

# Owner's Manual

## BP2-e



Unity-Healthcare Solutions, LLC  
25967 Conifer Road; Conifer, CO 80433  
Phone: 303-838-7320  
Fax: 303-838-4550

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**CONGRATULATIONS!**

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

The ESS electrostatic sprayers are the result of the efforts and creativity of a variety of 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 as well! If you have any suggestions or comments regarding the products or service of ESS write or call us at:

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Phone: 303-838-7320  
Fax: 303-838-4550  
<http://www.unity-healthcare.com/>



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

Thank you!

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

Your new sprayer has been thoroughly tested and calibrated at our factory. If you have 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 strives 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.

**For your personal records**

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

**BP2-e**

Base Serial Number

Spraywand Serial Number

Date of Purchase

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# OVERVIEW OF THE ESS MODEL BP2-e 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-e Sprayer is the patented MaxCharge™ nozzle.

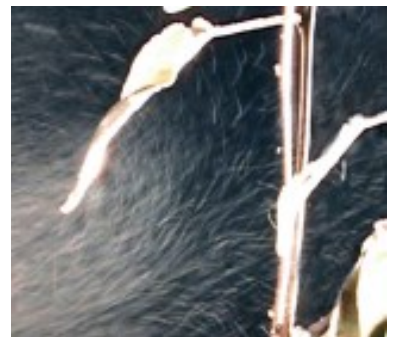
Air and liquid enter the rear of the nozzle separately. Just before leaving the nozzle, the air hits the liquid stream to produce many thousands of tiny spray droplets that pass through the charging ring. An electrical charge is applied to the spray droplets by the charging ring. Then the charged spray droplets are blown out of the nozzle to move onto the target where they are attracted to the surfaces by electrostatic forces. The electrostatic charge induced by the MaxCharge™ nozzle is strong enough to allow the droplets to move in any direction necessary to cover any 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 would typically miss. Air-assisted electrostatic sprayers give more than twice the deposition efficiency of hydraulic sprayers and non-electrostatic types of air-assisted sprayers. The user benefits in terms of significant reductions in application costs, as a result of the minute size of the droplets.

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 save in the application of chemicals.

The comparison of air-assisted electrostatic spraying versus conventional spraying is dramatic. Our sprayers optimize coverage for insect and disease control, as well as, food sanitization and safety.

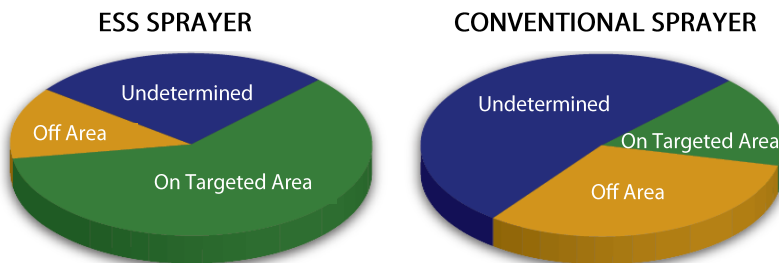


*The Maxcharge™ spray nozzle is what makes ESS the industry leader in the production of electrostatic spraying equipment .*



*Electrostatically charged droplets are strongly attracted to the underside of surfaces.*

## WHERE DOES THE SPRAY GO?



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

**Conclusion:** ESS technology places over 4 times the amount of spray onto the plant surface using 1/2 the amount of chemicals. Furthermore, they also reported that ESS sprayers send 2/3 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!**



*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.*

## SAFE OPERATION OF THE BP2-e SPRAYER

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### Operator Responsibility and Safety

#### IMPORTANT!

***Read the Owner's Manual! Failure to do so is considered a misuse of the equipment.***

It is the responsibility of the user to read the Owner's Manual to understand the safe and correct operating procedures for the sprayer and to maintain the sprayer according to the manufacturer's recommendations. It is the owner's responsibility to ensure that all who are using this equipment have read this manual.

The owner is responsible for inspecting the equipment and for repairing or replacing damaged or worn parts to prevent damage or excessive wear to other parts. It is also the owner's responsibility to deliver the machine for service or to replace 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 the machine.

- ➔ Read the Owner's Manual. Failure to read the manual is considered a misuse of the equipment.
- ➔ Use the BP2-e sprayer ONLY for its intended use as described in this manual.
- ➔ Do not allow a child to operate the BP2-e 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-e 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 chord.
- ➔ Never pull plug with wet hands.

## CAUTION: HOT SURFACE

- ➔ The compressor becomes hot to the touch during normal use. Do not touch the BP2-e compressor after it has been running.
- ➔ Stay clear of the hot compressor when making adjustments inside the BP2-e 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-e sprayer.
- ➔ Always use a respirator and eye protection when spraying with the BP2-e.
- ➔ Follow the chemical manufacturer's recommendations in the handling, mixing, applying, storing and disposing of chemicals.
- ➔ Be aware of poisoning symptoms and know the appropriate first aid.
- ➔ Know the length of time needed to pass after spraying before allowing people and pets to go back into the sprayed area.

### Pacemaker Disclaimer:

If you have a pacemaker, we recommend that you **do not operate an electrostatic sprayer**, however, if you elect to do so, know that you are accepting any risk associated therewith.

Just to be clear, no one, with a pacemaker, has ever had a problem using our electrostatic sprayers. Several years ago a physician expressed concern, although his opinion was un-tested and not founded on any research. Since that time, we have taken the safest approach and recommended that those with pacemakers do not operate our electrostatic sprayers.

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.



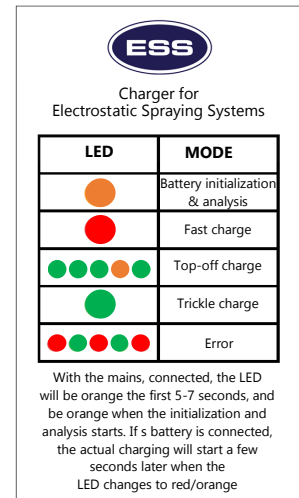
*PROTECT YOUR LUNGS  
PROTECT YOUR EYES*

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



*The BP2-e compressor becomes hot during normal operation*

*DO NOT TOUCH*



*This label is placed on the charger of all spraywands*

**READ AND FOLLOW THE CHEMICAL MANUFACTURER'S INSTRUCTIONS CAREFULLY**

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



*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 spraywand.*

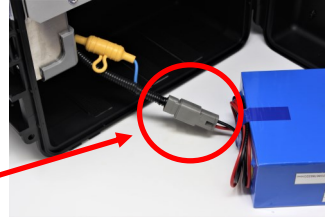


*If you use a pacemaker, use our electrostatic sprayer at your own risk.*

# PREPARATION INSTRUCTIONS

## Steps for Preparation:

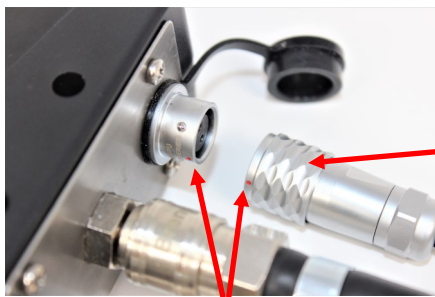
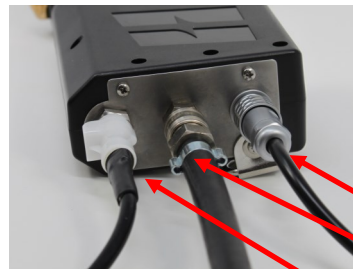
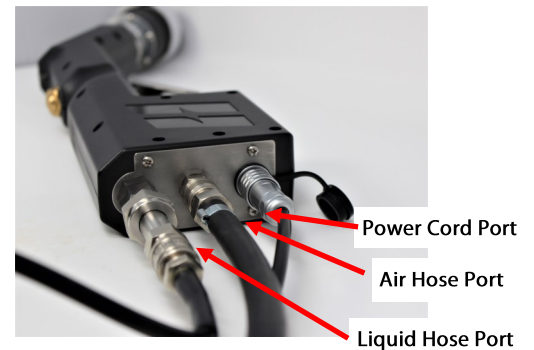
1. Open the backpack when the device is used for the first time.
2. Connect the quick disconnect on the battery to the backpack.
3. Place the battery inside the backpack.
4. Close the backpack after the connection is complete.
5. Connect one end of the spraywand power cord to the power output port and connect the other end to the power input port. To connect the power cord pull back the collar on the power cord, and then connect the cord to the spraywand/backpack. When you release the collar, it should click into place.



Battery inside case

**Note:** Make sure the red dot on the power cord is lined up with the red dot on the spraywand or backpack.

6. Connect the quick connector at one end of the air hose (thick hose) / liquid hose (thin hose) to the corresponding connector on the Spraywand. There are two versions of the liquid hose connectors. They both function exactly the same, but look slightly different.

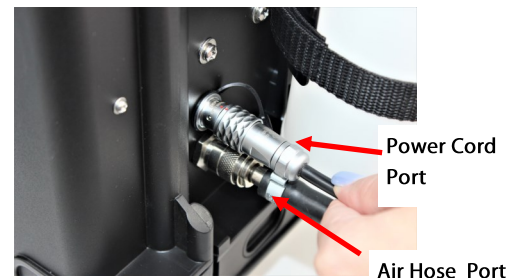


Power cord Collar

Be sure that the red dots line up before inserting the power cord into the spraywand/backpack.

**DO NOT TWIST THE CONNECTIONS.**

7. Connect the quick connector at the other end of the air hose (thick hose) to the backpack air port.
8. Connect the power cord to the corresponding backpack power port on the side of the case.
9. Add disinfectant to the bottle.
10. Connect the quick connector at the other end of the liquid hose (thin hose) to the quick connector of the disinfectant bottle cap by depressing the silver tab in the top of the liquid bottle and inserting the small mating connector from the twinline hose.



Silver tab

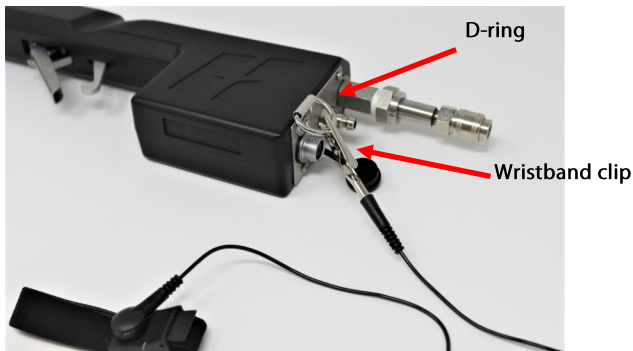


## Anti-Static Wristband

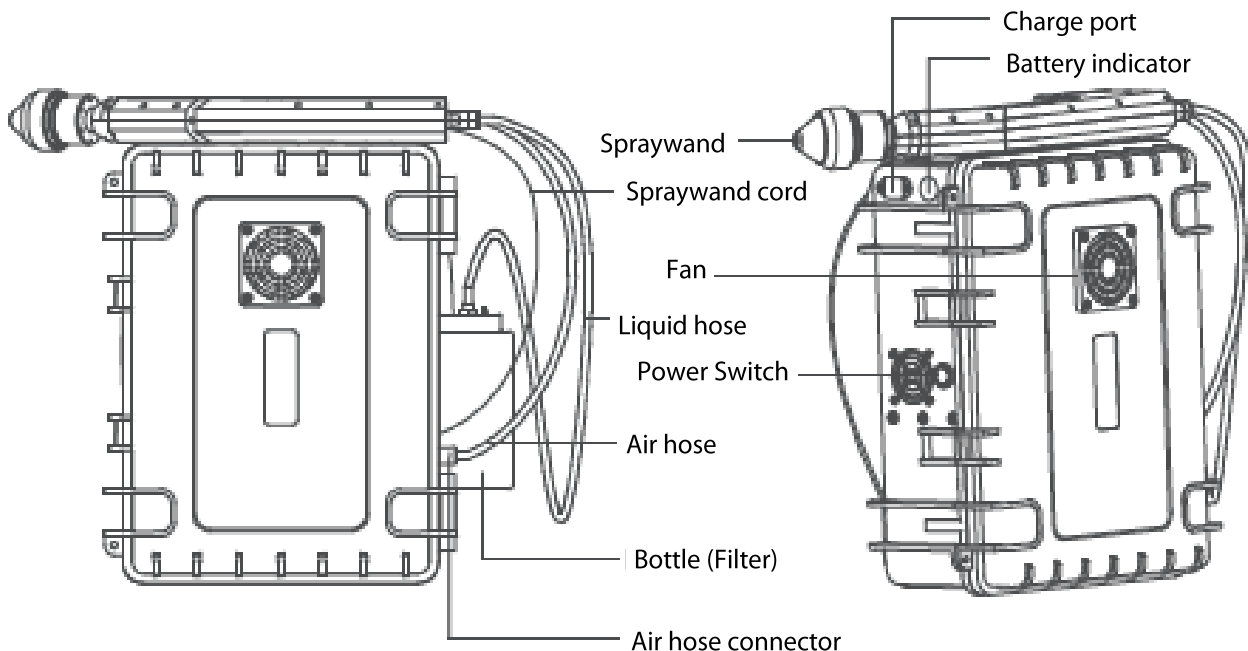
With any electrostatic sprayer, it is essential to have good grounding, so that the charge can be transmitted to the droplets efficiently. It is not necessary, but many users find it beneficial to use an “anti-static” wrist strap, attached to the D-ring at the base of the spraywand, to help secure better grounding. With the anti-static wrist strap, the spraywand has an extra measure of grounding as well as the potential for more consistent and more effective charges on the droplets. The anti-static wrist band also helps to eliminate small electrostatic discharges back to the user.



Anti-static Wristband



## Diagram of the BP2-e Sprayer



### Cautions:

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

Do not operate the BP2-e in standing water.

Do not immerse the BP2-e compressor.

Be sure to keep the backpack closed when spraying to prevent mist from entering the compressor and causing a short circuit.

The BP2-e compressor becomes hot enough to burn during normal operation.

**DO NOT TOUCH.**

## 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.



Nozzle Cover

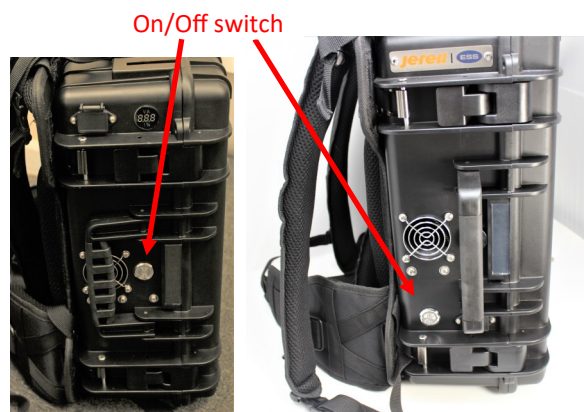
### 2. Preparing the Tank Mix

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. Check with your local chemical supplier for some that are available.

**If you intend to use wettable powders in your sprayer, be sure that the solution is extremely well-dissolved, as it can very easily clog your sprayer.**

## Locating the Sprayer On/Off Switch

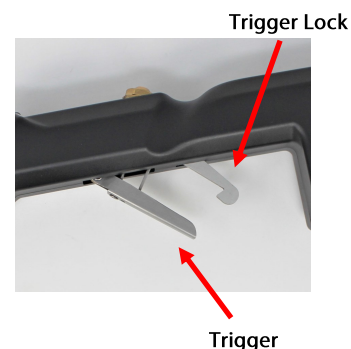
The BP2-e unit has a power button on the left side. Depending on your case it might be located in slightly different positions.



## Steps for Operation:

1. Turn on the power switch.
2. The charging indicator light glows red to indicate the electrostatic charging system is working.
3. Engage the trigger to spray.
4. To shut down– release the trigger and allow the air flow to continue to spray for 5-10 seconds before turning off the power switch.

**NOTE:** the air in the lines need to be emptied before operation, so engage the trigger for 5-10 seconds, or until you can see the mist coming out of the spraywand.



**NOTE:** At times, there could be a drip effect from the nozzle. The drip results from the accumulation of tiny electrostatically charged droplets wrapping back and coating the spraywand nozzle. The nozzle is **NOT** leaking. To help with this, we have included a terry cloth tube that can go around the nozzle and collect any drips.

You will need to put this cloth on the nozzle before you turn your sprayer on.

Alternatively, some users hold a towel in their hand and periodically wipe the nozzle cover dry.

Terry Cloth Tube

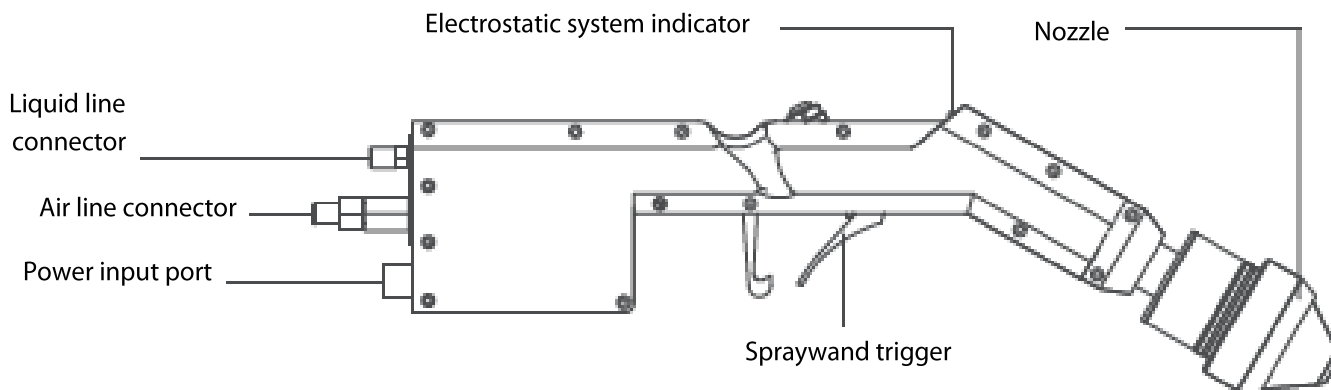


Towel Method



## THE SPRAYWAND

The spraywand is powered by a battery installed in the backpack. One end of the spray wand power cord is connected to the power output port and the other end is connected to the power input port.



The spraywand is held by the operator during spraying. Activation of the trigger causes liquid to spray. The spraywand has the following user-serviceable parts:

-The Trigger Plunger

-The Nozzle Assembly

Nothing inside the Spraywand shell is user-serviceable.

**NOTE: Do not open the spraywand shell; Doing so will void the warranty on the spraywand.**



### Cleaning the Spraywand

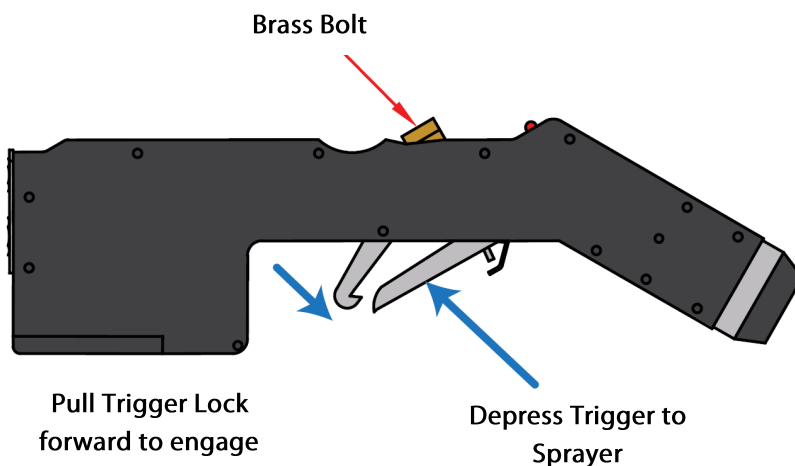
Always rinse the spraywand out with clean soapy water after every day's spraying. That is the most important thing you can do to ensure trouble free operation of your BP2-e sprayer. By cleaning after each and every working day, you will avoid the long-term chemical buildup that eventually causes clogs, 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 after 50 hours. If heavy loads of wettable powders are used, the cleaning schedule should be sooner.

## TRIGGER

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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 spraywand 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 spraywand with a  $\frac{5}{8}$ " 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 spraywand until tight.

### Hose:

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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, and/or breaks.
- ☒ Do not pull the case around by the hose.
- ☒ Use the handles to move the case from one place to another.

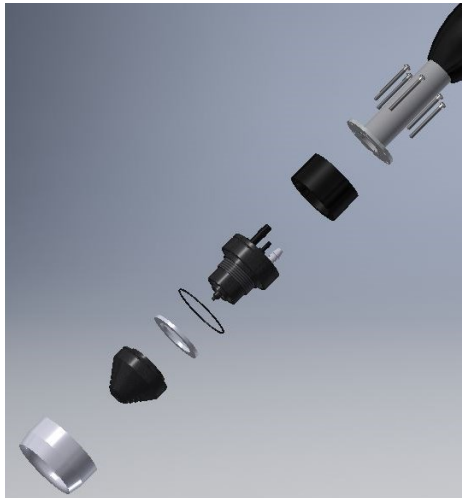
Should you notice anything wrong with your hose, please contact ESS to have this hose replaced.

## NOZZLE ASSEMBLY

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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 spraywand. It is composed of a nozzle body, internal o-ring, Teflon ring, cover, external o-ring, and a hood (See labeled drawing). To access the nozzle components, just unscrew the nozzle cover by hand.



### 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 out any debris from around the nozzle tip.  
**NOTE:** There is a small o-ring in the nozzle around the base of the tip; take caution that it doesn't fall off. If it does, clean it and press it 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 hold through it. Also, be sure to clean the hood. It is important to clean inside the hood as well as 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.



## SPRAYING TECHNIQUE

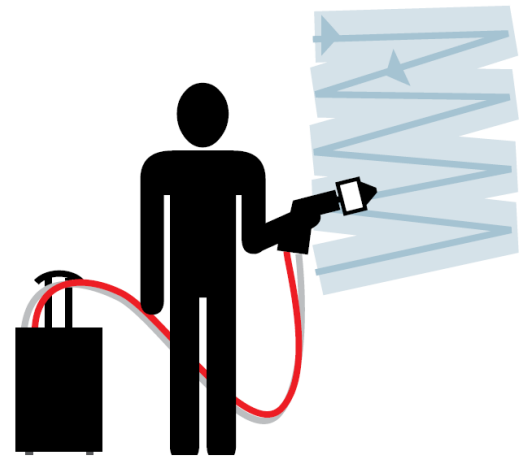
As with spray painting, the goal is to achieve even coverage over the surface. The ESS MaxCharge™ spraywand is designed to help you do just that. By propelling the chemical spray with a gentle air flow, you can stay well away from the target surface and let the electrostatic attraction do the rest of 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-e's MaxCharge™ spraywand, the surface of the target should just barely glisten with moisture. The fine droplets will evaporate quickly.

**NOTE:** When using unfamiliar equipment or chemicals, always test on a small area before treating the entire area 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 minutes, with a 5-10 minute break in between.

### Tips to achieve the best possible coverage with the ESS BP2-e 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 allows the fine mist produced by the MaxCharge™ nozzle room to develop into a spray cloud that will be attracted to the target surface.
3. Hold the spraywand at right angle 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.
4. You can use vertical strokes if it suits the area better. Just make sure to work in a methodical pattern and let your stroke overlap the previous stroke by about 50%.
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 spraywand barrel as level as possible. If you allow the nozzle to point down too much, it may drip occasionally.
8. Unlike spray painting, you do not 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 spraywand.



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



## Post-Spray Check

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



## To Clean the BP2-e After Operation:

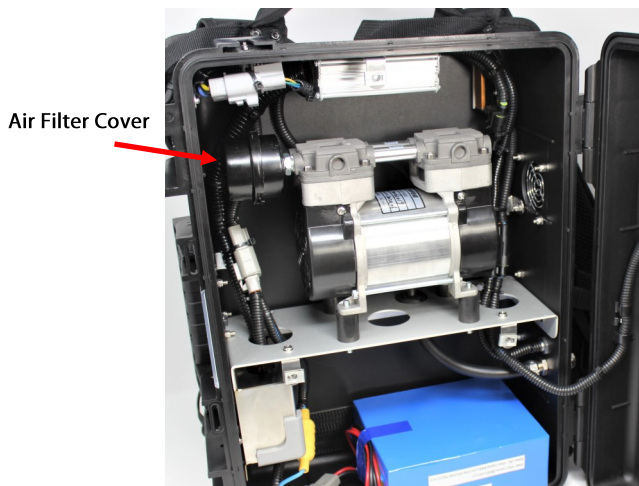
1. Clean the exterior of the sprayer with a damp cloth.
2. Clean the liquid bottle.
3. Fill the liquid bottle with 1/2 liter of clean water.
4. Turn on the air compressor to flush the line with most of the water. Turn off the air compressor.
5. Disconnect the quick connect plug from the twin line hose, then connect it into the spraywand liquid line leader.
6. Turn on the air compressor and engage the trigger to flush the spraywand 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-e's components follow in the next sections.

## 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.



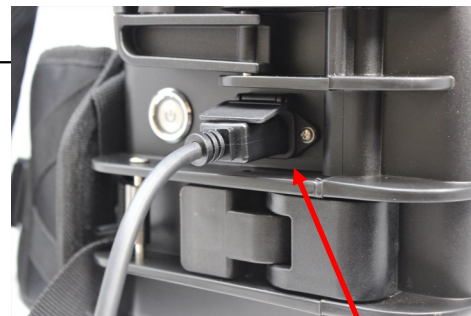
## BATTERY CHARGING OPERATION

The BP2-e battery can be charged while inside the backpack. Connect the output plug to an outlet and connect the input plug directly into the backpack input on the side of the case.

If you have an additional battery and wish to charge while the backpack is in use, disconnect the plug from the backpack and connect it to the spare battery using the adaptor cord purchased separately (P/N 19928).

Please note:

- Only use 29.4V, LiFe PO4 compatible chargers to charge the battery. The charging current should be 2A to 4A. If you need a charger, please contact us.
- Fully charge the battery before first use. This depends on the output of the charger but is typically between 3-5 hours.
- When the indicator light on the charger is RED that means it is charging, and when it is GREEN that means the battery is fully charged. Always charge for at least 5 hours to ensure full capacity.
- LiFe PO4 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).
- Do not charge the battery in temperatures below 0°C. This can cause damage to the cells.



Charger Input Port

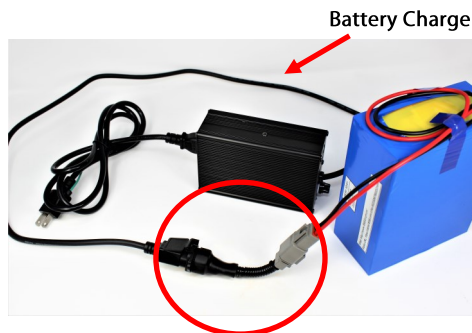
**Attention:** Do NOT charge the battery while the sprayer is in operation!  
Do NOT operate the sprayer while it is plugged into an electrical outlet!



The battery charger has a 10A fuse located on the side by the indicator light



Adapter Cord



Battery Charger

Adapter Cord attached to battery and charger

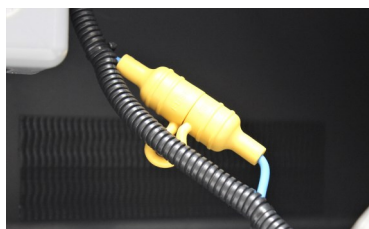


## CHANGING THE FUSE

If the BP2-e 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 from the BP2-e. Locate the yellow fuse holder inside the backpack, open it and inspect the fuse.

If it is blown, replace it with another 20A fuse and reassemble the fuse holder. Reconnect the battery to the BP2-e backpack.

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



Yellow rubber fuse holder



The 20A fuse can be either glass, or ceramic.

# Liquid Filter

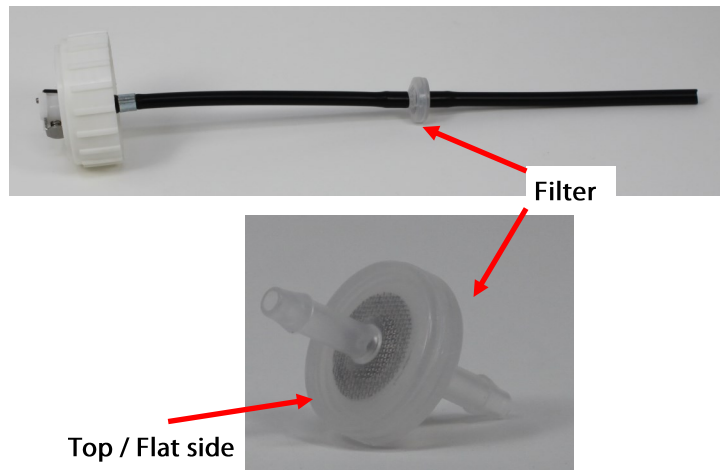
There are two different versions of the BP2-e liquid filter. They look different, but serve the same purpose.

We advise that you periodically inspect the filter or filter and flow disc, and clean or replace as needed.

One version has a filter in the liquid line that is inserted in the bottle.

To change this filter:

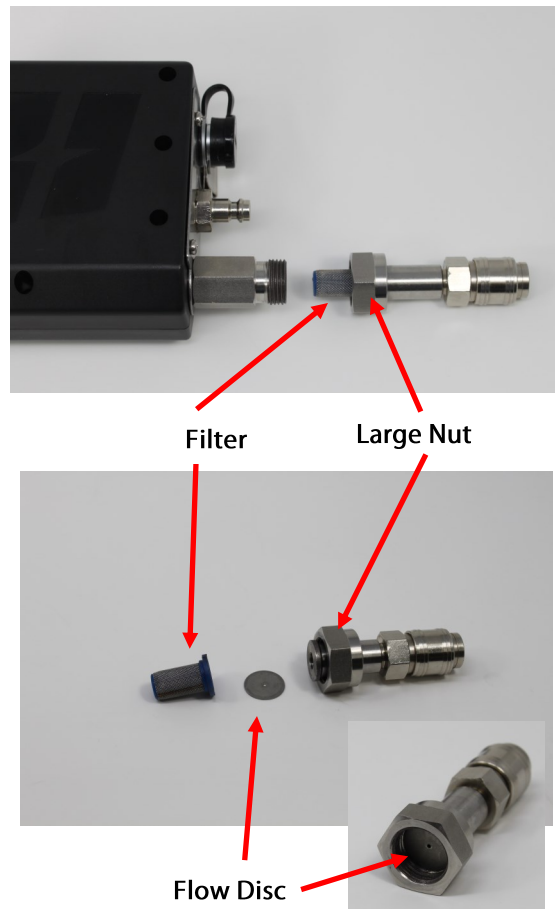
- Gently pull on the hoses connected to the filter to remove the filter
- Slide the hoses over the connections of the new filter keeping the top/flat side of the filter facing the lid, and make sure they are securely in place.



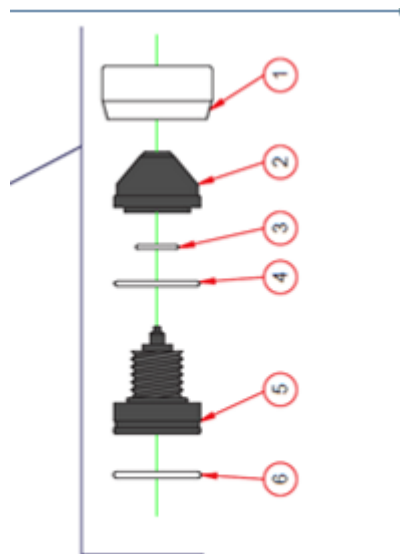
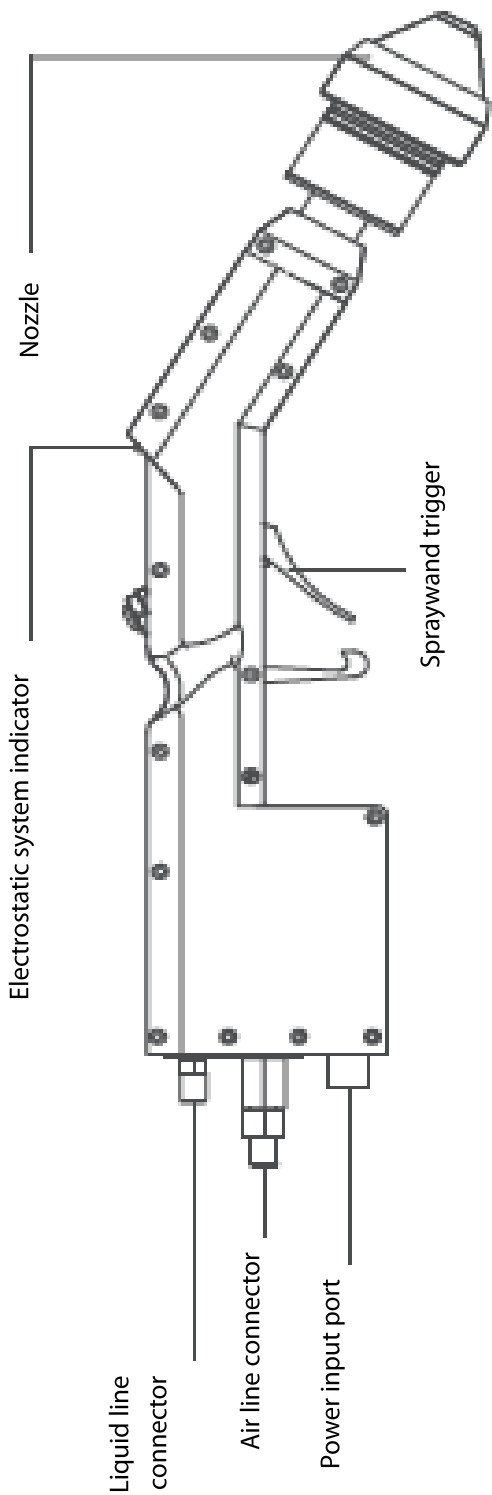
The other version has a filter and flow disc in the liquid hose port.

To Change this filter:

- Loosen the large nut on the Liquid Hose Port.
- Remove the old filter.
- Slide the large nut down over the body of the hose port to remove the flow disc.
- Slide the large nut back into place, and place a new flow disc and filter in place.
- Tighten the large nut of the Liquid Hose Port back into place on the body of the Spraywand.



# SPRAYWAND SERVICE



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



## **TROUBLESHOOTING**

### **GUIDE**

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When you encounter the problems listed below, use the suggested trouble-shooting methods below. If you cannot solve the problem or have a problem with the spraywand that is not addressed in this manual, please contact Unity-Healthcare Solutions 25967 Conifer Road; Conifer, CO 80433 Phone: 303-838-7320 ~ Fax: 303-838-4550

#### **Sprayer Will Not Turn On:**

- Is your sprayer battery charged?  
Recharge the battery for 3 to 5 hours.
- Is your sprayer button on?  
Turn the sprayer button on.
- Has the compressor overheated?  
Be careful, it may be hot. Let the sprayer cool with the case open and try again in 1 hour.
- Did the fuse burn out?  
Please refer to Page 14 section "Changing the Fuse"

#### **Spray Quality Problems:**

- Depress the trigger on the spraywand. While spraying water, place your finger over the nozzle blocking the liquid and air. This will force air back through the spraywand and possibly clean any obstructions in the liquid line.
- Check that all hose "quick connections" including hoses are connected to the spraywand, the case, and the liquid bottle.
- Is the nozzle cover dirty?  
Unscrew the nozzle cover and wash inside the nozzle cover with water. With the nozzle cover removed, check to see if the liquid port is clogged. Clean out a small wire (ex. paperclip).
- Is the liquid or ambient temperature too cold?  
The nozzle may 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 replacement of the trigger plunger mechanism.

#### **Charging Light Will Not Come On:**

- If the LED light on the handle of the spraywand fail to turn on, it is an indication that the spray is not receiving an electrostatic charge, or on rare occasions, that the light is burned out.
- Make sure the sprayer batteries are charged. Fully charged batteries will last for about 2 1/2 hours of continuous use.

## **ESS WARRANTY:**

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Electrostatic Spraying Systems, Inc. warrants to the original purchaser that any Electrostatic Spraying Systems equipment shall be free from defects in material and workmanship for a period of one year after date of delivery.

### **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 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 items parts such as air compressors, liquid pumps, solenoids, and other such items must be returned before warranty credit ends.
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 judgement 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 judgement 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 spraywand 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 parts that normally deteriorate. Belts, 9V rechargeable batteries, and exterior finishes due to use and exposure are also not covered under the warranty.

**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.**

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

Contact Unity-Healthcare Solutions Ph: 303-838-7320 to schedule spray wand services. Package the spray wand securely, since it can be damaged during shipment. Ship the spray wand in it's original packing material if possible. If the original packing is not available, wrap the spray wand in bubble wrap, place it in a strong cardboard box and surround the gun handle with foam packing. Please include a return shipping address and telephone number.

A form is provided for you at the back of the manual  
Ship the spraywand via UPS or Parcel Post to:

**Unity-Healthcare Solutions, LLC**  
**25967 Conifer Road; Conifer, CO 80433**  
**Phone: 303-838-7320**  
**Fax: 303-838-4550**  
<http://www.unity-healthcare.com/>

As an additional benefit, the Yearly Spraywand Service “turns back the clock”.  
The original 1 Year Warranty on the spraywand is renewed for another year.  
Yet another good reason to send your spraywand in to ESS for factory-authorized service!



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**Fax: 303-838-4550**  
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