Operator's Manual
BP2

ESS Electrostatic Spraying Systems

62 Morrison St, Watkinsville, GA 30677-2749
Phone: 706-769-0025 Fax: 706-769-8072
www.maxcharge.com

OWNER'S MANUAL

BP2

Electrostatic Spraying Systems, Inc. P/N: 19047
62 Morrison St. · Watkinsville, GA 30677-2749

Manual last updated March 2016.

CONGRATULATIONS!

You have just purchased one of the most advanced spraying systems on the market today. Electrostatic Spraying Systems, Inc.[1] (ESS) is committed to providing you with powerful spraying systems that are easy to operate and maintain.

The products of ESS are the result of the efforts and creativity of many people. In addition to input from engineering, marketing and manufacturing personnel, suggestions from our customers have been implemented into the design of our equipment. We would like to hear your ideas also! If you have any suggestions or comments regarding the products or service of ESS write or call us at:

Electrostatic Spraying Systems, Inc.
62 Morrison St.
Watkinsville, Georgia 30677-2749
Phone: 706-769-0025
1-800-213-0518
Fax: (760) 769-8072
support@maxcharge.com

Please take time to read this manual before operating your new ESS BP2 Suitcase Sprayer™. The manual contains important instructions for the safe operation of this equipment. It also includes helpful suggestions to maximize productive use of the BP2. Essential cleaning instructions should be followed to maintain your sprayer at peak efficiency. Please carefully read and follow all instructions for your own safety and the safety of others around you.

Thank you!
We appreciate your business and are proud that you have selected an ESS sprayer for your operation.

Your new sprayer has been thoroughly tested and calibrated at the factory. If you have any problems with it, please get in touch with us immediately. We will be glad to answer any questions you have concerning our equipment or service. ESS intends to support its customers with efficient, helpful and friendly service. We appreciate your business and sincerely hope that Electrostatic Spraying Systems can meet your present and future spraying equipment needs.

We encourage you to make copies of the "Spray Gun Yearly Service" form in the back of this manual. Use this form every year you send your gun in for maintenance and when we service the gun, your warranty will renew for another year. The service will replace the nozzle base, replace air and liquid hoses inside gun housing, replace filters, and recalibrate the gun and thoroughly cleaning the entire spray gun.

For your personal records

Please record the model and serial numbers of your new sprayer here.

BP2

_____
Model #

_____
Serial #

_____
Spraygun serial number

_____
Date of purchase.

Overview of the ESS Model BP2 Air-Assisted Electrostatic Sprayer

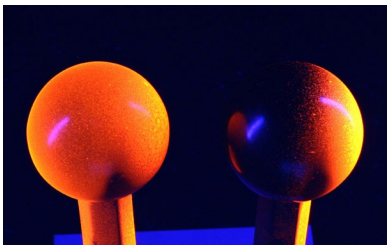
Air-assisted electrostatic sprayers produce electrically charged spray drops that are carried to the target in a low pressure, gentle, air stream. The heart of the BP2 Sprayer is the patented MaxCharge™ nozzle.

Air and liquid enter separately at the rear of the nozzle. Just before leaving the nozzle, the air hits the liquid stream to make many thousands of tiny spray droplets that pass through the charging ring. An electrical charge is applied to the spray droplets by the charging ring. Then the charged spray droplets are blown out of the nozzle and move onto the target where they are attracted to surfaces by electrostatic forces. The electrostatic charge induced by the MaxCharge™ nozzle is strong enough to allow the droplets to move in any direction to cover surfaces, even defying gravity to coat the underside of leaves and the back side of the target objects. The result is uniform spray coverage on hidden surfaces that other sprayers miss. Air-assisted electrostatic sprayers give more than twice the deposition efficiency of hydraulic sprayers and non-electrostatic types of air-assisted sprayers. The grower benefits in terms of significant reductions in application costs and optimized insect and disease control, sanitization of beef or other coverage.

Electrostatically charged droplets are attracted to plant surfaces.

The MaxCharge™ nozzle is easy to clean and corrosion-proof. The interior ceramic outlet resists wear three times better than stainless steel outlets. These features combine to give the best spray coverage on the market. This quality product is virtually maintenance-free, and assures you of savings in the application of chemical.

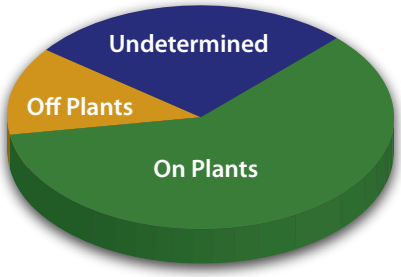
The comparison of air-assisted electrostatic spraying versus conventional spraying is dramatic.



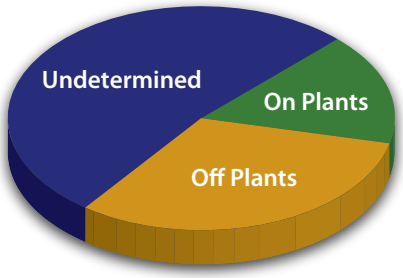
A picture worth a thousand words… *In this test, fluorescent dye has been sprayed on two round knobs. The left knob was sprayed with the electrostatic system ON; the right knob was sprayed with the same sprayer, but with the electrostatic system OFF. Note how even the coverage is on the electrostatic knob.*

Where Does the Spray Go?

ESS SPRAYER



CONVENTIONAL SPRAYER



The University of California completed a series of tests to investigate what happens to spray liquid after it leaves the nozzle.

Conclusion: ESS technology places over 4 times the amount of spray onto target surfaces using ½ the amount of chemicals. Furthermore, they also reported that ESS sprayers send ⅔ less chemicals to the ground and into the air. Less chemical used overall, less waste and less drift than conventional equipment. **Imagine the environmental benefit!**

Safe operation of the BP2 Sprayer

OPERATOR'S RESPONSIBILITY

Read the Operator's Manual.
It is the responsibility of the user to read the Operator's Manual, to understand the safe and correct operating procedures which pertain to the operation of the product, and to maintain the product according to the Operator's Manual. It is the owner's responsibility to ensure that all who are using this equipment read this manual.

The user is responsible for inspecting the equipment and for repairing and replacing damaged or worn parts to prevent damage or excessive wear to other parts. It is the user's responsibility to deliver the machine for service or replacement of defective parts which are covered by the standard warranty.

Lack of attention to safety can result in reduction of efficiency, accident, personal injury, or death. Watch for safety hazards and correct deficiencies promptly. Use the following safety precautions as a guide when using this machine.

- Read the Owner's Manual. Failure to read the manual is considered a misuse of the equipment.
- Use the BP2 sprayer ONLY for its intended use as described in this manual.
- Do not allow a child to operate the BP2 sprayer. Do not allow adults to operate the sprayer without proper instruction.
- Use extra care when spraying on stairs. Do not place sprayer on stairs.
- Do not use without liquid bottle in place.
- Always empty liquid bottle after use and before transporting the sprayer.
- Store sprayer in a dry place. Do not expose to freezing temperatures.

CAUTION: SHOCK HAZARD

The BP2 sprayer has been engineered to be very safe during normal operation. However, as with all line-powered electrical equipment and tools, certain safety procedures need to be followed.

- Use a GFCI (Ground Fault Circuit Interrupter) power outlet whenever possible.
- Always unplug by grasping the plug. Do not unplug by pulling on the cord.
- Never pull plug with wet hands.

CAUTION: HOT SURFACE

Be aware that the compressor inside the BP2 becomes hot enough to burn you.

- The compressor becomes hot to the touch during normal use. Do not touch the BP2 compressor after it has been running.
- Stay clear of the hot compressor when making adjustments inside the BP2 case
- The sprayer's compressor is equipped with a thermal overload switch. If it overheats, the compressor will stop running. Unplug the sprayer and let it stand for one hour with the door open. The unit should then be able to restart.

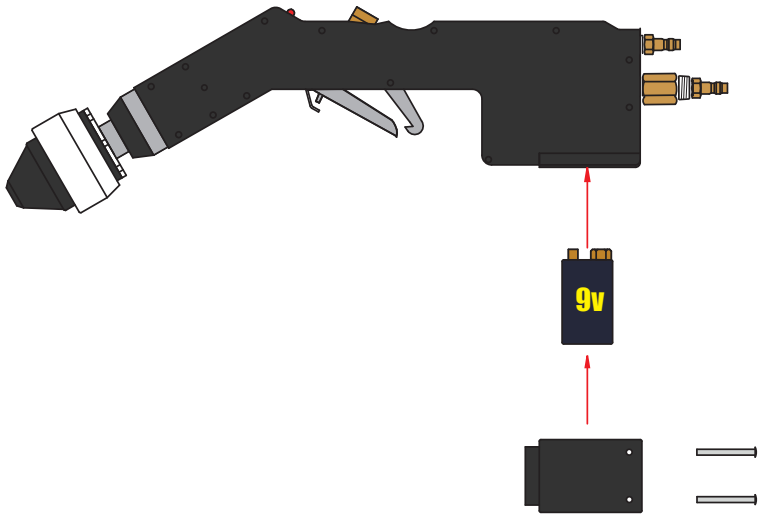
CHEMICAL SAFETY PRECAUTIONS

Read and follow all instructions on the chemical or pesticide manufacturer's label.

- Use protective clothing, eye protection and gloves when mixing chemicals to be sprayed with the BP2 sprayer.
- Always use a respirator and eye protection when spraying with the BP2.
- Follow the **chemical manufacturer's** recommendations in handling, mixing, applying, storing and disposing of chemicals.
- Be aware of decontamination methods in case a person, clothing, or equipment is accidentally sprayed.
- Be aware of poisoning symptoms and know the appropriate first aid.
- Know the length of time needed to pass before allowing people and pets to go back into the sprayed area.

About the low-voltage system of the MaxCharge Spraygun

For operator safety, the power supply for the MaxCharge spraygun is entirely separate from the power supply for the sprayer's compressor. The spraygun is powered by 9-volt batteries in the handle of the BP2 sprayer. This low-voltage charge is not enough to harm people. Some people report feeling a "tingle" or a slight stinging sensation when the spray from the spraygun falls on their bare skin.



Safety decals

Appropriate safety decals are placed on ESS equipment in order to alert the operator to possible dangers. If any decal is missing or damaged, please contact ESS immediately for a replacement decal.

ESS is currently redesigning all sprayer labels. Your sprayer may not have the same version of these decals. If you desire an updated decal, please contact Customer Service at 706-769-0025.

PROTECT YOUR LUNGS
PROTECT YOUR EYES

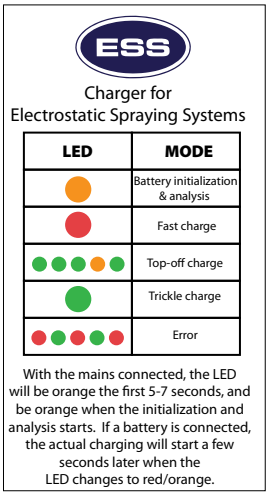
READ AD FOLLOW THE CHEMICAL MANUFACTURER'S INSTRUCTIONS CAREFULLY

It is extremely important for the owner/operator's safety as well as the safety of other people in the vicinity that all chemical safety precautions are followed.

This label is placed on top of the BP2 Sprayer, near the quick connect sockets.

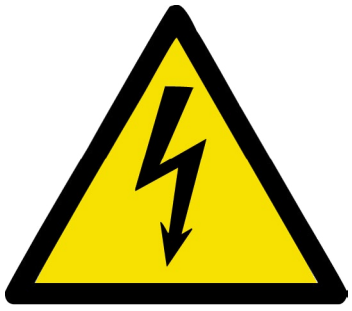
The BP2 compressor becomes hot during normal operation.

DO NOT TOUCH.



This label is placed on the charger of all sprayguns.

This label is wrapped around the hose to remind you to clean the filters regularly. The number one cause of poor sprayer performance is a clogged or dirty filter.



There will be a small shock when using our sprayers. To avoid this shock place your thumb on the bolt at the top of the spraygun.

If you use a pacemaker, use our electrostatic sprayer at your own risk.

Quick List: Operating Instructions

Steps for Operation

1. Prepare the tank mix.
2. Connect the twin line hose to the liquid and air connection.
3. Connect the twin line hose to the liquid and air leaders on the spraygun.
4. Engage the trigger and spray.

Cautions:

ESS recommends that you use an outlet with a Ground-Fault Circuit Interrupter (GFCI).

Do not operate the BP2 in standing water.

Do not immerse the BP2 compressor.

The BP2 compressor becomes hot enough to burn during normal operation. DO NOT TOUCH.

Quick List: To clean the BP2 after operation:

1. Clean the exterior of the sprayer with a damp cloth.
2. Clean the liquid bottle.
3 Fill the liquid bottle with ½ liter of clean water.
4. Turn on the air compressor to flush the line with most of the of water. Turn off the air compressor.
5. Disconnect the quick connect plug from the twin line hose, then connect it into the spraygun liquid line leader.
6 Turn on the air compressor and engage the trigger to flush the spraygun lines with the remaining water. Check the nozzle for a good spray pattern while flushing. Allow air to flow for 30 seconds after the water has been sprayed.
7. Apply silicone spray or similar lubricating oil to all quick connect fittings.

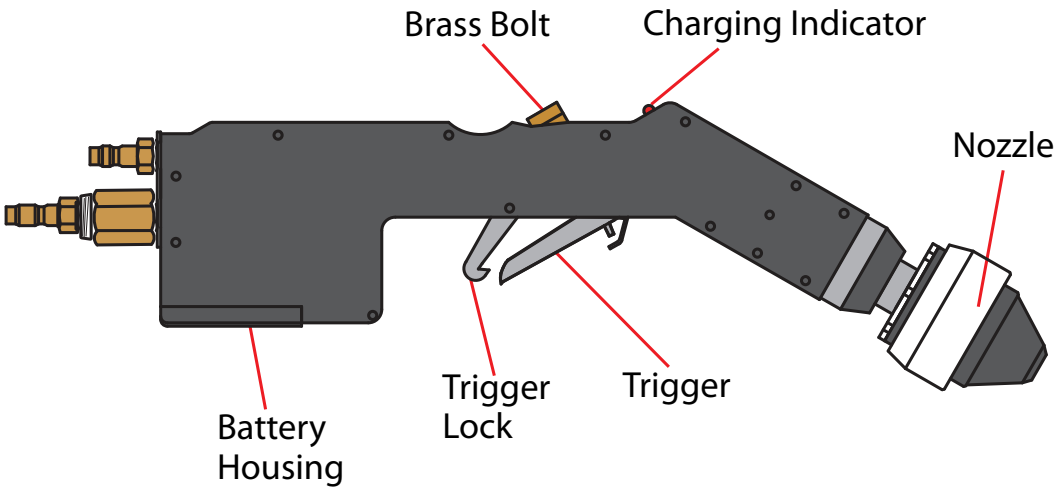
Detailed instructions on maintaining each of the BP2's components follow in the next sections.

REFERENCE

Spraygun

The spraygun is held by the operator during spraying. Activation of the trigger causes liquid to spray. The Spraygun has the following user-serviceable parts: the trigger plunger, the nozzle assembly, and the batteries. Except for the batteries, which are accessed by removing the battery cover, nothing inside the Spraygun shell is user-serviceable. **Do not open the spraygun shell**; doing so will void the warranty on the spraygun.

NOTE

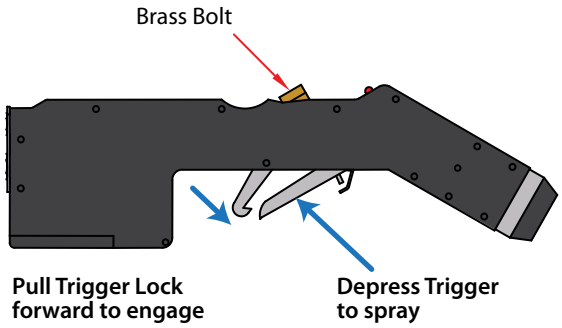


The Spraygun

See also: **Changing the batteries**
Yearly spraygun service
Spray technique

Trigger

The trigger turns the spray on and off. It can be continuously held for operation or it can be locked in place.



To engage/disengage the trigger:

1. Depress the trigger up towards the body of the spraygun to start spraying.
2. To keep spraying, either keep holding the trigger or lock it in place by pulling up the lock and hooking the trigger.
3. To stop spraying when the trigger is not locked, let go of the trigger.

To clean the trigger:

1. Unthread the brass bolt on the top of the spraygun with a ⅝" socket wrench. Be careful not to lose the spring, plunger, copper washer, and small brass bushing inside the trigger. Note how they fit inside so they may be replaced properly.
2. Check inside the trigger for blockage. Clean out any debris with compressed air or warm, soapy water.
3. Replace the spring and plunger; rethread the brass bolt into the top of the spraygun until tight.

Hose

To maintain optimal use of your sprayers hose, please remember the following

- Do not kink or cut the hose.
- Inspect the hose regularly for cuts, ruptures, tears or breaks.
- Do not pull the case around with the hose.
- Use the handles to move the case from one place to another.

Should you notice anything wrong with your hose, please contact ESS to have this hose replaced.

Nozzle assembly

It is very important to follow all the maintenance and cleaning procedures to ensure that the electrostatic sprayer will function properly. Although the MaxCharge™ nozzle will outperform all electrostatic spray technology on the market, regular cleaning will ensure peak operating performance.

The nozzle assembly is located at the end of the spraygun wand. It is composed of a nozzle body, internal o-ring, Teflon ring, cover, external o-ring, and a hood (see labeled drawing at right). To access the nozzle components, just unscrew the nozzle cover by hand.

Cleaning the spraygun
Always rinse the spraygun out with clean soapy water after every day's spraying. That is the most important thing you can do to ensure trouble free operation of your BP2 sprayer. By cleaning after each and every working day you will avoid the long-term chemical buildup that eventually causes clogs, poor spray patterns and shortens nozzle life.

Establish maintenance intervals to disassemble and clean the nozzle. Your nozzle maintenance schedule will vary depending on the types of chemicals used and adherence to pre- and post-spray checks. In general it is sufficient to thoroughly clean nozzles every 50 hours. If heavy loads of wettable powers are used, the cleaning schedule should be sooner.

To clean the nozzle assembly

1. Slide the hood over the nozzle cover.
2. Unscrew the cover from the nozzle base and remove the Teflon ring. Clean any debris from around the nozzle tip.

   Note: There is a small o-ring in the nozzle around the base of the tip – take care that it doesn't fall off. If it does, clean it and press back into place. Also, take care not to damage the nozzle tip when the cover is removed.
3. Soak the ring, cover, and hood in a mild detergent solution. Use a small brush (soft or mild bristle) to clean the inside of the cover and the hole through it. Also, be sure to clean the hood. It is important to clean inside the hood and the two cavities. Rinse thoroughly.
4. Scrub the nozzle base with the detergent solution using a soft bristle brush. Clean the ceramic outlet. Be sure to thoroughly clean the base cavity and take care not to damage the nozzle tip. Rinse and make sure the small o-ring is in place.
5. Reassemble nozzle by placing the Teflon ring on the base and screwing the cover on **hand tight**. Next, slide the hood over the nozzle and seat it securely against the external o-ring. Wipe clean the exterior of all hoses and fittings connected to the nozzle.

The electrode cover should be hand tight. Never use pliers or other tools to tighten it. The insulating ring should be loose.

NOTE There will be a drip effect from the nozzle. The drip results from the accumulation of tiny electrostatically charged droplets wrapping back and coating the spraygun nozzle.

Pre-Spray Check

1. Inspect Nozzles

   Check nozzle cover to make sure it is on hand tight (do not over tighten or use a wrench). Make sure the hood is seated firmly to the nozzle base and against the external o-ring.

2. Preparing the Tank Mix

   If you will be spraying wettable powders it is a good idea to use a compatibility agent with the water and tank mix. Compatibility agents are chemicals mixed with the water that make mixing easier and keep heavy concentrations uniformly in suspension. Some brand name additives are COMPLIMENT™, UNITE®, and BALANCE™. Check with your local chemical supplier for others that are available.

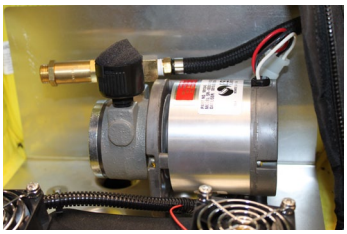
ESS recommends the use of NUTRA-SOL cleaner which can be purchased from ESS. Order S/N#1566.

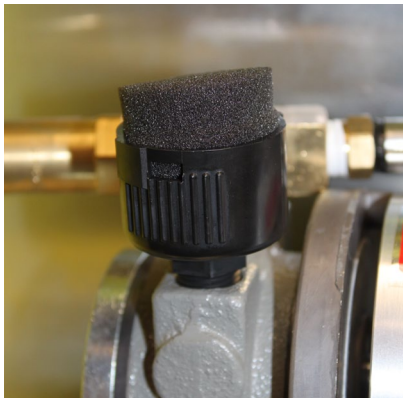
Post-Spray Check

After each spray it is essential that hoses and spraygun be flushed with clean soapy water. This will help prevent chemical build-up that can clog lines and nozzles.

Cleaning the air filter

To clean the air filter, pull off the filter cap. Inside, remove foam filter, and wash in warm, soapy water.





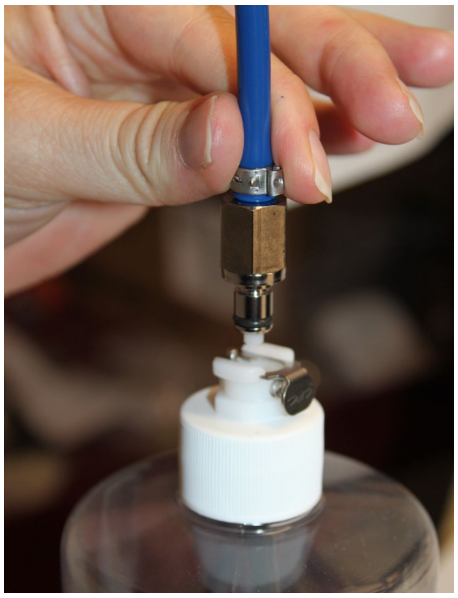
It is important to inspect the filter for deterioration. When handling, if the filter begins to break apart or crumble, replace immediately.

Connecting the hoses:

Remove the air supply hose from the top right pocket. Depress the silver tab and insert the large mating connector from the Twinline hose. Depress the silver tab on the fitting in the top of the liquid bottle and insert the small mating connector from the Twinline hose.

Step 1:

Attach blue hose to black fabric hose in upper right pocket



Step 2:

Insert smaller blue hose connection to top of liquid bottle

Step 4:

Attach connections to end of hose. Small is liquid and large is air

Preparing a Tank Mix (when applicable)

The tank mix depends on two factors: water requirement and dosage. Water requirement is the amount of water needed to cover the given treatment area. Dosage is the amount of chemical which should be applied in a given treatment area.

First determine the water requirement for your sprayer over a known area. An easy way to determine water requirement is to spray a trial application with water. Put a gallon of clean water in the ESS BP2 tank and thoroughly spray a known area. After spraying the known area, determine how much water was used from the amount left in the tank. This is the water requirement for the given area. Next measure the known area to determine how many square feet were sprayed. Write down both values for future reference.

_____ (gallons) Water Requirement

for _____ (size of known area in ft²)

Next determine the dosage. This is the amount of chemical you wish to dispense in a given area. Appropriate dosage depends upon chemical label recommendations, disinfection or sanitization goals, level of pest or disease infestation, past experience with particular chemicals, and other variables.

Because electrostatic spraying is a much more effective spraying method, ESS recommends that you experiment to find the optimum chemical concentration. Start spraying using the same chemical rate used in the past with other sprayers. Test to ensure that infective agent levels have been reduced to desired levels. At the next application, start reducing the amount of chemical used for each spray. Keeping the amount of water in the tank constant, cut the amount of chemical mixed in by 15 to 25% for each spray, testing after each experiment to see if the desired results are being accomplished. If you are planning to cut rates then it is very important to conduct these experiments to determine the optimum chemical concentration.

How to conduct a jar test

Needed:

- Solutions of chemicals in approximate dilutions
- Jar with lid
- Gloves and Safety Glasses

After mixing solutions of the desired chemicals, place them in a large jar, cap it securely, and shake vigorously. Carefully observe the interaction between the chemical compounds. If the water becomes milky or cloudy, the combined solution may plug the nozzles. Let the jar sit for one to two hours. If there is precipitate on the bottom of the jar, then seek another combination of chemicals.

A note about operating temperatures

The MaxCharge nozzle should always be operated at temperatures above 10° Celsius (50° Fahrenheit). When the ambient temperature is colder than this, the evaporative cooling caused as the spray is atomized will freeze the nozzle opening.

Nozzle freeze-up can also occur when the liquid to be sprayed is colder than 10° C (50° F).

Spraying with your ESS sprayer

Note: When using unfamiliar equipment or chemicals, always test on a small area before treating the entire crop or surface. Do not use a chemical with the ESS sprayer if the label prohibits use in low-volume sprayers. This unit is for light-duty use. Only spray in sessions of 20-30 mintues, with a 5-10 break in between.

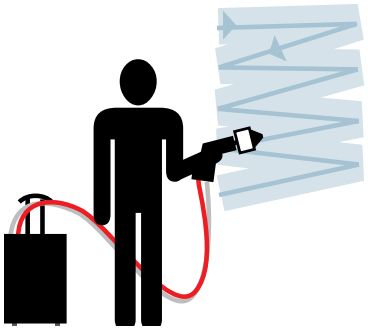
Spray Technique

As in spray painting, the goal is to achieve even coverage over the surface. The ESS MaxCharge spraygun is designed to help you do just that - by propelling the chemical spray with a gentle air flow, you can stay well away from the target surface and let the electrostatic attraction do the rest of the work.

Please note: the spray droplets are very, very fine - about 40 microns each. If you are used to working with a conventional sprayer, you may make the mistake of thinking the target is not wet enough because you do not see large beads of liquid. In fact, after a pass with the BP2's MaxCharge spraygun, the surface of the target should just barely glisten with moisture. The fine droplets will evaporate quickly.

Here are some tips to achieve the best possible coverage with the ESS BP2 sprayer.

1. Before each job, ensure that your sprayer is in good working order (see the pre-spray checklist on page 15 of this manual).
2. The optimal spraying distance is at least 18 inches away from the target surface, however 36 to 48 inches may provide a more even coating. This gives the fine mist produced by the MaxCharge nozzle room to develop into a chaotic cloud that will be attracted to the target surface.
3. Hold the spraygun at right angles to the target surface. Starting at the highest point and using zig-zag horizontal strokes about 1 meter (3 ft.) wide, spray down to the lowest point. Try to have each stroke overlap the previous stroke by about 50%.
4. You can use vertical strokes if it suits the area better. Just make sure to work in a methodical pattern and let your strokes overlap.
5. When moving to the next section, allow it to overlap the previous section by a few inches. Do not leave a gap.
6. The target surface should just barely glisten with the spray. Do not over-saturate the surface; if you see runs or puddles it means you are wasting chemicals. Do check to make sure the newly-sprayed surface is very slightly damp.
7. Be careful to keep the spraygun barrel as level as possible. If you allow the nozzle to point down too much, it may drip occasionally.
8. Unlike spray painting, you don't have to stop the spray on every return stroke. Just engage the trigger lock and concentrate on the regular pattern of spraying.
9. Periodically check to make sure the red light is illuminated on the spraygun.

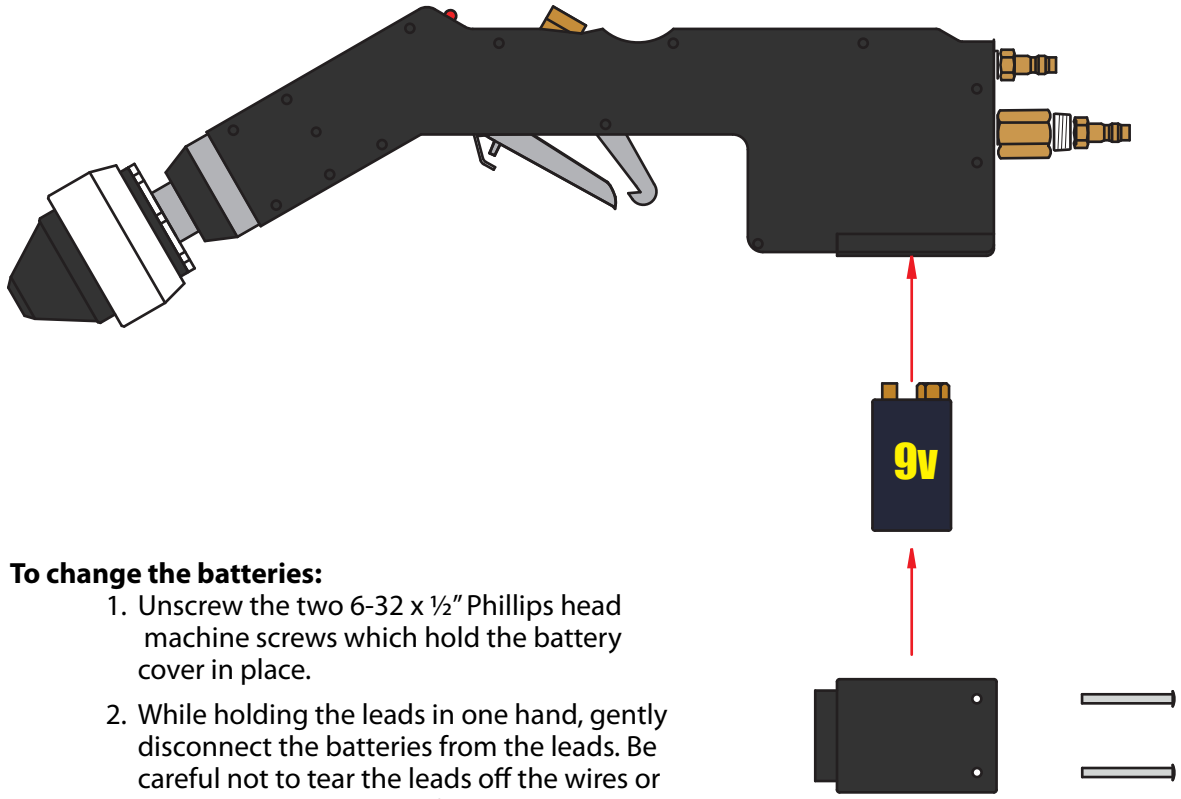


Spraying with your ESS sprayer

Note: When using unfamiliar equipment or chemicals, always test on a small area before treating the entire crop or surface. Do not use a chemical with the ESS sprayer if the label prohibits use in low-volume sprayers. This

Batteries

The nozzle charging operates on two 9-volt rechargeable batteries which are located in the base of the spraygun. In average conditions, the batteries will last 6 hours of operation on a charge. They should be recharged when the charging indicator on top of the spragun shell doesn't glow when air is going through the spraygun.
After approximately 800 to 1000 hours of service the battery pack will no longer be able to hold an adequate charge and will need to be replaced. Replace with Nickel-Hydride rechargeable batteries.
Order the SC-1 Replacement Battery Pack from ESS, S/N # 4512.

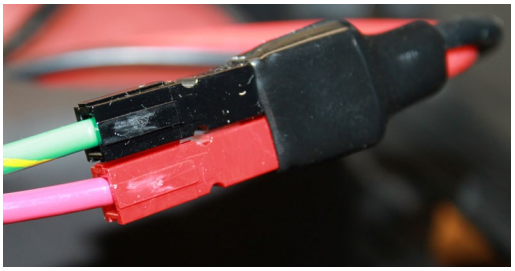


To change the batteries:

1. Unscrew the two 6-32 x ½" Phillips head machine screws which hold the battery cover in place.
2. While holding the leads in one hand, gently disconnect the batteries from the leads. Be careful not to tear the leads off the wires or tear the lead wires out of the power supply.
3. Connect the fresh battery pack to the leads.
4. Replace the battery cover. Screw the two 6-32 x ½" Phillips head machine screws back in to secure the battery cover.
5. Charge the spraygun before attempting to use it.

Remember to charge the spraygun batteries after every work session!

Backpack Battery Charging Operation:



Disconnect the red and black connectors from the battery. Remove the battery from the BP2 and follow the instructions below to charge:

1. Only use 29.2V, LiFePO4 compatible chargers to charge the battery. The charging current should be 2A to 4A. If you need a charger, please contact us.

2. Fully charge the battery before first use. This depends on the output of the charger but is typically between 3-5 hours.

3. Note that the LED light on the battery does NOT indicate the state of charge. A red LED light means the battery is under constant current(CC) charging and green LED means constant voltage(CV) charging. Always charge for at least 5 hours to ensure full capacity.

4. LiFePO4 does not suffer "memory effect" so please keep the battery fully charged for daily use. Cell balancing only occurs when the battery is fully charged (top-end balancing).

5. Do not charge the battery in temperatures below 0°C. This can cause damage to the cells.

Reinstall the battery and reconnect the red and black connectors to the matching ones in the BP2.

Changing the fuse:

If the BP2 fails to operate when the "ON" button is depressed, confirm that the battery is connected. If it is connected, confirm that it is fully charged. If the battery is fully charged, disconnect it and remove it from the BP2. Locate the two screws in the cover panel above the battery and remove them. Locate the yellow fuse holder, open it and inspect the fuse.

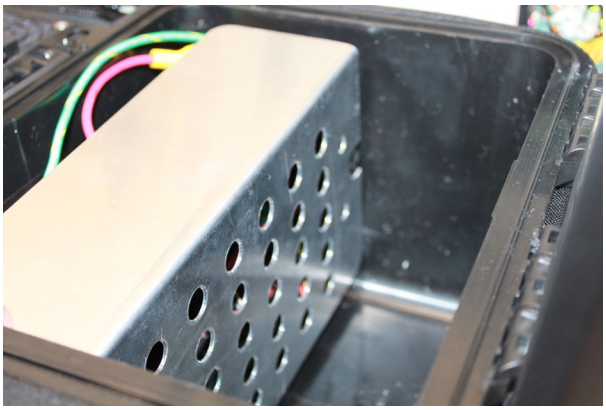


Figure 1: Cover Panel above battery

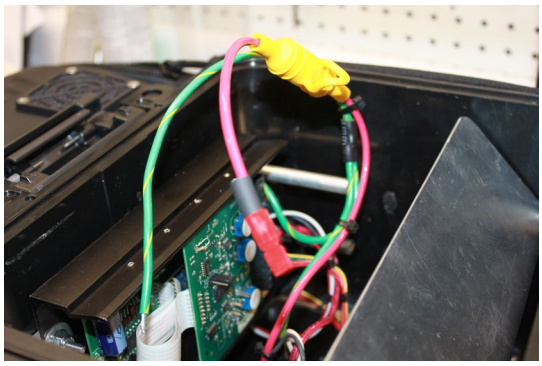


Figure 2: Yellow rubber fuse holder

If it is blown, replace it with another 20A fuse and reassemble the fuse holder. Re-install the cover panel and reinstall the battery, reconnecting the red and black connectors to the matching ones in the BP2.

If the fuse is not blown, or it blows again when the "ON" switch is depressed, please contact ESS Customer Service.

Voltage Converter: (Optional)

The battery must charge while being plugged into the wall. Below are the instructions for the Voltage Converter, if it was included in your order.

1. Plug the voltage converter into the 220v wall outlet

2. Switch the "Input Voltage Selector" to 220v on rear of converter

3. Plug the charger for the battery into the 110v output

Yearly spraygun services

Electrostatic Spraying Systems, Inc. offers and recommends yearly services on ESS sprayguns. For a nominal fee plus the cost of replacement parts, ESS will thoroughly clean the spraygun, replace any worn parts and recalibrate the electronics and nozzle. The Yearly Service also extends the spraygun warranty for another year. Consistent yearly service by ESS will increase spraying performance and prolong the life of the gun.

Contact ESS at (706) 769-0025 to schedule spraygun services. Then package the spraygun securely since it can be damaged in shipment. Ship the spraygun in its original packing material if possible. If the original packing is not available, wrap the spraygun in bubble wrap, place it in a strong cardboard box and surround the gun handle with foam packing. Include a return shipping address and a telephone number.
A form is provided for you at the back of this manual

Ship the spraygun via UPS or Parcel Post to:

Electrostatic Spraying Systems, Inc.
62 Morrison Street
Watkinsville, GA 30677

Yearly service will be conducted within one day of receipt by ESS. If any parts need to be replaced, the owner will be contacted for authorization before replacement. The spraygun will be returned via UPS, COD, or return shipping costs may be invoiced, contingent upon credit approval. ESS also accepts Visa and MasterCard.

As an additional benefit, Yearly Spraygun Service "turns back the clock" – the original 1-Year Warranty on the spraygun is renewed for another year!

Yet another good reason to send your spraygun in to ESS for factory-authorized service!

Spraygun Return Form

When returning a spraygun for warranty or repair services to ESS, please pack it securely and include the following form with your spraygun. We require you to fill out all information completely. With many changes to companies our records may not have the correct contact information. We at ESS want to expedite the process quickly but communication is the key to a quick repair.

Spraygun Serial Number: _____

Returned from:

Company: _____

Contact person: _____

Phone number: _____

Email address: _____

Shipping address: _____

_____

_____

Mailing address: _____

(if different) _____

_____

Date last serviced: _____

Send to:
Electrostatic Spraying Systems, Inc.
62 Morrison St.
Watkinsville, GA 30677-2749

ESS recommends sending your spraygun via a carrier with tracking.

Problems with the Spraygun or is this just a yearly service? _____

_____

_____

_____

_____

Method of Payment:

- ☐ Account (must be an approved account)
- ☐ COD
- ☐ Credit Card:
  VISA MASTERCARD AMERICAN EXPRESS

Card Number: _____ CCV:_____

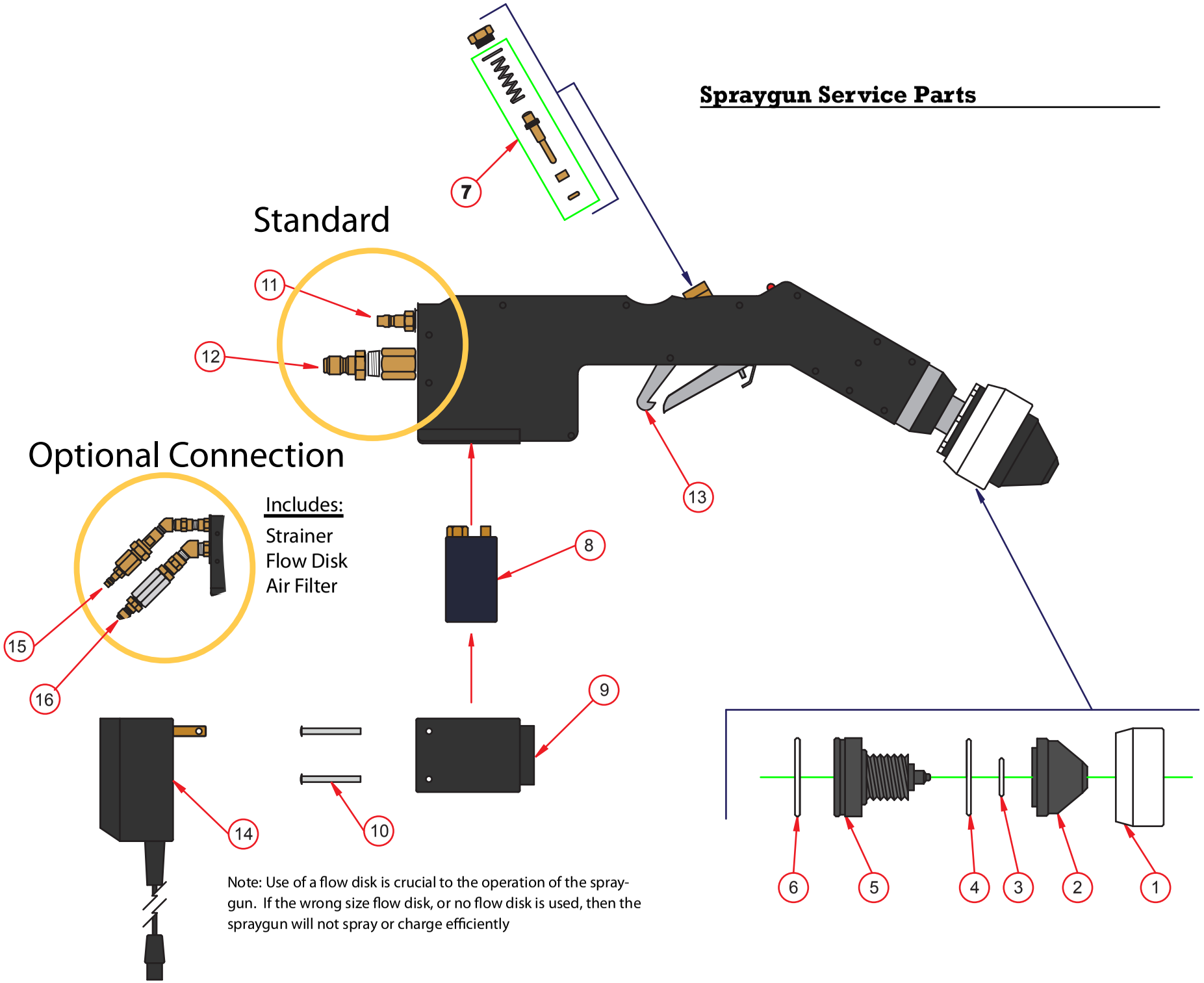
Expiration Date: _____

Card Holder's Name: _____

Full Mailing Address: _____

_____

Spraygun Service Parts



Note: Use of a flow disk is crucial to the operation of the spray-gun. If the wrong size flow disk, or no flow disk is used, then the spraygun will not spray or charge efficiently

Troubleshooting Guide

When you encounter the problems listed below, use the suggested trouble-shooting methods. If you cannot solve the problem or have a problem with the Spraygun that is not addressed in this manual, contact ESS at (706) 769-0025, 1-800-213-0518, toll-free.

Sprayer will not turn on:

Is your sprayer battery charged? Recharge the battery for 3 to 5 hours

Is your sprayer power button on?

Has the compressor overheated? Be careful, it may be hot. Let the sprayer cool with the case open try again in one hour.

Did your fuse burn out. Please refer to Page 14, section "Changing the Fuse"

Spray quality problems:

Depress the trigger on the spraygun and while spraying water, place your finger over the nozzle blocking the liquid and air. This will force air back through the spraygun and possibly clear any obstructions in the liquid line

Check that all hose "quick connections" are connected including hoses connected to the spraygun, to the case, and the liquid bottle.

Is the nozzle cover dirty? Unscrew the nozzle cover and wash inside nozzle cover with water. With the nozzle cover removed, check to see if liquid port is clogged. Clean out with paper clip or small wire.

Is the liquid or ambient temperature too cold? The nozzle can freeze up when the ambient temperature is less than 50° F.

Is the trigger mechanism dirty? See page 7 for trigger assembly and cleaning. Trigger may require replacing the trigger plunger mechanism

Charging light will not come on:

If the red LED on the handle of the spraygun does not come on, it indicates that the spray is not receiving an electrostatic charge, or on rare occasions that the light is burned out

Make sure the spraygun batteries are charged. Fully charged batteries will last for about 5 continuous hours of use. If in doubt, take the cover off from the spraygun battery compartment, and replace the two rechargeable 9 volt batteries with regular 9 volt batteries

62 Morrison St. · Watkinsville, Georgia 30677-2749
706-769-0025 · 1-800-213-0518 · Fax: 706-760-8072
Email: support@maxcharge.com · www.maxcharge.com

ESS Warranty

Electrostatic Spraying Systems, Inc. warrants to the original purchaser of any Electrostatic Spraying Systems equipment that the equipment shall be free from defects in material and workmanship for a period of one year after date of delivery. The electrostatic power supply warranty form must be returned for verification of date of purchase.

Disclaimer of Implied Warranties and Consequential Damages

Electrostatic Spraying Systems' obligation under this warranty, to the extent allowed by law, is in lieu of all warranties, implied or expressed, including implied warranties of merchantability and fitness for a particular purpose and any liability for incidental and consequential damages with respect to the sale or use of the items warranted. Such incidental and consequential damages shall include, but not be limited to: transportation, charges other than normal freight charges, cost of installation other than cost approved by Electrostatic Spraying Systems, Inc., duty, taxes, charges for normal service or adjustments, loss of crops or any other loss of income, expenses due to loss, damage, detention or delay in the delivery of equipment or parts resulting from acts beyond the control of Electrostatic Spraying Systems, Inc.

THIS WARRANTY SHALL NOT APPLY:

1. To vendor items which carry their own warranties such as, but not limited to, engines, air compressors, and liquid pumps. Electrostatic Spraying Systems, Inc. shall supply replacement parts at list price pending the warranty investigation of the vendor item. Vendor item parts such as air compressors, liquid pumps, solenoids, and other such items must be returned before warranty credit.
2. If the unit has been subject to misapplication, abuse, misuse, negligence, fire or other accident.
3. If parts not made or supplied by Electrostatic Spraying Systems, Inc. have been used in connection of the unit, if, in the sole judgment of Electrostatic Spraying Systems, Inc. such parts affect its performance, stability or reliability.
4. If the unit has been altered or repaired in a manner which, in the sole judgment of Electrostatic Spraying Systems, Inc. such alteration or repair affects its performance, stability or reliability. This shall include but not be limited to opening of the spraygun shell by anyone not authorized by Electrostatic Spraying Systems, Inc. to do so.
5. **To normal maintenance, service and replacement items such as, but not limited to, engine lubricant, filters, or to normal deterioration of such things as, but not limited to, belts and exterior finish, due to use and exposure.**

NO EMPLOYEE OR REPRESENTATIVE OF
ELECTROSTATIC SPRAYING SYSTEMS, INC.
IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY
OR GRANT ANY OTHER WARRANTY
UNLESS SUCH CHANGE IS MADE IN WRITING
AND IS SIGNED BY A CORPORATE OFFICER OF
ELECTROSTATIC SPRAYING SYSTEMS, INC.