FEATURES

SMART CONTROL PANEL
Controls and monitors your sprayer

SOFT PADDED STRAPS WITH QUICK ADJUSTMENT
Extremely comfortable.

EXTERNAL CHARGER
Recharging time: 4 hours.

INTERNAL HYDRAULIC AGITATOR
With external activation switch.

Weight:	**3,8 kg / 8.38 lbs
Volume:	16 L / 4 GAL (US)

**Empty

PROTECT THE ENVIRONMENT. DO NOT LITTER

3 YEAR WARRANTY

jacto

Jacto Inc.
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Original jacto - Since 1948 -

For more information access:

/JactoSmallFarmSolutions

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Jacto reserves the right to change its products without prior notice. 08/2015. Reading this leaflet does not exempt the operator from carefully reading the operator's manual.

NEW!

jacto

pjb-16

BATTERY BACKPACK SPRAYER

jacto pjb-16

BATTERY BACKPACK SPRAYER
FUNCTIONS AND FEATURES

The most advanced backpack sprayer in the world.

Battery Backpack Sprayer PJB - 16.

16 liters / 4 gallons of capacity, removable battery, soft padded strap and 5 constant pressure levels make the PJB the most desired sprayer in its category.

CONSTANT PRESSURE
Regardless of the battery level

5 PRESSURE LEVELS
SMART CONTROL

INTERNAL *Hydraulic* AGITATOR

REMOVABLE BATTERY
Easy installation and removal. Full charge in only 4 hours.

INTERNAL FILTER
Exclusive internal filter prevents clogging of the pump.

DIGITAL LED DISPLAY
Displays battery charge level, pressure and alerts.

WALKING PACE INDICATOR
Adjustable 4 speed
Adjustable 4-speed walking pace indicator, with audible signal, to help the operator maintain a constant walking speed.

AUTO SHUT-DOWN
Shuts off automatically after 10 minutes without operation.

PARTS AND ACCESSORIES
Original parts and accessories available from Jacto dealers.

Operator's Manual - English

BACKPACK SPRAYER JACTO PJB

Edition Nº 1231303
10/2015

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1. Introduction

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	PJB-20/16
Maximum dimensions (L x W x H)	15 in. x 8 in. x 21 in. (385 mm x 205 mm x 540 mm) 15 in. x 8 in. x 18.5 in. (385 mm x 205 mm x 470 mm)
Net weight	9.9 lbs / 8.4 lbs (4.5 kg / 3.8 kg)
Gross weight	54 lbs / 43.7 lbs (24.5 kg / 19.8 kg)
Spray lance length	23.6 in. (600 mm)
Hose length	53 in. (1350 mm)
Chemical agitation system	Enabled by agitation lever
Chemical tank	
Capacity	5.3 gal. / 4.2 gal. (20L / 16L)
Residual volume	None
Filling opening diameter	4.5 in. (115 mm)
Material	Polyethylene
Pump	
Type	Diaphragm
Maximum pressure	60 psi (4.1 bar)
Open flow	0.50 gpm (1.9 L/min)
Nozzle installed	JD No 12
Battery	
Type	Lithium Ion, rechargeable
Rated Voltage	14.4 V d.c.
Capacity	60 Wh (4200 mAh)
Recharge time	4 hours

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

a. Keep work area clean and well lit. *Cluttered or dark areas invite accidents.*

b. 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.*

c. Keep children and bystanders away while operating a power tool. *Distractions can cause you to lose control.*

3.2. Electrical safety

a. 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.*

b. 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.*

c. Do not expose power tools to rain or wet conditions. *Water entering a power tool will increase the risk of electric shock.*

d. 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.*

e. 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.*

f. 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

a. 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.*

b. 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.*

c. 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.*

d. 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.*

e. Do not overreach. Keep proper footing and balance at all times. *This enables better control of the power tool in unexpected situations.*

f. 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.*

g. If devices are provided for the connection of dust extraction and collection 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 60°C 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	⎓ ou d.c.	direct current
W	watts	∿ ou a.c	alternating current
Hz	hertz	⏚	earthing terminal
lbf/in² (lbf/pol²)	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 (15.2 m)	From 50 ft (15.2 m) and up to 100 ft (30 m)	More than 100 ft (30 m)
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 32 °F (0 °C) or above 113 °F (45 °C). 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 locations and approved for receiving such material.** *If a recycling center is not available in your area please contact CUSTOMER SERVICE: Jacto Inc. 19217 SW 119th Ave. Tualatin, OR 97062 - Phone 1-800-522-8610 - Email: info@jacto.com - Website: www.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 agrochemicals 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 1000 ml container, put 250 ml of water.

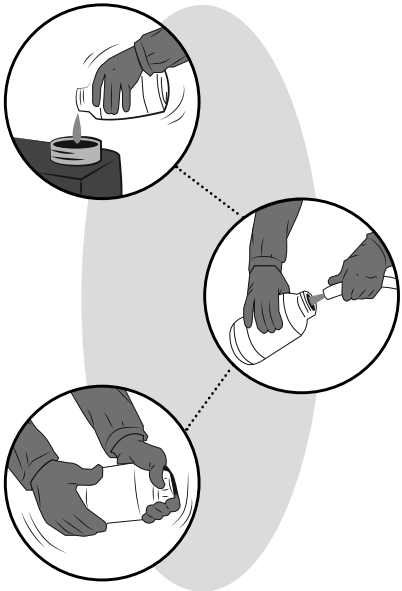
3. Install the container cap and tighten it enough to avoid leakage during the agitation.

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.

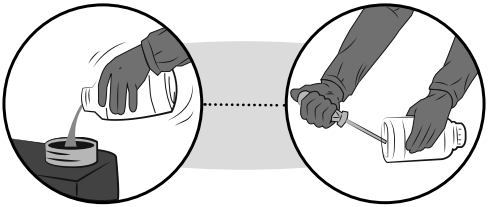
5. Take the container cap off and carefully pour the rinse water into the spray tank.

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. Operating Instructions

The following steps describe how to safely use the sprayer.

8.1. Select the correct nozzle

NOZZLE TYPE	FILTER (Mesh)	IDENTIFICATION (Part no. - Description)	APPLICATION	PRESSURE (psi)	FLOW RATE gpm (L/min)
	80 (Zinc yellow)	(1197535) JEF 110015 GREEN	Herbicides	30	0.13 GPM (0.49 L/min)
	50(Gentian blue)	(1197536) JEF 11002 YELLOW		30	0.17 GPM (0.65 L/min)
	50(Gentian blue)	(1197537) JEF11003 BLUE		30	0.26 GPM (0.98 L/min)
	80 (Zinc yellow)	(1197475) JSF 110015 GREEN	Herbicides	30	0.13 GPM (0.49 L/min)
	50(Gentian blue)	(1197476) JSF 11002 YELLOW		30	0.17 GPM (0.65 L/min)
	50(Gentian blue)	(1197477) JSF11003 BLUE		30	0.26 GPM (0.98 L/min)
	50(Gentian blue)	(1197565) JHC 8002 YELLOW	Fungicide, insecticide and foliar fertilizers	45	0.21 GPM (0.80 L/min)
	50(Gentian blue)	(1198892) JHC 8004 RED		45	0.42 GPM (1.60 L/min)
	50(Gentian blue)	(1198893) JHC 8005 BROWN		45	0.53 GPM (2.00 L/min)
	50(Gentian blue)	(1197486) JDF 04 RED	Herbicides and foliar fertilizers	15	0.24 GPM (0.92 L/min)
	50(Gentian blue)	(1197487) JDF 05 BROWN		15	0.30 GPM (1.15 L/min)
	50(Gentian blue)	(1197488) JDF 06 GREY		15	0.37 GPM (1.39 L/min)
	80 (Zinc yellow)	(1197497) JAI 120015 GREEN	Herbicides	20	0.11 GPM (0.42 L/min)
	80 (Zinc yellow)	(1197499) JAI 12002 YELLOW		20	0.15 GPM (0.57 L/min)
	50(Gentian blue)	(1197501) JAI 12003 BLUE		20	0.22 GPM (0.85 L/min)

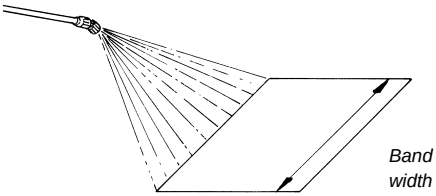
*Approximate data based on a spray swath for unique nozzles at 20 inch height of the target.

NOTE: This sprayer is packaged with the JD-12P nozzle installed on the lance. Other nozzles mentioned in this manual are optional, and do not accompany this sprayer.

8.2. Calibration of battery powered backpack sprayer

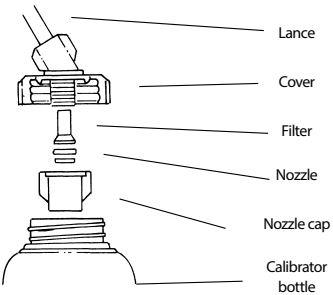
PROCEDURE

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

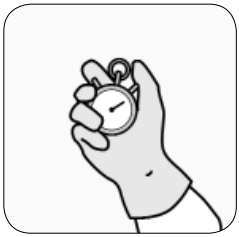


Band width ft (m)	1.6 (0.5)	2.2 (0.7)	3.2 (1.0)	3.9 (1.2)	4.9 (1.5)
Distance to walk ft (m)	164 (50.5)	117.1 (35.7)	82.0 (25.0)	68.2 (20.8)	54.7 (16.7)

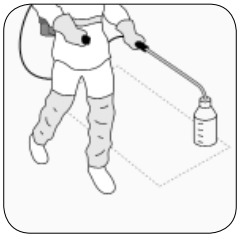
- Attach the calibrator bottle to the lance as shown:



- Remove the cap, nozzle and filter.
- Mount the calibrator cover to the lance.
- Reinstall the filter, nozzle and cap.
- Screw the calibrator onto the cover.



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



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

1. 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).
2. Place the bottle on a level surface and observe the liquid level visible through the side of the bottle. The ounces collected corresponds to gallons per acre. For example if you collected 10 ounce while spraying 340 sq/ft this equal 10 GPA.
3. Empty the bottle and repeat this operation to determine the average of two or more readings.

NOTE: To convert GPA to L/ha multiply by 9.353.

8.3. Choosing nozzle type

Seven main nozzle designs are used on backpack sprayers. Each nozzle design is available in a range of sizes to optimize the use the product to be applied. The nozzle choice will be based on the agrochemical type to be used and the droplet size recommended (table):

Nozzle			Herbicide	Fungicide	Insecticide
Code	Name	Picture			
1197571	*JHC*		▲	●	●
217174	*JD-12*		▲	●	●
1197537	*JEF*		●	■	■
1197477	*JSF*		●	■	■
325787	*J ADJ*		▲	■	■
1197486	*JDF*		●	▲	▲
1197486	*JAI*		●	■	■

● *Recommended* ■ *Acceptable* ▲ *Not recommended*

Periodically test the flow rate of the nozzle. If the flow rate is above 10% of the nominal flow rate replace the nozzle.

8.4. 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:

A)

B)

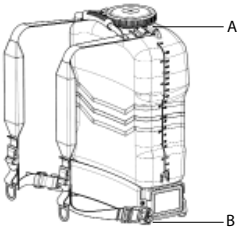
8.5. Filling the spray tank with pesticides.

1. Read carefully the chemicals manufacturer's labels;
2. Put 1.3 gallon (5 Liters) of water in a bucket and add the chemical product;
3. Stir until it becomes an homogeneous mixture;
4. Pour the solution into the tank while filling with water.

8.6. 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.

1. Mount the strap belt onto the tank as shown in position A.
2. Hook the buckle of the strap to the plastic couplers located at the side of the sprayer's base, as shown in position B.
3. 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.



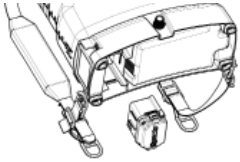
8.7. Installing and removing the battery

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:

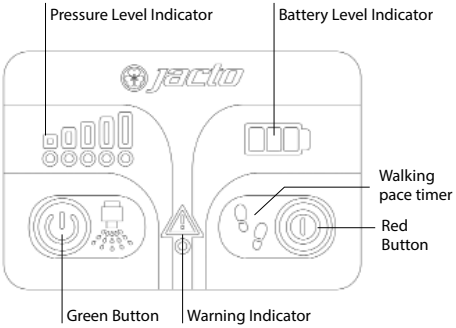
1. Press both locking buttons;
2. Pull the battery out of the battery housing.



8.8. 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.

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

To turn on the sprayer and select pressure level:

NOTE: Before starting to spray, retighten the hose clamps to avoid contamination of the operator and of 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.

8.10. 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.

8.11. 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 0.62 MPH (1 km/h).
2. Press Red Button again to adjust the Walking Pace to 1.24 MPH (2 km/h).
3. Press Red Button again to adjust the Walking Pace to 1.86 MPH (3 km/h).
4. Press Red Button again to adjust the Walking Pace to 2.49 MPH (4 km/h).
5. Press Red Button again to turn-off the Walking Pace function.

8.12. 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.

8.13. 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.

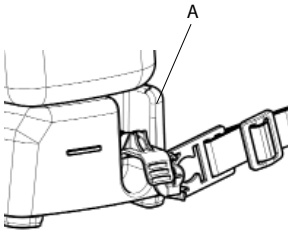
Basic recommendations:

- 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.

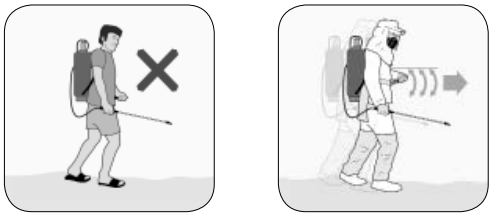
NOTE: Pressure in the spraying nozzle will be weaker while the Agitation System is activated.

WARNING!

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



8.14. Application

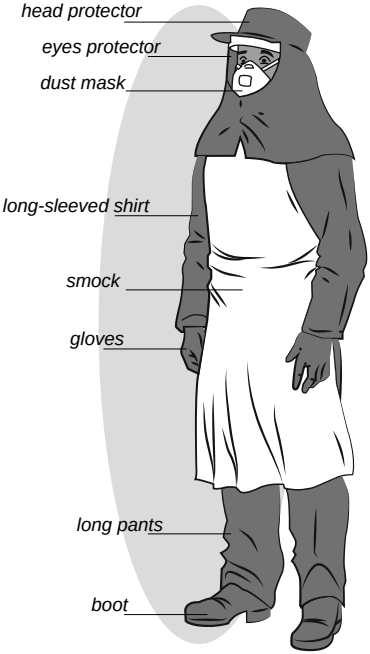


Wear appropriate protective clothing

Do not contaminate water

Spray downwind and avoid drift

Keep constant height



WARNING!

Use of individual protective clothing and safety equipment is required.

WARNING!

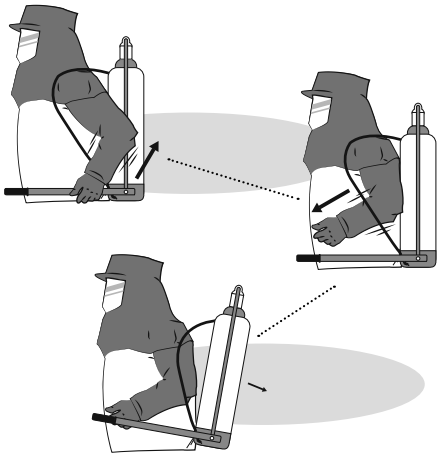
Use the correct dose and volume of chemical according to the product label.

WARNING!

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

WARNING!

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



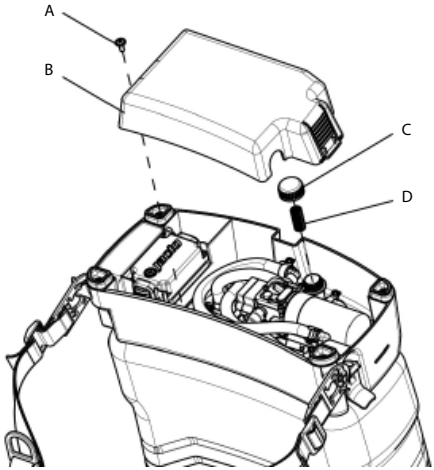
9. Maintenance

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.

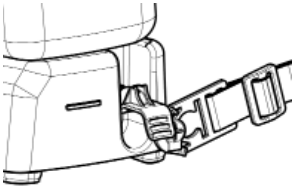


- Only fill the tank with a water soluble agrochemical or an already mixed powder liquid form through the filling filter. Do not prepare mixtures directly in the sprayer tank;
- This sprayer is an electronic tool and must be protected from severe environmental conditions. When not using, do not leave 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;
- Ensure that there is no liquid waste in the sprayer, especially in harsh winter locations;
- 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.

9.1. Maintenance of the agitation system

- Turn off the sprayer, then move the agitation lever to the horizontal position as shown in A;

A)

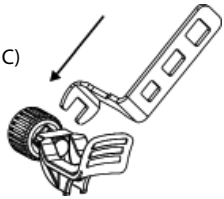


- Turn it 180° as shown in B;

B)

- Insert the maintenance key according to the illustration C;

C)

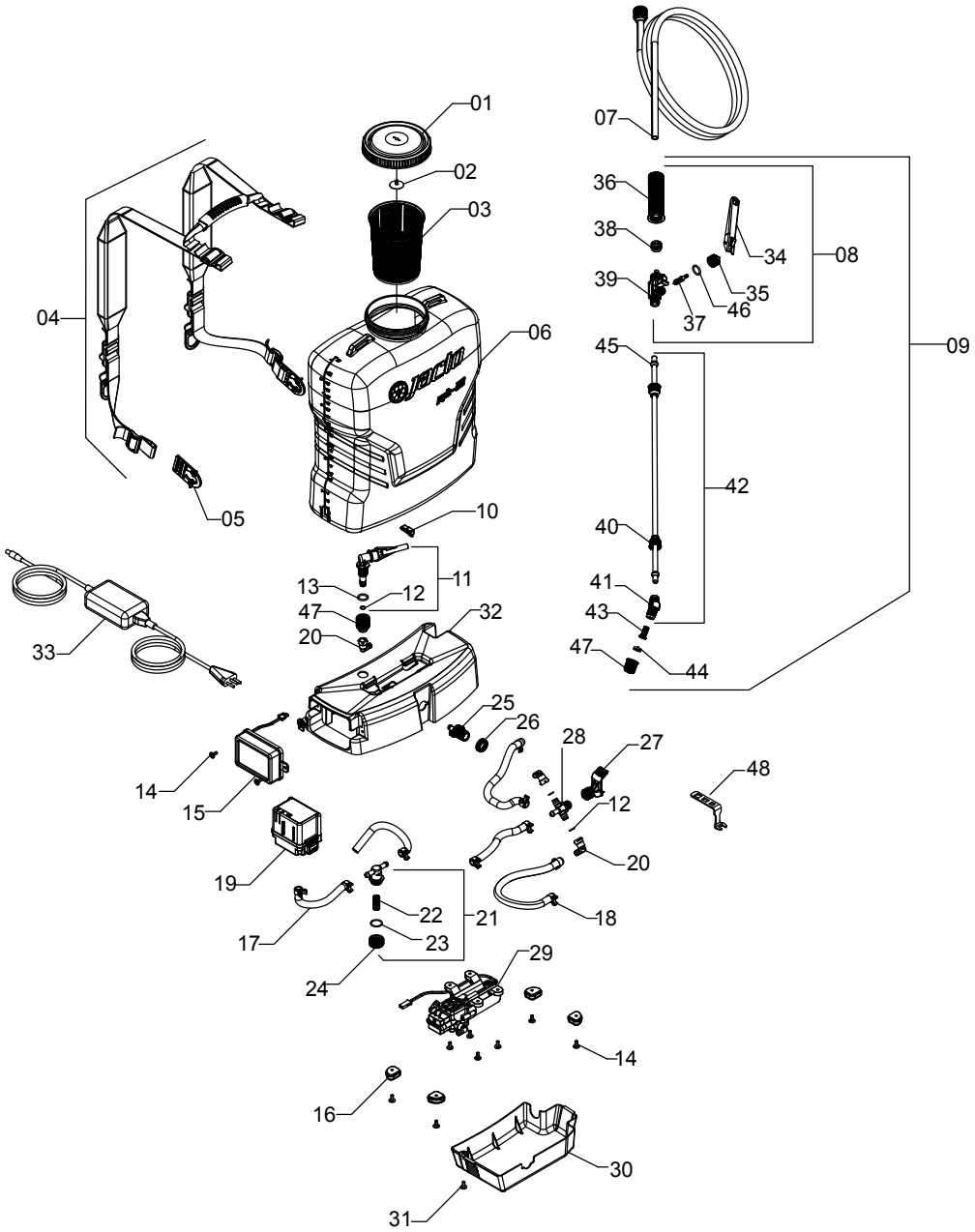


- Next, unscrew the agitator counterclockwise until the lever is removed;
- Put 1.3 gallons (5 L) of water in the tank and turn on the system to clean the system;

NOTE: Discard the water used to clean the system in an appropriate location.

- Inspect the agitator needle and replace lever assembly if necessary. (refer to illustrated parts list);
- After cleaning the system, reinstall the agitator lever and needle by reversing the steps. Check for any leaks before starting to spray.

Nº	Code	Description	Qty.
1	4739	LID WITH DIAPHRAGM (ORANGE)	1
2	560573	LID DIAPHRAGM (NITRILICA)	1
3	942920	TANK STRAINER	1
4	1220618	COMPLETE BELT WITH TRANSPORT HANDLE	1
5	635672	BUCKLE HD	2
6	1220619	TANK 20L	1
6a	1223765	TANK 16L	1
7	1220981	COMPLETE HOSE FOR LP605 AND LP601	1
8	908889	TRIGGER VALVE LP 601	1
9	530626	LANCE 600 WITH TRIGGER LP601	1
10	1168397	BASE LOCK	1
11	1220977	AGITATOR ASSEMBLY	1
12	1220629	O-RING OR1-11	3
13	1223766	AGITATOR SEAL	1
14	1220622	FLANGE HEAD SCREW PHILLIPS SLOT 5 X 12 MM	10
15	1220623	ELECTRIC PANEL JEP 2016	1
16	1220624	RUBBER FEET KIT (QTY. 4)	1
17	1220625	HOSE KIT	1
18	1220925	CLAMP D 12-14 STAINLESS STEEL	11
19	1220628	BATTERY JB 1660	1
20	1220631	SWIVEL CONNECTOR 3/8	3
21	1220632	PJB PUMP FILTER KIT	1
22	1220634	INLINE FILTER	1
23	1220934	O-RING 20.34 1.78 NITR 70 OR1-19	1
24	1168544	FILTER COVER CAP AND O-RING	1
25	1220635	HOSE CONNECTOR	1
26	1220636	CONNECTOR NUT	1
27	1220979	AGITATOR LEVER AND NEEDLE ASSEMBLY	1
28	1220638	AGITATOR VALVE BODY	1
29	1220639	PUMP JP 0402X	1
30	1220640	BASE COVER	1
31	1220947	PAN HEAD SCREW PHILLIPS SLOT M 5X0,8X12	1
32	1220641	BASE PJB	1
33	1223798	CHARGER JBC	1
34	105247	TRIGGER VALVE LEVER	1
35	996058	TRIGGER VALVE CAP	1
36	909192	TRIGGER VALVE HANDLE	1
37	105239	TRIGGER VALVE NEEDLE	1
38	920470	PINCH COCK	1
39	909283	TRIGGER VALVE BODY LP 601	1
40	915744	SCREW CAP	2
41	560649	ELBOW WITH CONE PACKING 11/16	1
42	100131	EXTENSION	1
43	592139	FILTER M50/60	1
44	217174	JD 12 NOZZLE	1
45	909309	CONE PACKING	1
46	1220983	O-RING 10.83x1.78 NITR. 70 OR1-13	1
47	229724	NOZZLE CAP	1
48	1223850	MAINTENANCE KEY PJB	1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10. Troubleshooting

If sprayer is not working as expected, consider the following table before contacting technical assistance.

Malfunction / Status		Cause	Action
Sprayer interface doesn't work	Green button was not pressed	The interface is OFF	Press green button
	Green button was pressed	Battery is fully discharged	Recharge battery
		Battery is permanently damaged	Replace battery
		Interface or electronic module is damaged	Contact technical assistance
Sprayer interface is ON, but pump is not working (no audible noise from pump)	Trigger valve is not released	Trigger valve is shut	Release trigger valve
	Trigger valve is released	Pump electrical connector is disconnected	Connect pump electrical connector
		Nozzle or nozzle filter is blocked	Clean or replace nozzle or filter
		Pump wiring is broken	Contact technical assistance
		Pump is damaged	Contact technical assistance
Pump is working, but spray is not coming out	Trigger valve is not released	Trigger valve is shut	Release trigger valve
	Trigger valve is released	Nozzle or nozzle filter is blocked	Clean or replace nozzle or filter
		Pump suction is blocked (inside chemical tank)	Contact technical assistance
		Suction hose is blocked or disconnected	Contact technical assistance
		Pump or hoses are leaking	Contact technical assistance
Sprayer sprays but is abnormal or spray pressure is weak	Agitation valve is ON	Part of the flow is being used to agitate chemical tank	Turn off agitation valve
	Agitation valve is OFF	Pump suction is partially blocked (inside chemical tank)	Remove obstruction and circulate fresh water to clean hoses
		Suction hose is partially blocked	Circulate fresh water to clean hoses
		Pump or hoses are leaking	Contact technical assistance
		Nozzle or filters are blocked or damaged	Clean or replace nozzle or filter
Chemical agitation is not working or is weak	Agitation valve is OFF	Agitation is not enabled	Turn on agitation valve
	Agitation valve is ON	Agitation nozzle or filter is blocked	Clean or replace agitator nozzle or filter
		Agitation hose is blocked or disconnected	Contact technical assistance
Spraying was normal but stopped suddenly	Interface shows blinking battery lights and warning light on	Battery overvoltage	Use JACTO original battery
	Low battery audible warning was beeping	Battery is fully discharged	Recharge battery
	Interface shows warning LED on and other lights are normal	Pump or motor is damaged	Contact technical assistance
		Pump wiring is short circuited	Contact technical assistance
	Green button was pressed	Pump reached maximum pressure, pressure switch activated	Press green button until pressure is lower. Clean nozzle and filters
	No audible noise from pump	Pump wiring is loose, damaged or disconnected	Check pump wiring

Malfunction / Status		Cause	Action
Battery charge is not lasting as usual or is not charging at all	New battery	Battery is not being fully charged	Charge battery until charger LED indicator is green
		Not original JACTO charger	Use original JACTO charger
		Not original pump (excessive load)	Use original pump
		Damaged charger or charger cords/ plugs	Replace charger
		Battery is damaged (wet, pierced, broken terminals…)	Replace battery
	Used battery (more than 300 recharge cycles)	Battery life cycle is near the end	Replace battery
Red button is pressed but sprayer does not shut off		Red button was not held/pressed long enough	Press red button and hold for 3 seconds
		Interface is damaged	Contact technical assistance

10.1. Influence of climatic conditions

During application, some factors may determine the interruption of the spraying. Wind currents, for example, can affect droplets 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: 1.9 - 6.2 mph (3-10 km/h);
- Temperature below 86º F (30º C) .

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
1.2 mph (2 km/h)	Calm	Smoke rises vertically	Ideal for spraying
1.2 to 1.9 mph (2 to 3 km/h)	Nearly calm	The smoke is tilted	
1.9 to 4.3 mph (3 to 7 km/h)	Light breeze	The leaves range. Feel the light wind	Ideal for spraying
4.3 to 6.2 mph (7 to 10 km/h)	Light wind	Leaves and thin branches in constant motion	We recommend only the drift reduction technique
6.2 to 9.3 mph (10 to 15 km/h)	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 thin or thin	Thin or medium	Medium or thick
Temperature	below 75º F (25º C)	75 to 85º F (25 to 28º C)	above 85º F (28º C)
Relative humidity	above 70%	60 to 70%	below 60%

11. Important Return Safety Instructions

If it is 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.

12. 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.

12.1. Warranty period

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

12.2. 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.

12.3. 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.

12.4. 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.

12.5. 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 CARE SERVICE: Jacto Incorporated - 19217 SW 119th Ave. - Tualatin OR, 97062 - Phone: 1-800-522-8610 - Fax: 1-800-511-3671 - Email: info@jacto.com.