J - 2000
J - 2000 TANDEM

English version / MI_USA- 0326

EDITION Nº 03/2016
CODE: 928085

WARNING!

Thoroughly read and understand the Operator's Manual before setting up, operating, or maintaining the sprayer. Failure to follow safety precautions in this manual and labels on the product could result in serious injury or death to the operator or bystanders.

This manual should be kept on or near the sprayer at all times for future reference. If the owner's manual or labels are damaged or illegible, contact your Jacto dealer or Jacto at the address below for a replacement.

Operator's Manual

JACTO INC.
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Introduction

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

Since applying agrochemicals can present risks to humans, the environment and to crops, Jacto wants to ensure the operator uses it in a proper, efficient, and safe manner.

Thoroughly read and understand this manual before operating this sprayer. Always keeps this manual on or near the sprayer at all times for quick reference for the proper operation, maintenance and adjustments to the sprayer.

If you have any questions, contact your Jacto dealer.

ATTENTION!

The J-2000 was developed exclusively for chemical spray application.

The J-2000 sprayer manual refers only to instructions of use and maintenance of parts and components manufactured by Jacto.

Read it carefully and follow strictly the instructions.

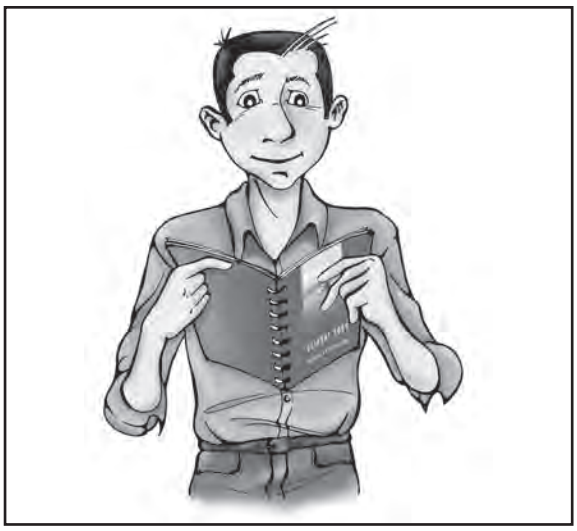
If you have any questions, please contact your Jacto dealer.

> Identification plate

Your sprayer has a plate showing the 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.



This chapter of the manual instructs the operator with the proper safe methods of operating the sprayer.

This equipment was developed to provide maximum efficiency, easy operation and safety.

Always follow the information provided in the owner's manual. If you have any questions, please contact us.

The symbols and their definitions used in this manual are listed as follow:

ATTENTION: Warns of the potential risks and demands constant attention from the operator.

NOTE: Reminder or warning.

OBSERVATION: Warning or clarification of certain instructions or situations.

By not adhering to the safety procedures, you are risking your life and all the people around you.

> Operator and owner's responsabilities

According to the standard NR31 - Safety and Healthy Regulation Standard in the Agriculture Work, it is responsability of the equipment's owner and operator to follow the chemical application safety guidelines.

Operator's responsabilities

· Always follow the safety procedures when operating the equipment.

· Always operate the equipment within the limits and restrictions indicated in this manual.

· Thoroughly read and understand this manual prior to using the equipment.

Owner's responsabilities

· The equipment's owner must keep the owner's manual on or near the equipment at all times for the operator's reference.

· It's the employer responsability to provide, properly maintain and train the operator regarding the use and requirements for adequate IPE (Individual Protection Equipment).

· The employer must to replace or repair the equipment's components in the event of failure to ensure the safe operation of the sprayer.

· The employer will be responsible for the operator's training to ensure a safe application.

> Environmental responsibilities

ATTENTION!

It is responsibility of the sprayer owner and sprayer user/operator to comply with the laws and regulations in effect. The sprayer owner or the person responsible shall provide information to operators on environmental risks and how to care for the environment.

Jacto recommends wearing approved and proper PPEs whenever operating the sprayer.

• It is responsibility of the sprayer owner to comply with the laws and regulations in effect.

• Waste such as contaminated parts, electrical and electronic components, and others when equipment (sprayer) is dismantled after rendering services, being serviced or a the end of their useful lives must be disposed of in a way that respects the environment, avoids air, water and soil pollution.

• If necessary, residues must be stored in proper places and later collected by trained and authorized employees or companies.

• Principles for environmental protection, recycling and proper disposal of equipment, its parts and components must be respected taking into consideration the legislation in effect (municipal, state and federal) as well as guidelines to dispose of parts, components or any other item of the equipment.

• Batteries must be properly disposed of in places which have been approved to collect such material. Legally speaking, places that sell new batteries can collect used ones and take them to recycling centers or to their manufacturers. If you are not sure how to dispose of batteries in an environmentally sound manner, JACTO suggest contacting their manufacturer for further information.

• JACTO recommends wearing proper and approved PPEs at all times when handling the equipment.

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

Before operating the equipment, identify and understand all decals, listed on the next few pages.

Keep all decals clean, legible and in good condition. Replace any decal immediately if damaged. Refer to the part numbers listed below when ordering replacement decals by ordering them through the part numbers specified below.

P/N: 276220

ATTENTION: Lubrication point.

P/N: 276238

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

P/N: 389387

ATTENTION: Drain point.

P/N: 395061

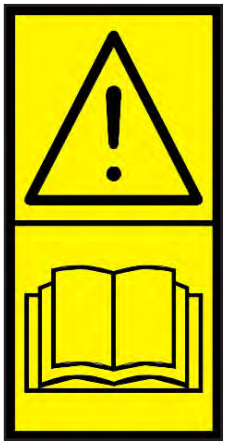
ATTENTION: Lubrication point with oil.

P/N: 379230

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

P/N: 379065

ATTENTION: Risk of serious injuries. Keep all protection devices in its places.

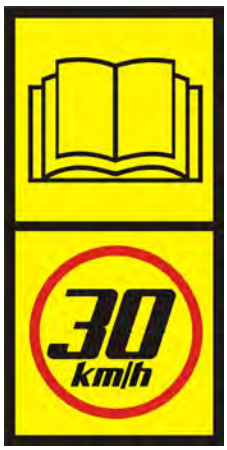


P/N: 379248

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

P/N: 380014

ATTENTION: Do not get into the main tank of the sprayer.



P/N: 379214

ATTENTION: Maximum speed allowed for the sprayer is 18 mph.

P/N: 379131

ATTENTION: Required use of protective clothing.

P/N: 379008

ATTENTION: Risk of serious injuries. Do not make any operation on the PTO shaft if the PTO is engaged.

P/N: 379222

ATTENTION: This sprayer is not designed for highways.

P/N: 379107

ATTENTION: Hydraulic oil level indicator.

P/N: 379115

ATTENTION: Required use of protective mask.

P/N: 169128

ATTENTION: Never operate the valve of the chemical rinse nozzle if the container is not fully positioned over the rinse nozzle.

P/N: 013169

Final test of the equipment.

ATTENTION: Required use of hearing protector.

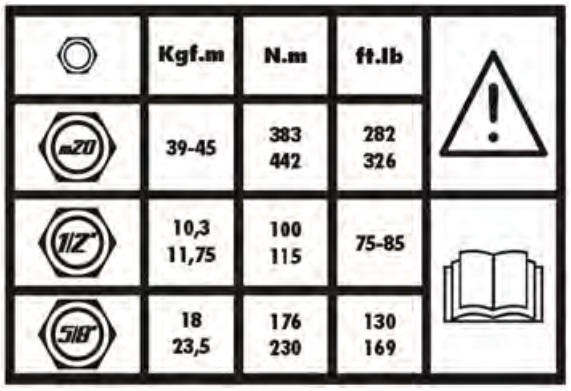
P/N: 379123

Instructions to connect the PTO shaft

P/N: 428631

Instructions to adjust draw bar.

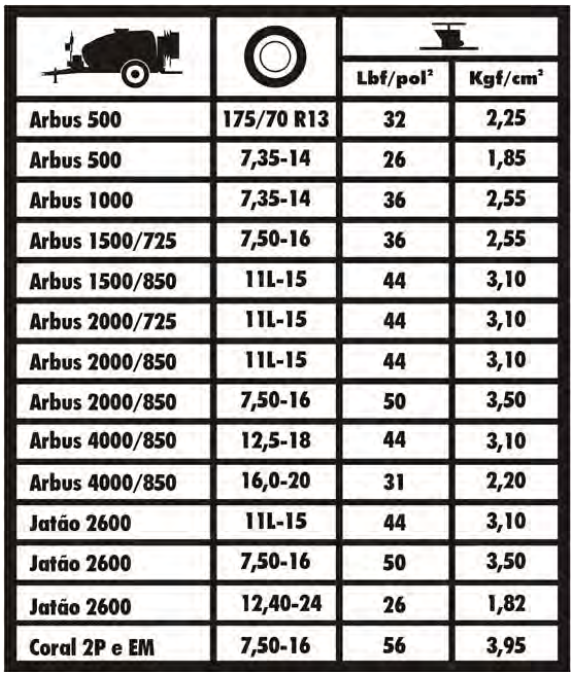
P/N: 219717



	Kgf.m	N.m	ft.lb
M20	39-45	383 442	282 326
1/2"	10,3 11,75	100 115	75-85
5/8"	18 23,5	176 230	130 169

ATTENTION: Torque Specification table.

P/N: 379164



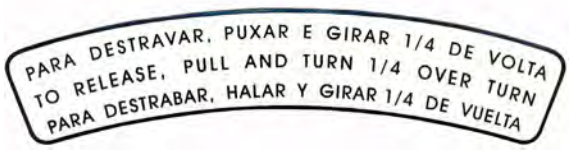
		Lbf/pol²	Kgf/cm²
Arbus 500	175/70 R13	32	2,25
Arbus 500	7,35-14	26	1,85
Arbus 1000	7,35-14	36	2,55
Arbus 1500/725	7,50-16	36	2,55
Arbus 1500/850	11L-15	44	3,10
Arbus 2000/725	11L-15	44	3,10
Arbus 2000/850	11L-15	44	3,10
Arbus 2000/850	7,50-16	50	3,50
Arbus 4000/850	12,5-18	44	3,10
Arbus 4000/850	16,0-20	31	2,20
Jatão 2600	11L-15	44	3,10
Jatão 2600	7,50-16	50	3,50
Jatão 2600	12,40-24	26	1,82
Coral 2P e EM	7,50-16	56	3,95

ATTENTION: Tire pressure table.

P/N: 391631

Identification plate

P/N: 047035



Instructions to unlock the fan.

P/N: 018705

Decal "Jacto" fan

P/N: 1180095

Decal "Jacto" left side

P/N: 1180096

Decal "Jacto" right side

P/N: 1180097

· Only qualified operators that have thoroughly read and understood the owner's manual should operate the J2000;

· Before operating the sprayer, it's very important to understand all the information in this manual. If you have any questions, please contact Jacto.

· Do not take alcohol or drugs before or during operation of this sprayer.

· Whenever handling chemicals, always use approved Individual Protective Equipment (IPE). For example: long sleeve coveralls, water resistant gloves, hats, boots and specially design mask with filter for the type of chemicals being applied.

· Never come into contact with any part of the sprayer that has been in contact with chemicals without the use of IPE that is approved in accordance with the chemical manufacture's label.

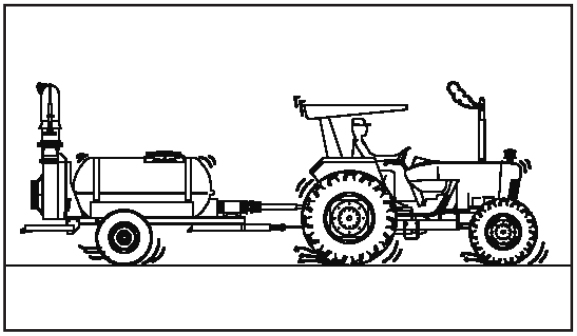
· If you're using a cab tractor with approved filtration air conditioning system, clean or remove any contaminated clothing or shoes before entering the cab.

· Use only breathing apparatus or mask that is approved and recommended by the chemical manufacturer.

· Avoid areas with obstacles such as rocks, bumps, low lying limbs, electric power lines, etc.

· Operating the sprayer in areas and conditions not approved by the manufacturer may cause pre-mature failure of the components. Jacto does not warranty components that fail due to misuse. Jacto is not responsible for any accident or consequences that may occur in operation of the sprayer in an unapproved condition or area.

· Always park the sprayer on level ground and block the tires securely.



· Always keep the step and handrail clean and free of oil and grease to prevent injury.

· If the sprayer is in need of repair do not operate it until all repairs are completed.

· If the sprayer is used irresponsibly or improperly, accidents may occur.

· Do not climb on the sprayer when in motion.

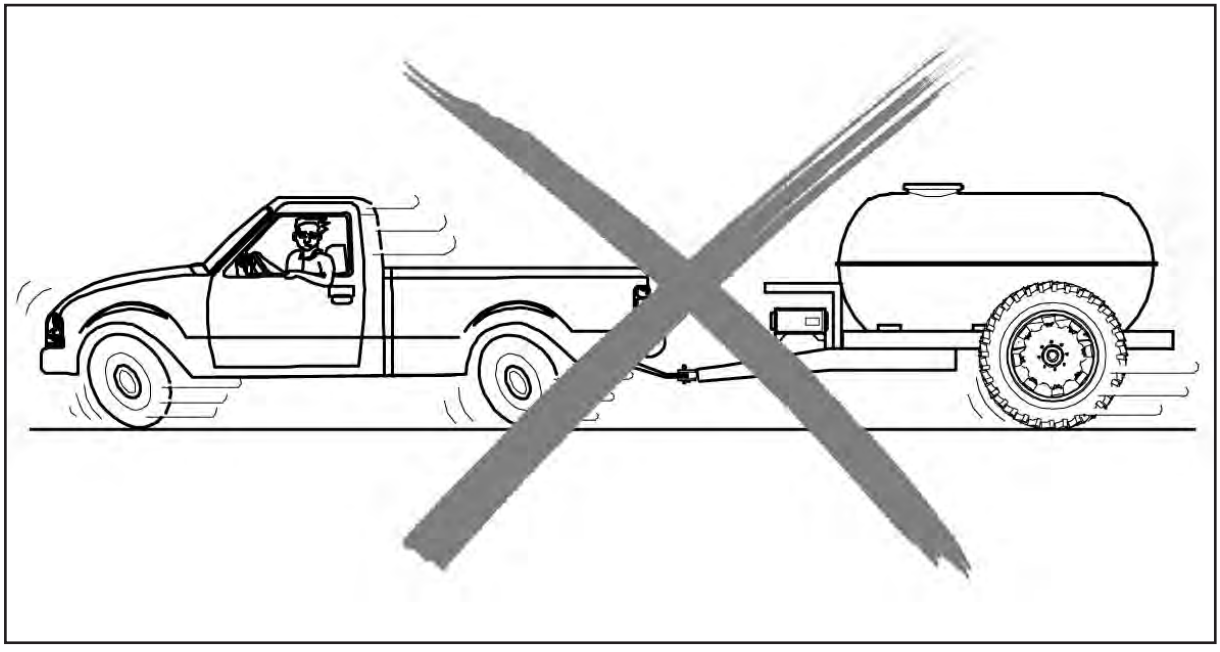
> Operational safety

• Do not travel at high speeds.

· This equipment was designed and manufactured to support operations in the crops and inside the farms within the speed limit recommended by Jacto (limit of 6 MPH on the farm and 4 MPH when spraying). The use of the sprayer above the limits mentioned is not approved by Jacto.

· Jacto neither recommends nor approves the towing or moving of the sprayer by vehicles, except with recommended tractors in the above mentioned conditions.

· The use in adverse and not recommended conditions can cause damage to the sprayer and components and will void the warranty. Any accident or consequences caused in this type of conditions is not the responsability of Jacto.



> Warning when connecting the sprayer to the tractor's drawbar.

· Check the owner's manual prior to do this operation. The following warnings are related to connecting the J2000 to the tractor. Refer to the tractor manufacture's operator's manual for warnings related to the components and adjustments for the tractor.

· The information related to the correct adjustment of the draw bar and proper procedures for connecting the sprayer to tractor are found in the "Assembly" chapter of this manual.

· Before connecting the sprayer make sure the tractor's parking brake it set firmly, the engine is turned off and the key is removed from the ignition.

· After connecting the sprayer to the tractor, position the sprayers jack in the horizontal or working position.

ATTENTION!
Ignoring the safety practices, you're risking your life and all of those around.

This manual contains important safety information. Read it carefully, and be aware of any possibility of personal accident. Keep all the decals on the machine and replace them, if necessary.

· The incorrect handling by untrained personnel can cause serious injury or death.

· Do not make any alternations or modifications to the sprayer as this can compromise the equipment and risk your life.

· Do not allow children, eldery or animals close to the equipment during it uses, maintenance or even with the equipment stored.

· Keep hands, feet, loose clothes and long hair far from moving parts.

· Before executing any type of service, adjustment or maintenance to the sprayer, turn off the PTO shaft and the tractor's engine.

· Always use all recommended Individual Protective Equipment (IPE) even if the equipment has been washed and appears clean, as there still could be chemical residue on the sprayer.

· Do not touch PTO shaft, belts, fan or any other moving part of the equipment with the PTO shaft engaged or the tractor's engine running.

· Always disconnect the sprayer on firm level ground and firmly secure it with wheel chaulks.

· Do not run the pump dry.

· Do not exceed 540 rpm at the PTO.

· Keep the machine always in perfect condition.

· Be aware and understand the safety decals on the sprayer as they warn about the risk of damage or accident that can happen to the operator or to the equipment.

· Request a JACTO representative during the technical delivery of the equipment for the proper assembly instructions, maintenance, warranty instructions to be carefully explained.

· **Never operate the sprayer without the PTO shaft shield in place.**

> Warnings when parking the equipment

· Avoid parking the sprayer on uneven or hilly terrain.

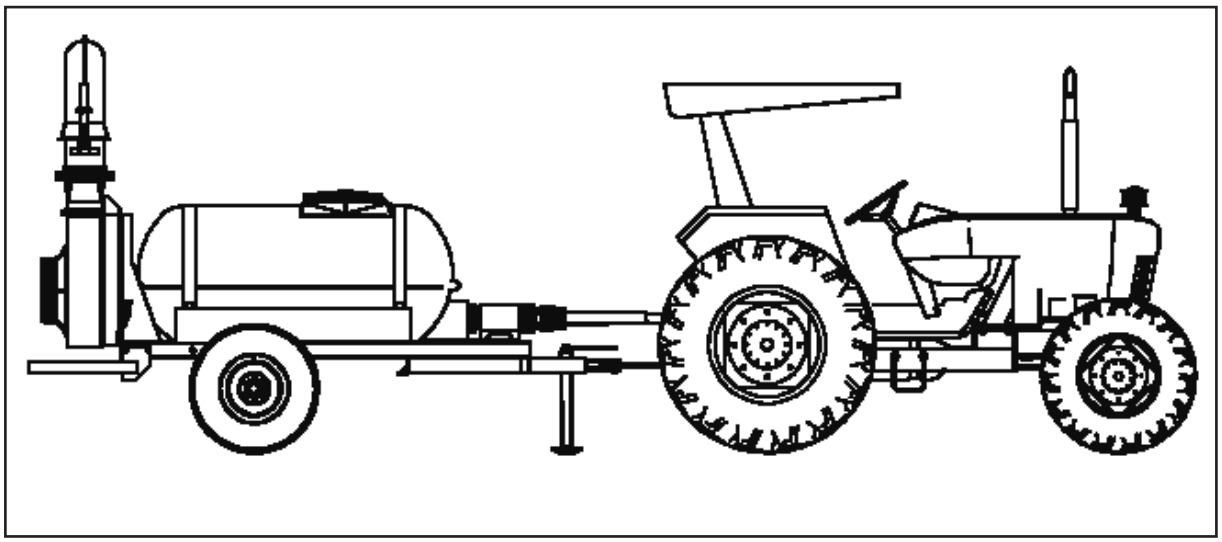
· When parking the sprayer activate the tractor's parking brake, block the equipment and tractor's tires.

· Park the equipment in a place far from working area that offers you the best and safest conditions.

· Do not park in areas when the surface is slick or not firm.

· If for any reason the equipment can't be moved, call for a technical assistance. Do not try to make alteration or changes to the equipment.

· Always disengage the PTO shaft before turning off the tractor's engine.



> Warning for adjusting and connecting PTO shaft to the tractor

· Check the tractor's owner's manual prior to performing this operation.

· Turn off the tractor's engine, activate the parking brake and remove the key from the ignition, before connecting the PTO shaft to the tractor.

· Check the length of the PTO shaft and adjust if necessary. Refer to "Adjusting the PTO Shaft" in chapter 2 of this manual for this procedure.

· When connecting the PTO shaft to the tractor make sure the retaining pin is fully engaged.

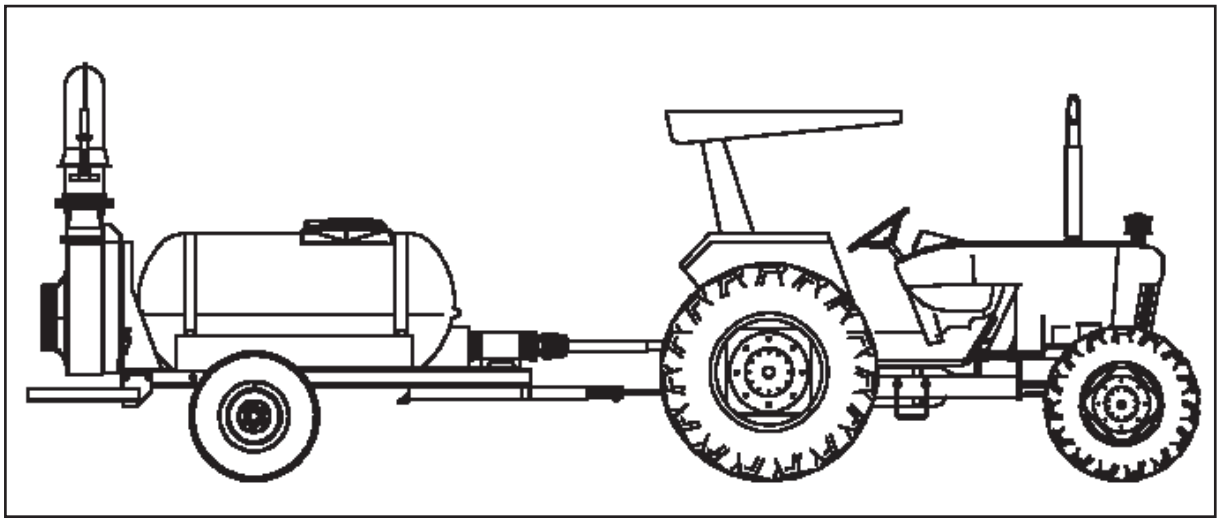
· Clean and lubricate the PTO shaft components before operating.

· **Never use the PTO shaft without the shield.**

· The PTO is specifically designed for use of the J2600. It's not recommended to use the PTO shaft for other equipment.

· Secure the safety chain for the PTO shaft shield on the tractor; the chain will keep the PTO shaft shield from spinning.

· Before engaging the PTO shaft, fill the tank.



> Fresh water tank for hand wash

· The fresh water tank on this sprayer is for washing hands only. Only use clean water when filling this tank. The use of soap or solutions are prohibited.

· Do not in any circumstances use the water for drinking.

· It's extremely important to keep this tank always full.

> 550 Gallon tank

Instruction for filling the tank are explained in chapter 4 "OPERATIONS AND ADJUSTMENTS" in this manual. The warnings when filling the tank are the as follow:

· When filling the 550 gallon tank, it's important that all personnell involved use the recommended IPE. It's important to read the chemical's label before filling the tank. On the label you'll find important information regarding the product, warning, etc.

· Prior to filling the tank, make sure that the drain cap is tight.

· Never remove the filling hose with the filling valve opened or overflow or spillage may occur.

· The residue in the filling hose must be removed and returned to the tank. Clean up any spillage.

· When filling the sprayer tank, use an appropriate area away from any pond, stream, rivers etc. to keep from polluting the enviroment.

· Avoid using water from rivers, lakes, etc.

· Following these recommendations will save the environment.

1 • READ the operator's manual for the sprayer: To spray efficiently it is necessary to thoroughly understand the proper operation and adjustment of the sprayer. This will help avoid the misuse and wasting of chemicals and the desired result will be obtained.

2 • Correct ADJUSTMENT of the sprayer: The adjustment of the sprayer is a simple operation. The best applications will only be obtained if the sprayer is adjusted properly.

3 • USE appropriate individual protective clothing equipment: When handling chemicals or preparing the chemical mixture, use individual protective clothing equipment recommended by the agrochemical manufacturer. After spraying, take a shower and change your clothes. Wash the working clothes immediately and separately from other clothes to remove the chemical residues.

Wash at least 15 minutes with running water any part of the body that have come in contact with the agrochemicals. Remember that most poisonings occur during the preparation of the chemical mixture when the chemical is still concentrated.

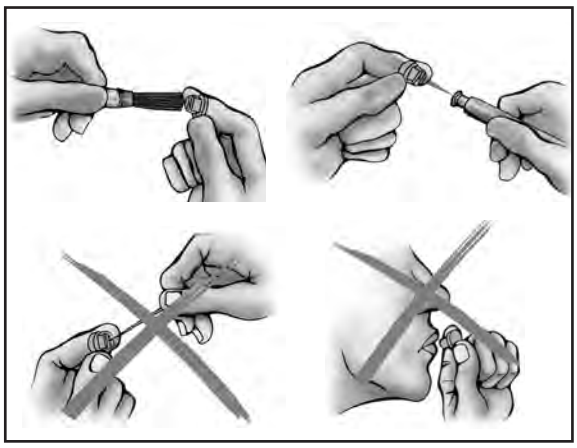
Do not wear or store any individual protective clothing that is used to handle or prepare the chemical mixture in the cab of the tractor to prevent contamination.

Use only masks that are approved by the agrochemical manufacturer when spraying.

4 • USE the sprayer in perfect conditions: Check if there is no leakage. If any, eliminate it. Check and repair any leaks before operating the sprayer. Leaks do not only cause agrochemical waste but also irregular spraying and environment contamination.

] 5 • USE the appropriate nozzle: Each agrochemical has an appropriate nozzle for its application. Keep in mind that weather also has influence when choosing the nozzle. The spraying volume can vary from one chemical to another. Contact your chemical manufacturer to choose the ideal nozzle.

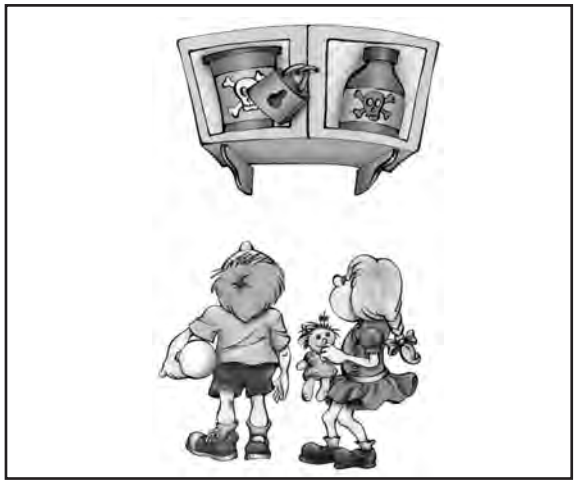
6 • NEVER blow through nozzles, valves or pipelines by mouth. For this operation use protective gloves. All spraying equipment has agrochemicals residues. Never put spraying parts in touch with mouth. This is the quickest way to be poisoned on or near your mouth. If it is necessary to clean the nozzles, use a nylon bristle brush.



7 • NEVER contaminate water sources. The sprayer must be filled in proper places or through vehicles (trucks, etc.) designed for this operation. Avoid using water from rivers, lakes, dams, streams, etc. PROTECT THE ENVIRONMENT.

8 • NEVER eat, drink or smoke when handling the chemical or spraying. Never keep food next to the sprayed area.

9 • KEEP children, animals and unprotected people away from the sprayed area. Never allow children or other unsolicited people to remain in the area of chemical handling or application.



10 • APPLY only the recommended rate: The application rates recommended by the manufacturers must be followed. Any change in the application rate or error in calculating can damage the crop or the environment. Never use chemicals on crops for which they are not recommended.

11 • NEVER spray when the wind is strong: spraying in high winds can prevent the agrochemical from reaching the target and create poor distribution to the crop. High winds can cause the chemicals to drift away from the crop and endanger water, people, animals and the environment. Never spray if the wind speed is over 7 MPH. A good application can be obtained when the wind speed is between 2 and 5 MPH and the temperature is between 45 and 86°F and the relative humidity is over 55%.

12 • RINSE the chemical containers before discarding them: After preparing the chemical mixture, rinse for at least 30 seconds.

13 • NEVER reuse empty chemical containers: Even after rinsing the chemical containers multiple times, the chemical residue can still exist. Never burn empty chemical containers. Make them useless by piercing their bottom and store them in a safe place until they can be properly disposed of.

14 • NEVER fill the sprayer tank completely to the top. This will help avoid chemical leakage and the possible poisoning of the operator and contamination of the environment. Fill the tank up to the maximum level indicated by its level indicator.

15 • WHEN TRANSPORTING agrochemicals: Never transport them with food or animal's food, etc. Never buy leaking chemical containers. Never buy or use agrochemicals that have expired. Never carry agrochemicals inside the tractor's cab. In case of accident that causes leakage, take measures to prevent the agrochemical from reaching lakes or rivers. Inform the authorities and the agrochemical manufacturer.

16 • When STORING chemicals: Always store the chemicals in a secure area and out of reach of others. Contact the chemical manufacturer for the recommended storage facility.

17 • SYMPTOM of poisoning: fainting, anxiety, convulsions, weakness, headache, dizziness, impaired vision, sickness, stomachache, diarrhea, discolored urine, eye nose and throat irritation, coughing, watery eyes, etc.

18 • FIRST aid: Contact a doctor immediately and refer to the instructions on the chemical's label regarding first aid. Call a doctor.

Knowing and following of recommendations in this manual will minimize the cost of maintenance and increase the equipment life.

· Maintenance procedures must be done by trained and qualified professionals. Use individual protective clothing recommended by the chemical manufacturer when repairing or maintaining this sprayer.

· Use original parts, to ensure the best operation of the equipment.

· Maintenance repair must be performed with the equipment connected to the tractor, with the tires blocked and the tractor's engine and the PTO off.

· Do not modify or alter the sprayer when performing maintenance or repairs.

· Filters and lubricating oils must be checked periodically and changed when necessary or recommended.

· All maintenance involving the hydraulic system must be done after removing the pressure from the circuit. Always use extreme caution during this type of maintenance.

· The identification of possible leakage must be done with paper, and never by hand.

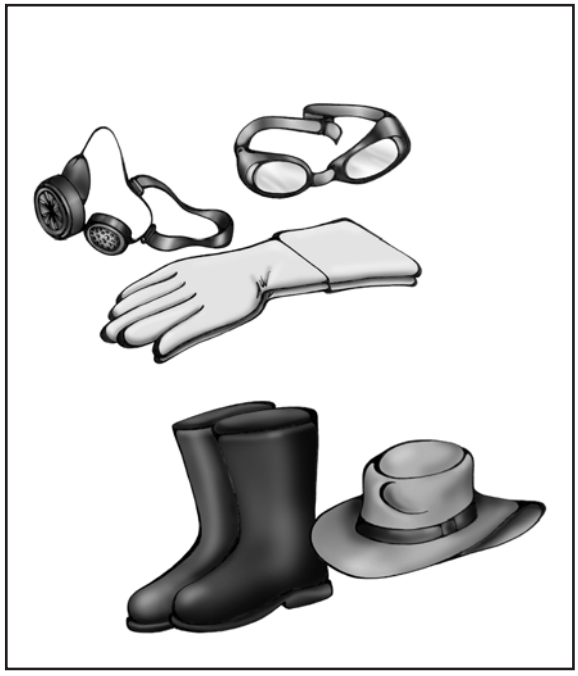
· When the equipment is connected to the tractor and to the PTO, be careful and stay away from the equipment's moving parts; all protective shields and equipment must be maintained and properly installed at all times. If you have any question, call for technical assistance.

· Always keep the labels on the machine in perfect conditions. They provide important warning and recommendations.

· The removable protectors must be removed only for maintanence, lubrication or adjust purposes. Never operate the sprayer with the protective shields or guards removed.

· Lubricating the sprayer must be done by trained and qualified person. Use individual protective clothing equipment recommended by the chemical manufacturer when repairing or maintaining this sprayer.

· Do not get into the sprayer's tank. If necessary call for technical assistance.



Different working conditions lead us to adopt the following criterion for choosing the tractor that will drive the J2000 cannon sprayer.

· Check the sprayer weight on the identification plate.

· Check the tank capacity.

· Check the total PTO power consumption of the sprayer in the specification table.

Example:

Sprayer weight = 2006 lbs
Tank capacity = 550 gallons
Total power consumption = 26.7 HP

> Choosing the tractor considering the 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 = 26.7 HP
Minimum tractor nominal power = 60 HP

> Choosing the tractor considering the load to be transported

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

Ex: Sprayer net weight = 2006 lbs
Full tank weight = approximately 4409 lbs (550 gallon tank)
Sprayer gross weight = 6415 lbs
Tractor gross towing capacity = 6415 lbs or more

> Choosing the tractor considering the auxiliary hydraulic system

· Two sets of remote hydraulic ports on the tractor is required to move the duct.

ATTENTION!

In this case the recommended tractor should have minimum nominal power of 60 HP and a minimum gross towing capacity of at least 6415 lbs.

> Adjusting the drawbar

· Fit the drawbar pin into the proper hole (1 or 2) to vary the distance between the PTO shaft and the hitch point (see figure A). See table below to determine appropriate hole to use.

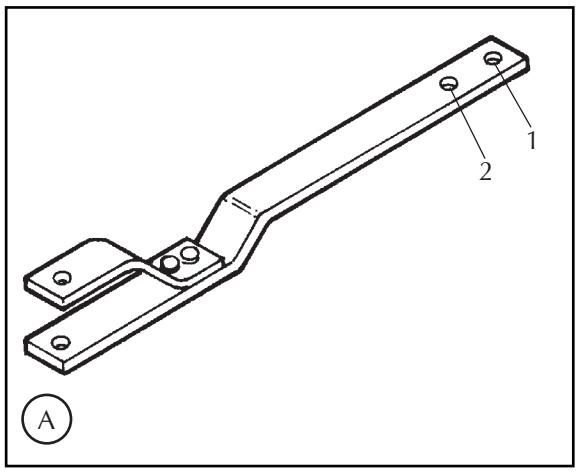
NOTE:

For heavy loads, the hole no. 2 is recommended (see figure A).

Hole	Distance between the PTO shaft and the hitch point	Maximum (static) tongue weight
1	13.7 in	1003 lb
2	9.8 in	1300 lb

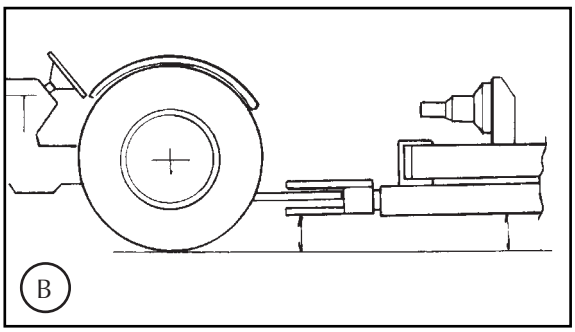
ATTENTION!

The figures shown in the above table applies to a 63 HP tractor. For more details, consult the tractor's operator's manual.

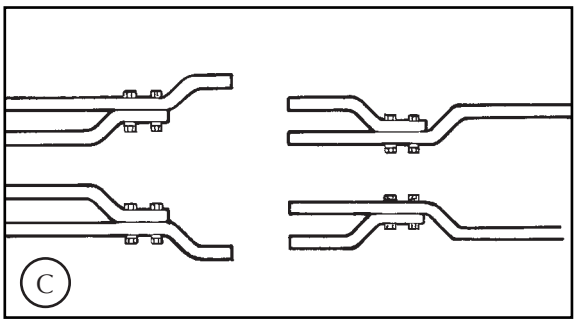


> Adjusting the sprayer height and the tractor's drawbar

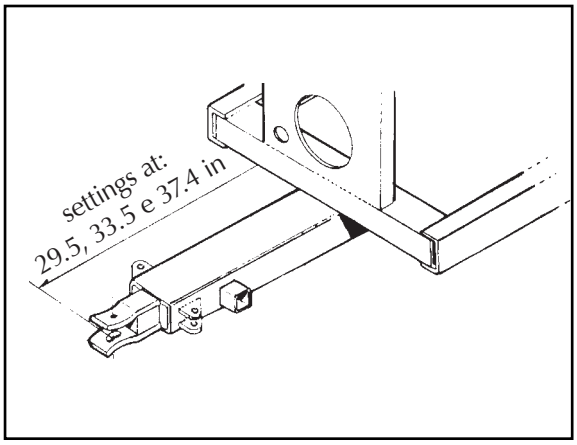
· Adjust the tractor's drawbar so the sprayer is level after it is connected (see figure B).



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



> Adjusting the sprayer's tongue

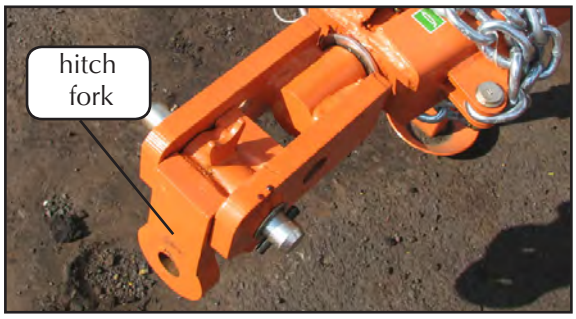


· The sprayer's tongue can be adjusted from 29.5 to 37.4 in , as shown in the figure on the left.

NOTE:

To calculate approximate tongue weight (lbs) applied on the tractor's drawbar add the sprayer's weight to the tank capacity and multiply the total by 0.12.

> Connecting the sprayer to the tractor



With the draw bar in the chosen position (see draw bar adjustment), perform the connecting procedure as follow.

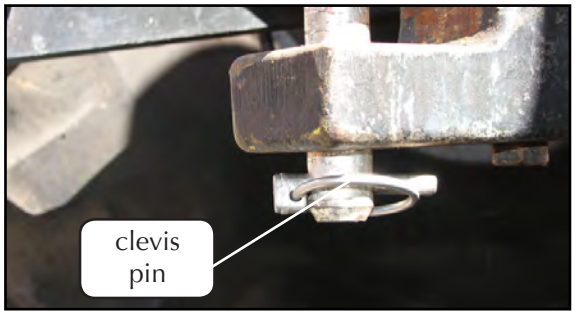
· Remove the plastic straps used in the hitch fork.

· Place the fork in a horizontal position and insert the fork pin into the hole.

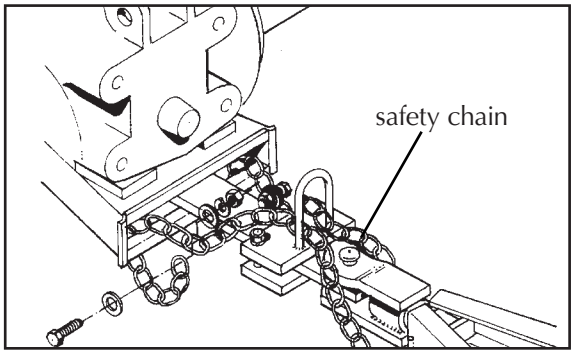
· Place the tractor's draw bar between the hitch fork and remove the pin from the side hole.

· Place the hitch pin through the hitch hole and the tractor's drawbar.

· Place the clevis pin in the hole of the hitch pin (see figure on the right).



· Install the safety chain, but allow enough slack for maneuvering.

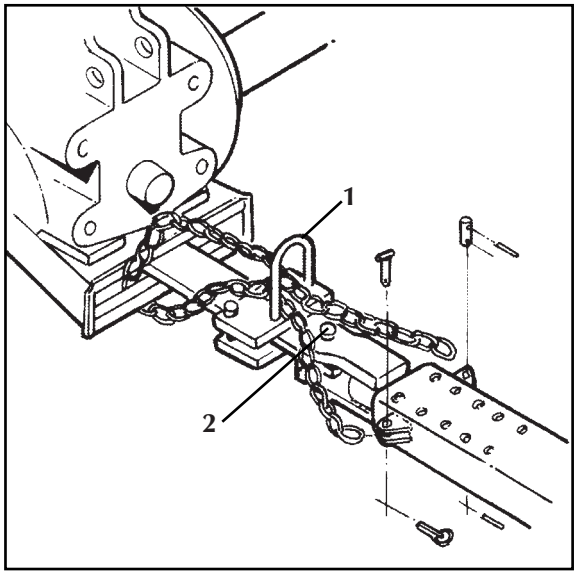


> Installing the safety chain

· Install the safety chain as shown in the figure on the right.

· Leave enough slack on the chain so that it is not stretched when maneuvering.

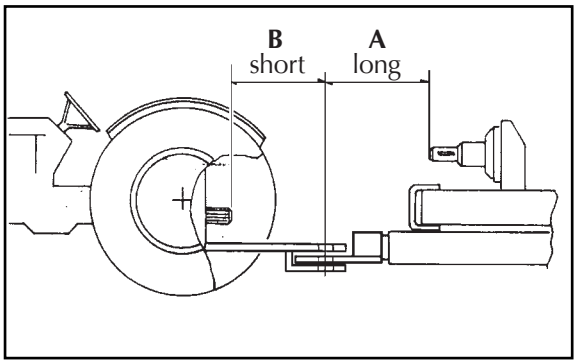
· The chain holder (1) must be mounted as close to the hitch pin (2) as possible.



NOTE:

Replace the safety chain if one or more links are damaged.

> CV PTO shaft

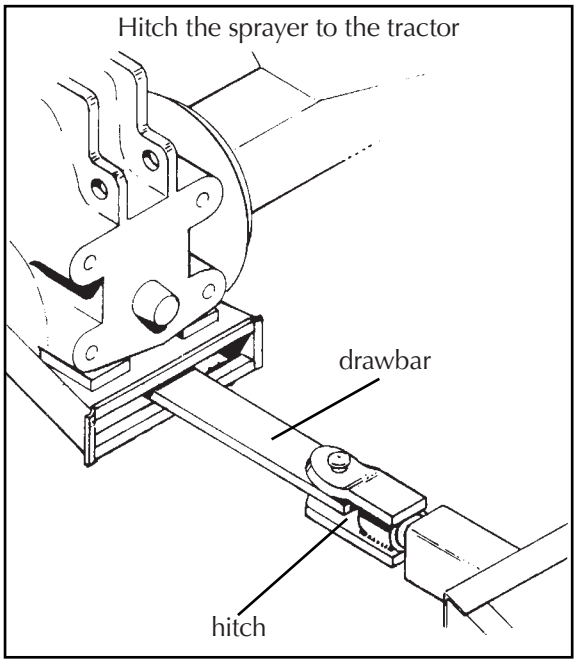


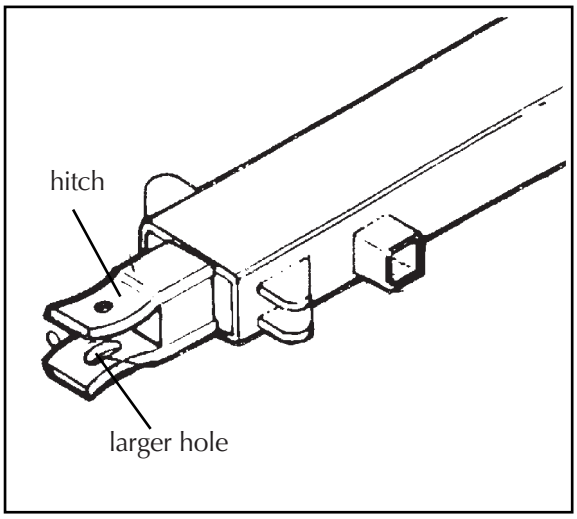
Adjust the drawbar length in relation to the PTO as shown in the figure on the left.

Distance A = B or as close as possible.
Ex.: If A = 15.7 in, then B should be somewhere between 13.7 in and 17.7 in.

· The distance "A" must be as long as possible, and the distance "B" as short as possible. This allows for a larger angle for CV joint articulation.

· The ideal connection is when distance "A" is double that of distance "B".





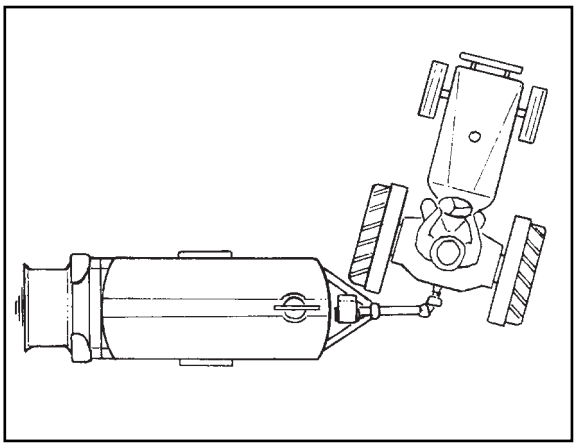
NOTE:

The larger hole on the hitch must always be set in the bottom position.

> Adjusting the PTO shaft length

· Position the tractor so the rear tire are close to the sprayer's tongue.

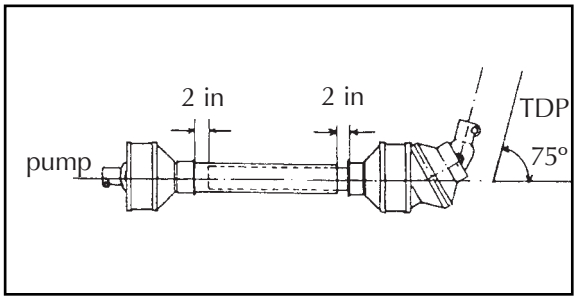
· Connect the PTO shaft.



ATTENTION!

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

· Adjust the male and female tubes lengths (recommended overlap: 2 in).



NOTE:

Before cutting the PTO shaft tubes, check for all the possible adjustments of both tractor's drawbar and sprayer's tongue and select the most appropriate arrangement. Make sure the hitch pin is installed with a clevis pin.

> Duct hydraulic system

The J2000 has a hydraulic system that allows the movement of the duct both vertically and horizontally. This system uses the tractor's remote hydraulic controls, therefore this sprayer will only operate properly with tractors equipped with two remote hydraulic controls.

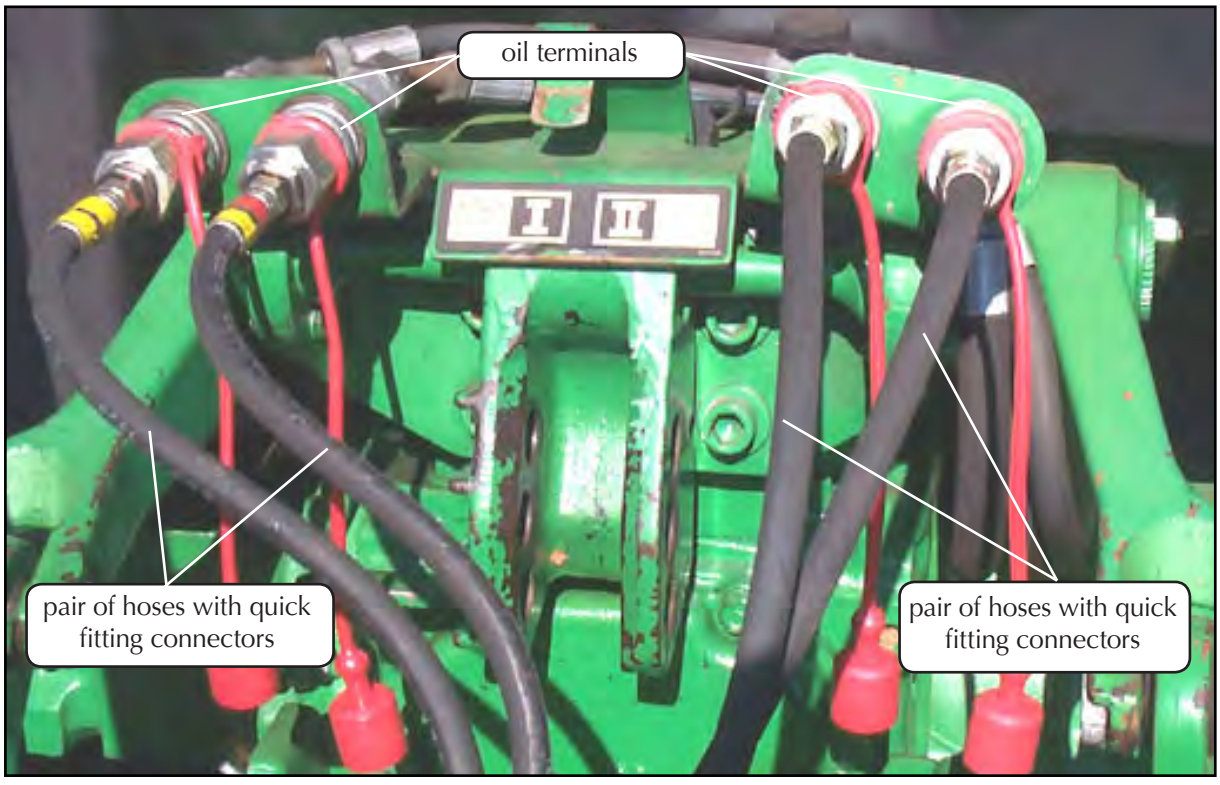
Once you identify the remote hydraulic oil terminals on the tractor, proceed as follows:

· Connect the hoses using quick fitting connectors, and make sure to fasten the two hoses of each cylinder to the same control block. The pair of hoses are separeted by a plastic clamp.

· Next, identify the cylinder actuation levers in the tractor's cabin.

NOTE:

As this sprayer will be using the tractor's remote control system, always read the tractor instructions manual before any operation.

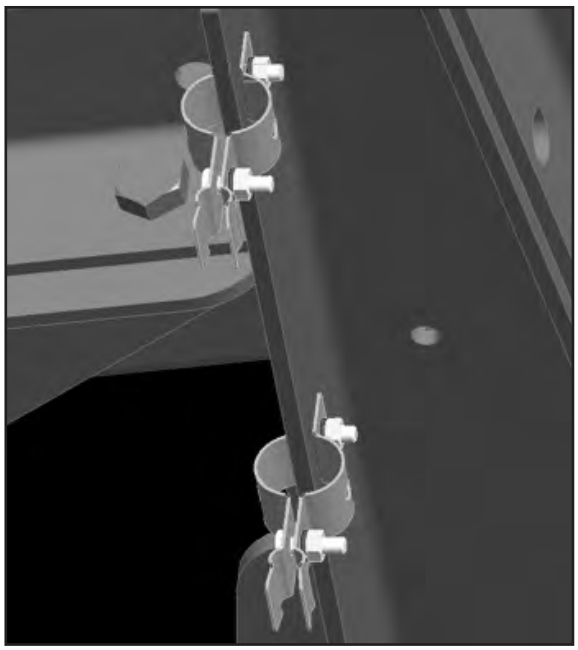


ATTENTION!

To minimize risk of injury from high pressure hoses, before connecting or disconecting hydraulic hoses, relieve system pressure by turning off tractor engine and moving remote controls in both directions.
To avoid damage to the equipment and to keep hose inlets protected, use the correct type and amounts of oil in the tractor remote control system. See tractor manual.

> Assembling the hose reel

· Install the spraying gun fastening clamps on the front brim of the frame column according to the illustration.



· Install the hose reel on the existing holes on the other frame brim. Use M10 bolts, spacer sleeves, nuts and washers.

OBSERVATION:

Both hose reel brackets must be installed facing downwards (according to the illustration).

· Wrap the hose on the reel and attach it to the quick coupling right below the fan box.

1 - Pump
2 - Mechanical agitator
3 - Step
4 - Belt tension
5 - Auxiliary ducts
6 - Main duct
7 - Tank
8 - Level indicator
9 - Chemical control
10 - PTO shaft
11 - Hitch
12 - Jack

Model **J-2000**

Weight
- Net weight ..... 1,918 lbs

Dimensions
- Total length ..... 170 in
- Total width
  - Minimum ..... 62 in
  - Maximum ..... 75 in
- Total height
- Minimum ..... 102 in
- Maximum ..... 108 in

Tires
- Type ..... 7,5 x 16
- Pressure ..... 55 psi

Tank
- Material ..... Polyethylene
- Capacity ..... 550 gallons

Level indicator ..... Level indicator with graduated scale

Pump
- Model ..... JP-50 / JP-100
- Capacity ..... 13 and 26 gpm at 540 rpm at pump
- Maximum pressure ..... 500 psi
- Power consumption at 400 psi ..... 3.5 / 6.9 HP

Filter
- Model ..... FVS 200
- Mesh 24/40

Spray swath
- Without wind ..... 100 ft

Ground clearance ..... **15 in**

Track width
- Minimum ..... 49 in
- Maximum ..... 55 in

Agitator .....Mechanical and Hydraulic

Chemical control MF-2000 2x2

Pressure gauge ..... with extended scale

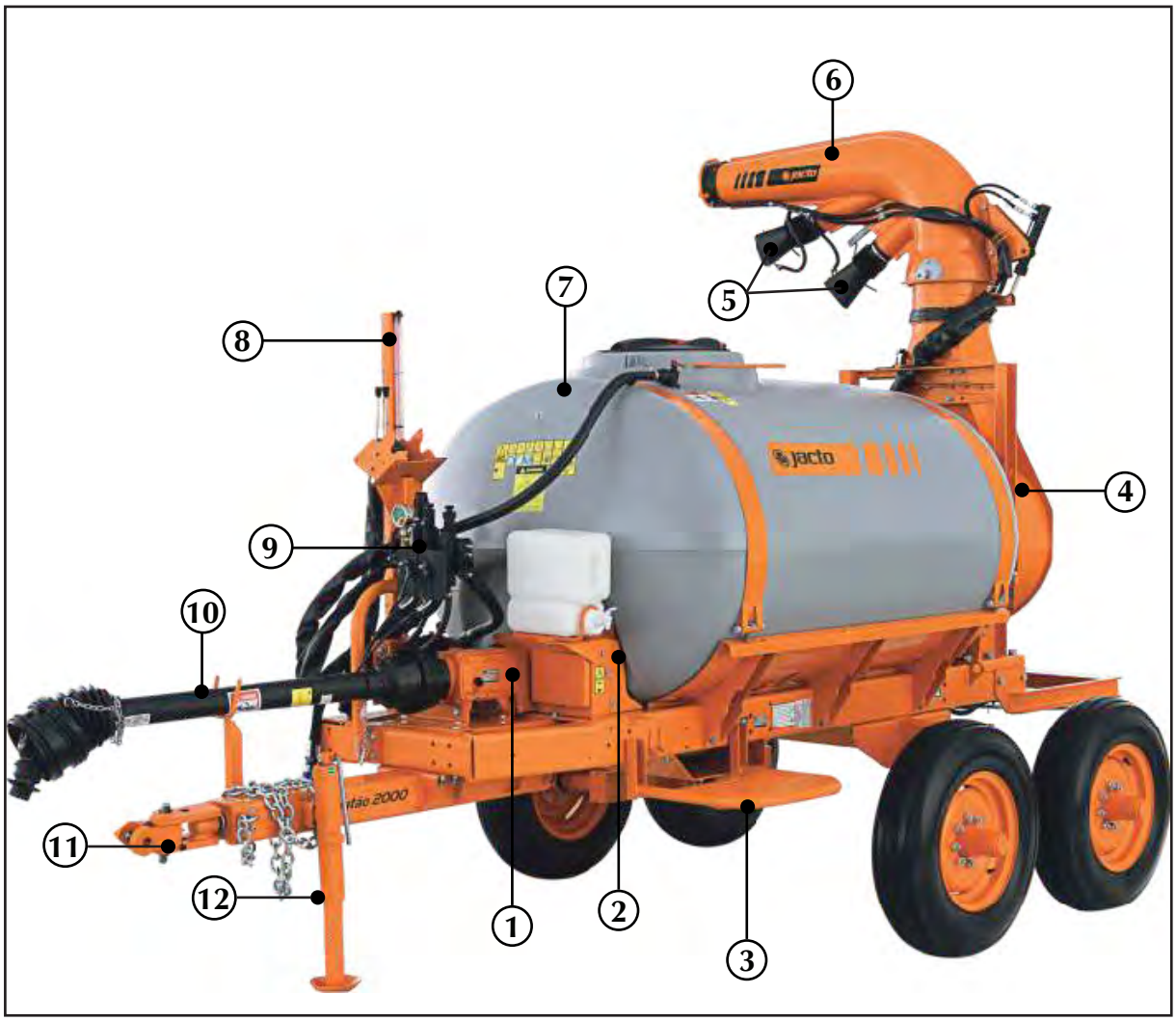
Recommended working speed ..... 1.5 to 4 mph

Total power consumption ..... 26.7 HP

FAN FEATURES	
Description	**Characteristic**
Fan diameter (in)	23.6
Pulley diameter (in)	4.1
Rotation (rpm)	3030
Air volume (cfm)	5445
Air speed (mph)	171

J-2000 - OPTIONS	
Pump	JP-100
Spot Sprayer	Quick fitting
Tire	11Lx 15
PTO shaft	Wide-angle C.V.

> J-2000 Tandem



1 - Pump
2 - Mechanical agitator
3 - Step
4 - Belt tension
5 - Auxiliary ducts
6 - Main duct
7 - Tank
8 - Level indicator
9 - Chemical control
10 - PTO shaft
11 - Hitch
12 - Jack

Model ..... J-2000 Tanden

Weight
Net weight ..... 2,535 lbs

Dimensions
Total length ..... 175.1 in
Width (Maximum) ..... 84.6 in
Height ..... 122.0 in

Tires
Type ..... 7,5 x 16
Pressure ..... 55 psi

Tank
Material ..... Polyethylene
Capacity ..... 550 gallons

Level indicator ..... Level indicator with graduated scale

Pump
Model ..... JP-50 / JP-100
Capacity ..... 13 and 26 gpm at 540 rpm at pump
Maximum pressure ..... 500 psi
Power consumption at 400 psi ..... 3.5 / 6.9 HP

Filter
Model ..... FVS 200
Mesh 24/40

Spray swath
Without wind ..... 590.5 in
With wind at 5 km/h ..... 1181. 0 in
With wind at 10 km/h ..... 1377.9 in

Ground clearance ..... 21.65 in

Track width ..... 72.0 in

Agitator .....Mechanical and Hydraulic

Chemical control MF-2000 2x2

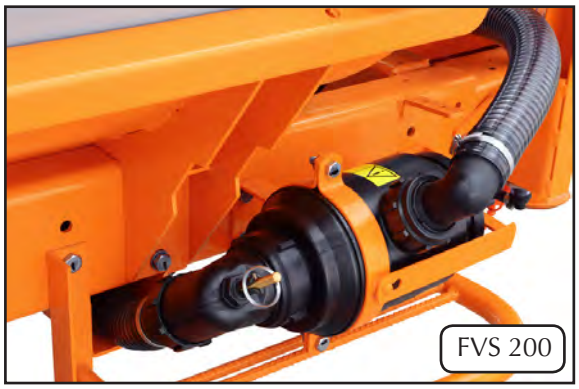
Pressure gauge ..... with extended scale

Recommended working speed ..... 1.5 to 4 mph

FAN FEATURES	
Description	**Characteristic**
Fan diameter (in)	23.6
Pulley diameter (in)	4.1
Rotation (rpm)	3030
Air volume (cfm)	5445
Air speed (mph)	171

J-2000 TANDEM - OPTIONS	
Pump	JP-100
Spot Sprayer	Quick fitting
Tire	11Lx 15

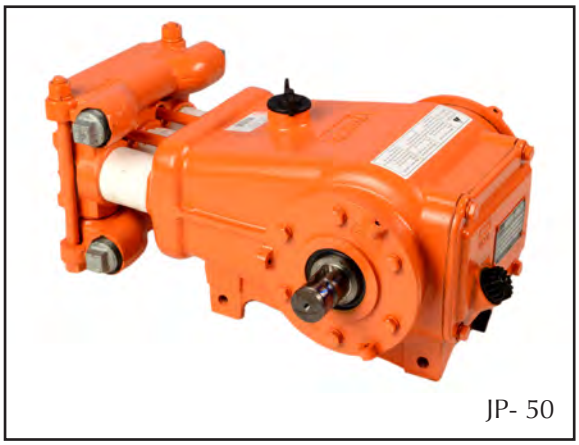
> Suction filter


FVS 200

· 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 should always remain open while the sprayer is running. If it remains closed, the mechanical seal of the pump can be damaged.

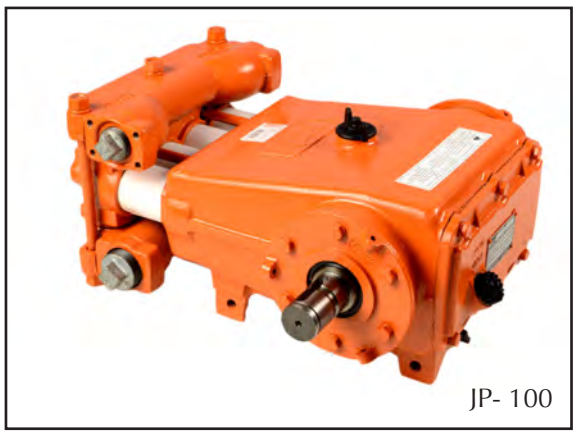
> Pump


JP- 50

· The pumps mounted to Jacto J2000 have capacity ranging from 13 to 26 gallons per minute.

· Their ceramic liners ensure greater resistance to abrasion and chemical action.

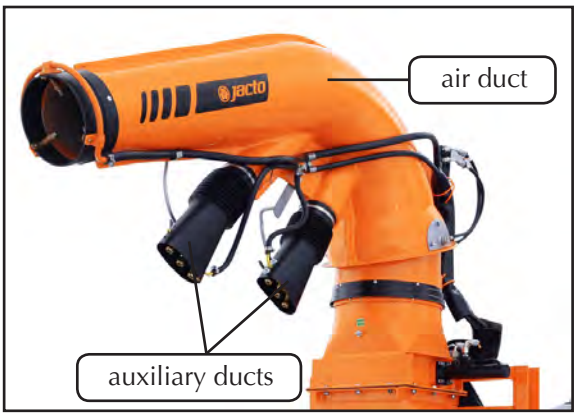
· Moreover, the piston cup can be easily replaced by removing the head assembly in a quick and simple operation with no need to remove the pump.


JP- 100

Pump	Flow rate (gallons/minute)	Maximum working pressure	
		PSI	kgf/cm²
JP-50	13	500	35
JP-100	26	500	35

> Duct

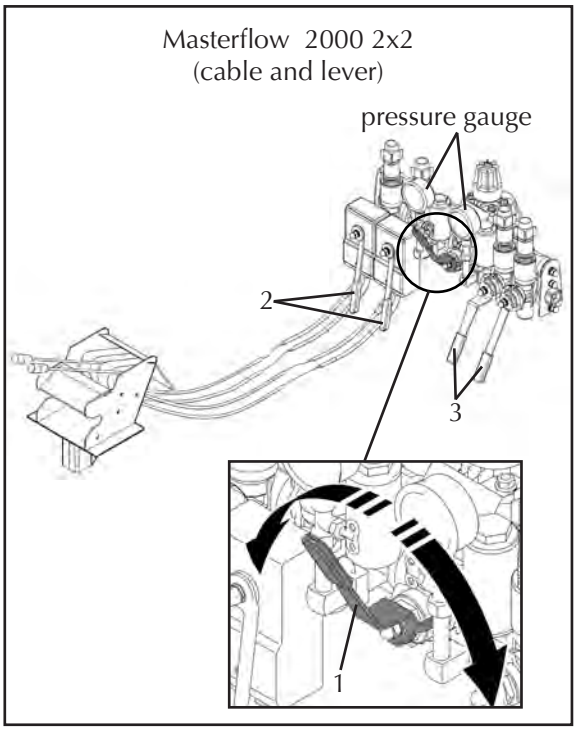
· The main duct on the J2000 can be adjusted both horizontally and vertically. It also has two auxiliary ducts to cover the area close to the tractor, thus improving the quality of the spray applications.



> Pressure regulator

· The Masterflow 2000 2x2 pressure regulating control provides adjustments of up to 80 psi (5.5 kgf/cm²) on the side that controls the flow to the main and auxiliary ducts (cable operation) and 300 psi (20.7 kgf/cm²) on the side that controls the flow to the spray guns (lever operation).

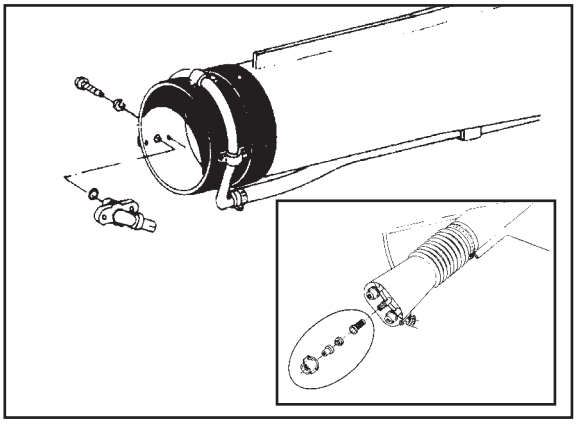
· The levers (1),(2) and (3) have different functions: lever (1) diverts the chemical flow to the ducts or spray guns; levers (2) distribute the chemical flow to the main and auxiliary ducts; and levers (3) distributes the chemical flow to the spray guns when in use.



> Nozzles

· The function of the nozzles is to generate droplets and distribute them uniformly over the area being sprayed.

· Flow, size and distribution vary according to the air volume generated by the fan. Therefore, always work as directed in the operator's manual.




universal key ø3

The fan has a locking device 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.

In order to reach the fan locking device, it is necessary to use a universal key ø3 (provided together with the machine in the accessories box) which will open the access door.

To turn the fan off, pull the lock and give it a quarter turn. To turn it on, set the lock back. After these procedures, close the access door.

For tractors with independent PTO, the following is recommended:

• Do not engage the PTO with the engine accelerated.

• With the engine idling, engage the PTO and gradually accelerate until reaching the recommended rpm.

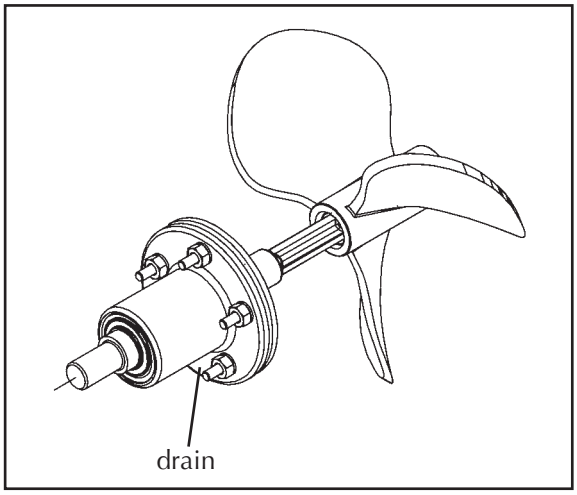
ATTENTION!

Always disengage the PTO and wait for the fan to stop completely before handling the lock orunlock.

The equipment shall neverer be used with the fan locking device access door opened. The access door shall never be opened with the tractor on and the PTO shaft engaged.

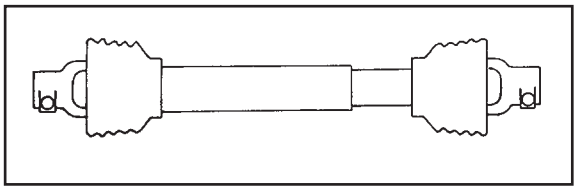
> Mechanical agitator

· This device provides a better homogenization to the chemical mixture, thus reducing clogging of nozzles and filters.



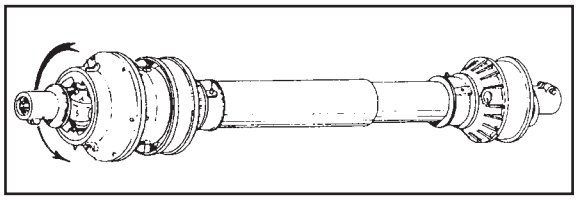
> Conventional PTO shaft

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



> Wide-angle CV PTO shaft (optional)

· The wide-angle CV PTO shaft is a component whose advantage on the standard PTO shaft is in allowing the sprayer to make turns of up 75^0 degree angle with no need to disengage the PTO.

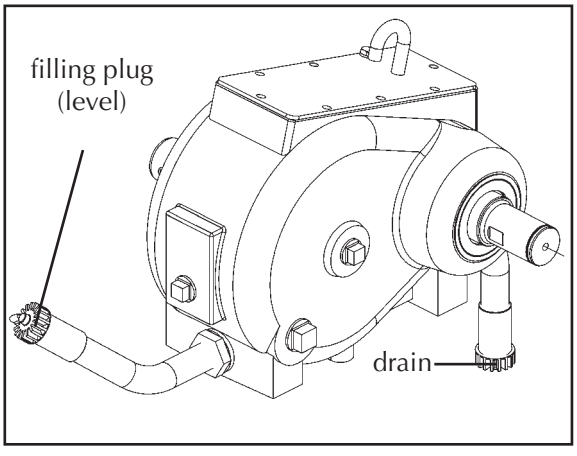


NOTE:

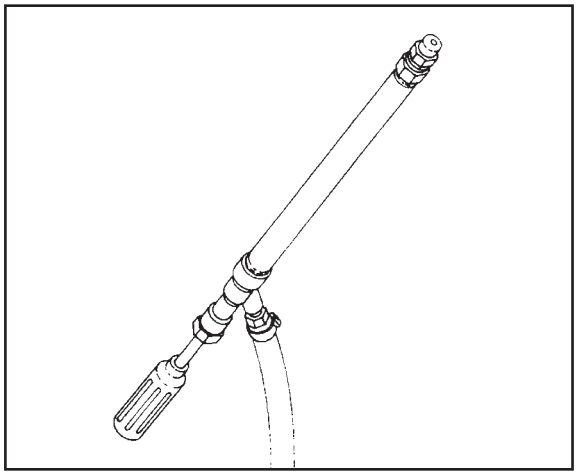
For instruction in detail, refer to the section MAINTENANCE - PTO SHAFT.

> Gearbox

· Placed between the tank and the fan, the gearbox has the function of multiplying the PTO shaft rotation (540 rpm) for the fan.



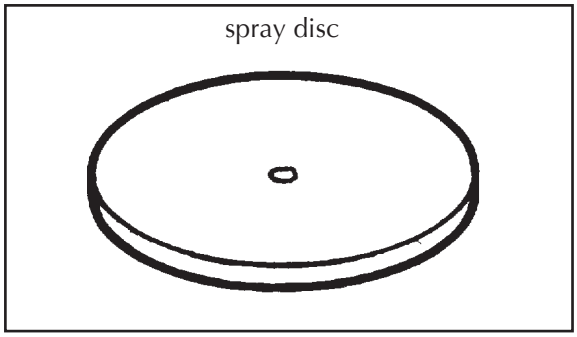
> Spray gun (optional)



· The spray gun is an accessory for localized spot spraying of tall trees which requires a high spraying volume.

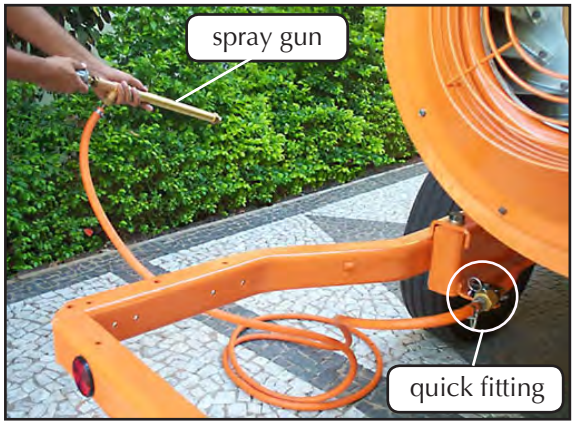
· It is possible to change the gun flow rate from 1.32 to 11.88 gpm by replacing the spray discs.

> Stainless steel spray discs - series D



· The spray discs are recommended for localized spot spraying in fruit crops in general due to its long reach spray. They are made of stainless steel and have flow rates ranging from 1.32 to 11.88 gallons per minute.

· These discs, which have been specially designed for this type of spray application, must only be used with the Jacto spray gun.



Spray discs flow rate table - Series D

Spray disc part no.	Discs	Pressure (PSI)				
		100	150	200	300	400
		Spray gun flow rate (gpm)				
202275	D-5	1.32	1.58	1.85	2.11	2.50
202267	D-6	1.81	2.24	2.64	3.17	3.57
202811	D-7	2.47	2.88	3.30	3.90	4.50
202259	D-8	3.39	3.96	4.50	5.28	6.24
622829	D-9	3.75	4.66	5.47	6.71	7.76
114686	D-10	4.89	5.81	6.74	7.92	9.42
622837	D-11	5.54	6.54	7.75	9.77	11.88

ATTENTION!

While filling the tank it is recommended wearing the appropriate PPE.

There are two ways to fill the sprayer main tank:

> Through the clean source filler

· Add 11 gallons of water to the main tank. Disconnect the hose connecting to the Masterflow control from the chemical pump;

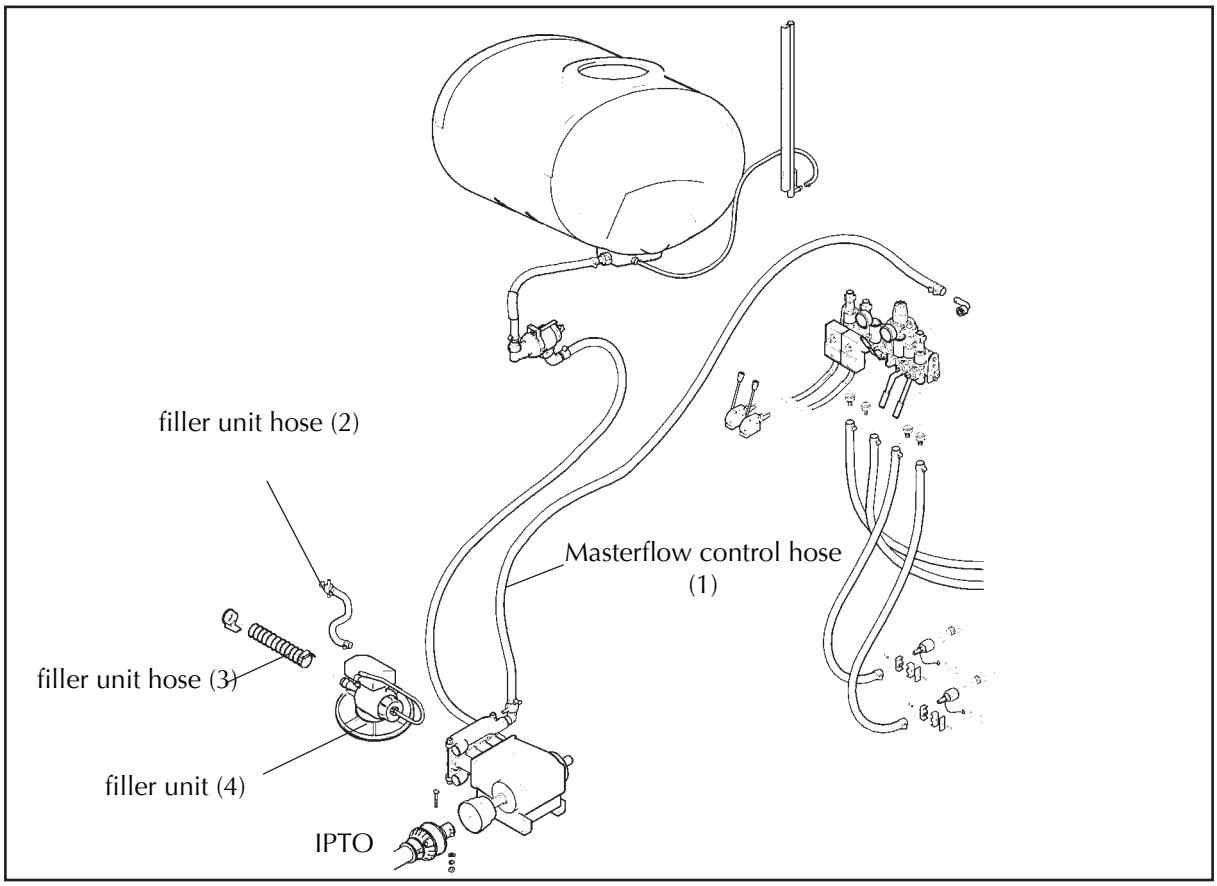
· Attach the filler unit hose (2) to the chemical pump (where the Masterflow control hose was);

· Open the main tank cover and attach the filler unit hose (3) to the main tank;

· Attach the filler unit (4) to the water tank;

· Start the machine at 540 rpm on the IPTO;

· Once filling is complete, turn IPTO off, disconnect the hoses from the clean source filler and store it. Attach the Masterflow control hose (1) to the chemical pump.



ATTENTION!

When filling the sprayer tank use individual protective equipment that is recommended by the chemical manufacturer.

2ª - FILLING USING THE OPTIONAL QUICK FITTING

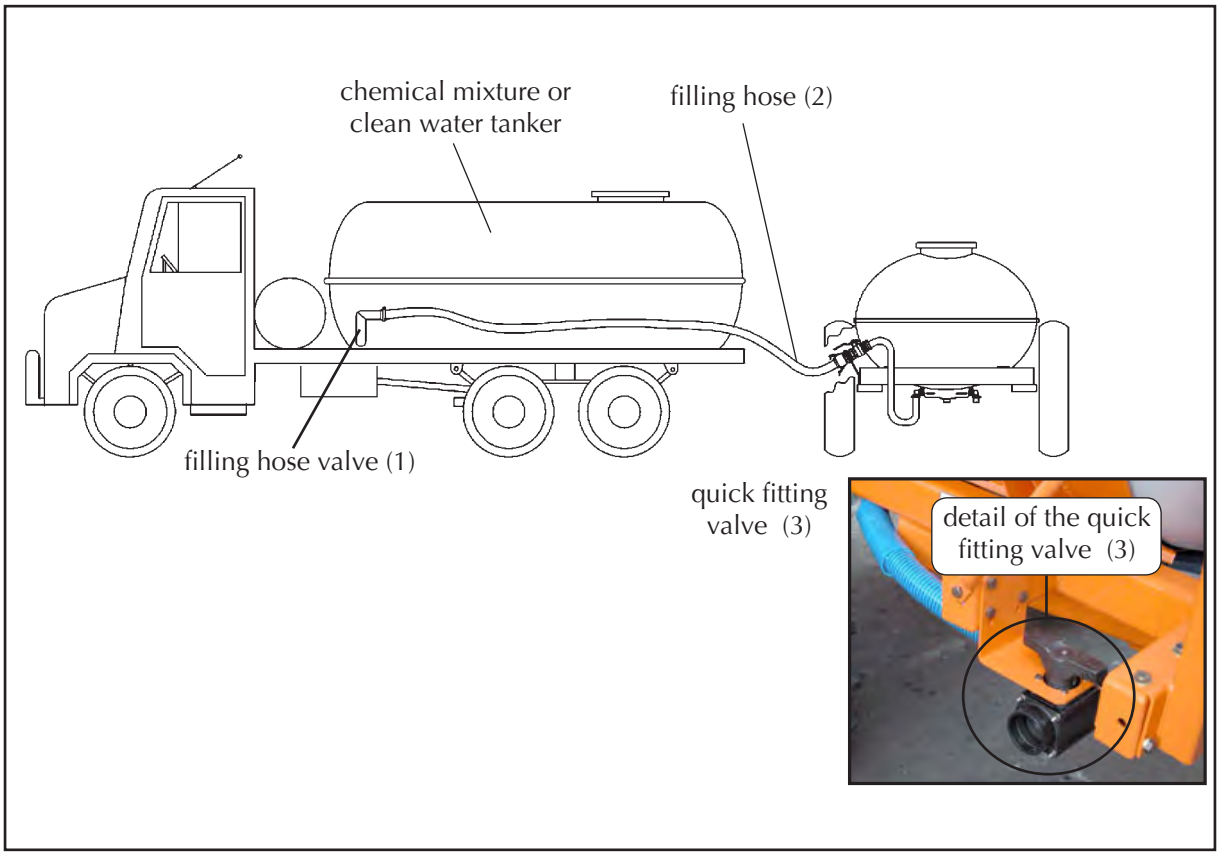
· Connect the filling hose (2) to the quick fitting valve;

· Open the quick fitting valve (3);

· Open filling hose valve (1); Pay attention to the water volume transported to the sprayer's tank, to avoid leaking;

· After filling the tank, shut off the quick fitting valve (3) and then the hose filling valve (1);

· Remove the filling hose from the quick fitting valve.



The Masterflow 2x2 control has two types of operation: cable and lever.

1)Cable operation: turns on/off the chemical flow to the main and auxiliary ducts.

2)Lever operation: turns on/off the chemical flow to the spray guns.

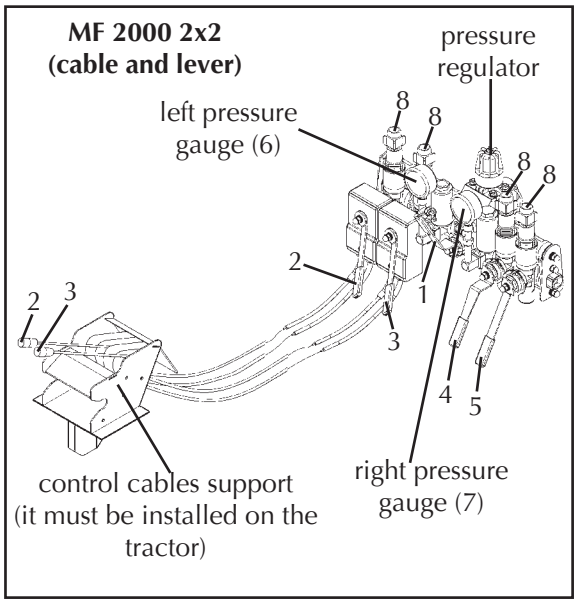
Due to the use of this control for two types of spraying, it has two diferent pressure adjustments. On the left side of the control, which controls the flow to the main and auxiliary ducts, maximum pressure is 80 psi (5.5 kgf/cm^2) indicated on the left pressure gauge (6). On the right side of the control, which controls the flow to the spray guns (optional), the maximum pressure is 300 psi (20.7 kgf/cm^2), indicated on the right pressure gauge (7).

The levers (1), (2), (3), (4) and (5) have different functions:

· lever (1): diverts the chemical flow to the ducts or the quick fitting connection of the sprays gun.

· levers (2) and (3): distribute the chemical flow to the main and auxiliary ducts.

· levers (4) and (5): distribute the chemical flow to quick fitting connections for the spray guns.



ATTENTION!

The chemical control cable support should be installed close to the operator to make easier the spraying job, for easier operation. Always use the original hitch pin with cotter pin and the original safety chain to avoid accidents.

· Engage the tractor PTO and accelerate it gradually until reaching 540 rpm.

· To adjust the pressure to the auxiliary and mainducts, set the lever (1) to t he left side of the chemical control.

· To adjust the pressure to the spray gun, set the lever (1) to the right side of the chemical control.

· Keep the levers (1), (2), (3), (4) and (5) on.

· Turn the pressure regulator (clockwise to increase the pressure - counterclockwise to decrease the pressure) until obtaining the desired pressure. Note that the left pressure gauge corresponds to the flow rate in the auxiliary and main ducts and the right pressure gauge corresponds to the flow in the spray guns.

· To facilitate the adjustment, the return adjustment valves (8) must be tightened all the way.

> Level indicator

• Placed on the right side of the operator, the level gauge has a graduated scale that facilitates the identification of the amount of mix in the reservoir.

• During pulverization, make sure that the level of chemicals mix in the reservoir is not below 13.20 gallons so that the pump does not operate without water.

NOTE:

Avoid leaving chemicals left-overs in the reservoir or even storing them for too long. On the last application prepare a sufficient amount of mix to treat whatever harvests are left untreated.

> Package washer

• The package washer is assembled at the reservoir´s opening and provides a correct and safe discard of empty packages.

• Wash packages after use for 30 seconds, before the residues start to dry.

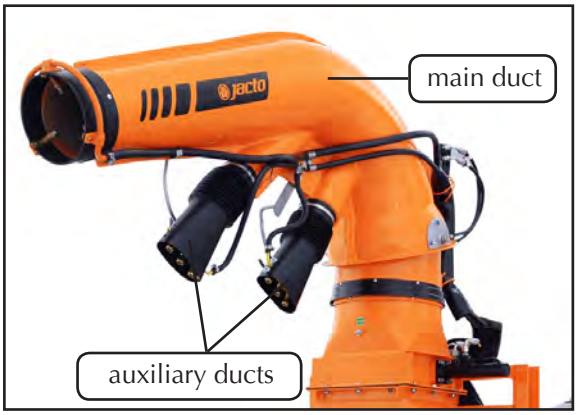
• Wash the packages three times.

• For more information, check the “Operation and Regulation – Procedures for using the package washer” item.

ATTENTION!

Activation of the package washer lever should only be done after placing a container over it.
The package washer nozzle rotates, and auctioning the lever without having a package over it could sprinkle people near the machine.

> Total flow rate table



Pressure (PSI)	Total flow rate (main duct + auxiliary ducts) (gpm)		
	A*	B*	C*
0	0	0	0
30	4.2	4.5	5.0
60	5.8	6.2	7.1
90	7.2	7.7	8.7
120	8.5	9.1	10.2
150	9.5	10.2	11.4
180	10.7	11.4	12.7
210	11.6	12.4	13.8
240	12.4	13.2	14.7
270	13.1	13.9	15.4

NOTE:

Flow rate A* in the main duct it is obtained when the nozzles JA-1 are used in the auxiliary ducts.
Flow rate B* in the main duct: it is obtained when the nozzles JA-2 are used in the auxiliary ducts.
Flow rate C*in the main duct: it is obtained when the nozzles JA-4 are used in the auxiliary ducts.

> Total flow rate auxiliary ducts

Pressure (PSI)	Total flow rate auxiliary ducts (gpm)		
	JA-1	JA-2*	JA-4
0	0.09	0.22	0.30
10	0.21	0.41	0.73
20	0.29	0.57	1.06
30	0.35	0.79	1.29
40	0.41	0.81	1.50
50	0.46	0.90	1.69
60	0.49	1.00	1.84
70	0.53	1.09	1.99
80	0.57	1.16	2.16
*JA-2 - Nozzle model installed on the auxiliary ducts.			

NOTE:

For a more even distribution of the chemical mixture along the spray swath, it is recommended to install the nozzles in the table above on the auxiliary ducts according to the flow rate setting of the regulating valve.

ATTENTION!

The figures shown in the table above have been obtained with water applications. Therefore, there may be variations due to the viscosity of the liquid to be applied.

> Selecting the spray swath

Chemicals	Spray swath (ft)	
	Minimum	Maximum
Fungicides	50	82
Insecticides	65	115
Herbicides for pasture	50	100

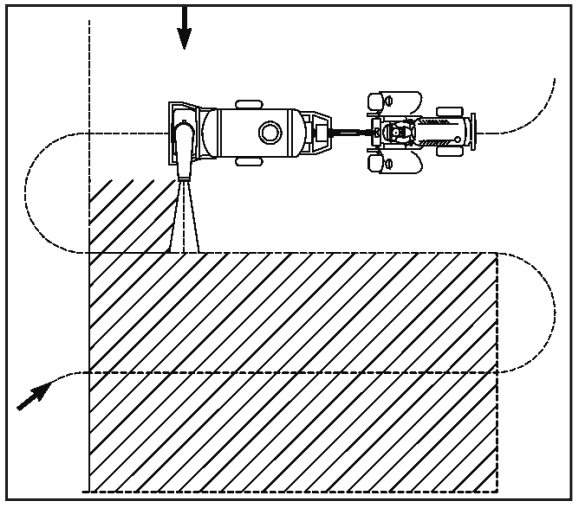
· Select the spray swath according to the plant growth stage, type of pest or disease, chemicals to be applied and weather conditions.

· The table beside show some suggestions of spray swath. In the course of the applications, the operator should determine the spray swath most appropriate for the working conditions.

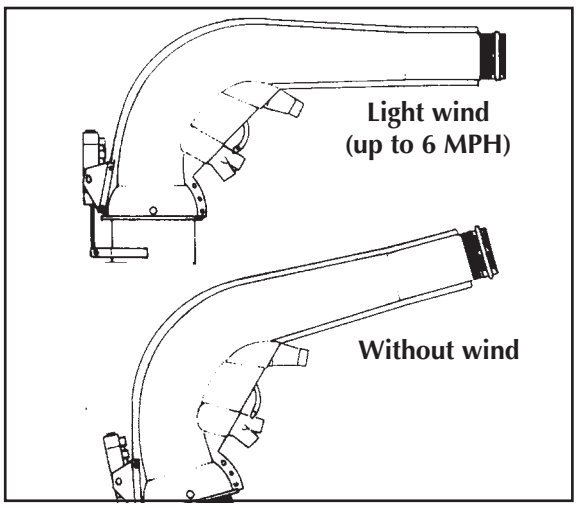
ATTENTION!

Always spray at cooler times of the day.
The rotation of PTO must be 540 rpm.
Spray with light wind (maximum of 6 mph).
Make sure the swath determined is being sprayed.

> Tractor path and duct inclination

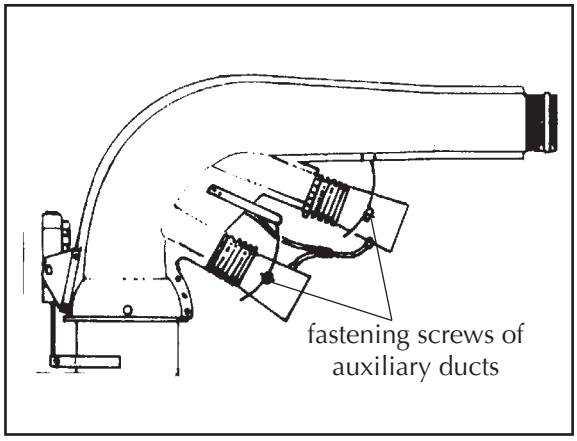


· The figures beside show how to perform the spray application and adjust the duct according to the tractor speed and wind direction.



> Adjusting the auxiliary ducts on the J2000

· Adjust the auxiliary ducts so that the spray covers the area close to the tractor to avoid failures in the application.



ATTENTION!

Turn off the duct before stopping or maneuvering the tractor.

Never spray against the wind.

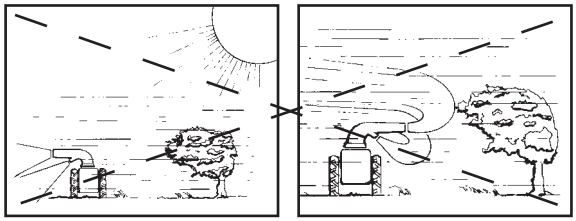
Never spray with strong winds.

Never spray during hotter times.

> Improper conditions to spray

· With strong wind and high temperature.

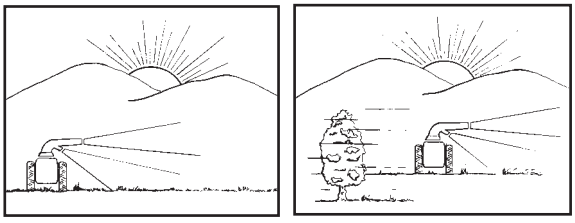
· Against the wind.



> Proper conditions to spray

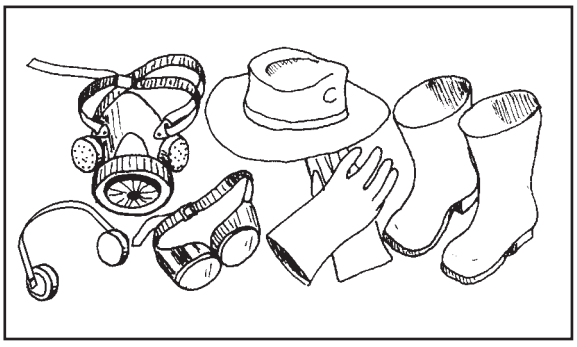
· At cooler times of the day, normally, early in the morning or late in the afternoon.

· With the wind (light wind).



ATTENTION!

Always use appropriate individual protective clothing equipment such as: working clothes, mask, gloves, etc.



• The success of an application not only depends of good equipment and correct use of chemicals. Depends also on field factors, such as specialized orientation.

• Among these factors, we consider some concepts that should be part of an evaluation criteria so that the positive results are reached within a chemical control program of biological agents (diseases, plagues and weeds).

Factors like:

- Right moment
- Safety during application
- Correct dosage
- Good coverage
- Operational conditions of the machine
- Well trained operator

> Right moment

Consists in choosing the ideal moment according to the characteristics of the chemicals and also field conditions, such as:

• Level of plague infestation, diseases or weeds;

• Stage of infection of the disease;

• Stage of development of weeds;

• Weather conditions.

> Safety during application

• The maintenance of safe conditions for people, animals and the environment is fundamental. The use of personal protective equipment is mandatory during the application of the chemicals.

• Avoid applying when temperatures are above 86^0 F (depending on the chemical product) and relative air humidity lower than 50%, winds with unpredictable speeds (maximum velocity 6 mph) and direction.

> Correct dosage

• It is fundamental, for any type of application, the correct maintenance of the chemicals dosage for the duration of the spraying process.

• This is possible if good equipment is available and the chemicals is correctly calibrated before starting the application.

• The calibration can be obtained thru practical methods or via calculations (refer to the instructions regarding the sprayers calibration, which can be found on the "CALIBRATION OF SPRAY" page).

> Good coverage

• A good coverage consists of obtaining ideally sized drops to reach the target with good uniform distribution, with positive results during control and that do not cause damages to the environment.

• Unlike what a lot of people think, the application volume does not influence the treatment result, since the amount of solvent (water, oil, etc) per unit area only functions to dissolve, transport and facilitate the distribution of the active ingredient over the target surface, whether it is plants, soil, etc.

• This means that one could get the same coverage with different spraying volumes.

• In practice, different volumes have been used for the same ends due to operational as well as regional factors.

ATTENTION!

Read and rigorously follow the instructions contained in label of the chemical products.
Always follow the orientation of a technician or someone responsible for the operation during the handle and use of chemical products.

ATTENTION!

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

WHEN HANDLING THE CHEMICALS

· Follow strictly the instructions on the labels.

· Use recommended individual protective equipment.

· 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 in hotter times.

· Use recommended individual protective equipment.

· Do not eat, drink or smoke.

NOTE:

You are responsible for the success of the application.

> Calculating the spraying volume using the formula

· The sprayer can be calibrated by obtaining the spraying volume through the following formula:

Spray volume (gpa) $GPA = \frac{GPM \times 495}{MPH \times S}$	Where: GPA - Spray volume (GPA) GPM - Total nozzles flow rate S - Spray swath (ft) MPH - Tractor speed (mph) 495 - Conversion unit
Total nozzles flow rate $GPM = \frac{GPA \times MPH \times S}{495}$	

Example:
Spray volume = 16 gpa
Spray swath = 82 ft
Tractor speed = 2.5 mph

$GPM = \frac{GPA \times MPH \times S}{495}$ $GPM = \frac{16 \times 2.5 \times 82}{495}$ GPM = 6.6

ATTENTION!

The figures shown in the example above are illustrative only. The correct calibration must be done according to the recommendations of the technician.

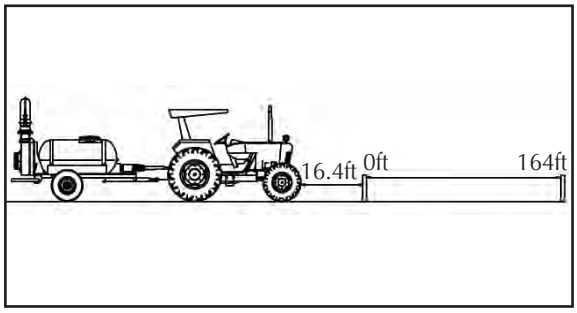
> Calibrating the sprayer through a pratical method

Before calibrating the sprayer be sure:

· Suction filter is clean.

· Hoses are not twisted or bent.

· Pressure regulator components (valve seat, valve and spring) are not worn or dirty.



· Pump is properly lubricated (oil level and grease) and has no leakage.

· Nozzles are of the same model, not worn, with correct flow rate and with clean filters.

AFTER ALL THE ITEMS ARE CHECKED, START PROCEED WITH THE SPRAYER CALIBRATION.

1 - Mark off 164 foots on the ground to be sprayed.

2 - Fill up the sprayer.

3 - Start moving at least 16 feets before the initial mark.

4 - Engage the PTO at 540 rpm.

5 - Choose the working gear.

6 - Through the Masterflow valve, begin spraying. Turn on the spray using the Masterflow control valve.

7 - When the machine passes the first mark, start the stopwatch.

8 - When the machine passes through the second mark, stop the stopwatch.

9 - Note the time it takes the tractor to move 164 feets.

10 - On irregular ground, repeat this operation several times and take the average.

11 - Measure the application swath.

12 - Preferably with the sprayer parked on a level surface, determine the amount of water used in the sprayed area.

13 - Calculate the spray volume gallons per acre, through the formula:

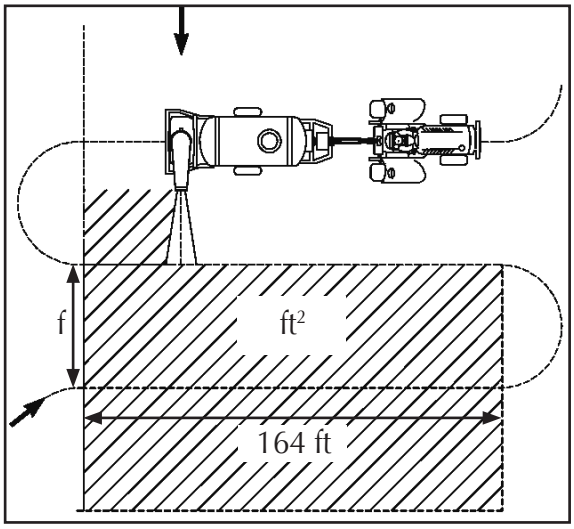
$$GPA = \frac{Vol \times 43560}{A}$$

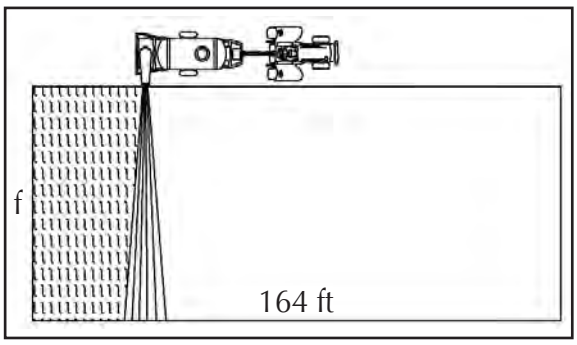
Where:
GPA = spray volume (gallons per acre)
Vol = volume used in the sprayed area
A = sprayed area (164 ft x spray swath (f) = ft^2)

Example:
Vol = 5 gallons
A = 164 ft x 65 ft (s) = 10660 ft^2

$$GPA = \frac{5 \times 43560}{10660}$$

GPA = 20.4

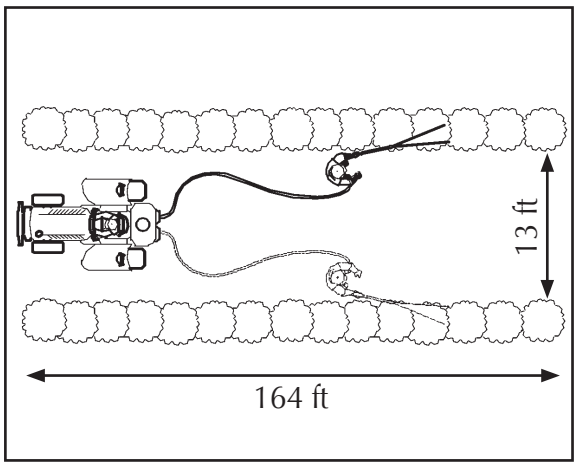




ATTENTION!

If the desired volume is not obtained, increase or decrease the flow, with the control valve, or increase or decrease the speed by changing gear.

> After all items are checked proceed with the calibration as follows:



1- When there is not enough space between the rows for the tractor to enter, determine the spray swath by measuring the crop spacing and dividing by the number of times the sprayer passes between the same rows (e.g.: 13 ft between rows ÷ 2 times = 6.5 ft spray swath).

2- On beds (e.g.: vegetables), the spray swath will be equal to the bed width multiplied by the number of beds sprayed simultaneously (e.g.: 3 ft bed width x 3 beds sprayed simultaneously = 9 ft spray swath).

3- When the tractor enters the space between the rows, the spray swath can vary depending on the quantity of guns used for spraying. If using one spray gun, the spray swath is the crop spacing divided by two (e.g.: 13 ft between rows ÷ 2 = 6.5 ft spray swath). If using two spray guns, the spray swath is equal to the crop spacing (e.g.: 13 ft between rows = 13 ft spray swath). If there is need to use two operators on the same side of the crop, each with a spray gun , the spray swath can be determined by dividing the crop spacing by two (e.g.: 13 ft crop spacing ÷ 2 = 6.5 ft spray swath).

4- To know how many feet need to be sprayed to cover 328 ft², divide 328 by the spray swath measured (e.g.: 328 ft ÷ 6.5 ft spray swath = 50 ft, which is the distance to be sprayed).

5- Fill the sprayer tank.

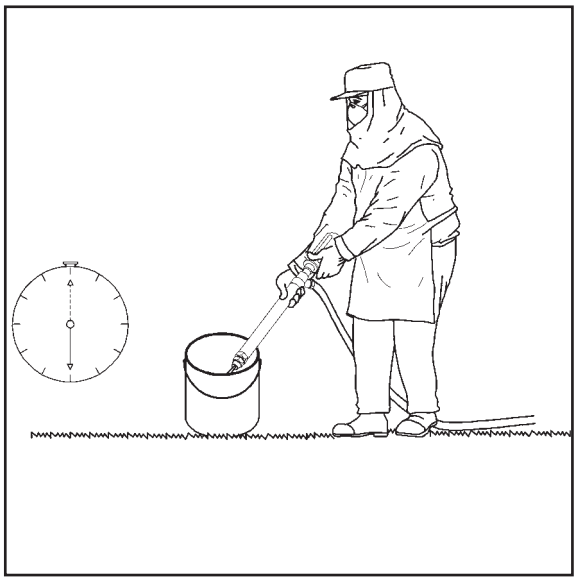
6- Choose the operating gear.

7- Engage the PTO.

8- Accelerate until reaching 540 rpm at the PTO.

9- Note the time (seconds) it takes to spray the distance previously obtained in “item 4” (e.g.: 164 ft) at a comfortable speed, which is sustainable for the normal conditions of the area (inclines, declines, obstacles, etc.) to be sprayed during the normal time of work.

10- Repeat this operation twice and take the average, adding time 1 and time 2 and dividing by two (e.g.: time 1 = 29s; time 2 = 31s; 29 + 31 = 60s; 60 ÷ 2 = 30s average, that is the time it takes to spray the distance previously obtained in "item 4", which is 164 ft).



11- Stop the tractor with the rotation used to travel the 164 ft, run the sprayer, turn the knob on (gun) to begin the spraying and adjust the pressure according to the recommendation for the nozzle type:

· Stainless steel nozzles series D: from 100 to 400 psi.

12- Collect the spraying volume in a container during the time determined (e.g.: 30s according to "item 9").

13- Measure the spraying volume in a graduated bottle.

14- Repeat this operation twice and take the average (e.g.: 1.32 gallons)

15- To determine the spraying volume in 1 acre, multiply 40.46 by the volume sprayed in 328 ft² (e.g.: sprayed volume = 1.32 gallons x 40.46 = 53.40 gpa spraying volume).

16- Contact an agronomist and read the product instructions to check if the volume is inside the recommended limits. If the volume varies 10% from the recommended volume, proceed as follows:

1- If the spraying volume is below which is desired, increase the pressure, decrease the speed (but keep 540 rpm at PTO) or change the nozzles for one of higher flow rate.

2- If the spraying volume is above which is desired, decrease the pressure, increase the speed (but keep 540 rpm at PTO) or change the nozzles for one of lower flow rate.

· If it is necessary to carry out any of the above procedures, repeat the calibration procedure.

· When the recommended product dosage is concentrated (e.g.: 5 ouces/26.4 gallons water), check the proper spraying volume through the beginning of the chemical flow, in case of foliage, or the desired droplet concentration.

17- Contact an agronomist and read the product instructions to identify the recommended dosage.

· If the dosage is recommended in acre (e.g.: 0.25 gpa), calculate the necessary quantity of product for each filling operation in relation to the sprayed volume. For example, if the tank capacity is 105 gallons and the spraying volume is 53.40 gpa, the necessary quantity of product is (105 ÷ 53.40) x 0.25 = 0.50 gallons product per tank.

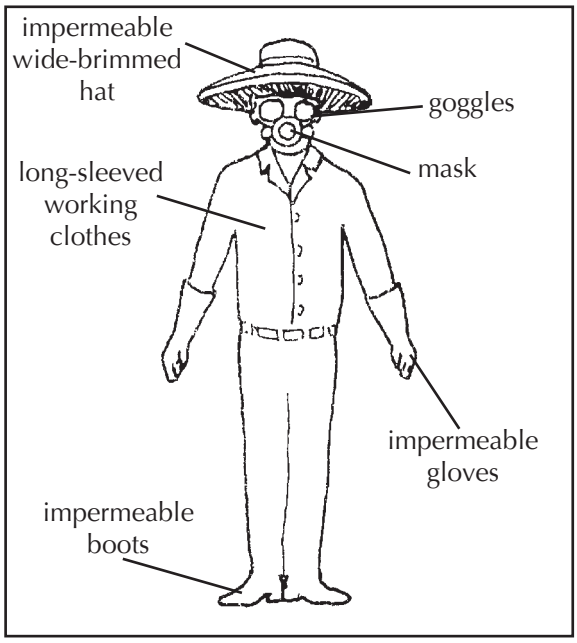
· If the dosage is recommended in concentration (e.g.: 5 ounces/26.4 gallons water), calculate the necessary quantity of product for each filling operation in relation to the tank capacity. For example, if the tank capacity is 105 gallons, the necessary quantity of product is (105 ÷ 26.4) x 5 = 20 ounces product per tank.

ATTENTION!

To avoid damaging the pump, do not operate the sprayer with less than 14 gallons of water in the tank.

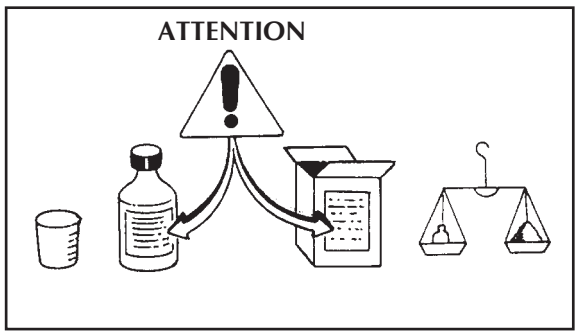
Always use the following individual protective clothing equipment when handling chemicals or others recommended by the chemical manufacturer:

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

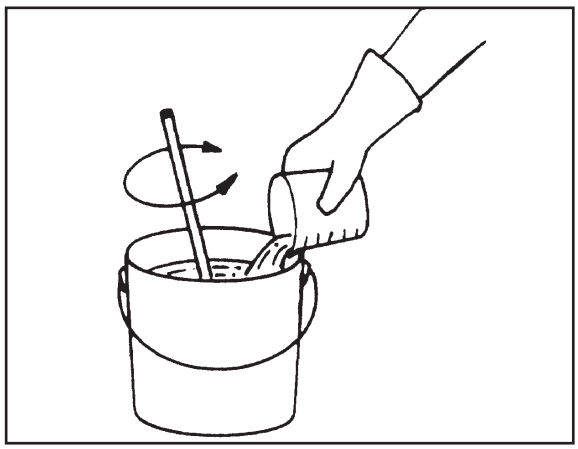


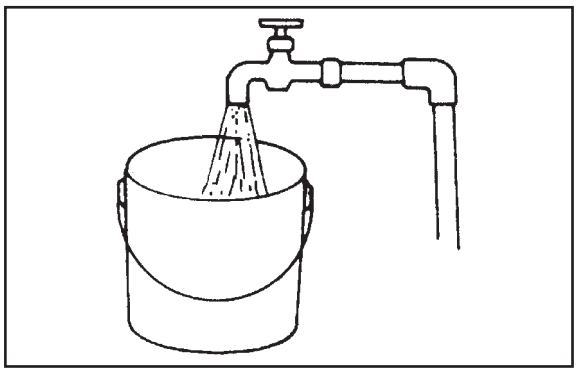
> Preparing the chemical mixture

· Read carefully the chemicals manufacturer's label.



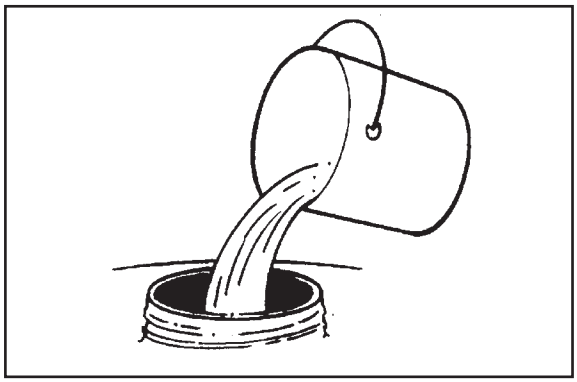
· Pour the chemicals into a bucket with a small amount of water and stir.





· Add water until the bucket is filled.

· Stir until the chemical and water are throughly mixed.



· Pour the solution into the sprayer's tank.

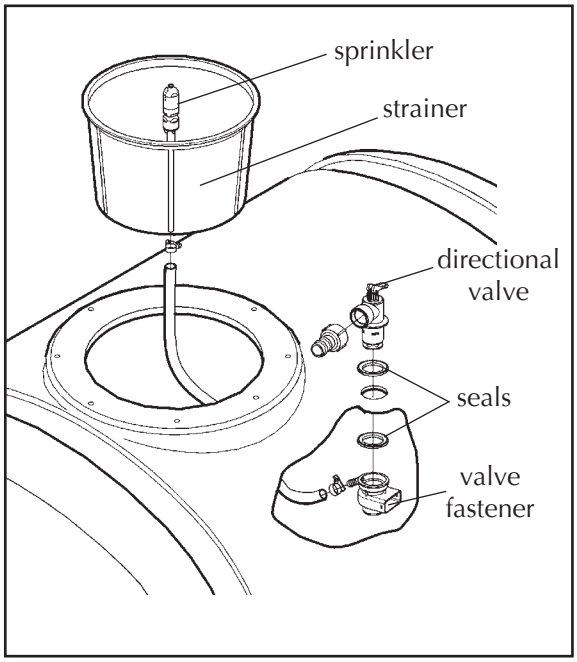
· Install the tank lid and make sure there is no leakage.

ATTENTION!

Always follow the chemical manufactures recommendations when handling chemicals.

· After the chemical containers are empty, they must be rinsed to remove any chemical residues and discarded in accordance with local disposal regulations.

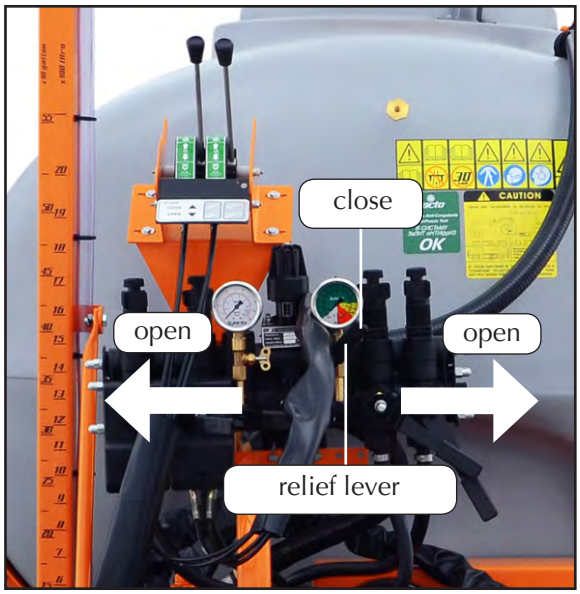
· To assist with this rinsing, Jacto has installed a device that internally rinses the containers with pressurized water. This device consists of the following components shown on the left.



> Procedures

· Pour the chemical into the tank.

· Engage the tractor PTO.

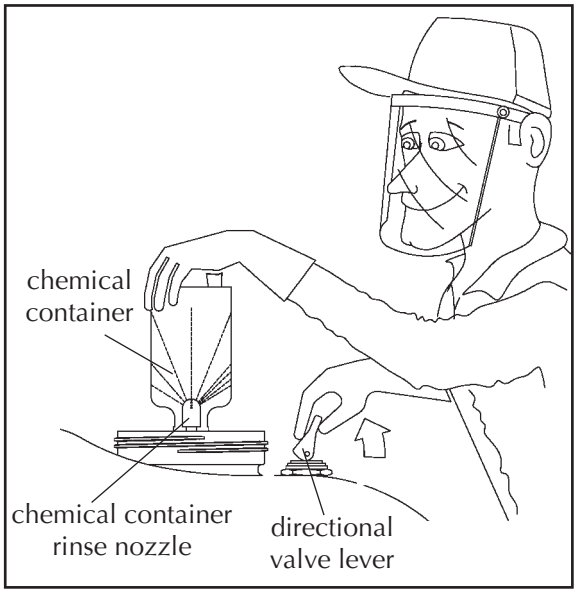


NOTE:

The relief lever of the chemical control must be set to allow the chemical to return to the tank (closed).

ATTENTION!

To prevent serious injury from exposure to hazardous chemicals, always wear recommended protective clothing and gear individual protective equipment before rinsing chemical containers.



· Hold the chemical container over the rinse nozzle and pull the directional valve lever to wash inside the container.

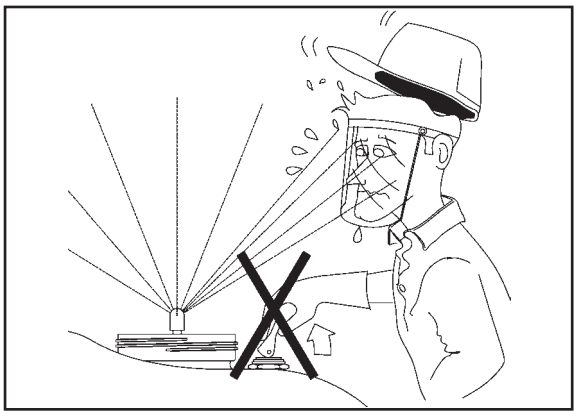
NOTE:

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 directional valve without the chemical container over the container rinse nozzle.
After rinsing the chemical container, wash it for the last time.



> Washing the chemical container

· Fill the chemical container with water up to 1/4. Fit the container cap and tight it enough to avoid leakage during the agitation.

· Shake the container strongly in all ways (horizontal and vertical), for approximately 30 seconds to remove the residues that are attached to the inside of the container.

· 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 it is completely empty.

· Next , pierce the bottom of the container so it can't be used anymore. Do not damage the label which identifies the chemical that was inside.

After having washed the package contaminated by mix, it is necessary to do a TRIPLE WASHING OF THE CONTAINERS. For this, follow the instructions below:

• Use personal protective equipment – PPEs (gloves, apron, overalls, protective glasses, hat, boots, masks).

ATTENTION!

This equipment does not have a backup reservoir for package washing.

• Fill out the package with approximately 1/4 of its volume with clean volume, place a lid over the package and tighten enough to avoid leaking during shaking.

• Vigorously shake the package in all directions for approximately 30 seconds, to remove the product residues that got stuck on the internal walls of the package.

• Remove the package lid and carefully place water for washing inside the package washer.

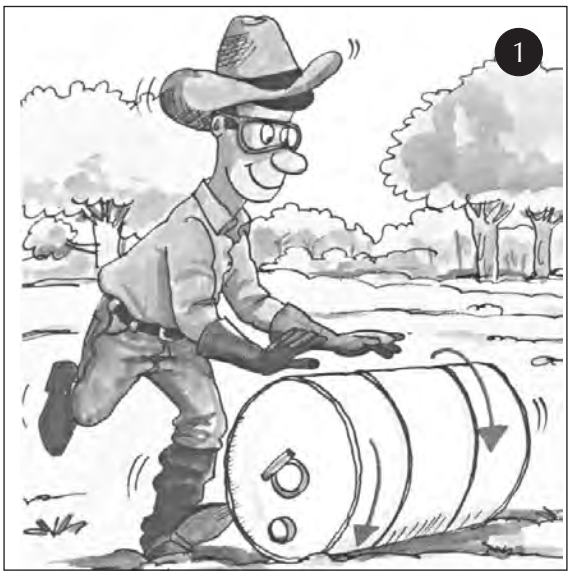
• Repeat this operation twice.

• Careful not to damage package label punch holes in the package in order to avoid its reuse. Avoid damaging package labels so that the chemicals can be identified after the package is no longer in use.

ATTENTION!

After the package is no longer in use they can be temporarily stored in an appropriate place until they are placed at their final destination.
Flexible packages should be stores and returned in specific bags designed for this function.

> Additional information



1. In the case of a medium sized package or large sized (13.20, 26.40 and 52.84 gallons), after washing in an adequate volume, place a lid over the package roll it on the ground for approximately 30 seconds.

2. Complete the shaking by alternatively lifting the package extremities, while supporting the opposite side on the ground. This operation should last approximately 30 seconds.

Remove the water for washing the packages the same way the product was removed while placing it on the sprayer tank.

This operation should be repeated at least twice. Punch holes on the package at the end of the TRIPLE WASH in order to avoid its reuse.

Source: ANDEF - ASSOCIAÇÃO NACIONAL DE DEFESA VEGETAL

· After the first hour of work, check if the bolts, nuts, clamps on the tanks, wheel and axle are tight. Retighten them if necessary.

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

· Clean and reinstall the nozzles.

· Clean the main filter.

· Rinse off the inside and outside of the sprayer.

· 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.

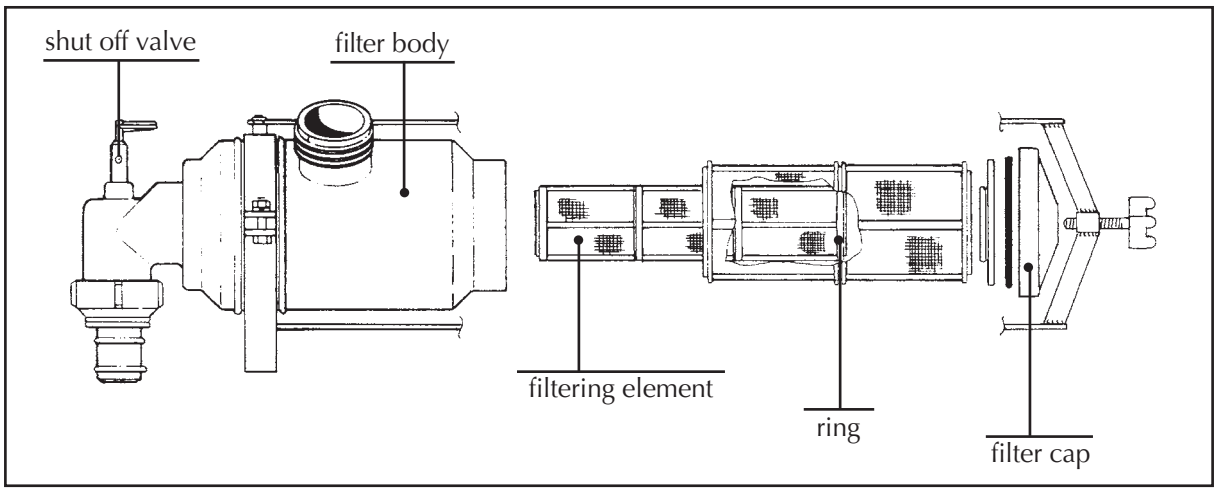
ATTENTION!

Never wash sprayers or individual protective equipment in or close to rivers, lakes, streams, creeks, dams, etc.

> Components - Main filter

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

· Clean the filter when filling the tank or whenever necessary.

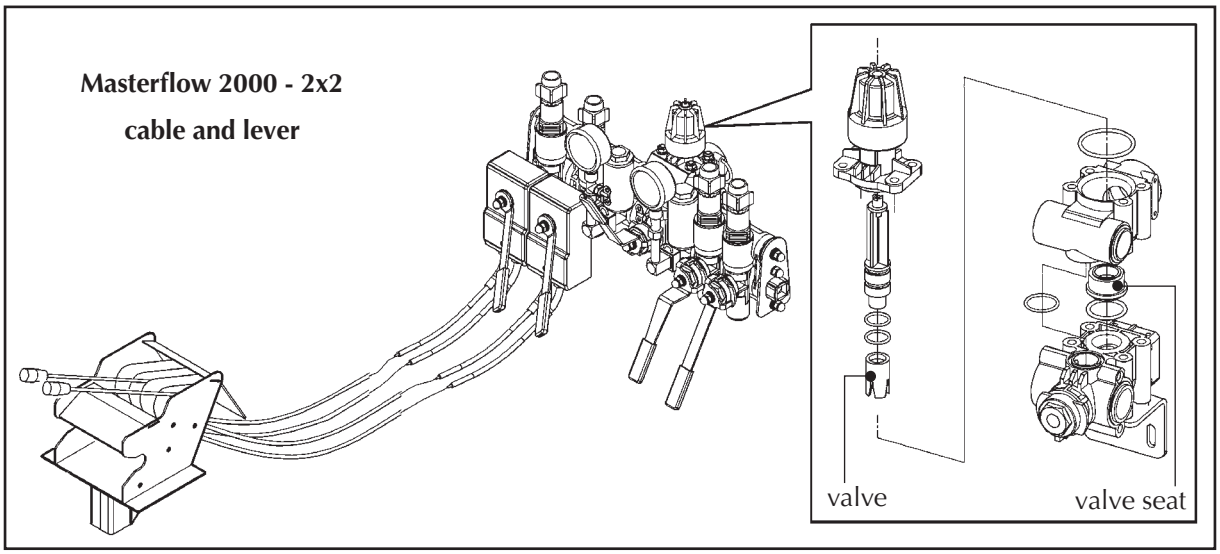


> Pressure regulator (VDC)

· Disassemble the pressure regulator every 100 working hours.

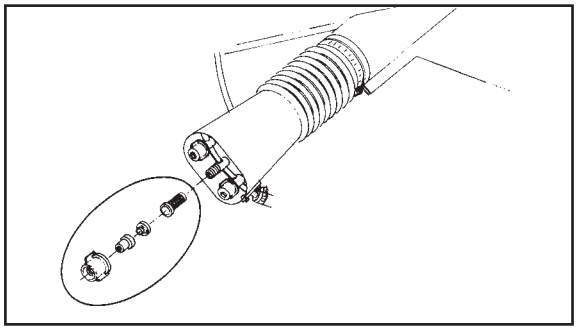
· Check for wear on the valve and valve seat.

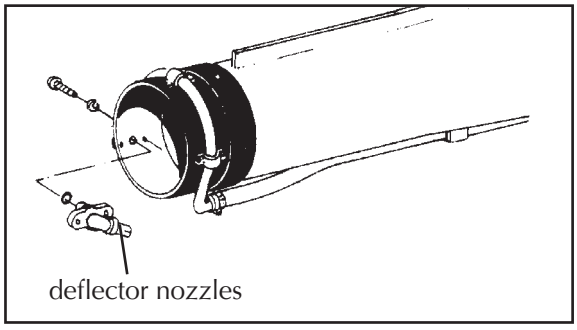
· Replace the parts if necessary.



> Auxiliary and main ducts

· Remove the auxiliary ducts nozzles and filters and the main duct deflector nozzles for cleaning daily or whenever necessary.



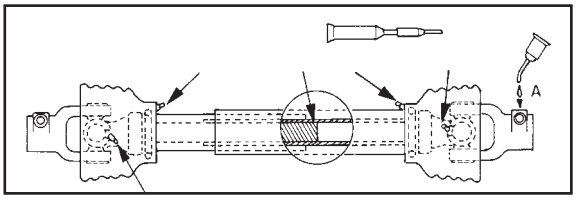


> Components lubrication

> PTO Shaft

• Lubricate daily.

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



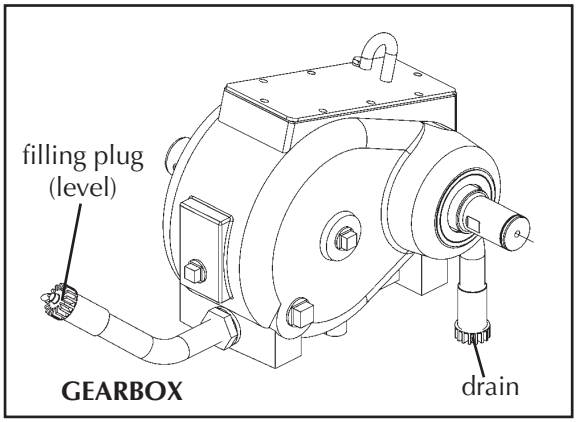
ATTENTION!

Before using the equipment for the first time, clean and lubricate every point of the PTO shaft, as shown in the picture above, with Lithium-based grease NGLI-2 (for further information about the greases, refer to the lubrication table).

> Pump

· Check the pump oil level daily and fill it if necessary.

> Gearbox

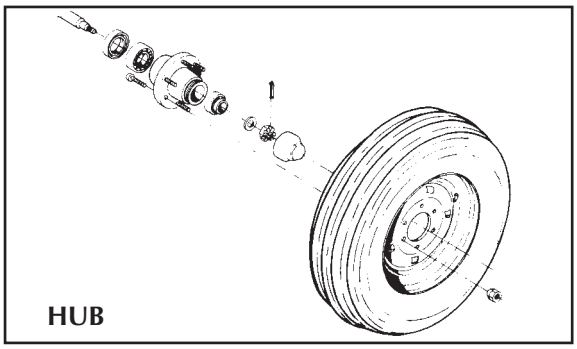


· Check the lubrication table for the frequency, quantity and type of the lubricant oil used in the gearbox. The gearbox oil level must be checked daily.

· If necessary , fill until reaching the filling plug.

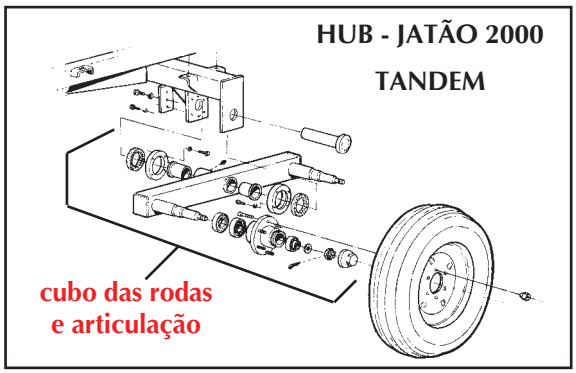
· Remove the drain plug to drain the oil.

> Wheel hub



· Replace the grease every 500 working hours according to specifications in the lubrication table.

· Place the sprayer on a firm and level ground and block its wheels before lubrificating the wheel hub.



1 - PTO shaft cross and tubes (Refer to the section MAINTENANCE - PTO SHAFT);

2 - Jack;

3 - Trailer's hitch;

4 - Mechanical agitator;

5 - Rear bearing;

6 - Spray ducts.

ATTENTION!

Always stop the sprayer and turn off the tractor engine before any kind of maintenance.

OBSERVATION:

The frequency to lubricate each item is descsribed in "OPERATIONS" in this chapter.

OPERATIONS TABLE	FREQUENCY									
	receiving the sprayer	using the sprayer for the first time	spraying	whenever filling the tank	every day or every 10h	first 30h	every 100h	every 500h or annually	every 1000h	every 2000h
Strictly follow all information contained in this operator's manual.	.									
Check if all components are intact.	.									
Check the components of accessories box.	.									
Require trained person to instruct about assembling, operating and servicing components and accessories.	.									
Clean and lubricate every point of the PTO shaft.		.								
Check if the hitch pin is original.		.								
Check if the hitch pins have cotter pins.		.								
Check the overlaps of the PTO shaft.		.								
Raise the tractors lift arms to the highest point.		.								
Adjust the control valve to avoid impact to the tractor.		.								
Check if the grease fittings are filled.		.								
Check the oil level on the components.		.								
Check tires and pressure.		.								
Retighten the tank nuts and lug nuts.		.								
Use individual protective clothing equipment.			.							
Do not work at high speeds.			.							
Do not spray against the wind.			.							
Take care with electricity supply cables.			.							
Do not eat, drink or smoke while spraying.			.							
After spraying, dispose of all protective clothing and take a shower.			.							
Clean the suction filter.				.						
Clean nozzles and their filters.				.						

OPERATIONS TABLE	FREQUENCY									
	receiving the sprayer	using the sprayer for the first time	spraying	whenever filling the tank	every day or every 10h	first 30h	every 100h	every 500h or annually	every 1000h	every 2000h
Clean nozzles and filters.					.					
Check the grease fittings and joint pins.					.					
Check the oil level on the pump and gear box.					.					
Wash the inside and outside of the sprayer.					.					
Check for damage to the paint and repaint.					.					
Check for oil leakage and repair.					.					
Store the sprayer in a dry, ventilated and indoor place.					.					
Change the pump oil for the first time.						.				
Retighten the bolts on the tank, axle and wheels.						.				
Check the protection guards, clean and wash the parts, lubricate and assemble the PTO shaft.						.				
Change the oil of the pump and gearbox.							.			
Tighten the belts.							.			
Clean and check the pressure regulator components.							.			
Clean the inside and outside of the sprayer, and paint the parts subject to corrosion with lubricating oil.							.			
Service the pump.								.		
Change the oil of the gearbox.								.		
Retighten the bolts of tank, wheels, axle, etc.								.		
Change the grease of the wheel hub.								.		
Replace the belts of the equipment.									.	
Replace the bearings of the drive transmission.										.
Replace the bearings of the driven transmission.										.
If necessary, replace the pressure gauge.										.

RECOMMENDED LUBRICANTS				
COMPONENTS	**TYPE**	**SPECIFICATION**	**RECOMMENDED PRODUCT**	**QUANTITY**
pto shaft, trailer's hitch, rear and front bearings, mechanical agitator, jack and wheel hub	grease	lithium base NLGI-2	Multifak EP-2 MobilGrease 77 Lubrax GMA-2 Beacon EP-2 or similar type	when necessary
gearbox	lubricant oil	API GL-5 SAE-90	Multigear Lubrificante EP-90 (Texaco) Mobilub HD-90 (Mobil) Ipergerol SP-90 (Ipiranga) or similars	0.4 gallons
JP-100 pump	lubricant oil	API-SB or superior SAE-30	All internal combustion engines within this specification	0.5 gallons
JP-50 pump				0.4 gallons

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

TRACK WIDTH

Tires	Track width (in)	
	Minimum	Maximum
7.5-16	55	59

GROUND CLEARANCE

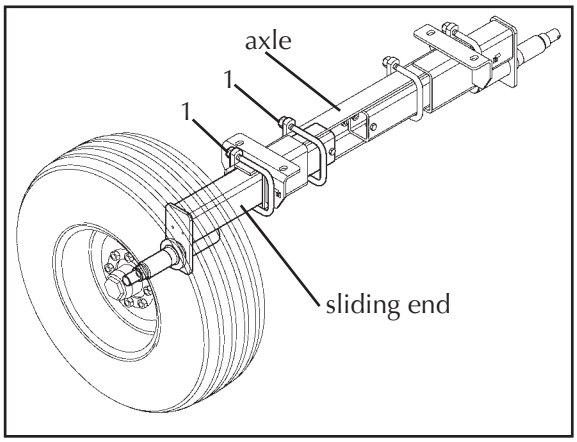
Tires	Ground clearance (in)
7.5-16	15

> Adjusting the track width

· Raise the trailer enough to suspend the wheels off the ground.

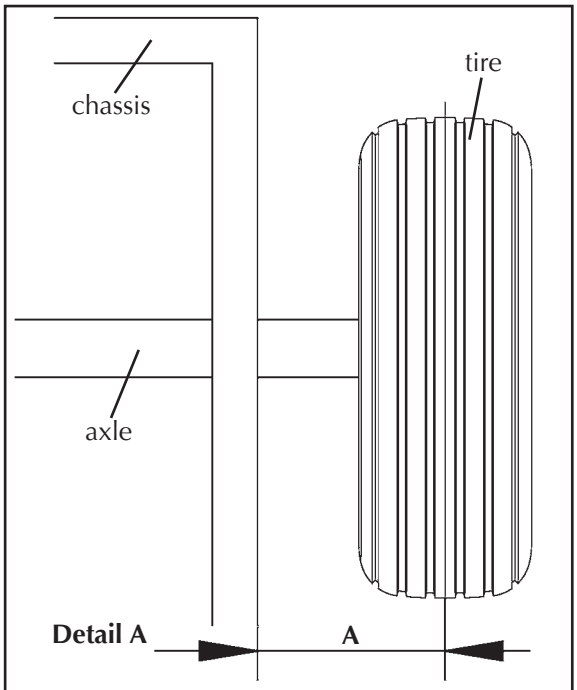
· Loosen the 4 nuts (1) that fasten the sliding end to the axle.

· Slide the axle end measuring the distance from the tire inner face to the chassis outer face. (example in the detail A).



NOTE:

Depending on the sprayer and the track width desired, it may be necessary to adjust the locking bolt for the high axle. Then adjust according to the recommendations in the table "Recommended Minimum Track Width (in)".



A = 11.6 in.....Track width = 55 in
A = 14.5 in.....Track width = 59 in

> Safety instructions

NOTE:

For both moving and working with the sprayer, it is important to have the axle assembled according to the recommendations in the table below. Preferably, for moving the sprayer at speeds above 5 mph, set the axle with the maximum track width and minimum ground clearance.

· The maximum working speed for the J-2000 sprayer must not exceed 4 mph.

· The maximum speed for moving the J-2000 sprayer must not exceed 6 mph.

ATTENTION!

Irregular ground risks operator's safety and sprayer.

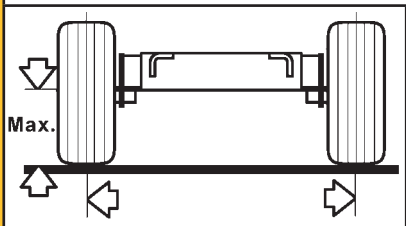
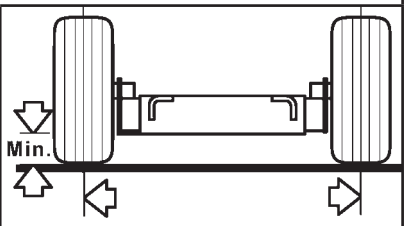
· Avoid moving on unlevel ground.

NOTE:

The values on the table, refer to the minimum distance (from the tire center to the other tire center) to operate the sprayer according to the position of the axle (i.e. high or low position).

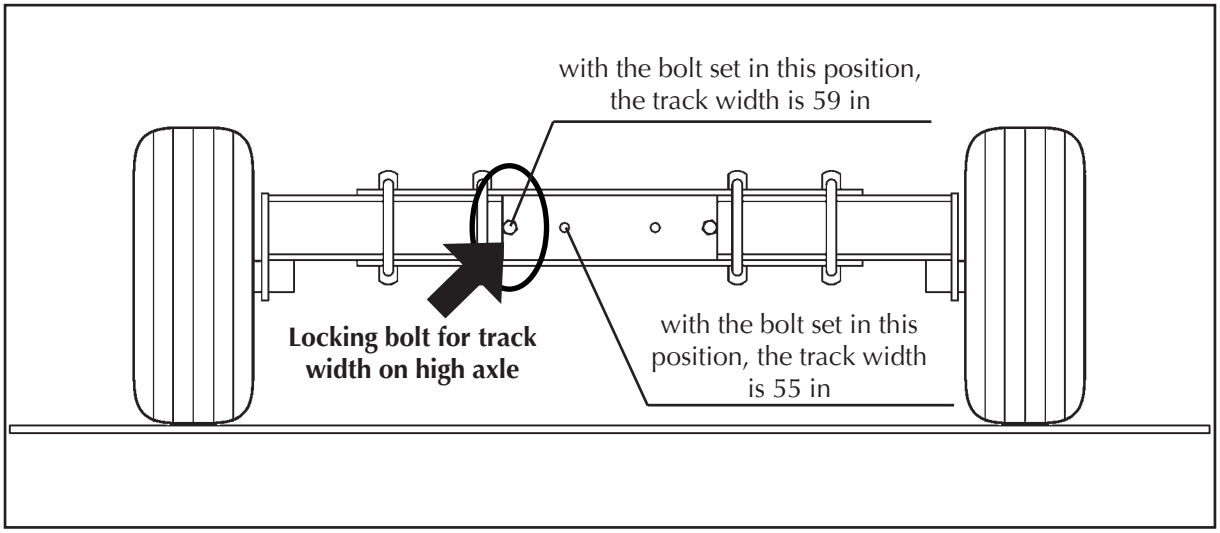
· The axle on the J-2000 sprayer is assembled with bolts to block the track width adjustment when set to high axle. The position of these bolts varies according to the sprayer type.

· To adjust the tracking width, follow the recommendation found on the label on the sprayer's axle.

	DISTÂNCIA (mm) MÍNIMA RECOMENDADA RECOMMENDED MIN. DISTANCE (mm) DISTANCIA (mm) MÍNIMA RECOMENDADA	
		
ARBUS 2000 VALÊNCIA	**1550**	*
ARBUS 2000 EXPORT/USA ARBUS SUPER EXPORT J-2600	**1400**	*
ARBUS 1500 GOLDEN ARBUS 1500 DIAMMOND ARBUS 2000 CAFÉ ARBUS SAFIRA	**1400**	**1230**
ARBUS 2000 CERRADO	**1550**	**1400**
* **NÃO É POSSÍVEL -** *NOT ALLOWED - NO SE PUEDE*		

ATTENTION!

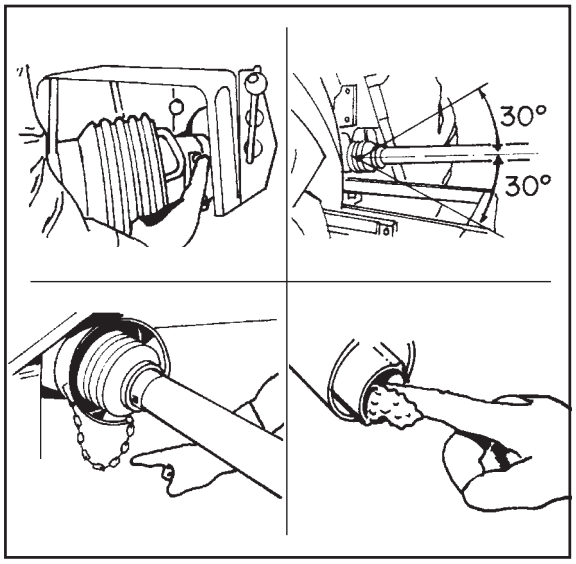
To adjust the track width, be alert to the position of the locking bolt, and adjust according to the dimensions recommended in above table.



ATTENTION!

Always stop the sprayer and turn off the tractor engine before servicing the PTO shaft. Any type of maintenance on the PTO shaft must be done with the use of appropriate protective clothing, such as: gloves, boots, goggles, etc.

> Connecting



· Check the PTO shaft length.

· Adjust the length by cutting the tubes and protection guards proportionately.

· Connect the PTO shaft and install the safety chain.

NOTE:

File and remove all burrs.
Leave some slack on the chain considering angular movements.

· Disengage the PTO when making sharp turns.

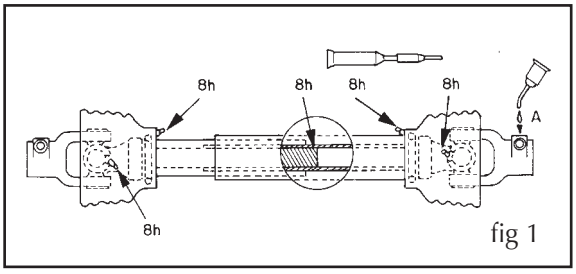
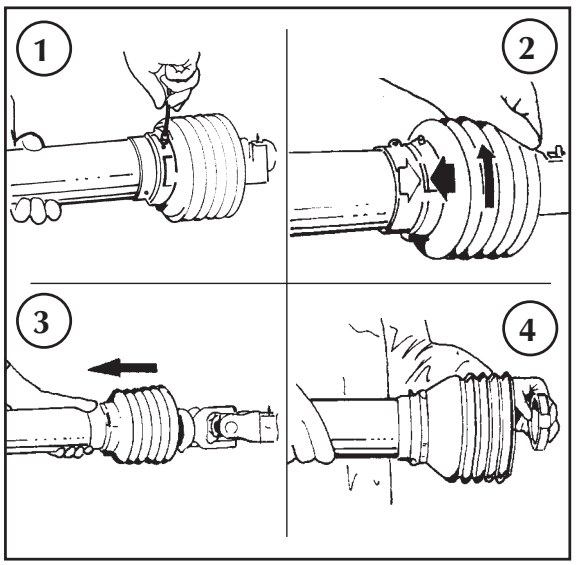


fig 1

ATTENTION!

Lubricate the male and female tubes and other points as in figure 1.

> 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.

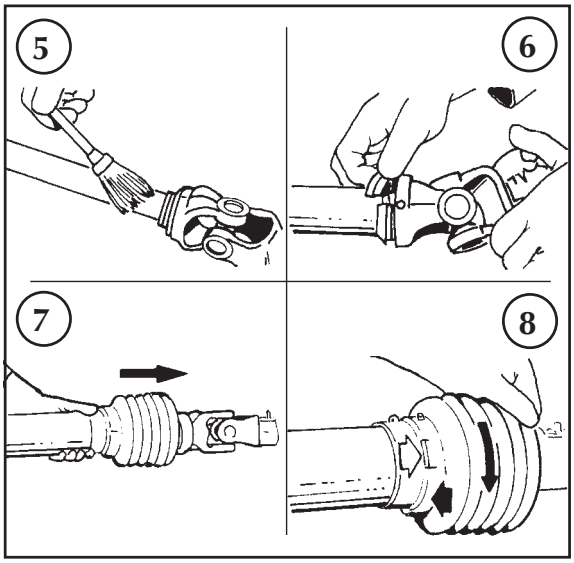
b) ASSEMBLING

5- Clean and lubricate the male and female tubes.

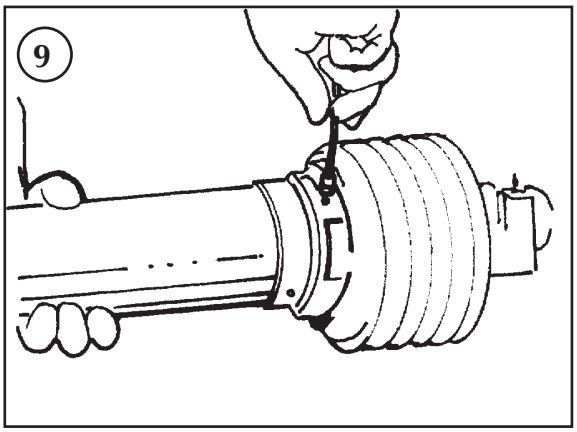
6- Install the sliding ring into the fitting with the grooves pointing toward the tube.

7-Install the protection guards.

8- Turn the guard cone until the indicated position.



9-Install the lock screw.



> PTO shaft with shield: Use, maintenace, disassembly and assembly

ATTENTION!

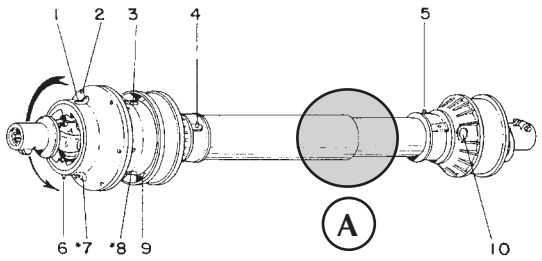
Always stop the sprayer and turn off the tractor's engine before servicing the PTO shaft.

Only operate with pto shaft equipped with protection guard. Always use the individual protective equipment during the maintenance of the PTO shaft.

· The WIDE-ANGLE CV PTO SHAFT is a component whose advantage in relation to standard PTO shafts is to allow turns at angles up to 75^{0}° with no need to disengage the PTO.

> Instructions

Correct position for lubrication



Lubricate daily the male and female tubes (detail A) and further lubricating points as indicated on figure.

1º - Lubrication

· Lubricate the points indicated in the figure A every 8 working hours.

ATTENTION!

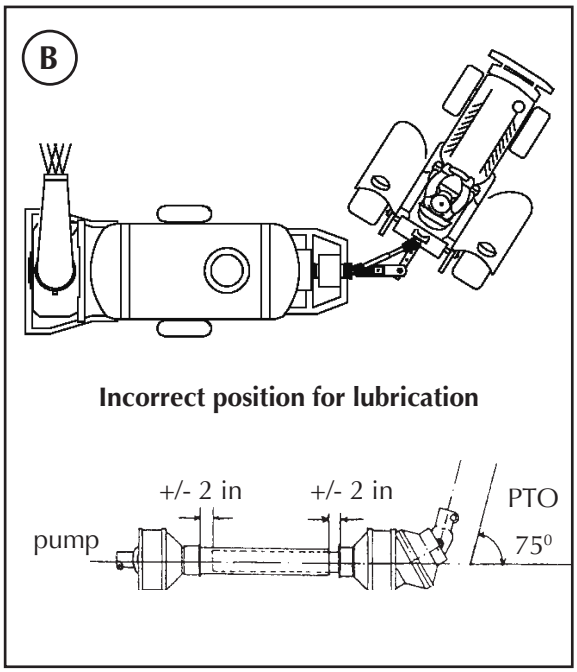
Before using the equipament for the first time, clean and lubricate every point of the PTO shaft, as show in the picture beside, with Lithium based greased NGLI-2 (for further information about the greases, refer to the lubricate table).

OBSERVATION:

Lubricate all points shown in figure A. Every 30-50 hours disassemble the shield, clean the parts, lubricate and assemble the PTO shaft.

ATTENTION!

Only lubricate the PTO shaft with the CV joint aligned to the male and female tubes; otherwise, the lubrication will not be appropriate and the PTO shaft can be damaged.



2º - Connecting the PTO

· Adjust the sprayer's tongue and the tractor's drawbar so that there is an overlap from 1.2 to 2 inches when the tractor is making a sharp turn (that is, when the tractor's tire is touching the sprayer's frame).

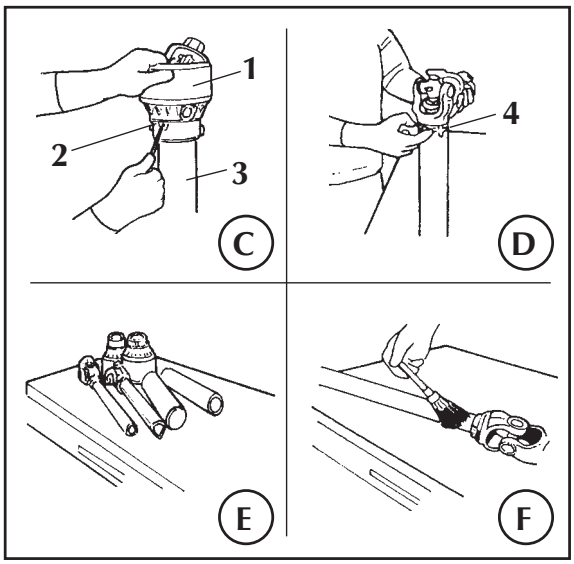
3 - Disassembling the PTO shaft for lubrication

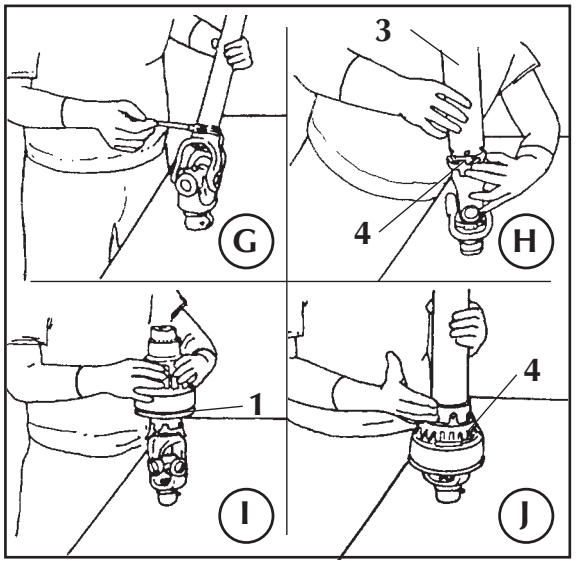
· Hold the shaft as shown in the figure C, push the guard cone (1) down and simultaneously press the three locks (2) with a point or screw-driver. Thus the guard cone (1) will slip on the guard tube (3) and can be removed.

· Remove the locking collar (4) and disconnect the guard tube (3) from the shaft.

· Do the same shown in the figures C and D with the C.V. joint other end and set apart its components.

· Clean all parts with a brush using kerosene or diesel and water and dry them.





4 - Reassembling

· Grease the locking collar groove (figure G).

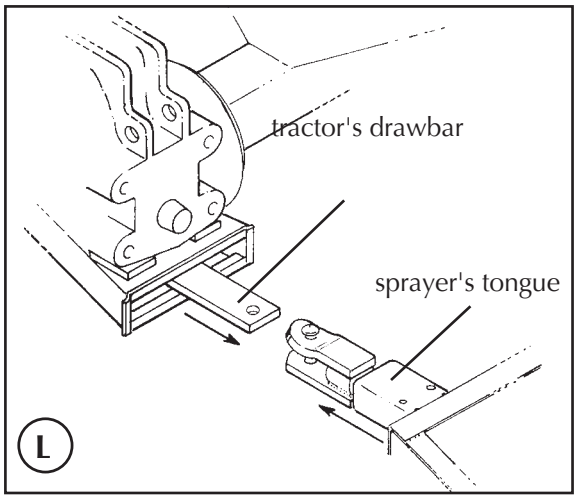
· Install the guard tube (3) and fasten it with the locking collar (4) (figure H).

· Hold the shaft as shown in the figure H and slip the guard cone (1) on. Align the grease cup of the guard cone (1) with the bearing tab on the locking collar (4) (figure J).

· Push the guard cone (3) so that it is engaged by the locks (2).

· Make sure the 3 locks (2) are firmly engaged as shown in the figure J.

· Do the same with the other end of the shaft and lubricate the whole assembly as shown in the figure A.



5 - Adjusting the PTO shaft length

a) Before cutting the PTO shaft, check if it is possible to use it without reducing its length.

Check:

· The position on the tractor's drawbar.

· If the sprayer's tongue can be adjusted longer.

b) Cutting the shaft

· Dismantle the protection guards as shown in the figures C and D.

· Cut the two tubes (male and female) at the desired dimensions (figure M).

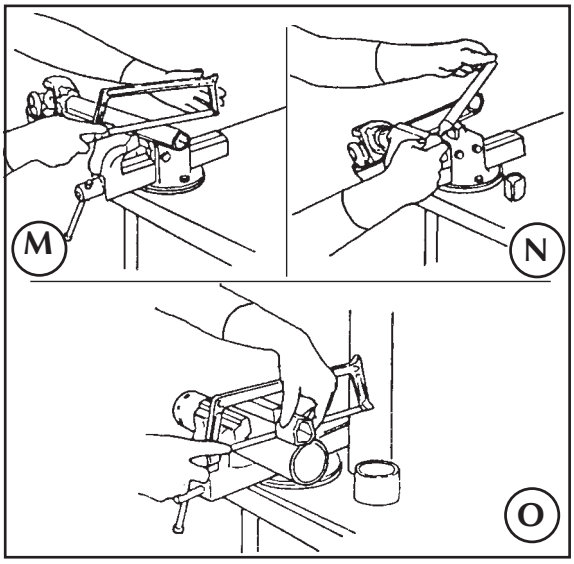
· Remove the burrs resulting from the cutting operation as well as the filings resulting from the burrs removal (figure N).

· Cut the guard tubes to length using the PTO shaft male and female metal tubes as reference measurement (figure O).

· Clean the cutting residue.

c) Assembling

· Assemble the PTO shaft as shown in the figures G, H, I, and J and lubricate it if necessary.



ATTENTION!

Only operate the PTO shaft with the protection guard installed.

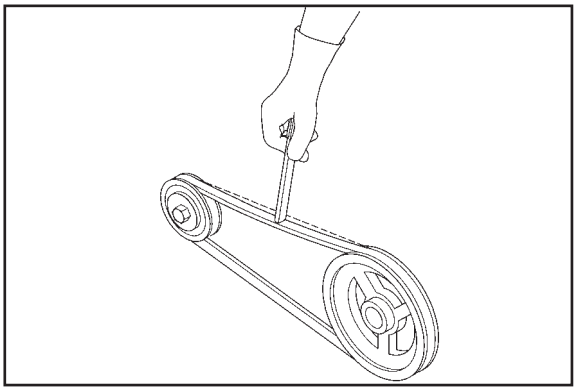
ATTENTION!

Always stop the machine and turn off the the tractor before any maintenance and use appropriate clothing equipment, such as: gloves, boots, goggles, etc.

> Belts tension

· Check the belts tension periodically.

· Press the agitator belts as shown in the figure beside. When pressed it should slack 0.4 to 0.6 inches. DO NOT USE SHARP-ENDED OR CUTTING TOOL.

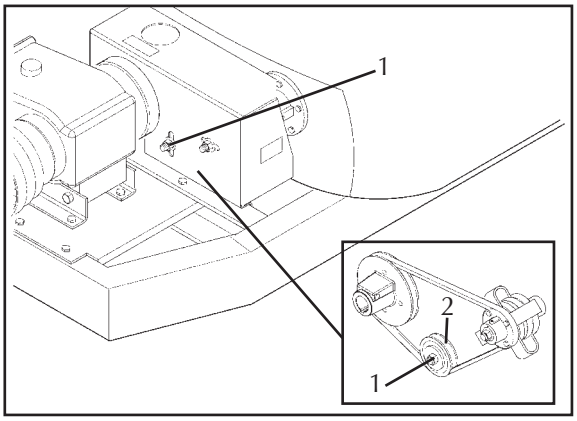


> Agitator belt adjustment

· Loosen the nut (1) that fastens the tension pulley of the agitator belt.

· Then use a lever to slide the pulley (2) until obtaining the required tension for the proper operation of the agitator.

· Retighten the nut (1).



> Fan belt

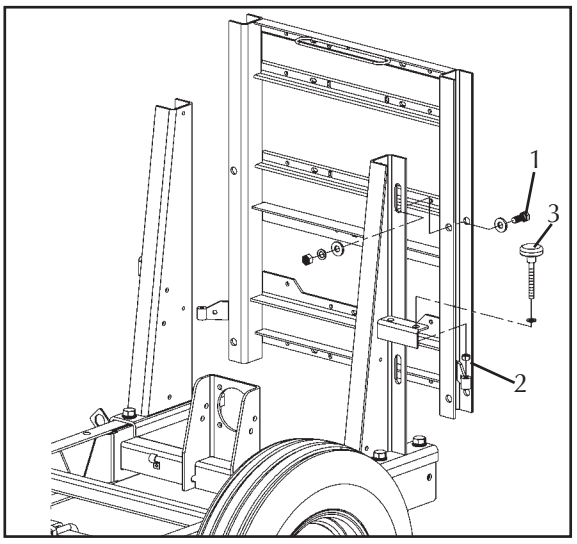
· Loosen the four bolts (1) enough to allow the frame to be moved.

· Loosen the two nuts (2).

· Hand-tighten the two knobs (3) equally until obtaining the recommended tension for the belts.

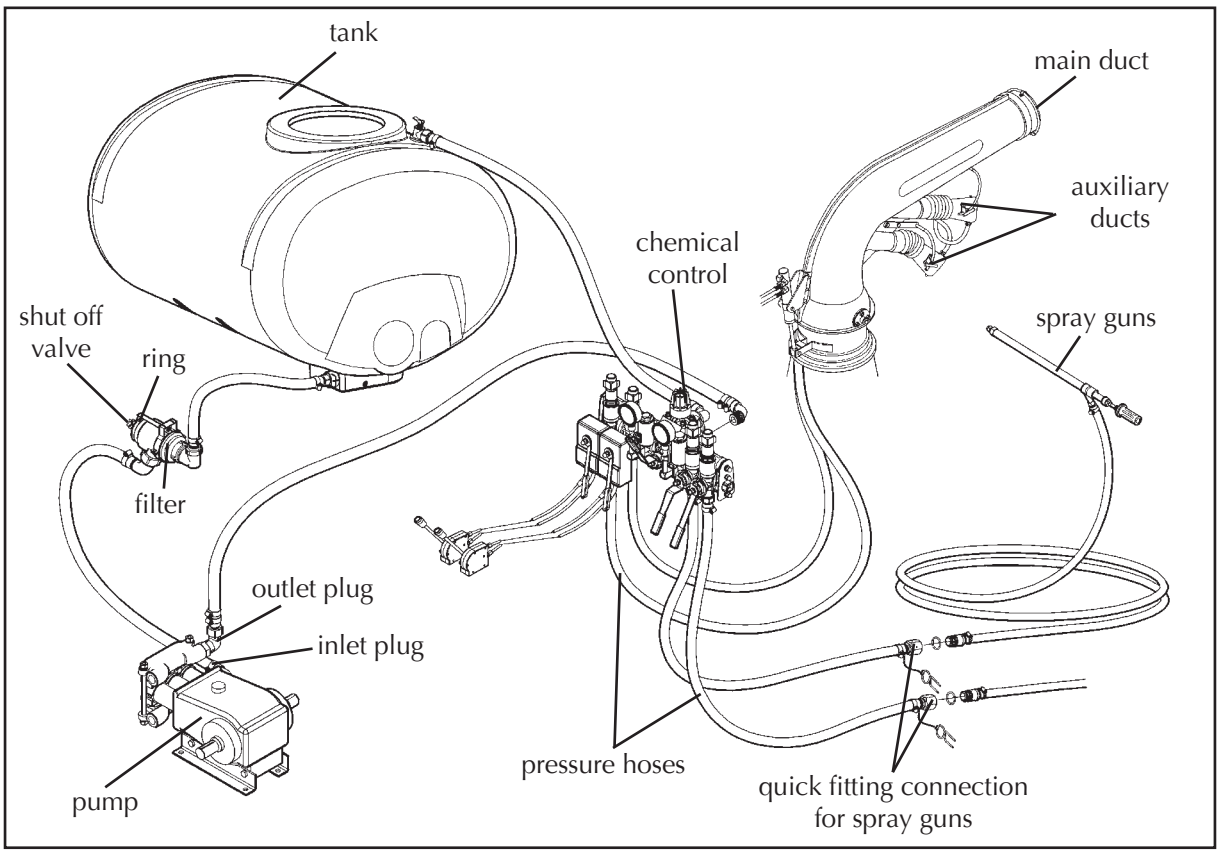
· Retighten the two nuts (2).

· Retighten the four bolts (1).



ATTENTION!

In regions where temperatures drop to 32 Fahrenheit or less, the water accumulated in the pump can freeze and cause serious damage. Drain all water from pump after each use and before long-term storage in the winter.



> 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.

· 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.

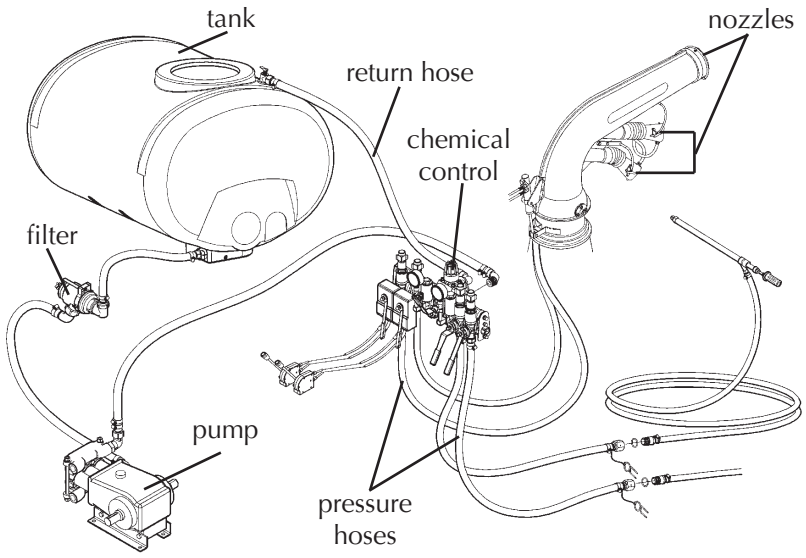
· Run the sprayer for about 30 seconds at half speed.

OBSERVATION:

To avoid damage, do not operate the sprayer over the recommended maintenance period.

COMPONENTS:

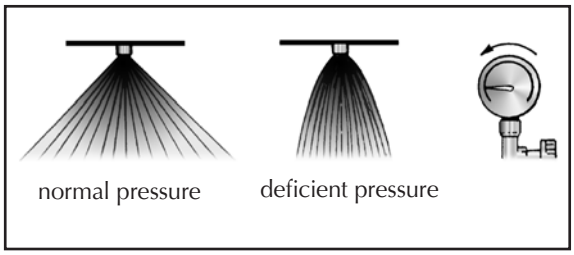
- Tank
- Main filter
- Chemical control
- Pump
- Pressure hoses
- Return hose
- Nozzles



ATTENTION!

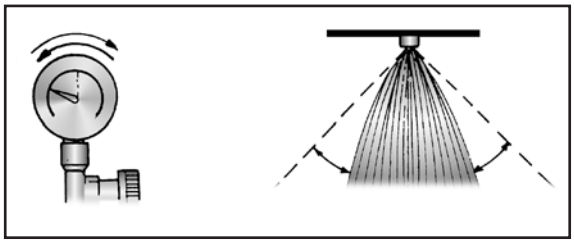
PROBLEMS - CAUSES - SOLUTIONS

Whenever Jacto sprayers equipped with piston pumps present problems, try to classifiy them in one of the following four groups. Then look at the trouble-shooting chart on the next page for the solution.



a) LACK OF SUCTION AND PUMPING CAPACITY

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

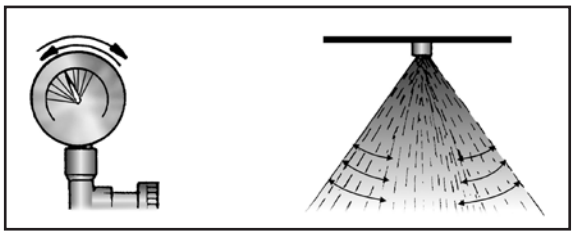


b) PRESSURE DEFICIENCY (PARTIAL LACK OF PRESSURE)

- Desired pressure is not obtained.
- Specified nozzle spraying angle is not obtained.
- 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 operate the pump system, it is necessary to maintain 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.

b. 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.

c. Intermittent pressure

PROBABLE CAUSES	SOLUTIONS
1. Filter shut off valve close.	When the pumps runs, liquid will pass through the valve even in the closed position, however flow will be insufficient.
2. Pump valve deficienty.	Valve with sealing deficiency or stuck due to impurities.
3. Head with an internal hole.	Replace the head.

d • 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 lack of pressure. Check whether the hose connecting the filter to the pump is twisted. Verify whether 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 20% 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: JP - 402 = 10 gpm JP - 75 = 20 gpm JP - 42 = 11 gpm JP - 100 = 26 gpm JP - 50 = 13 gpm JP - 150 = 40 gpm

> Handling sprayers and agrochemicals

· We warn the owners and users that the UNREASONABLE USE of this sprayer and chemicals it applies 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 safety and efficiency when spraying your crops.

> After spraying

· Empty completely the tank and wash thoroughly the sprayer in a proper decontamination place.

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.

· 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.

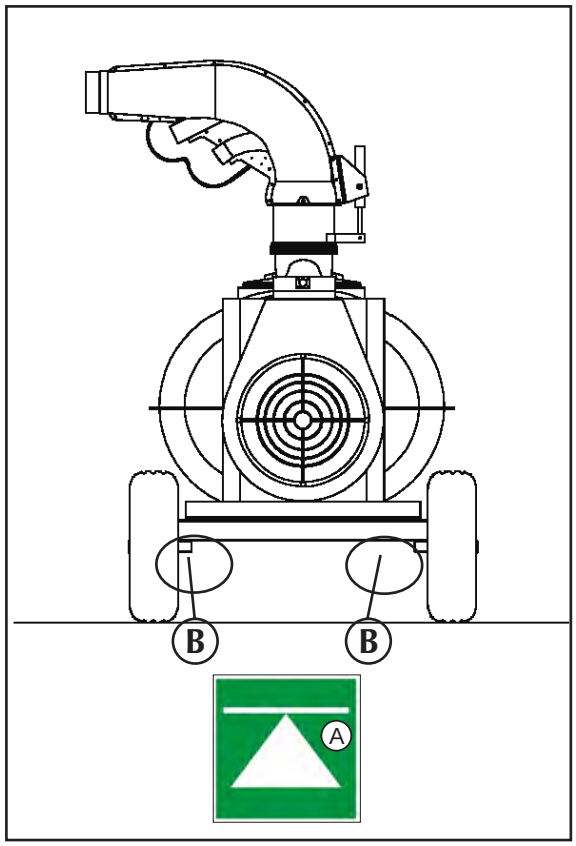
· Repaint the damaged metallic parts to prevent corrosion.

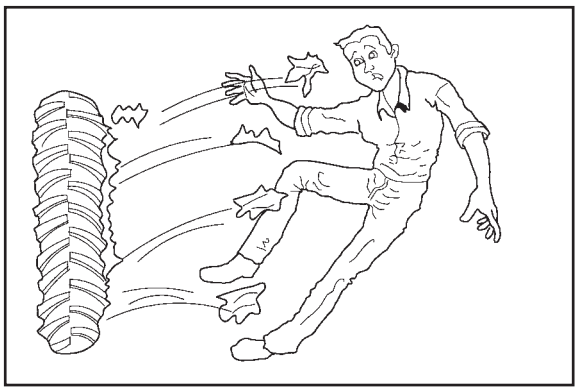
· Spray the mettalic parts with lubricating oil to prevent corrosion.

· Take off the individual protective clothing and wash it separately from other clothes.

ATTENTION!

Operating this SPRAYER without following the instructions may result in serious injury or death.





· When raising the equipment to change tires or track width require much attention

· Keep the machine connected to the tractor on a level and firm ground.

To change the tires, proceed as follows::

· Lift the sprayer with the appropriate hydraulic jack (lift capacity over 4,410 lb in each point) through the points (B).

· These operations must be done with the sprayer tank empty.

Changing tires:

· Always deflate the tire before removing the object that punctured it.

· The tires disassembly and assembly services must be done by trained people. When pumping up the tire, never exceed the manufacturer's recommended pressure. Over pressurizing the tire can cause it to blowout which can result in a serious injury.

· If it is necessary to repair the wheel/rim, disassemble the tire.

· When you are finished spraying, fill up the tank with clean water (50% of its capacity), remove the nozzles and filters in appropriate place and run the system until draining all the water in order to clean the chemical circuit. Clean the suction filter, the nozzle filters and the nozzles using clean water, neutral detergent and nylon bristle brush (toothbrush). This operation must be made with the use of individual protective clothing equipment (gloves, masks, etc.) and in places where there is no risk of contaminating people, animal, water sources, houses, etc.

· Repaint the damaged parts to prevent corrosion.

· Wash the sprayer externally with clean water and in an area where there is no risk of contaminating the environment.

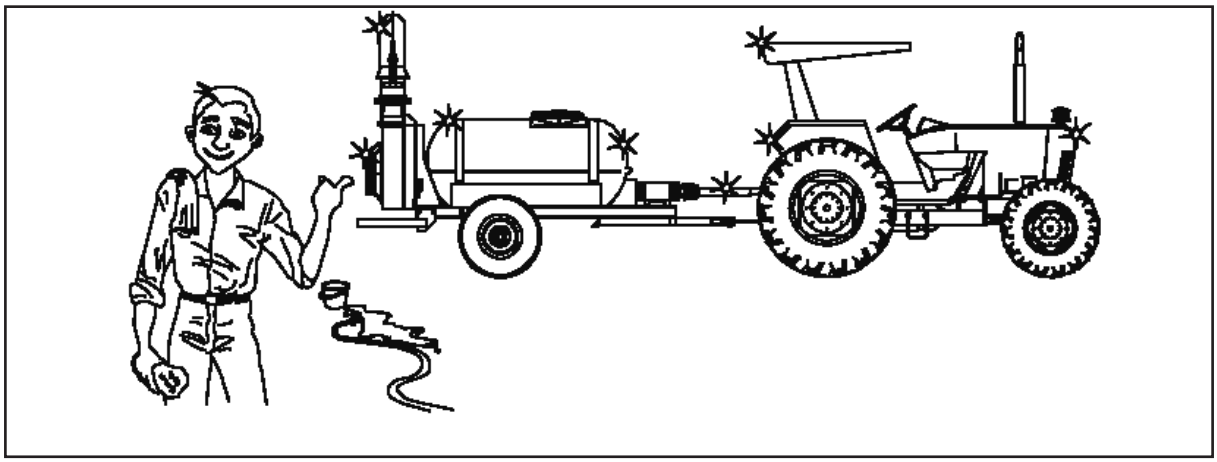
· Store the sprayer in a closed covered, dry and ventilated place.

· Do not store the sprayer together with foods for people or animals that can be contaminated.

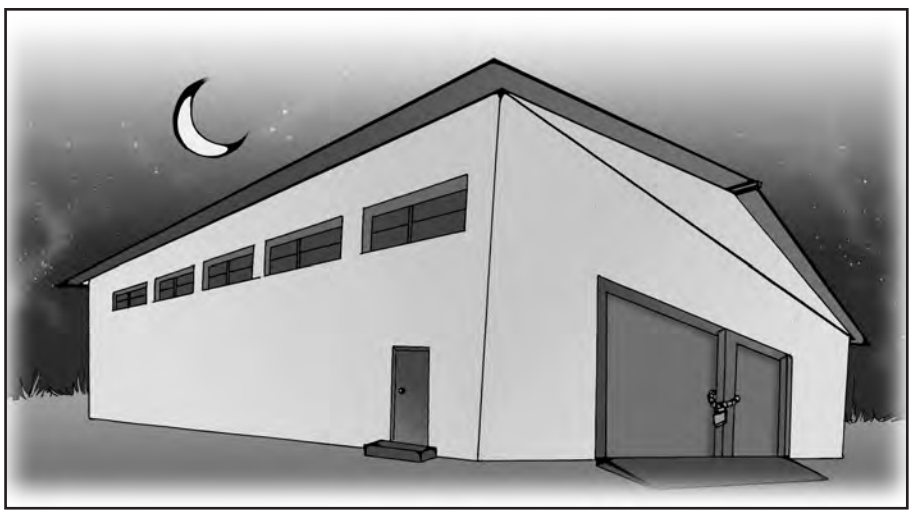
· Do not store the sprayer together with chemicals and fertilizers that can cause corrosion of the sprayer.

· Spray the metalic parts with a proper protection product or lubricating oil. Do not spray plastic or rubber parts such as tires, nozzle holders, etc. with any kind of solution.

· Make all necessary repairs to maintain the sprayer in good conditions for the next use.



> After cleaning, store the sprayer in a closed covered, dry and ventilated place



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.

Date	hours nº	Description	Techinical/Dealer

PRODUCT REGISTRATION CARD

Invoice number _____ Date ____/____/____

Retailing delaer _____

Phone _____ City _____ State _____

Sprayer _____ Model _____

Series _____ Sprayer No. _____ Pump No. _____

Original retail purchaser _____

Adress _____ 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 delaer _____

Phone _____ City _____ State _____

Sprayer _____ Model _____

Series _____ Sprayer No. _____ Pump No. _____

Original retail purchaser _____

Adress _____ 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