J-1000

English version / MI_USA- 0471

EDITION Nº 06/2011 CODE: 1160881



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. 19217 SW 119th Ave Tualatin, Oregon 97062

Tel.: (503) 885-8723 Fax: (800) 511-3671

Toll Free: (800) 522-8610 E-mail: info@jacto.com Home page: www.jacto.com

Introduction

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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-1000 was developed exclusively for chemical spray application.

The J-1000 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.





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JACTO RESERVES THE RIGHT TO CHANGE SPECIFICATIONS AND DESIGN WITHOUT PRIOR NOTICE.

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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.



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 condi-

tion. 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.



ATTENTION: Lubrication point

P/N: 276220



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



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



P/N: 276238



P/N: 379248

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



P/N: 389387

ATTENTION: Drain point.



ATTENTION: Lubrication point with oil.

P/N: 395061



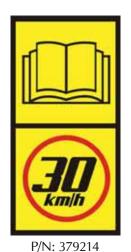
ATTENTION: Do not get into the main tank of the sprayer.



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

P/N: 379230





ATTENTION: Maximum speed allowed for the machine is 18.5 mph.



ATTENTION: Required use of protective clothing.





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



ATTENTION: This sprayer is not designed for highways.

P/N: 379008



P/N: 379222



ATTENTION: Required use of protective mask.

P/N: 379107



P/N: 169128



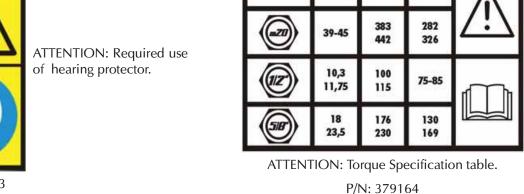
P/N: 379115

Final test of the equipment.

P/N: 013169



P/N: 379123



Kgf.m

N.m

ft.lb

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

P/N: 379040

1			
+ \ O E		Lbf/pol³	Kgf/cm³
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: Risk of injuries. Keep away and do not make any kind of maintenance while the fan is in motion and the PTO is turned on.

ATTENTION: Tire pressure table.

P/N: 391631

) jacto		
MÁQUINA:		
MOD€LO:		
LOTE:	PESO:	kg

Identification plate P/N: 047035



ATEN	ÇÃO AT	TENTION ATENCIÓN
DANG.	CAMMENTS IN THE OW I PONTOS IS - IL ON	MONTAR DE DARFOS CONTURRE RICICADO EM A CRIO SEJA INCESSARIO CONTAR RE BARRAS DO CARDAS, DEXARDO FOLIZA CONTURRE RICICADO EM SE
	TRACEPE A 20 CM	ASSURE THE POPER AS INDICATED IN IN THE PIDLING CAP LEAVING CLARACTER IN THE PIDLING CAP
PATTER STATES	CAMPENS B + 31 IIII 3 PONTOS B + 3 IIII	ARONTAN LAS HORSON LINE SESSIN RESCASO EN IN- CADO SEA NECESARIO, CORTAN LAS SAFRIAS SES CARGINA DELANCIO MULSES CONTORNAS EN IN-

Instructions to connect the PTO shaft

P/N: 428631



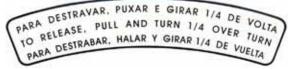
Instructions to adjust draw bar.

P/N: 219717



Procedures for fan belts tension.

P/N: 515601



Instructions to unlock the fan.

P/N: 018705



Designer sticker left.

P/N: 280735



Designer sticker right.

P/N: 280743



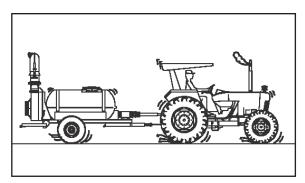
- Only qualified operators that have thoroughly read and understood the owner's manual should operate the J-1000;
- Before operating the sprayer, it's very important to understand all the information in this manual. If you have any questions, please contact Jacto.
- Do not take alcohol or drugs before or during operation of this sprayer.
- Whenever handling chemicals, always use approved Individual Protective Equipment (IPE). For example: long sleeve coveralls, water reistant 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 premature 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.







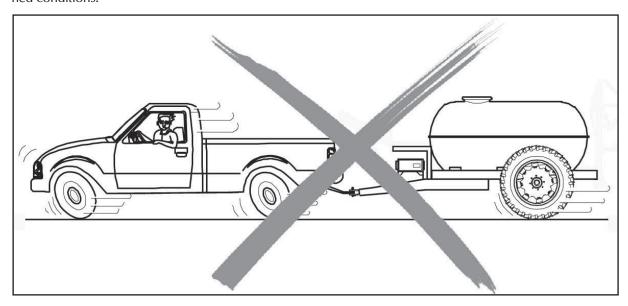




> Operational safety

- 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 18 MPH on the farm and 7 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.

- 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.
- •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 J-1000 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.

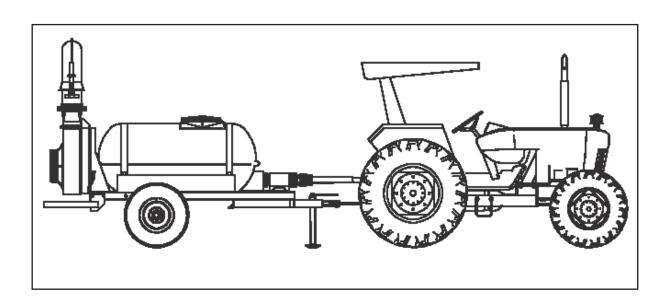
- The incorrect handling by untrained personnel can cause serious injury or death.
- •Do not make any alternations or modifications to the sprayer as this can compromise the equipment and risk your life.
- Do not allow children, eldery or animals close to the equipment during it uses, maintenance or 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.

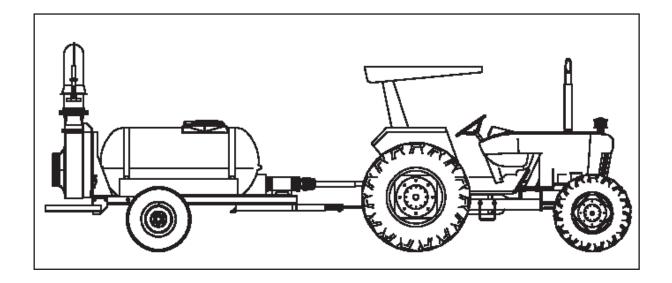




> Warning for adjusting and connecting PTO shaft to the tractor

- 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 J-1000. 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.

> 265 Gallon tank

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

- When filling the 265 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 environment.
- 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: When handling chemicals or preparing the chemical mixture, use individual protective clothing 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.

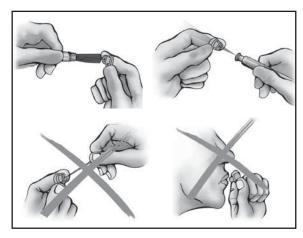
Wash at least 15 minutes with running water any part of the body that have come in contact with the agrochemicals. Remember that most poisonings occur during the preparation of the chemical mixture when the chemical is still concentrated.

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.

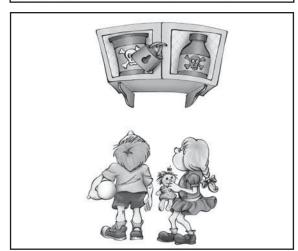
Use only masks that are approved by the agrochemical manufacturer when spraying.

- 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.









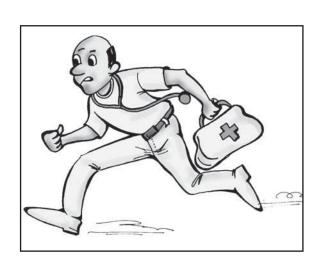


- 6 · NEVER blow through nozzles, valves or pipelines by mouth. For this operation use protective gloves. All spraying equipment has agrochemicals residues. Never put spraying parts in touch with mouth. This is the quickest way to be poisoned on or near your mouth. If it is necessary to clean the nozzles,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



Choosing the tractor	. 3
Hitching the sprayer to the tractor	. 4
Adjusting the PTO shaft	. 5
Connecting the hydraulic system	. 6



> Procedures



Different working conditions lead us to adopt the following criterion for choosing the tractor that will drive the J-1000 cannon sprayer.

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

Example:

Sprayer weight = 1,565 lb Tank capacity = 265 gallons Total power consumption = 25 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 = 25 HP Minimum tractor nominal power = 47,5 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 = 1,565 lbs
Full tank weight = approximately 2,204 lbs (265 gallon tank)
Sprayer gross weight = 3,769 lbs
Tractor gross towing capacity = 3,769 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 47,5 HP and a minimum gross towing capacity of at least 3,769 lbs.

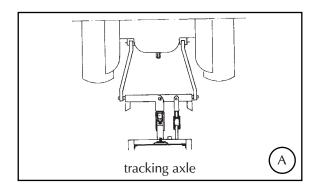


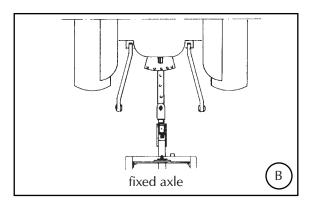
- Hitch the sprayer to the tractor (figures A and B).
- If the sprayer is equipped with tracking axle, it is necessary to leave a clearance between the sprayer's hitch and the PTO shaft enough for the normal operation of the sprayer (figure C). Next, lock the hydraulic lift lever (figure D).

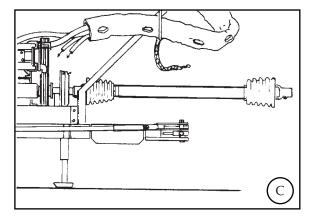


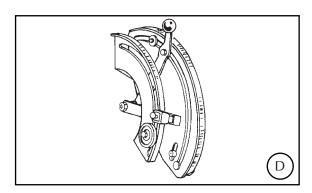
ATTENTION!

Make sure the sprayer is properly hitched to the tractor to avoid damage to sprayer.

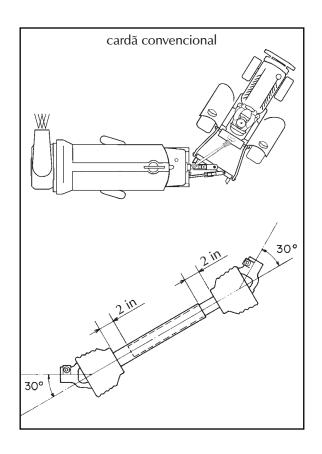












- Position the tractor so that either of its rear tires can touch the sprayer's chassis head.
- Connect the PTO shaft and mark on both male and female tubes the recommended overlaps (1.96 in).
- If necessary, cut the tubes according to specifications in the section MAINTENANCE PTO SHAFT.



NOTE:

Before cutting the PTO shaft tubes, check for all the possible adjustments of both tractor's drawbar and sprayer's tongue. Make sure the hitch pin is properly installed with cotter pin.



> Duct hydraulic system

The J1000 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.

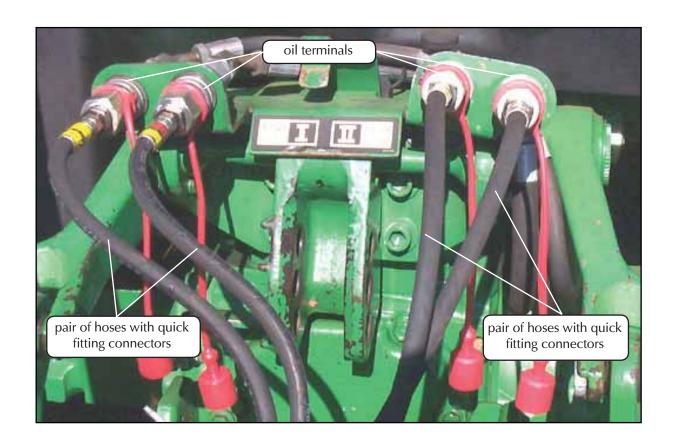
Once you identify the remote hydraulic oil terminals on the tractor, proceed as follows:

- 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.

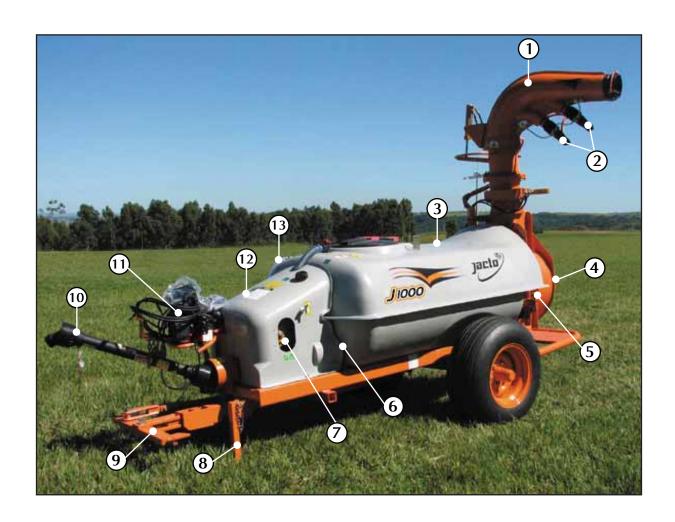
To avoid damage to the equipment and to keep hose inlets protected, use the correct type and amounts of oil in the tractor remote control system. See tractor manual.

CHAPTER 3 Technical Specifications



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Technical specifications	. 4





- 1 Main duct
- 2 Auxiliary ducts
- 3 Tank
- 4 Fan lock
- 5 Belt tension
- 6 Mechanical agitator
- 7 Pump

- 8 Jack
- 9 Hitch
- 10 PTO shaft
- 11 Chemical control
- 12 Clean water tank
- 13 Level indicator



Model	J-1000
Weight Net weight	1,565 lbs
	,
Dimensions Total length	150 in
Total widthTotal height	
Ŭ	
Tires Type	11 15
Pressure	
Tank	
Material	
Capacity	265 gallons
Level indicator	Level indicator with graduated scale
Pump	
Model	
Capacity Maximum pressure	
Power consumption at 400 psi	
Filter	
Model	
Mesh	60
Ground clearance	10 in
Track width	
Fixed	45 in
Agitator	Mechanical
Chemical control	MF-2000 2x2
Pressure gauge	with extended scale
Recommended working speed	1.5 to 4 mph
Total power consumption	25 HP
i otai pomei consumption	



FAN FEATURES			
Description	Characteristic		
Fan diameter (in)	20		
Drive pulley diameter (in)	8		
Driven pulley diameter (in)	3.5		
Rotation (rpm)	3030		
Air volume (cfm)	5.445		
Air speed (mph)	171		

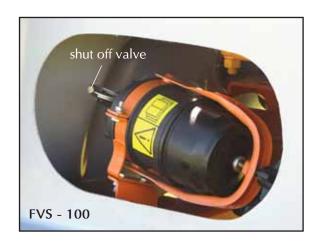
J1000 - OPTIONS			
Filling unit	EJ-250		



Suction filter	3
Pump	3
Duct	3
Pressure regulator	4
Gearbox	4
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Outline of panel electrical installation	5
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Triple wash of chemical container	23
Track width and ground clearance	25

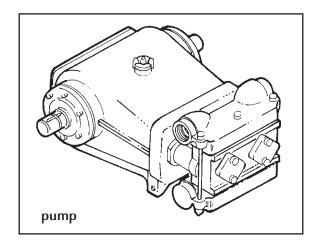


> Suction filter



- Located between the tank and pump, the suction filter is specifically designed to prevent dirt or impurities from reaching the pump.
- It has a quick shut off valve which allows easy filter cleaning, filtering elements changing and/ or pump maintenance. This valve should always remain open while the sprayer is running. If it remains closed, the mechanical seal of the pump can be damaged.

> Pump



- The pumps mounted to Jacto sprayers have capacity ranging from 10 to 79 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.

Pump	Flow rate	Maximum press	O
-	(gpm)	psi	kgf/cm ²
JP-402	10	300	21
JP-75	20	400	28
JP-100	26.5	400	28
JP-150	40	400	28
JP-300	79	400	28

> Duct

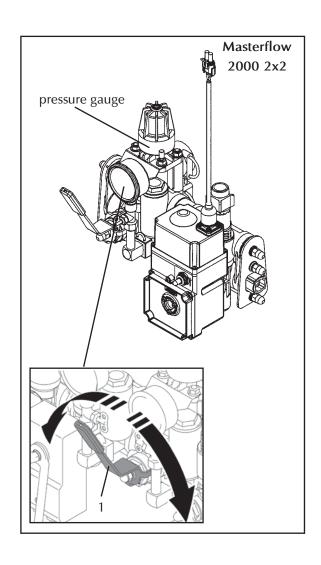


• The main duct on the J -1000 can be adjustade both horizontally and vertically. It also has two auxiliary ducts to cover the area close to the tractor, thus improving the quality of spray applications.



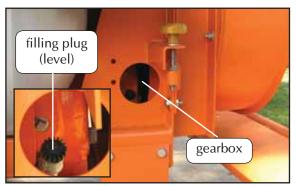
> Pressure regulator

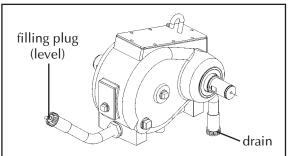
- The Masterflow 2000 2x2 pressure regulating control provides adjustments of up to 5.5 kgf/cm (80 psi) on the side that controls the flow to the main and auxiliary ducts (cable operation) and 20.7 kgf /cm (300 psi) on the side that controls the flow to the spray guns (lever operation).
- The lever 1 diverts the chemical flow to the ducts or spray guns.



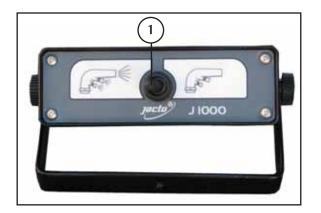
> Gearbox

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









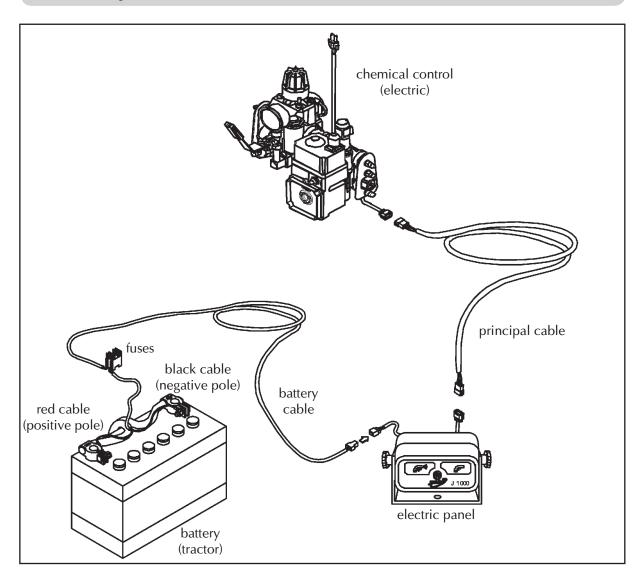
- The electrical panel of J-1000 is located in with easy access on a mobile base that can be adjusted in the longitudinal way, depending on the type of tractor or even the need of the operator.
- •The electric panel controls the opening and closing of the ducts flow. The switch number 1 allows the opening or closing of the flow of the main and auxiliary ducts.

> Outline of panel electrical installation



ATTENTION!

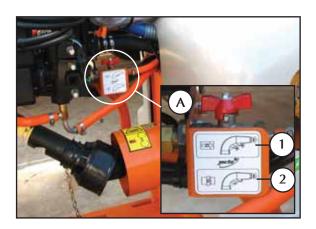
Please note carefully the position of assembly of the cables connectors, to avoiding terminals damage.





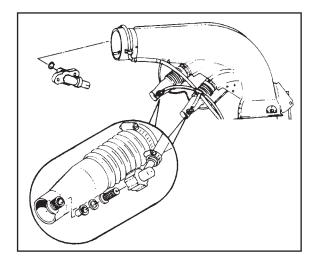
> Directive valve

- •The directive valve (detail A) is located between the pump Masterflow control and chemical pump, easy access.
- •The directive valve (detail A) allows you to select the flow only in the main duct (detail 2) or in all ducts (main and auxiliary - detail 1).



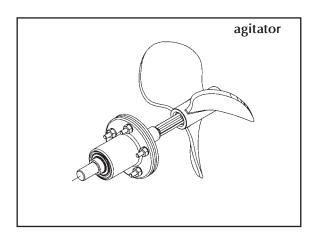
> Nozzles

- The job 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.



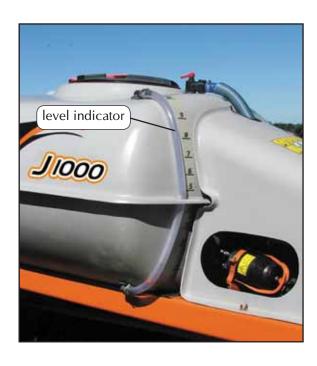


> Mechanical agitator



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

> Level indicator



- •Located on the right side of the operator, the level indicator has a graduated scale that facilitates the identification of the mixture quantity in the tank.
- During the spraying, make sure that the level of mixture in the tank is not less than 13.2 gallon so that the pump does not work without chemical.



NOTE:

Avoid leaving the chemical leftovers in the tank or store them for a long time. In the last application prepare the mix in sufficient quantity to treat the remaining area.



> PTO Shaft

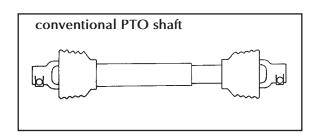
•Your equipment can be mounted with conventional PTO shafts or wide-angle CV PTO shaft. Identify through the illustrations and proceed as described.

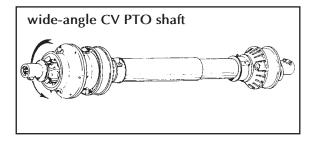
CONVENTIONAL PTO SHAFT

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

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-degree angle with no need to disengage the PTO.







NOTE:

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

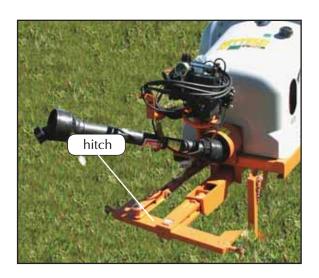
> Tracking axle

• This is a device that allows to maneuver the tractor in narrower spaces in the field, even with the PTO engaged.



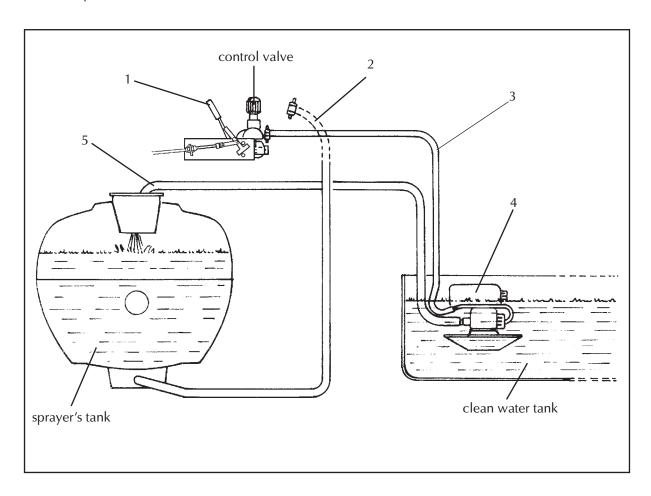
ATTENTION!

Whenever you need to move backward with the sprayer (reverse gear), do this carefully, without dragging the sprayer's tires, in order to avoid damage to the transmission.





- Set the lever (1) to turn off the chemical flow.
- Pour 13.20 gallons of water into the sprayer tank.
- Remove the return hose (2) from the chemical control.
- •Connect the filler hose (3) to the chemical control in the place of the return hose.
- Put the filler unit (4) in the water tank and put the end of the discharge hose (5) in the tank opening.
- Run the sprayer with 540 rpm at PTO.





•The opening and closing of the flow rate in the main and auxiliary ducts, is made through the lever 1. Through the Masterflow control you can adjust the pressure up to 5.5 kgf/cm² (80lbf/inch) showing on the manometer.

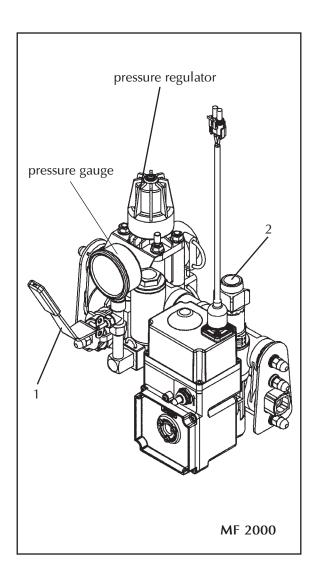
REGULATION THE PRESSURE

- Run the tractor PTO and accelerate it gradually until reaching 540 rpm.
- To make the pressure adjustment in pipelines on the main and auxiliary duct, place the lever 1, left of the Chemical control.
- Turn the pressure regulator (clockwise, increases the pressure. Counter-clockwise, decrease the pressure), to obtain the pressure you need. Check in the gauge the flow rate in the main and auxiliary duct.
- The return regulating valve number 2 must be tight until course end.



ATTENTION!

As the chemical control should be installed close to the operator to make easier the spraying job, you must always use the original hitch pin with cotter pin and the original safety chain to avoid accidents.





> Spray application technology

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

Among these factors, some concepts should be part of a criterion of evaluation so that positive results may be obtained.

- Ideal time
- Safety
- Good coverage
- Application rate

> Ideal time

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

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

> Safety

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

> Correct application rate

- Any type of application requires that the rate be maintained during the entire spraying process. This will be possible when you have a good sprayer properly calibrated.
- This calibration can be obtained through practical methods or formulas. Please refer to the section OPERATION AND ADJUSTMENTS CALIBRATING THE SPRAYER.

> Good coverage

- You have a good coverage when the entire target is sprayed with uniform distribution, with no risk to the environment and with good results in controlling the pest.
- The application rate does not have influence on the treatment results. Therefore good coverages can be obtained even with different rates, which may vary according to operational and regional factors.



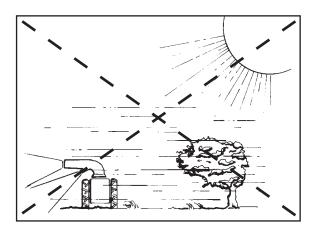
ATTENTION!

Read carefully and follow strictly the instructions on the chemicals manufacturer's label. Always follow directions of a technician when handling and applying chemicals. Always make sure the sprayer is in good operational conditions before spraying and employ a well trained operator.

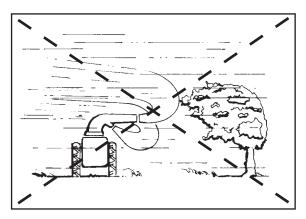


> Improper conditions to spray

• With strong wind and high temperature.

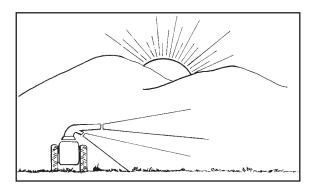


• Against the wind.

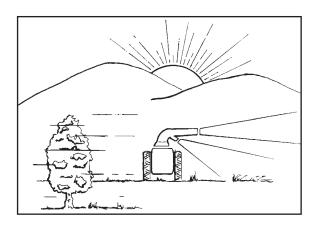


> Proper conditions to spray

• At cooler times of the day, that is, early in the morning or late in the afternoon.



• With the wind (light wind).





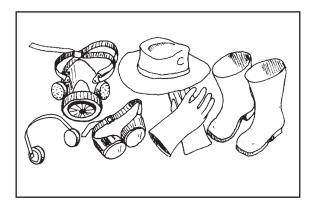
	Spray sv	wath (ft)
Chemicals	Work beginning	Maximum
Fungicides	50	82
Insecticides	65	115
Herbicides for pasture	50	100

- Select the spray swath according to the plant growing stage, kind of pest or disease, chemicals to be applied and weather conditions.
- The table beside shows some suggestions of spray swath. In course of the applications, the operator should determine the spray swath most appropriate to 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 16 mph).
- Make sure the swath determined is being sprayed.





ATTENTION!

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





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

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!

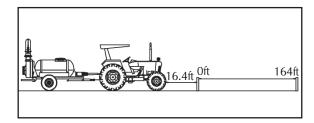
The figures shown in the example above are illustrative only. The correct calibration must be done according to the recommendations of the technician.

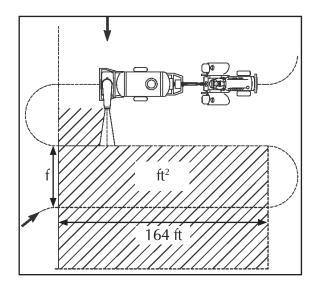


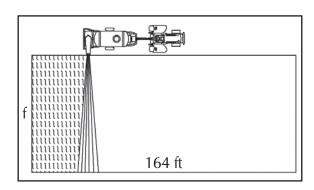
> Calibrating the sprayer through a pratical method

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.









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.

- 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) = ft²)

Example:

Vol = 5 gallons A = 164 ft x 65 ft (s) = 10660 ft²

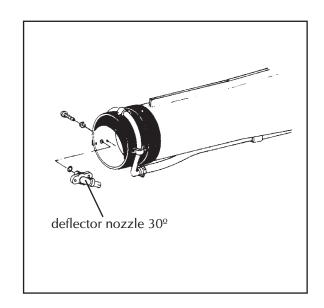
$$GPA = \frac{5 \times 43560}{10660}$$

GPA = 20.4



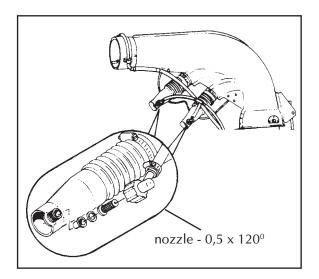
> Total flow rate main duct

Pressure (PSI)	Total flow rate main duct (gpm)
0	1
10	2.6
20	4
30	5
40	5.6
50	6.5
60	7
70	8
80	8.6
Deflector nozzle 30º - S	Stainless steel AISI 303



> Total flow rate auxiliary ducts

Pressure (PSI)	Total flow rate auxiliary ducts (gpm)
10	0.6
20	0.9
30	1.2
40	1.3
50	1.5
60	1.6
70	1.7
80	1.8
Nozzle - 0,5 x 120º -	CLA Brass alloy



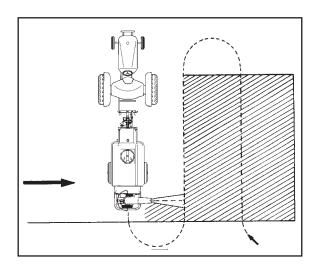


ATTENTION!

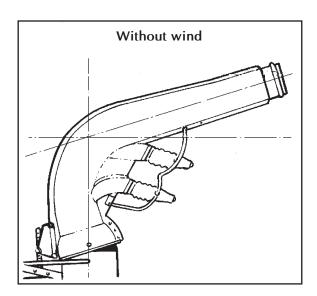
The figures shown in the table above have been obtained with water applications. Therefore, there may be variations due to the viscosity of the liquid to be applied. Since these numbers are for orientation, there may be specific cases that will require to check for the flow rate on every duct.

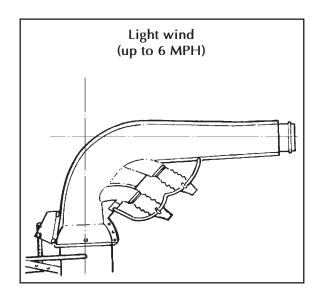


> Tractor path and duct inclination



• The figures below show how to make the spray application and adjust the duct according to the tractor speed and wind direction.





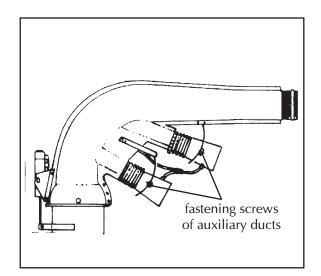


• Adjust the auxiliary ducts so that the spray covers the area close to the tractor to avoid failures in the application.



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.



> Diluting the chemicals

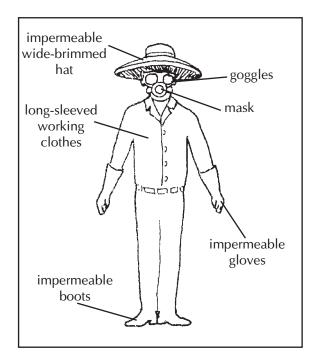


ATTENTION!

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

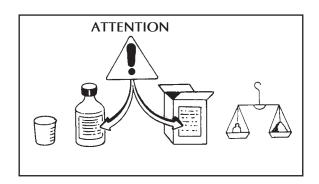
Always use the following individual protective clothing equipment when handling chemicals or others recommended by the chemical manufacturer:

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

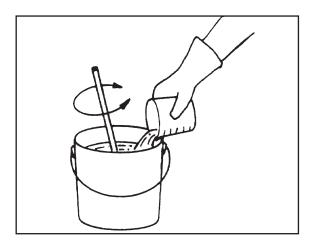




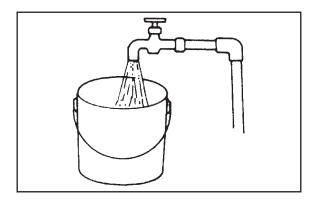
> Preparing the chemical mixture



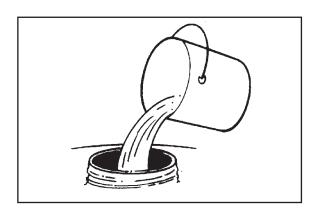
• Read carefully the chemicals manufacturer's label.



• 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.



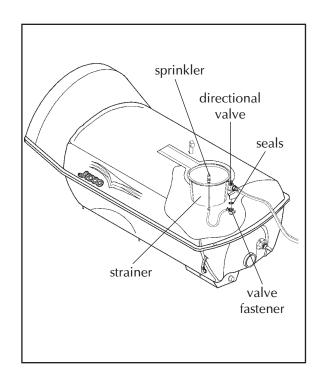
- Pour the solution into the sprayer's tank.
- Install the tank lid and make sure there is no leakage.



Always follow the chemical manufactures recommendations when handling chemicals.



- The chemicals are packaged in appropriate containers for each type of product.
- After emptying the containers, they must be discarded in a safety way, in order not to poison the man and the environment.
- It is very important, before any discard of empty containers, to remove the residues of the product that are sticked inside.
- Metal, plastic and glass containers must be rinsed for decontamination.
- •To facilitate this important operation, Jacto has installed on its trailed sprayers a suitable device that rinses internally the containers with pressurized water, eliminating most of the residues.



> Procedures

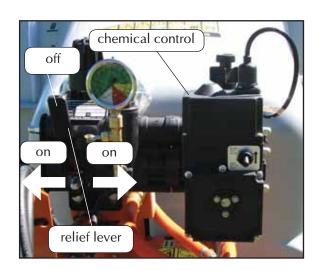
- Fill the chemical tank up to approximately 90% of its capacity.
- Pour the chemical into the tank.
- Engage the tractor PTO.



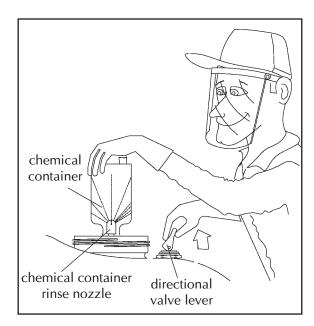
NOTE:

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









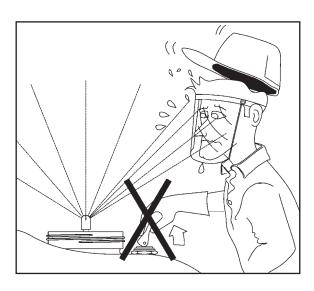
• Hold the chemical container over the rinse nozzle and pull the directional valve lever to wash inside the container.



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.



> Clean water tank

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



ATTENTION!

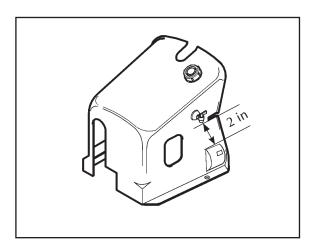
The water from this tank is not fit for drinking, or even washing hands, face, tools, etc. It must be used only to fill the chemical containers for the final rinse.





NOTE:

To keep from contaminating the water and the auxiliary tank tap during the filling of the chemical container, hold the container at least 1.96 in away from the tap, as shown.

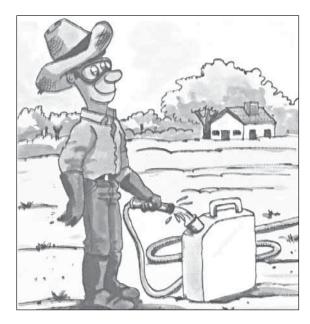


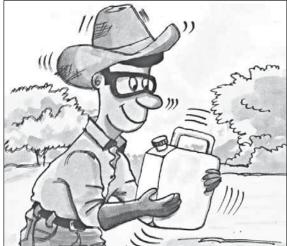
> Washing the chemical container

- Fill the chemical container with water up to 1/4.Fit the container cap and tight it enough to avoid leakage during the agitation.
- Agitate the container strongly in all ways (horizontal and vertical), during approximately 30 seconds to remove the residues that are sticked to the container internal walls.
- Take the container cap off and carefully pour the rinse water into the spray tank.
- Keep holding the container over the spray tank opening until the last drop.
- Next, make the container useless by piercing it. This way, their labels are not damaged for identification purposes.











After washing the chemical container with the mixture, it is necessary to make the triple wash of the chemical containers as follows:

• Always use individual protective clothing equipment



ATTENTION!

This equipment does not have auxiliary tank to wash chemical containers. The liquid used is the mixture from the tank.

- •Fill the container with clean water up to 1/4, fit the container cap and tighten it enough to avoid leakage during the agitation.
- Agitate the container strongly in all ways during for approximately 30 seconds to remove the residues that are stuck to the container internal walls.
- Take the container cap off and carefully pour the rinse water into the chemical mixer spray tank.
- Repeat this operation twice more.
- Make the container useless by piercing with a pointed instrument the container bottom. This way, their labels are not damaged for identification purposes.



ATTENTION!

The useless containers can be stored temporarily in a safe and appropriate place, until final destination.

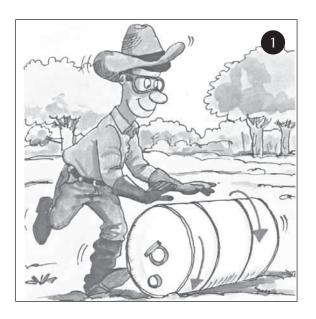


ADDITIONAL INFORMATION

- 1- In case of mid and large sized container (15, 25 and 50 gallons), after washing with the appropriate volume and fitting the cap, roll it on the ground during for approximately 30 seconds.
- 2- In the upright position complete the agitation by moving back and forth for approximately 30 seconds. Empty the container by repeating the same operation to pour the chemical into the spray tank.

Repeat this operation twice more. Make the container useless at the end of the TRIPLE WASH.

Source: ANDEF - ASSOCIAÇÃO NACIONAL DE DEFESA VEGETAL







Tires	Track width (in)	Ground clerance (in)
Tiles	Fixed	Fixed
11L-15	46	11

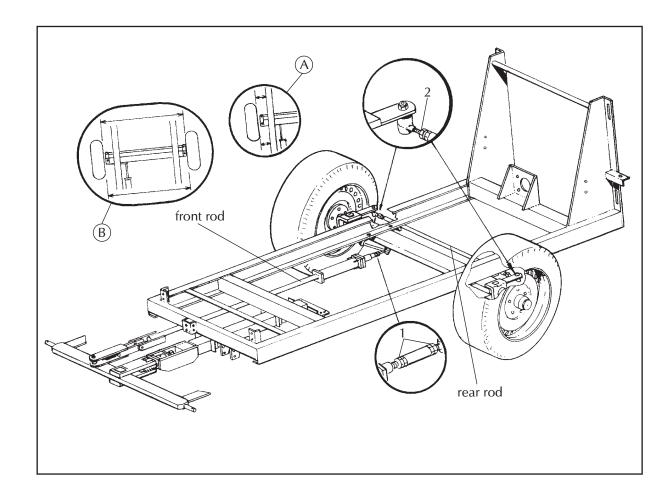
> Aligning the wheels

- Loosen the nut (1) and rotate the front rod so that the right tire is parallel to the sprayer's chassis (detail A).
- Tighten the nut (1).

- Loosen the nuts (2) and rotate the rear rod until the left tire is parallel to the right tire (detail B).
- Tighten the nuts (2).



Proper alignment is necessary to avoid unusual wear of tires.





ATTENTION!

The sprayer must be with empty tank and wheels properly scotched for any kind of maintenance. Always require a trained person to service your sprayer.

Do not allow persons and animals to be close to the sprayer when being serviced.



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Guidelines J-1000



- 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.

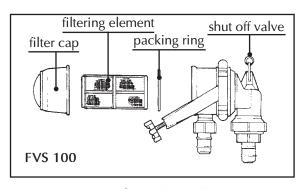


ATTENTION!

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

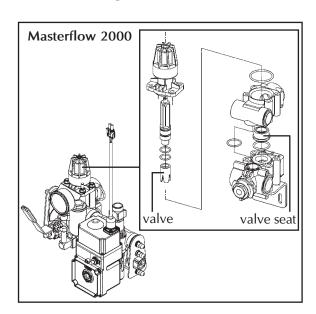
Any type of maintenance should be done with the machine stopped and the tractor engine

> Components maintenance - 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)

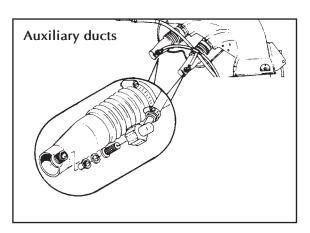


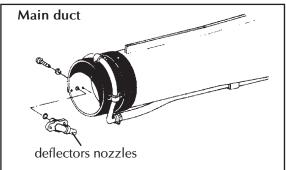
- Disassemble the pressure regulator every 100 working hours.
- •Check for wear on the valve and valve seat. Replace the parts if necessary.



> Auxiliary and main ducts

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



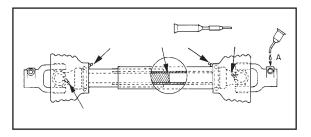


> Components lubrication

> PTO Shaft

- Lubricate daily.

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



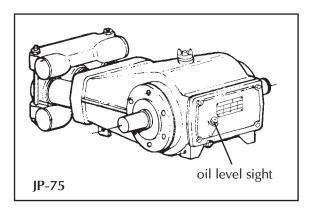


ATTENTION!

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).

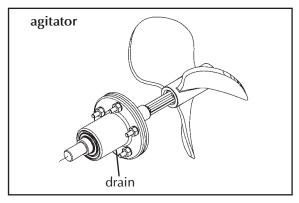


> Pump



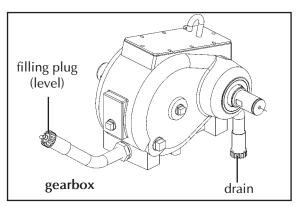
• Check the pump oil level daily and fill it if necessary.

> Mechanical agitator



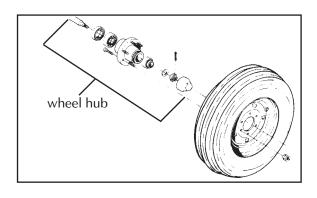
• At any sign of the drain leak, replace the mechanical seal. Contact your nearest Jacto dealer.

> Gearbox



- •Check on the maintenance table the frequency, quantity and type of the lubricant oil used in the gearbox. The gearbox oil level must be checked daily.
- If necessary , fill up until reaching the duct filling plug.
- Release the drain nut 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 scotch its wheels before lubrificating the wheel hub.





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



- 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



OBSERVATION:

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

				FK	FREQUENCY					
OPERATIONS TABLE	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 three-point hitch pins are original.		•								
Check if the hitch pins have cotter pins.		•								
Check the overlaps of the PTO shaft.		•								
Adjust the control valve position to avoid impacts while turning.		•								
Check if the grease fittings are filled.		•								
Check if the oil is on 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.				•						

				FRI	FREQUENCY					
OPERATIONS TABLE	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 gearbox.					•					
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	BRICANTS	
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	120	OC DI CD COLLEGE CAE 30	All internal combustion engines within this	0.5 gallons
JP-50 pump	IUDITCATE OII	Art-50 di superidi 3AE-50	specification	0.4 gallons

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





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

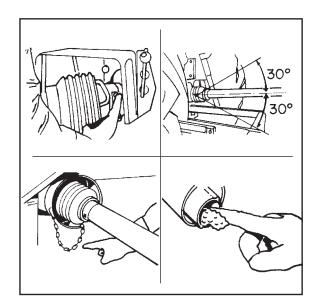
- Check the PTO shaft length.
- Adjust the length by cutting the tubes and protection guards proportionately.
- Connect the PTO shaft and install the safety chain.



NOTE:

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

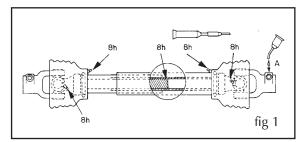
• Disengage the PTO when making sharp turns.





ATTENTION!

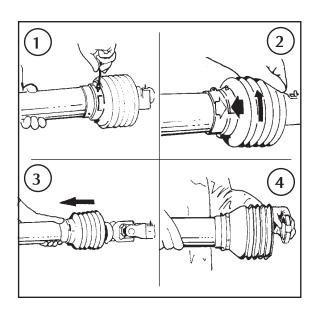
Lubricate the male and female tubes and other points as in figure 1.

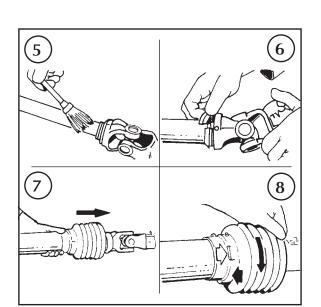


> Servicing

a) DISASSEMBLING

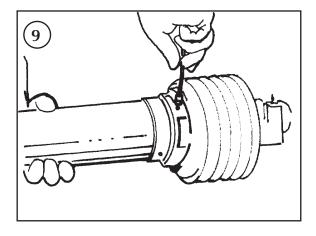
- 1- Remove the lock screw.
- 2- Turn the guard cone until the indicated position.
- 3- Pull the guard cone.
- 4- Remove the sliding ring.







- 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

• 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° with no need to disengage the PTO.



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.

> Instructions

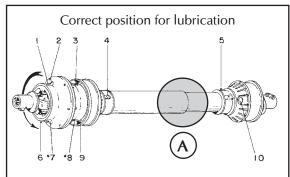
1º - Lubrication

• 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).



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



OBSERVATION:

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

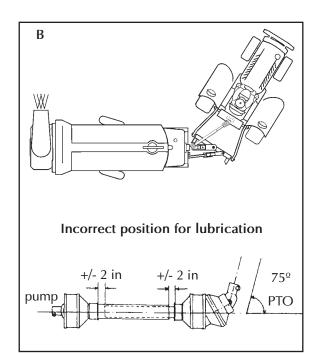


ATTENTION!

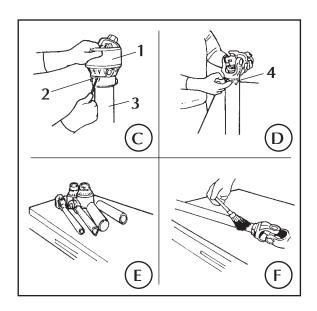
Only lubricate the PTO shaft with the CV joint aligned to the male and female tubes; otherwise, the lubrication will not be appropriate and the PTO shaft can be damaged.

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).

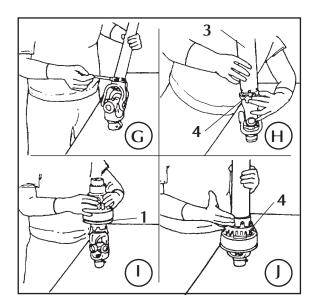






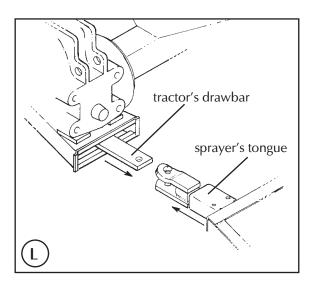
3 - Disassembling the PTO shaft for lubrication

- 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.

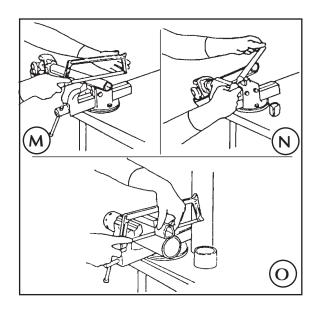
Check:

- 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.



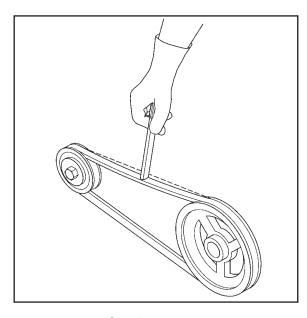
c) Assembling

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





> Belts tension



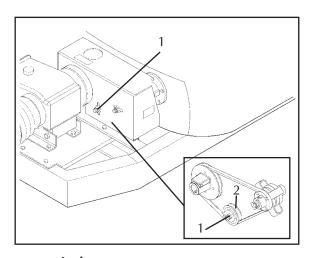


ATTENTION!

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

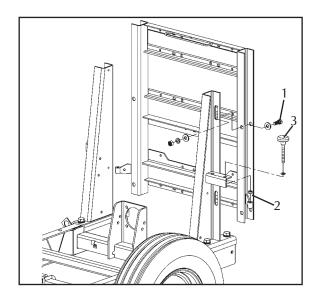
- Check the belts tension periodically.
- Press the agitator belts as shown in the figure beside. When pressed it should slack 0.4 to 0.6 inches. DO NOT USE SHARP-ENDED OR CUTTING TOOL.

> 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



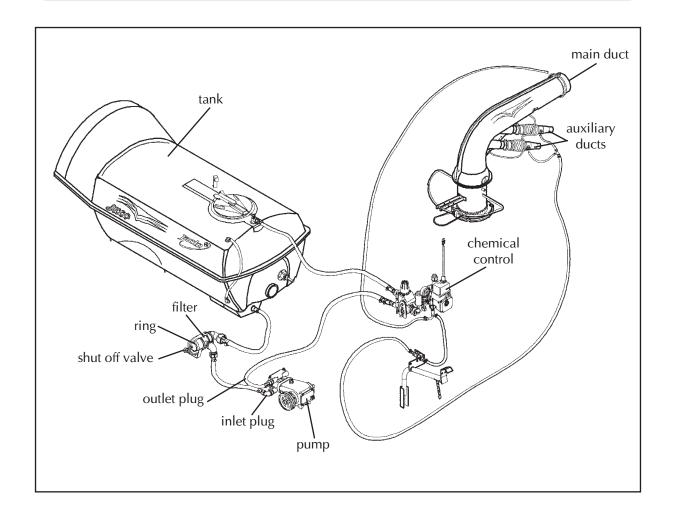
- Loosen the four bolts (1) enough to allow the frame to be moved.
- Loosen the two nuts (2).
- Hand-tighten the two knobs (3) equally until obtaining the recommended tension for the belts.
- Retighten the two nuts (2).
- Retighten the four bolts (1).





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

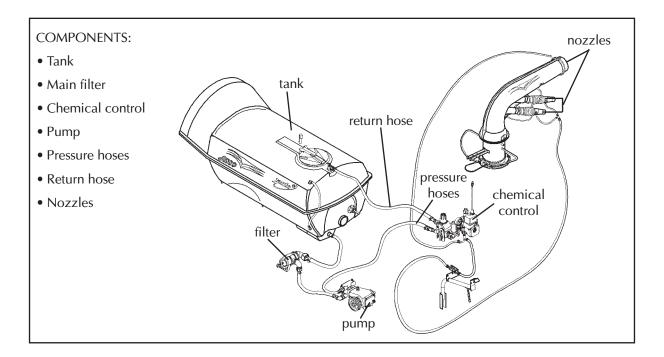
- Empty the tank completely by removing the filter cap and opening the filter shut off valve.
- Disconnect the pressure hose from the pump or remove the outlet plug from the valve cover.
- Assemble the components again in their correct place.
- Repeat this operation at the end of each daily spraying 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.



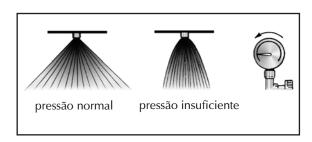


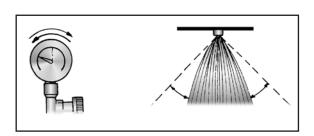


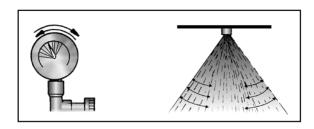
ATTENTION!

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 troubleshooting 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 UNREA-SONABLE 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.

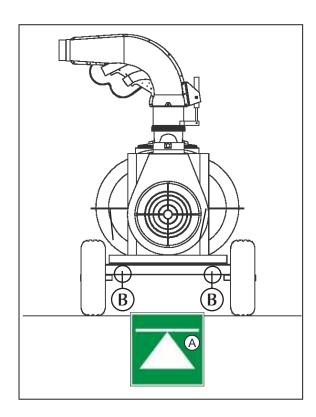
- Disassemble and clean each nozzle assembly with fine brush, water jet or compressed air.
- •Dry, lubricate and store the sprayer in a dry and covered place.
- Repaint the damaged metallic parts to prevent corrosion.
- •Spray the mettalic parts with lubricating oil to prevent corrosion.
- Take off the individual protective clothing and wash it separately from other clothes.

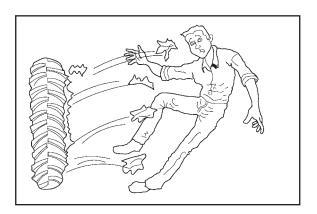


ATTENTION!

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.

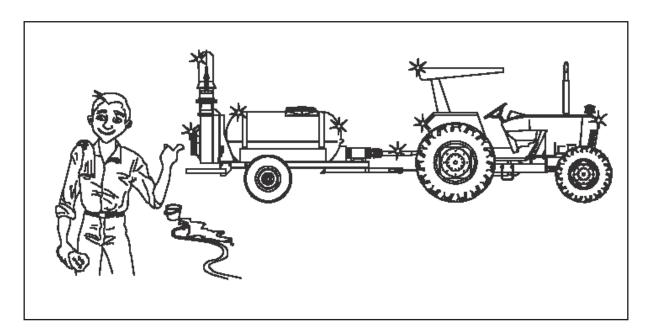
Changing tires:

- 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.

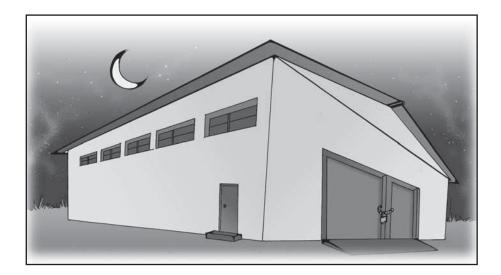


- When you are finished spraying, fill up the tank with clean water (50% of its capacity), remove the nozzles and filters in appropriate place and run the system until draining all the water in order to clean the chemical circuit. Clean the suction filter, the nozzle filters and the nozzles using clean 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



CHAPTER 6 Warranty



Statement of limited warranty	3
Techinical inspections registration	4



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 IN-STRUCTION 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

PRODUCT REGISTRATION CARD			ATION CARD
Invoice number			Date/
Retailing delaer			
Phone	City		_ State
Sprayer			Model
Series	Sprayer No		_ Pump No
Original retail purchaser			
Adress —			Phone
			State
Purchase date by the original retail purchaser/			
The warranty is in force a	as of this date	_/	<u></u>
Retail purchaser signatur	e		
			Original retail purchaser's copy

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PRODUCT REGISTRATION CARD

Invoice number		Date/		
Retailing delaer				
Phone	. City	State		
Sprayer		Model		
Series	Sprayer No	Pump No		
Original retail purchaser				
Adress		- Phone		
		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