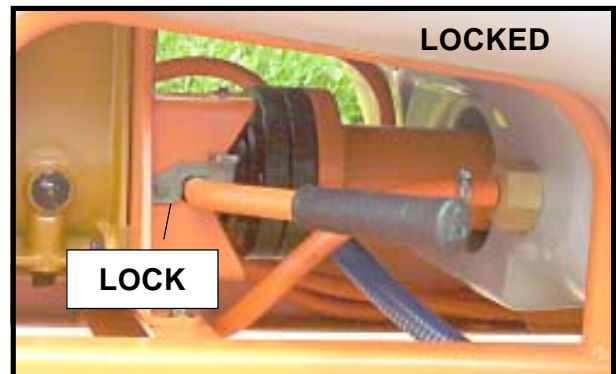
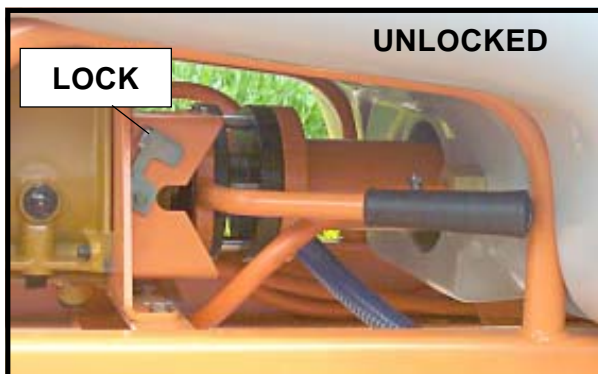
FAN

The fan has a locking lever designed to be used during the tank filling, agitation of chemical mixture while spraying, as well as for spray lance application. The use of this device reduces power consumption in any of said operations.

IMPORTANT: Always disengage the PTO and turn off the tractor before operating the lock.

Procedure to turn on/off the fan:

- The tractor must be turned off.
- Release the locking lever by lifting the lock .
- To turn off the fan push the lever toward main tank and it will be released.
- If the fan is disengaged, rotate the PTO shaft manually until one of the marks of the pin flange coincides with the holes flange, and then pull the lever to its housing and lock it. The fan will be engaged.



ATTENTION:
Check regularly the coupling pins. If they reach approximately 5 mm, they must be replaced.

CONVENTIONAL PTO SHAFT

The sprayer's PTO shaft is equipped with plastic protection guards to prevent the operator and his clothes from touching the PTO shaft and avoid damage to the crops.



For instruction in detail, refer to the section MAINTENANCE - PTO SHAFT.

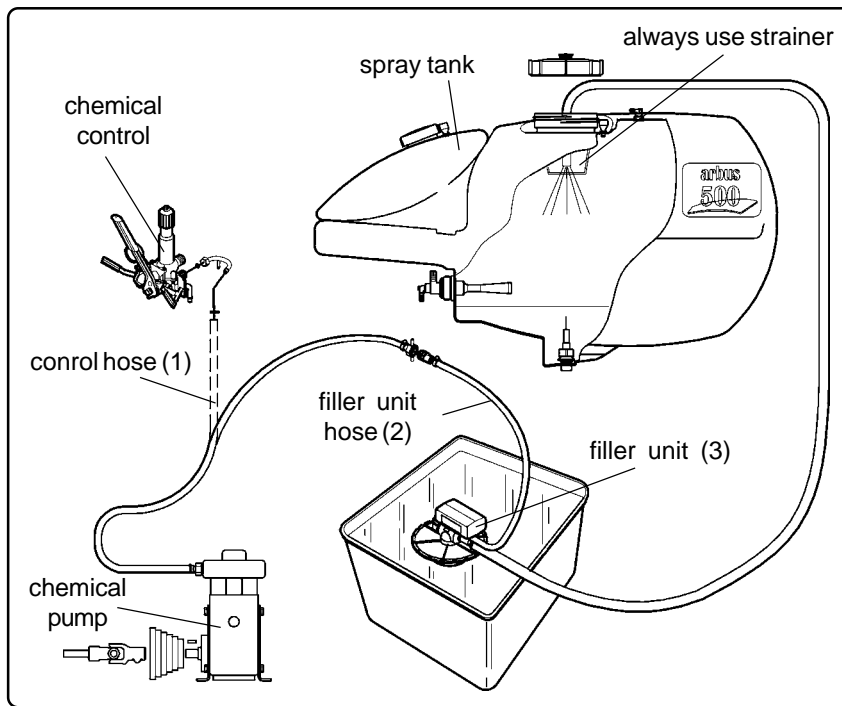
MAIN COMPONENTS OF SPRAYER

FILLER UNIT (OPTIONAL)

- Pour 50 liters of water into the sprayer tank;
- Disconnect the control hose (1) and connect it to the filler unit hose (2);
- Put the filler unit (3) in the water tank and its discharge hose in the tank opening;
- Run the chemical pump with 540 rpm;
- After filling the tank, connect again the hose (1) to the chemical control;
- Add the chemical to the tank and run the sprayer for 5 minutes until the chemical mixture becomes homogeneous.

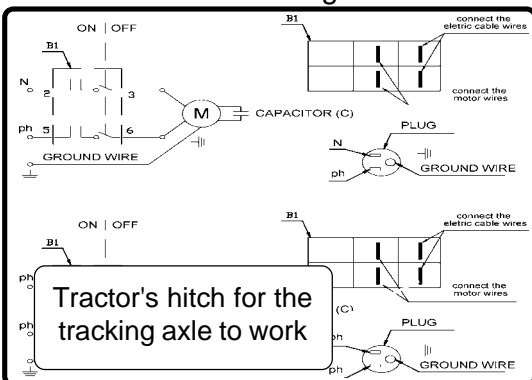
ATTENTION: In case of wettable powder chemicals, only disengage the pump after finishing the chemical mixture of the tank to avoid its decantation. The sprayer filling operation must be done in places appropriate for this purpose or through appropriate vehicles (trucks, trailers, etc.).

Never collect water from rivers, lakes, dams, streams, brooks, etc. by using the sprayer's return system.



TRACKING AXLE

The model Arbus 500 equipped with tracking axle is proper for agricultures where the space to maneuver is small. It allows to turn at a radius smaller than the tractor's turning radius, even with the PTO shaft running.



ATTENTION:

Whenever it is necessary to engage reverse gear, do it with much attention and without pulling the sprayer's tires, otherwise the transmission will be damaged.

OPERATIONAL PROCEDURES

| Stage | Procedure | Sprayer type | |
|---|--|--------------|---------|
| | | Trailer | 3 point |
| Spraying | Use individual protective clothing | X | X |
| | Do not work at high speeds | X | X |
| | Do not spray against the wind | X | X |
| | Do not travel with boom lifted or unlocked | X | X |
| | Take care with electricity supply cables | X | X |
| | Do not eat, drink or smoke while spraying | X | X |
| | After spraying, dispose of all protective clothing and take a shower | X | X |
| Receiving the sprayer | Check if all components are intact | X | X |
| | Check the components of accessories box | X | X |
| | Require trained person to instruct about assembling, operating and servicing components and accessories | X | X |
| Using the sprayer for the first time | Check if the hitch pin is original | X | - |
| | Check if the three-point hitch pins are original | - | X |
| | Check if the hitch pins have cotter pins | X | X |
| | Check the overlaps of the PTO shaft | X | X |
| | Remove the tractor's drawbar | - | X |
| | Raise to the highest the tractor's hydraulic arms | X | X |
| | Adjust the control valve position to avoid impacts while turning . | X | - |
| | Check if the grease fittings are filled | X | X |
| | Check if the oil is on the level on the components | X | X |
| | Calibrate the tires | X | - |
| Retighten the tank nuts and lug nuts | X | - | |
| Whenever filling the tank | Clean the suction or line filters | X | X |
| | Clean nozzles and their strainers | X | X |
| Every day or every 10 hours | Clean nozzles, strainers and filters | X | X |
| | Check the grease fittings and joint pins | X | X |
| | Check the oil level on the pumps and gear box | X | X |
| | Wash the inside and outside of the sprayer | X | X |
| | Check for damage on the paint and repaint | X | X |
| | Check for oil leakage and stop it | X | X |
| Store the sprayer in a dry, ventilated and indoor place | X | X | |
| First 30 hours | Change for the first time the pump oil | X | X |
| | Retighten the bolts on the tank, axle and wheels | X | - |
| Every 100 hours | Change the oil of the pump and gearbox | X | X |
| | Tighten the belts | X | X |
| | Clean and check the pressure regulator components | X | X |
| | Clean the inside and outside of the sprayer, and paint the parts subject to corrosion with lubricating oil | X | X |
| Every 500 hours or annually | Service the pump | X | X |
| | Change hydraulic oil | X | - |
| | Change the oil of the gearbox | X | X |
| | Retighten the bolts of tank, wheels, axle, etc. | X | - |
| | Change the grease of the wheel hub | X | - |
| Every 1000 hours | Replace the belts of the equipment | X | X |
| Every 2000 hours | Replace the bearings of the drive transmission | X | X |
| | Replace the bearings of the driven transmission | X | X |
| | Replace the pressure gauge | X | X |

CHOOSING THE IDEAL TRACTOR

PROCEDURES

Different working conditions lead us to adopt the following criterion for choosing the tractor that will drive the Arbus 500 and Arbus 500 Grape sprayers.

- Check the sprayer weight on the identification plate.
- Check the tank capacity.
- Check in the specifications table the total power consumption of the sprayer at the PTO.

Example:

Sprayer weight = 346 kg

Tank capacity (liters) = 575 + 50 + 15

Total power consumption = 8.1 HP

CHOOSING THE TRACTOR CONSIDERING THE POWER CONSUMPTION AND THE LOAD TO BE TRANSPORTED

1st - POWER CONSUMPTION

The tractor should have power (HP) at least 90% higher than the power required to run the sprayer.

Ex.: Power required by the sprayer = 8.1 HP

Minimum tractor nominal power = 15.4 HP

2nd - LOAD TO BE TRANSPORTED

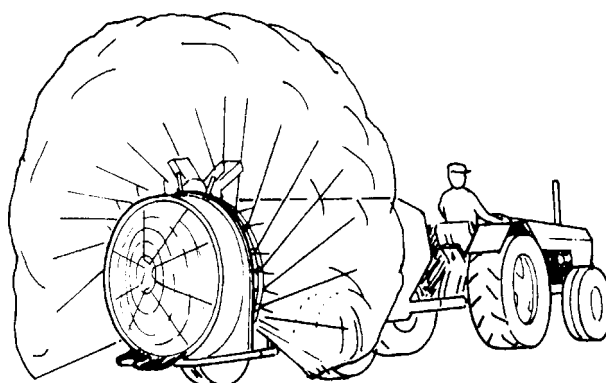
The tractor gross weight should be at least equal to the sprayer gross weight (sprayer net weight plus full tank weight).

Ex: Sprayer net weight = 346 kg

Filled up tanks = approximately 640 kg (640-liter tank)

Sprayer gross weight = 986 kg

Tractor gross weight = 986 kg or more



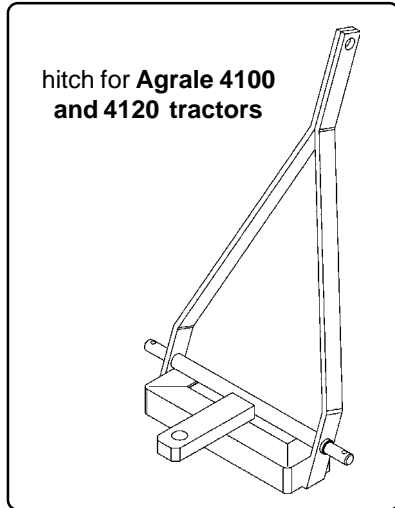
ATTENTION

In this case the recommended tractor should have minimal nominal power of 15.4 HP and weighs at least gross 986 kg.

HITCHING THE SPRAYER TO THE TRACTOR

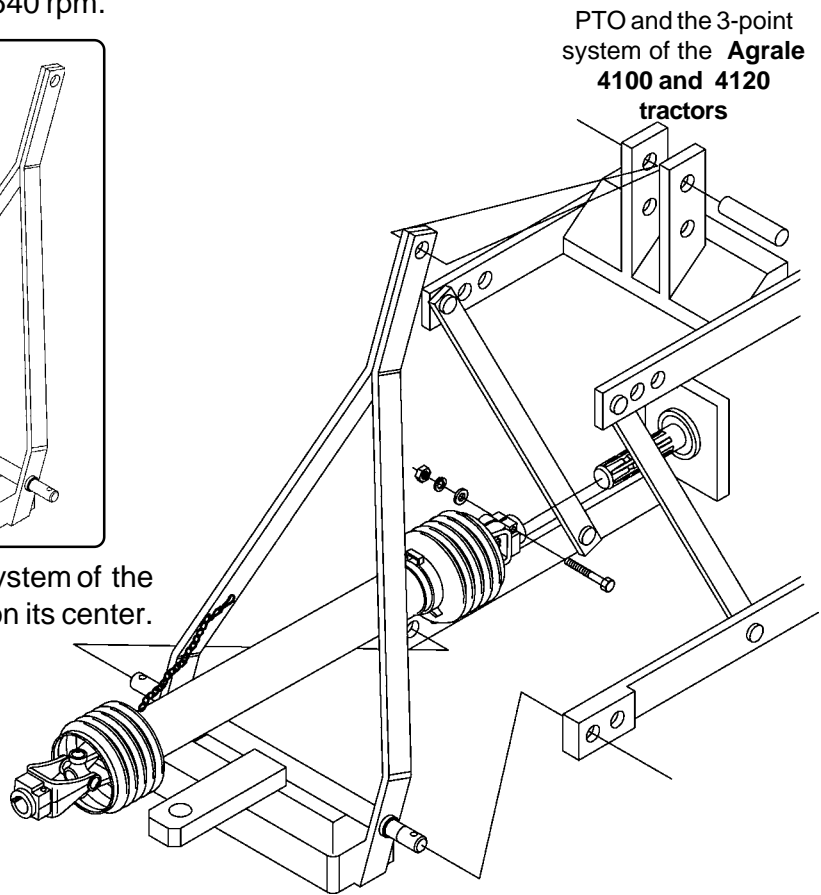
AGRALE 4100 and 4120 TRACTORS

If the tractor does not have an adequate drawbar, it is necessary to install the hitch as shown below. And it is also necessary to connect the speed-reducing box to the PTO, so that the pump does not work at a rotation over than 540 rpm.



Install the hitch on the 3-point system of the tractor, so that the PTO works on its center.

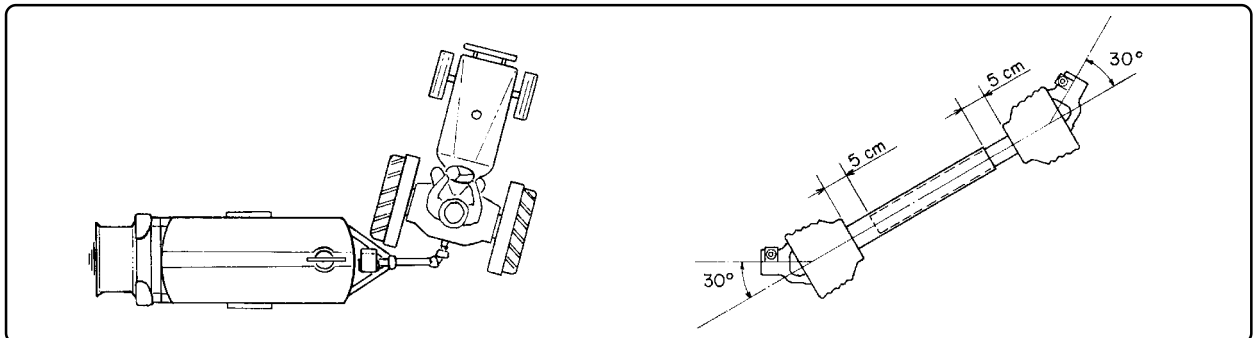
NOTE: The pump rotation must not exceed 540 rpm



ADJUSTING THE PTO SHAFT MALE AND FEMALE TUBES

- Position the tractor until its rear tire gets close to the sprayer's tongue.
- Connect the PTO shaft.
- Adjust the male and female tubes lengths (recommended overlap: 5 cm).

ATTENTION: When maneuvering, disengage the PTO and keep the tire from touching the sprayer's tongue, otherwise this will damage the sprayer's transmission.



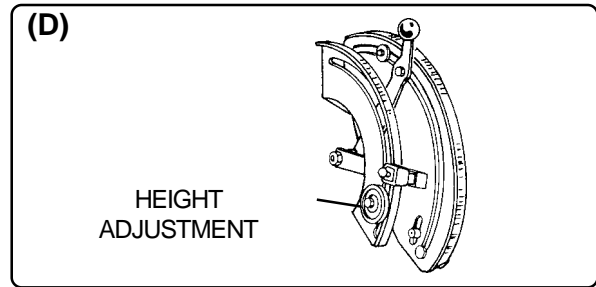
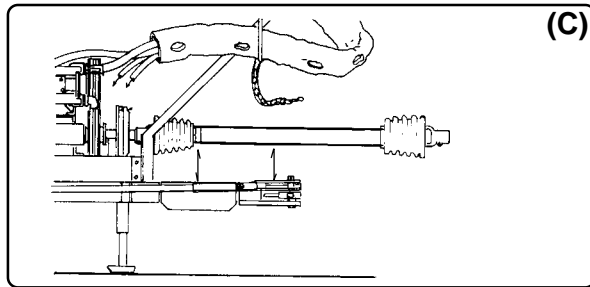
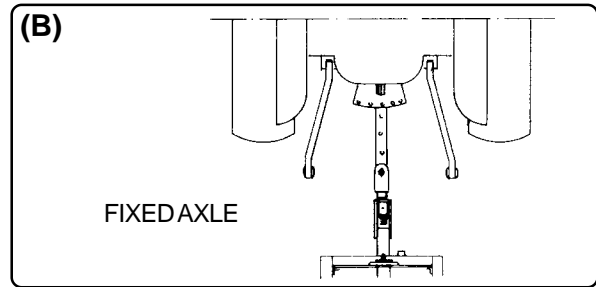
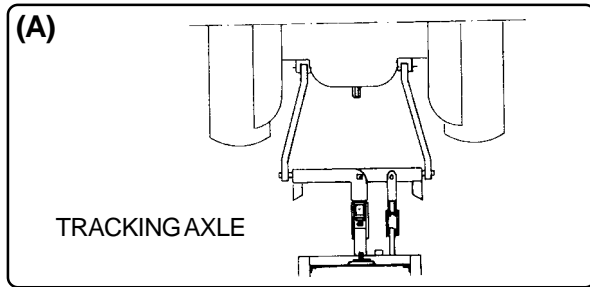
NOTE: Before cutting the PTO shaft tubes, check for all the possibilities of adjustment on both tractor's drawbar and sprayer's tongue. Make sure the hitch pin is mounted with cotter pin.

HITCHING THE SPRAYER TO THE TRACTOR

HITCHING

- Hitch the sprayer to the tractor (figures - A and B).
- NOTE: If the sprayer is assembled with tracking axle, there must be a space between the sprayer head and the PTO shaft to allow the sprayer to work normally (fig. - C). Then, lock the hydraulic lift lever (fig. - D).

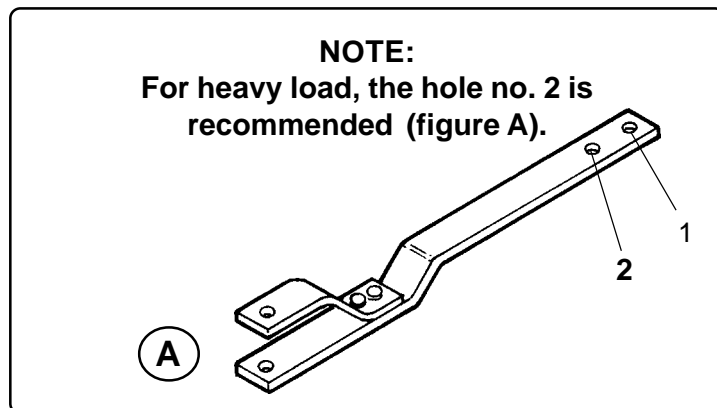
ATTENTION: The improper hitch of the sprayer with tracking axle to the tractor, can cause damages to the equipment.



YANMAR TRACTOR AND OTHERS

- Adjusting the drawbar:

Fit the drawbar pin in the proper hole (1 or 2) to vary the distance between the PTO and the hitch point (figure A).



| Hole | Distance between the PTO and the hitch point | Maximum (static) load in lift |
|------|--|-------------------------------|
| 1 | 35 cm | 455 kg |
| 2 | 25 cm | 590 kg |

ATTENTION

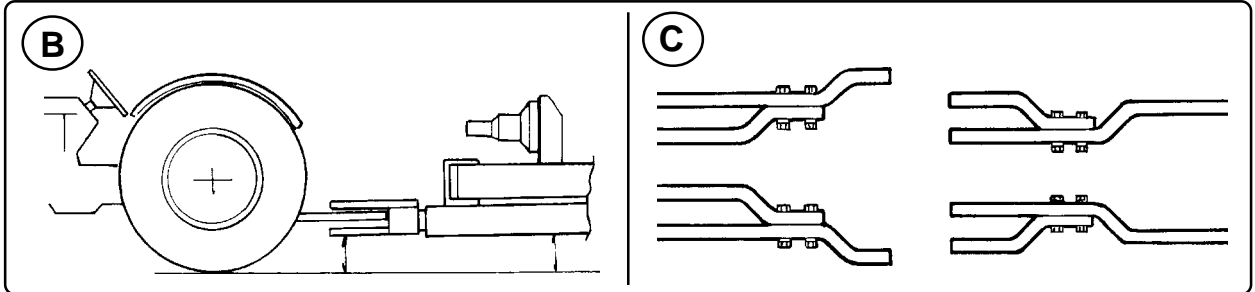
The figures shown in above table were obtained on a 63 HP tractor.
For explanation in detail, please consult the operator's manual of your tractor.

HITCHING THE SPRAYER TO THE TRACTOR

- Adjusting the sprayer height and the tractor's drawbar

Set the tractor's drawbar so as to allow the sprayer to work on level after being hitched (see figure B).

Invert the drawbar to vary the height of the hitch point (see figure C).



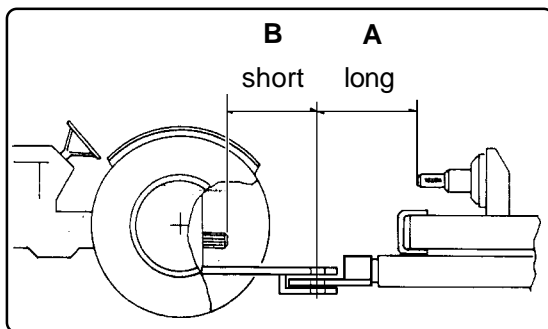
CONVENTIONAL PTO SHAFT

- Adjust the drawbar length in relation to the PTO as shown in the figure below.

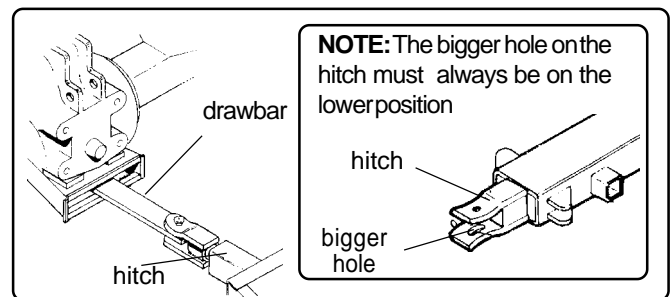
IDEAL CONNECTION

Distance A = B or as close as possible.

Ex.: If A = 40 cm, then B should be somewhere between 35 and 45 cm.



Hitch the sprayer to the tractor



NOTE

In order to know what is the load in kilogram put on the drawbars of tractors trailing Arbus line sprayers, just add the sprayer weight to the tank capacity and multiply the total by **0.12**.

OPERATION AND ADJUSTMENTS

SPRAY APPLICATION TECHNOLOGY

A successful spray application does not depend only on a good sprayer or correct use of the chemicals but also on factors to be determined in the field under specialized orientation.

Among these factors, some concepts should be part of a criterion of evaluation so that positive results may be attained within the pest control program.

- **Ideal time**
- **Safety**
- **Application rate**
- **Good coverage**

IDEAL TIME

The ideal time for spraying should be chosen according to the chemical product characteristics, as well as to the field conditions:

- Infestation level of pests, diseases and weeds;
- Infection level of diseases;
- Growing stage of weeds;
- Weather conditions.

SAFETY

When spraying your crops, you must make sure there will be no risk to people, animals and environment. Avoid spraying at hotter times, with humidity below 55% or under windy conditions. **Do not allow the operator to handle chemicals and spraying machinery without the proper individual protective clothing.**

CORRECT APPLICATION RATE

Any type of application requires that the rate be maintained during the whole spraying work. This will be possible when you have a good sprayer properly calibrated.

This calibration can be obtained through practical methods or formulas. Please refer to the section **OPERATION AND ADJUSTMENTS - CALIBRATING THE SPRAYER.**

GOOD COVERAGE

You have a good coverage when the whole target is sprayed with uniform distribution, with no risk to the environment and with good results in the pest control.

The application rate does not have influence on the treatment results. Therefore good coverages can be attained even with different rates, which may vary according to operational and regional factors.

IMPORTANT!

READ CAREFULLY AND FOLLOW STRICTLY THE INSTRUCTIONS ON THE CHEMICALS MANUFACTURER'S LABEL.

ALWAYS FOLLOW DIRECTIONS OF A TECHNICIAN WHEN HANDLING AND APPLYING CHEMICALS.

ALWAYS MAKE SURE THE SPRAYER IS IN GOOD OPERATIONAL CONDITIONS BEFORE STARTING THE SPRAYING JOB AND EMPLOY A WELL TRAINED OPERATOR.

OPERATION AND ADJUSTMENTS

ARBUS 500

This equipment is available in the versions:

1st - ARBUS 500 - ARBUS 500 with hitch 4100 (1580-rpm fan)



2nd - ARBUS 500 GRAPE - ARBUS 500 GRAPE with hitch 4100 (1580-rpm fan)



OPERATION AND ADJUSTMENTS

ARBUS 500

This equipment is available in the versions:

3rd - ARBUS 500 (2035-rpm fan) or 1580 for Agrale 4100.



4th - ARBUS 500 GRAPE (2035-rpm fan) or 1580 for Agrale 4100.



OPERATION AND ADJUSTMENTS

VERTICAL DEFLECTOR - ASSEMBLY

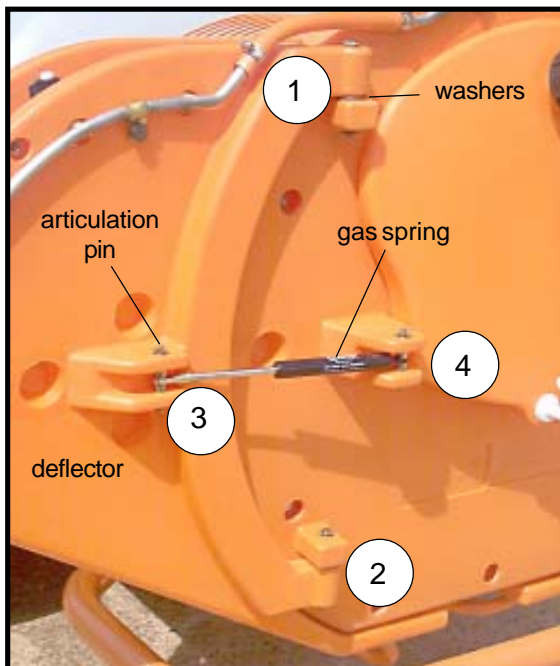
The vertical deflector is a component mounted on the sides of the sprayer that allows to spray grapes planted in trellis system.

The deflector has breakaway device to protect against frontal impacts.

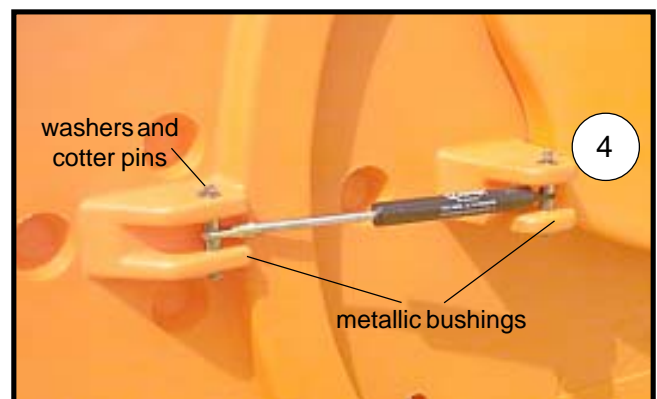


Procedures to assemble the deflector and the gas spring.

- Set the washers between the plastic parts (1 and 2).
- Set the joint pins in the points 1 and 2. After that, fit the smaller washers and lock them with the cotter pins.
- Fit the joint pin in the point 3 with the metallic bushings. Fit the washers and lock them with the cotter pins.



- Pull the gas spring until you can fit the bushings and the pins on the place indicated by no. 4.
- Fit the washers and lock them with the cotter pins.



OPERATION AND ADJUSTMENTS



DEFLECTOR ASSEMBLY

- Install the deflector as shown on the figure beside.

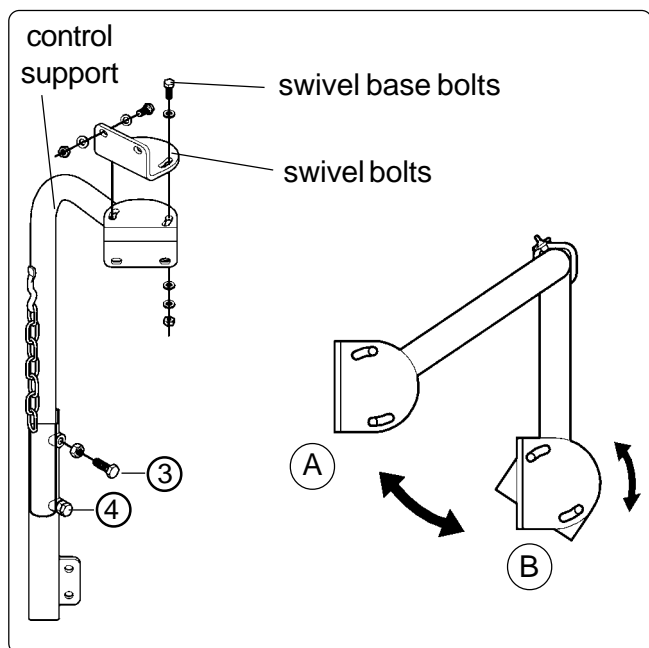
ADJUSTING THE PRESSURE REGULATOR SUPPORT

To easily operate the pressure regulator on different tractor models, the control support has adjustable height and a swivel base.

To adjust the height of the support, loosen the support bolts (3) and (4) and set the desired position. Next, tighten the bolts.

If the tractor is too close to the control, it is necessary to adjust the support backward as follows:

- Loosen the bolts (3) and (4) and turn the control support backward (B) as shown below.
- Next, loosen the bolts that fasten the swivel base to the support and turn the base (B) to allow that the control is set in an easy-to-reach position for the operator.
- At last, tighten all bolts.



OPERATION AND ADJUSTMENTS

TRACK WIDTH

| TIRES | GROUND CLEARANCE(m) | TRACK WIDTH (mm) | |
|-----------------|---------------------|------------------|---------|
| | FIXED | MINIMUM | MAXIMUM |
| 175/70 R13-GPS2 | 240 | 890 | 1212 |

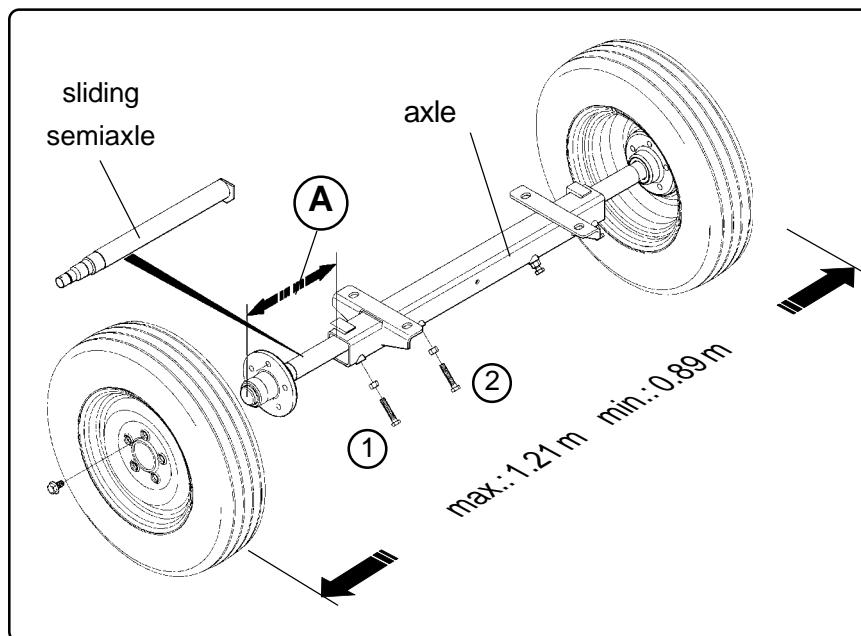
ADJUSTING THE TRACK WIDTH

- Raise the trailer rear enough to suspend the tires over the ground;
- Loosen the bolts 1 and 2, that fasten the sliding semi-axle to the axle;
- Displace the sliding semi-axle and adjust the track width between the tires centers.
- Attention to the distances: maximum - 1.21m
minimum - 0.89m.

ATTENTION: The bolt 2 also works as limiter to the maximum track width. Therefore do not remove it because the semi-axle can come off completely the axle and cause an accident.

ATTENTION

- THIS OPERATION MUST BE DONE BY A TRAINED PERSON WITH THE SPRAYER EMPTY AND WELL SCOTCHED ON FIRM AND LEVEL GROUND.
- FOR THE SAFETY OF THE EQUIPMENT, ADJUST THE TRACK WIDTH USING ONLY DIMENSIONS DEFINED AND KEEP THE SEMI-AXLE DISPLACEMENT (DETAIL A) EQUAL FOR BOTH WHEELS.



ATTENTION:

- THE OPERATIONS OF MAINTENANCE MUST BE DONE BY A TRAINED PERSON WITH THE SPRAYER EMPTY AND WELL SCOTCHED ON FIRM AND LEVEL GROUND.
- KEEP PEOPLE OR ANIMALS AWAY FROM THE EQUIPMENT WHEN DOING ANY KIND OF MAINTENANCE.

OPERATIONS AND ADJUSTMENTS

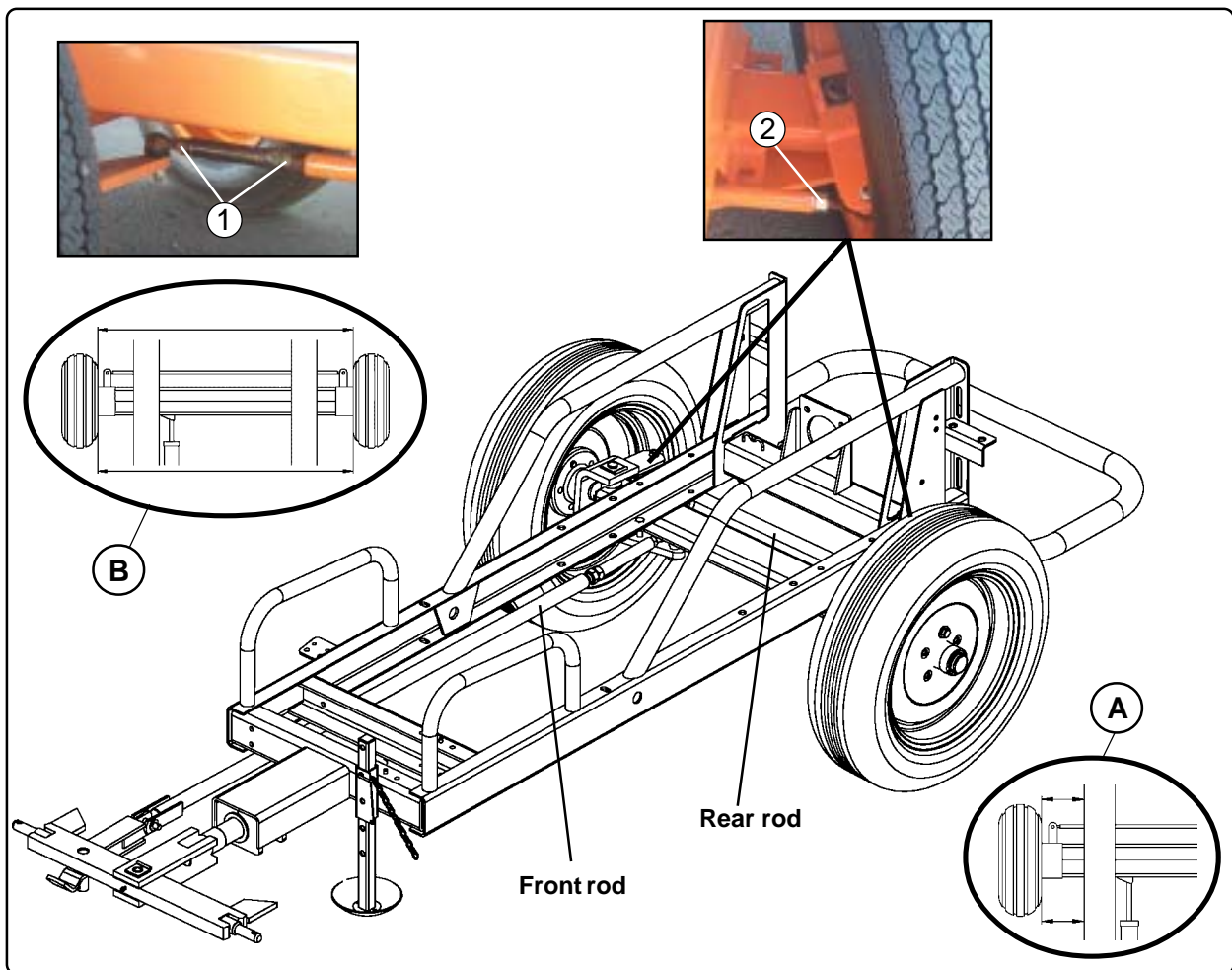
TRACK WIDTH AND GROUND CLEARANCE - TRACKING AXLE

| TIRES | TRACK WIDTH (m) |
|---------|-----------------|
| | FIXED |
| 7.35-14 | 1.02 |

| TIRES | GROUND CLEARANCE (m) |
|---------|----------------------|
| | FIXED |
| 7.35-14 | 0.24 |

ALIGNING THE WHEELS

- Loose the nut (1) and turn the front rod till the right tire be parallel to the sprayer's chassis (detail A).
- Tighten the nut (1).
- Loose the nuts (2) and turn the rear rod till the left tire be parallel to the right tire (detail - B).
- Tighten the nuts (2).



ATTENTION:

- The nonalignment of the tires in relation to the sprayer's chassis causes unusual wear of the tires.

ATTENTION:

- THE OPERATIONS OF MAINTENANCE MUST BE DONE BY A TRAINED PERSON WITH THE SPRAYER EMPTY AND WELL SCOTCHED ON FIRM AND LEVEL GROUND.
- KEEP PEOPLE OR ANIMALS AWAY FROM THE EQUIPMENT WHEN DOING ANY KIND OF MAINTENANCE.

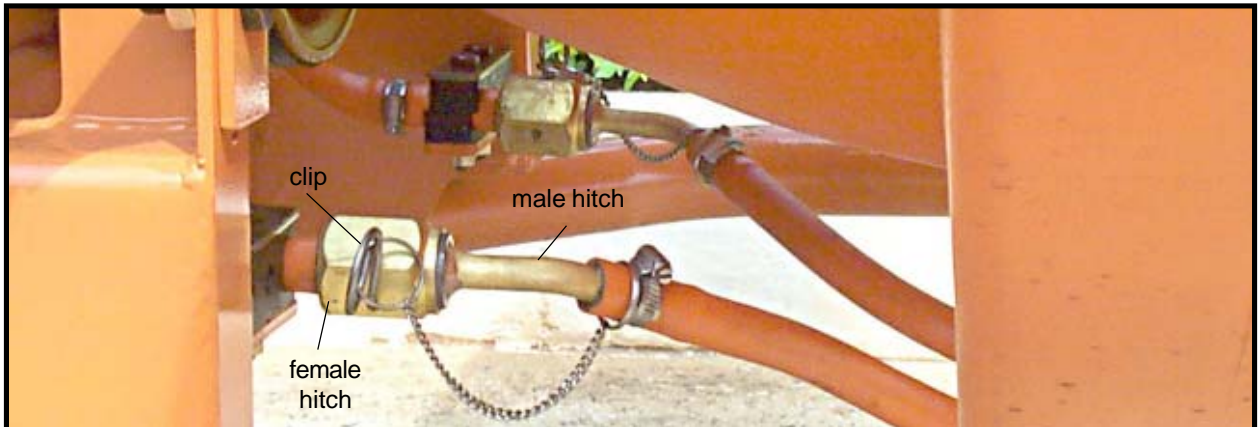
OPERATION AND ADJUSTMENTS

USING THE QUICK FITTING CONNECTION

This sprayer has a device that allows the use of the pump for spot spraying with lance or gun (both optional).

Procedures:

With the tractor off, disengage the fan as described on item "Fan".



IMPORTANT: To operate the fan locking lever, the tractor must be turned off or with the PTO disengaged.

Locate the quick fitting connection under the deflector and remove the clip that connects the two parts of the hitch, separating them. Note that the hose end or spray gun is a male part similar to the part disconnected from the quick fitting connection.

Fit the gun or lance end on the quick fitting connection female part and fasten it with the clip. Then run the tractor at the desired rotation and spray.

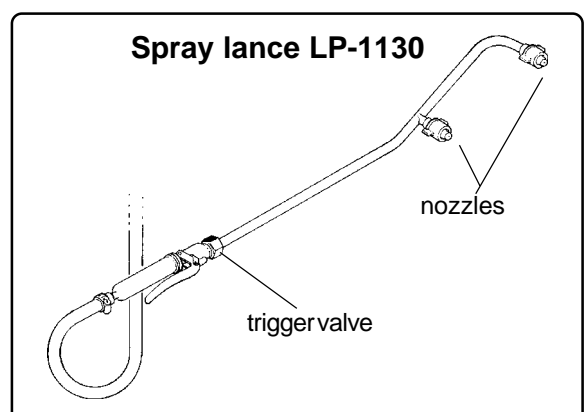
SPRAY LANCE (OPTIONAL)

This is an accessory for spot spraying, as well as for applications to difficult of access places.

It has two ceramic cone nozzles (model JA-2) and trigger valve for turning on and off the chemical flow, thus preventing waste of agrochemicals.

| Nozzle | Pressure psi | Flow rate | |
|--------|-----------------|-----------|-------|
| | | Nozzle | Lance |
| JA - 2 | 150 | 1.00 | 2.00 |
| | 200 | 1.16 | 2.32 |
| | 300 | 1.42 | 2.84 |
| | 400 | 1.64 | 3.28 |

Pressure band not recommended.

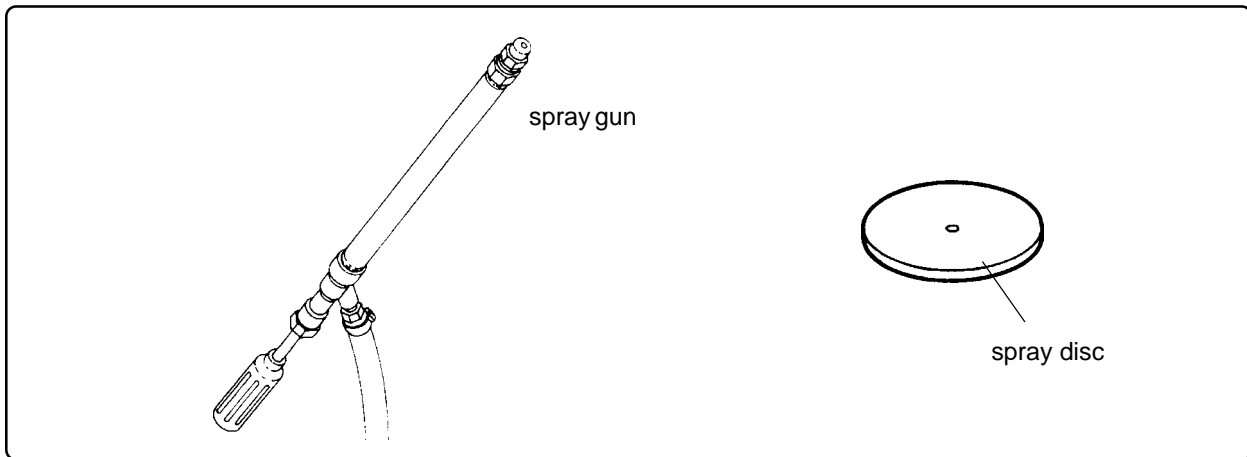


OPERATION AND ADJUSTMENTS

SPRAY GUN (OPTIONAL)

This is a component for spot spraying on big plants requiring high application rate.

It is possible to have flow rate ranging from 5 to 45 liters per minute by shifting the spray discs.

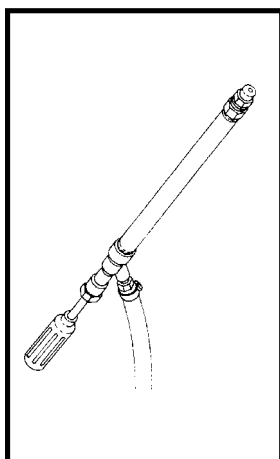


SPRAY DISCS - SERIES D

Made in stainless steel, these discs are designed to be used on the Jacto spray gun for spot spraying on fruit trees due to its large application range, as well as for cleaning sheds, warehouses and agricultural equipment.

The spray discs are available with flow rate ranging from 5 to 45 liters per minute.

FLOW RATE



| DISC PART# | DISC MODEL | PRESSURE (psi) | | | | |
|------------|------------|-------------------------------|-------|-------|-------|-------|
| | | 100 | 150 | 200 | 300 | 400 |
| | | SPRAY GUN FLOW RATE (L/min) | | | | |
| 202275 | D - 5 | 5.20 | 6.00 | 7.00 | 8.00 | 9.50 |
| 202267 | D - 6 | 6.85 | 8.50 | 10.00 | 12.00 | 13.50 |
| 202811 | D - 7 | 9.35 | 10.90 | 12.50 | 14.75 | 17.00 |
| 202259 | D - 8 | 12.85 | 15.00 | 17.00 | 20.00 | 23.65 |
| 622829 | D - 9 | 14.20 | 17.64 | 20.72 | 25.40 | 29.40 |
| 114686 | D - 10 | 18.50 | 22.00 | 25.50 | 30.00 | 35.68 |
| 622837 | D - 11 | 21.00 | 24.75 | 29.35 | 37.00 | 45.00 |

OPERATION AND ADJUSTMENTS

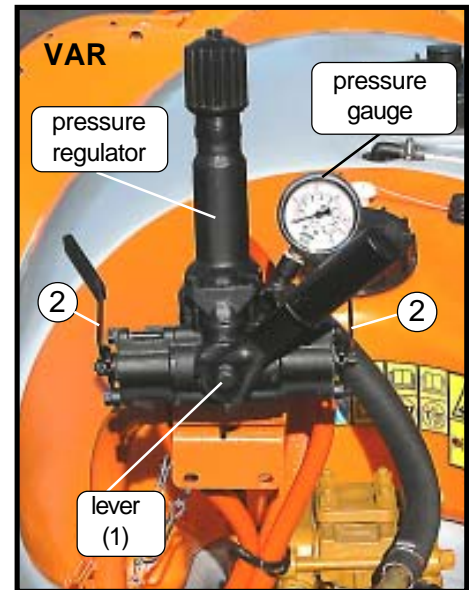
PRESSURE REGULATOR

The pressure regulator provides adjustments ranging from 2 to 35 kgf/cm² (30 to 500 psi), shown by the pressure gauge.

The lever (1) turns on and off the chemical flow and the levers (2) control the chemical flow to both sides or to one only.

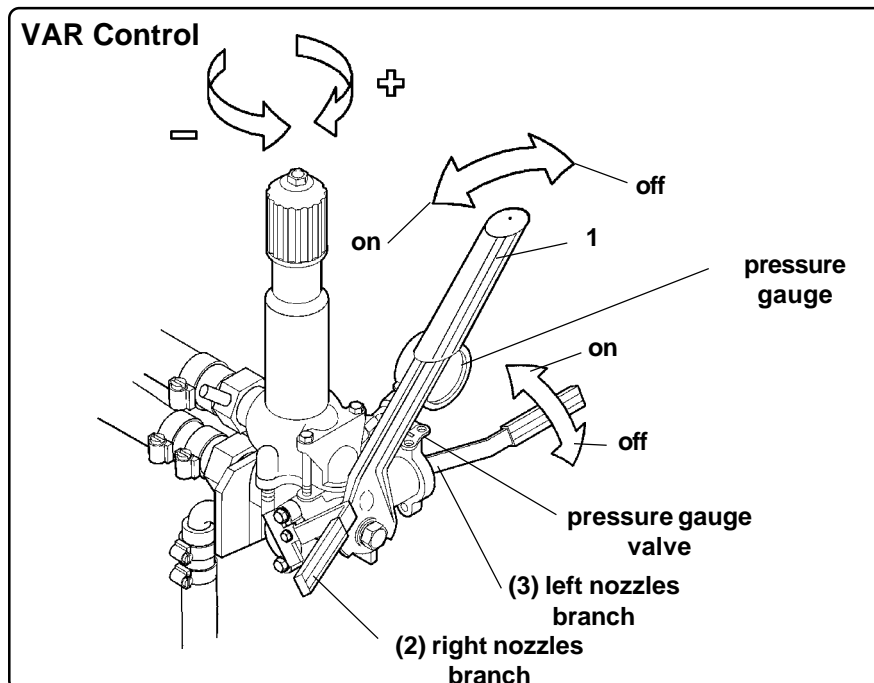
ATTENTION:

To ensure longer life of the pressure gauge, its valve should be closed and without retained pressure during the spraying. After calibrating the sprayer, use the lever (1) to release the pressure in the circuit and close the pressure gauge valve.



ADJUSTING THE PRESSURE

- Run the tractor PTO and accelerate it gradually until reaching 540 rpm.
- Set the lever (1) to turn on the chemical flow.
- Set the lever (2) and (3) to turn on the chemical flow to both nozzles branches.
- Turn the knob (clockwise to increase the pressure - counterclockwise to decrease the pressure) until obtaining the desired pressure.
- After adjusting the pressure, set the lever (1) back to turn off the chemical flow, and close the pressure gauge valve.



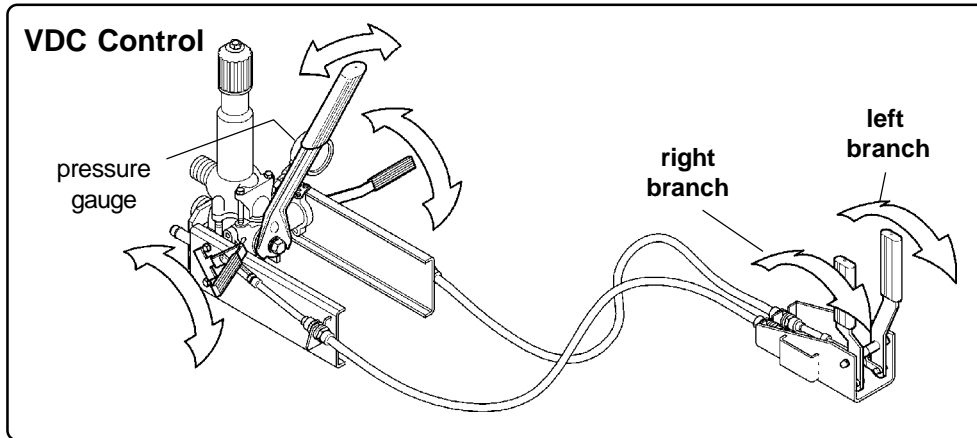
HYDRAULIC AGITATOR

During the displacement, set the directional valve to the return position and adjust the pressure to 200 psi to obtain a stronger chemical agitation.

OPERATION AND ADJUSTMENTS

PRESSURE REGULATOR - CABLE-OPERATED CONTROL (OPTIONAL)

If the sprayer is equipped with cable-operated control (VDC), the adjustment is as follows:



ADJUSTING THE PRESSURE

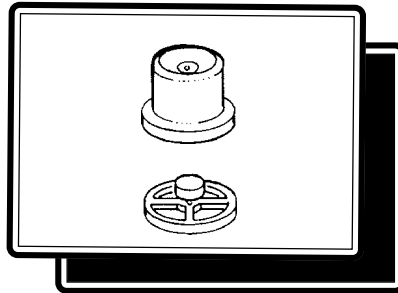
- Run the tractor PTO and accelerate it gradually until reaching 540 rpm.
- Set the lever (1) to turn on the chemical flow.
- Set the lever (2) and (3) to turn on the chemical flow to both nozzles branches.
- Turn the knob (clockwise to increase the pressure - counterclockwise to decrease the pressure) until obtaining the desired pressure.
- After adjusting the pressure, set the lever (1) back to turn off the chemical flow, and close the pressure gauge valve.

| | |
|--|--|
| <p>ATTENTION: In case of problems to operate the levers by cables, use the levers mounted on the control body. Then service the chemical control as soon as possible.</p> | <p>ATTENTION:</p> <p>To ensure longer life of the pressure gauge, its valve should be closed and without retained pressure during the spraying. After calibrating the sprayer, use the lever (1) to release the pressure in the circuit and close the pressure gauge valve.</p> |
|--|--|

ATTENTION
AS THE CHEMICAL CONTROL SHOULD BE INSTALLED CLOSE TO THE OPERATOR TO MAKE EASIER THE SPRAYING JOB, YOU MUST ALWAYS USE THE ORIGINAL HITCH PIN WITH COTTER PIN AND THE ORIGINAL SAFETY CHAIN TO AVOID ACCIDENTS.

OPERATION AND ADJUSTMENTS

HOLLOW CONE NOZZLE HIGH QUALITY CERAMIC SERIES JA



TECHNICAL CHARACTERISTICS

SPRAY PATTERN HOLLOW CONE
 SPRAY ANGLE 75 TO 80 DEGREES AT 150 PSI
 MANUFACTURING MATERIAL **SINTERED ALUMINA**
 FLOW RATE IDENTIFICATION NOZZLE COLOR AND DESCRIPTION

Series JA hollow cone nozzles are produced by processes developed for exacting markets of mechanical engineering, space and aerospace industries. A special mold injection process makes a perfect orifice on the nozzles, giving better quality to the surface finish than that achieved by machines. And the result is better coverage and more homogenous spraying.

These nozzles are approved by international quality standards, ensuring an outstanding spray cone uniformity and flow rate of nozzles.

The alumina-sintered nozzles are almost as hard as diamond and resist yet the most corrosive products. This provides perfect stability for long time concerning all requirements such as flow rate, coverage and droplet size.

TABLE 1 - FLOW RATE



| Pressure (psi) | Nozzles model | | | | | |
|-------------------|-------------------|----------|--------|--------|--------|--------|
| | JA - 1 | JA - 1,5 | JA - 2 | JA - 3 | JA - 4 | JA - 5 |
| | Flow rate (L/min) | | | | | |
| 30 | 0.23 | 0.31 | 0.47 | 0.64 | 0.91 | 1.16 |
| 45 | 0.28 | 0.38 | 0.55 | 0.77 | 1.10 | 1.40 |
| 60 | 0.32 | 0.43 | 0.64 | 0.88 | 1.25 | 1.60 |
| 90 | 0.38 | 0.52 | 0.76 | 1.06 | 1.51 | 1.93 |
| 120 | 0.42 | 0.59 | 0.86 | 1.21 | 1.72 | 2.20 |
| 150 | 0.50 | 0.66 | 1.00 | 1.34 | 1.91 | 2.44 |
| 180 | 0.52 | 0.71 | 1.04 | 1.46 | 2.07 | 2.65 |
| 210 | 0.55 | 0.77 | 1.13 | 1.57 | 2.22 | 2.85 |
| 240 | 0.60 | 0.82 | 1.22 | 1.68 | 2.34 | 3.22 |
| 270 | 0.63 | 0.87 | 1.28 | 1.76 | 2.42 | 3.41 |
| 300 | 0.72 | 0.90 | 1.42 | 1.84 | 2.54 | 3.57 |

NOZZLES STRAINERS: Use 50 or 60 mesh for all nozzle models.

OPERATION AND ADJSUTMENTS

| Nozzle | | Pressure (psi) | Flow rate (L/min) | Tractor speed (km/h) | | | | | | | | |
|----------|--------|-------------------|----------------------|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Model | Color | | | Spraying volume (L/ha) | | | | | | | | |
| JA - 1 | Blue | 60 | 0.32 | 96 | 77 | 64 | 55 | 48 | 43 | 38 | 35 | 32 |
| | | 90 | 0.38 | 114 | 91 | 76 | 65 | 57 | 51 | 46 | 41 | 38 |
| | | 150 | 0.50 | 150 | 120 | 100 | 86 | 75 | 67 | 60 | 55 | 50 |
| | | 210 | 0.55 | 165 | 132 | 110 | 93 | 83 | 73 | 66 | 60 | 55 |
| JA - 1.5 | Brown | 60 | 0.43 | 129 | 103 | 86 | 74 | 65 | 57 | 52 | 47 | 43 |
| | | 90 | 0.52 | 156 | 125 | 104 | 89 | 78 | 69 | 62 | 57 | 52 |
| | | 150 | 0.66 | 198 | 158 | 132 | 113 | 99 | 88 | 79 | 72 | 66 |
| | | 210 | 0.77 | 231 | 185 | 154 | 132 | 116 | 103 | 92 | 84 | 77 |
| JA - 2 | Black | 60 | 0.64 | 192 | 154 | 128 | 110 | 96 | 85 | 77 | 70 | 64 |
| | | 90 | 0.76 | 228 | 182 | 152 | 130 | 114 | 101 | 91 | 83 | 76 |
| | | 150 | 1.00 | 300 | 240 | 200 | 171 | 150 | 133 | 120 | 109 | 100 |
| | | 210 | 1.13 | 339 | 271 | 226 | 194 | 170 | 151 | 136 | 123 | 113 |
| JA - 3 | Orange | 60 | 0.88 | 264 | 211 | 176 | 151 | 132 | 117 | 106 | 96 | 88 |
| | | 90 | 1.06 | 318 | 254 | 212 | 182 | 159 | 141 | 127 | 116 | 106 |
| | | 150 | 1.34 | 402 | 322 | 268 | 230 | 201 | 179 | 161 | 146 | 134 |
| | | 210 | 1.57 | 471 | 377 | 314 | 269 | 236 | 209 | 188 | 171 | 157 |
| JA - 4 | Red | 60 | 1.25 | 375 | 300 | 250 | 214 | 188 | 167 | 150 | 136 | 125 |
| | | 90 | 1.51 | 453 | 362 | 302 | 259 | 227 | 201 | 181 | 165 | 151 |
| | | 150 | 1.91 | 573 | 458 | 382 | 327 | 287 | 255 | 229 | 208 | 191 |
| | | 210 | 2.22 | 666 | 533 | 444 | 381 | 333 | 296 | 266 | 242 | 222 |
| JA - 5 | Green | 60 | 1.60 | 480 | 384 | 320 | 274 | 240 | 213 | 192 | 175 | 160 |
| | | 90 | 1.93 | 579 | 463 | 386 | 331 | 290 | 257 | 232 | 211 | 193 |
| | | 150 | 2.44 | 732 | 586 | 488 | 418 | 366 | 325 | 293 | 266 | 244 |
| | | 210 | 2.85 | 855 | 684 | 570 | 489 | 428 | 380 | 342 | 311 | 285 |

Ordering: Specify nozzle model and part #. Ex.: nozzle JA-2, part # 000026.

| | | | | | | |
|--------|--------|----------|--------|--------|--------|--------|
| Color | Blue | Brown | Black | Orange | Red | Green |
| Model | JA - 1 | JA - 1,5 | JA - 2 | JA - 3 | JA - 4 | JA - 5 |
| Part # | 109744 | 454256 | 000026 | 454264 | 454272 | 454280 |

OPERATION AND ADJUSTMENTS

CALIBRATING THE SPRAYER

The safety of people, animals and environment depends on correct spray applications. Therefore, we list below some operational procedures.

WHEN HANDLING AGROCHEMICALS

- Follow strictly the instructions on the labels.
- Use individual protective clothing.
- Do not eat, drink or smoke.
- Choose a ventilated place.
- Wash with water and soap the parts of the body touched by chemicals.

WHEN HANDLING THE SPRAYER

- Check for the proper working conditions of the sprayer.
- Do not blow by mouth nozzles, valves or tubes.
- Do not spray against the wind.
- Do not spray at sunny times.
- Use individual protective clothing recommended.
- Do not eat, drink or smoke.

REMEMBER

You are responsible for the success of the application.

The sprayer can be calibrated by calculating the spray volume through the following formula:

$$V = \frac{F \cdot 600}{S \cdot A} \text{ (L/ha)}$$

Where:

V : Spray volume (L/ha)

F : Nozzles total flow rate (L/min)

S : Tractor speed (km/h)

A : Row spacing (m)

600 : Conversion unit

EXAMPLE:

| | | |
|-------------------------|---|---|
| Nozzles total flow rate | : | 14 L/min (14 x JA-2 nozzles at 150 psi) |
| Row spacing | : | 3.0 x 5.0 (m) |
| Tractor speed | : | 3.0 km/h |
| Plants per hectare | : | 667 plants |

$$V = \frac{F \cdot 600}{S \cdot A} \text{ (L/ha)} \quad V = \frac{14 \cdot 600}{3 \cdot 5} \text{ (L/ha)} \quad V = \frac{8400}{15} = 560 \text{ L/ha}$$

$$\text{SPRAY VOLUME: } \frac{560}{667} = 0.84 \text{ (L/plant)}$$

OPERATION AND ADJUSTMENTS

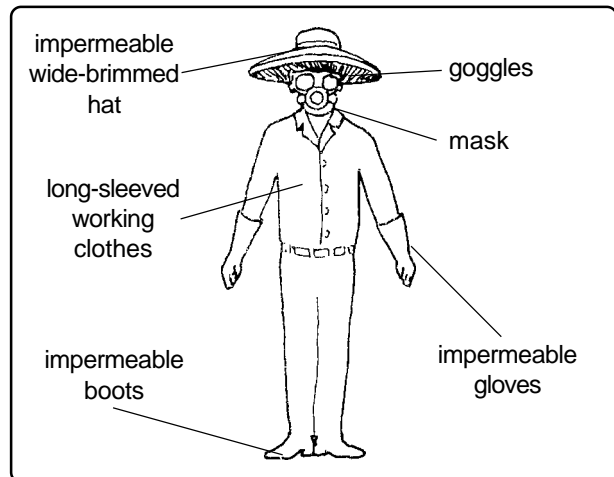
DILUTING THE CHEMICALS

ATTENTION

NEVER run the sprayer for with less than 50 liters of water in the tank to avoid damage to the pump.

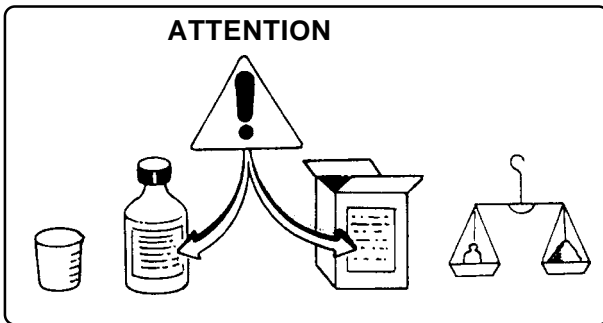
Always use the following individual protective clothing when handling chemicals:

- Impermeable wide-brimmed hat
- Goggles
- Mask
- Long-sleeved working clothes
- Impermeable gloves
- Impermeable boots

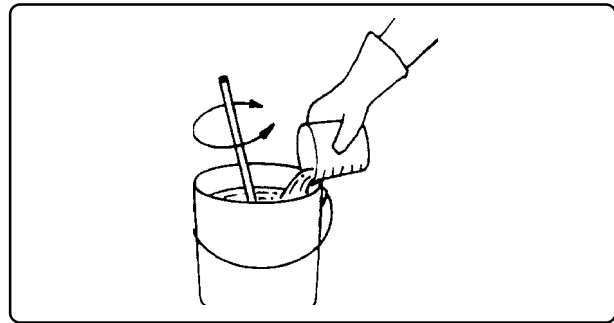


PREPARING THE CHEMICAL MIXTURE

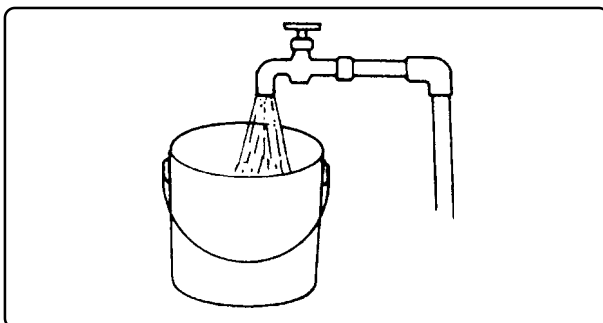
ATTENTION



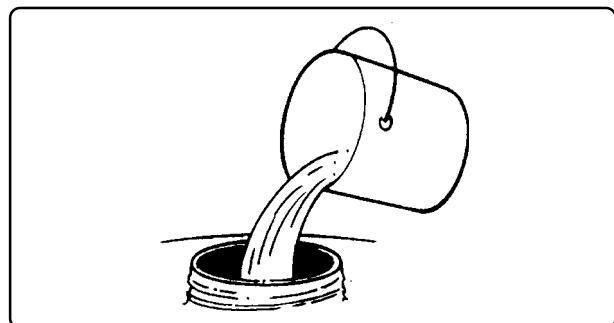
- Read carefully the chemicals manufacturer's label.



- Pour the chemicals into a bucket with little water and stir.



- Add water until filling the bucket up.
- Stir until the mixture is homogeneous.



- Pour the solution into the sprayer's tank.
- Install the tank lid and make sure there is no leakage.

ATTENTION
ALWAYS FOLLOW TECHNICAL RECOMMENDATIONS
WHEN HANDLING CHEMICALS.

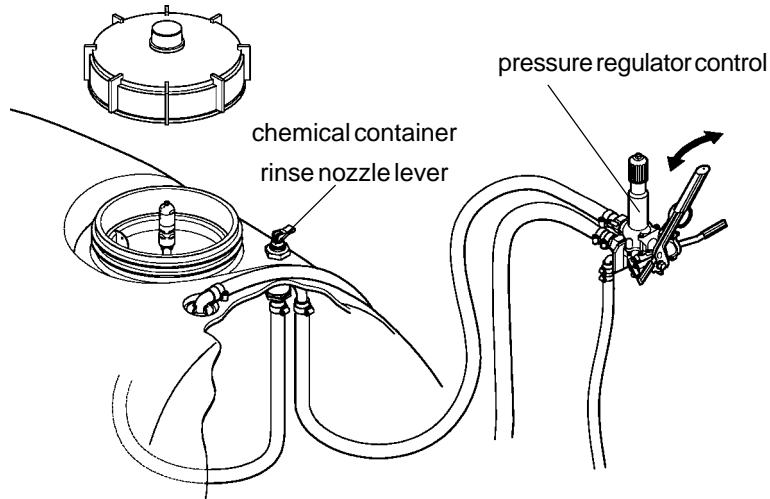
OPERATION AND ADJUSTMENTS

PRESSURE WASH

Procedures to use the container rinse nozzle:

- Fill the tank up to approximately 90% of its capacity.
- Pour the chemical into the tank.
- Engage the tractor's PTO

NOTE: The directional valve lever must be set to allow the chemical return to the tank (off).

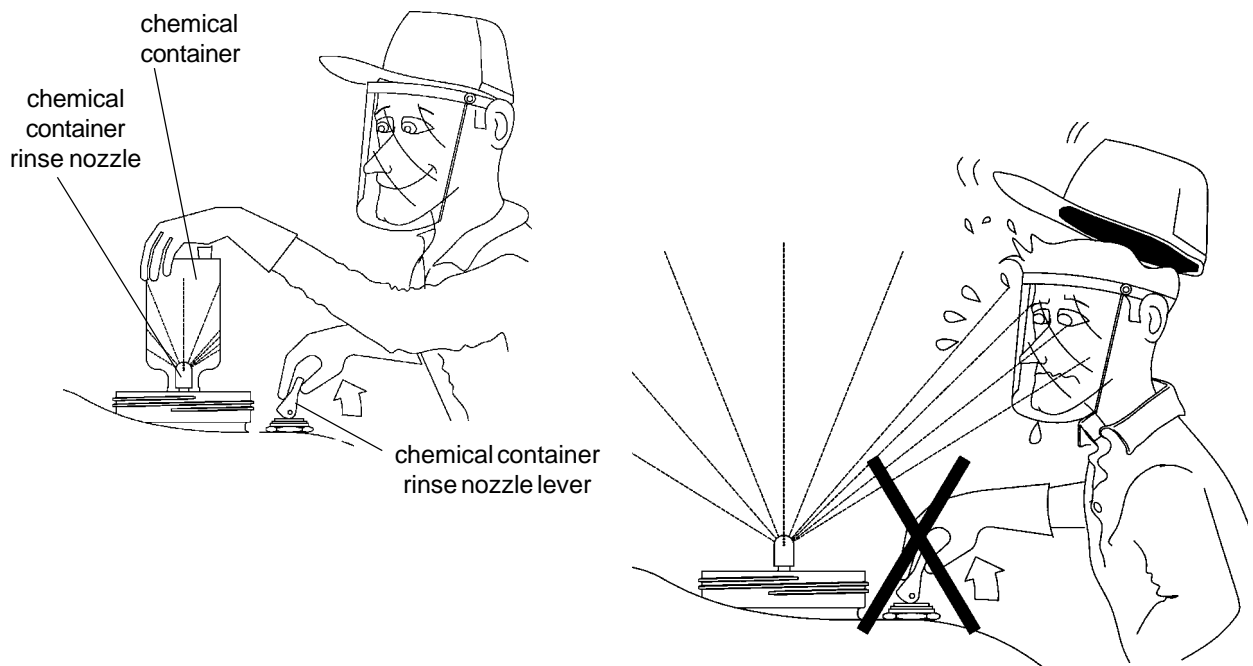


ATTENTION: USE THE RECOMMENDED PROTECTIVE CLOTHING FOR THIS OPERATION

- Hold the chemical container over the rinse nozzle and pull the lever to wash inside the container.

NOTE: With the chemical container over the rinse nozzle, make circular movements to reach all internal walls of the chemical container with the water jet for around 30 seconds.

- Fill up the sprayer tank with water.



ATTENTION

Never pull the lever without the chemical container over the container rinse nozzle.

After rinsing the chemical container, wash it for the last time, using clean water from the auxiliary tank.

OPERATION AND ADJUSTMENTS

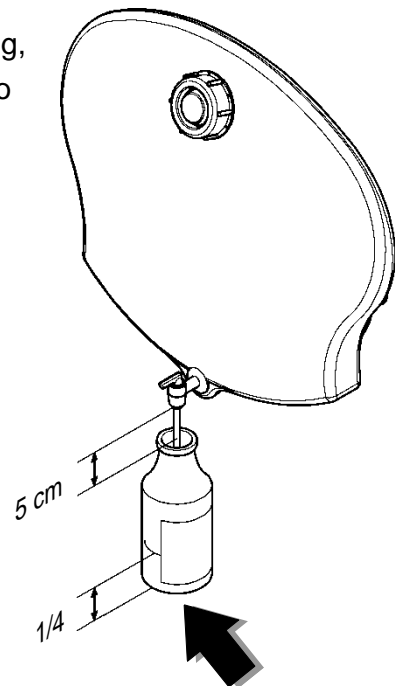
CLEAN WATER TANK

To assist in the operation of the PRESSURE-WASH, a clean water tank is also installed on the sprayers.

ATTENTION: The water from this tank is not fit for drinking, or even washing hands, face, tools, etc. It must be used only to fill the chemical containers for the final rinse.

NOTE:

To keep from contaminating the water and the auxiliary tank tap during the filling of the chemical container, hold the container at least 5 cm away from the tap, as shown.



1/4 = 25% of the chemical container capacity

WASHING THE CHEMICAL CONTAINER

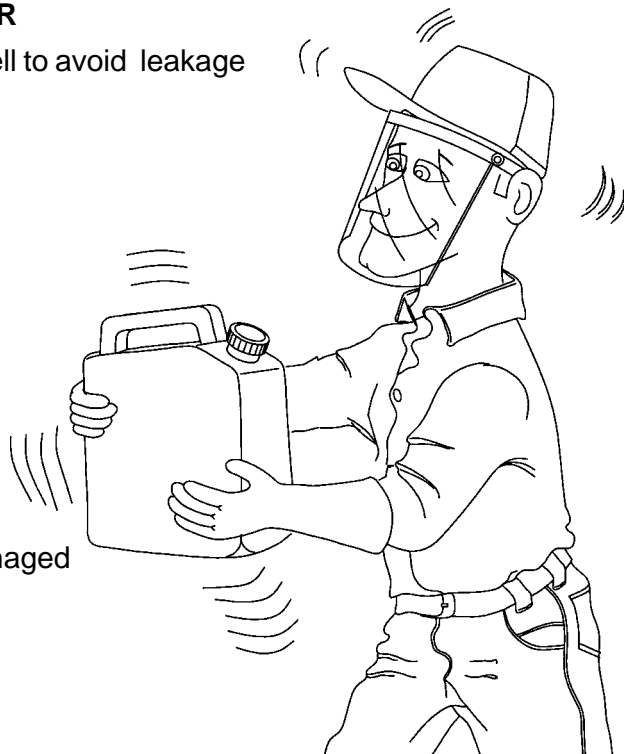
- Fit the container cap and tight it very well to avoid leakage during the agitation.

- Agitate the container strongly in all ways (horizontal and vertical), during approximately 30 seconds to remove the residues that are stuck to the container internal walls.

- Take the container cap off and carefully pour the rinse water into the spray tank.

- Keep holding the container over the spray tank opening until the last drop.

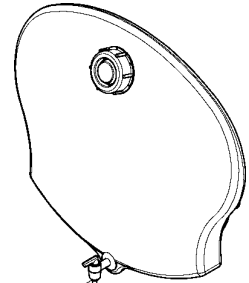
- Next, make the container useless by piercing it. Make sure their labels are not damaged for identification purposes.



OPERATION AND ADJUSTMENTS

CLEAN WATER TANK

The 15-liter clean water tank, designed to wash the chemical containers for the last time, is installed on the body of the deflector. The water from this tank is not fit for drinking, or even washing hands, face or tools.



The clean water tank can be removed for refilling.

CLEANING THE CHEMICAL CIRCUIT

After spraying, proceed to rinse inside the tank.

The sprayer must be turned off.

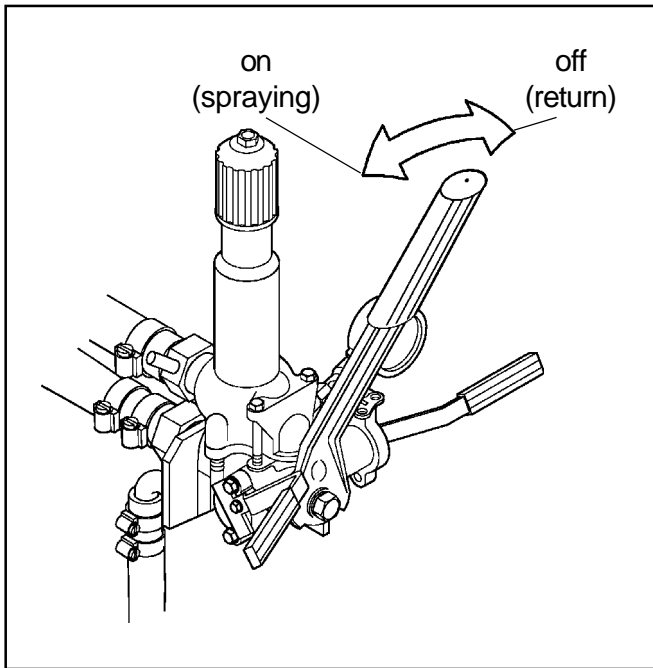
Operate the transfer valve by pulling the rope located close to the tank filler opening (roll up the rope around the support grooves so that the valve remains open until the water is totally transferred to the main tank).

Unroll the rope to close the valve again.

Fill again the rinse tank with clean water.



OPERATION AND ADJUSTMENTS



- Run the sprayer and with the pressure regulator lever set to return, leave the agitator to work for a few minutes.
- Spray the crop with the water of the main tank.



ATTENTION:

With the main tank filled, do not pull the transfer valve rope, otherwise it will contaminate the clean water.

DRAINAGE OF THE MAIN TANK

To drain the main tank, just pull the drain valve rope located close to the tank filler opening. Roll it up around the support as in the previous procedure for circuit cleaning.

IMPORTANT: Do not empty the sprayer tank in places where it can contaminate the environment and poison man and animals.



NOTE: The water used to clean inside the main tank must be sprayed on the crop. It must not be drained in places where it can contaminate the environment and poison man and animals.

MAINTENANCE

GUIDELINES:

Daily, after finishing the spray application, put clean water in the tank, remove the nozzles and run the sprayer till empty.

Clean and reinstall the nozzles.

Clean the main filter.

Rinse off the inside and outside of the sprayer.

ATTENTION

NEVER WASH SPRAYERS OR INDIVIDUAL PROTECTIVE EQUIPMENT IN OR CLOSE TO RIVERS, LAKES, STREAMS, BROOKS, DAMS, ETC.

Take off and wash the individual protective clothing separated from other clothes.

Take a shower with plenty of water and soap and change your clothes.

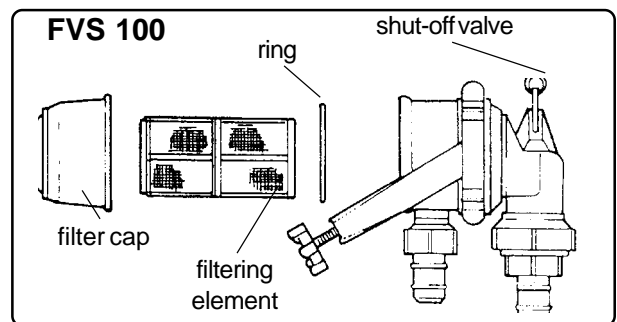
These procedures will avoid future problems caused by strainer, nozzle and tube obstructions and prolong the sprayer's life, as well as protect yourself.

COMPONENTS

MAIN FILTER

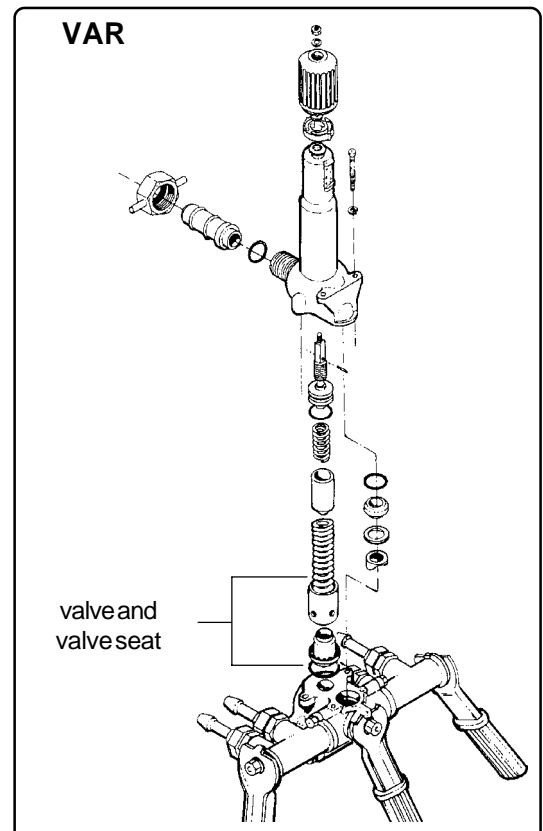
The frequency of filter cleaning will depend on the quality of water and type of agrochemicals applied.

Clean the filter whenever filling the tank or when necessary.



PRESSURE REGULATOR

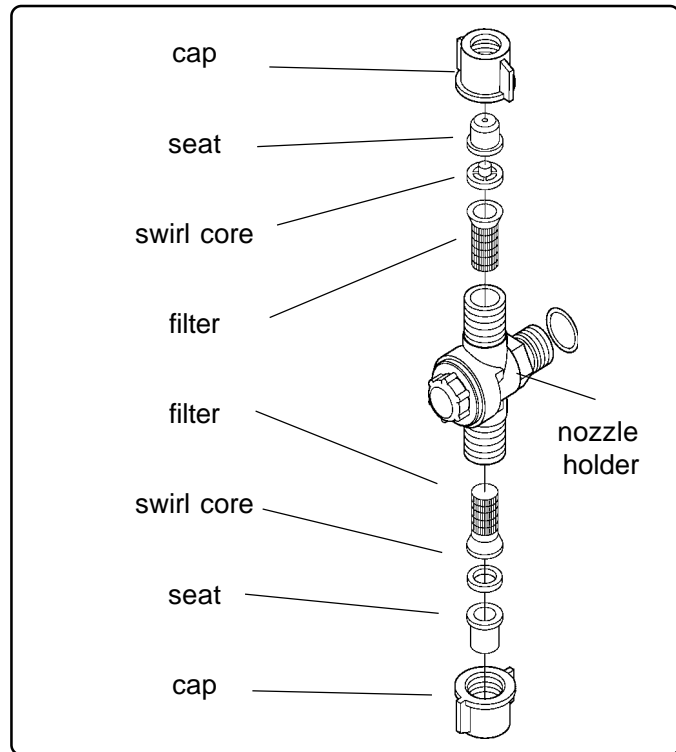
- Disassemble the pressure regulator every 100 working hours.
- Check for wear on the valve and valve seat.
- Replace the parts if necessary.



MAINTENANCE

NOZZLE HOLDER

Clean the nozzle holders daily or when necessary.



LUBRICATION TABLE

| PRODUCT | LOCATION | QTY. | FREQ | SPECIFICATIONS | RECOMMENDED PRODUCTS |
|-----------------|--|-------|--|--|---|
| LUBRICATING OIL | JP - 50 V PUMP | 1.5 l | 1ST CHANGE: AFTER 30 HOURS FURTHER CHANGES: EVERY 100 HOURS | API - SB OR SUPERIOR SAE - 30 | ALL OILS FOR INTERNAL COMBUSTION ENGINES WITHIN THIS SPECIFICATION |
| GREASE | PTO SHAFT TRAILER SHITCH FRONT/REAR BEARINGS AGITATOR JACK | - | DAILY | LITHIUM BASE NGLI - 2 | MULTIFAKEP - 2 MOBIL GREASE 77 LUBRAX GMA - 2 BEACON EP - 2 AND SIMILAR PRODUCTS |
| | WHEEL HUB | - | 500 HOURS | | |

NOTE: The presentation order of recommended products does not imply any preference for any brand or product.

CHEMICAL PUMP LUBRICATION

- Check the oil level of the pump and complete if necessary.
- Complete the oil level of the pump through the filling plug of the extension.
- Check the oilsights for leakage daily.
- The vertical position of the pump, with the valve cover upwards, does not allow to check if there is oil leakage (retainer wear), with chemical entering inside the oil reservoir (contamination). Therefore, for every change of piston cup and other parts, the rod retainers must also be changed.
- To drain the pump oil, use the drain plug located under the pump.

MAINTENANCE



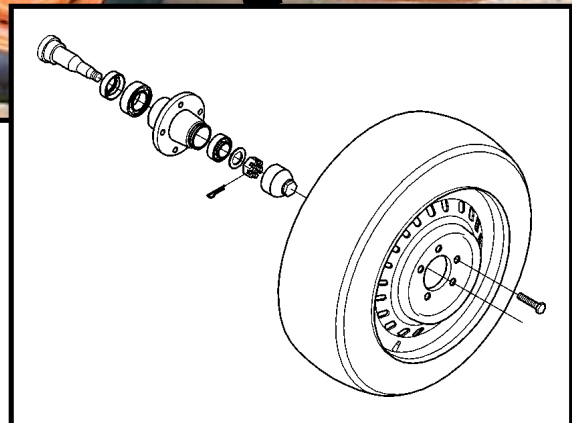
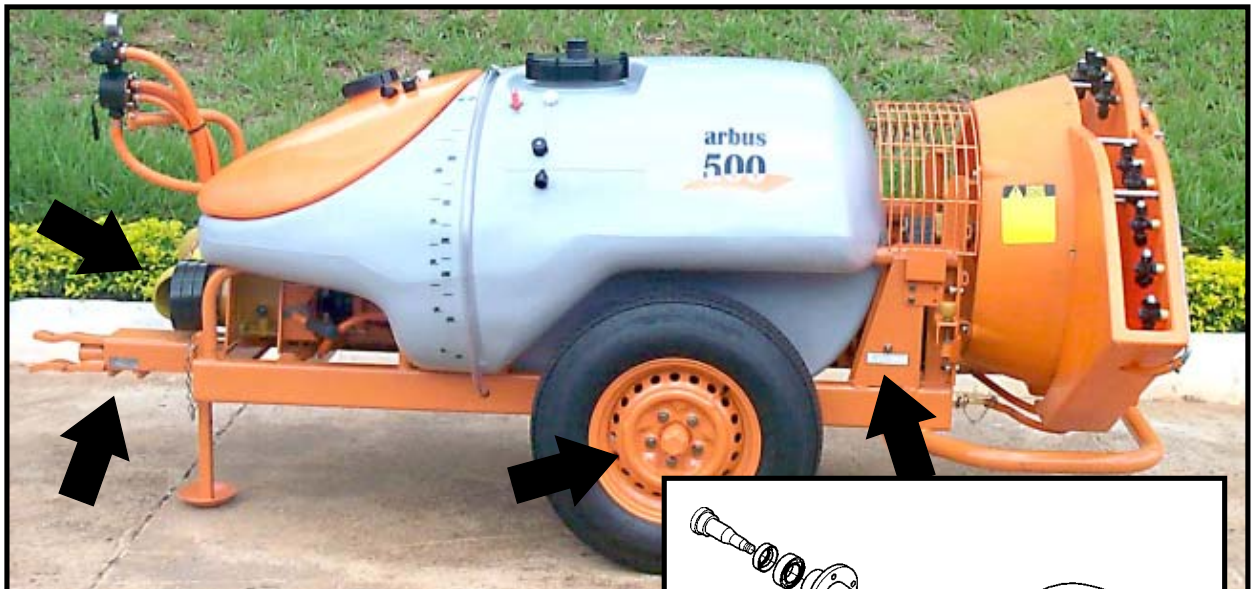
LUBRICATION POINTS

WHEEL HUB

Every 500 working hours, remove the wheels hubs and replace the grease.

PTO SHAFT, TRAILER'S HITCH AND BEARINGS

Lubricate daily.



ATTENTION:
THE WHEEL HUB LUBRICATION
MUST BE DONE ON FIRM AND
LEVEL GROUND AND WITH THE
SPRAYER WELL SCOTCHED.

MAINTENANCE

TRACKING AXLE AND HITCH - LUBRICATION



- Lubricate the hitch daily.



- Lubricate the tracking axle end (both sides) daily.

FAN BELT

- Loosen the four screws (1) enough to allow the frame to be moved.
- Loosen the two nuts (2).
- Hand-tighten equally the two knobs (3) until obtaining the recommended tension.
- Retighten the two nuts (2).
- Retighten the four screws (1).



ATTENTION
ALWAYS STOP THE SPRAYER AND TURN OFF
THE TRACTOR ENGINE BEFORE ANY KIND OF
MAINTENANCE.

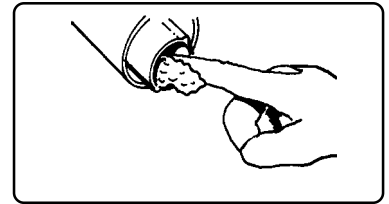
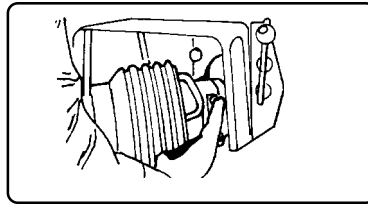
MAINTENANCE

CONVENTIONAL PTO SHAFT

ATTENTION: ALWAYS STOP THE SPRAYER AND TURN OFF THE TRACTOR'S ENGINE BEFORE SERVICING THE PTO SHAFT. ALWAYS USE THE INDIVIDUAL PROTECTIVE EQUIPMENT DURING THE MAINTENANCE OF THE PTO SHAFT

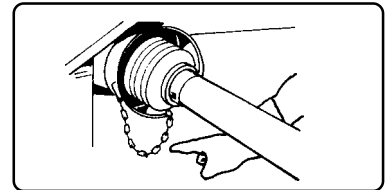
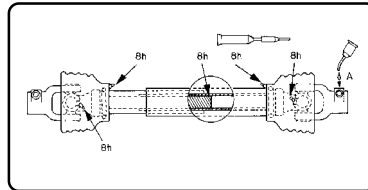
01- CONNECTING

- Check the PTO shaft length.
- Adjust the length by cutting the tubes and protection guards proportionately.



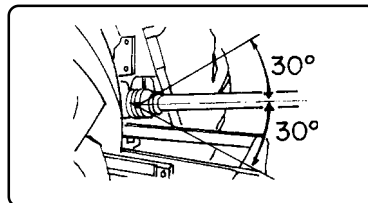
Note: File and remove all burrs.

- Lubricate the male and female tubes.
- Connect the PTO shaft and install the safety chain.



Note: Leave some slack on the chain considering angular movements.

- Disengage the PTO when making sharp turns.

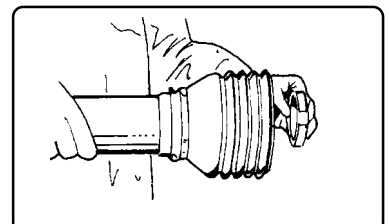
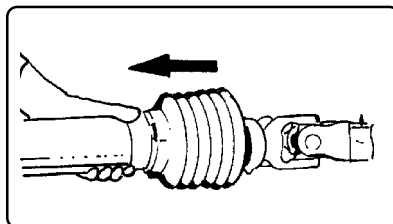
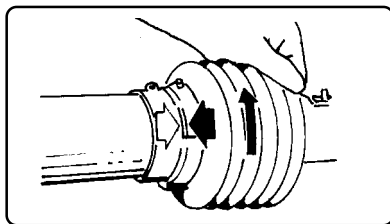
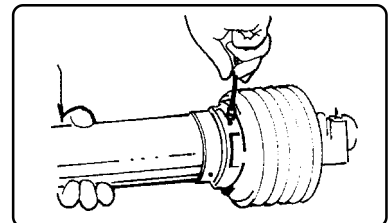


ATTENTION
ONLY OPERATE WITH PTO SHAFT EQUIPPED WITH PROTECTION GUARDS.

02- SERVICING

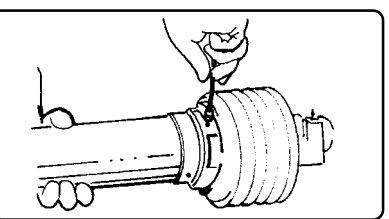
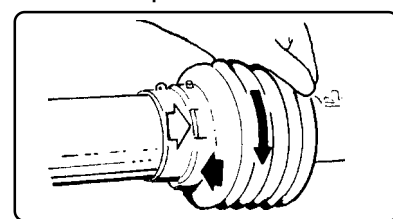
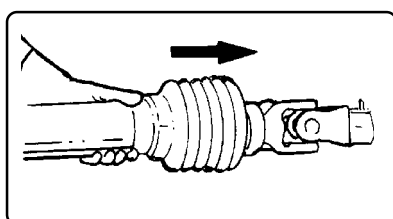
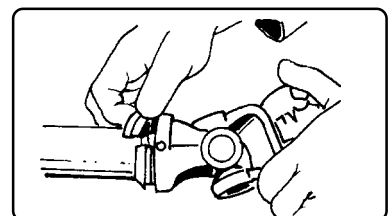
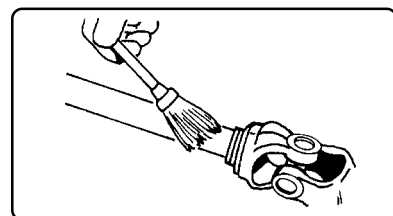
a) DISASSEMBLING

- 1- Remove the lock screw.
- 2- Turn the guard cone until the indicated position.
- 3- Pull the guard cone.
- 4- Remove the sliding ring.



b) ASSEMBLING

- 5- Clean and lubricate the male and female tubes.
- 6- Install the sliding ring into the fitting with the grooves pointing toward the tube.
- 7- Install the protection guards.



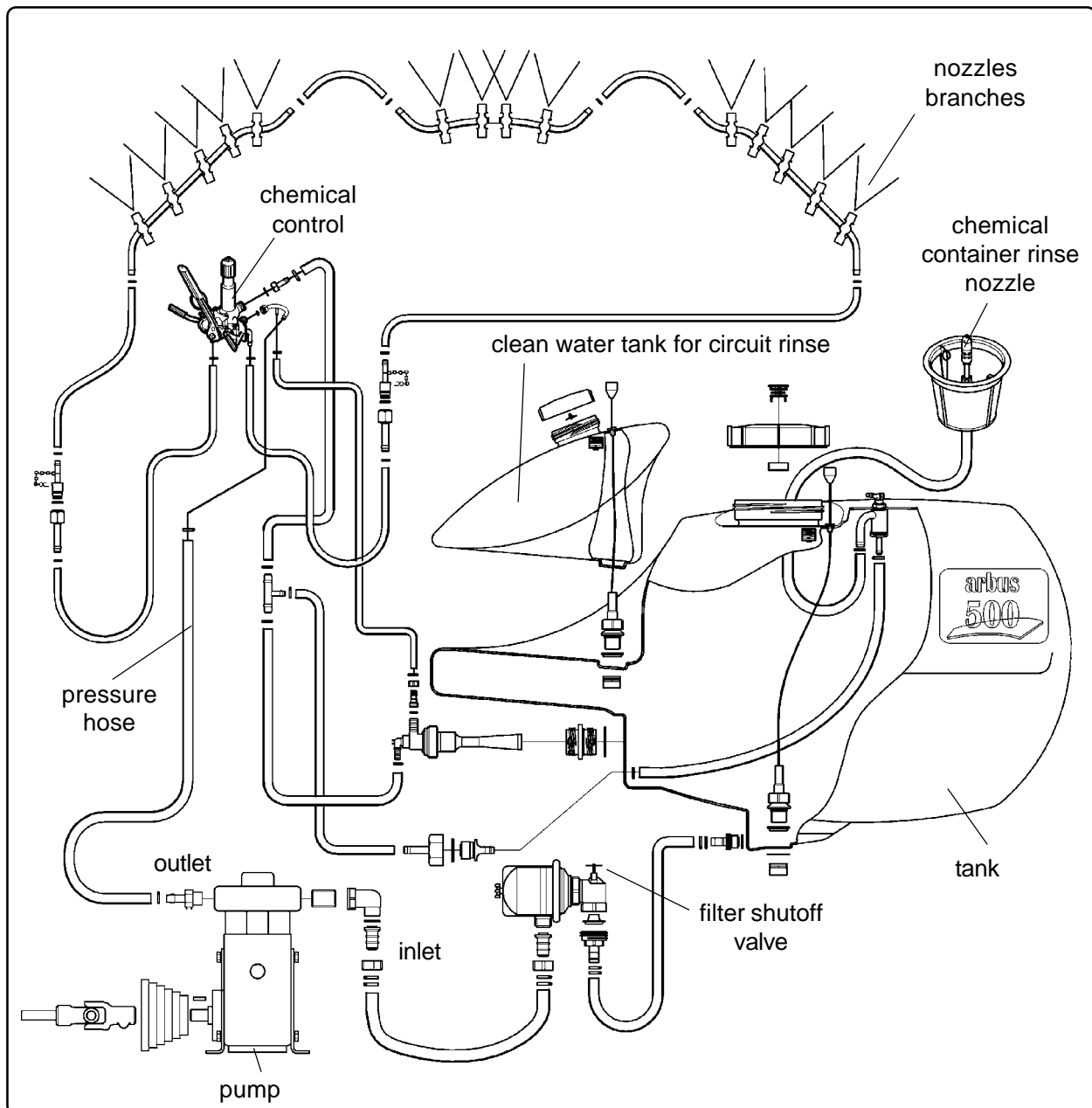
- 8- Turn the guard cone until the indicated position.

- 9- Install the lock screw.

MAINTENANCE

WINTER STORAGE

ATTENTION: In regions where temperatures drop to 0 degree Celsius or less, the water accumulated in the pump can freeze and cause serious damage.



PROCEDURES

- Empty the tank completely by removing the filter cap and opening the filter shut off valve.
- Disconnect the pressure hose from the pump or remove the outlet plug from the valve cover.
- Run the sprayer for about 30 seconds at half speed.

NOTE: To avoid damage, do not run the sprayer over the recommended time.

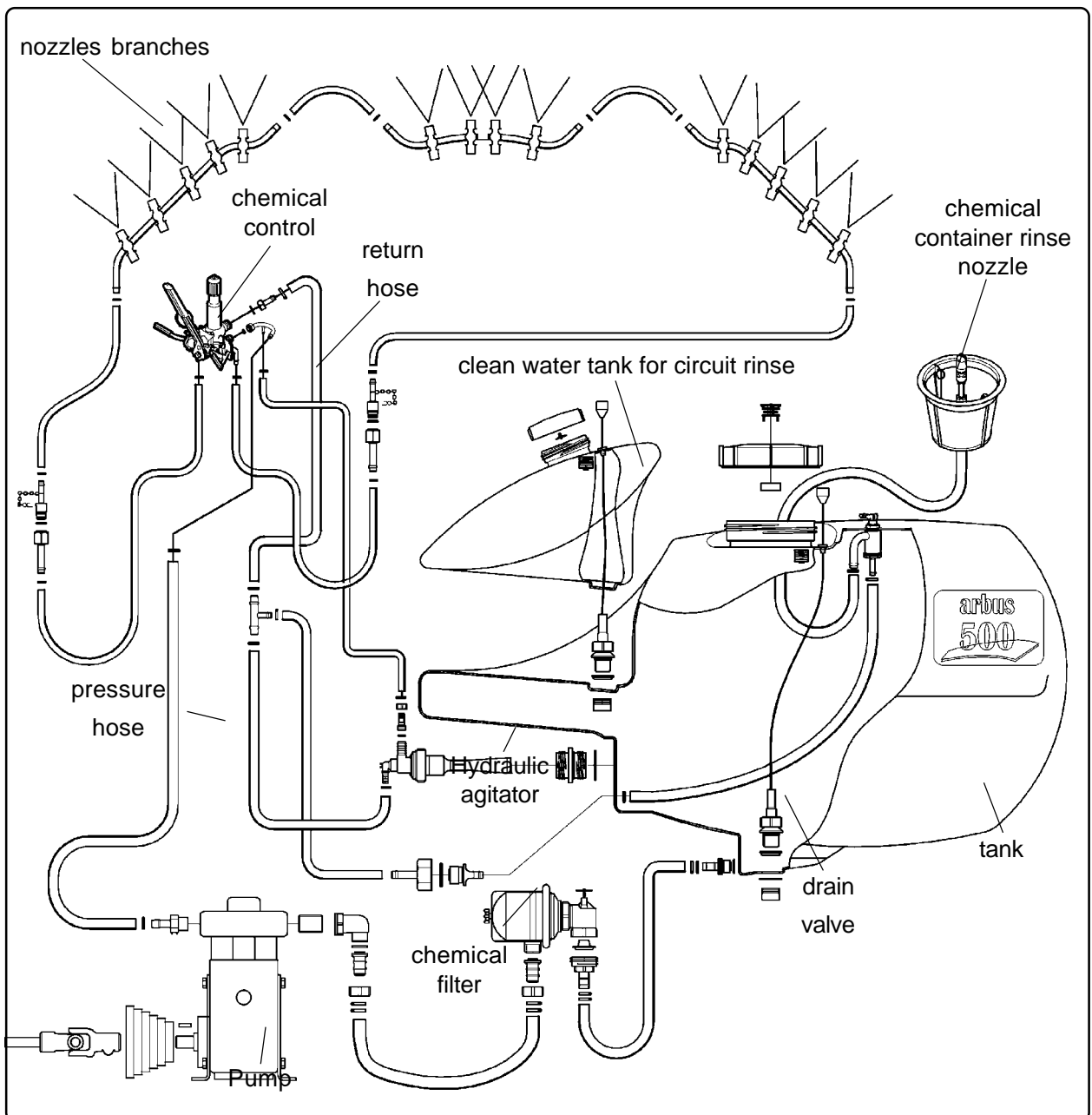
- Assemble the components again in their correct place.
- Repeat this operation at the end of each daily spraying job during the winter to avoid problems in future applications.

MAINTENANCE

TROUBLE-SHOOTING

COMPONENTS:

- Tank
- Chemical filter
- Chemical control
- Pump
- Hydraulic agitator
- Pressure hose
- Return hose
- Chemical container rinse nozzle
- Nozzle branches
- Drain valve
- Clean water tank for circuit rinse
- Chemical container rinse



PROBLEMS - CAUSES - SOLUTIONS

Whenever Jacto sprayers equipped with piston pumps present problems, try to classify them in one of the following four groups.

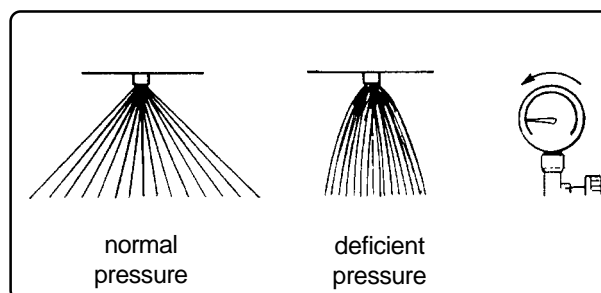
MAINTENANCE

a) LACK OF SUCTION AND PUMPING CAPACITY

No liquid flow through the nozzles.
 No return to the tank.
 Pressure gauge does not indicate pressure.

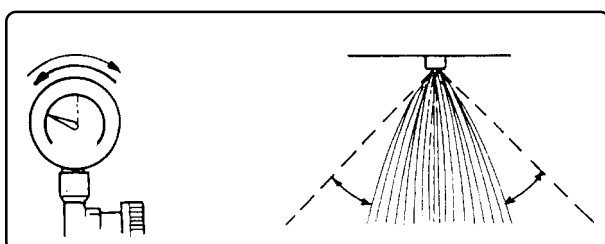
b) PRESSURE DEFICIENCY (PARTIAL LACK OF PRESSURE)

Desired pressure is not attained.
 Specified nozzle spraying angle is not attained.
 Pressure gauge shows lower pressure.



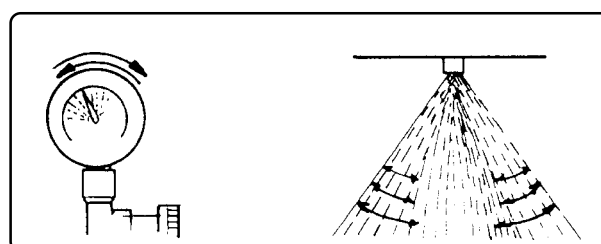
c) PRESSURE OSCILLATION

The pressure gauge needle oscillates.
 The nozzle spray angle oscillates.



d) INTERMITTENT PRESSURE

The pressure gauge needle vibrates with intensity.
 The pressure hoses vibrate with intensity.
 The nozzles spray angle varies.



a - LACK OF SUCTION AND PUMPING CAPACITY

| PROBABLE CAUSES | SOLUTIONS |
|-------------------------------------|--|
| 1- PTO not turning. | The sprayer should be run with 540 rpm at PTO. Check visually whether the pump is being run. |
| 2- Lack of water in the tank. | To run the hydraulic system, it is necessary to contain a minimum quantity of liquid, otherwise there will be no pressure. |
| 3- Filter shut off valve closed. | When the pump runs, liquid will pass through the valve even in the closed position, however it will be insufficient. Open it. |
| 4- Dirty filter. | Impurities in the filter prevent a free liquid flow. Clean the filter whenever filling the tank, or with more frequency depending on the quality of the water and the type of product applied. |
| 5- Obstruction in the intake hoses. | Check whether the hose connecting the filter to the pump is twisted. Check whether there is any obstruction in the hoses from tank to filter. Fill up the tank with water, open the valve and verify if it flows freely. |
| 6- Air in the system. | Check the filter packing ring. The filter should not leak. |
| 7- Insufficient pump suction. | Remove the cover of the suction valves. Check the condition of the valves and replace them if necessary. |

MAINTENANCE

b - PRESSURE DEFICIENCY

| PROBABLE CAUSES | SOLUTIONS | | | | | | | | |
|--------------------------------------|--|----------------------|-----------------------|---------------------|-----------------------|--------------------|-----------------------|---------------------|--|
| 1- - Low PTO rpm. | The proper PTO rotation is 540 rpm. | | | | | | | | |
| 2- Filter shut off valve closed. | When the pumps runs, liquid will pass through the valve even in the closed position, however flow will be insufficient. | | | | | | | | |
| 3- Filter partially obstructed. | The filter should be clean to allow free liquid flow. | | | | | | | | |
| 4- Intake hose partially obstructed. | A deficient pump will cause depressurization. Check wether the hose connecting the filter to the pump is twisted. Verify wether there is any obstruction in the hoses connecting the tank to the filter. Fill the tank with water, open the valve and observe if it flows freely. | | | | | | | | |
| 5- Air in the system. | Check the connections and the o'rings of the tank outlet and the pump inlet. | | | | | | | | |
| 6- Pressure regulator. | Check the valve and valve seat. | | | | | | | | |
| 7- Worn nozzles. | Check whether the nozzle flow is within the recommended guidelines. Replace the nozzles when the flow rate exceeds 10% of the specified. Use only nozzles recommended by the sprayer manufacturer. | | | | | | | | |
| 8- Pump with lower flow rate. | Disconnect the pressure hose from the control valve. Run the sprayer at 540 rpm. Collect water for one minute and measure. The volume collected should approximate this shown below for each pump model: <table style="width: 100%; border: none;"> <tr> <td>JP - 402 = 38 L /min</td> <td>JP - 100 = 100 L /min</td> </tr> <tr> <td>JP - 42 = 42 L /min</td> <td>JP - 150 = 150 L /min</td> </tr> <tr> <td>JP - 50 = 50 L/mim</td> <td>JP - 300 = 300 L /min</td> </tr> <tr> <td>JP - 75 = 75 L /min</td> <td></td> </tr> </table> | JP - 402 = 38 L /min | JP - 100 = 100 L /min | JP - 42 = 42 L /min | JP - 150 = 150 L /min | JP - 50 = 50 L/mim | JP - 300 = 300 L /min | JP - 75 = 75 L /min | |
| JP - 402 = 38 L /min | JP - 100 = 100 L /min | | | | | | | | |
| JP - 42 = 42 L /min | JP - 150 = 150 L /min | | | | | | | | |
| JP - 50 = 50 L/mim | JP - 300 = 300 L /min | | | | | | | | |
| JP - 75 = 75 L /min | | | | | | | | | |

c - PRESSURE OSCILLATION

| PROBABLE CAUSES | SOLUTIONS |
|------------------------------|---|
| 1- Loose belts. | Check belt tension and tighten if necessary. |
| 2- Air in the intake system. | Check for damaged hoses, filter packing rings, etc., and repair if necessary. |
| 3- Pressure regulator. | Check the regulator components and clean or replace them if necessary. |

d - INTERMITTENT PRESSURE

| PROBABLE CAUSES | SOLUTIONS |
|-------------------------------------|---|
| 1- Filter shut off valve closed. | When the pumps runs, liquid will pass through the valve even in the closed position, however flow will be insufficient. |
| 2- Pump valve deficiency. | Valve with sealing deficiency or stuck due to impurities. |
| 3- Pump head perforated internally. | Replace it. |

GUIDELINES

HANDLING AGRICULTURAL SPRAYERS AND CHEMICALS

We warn the owners and users that the UNREASONABLE USE of this sprayer and chemicals applied may cause damage to people, properties, animals and environment.

Read carefully and understand thoroughly this manual and the recommendations of the chemicals manufacturers.

Follow strictly the instructions for proper use of this sprayer and chemicals to ensure more safety and efficiency when spraying your crops.

AFTER SPRAYING

ATTENTION: Avoid leaving chemical mixture residues in the tank. For the last pass, prepare the chemical solution in enough quantity to spray the remaining of the crop.

- Empty completely the tank and wash thoroughly the sprayer in a proper decontamination place.
- Wash the inside and outside of the sprayer with clean water and detergent.
- Disassemble and clean each nozzle assembly with fine brush, water jet or compressed air.
- Dry, lubricate and store the sprayer in a dry and covered place.
- Repaint the damaged metallic parts to prevent corrosion.
- Spray the mettalic parts with lubricating oil to prevent corrosion.
- Take off and wash the individual protective clothing separately from other clothes.

DANGER

SAFETY OBSERVATION

OPERATING THIS SPRAYER WITHOUT FOLLOWING THE INSTRUCTIONS MAY RESULT IN SERIOUS INJURY OR DEATH.

STATEMENT OF LIMITED WARRANTY

MÁQUINAS AGRÍCOLAS JACTO S.A. warrants the equipment described herein and agrees to repair or replace parts and components which, under normal operation and wear, following the technical recommendations, show DEFECTS IN MATERIAL OR WORKMANSHIP.

WARRANTY PERIOD:

- One (1) year from the purchase date by the original retail purchaser.

WARRANTY APPLICATION:

Jacto or its authorized representative shall honor this warranty, if any part or component shows confirmed defect in workmanship.

IT SHALL BE UNDERSTOOD THAT THE REPLACEMENT OF COMPLETE COMPONENTS SUCH AS PUMPS, CONTROL VALVES, ENGINES, TRANSMISSIONS, HYDRAULIC PISTONS AND SIMILAR ONES SHALL ONLY BE PERFORMED IN CASE THAT THE DEFECT CANNOT BE REPAIRED BY REPLACING PARTS AND/OR PIECES OF THE COMPONENT.

THIS WARRANTY IS NULL AND VOID IF:

- Equipment is not used in accordance with the INSTRUCTION MANUAL, overwork or accidents.
 - Improper preventive maintenance or performed by unauthorized people.
 - Modification of the equipment in any way from the original design.
 - Change, damage, or loss of the product identification plate.
 - Utilization of parts and components not supplied by JACTO.
- PRODUCT REGISTRATION CARD MUST BE COMPLETED BY THE ORIGINAL RETAIL PURCHASER, AND RETURNED TO JACTO DEALER WITHIN 30 DAYS OF PURCHASE DATE.

WARRANTY EXCLUSIONS:

- Parts considered as normal maintenance such as: filtering elements, belts, hoses, nozzles, pistons, pressure gauges, as well as usual maintenance, adjustments, retightening, lubrication and painting.
- Parts which show wear or tear due to use, UNLESS THEY SHOW DEFECTS IN WORKMANSHIP, ASSEMBLY OR MATERIAL.
- Hydraulic, lubricating oils and grease.
- Injuries of personal or material nature to the user, owner, or third parties.
- Additional charges resulting from paralyzation and repair of the equipment.
- Freight charges, pick up and delivery charges.
- Damages of any nature resulting from action of gases or liquids used in the equipment.

GENERAL INFORMATION:

- Defective parts replaced under warranty period shall be property of JACTO.
- Eventual delays in performing services do not confer to the owner the right to indemnity or to extension of the warranty period.
- JACTO reserves the right to change its products or to interrupt manufacturing the equipment.
- THIS LIMITED WARRANTY shall be understood by its expressed terms, and no one in anyway subject to JACTO shall be authorized to modify or amplify the conditions prescribed herein.
- In case of need for warranty request, call for the authorized dealer supplying all information required for a prompt compliance. Do not forget the identification of the equipment, total hours of work, and the noticed defect.

FOR THIS WARRANTY TO BECOME EFFECTIVE THE PRODUCT REGISTRATION CARD FOUND IN THE INSTRUCTION MANUAL MUST BE FILLED IN AND RETURNED TO YOUR JACTO DEALER. THIS CARD MUST BE SIGNED BY THE ORIGINAL RETAIL PURCHASER, INDICATING THAT HE HAS READ AND UNDERSTOOD ALL SAFETY AND OPERATIONAL INSTRUCTIONS IN THE MANUAL. FURTHER THE RETAILING DEALER HAS EXPLAINED TO THE ORIGINAL RETAIL PURCHASER ALL SAFETY INSTRUCTIONS. IN NO CASE WILL WARRANTY BE SUPPLIED UNTIL THIS CARD, PROPERLY COMPLETED AND SIGNED, IS ON FILE WITH JACTO RETAILING DEALER.



PRODUCT REGISTRATION CARD

INVOICE NUMBER: _____ DATE: ____ / ____ / ____

RETAILING DEALER: _____

PHONE: _____ CITY: _____ STATE: _____

SPRAYER: _____ MODEL: _____

SERIES: _____ SPRAYER No.: _____ PUMP No.: _____

ORIGINAL RETAIL PURCHASER: _____

ADDRESS: _____ PHONE: _____

CITY: _____ STATE: _____

PURCHASE DATE BY THE ORIGINAL RETAIL PURCHASER: ____ / ____ / ____

THE WARRANTY IS IN FORCE AS OF THIS DATE: ____ / ____ / ____

RETAIL PURCHASER SIGNATURE: _____

Original retail purchaser's copy



PRODUCT REGISTRATION CARD

INVOICE NUMBER: _____ DATE: ____ / ____ / ____

RETAILING DEALER: _____

PHONE: _____ CITY: _____ STATE: _____

SPRAYER: _____ MODEL: _____

SERIES: _____ SPRAYER No.: _____ PUMP No.: _____

ORIGINAL RETAIL PURCHASER: _____

ADDRESS: _____ PHONE: _____

CITY: _____ STATE: _____

PURCHASE DATE BY THE ORIGINAL RETAIL PURCHASER: ____ / ____ / ____

THE WARRANTY IS IN FORCE AS OF THIS DATE: ____ / ____ / ____

RETAIL PURCHASER SIGNATURE: _____

**URGENT
RESPOND WITHIN 30 DAYS
FIRST CLASS POSTAGE REQUIRED**