



CAUTION: IT IS MANDATORY
TO READ AND THOROUGHLY
UNDERSTAND THE OPERATOR'S
MANUAL BEFORE USING THE
EQUIPMENT.

Operator's Manual - English

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Backpack Sprayer Jacto

Djb

Manual de Instruções - Português (18)

Manual del Operador - Español (32)

Manuel du Operateur - Français (45)



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1. Introduction

SAVE THESE INSTRUCTIONS: This manual contains information for the proper assembly, operation and care of your sprayer. Carefully read and follow the instructions contained in this manual before using your sprayer.

This equipment was designed for spraying plants protection products approved by regulatory authorities to be used in backpack sprayers.

2. Specifications

Model	DJB-20/16
Maximum dimensions (W x L x H)	15.4 x 7.9 x 21.8 in. (DJB20) 15.4 x 7.9 x 18.9 in. (DJB16)
Net weight	10.58 lbs. / 10.80 lbs.
Gross weight	12.13 lbs./ 12.57 lbs.
Spray lance length	23.6 in
Hose length	53 in
Chemical agitation system	Enabled by agitation lever
Chemical tank	
Capacity	5.3 Gal / 4.2 Gal
Residual volume	None
Filling opening diameter	4.5 in
Material	Polyethylene
Pump	
Type	Diaphragm
Maximum pressure	60 psi (4.1 bar)
Open flow	.56 GPM
Nozzle installed	JD12 Fixed Cone
Battery	
Type	Lithium Ion, rechargeable
Rated Voltage	14.54 V (16.4V max.)
Capacity	84.3 Wh (5800 mAh)
Recharge time	5h

SAFETY GUIDELINES – DEFINITIONS

It is important for you to read and understand this manual. The information it contains relates to protecting YOUR SAFETY and PREVENTING PROBLEMS. The symbols below are used to help you recognize this information.



DANGER!

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING!

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION!

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTE: Used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

3. General Power Tool Safety Warnings



WARNING!

Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE.

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

3.1. Work area safety

- Keep work area clean and well lit.** *Cluttered or dark areas invite accidents.*
- Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** *Power tools create sparks which may ignite the dust or fumes.*
- Keep children and bystanders away while operating a power tool.** *Distractions can cause you to lose control.*

3.2. Electrical safety

- Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** *Unmodified plugs and matching outlets will reduce risk of electric shock.*
- Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** *There is an increased risk of electric shock if your body is earthed or grounded.*
- Do not expose power tools to rain or wet conditions.** *Water entering a power tool will increase the risk of electric shock.*
- Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** *Damaged or entangled cords increase the risk of electric shock.*
- When operating a power tool outdoors, use an extension cord suitable for outdoor use.** *Use of a cord suitable for outdoor use reduces the risk of electric shock.*
- If operating a power tool in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) protected supply.** *Use of a GFCI reduces the risk of electric shock.*

3.3. Personal Safety

- Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** *A moment of inattention while operating power tools may result in serious personal injury.*
- Use personal protective equipment. Always wear eye protection.** *Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*
- Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool. Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents.**
- Remove any adjusting key (wrench, screwdriver...) before turning the power tool on.** *A wrench or a key left attached to a rotating part of the power tool may result in personal injury.*
- Do not overreach. Keep proper footing and balance at all times.** *This enables better control of the power tool in unexpected situations.*
- Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts.** *Loose clothes, jewellery or long hair can be caught in moving parts.*
- If devices are provided for the connection of dust extraction and collec-**

tion facilities, ensure these are connected and properly used. Use of dust collection can reduce dust-related hazards.

3.4. Power tool use and care

- a. **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.
- b. **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- c. **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
- d. **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
- e. **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.
- f. **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- g. **Use the power tool, accessories and tool bits etc., in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.

3.5. Battery tool use and care




- a. **Recharge only with the charger specified by the manufacturer.** A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
- b. **Use power tools only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.
- c. **When battery pack is not in use, keep it away from other metal objects like paper clips, coins, keys, nails, screws, or other small metal objects that can make a connection from one terminal to another.** Shorting the battery terminals together may cause burns or a fire.
- d. **Under abusive conditions, liquid may be ejected from the battery, avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.** Liquid ejected from the battery may cause irritation or burns.
- e. **Do not use a battery pack or appliance that is damaged or modified.** Damaged or modified batteries may exhibit unpredictable behavior resulting in fire, explosion or risk of injury.
- f. **Do not expose a battery pack or appliance to fire or excessive temperature.** Exposure to fire or temperature above 140°F may cause explosion.

3.6. Service

- a. **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.

4. Symbols

The label on your tool may include the following symbols. The symbols and their definitions are as follows:

V	volts	n ₀	no-load speed
A	amperes	 d.c.	direct current
W	watts	 a.c.	alternating current
Hz	hertz		earthing terminal
lbf/in ² (lbf/pol ²)	psi	l	litres
min	minutes	kg	kilograms
h	hours	m	meters

5. Important Safety Instructions for Battery Chargers

SAVE THESE INSTRUCTIONS: This manual contains important safety instructions for battery chargers. Before using charger, read all instructions and cautionary markings on charger, battery pack, and product using battery pack.



WARNING:

Shock hazard. Do not allow any liquid to get inside charger.



CAUTION!

- **Burn hazard.** To reduce the risk of injury, charge only designated JACTO batteries. Other types of batteries may burst causing personal injury and damage.
- Under certain conditions, with the charger plugged in to the power supply, the charger can be shorted by foreign material. Foreign materials of a conductive nature such as, but not limited to, steel wool, aluminum foil, or any buildup of metallic particles should be kept away from charger contacts. Always unplug the charger from the power supply when not charging battery. Unplug charger before attempting to clean.



WARNING!

- **DO NOT attempt to charge the battery pack with any chargers other than the ones in this manual.** The charger and battery pack are specifically designed to work together.
- **These chargers are not intended for any uses other than charging designated JACTO lithium rechargeable batteries.** Any other uses may result in risk of fire, electric shock or electrocution.
- **Do not expose charger to rain or snow.**
- **Pull by plug rather than cord when disconnecting charger.** This will reduce risk of damage to electric plug and cord.
- **Make sure that cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.**
- **Do not use an extension cord unless it is absolutely necessary.** Use of improper extension cord could result in risk of fire, electric shock, or electrocution.
- **An extension cord must have adequate wire size (AWG or American Wire Gauge) for safety.** When

using more than one extension to make up the total length, be sure each individual extension contains at least the minimum wire size. When using an extension cord, be sure to use one heavy enough to carry the current that product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. The following table shows the correct size to use depending on cord length and nominal current presented in the label of the charger mentioned in this manual. If in doubt, use the next heavier gauge.

Extension Cord Total Length	Up to 50 ft	From 50 ft and up to 100 ft	More than 100 ft
Wire Size (AWG)	16	14	Not recommended
Wire Size (mm2)	1.5	2.5	Not recommended

- **Do not mount charger on wall or permanently affix charger to any surface.** The charger is intended to use on a flat, stable surface (i.e., table top, bench top).
- **Do not operate charger with damaged cord or plug** - have them replaced immediately.
- **Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way.** Take it to an authorized service center.
- **Do not disassemble charger;** take it to an authorized service center when service or repair is required. Incorrect reassembly may result in a risk of electric shock, electrocution or fire.
- **Disconnect the charger from the outlet before attempting any cleaning.** This will reduce the risk of electric shock. Removing the battery pack will not reduce this risk.
- **NEVER attempt to connect 2 chargers together.**
- **The charger is designed to operate on standard household electrical power. Do not attempt to use it on any other voltage.**
- **Battery chargers contain electronic parts.** Dispose of properly.

5.1. Charging procedure

JACTO charger provided with this sprayer is designed to charge JACTO battery pack model JB1660 in 4 hours.

1. Remove the battery from the sprayer.
2. Plug the charger into an appropriate outlet before connecting the battery pack. Make sure the AC cord is well attached to the charger.
3. Connect the charger plug to the battery pack connector.
4. The charge light will remain red/orange while charging.
5. When battery pack is fully charged, charge light will change its color to green.
6. As soon as the battery is fully charged, disconnect the battery from the charger.
7. Unplug charger cord from outlet.

Recharge discharged batteries as soon as possible or battery life may be greatly diminished. For longest battery life, do not discharge batteries fully. It is recommended that the batteries be recharged after each use.

5.2. Important charging notes

- **DO NOT** charge the battery pack in an air temperature below 0°C or above 113°F. This is important and will prevent serious damage to the battery pack.
- The charger and battery pack may become warm to the touch while charging. This is a normal condition, and does not indicate a problem. To facilitate the cooling of the battery pack after use, avoid placing the charger or battery pack

in a warm environment such as in a shed.

- Do not freeze or immerse charger in water or any other liquid.

6. Important Safety Instructions for Battery Packs



WARNING:

For safe operation, read this manual and manuals originally supplied with tool before using the charger.

When opening the tool package for the first time, the battery pack will not be fully charged. Before using the battery pack and charger, read the safety instructions below. Then follow charging procedures outlined.

READ ALL INSTRUCTIONS

- **Do not incinerate the battery pack even if it is severely damaged or is completely worn out.** The battery pack can explode in a fire. Toxic fumes and materials are created when battery packs are burned.
- **Do not charge or use battery in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Inserting or removing the battery from the charger may ignite the dust or fumes.
- **If battery contents come in to contact with the skin, immediately wash area with mild soap and water.** If battery liquid gets into the eye, rinse water over the open eye for 15 minutes or until irritation ceases. If medical attention is needed, the battery electrolyte for Li-ion batteries is composed of a mixture of liquid organic carbonates and lithium salts.
- **Contents of opened battery cells may cause respiratory irritation.** Provide fresh air. If symptoms persist, seek medical attention.
- **Disposal of used batteries must be made at appropriate points and approved for receiving such material.** If a recycling center is not available in your area please contact CUSTOMER SERVICE: Phone: 1-800-522-8610 email: info@jacto.com



WARNING!

Burn hazard. Battery liquid may be flammable if exposed to spark or flame.

- Charge the battery packs only in **JACTO** chargers.
- **DO NOT splash or immerse in water or other liquids.** This may cause premature cell failure.
- **Do not store or use the tool and battery pack in locations where the temperature may reach or exceed 113°F (45 °C).**
- Never attempt to open the battery pack for any reason. If battery pack case is cracked or damaged, do not connect to charger. Do not crush, drop or damage battery pack. Do not use a battery pack or charger that has been dropped, run over or damaged in any way (i.e., pierced with a nail, hit with a hammer, stepped on). Damaged battery packs should be returned to service center for recycling.
- **Fire hazard. Do not store or carry battery so that metal objects can contact exposed battery terminals.** For example, do not place battery in aprons, pockets, tool boxes, product kit boxes, drawers, etc., with loose nails, screws, keys, etc. **Transporting batteries can possibly cause fires if the battery terminals inadvertently come in contact with conductive materials such as keys, coins, hand tools and the like.** Certain regulations prohibit transporting batteries on airplanes (i.e., packed in suitcases and carry-on luggage) UNLESS they are properly protected from short circuits. So when transporting individual batteries, make sure that the battery terminals are protected and well insulated from materials that could contact them and

cause a short circuit. **NOTE: Batteries should not be put in checked baggage.**

6.1. Storage recommendations for batteries

- Store battery packs in clean, dry place and away from direct sunlight and excess heat or cold.
- Store batteries out of reach of children.
- For storage periods of more than one month, store battery with half charge. This extends battery life.

7. Important Safety Instructions for Sprayers



DANGER!

- **DO NOT spray flammable or combustible chemical products.** This will result in serious risk of fire and explosion.
- **DO NOT spray acids or corrosive chemicals.** This will result in serious risk of fire, explosion and leakage. Sprayer parts can be permanently damaged.



WARNING!

- **DO NOT use the sprayer for purposes other than spraying agricultural defensives approved by competent authorities.**

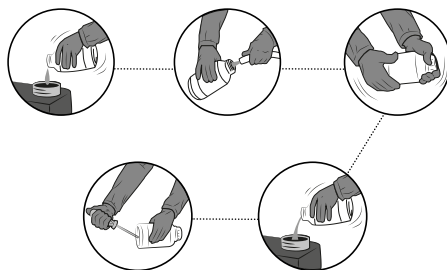
Always consider the following recommendations:

- **Check sprayer before spraying.** Ensure there is no leakage or missing parts. Do not use sprayer if it is not in good condition.
- **Do not eat, drink or smoke while spraying.** Serious risk of poisoning.
- **Do not mix chemical products, unless recommended by manufacturer.** Intense chemical reactions can occur.
- **Read the label of chemical products carefully.** Always follow manufacturer's recommendations.
- **High pressure present at end of nozzle and inside sprayer base.** Turn-off the sprayer completely and release pressure before attempting to repair or replace parts of the sprayer.
- **Do not direct spray towards bystanders.** Spray may be toxic.
- **After the use of herbicides always clean the equipment before using other formulations.**
- **Wear individual protection equipment.** Wear gloves, safety glasses, safety mask and protective clothing.
- **Clean yourself after spraying.** Take a shower with plenty of soap and water. Put on clean clothes.
- **The clothing used during spray application must be washed separate from other clothes of ordinary use.**
- **Keep chemical products out of reach of children and animals.** Lock up the chemical products to prevent untrained persons from handling them.
- **In case of intoxication, see a doctor immediately.** Show him/her the chemicals manufacturer's label.
- **Dispose of chemical containers properly.** Observe your local regulatory agency recommendations and follow manufacturer's disposal instructions.
- **Do not pollute the environment.**
- **During the transport in vehicles, the sprayer must be turned off and secured.** Always keep the trigger valve shut during transport and when not using the sprayer.

7.1. Triple rinse of empty agrochemical containers

NOTE: Even the containers considered empty contain chemical residues. Therefore, discarding the containers without washing out the residues is extremely dangerous to man, animals and environment. In the case of metal, plastic and glass chemical containers, each container must be rinsed three times to ensure the residues are completely removed. This manual describes how to make the triple rinse in a correct, safe and effective way.

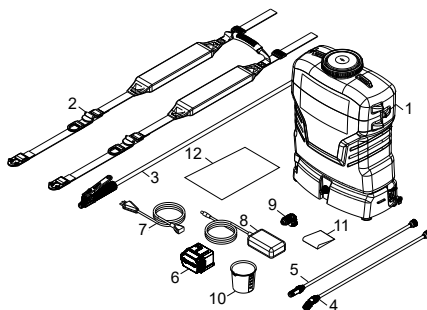
1. Immediately after emptying the container, you must keep it with the opening upside down over the sprayer tank opening or over the bucket that you are using to prepare the chemical mixture for at least 30 seconds, until no residue is left in the container, when the drops are falling in long intervals.
2. Hold the container in the upright position and fill it with water up to 1/4. For example: in a 5 gallon container, put 1.25 gallon of water.
3. Install the container cap and tight it enough to avoid leakage during the agitation.
4. Agitate the container strongly in all ways (horizontal and vertical), for approximately 30 seconds to remove the residues that are on the container internal walls.
5. Take the container cap off and carefully pour the rinse water into the spray tank.
6. Keep holding the container over the spray tank opening for approximately 30 seconds to the last drop.
7. Repeat this operation twice more. This way, you complete the triple rinse.
8. Make the plastic and metallic containers useless by piercing the container bottom with a pointed instrument. This way, their labels are not damaged for identification purposes.



8. Preparation for use

8.1. Unpacking

Make sure the following components are in the box:



1. Sprayer tank;
2. Shoulder Strap;
3. Trigger valve with hose;
4. Spraying lance;
5. Extension 600;
6. Battery;
7. Charger cable;
8. Charger;
9. Quick coupler;
10. Measuring cup;
11. Accessory kit;
12. Instruction manual;

8.2. Assembling the lance to the trigger valve

Fit the lance into the trigger valve and thread enough so that there is no leakage, as shown in the image below:

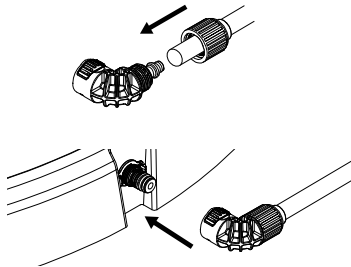


WARNING!

Do not overtighten the screw cap.

8.3. Assembling the hose to the sprayer

- Fit the hose through the S-20 nut, attach it to the connector and tighten it.
- Plug the connector into the quick coupler and press until it clicks.



9. Operating Instructions

The following steps describe how to safely use the sprayer.

9.1. Choosing nozzle type

Our sprayers are compatible with all ISO certified nozzles or hydraulic tips. Each nozzle offers a range of options and specifications for product application, so it is extremely important to know how to choose the right nozzle for your equipment. See the table below to identify which nozzle is best suited for flow rate and droplet size

NOTE: The following nozzles are optional, so they do not accompany this sprayer.

Nozzle type	Identification (code)	Pressure (psi)	Droplet size (vmd)	Flow rate (GPM)
	JEF 8001 orange (1197534)	45	VF	0.11
	JEF 80015 green (1197535)	45	VF	0.16
	JEF 8002 yellow (1197536)	45	VF	0.21
	JSF 11001 orange (1197473)	30	F	0.09
	JSF 110015 green (1197475)	30	F	0.13
	JSF 11002 yellow (1197476)	30	F	0.17
	JHC 80015 green (1197555)	60	F	0.18
	JHC 8002 yellow (1197565)	60	F	0.24
	JHC 8003 blue (1197571)	60	F	0.36
	JDF 02 yellow (1197483)	30	M	0.17
	JDF 03 blue (1197485)	30	M	0.26
	JDF 03 red (1197486)	30	M	0.35
	AirMix 110015 green (255091)	20	C	0.11
	AirMix 11002 yellow (255109)	20	C	0.14
	AirMix 110025 lilac (255177)	20	C	0.18

DROPLET SIZE

VF	Very Fine
F	Fine
M	Medium
C	Course
VC	Very course
XC	Extremely course



WARNING!

Use PPE to service and replace parts.

9.2. Pressure, flow rate and autonomy of each nozzle type

Nozzle	Level	Pressure (psi)	Flow rate (GPM)	Autonomy (h)
01 (orange)	1	48	0.11	8.7
	2	52	0.12	7.5
	3	57	0.12	6.7
	4	62	0.13	6.1
	5	64	0.13	5.6
015 (green)	1	35	0.15	9.2
	2	40	0.16	7.7
	3	44	0.17	6.8
	4	48	0.18	6.2
	5	51	0.18	5.6
02 (yellow)	1	28	0.18	9.3
	2	31	0.20	7.8
	3	35	0.21	7.0
	4	39	0.22	6.2
	5	43	0.22	5.6
025 (purple)	1	18	0.21	9.6
	2	21	0.23	8.3
	3	26	0.24	7.3
	4	30	0.25	6.5
	5	35	0.26	5.7

Nozzle	Level	Pressure (psi)	Flow rate (GPM)	Autonomy (h)
03 (blue)	1	15	0.22	9.8
	2	18	0.24	8.4
	3	20	0.25	7.5
	4	25	0.27	6.6
	5	29	0.29	5.9
04 (red)	1	*	*	*
	2	*	*	*
	3	*	*	*
	4	16	0.31	7.0
	5	18	0.32	6.3

NOTE*: Nozzle has not reached working pressure (15 psi).

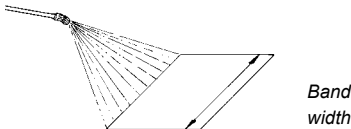
NOTE**: The values above may vary as to the wear, clogging and variation of the nozzles, the density and viscosity of the liquid to be applied, the temperature and relative humidity of the environment, the altitude and consequent atmospheric pressure of the site, the height of the lance spraying, etc.

NOTE***: The minimum working nozzle pressure should always be observed, so we do not recommend spraying at pressures below 15 psi for fan nozzles and below 45 to 60 psi for cone nozzles depending on the model. In addition, we do not recommend using ISO standard nozzles of brown color (05 gal/min at 45 psi).

9.3. Calibration of battery powered knapsack sprayer

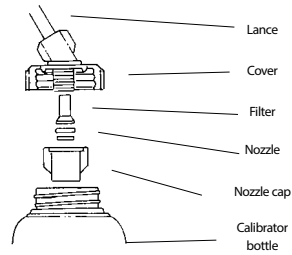
PROCEDURE

- USING CALIBRATOR BOTTLE (OPTIONAL)
- Hold the lance at the working height and spray to measure the application band width.
- Based on the band width, calculate the total walking distance required to spray the desired area. Use the chart as shown next.



Band width (ft)	1.6	2.2	3.2	3.9	4.9
Distance to walk (ft)	164	117.1	82.0	68.2	54.7

- Remove the cap, nozzle and filter.
- Install the calibrator cover to the lance.
- Reinstall the filter, nozzle and cap.
- Screw the calibrator onto the cover.
- Attach the calibrator bottle to the lance as shown:



Record the time it takes to walk 340 sq/ft (1/128th acre)



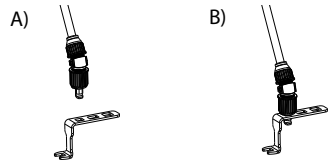
Simulate the spraying of 340 sq/ft (1/128th acre)

- Hold the lance at the normal working height and spray into the bottle while walking the distance required to spray an area corresponding to 340 sq/ft (1/128th acre).
- Place the bottle on a level surface and observe the liquid level visible through the side of the bottle. Match the liquid level to the corresponding scale on the calibrator bottle.
- Empty the bottle and repeat this operation to determine the average of two or more readings.

NOTE: The ounces collected corresponds to the gallons per acre. For example if you collect 10 ounces when spraying 340 sq/ft this equals to 10 gallons per acre.

9.4. Aligning nozzles using the maintenance key

The maintenance key can be used to align the nozzle according to the application you desire, as shown in the following drawings:



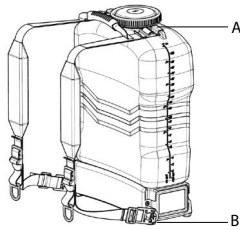
9.5. Solution preparation and tank filling

- To dilute and premix the product, place 1.3 gallons (5 liters) of water in a separate container.
- Mix to a homogeneous solution and pour into the sprayer tank fill. Fill the rest of tank with the desired amount of water.

9.6. Shoulder strap adjust

The tank is contoured for the operator comfort. The shoulder straps can be quickly adjusted to properly position the sprayer on the operator's back.

- Install the strap belt onto the tank as shown in position A.
- Hook the buckle of the strap to the plastic couplers located at the side of the sprayer's base, as shown in position B.
- To tighten the strap belt, hold the strap buckle firmly with one hand and pull the handle downward with the other hand. To loosen the strap belt, hold the buckle firmly with one hand and pull the strap upward with the other hand.



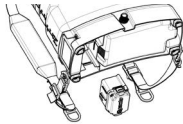
9.7. Installing and removing the battery

To install the battery:

1. Locate the battery housing, on the bottom of the sprayer's base, as shown in the figure.
2. Identify the correct battery position according to the position guides. Do not force to install the battery in the wrong position.
3. Press the battery until a "click" is heard.

To remove the battery:

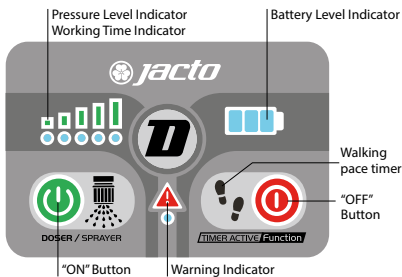
1. Press both locking buttons;
2. Pull the battery out of the battery housing.



9.8. Electronic interface, audible and visual warnings

The following picture shows the electronic interface with buttons (green and red), pressure level indicator lights (five levels), battery level indicator lights (three levels) and warning indicator light.

The sprayer has 5 pressure levels, where the leftmost light indicates the lowest pressure and rightmost light indicate the highest pressure. The resulting pressure at the end of the nozzle will depend on the selected nozzle.



The battery level indicator has three levels:

- Three lights on = battery charge higher than 80%.
- Two lights on = battery charge between 80% and 50%.
- One light on = battery charge between 50% and 15%.
- All lights off = battery discharged.

The autonomy of the battery pack (number of hours of spraying with a single battery charge) depends on the pressure level and selected nozzle (the higher the pressure, the lower the autonomy). Use this indicator to estimate the battery autonomy for your spraying condition by checking the remaining battery charge regularly.

While operating the sprayer, the possible audible/visible warnings can occur, in

case a faulty condition is detected:

- Three short beeps repeated every five seconds and warning light is on = Pump, motor or wiring critical failure. Contact technical assistance.
- Five short beeps repeated every thirty seconds and all battery level indicator lights are off = Low battery (only a few minutes left to spray), recharge as soon as possible.
- Three lights of the battery level indicator are blinking and warning light is on = Battery overvoltage (user attempted to connect a battery different from the original one). If battery voltage is too high, electronic interface will completely shut-off to avoid permanent damage.

9.9. Turn On/Off the sprayer and select pressure level

To turn on the sprayer and select pressure level:

NOTE: Before starting to spray, make sure all hose fittings are tight to avoid contamination to the operator and the environment.

1. Install a charged battery pack.
2. Press Green Button once. Electronic interface will turn on showing all lights on. Then, the electronic interface will show battery charge status and pump will turn on in the minimum pressure level.
3. Direct the spray lance to a safe position and open the trigger valve to begin spraying.
4. Press Green Button to choose different pressure levels. When the maximum pressure level is reached, the pressure setting will return to the minimum setting if the Green Button is pressed again.

To turn off the sprayer:

1. Shut off the trigger valve. The internal pump pressure switch will automatically turn off the pump (the sprayer is said to be in idle state). However, the electronic interface will remain on.
2. Press the Red Button and hold it pressed for 3 seconds. All lights in the electronic interface will be off.
3. Direct the spray lance to a safe position and open the trigger valve to release pressure before storing the sprayer.
4. Remove and store the battery pack in safe place.

NOTE: If the sprayer is left in idle state for more than 10 minutes, the electronic interface will turn off automatically.

9.10. Activate/Deactivate pressure lock

The Pressure Lock is a feature that allows the farm manager to lock the sprayer in a chosen pressure level. This avoids misuse of the equipment and all users will spray with the same pressure level thus guaranteeing better spray uniformity. Once locked, the pressure level is not changeable when Green Button is pressed, nor when the sprayer is turned off, nor when the battery is removed.

To activate the Pressure Lock:

1. Select the desired pressure level (1 to 5).
2. Press Green Button and hold it pressed for 10 seconds. When Pressure Lock is activated, pressure level indicator will blink.

NOTE: The sprayer can still be turned off by holding the Red Button.

To deactivate the Pressure Lock:

1. Press the Green Button three times and then press the Red Button once. This must be done in less than 3 seconds. When the Pressure Lock is deactivated, pressure level indicator will stop blinking.

9.11. Set up walking pace timer

The Walking Pace function is a useful timer that can assist user to calibrate the sprayer or keep a uniform walking speed while spraying. When the Walking Pace function is activated, user will notice an audible beep, indicating the correct moment to step forward (as an example). The audible beeps can be used for other purposes, such as spot chemical application. In this case, the beep can indicate the

correct moment to proceed to another plant.

To set up the Walking Pace timer:

1. Press Red Button once. An audible beep will be heard and it corresponds to a speed of 0.6 MPH
2. Press Red Button again to adjust the Walking Pace to 1.2 MPH
3. Press Red Button again to adjust the Walking Pace to 1.9 MPH
4. Press Red Button again to adjust the Walking Pace to 2.5 MPH
5. Press Red Button again to turn-off the Walking Pace function.

9.12. Total labor time indicator

The Total Labor Time Indicator shows how many hours the sprayer has been working since the first use. The hours are only incremented in the Total Labor Time Indicator when the electronic interface is on.

To view the total labor time:

1. Turn on the electronic interface, by pressing the Green Button once.
2. Press Green Button and Red Button together and hold them pressed for 10 seconds.
3. The lights (the same lights used for pressure level indication) will blink according to the code below:
 - No lights blinking = Total labor hour is less than 300 h.
 - One light blinking = Total labor hour is more than 300 h and less than 700 h.
 - Two lights blinking = Total labor hour is more than 700 h and less than 1000 h.
 - Three lights blinking = Total labor hour is more than 1000 h and less than 1300 h.
 - Four lights blinking = Total labor hour is more than 1300 h and less than 1600 h.
 - Five lights blinking = Total labor hour is more than 1600 h.

NOTE: Press any button to return to normal operation mode. If none of the buttons are pressed, the electronic interface will automatically exit the Total Labor Time Indicator after 15 seconds.

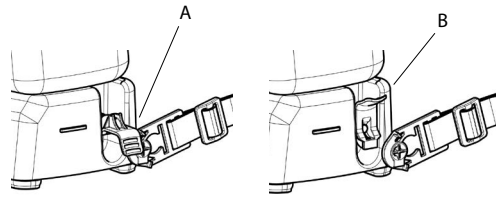
9.13. Activate/Deactivate agitation system

The Agitation System ensures that there is no significant variation between initial concentration of agrochemical (when tank is full) and final concentration (when tank is almost empty). This is especially important if wettable powder agrochemicals are used. When the agitation is activated, part of the pump's flow will be directed to the tank, forcing the mixture to circulate.

Basic recommendations:

- Turn on the Agitation System by moving the agitation lever to the horizontal position, as shown in A. It is recommended that agitation is kept on while transporting the sprayer from the filling area to the area being sprayed. This will maintain uniform chemical concentration until the beginning of the application.
- Turn off the Agitation System to begin spraying by returning the lever to the vertical position, as shown in B. This ensures higher pressure at the end of the nozzle.
- Periodically turn on the Agitation System when spraying wettable powder or chemical products that easily settle out of solution.

NOTE: Pressure in the spraying nozzle will be weaker while the Agitation System is activated.



9.14. DJB Liquid Doser

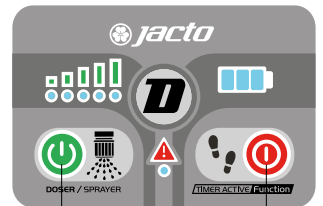
The DJB Liquid Doser can work as SPRAYER or DOSER

How to change between SPRAYER and DOSER functions:

- Make sure the electric panel is turned off.
- After the electric panel is turned off, press and hold the green button. You will hear "beeps". Keep the green button pressed and wait until the electric panel turns on.

9.14.1. The doser function

- Install JD-40 nozzle on the lance. This nozzle reduces dripping.
- After the DOSER function is selected, press the green button to turn on the equipment.
- All panel lights and the pump will be ON for 10 seconds. This is necessary to remove the air inside the chemical circuit. During this time, press the trigger valve on the lance and open the agitator valve to remove the air.
- After 10 seconds, the DOSER is ready to use.
- Return agitator valve to OFF position
- Always keep the trigger valve locked in ON position.
- Press green button to increase dose from 0.17 oz. to 10.14 oz. Using a calibrated cup, increase or decrease volume until you find a satisfactory dose for your application.
- Press red button to increase time interval between doses.
- If necessary, release the trigger valve to immediately interrupt dose application.
- Hold red button pressed for at least 3 seconds to turn off the equipment.



Increase volume

Increase Interval
between doses



WARNING!

The sprayer may not work properly if this procedure is not performed.

9.14.2. Possible Doses

In DOSER function, there are 20 possible doses, indicated by blinking LEDs;

NOTE: Higher doses demand longer dispensing times;

Volume (ml)	Volume (ml)	Volume (oz)	Volume (oz)
5	55	0.17	1.86
10	60	0.34	2.03
15	75	0.51	2.54
20	100	0.68	3.38
25	125	0.85	4.23
30	150	1.01	5.07
35	175	1.18	5.92
40	200	1.35	6.76
45	250	1.52	8.45
50	300	1.69	10.14

NOTE: The volume may vary.

9.14.3. Possible time intervals

Liquid is dosed according to an adjustable time basis. Currently, doses can be dispensed in time intervals of:

- 0.50 seconds, very fast dosing rate, tested in nursery;
- 0.75 seconds, very fast dosing rate, tested in nursery;
- 1.00 second, useful in crops with irregular terrains;
- 1.50 seconds, same as above;
- 3.00 seconds, tested in non uniformly-spaced crops;

Last used dose and last used time interval are saved when the electric panel is turned off. So, it is not necessary to adjust equipment when you turn it on again.

9.14.4. Dosage calibration

Using the measuring cup (included in the box) you can calibrate your dosage to improve your application.

Follow the steps below to calibrate your dosage:

- Fill the tank with the pesticide mixture;
- Select the proper dose on the electrical panel;
- Increase the intervals between doses to 3 seconds to facilitate the dosage collection;
- If necessary remove air from hose;
- Simulate the application by putting the sprayer on your back and the measuring cup where the pesticides would be sprayed;
- Release the trigger valve and apply 5 doses in the measuring cup;
- Check the total volume and divide it by 5;
- In case of the total doses overflows the cup, you can apply once, measure the volume, empty it and then repeat the process 5 more times;
- Check that the collected dose is within the proper volume needed. If not, increase or decrease the dose on the electrical panel until you reach an appropriate dose. Repeat calibration;

You must repeat this calibration every time you change the type of mixture or the pesticide concentration. Regularly check if the applied dosage is correct.

9.14.5. Activate/Deactivate dosage lock

The Dosage Lock is a feature that allows the farm manager to lock the DJB in a chosen dose volume and time interval. This avoids misuse of the equipment and all users will apply the same dose volume with the same time interval thus guaranteeing better application uniformity. Once locked, the dose is not changeable when Green Button is pressed, nor when the sprayer is turned off, nor when the battery is removed.

To activate the Dosage Lock:

1. Select the desired dose volume and time interval (as shown before);
2. Press the Green Button and keep it pressed during 15 seconds. When the Dosage Lock is activated, all LED lights will briefly blink and the electrical panel will emit a "beep".

NOTE: The doser can still be turned off by holding the Red Button.

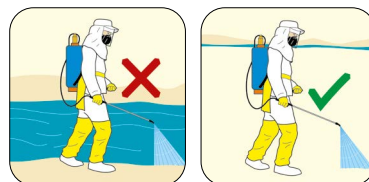
To deactivate the Dosage Lock:

1. Press the Green Button three times and then press the Red Button once. This must be done in less than 3 seconds. When the Dosage Lock is deactivated, the electrical panel will emit a "beep".

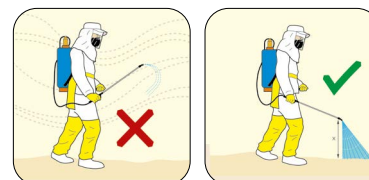
9.15. Application



Wear appropriate protective clothing



Do not contaminate water



Spray downward and avoid drift

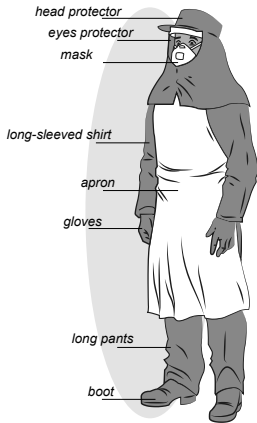
Keep constant height

9.16. PPE



WARNING!

Do not spray near people who are not using PPE or near springs, lakes or rivers.



10. Maintenance

For extended product life, follow these important care instructions:

- When filling up the tank, always use the strainer provided. This will reduce the chance of undesirable debris that could damage the pump.
- Do not operate the sprayer without the pump suction filter. This can severely damage the pump. Periodically clean or replace this filter as follows:
 1. Empty the tank, make sure the sprayer is turned off and put it upside down;
 2. Remove screw A;
 3. Remove base cover B;
 4. Unscrew filter cover C;
 5. Clean or replace filtering element D.



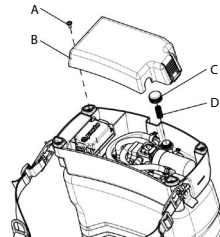
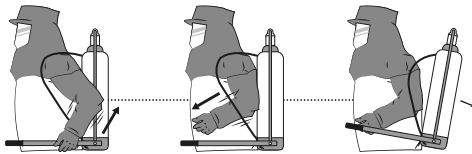
WARNING!

Use of individual protective clothing and safety equipment is required.



WARNING!

In case of an accident remove the sprayer immediately as shown in the illustration below.



- Only fill the tank with a water soluble agrochemical or an already mixed powder liquid form through the filling filter. Do not prepare mixtures directly in the sprayer tank;
- This sprayer is an electronic tool and must be protected from severe environmental conditions. When not using, do not leave the sprayer in sun, rain or frost;
- Do not submerge the sprayer completely or partially;
- After finishing the application, clean and wash all equipment in an approved decontamination area;
- Clean the sprayer before storage. Circulate fresh water through the tank, pump and hoses after each use. This will help remove chemical residues and extend life of sprayer parts;
- The spray lance can be conveniently stored on the clips on the side of the tank;
- Nozzles and filters must be periodically cleaned or replaced. Do not clean nozzles or filters with sharp hard objects, nor blow through them using the mouth.
- Before storage the sprayer during periods of harsh winter, in temperatures less than 32° F, circulate fresh water through the tank, pump and hoses. Release the trigger valve to drain all the liquid inside the sprayer. Use antifreeze if necessary. Make sure there is no liquid inside the tank before you storage the sprayer in a safe place.

9.17. Influence of climatic conditions

During application, some factors may determine the interruption of the spraying. Wind currents, for example, can drag drops to a greater or lesser distance in terms of its size or weight. The temperature and especially the relative humidity contribute to the rapid evaporation of the droplets.

The ideal conditions for spraying are:

- Relative humidity: minimum 50%;
- Wind speed: 2 - 6 MPH;
- Temperature below 86 F.

These limits should be considered according to technology application that will be used, adopting the safest class droplets within the boundaries of each situation.

Air velocity around the nozzle height	Description	Visible signs	Spraying
Up to 1.5 MPH	Calm	Smoke rises vertically	Recommended only with course, very course drops
1.6 to 2 MPH	Nearly calm	The smoke is tilted	
2.1 to 4.3 MPH	Light breeze	The leaves move. Feel the light wind	Ideal for spraying
4.4 to 6 MPH	Light wind	Leaves and thin branches in constant motion	We recommend only the drift reduction technique
6.1 to 10 MPH	Moderate wind	Moving branches. Dust and pieces of paper are carried by the wind	Improper for spraying

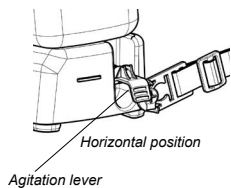
Factors	Classes of drops according to weather conditions		
	Very small or small	Small or medium	Medium or large
Temperature	below 77° F	77 to 83° F	above 83° F
Relative humidity	above 70%	60 to 70%	below 60%

10.1. Agitation system maintenance

To clean the agitation system, follow the steps below:

- Add at least 1 gallon of water into the sprayer tank;

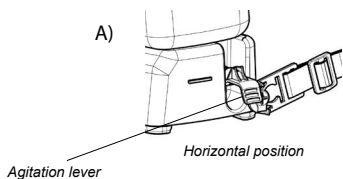
- Turn on the sprayer and the agitation system according to item "9.12. Activate/ Deactivate agitation system";



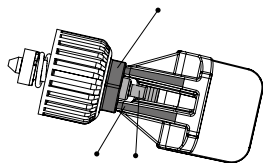
- Let the water circulate through the system for a few minutes;
- Dispose of the water used to clean in an appropriate location.

10.1.1. Lubricating the agitation system

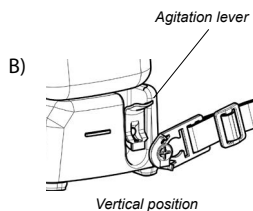
- With the sprayer OFF, move the agitation lever to the horizontal position as shown in figure A.



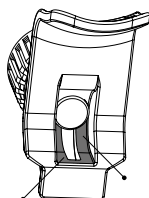
- Lubricate the darker areas indicated in the figure below.



- Move the agitation lever to the vertical position as shown in figure B.

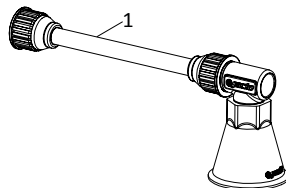


- Lubricate the darker areas indicated in the figure below every 100 hours of use.



11. Accessories (optional)

11.1. Anti-growth lance



Nº	Code	Description	Qty.
1	1236093	ANTI-GROWTH LANCE	1

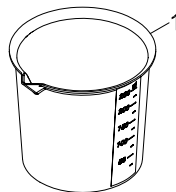
11.1.1. Assembly instructions

1. Connect the anti-growth lance to the trigger valve;
2. Tighten enough to avoid leakage.

11.1.2. Use

The Tobacco lance is indicated for the application of anti-growth in tobacco.

11.2. Measuring cup

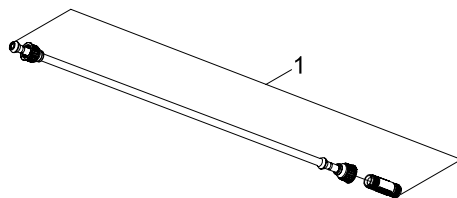


Nº	Code	Description	Qty.
1	963959	MEASURING CUP	1

11.2.1. Use

Recommended for calibrating the application dose.

11.3. Extension 600



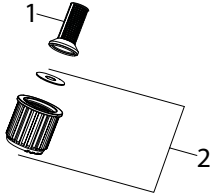
Nº	Code	Description	Qty.
1	1222729	EXTENSION 600	1

11.3.1. Assembly instructions

1. Disconnect the lance from the trigger valve;
2. Connect the trigger valve to the extension 600;
3. Connect the lance to the extension 600.

NOTE: It is recommended to use the nozzle JD-40 for a proper drench application.

11.4. Nozzle JD-40



Nº	Code	Description	Qty.
1	1168545	NOZZLE FILTER	1
2	1236097	NOZZLE JD-40	1

11.4.1. Assembly instructions

1. Remove the nozzle cap.
2. Insert the filter.
3. Install the nozzle JD-40.
4. Reinstall the nozzle cap.

11.4.2. Use

Suitable to be used together with Extension 600 to apply agrochemicals, biological products and liquid or water-diluted fertilizers, e.g. in a drench application.

12. Troubleshooting

In case the equipment does not work as expected, check the following table before contacting technical assistance.

Problem	Status	Analysis	Solution
Charger does not work / Charge light does not turn on.	Charger not plugged in.	No power supply.	Make sure the charger is properly plugged into the electrical outlet and that the outlet is providing electrical power. If not, replace the outlet. Also, make sure the power cord is securely connected to the charger source.
Charger green light turns on, but the battery is not charged (The light color does not change when battery is connected)	Not connected to the battery.	Poor contact at the battery connection.	Make sure the plug is inserted all the way into the battery connector.
Battery does not hold charge or does not charge.	New battery.	Battery not being fully charged.	Charge the battery until the battery charge light turns green.
		Charger is not JACTO original charger.	Use JACTO original charger.
		Pump is not original (excessive load).	Use original pump.
		Charger or charger plug/cord are damaged.	Replace the charger.
		Damaged battery (wet, perforated, broken terminals ...).	Replace the battery.
	Worn out battery (over 300 charge cycles).	Battery life cycle is nearing its end.	Replace the battery.
Electronic panel does not turn on.	Before pushing the green button.	Electronic panel is off.	Push the green button for 3 seconds to turn on the electronic panel.
	After pushing the green button.	Discharged battery.	Charge the battery for at least 15 minutes. After that, install it again and test.
		Rust or dirt on the connectors.	Check the connectors between panel and battery for rust or dirt, and clean it.
		Electronic panel is damaged.	Contact technical service.
Electric panel turns on, but there is no change in the pressure level, dosage level or between functions.	Pushing the green button and lights blinking.	Electronic panel locked.	Unlock the electric panel. Turn on the sprayer and then press the green button three times and then press the red button once. This must be done in less than 3 seconds.
	Pushing the green button and there is no light blinking and no level changing.	Button is damaged.	Replace the electric panel.
Electronic panel turns on, but the pump does not work.	Pushing the trigger valve.	Poor contact in the electric panel and pump connectors. Or no connection.	Remove the base cover and check the connectors between the electric panel and pump.
Electronic panel turns on, pump turns on, but there is not spraying/dose.	Pushing the trigger valve.	Chemical circuit is obstructed.	Make sure the filters are clean, the tank suction hole is not clogged and that there no folded hoses.
		Incorrect assembly of the nozzle diffuser.	Check the nozzle swirl core (pin facing towards filter).
		Pump or hoses are leaking.	Contact technical assistance.
		Check ball stuck in pump.	Take a hose with running water and position it on the sprayer suction hole inside the tank with the sprayer at maximum pressure and the trigger valve locked on. Wait a few seconds. Turn off the agitator lever.
Agitator does not work.	With the system off.	No leak.	Obstruction in the agitation system. Clean the agitator nozzle or contact technical service.
	With the system on.	No leak.	Obstruction in the agitation system. Clean the agitator nozzle or contact technical service.
Intermittent spray operation.	Without checking the pressure switch.	Pressure switch is not adjusted.	Remove the sprayer base cover and with an Allen wrench no. 2 adjust the pump pressure switch.
	Pressure switch adjusted.	Lower flow rate nozzle installed.	Replace the nozzle with one with higher flow rate
		Leak in the chemical circuit.	Check the chemical circuit connections and tighten the clamps.
Spraying was normal, but stopped suddenly.	Electronic interface shows battery lights blinking and the warning light is on.	Battery overvoltage.	Use the original Jacto battery.
	5 Beeps every 30 seconds	Battery completely discharged.	Charge the battery.
	Electronic interface shows the warning light is on and other lights are normal.	Pump, motor or wiring critical failure.	Contact technical service.
		Short circuit pump wiring.	Contact technical service.
	Green button was pressed.	Pump reached maximum pressure, pressure switch activated.	Press the green button until the pressure drops. Clean the nozzle and filters.
Pump makes no noise.	Pump wiring is loose, damaged or disconnected.	Check pump wiring.	
Variation of dose	Maintaining the same operating position.	Hydraulic fluid release system is blocked.	Remove the clog, clean the filters on the pump, valve and nozzle.
		Pump or hoses are leaking.	Contact technical service.
		Agitator lever is on.	Turn off the pressure level.
Red button is pushed, but sprayer does not turn off.	Pressing the red button.	Red button has not been pressed long enough.	Press the red button and hold for 3 seconds.
		Electric panel is damaged.	Contact technical service.

13. Important Return Safety Instructions

If it is really necessary to return the sprayer for repair, always perform the following:

1. Flush chemical residue from the pump, tank and hoses (performed in an approved containment area).
2. Circulate fresh water in the tank, pump and hoses.
3. Tag the sprayer with type of chemicals that have been sprayed.
4. Include complete description of operation problem, such as how sprayer was used, symptoms of malfunction, how many working hours per day, etc.
5. Remove the battery from the sprayer and keep it in clean and dry conditions. Battery must accompany the sprayer when it is returned for repairs.

Since the sprayer can contain residues of toxic chemicals, these steps are necessary to protect all the people who handle return shipments, and to help identify the reason for the breakdown.

14. Statement of Limited Warranty

MÁQUINAS AGRÍCOLAS JACTO S.A. shall warrant the equipment described in this manual and shall repair or replace parts and components which, under normal operation and wear, in accordance with technical recommendations, show DEFECTS IN MATERIAL OR WORKMANSHIP, based on the following conditions.

14.1. Warranty period

03 (three) years from the date of sale to the original purchaser.

14.2. Warranty application

JACTO shall honor this warranty, free of charge, if any part or component shows defect in MATERIAL OR WORKMANSHIP, after final analysis at the factory.

14.3. This warranty shall be null & void in case of:

- Misuse of the equipment against specifications in this manual, overwork or accidents.
- Use the equipment to spray products not intended for plants protection or not approved by regulatory authorities to be used with backpack sprayers.
- Preventive/basic maintenance performed by unauthorized people.
- Use of parts and components not supplied by JACTO.
- Modification of the equipment or any characteristic of the original design.

14.4. This warranty shall exclude

- Parts which show wear and tear due to use: spray nozzle, filters, seals, rechargeable battery, hydraulic pump, electronic panel, charger and its cables, agitator lever, belt, UNLESS THEY SHOW DEFECTS IN WORKMANSHIP, ASSEMBLY OR MATERIAL.
- Damages resulting from accidents.
- Transportation or freight of the equipment, parts and components in case such warranty is not approved.
- Transportation and travel time of technicians.

14.5. General terms

- Parts replaced within the warranty period shall be property of JACTO.
- The warranty on replaced parts and components shall expire together with the equipment warranty period.
- Eventual delays in performing services shall not give the owner right either to indemnity or to extension of the warranty period.

• JACTO reserves the right to modify its products or to interrupt the manufacture without prior notice.

• Any suggestion, questions and complaints shall be submitted to:

• CUSTOMER SERVICE:
Phone (800) 522-8610
Email: info@jacto.com