



OWNER/OPERATOR MANUAL

BACKPACK SPRAYERS



TO PROLONG THE LIFE OF YOUR SPRAYER

To prolong the life of your sprayers, follow these three simple steps:

- 1) Never leave chemicals in your sprayer overnight
- 2) Empty, Clean, and run water through your sprayer including the hose and gun
- 3) Lubricate all moveable rubber pieces periodically with Silicone Grease (o-rings, seals, piston cup (when applicable), spindle in gun, etc)

⚠ WARNING ⚠


This sprayer is not designed to be used with chlorine/bleach, acids of any kind, corrosive products like caustic soda, gasoline, materials capable of generating heat, hot fluids, explosive or highly volatile products.

USE OF THESE AND OTHERS EXPOSE USERS TO SERIOUS INJURY AND EVEN DEATH.

⚠ WARNING ⚠

Before using our products, please read this manual carefully to understand the proper use of your unit.

 **SAFETY FIRST**

Instructions contained in warnings within this manual and warning seals marked with a  symbol on the sprayer concern critical points which must be taken into consideration to prevent possible serious bodily injury, and for this reason you are requested to read all such instructions carefully and follow them without fail.

Note that there may be times when warning seals peel off or become soiled and impossible to read. If this happens, you should contact the dealer from which you purchased the product to order new seals and affix the new seal(s) in the required location(s).



■ **NOTES ON TYPES OF WARNINGS**



Instructions labeled as shown at left, concern critical steps or procedures which must be followed in order to prevent accidents which could lead to serious bodily injury or death. This mark is used to indicate instructions which must be followed without exception.



Instructions labeled as shown at left concern steps or procedures which, if not followed correctly, could lead to mechanical failure, breakdown, or damage.



To label supplementary instructions designed to provide helpful hints or directions for the use of the product.

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1. Parts location



Sprayer Type	Backpack
Model Names	100,101,102,103, 201, 202, 301,302
Dimensions (LxWxH).....	20.9x14.2x8.3 in (530x360x210 mm)
Dry Weight.....	14 LBS (301, 302, 10 lbs)
Tank Capacity.....	4 Gallons, 15.1 liter
Max. Pressure.....	150 PSI (100, 102, 103) 120 PSI (202)
	80 PSI (301), 70 PSI (101, 201)
Working Pressure.....	15-80 PSI (100, 102, 103, 202, 302)
	15-60 PSI (101, 201, 301)
Seals/O-Rings.....	VITON/Nytril (depending on model)
Pump Type.....	External Piston (102, 202, 302)
	External Diaphragm (101,201)
	External High Pressure Diaphragm (103)
	Triple Function Piston Diaphragm (100)
Reparable Pump.....	Yes
Tank Mouth	6" Wide Mouth
Wand Type	20" Brass or 20" Fiberglass
Standard Nozzle	Adj Brass or Adj Plastic or Fan Tip

3. Warning labels on the machine

IMPORTANT

If warning labels peel off or become soiled and impossible to read, you should contact the dealer from which you purchased the product to order new labels and affix them in the required location(s).

WARNING

Never modify your machine. We will not warrant the sprayer if you use the remodeled sprayer or don't observe the proper usage written in this manual.

2. For safe operation



WARNING

1. Read this Sprayer Owner/Operator Manual carefully. Be sure you understand how to operate this unit properly before you use it. Failure to do so could result in serious injury
2. Be sure to keep this manual handy so that you may refer to it later whenever any questions arise. Also note that you are requested to contact the dealer from whom you purchased the product for assistance in the event that you have any questions which cannot be answered herein
3. Always be sure to include this manual when selling, lending, or otherwise transferring the ownership of this product
4. Do not lend or rent your machine without the owner's manual
5. Be sure that anyone using your unit understands the information contained in this manual
6. Never let a child under 13 years old use the machine
7. **DO NOT use flammables in the sprayer. They can ignite or explode causing serious injury**
8. Always wear splash goggles and protective gear and clothing when filling, using and/or cleaning the sprayer.
9. Lubricate the rubber lid o-ring with Silicone Grease prior to first usage so the o-ring will seal properly.
10. Tighten all connections before using the sprayer. Some may not be properly secured and must be tightened to prevent leakage

WARNING

BEFORE USING:

Lubricate all moveable rubber pieces with Silicone Grease (o-rings, seals, piston cup (if applicable), spindle in gun). Keep breather hole in lid clear of debris. Lubricating the seals and keeping the breather hole open allows air into the tank. Without this airflow, the tank may collapse and crack due to a vacuum created by the pump.

4. For safe operation



■ WORKING CONDITION

1. Refrain from operating the sprayer if you are tired, ill, or upset, or if you are under the influence of alcohol, drugs or medication.
2. To reduce the risk of injury when filling, using and/or cleaning the sprayer, always wear eye protection. Eye protection should meet the requirements of ANSI Z87.1.
3. Always wear a mask or respirator when filling, using and cleaning sprayer, if recommended by the spray material manufacturer.
4. Wear protective gear and clothing when filling, using and cleaning the sprayer.
5. Wear sturdy rubber-soled shoes or shoes with some other form of anti-slip protection to help protect you against falling when filling, using and/or cleaning the sprayer.
6. Do not wear loose clothing, scarves, neck chains, hair longer than shoulder length, when filling, using and/or cleaning the sprayer.



IMPORTANT

Check and follow the local regulations.

■ WORKING PLAN

- When planning your work schedule, allow plenty of time to rest. Limit the amount of time over which the product is to be used continuously to somewhere around 30 ~ 40 minutes per session, and take 10 ~ 20 minutes of rest between work sessions. Also try to keep the total amount of work performed in a single day under 2 hours or less.

■ USING THE PRODUCT

NOTE

Hose clamps are not completely tight. Please tighten hose clamps prior to using. Hose clamps are left loose to extend life of seals and fittings.

WARNING

Lubricate all moveable rubber pieces with **Silicone Grease (o-rings, seals, spindle in gun, piston cup (if applicable))**.

Keep breather hole in lid clear of debris.

Lubricating the seals and keeping the breather hole open allows air into the tank.

Without this airflow, the tank may collapse and crack due to a vacuum created by the pump.

1. Always inspect your sprayer thoroughly before and after each use. Check to be sure hose is securely attached and in good condition before pressurizing the tank.
2. Check the work area that the sprayer will be used in and remove or cover all valuables that may be damaged by using sprayer.
3. To reduce the risk of injury:
 - Watch out for children, pets, open windows, freshly washed cars, and spray safely away.
 - Do not allow bystanders in work area.
 - Do not point the sprayer nozzle in the direction of people or pets.
 - Pay attention to the direction of the wind, do not work against the wind.
 - Never use the sprayer during windy conditions.
 - Never point a sprayer nozzle toward an open flame to avoid the possibility of igniting the unit, causing injury to yourself or damage to surroundings.
 - Always release pressure in the pump prior to filling, cleaning, or servicing the sprayer.
 - Before opening a container of pesticide or other spray material, carefully read, understand, and follow all instructions on the label.
 - Do not use flammable materials in the sprayer: they can ignite and/or explode, causing serious injury.
 - Never use chlorine/bleach, caustic or corrosive materials in the sprayer, which could result in damage to the unit.
 - In case of personal contamination: remove contaminated clothing, remain upright, do not consume liquids or cause vomiting, and get professional help immediately.
 - Never attempt to pressurize the unit by any other method than with the pump module provided.
 - Never over-pressurize the unit.
 - Do not eat, drink, or smoke while spraying.
 - Wash face and hands with soap and water after spraying.
 - Clean and rinse tank and spraying assembly after each use to prevent crystallizing, which would later cause clogging and chemical damage to the unit.
 - Do not store sprayer under pressure, or with spray solution in tank.
 - Do not transfer spray materials to other containers that are used for food and/or drink containers.



4. For safe operation

- Keep spray materials locked up and out of reach of children and animals.
- Use only original manufacturer's replacement parts.
- As a rule, mix your chemicals in a separate container from which to fill the sprayer. Do not mix formulas inside the sprayer. Where an exception is made (e.g. with liquid fertilizers), fill sprayer with water BEFORE adding the active ingredient.
- Always sift formula through the screen. If there is no built-in strainer, use a screened funnel.
- Never fill the sprayer with hot liquids. Max. 30°C, or 85°F.
- Never use gasoline or other flammable materials.
- Before cleaning or servicing the sprayer, allow all pressure to escape. Do not store or transport sprayer under pressure.
- After each use, wash the sprayer, including hose, wand, and shut-off valve with plenty of fresh water. Unless spraying is to be continued within hours, drain chemical formula and thoroughly rinse the tank and all liquid ducts.
- Never store chemicals in your sprayer for any length of time
- Do not leave the sprayer in reach of children or persons not qualified to handle it in proper fashion.
- When not in use, and especially during prolonged storage, keep your sprayer in a protected place away from direct sunlight.
- Make sure the spray hose loops freely without kinking or squeezing.

4. After using sprayers and other equipment, CLEAN UP! Dispose of debris in trash receptacles.

■ MAINTENANCE

1. In order to maintain your product in proper working order, perform the maintenance and checking operations described in the manual at regular intervals.
2. Examine the sprayer at intervals for loose fasteners and rusted or damaged parts. Use special care for chemical leakage.
3. Clean and rinse tank and spraying assembly after each use to prevent crystallizing, which would later cause clogging and chemical damage to the unit.
4. All service except for those described in this manual should be performed by trained service personnel.



4. When replacing parts and accessories, lubricate first, and always be sure to use only SP products which have been certified by SP for use with SP product.
5. In the event that any part must be replaced or any maintenance or repair work not described in this manual must be performed, please contact a SP authorized servicing dealer for assistance.
6. Do not use any accessory or attachment other than those bearing the SP mark and recommended for the unit.
7. Under no circumstances should you ever take apart the product or alter it in any way. Doing so might result in the product becoming damaged during operation or the product becoming unable to operate properly.
8. Units are not storage tanks and should be washed and cleaned after each use. Failure to maintain the unit damages o-rings and seals and may void the manufacturer's warranty.

■ TRANSPORTATION

- Clean and rinse tank and spraying assembly after each use to prevent crystallizing, which would later cause clogging and chemical damage to the unit.
- Drain the content from the tank before transporting or storing the sprayer.
- Secure the unit carefully to prevent movement when it is transported.
- A unit that receives a strong shock during transport and unloading may malfunction.

■ STORAGE

- Clean and rinse tank and spraying assembly after each use to prevent crystallizing, which would later cause clogging and chemical damage to the unit.
- Do not store sprayer under pressure, or with spray solution in tank.
- When storing the sprayer, choose a space indoors free from moisture and out of the reach of children.

■ DISPOSAL

- When disposing of your machine, or chemical, be sure to follow your local regulations.

5. Set up

NOTE

Hose clamps are not completely tight. Please tighten hose clamps prior to using. Hose clamps are left loose to extend life of seals and fittings.

WARNING

Lubricate all moveable rubber pieces with Silicone Grease (o-rings, seals, spindle in gun, piston cup (when applicable). Keep breather hole in lid clear of debris. Lubricating the seals and keeping the breather hole open allows air into the tank. Without airflow, the tank may collapse and crack due to a vacuum created by the pump.

■ HOW TO ASSEMBLE

1. Attach spray wand to spray gun and tighten firmly.
2. Take pump handle and insert into the tube on the pump lever. You will notice holes drilled through both sides of the pump handle and lever. Align these holes, take the "R" pin provided and place through the holes. This affixes the handle in place and is ready for use. For storage, reverse the above process, and then place "R" pin through the pump lever to keep from losing the "R" pin.
3. Instructions for installing shoulder strap plastic buckle:
First, put the sprayer on a hard flat surface, take the white plastic buckle and while holding the sprayer up slightly, place the buckle under the metal frame. Slowly push down forcing the frame into the buckle. Repeat the same procedure for the other side.

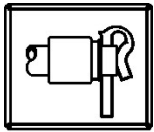


Fig. 1



Fig. 2

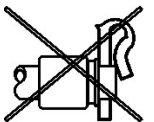


Fig. 3

IMPORTANT

Make sure to insert the locking pin for the pump handle in its (only) CORRECT POSITION.

The pin limits the pump stroke for optimum performance. Observe Fig. 1 exactly. (Fig. 2 and 3 spell trouble)

For best results and to maintain a good seal, re-grease piston cup periodically with Silicone Grease. Do not use any petroleum based lubricants or WD-40, they will damage the o-rings and seals of your sprayers. Only Silicone Grease is recommended for lubrication of SP sprayers.

6. Pre-operation



Hose clamps are not completely tight.
Please tighten hose clamps prior to using.
Hose clamps are left loose to extend life of gaskets and fittings.



Lubricate all moveable rubber pieces with Silicone Grease (o-rings, seals, spindle in gun, piston cup (when applicable). Keep breather hole in lid clear of debris. Lubricating the seals and keeping the breather hole open allows air into the tank. Without airflow, the tank may collapse and crack due to a vacuum created by the pump.



Before using, lubricate lid o-ring, pump washer, check valve, and keep breather hole clear of debris. Your failure to lubricate, clean check valve, and maintain breather hole open to allow air into the tank, can cause the tank to collapse and crack, due to the vacuum created by pump.

1. Before you remove cap, be sure there is no pressure in the tank. In order to release pressure, invert unit upside down and squeeze spray pistol (aim away from you). Pressure will escape; when hissing stops, all pressure has been released. Remove pump assembly by turning counter-clockwise. The pump handle has two locking positions, one turning clockwise and one counter-clockwise.
2. Remove lid.
3. A unit that has been used with herbicides should never be used to spray insecticides, unless the sprayer has been properly cleaned and all other chemicals neutralized. Failure to do this could cause you to kill plants that have been sprayed. Consult with the manufacturer of the chemicals in use to obtain proper instructions.
4. Always lubricate the o-ring on the lid of the unit, as well as the check valve. This will extend the life of the seal and is important for obtaining a proper seal with no leaks.
5. Mix solution in a separate container, following the manufacturers' directions.
6. Pour pre-mixed solution through strainer into tank. Reinstall lid tightly.
7. Place sprayer on back and pressurize tank by pumping approximately 5 to 15 times.
8. You will need to pump occasionally to maintain the desired spraying pressure.
9. For best results, the sprayer should be pumped every five seconds on a continuous basis. This will maintain your spraying pressure. If you do not pump, you will not have pressure to spray.

7. Operation

- Always release pressure in the pump prior to filling, cleaning, or servicing the sprayer.
- Before opening a container of pesticide or other spray material, carefully read, understand, and follow all instructions on the label.
- Do not use flammable materials in the sprayer: they can ignite and/or explode, causing serious injury.
- Never use chlorine/bleach, caustic or corrosive materials in the sprayer, which could result in damage to the unit.

■ HOW TO ADJUST THE NOZZLE

- To adjust nozzle, tighten cap (turn clockwise) for fine atomized spray, or loosen (turn counter-clockwise) for coarser spray or solid stream.

■ HOW TO PREPARE YOUR UNIT FOR USE

- For best results, the sprayer should be pumped every 5 seconds on a continuous basis. This will maintain your spraying pressure. If you do not pump, you will not have pressure to spray.

■ RECOMMENDED APPLICATIONS FOR "LAWN AND GARDEN" OR "AGRICULTURE" USAGE.

Herbicide: Yes
Insecticides/Pesticides: Yes
Fertilizers: Yes
Chlorine/Bleach: No
Diesel: Yes
Wettable Powder: No (except Model 100)
Stains & Sealers: No
Oil Based Stains & Sealers: No
Water Based Stains & Sealers: Yes
Viscous: No (except Model 100)

(**) Permanent damage will occur and warranty will be voided if sprayer is used with Chlorine/Bleach.

8. Maintenance

WARNING

Before you remove lid, be sure there is no pressure in the tank. To release pressure, invert unit upside down and squeeze spray pistol (aim away from you). Pressure will escape; when hissing stops, all pressure has been released.

Remove pump assembly by turning counter-clockwise. The pump handle has two locking positions, one turning clockwise and one counter-clockwise.

- Remove lid and pour out remaining solution, then rinse all parts thoroughly with clean water.
- Add 1/2 gallon of fresh water in tank. Pressurize, and flush pumping system by depressing trigger for at least two minutes; then drain all remaining water.
- Units are not storage tanks and should be washed and cleaned after each use. Failure to maintain the unit damages o-rings and seals and may void the manufacturer's warranty.
- Periodically re-lubricate lid o-ring, as well as check valve and piston cup, where applicable.
- To ensure good performance, keep lid vent free of obstruction
- Before and after each use, make sure all connections are well tightened.
- Service and replace worn parts as required.

NOTE

Failure to follow manufacturer's recommendation of use and care of unit will void any expressed or implied warranty. Do not use chlorine, bleach, or Clorox. It will permanently damage the pump system.

NOTE

In the event that any part must be replaced or any maintenance or repair work not described in this manual must be performed, please contact a SP authorized servicing dealer for assistance.

■ SPRAYER MAINTENANCE TABLE

System/Component	Procedure	Daily or Before Use	After Use
Lid O-ring	Grease	√	
Check Valve	Inspect/Clean	√	
Pump	Grease	√	
Connection	Inspect/Tight	√	
Whole unit	Wash/inspect		√

9. Storage

WARNING

Never store chemicals in your sprayer for any length of time.

1. Before you remove lid, be sure there is no pressure in the tank. To release pressure, invert unit upside down and squeeze spray pistol (aim away from you). Pressure will escape; when hissing stops, all pressure has been released.
Remove pump assembly by turning counter-clockwise. The pump handle has two locking positions, one turning clockwise and one counter-clockwise.
2. Remove lid and pour out remaining solution, then rinse all parts thoroughly with clean water.
3. Add 1/2 gallon of fresh water in tank. Pressurize, and flush pumping system by depressing trigger for at least two minutes; then drain all remaining water.
4. Always store tank clean and empty in a dry, shaded location.

10. Disposal

When disposing of your machine, or chemical, be sure to follow your local regulations.

Trouble Shooting Guide



Hose clamps are not completely tight. Please tighten hose clamps prior to use. Hose clamps are left loose to extend the life of o-rings and fittings.



Lubricate all moveable rubber pieces with Silicone Grease (o-rings, seals, spindle in gun, piston cup (when applicable)). Keep breather hole in lid clear of debris. Lubricating the seals and keeping the breather hole open allows air into the tank. Without airflow, the tank may collapse and crack due to a vacuum created by the pump.

If your sprayer won't pressurize:

- 1) The seals, o-rings, & piston cup (where applicable) need to be lubricated with Silicone Grease. If cracked or worn due to wear and tear or chemical attack, they need to be replaced.
- 2) The pressure chamber o-ring is not seated properly. It needs to be properly aligned or lubricated. If cracked or worn, it needs to be replaced.
- 3) There is water in the pressure chamber. This can happen if your sprayer gets knocked over. To release the water from the pressure chamber, simply lift the sprayer over your head while depressing the spray gun trigger. This will allow the water in the pressure chamber to come out. Repeat this procedure 3-4 times to empty water in the pressure chamber completely.

If your sprayer leaks from the bottom:

- 1) The 90° elbow is cracked due to wear and tear. It needs to be replaced
- 2) The pressure chamber o-ring is not seated properly. It needs to be properly aligned or lubricated. If cracked or worn, it needs to be replaced.
- 3) The seals, o-rings, & piston cup (where applicable) need to be lubricated with Silicone Grease. If cracked or worn due to wear and tear or chemical attack, they need to be replaced.

If your sprayer leaks from the top:

- 1) Check the o-ring seal in your lid to see if it is seated properly or if it needs to be lubricated. If cracked or worn due to wear and tear or chemical attack, it needs to be replaced.
- 3) Your check valve (breather hole) may be clogged or blocked by debris. Clear away any excess debris and lubricate the check valve. Keeping the check valve (breather hole) open allows air into the tank. Without airflow, the tank may collapse and crack due to a vacuum created by the pump
- 3) You may have overfilled your sprayer. Check the liquid level in your sprayer.
- 4) Never bend over when you have a sprayer full of chemical on your back. Since there is a breather hole in the lid, liquid from your sprayer may leak out. In case of personal contamination: remove contaminated clothing, remain upright, do not consume liquids or cause vomiting, and get professional help immediately.

If your spray gun's trigger is sticking:

- 1) Check the spindle and o-rings inside the gun to see if they need to be lubricated or replaced due to wear and tear or chemical attack.
- 2) Check the spring in the gun to see if it is damaged due to wear and tear or chemical attack, replace if necessary

If your nozzle is clogged:

- 1) Remove the nozzle from your spray wand. Rinse and clean out the nozzle with water to clear the debris.
- 2) If unable to remove the debris, try using an air compressor (if available) to remove the debris blocking the nozzle
- 3) If the nozzle is damaged from wear and tear, chemical attack, or abuse it needs to be replaced. Never smack your nozzle on the ground to remove a clog. This damages the nozzle body and is not warrantable

Silicone Grease is the only recommended lubricant for SP Systems sprayers. Do not use any petroleum based lubricants or WD-40, as they will damage the o-rings and seals of your sprayer.



Limited Warranty

LENGTH OF WARRANTY: (FROM DATE OF ORIGINAL RETAIL PURCHASE)

PRIVATE RESIDENTIAL: TWO (2) YEARS

COMMERCIAL: ONE (1) YEAR (excludes 301 & 302)

RENTAL/INSTITUTIONAL: NINETY (90) DAYS (excludes 301 & 302)

To Qualify for This Warranty:

The product must be purchased in the United States, Puerto Rico, the US Virgin Islands, or Canada from an authorized SP Systems International dealer. This warranty applies to first retail purchased and each subsequent owner during the applicable warranty period.

What SP Systems International Will Repair or Replace Under Warranty:

SP Systems International will repair or replace, at its option, any part that is proven to be defective in material or workmanship under normal use during the applicable warranty period. Warranty repairs and replacements will be made without charge for parts or labor. Anything replaced under warranty becomes the property of SP Systems International. All parts replaced under warranty will be considered as part of the original product, and any warranty on those parts will expire coincident with the original product warranty.

To Obtain Warranty Service:

You must, at your expense, take the SP Systems International product and proof of purchase to any authorized dealer in the United States, Puerto Rico, the US Virgin Islands, or Canada who is authorized to sell that product, during the dealer's normal business hours. If you are unable to obtain warranty service or are dissatisfied with the warranty service you receive, please take the following steps:

- 1) First, contact the owner of the dealership involved; normally this will resolve the problem
- 2) If you should require further assistance, please call the Customer Service Dept at (800) 457-3440 or send us an e-mail at info@spsystemsinternational.com. You may also reach us by mail at:
SP Systems International, Inc, PO Box 7098, Santa Monica, CA 90406

Exclusions:

- 1) Any damage or deterioration resulting from the following:
 - Neglect of the periodic maintenance as specified in the owner's manual
 - Improper Repair or Maintenance
 - Operating methods other than those indicated in the product owner's manual
 - The use of non-genuine parts and accessories, other than those approved by SP Systems International
 - Unauthorized alteration
- 2) Consumable parts: SP Systems International does not warrant parts deteriorated due to wear and tear or chemical attack
- 3) Lack of cleaning, adjustment, and normal periodic maintenance may void manufacturer's warranty
- 4) Any product that has ever been declared a total loss or sold for salvage by a financial institution or insurer

Disclaimer or Consequential Damage and Limitation of Implied Warranties:

SP Systems International disclaims any responsibility for loss of time or use of the product, transportation, commercial loss, or any other incidental or consequential damage. Any implied warranties are limited to the duration of this written limited warranty. Some states/provinces do not allow limitations on how long an implied warranty lasts and/or does not allow limitation of incidental or consequential damages, so the above exclusion and limitations may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state, (province to province).