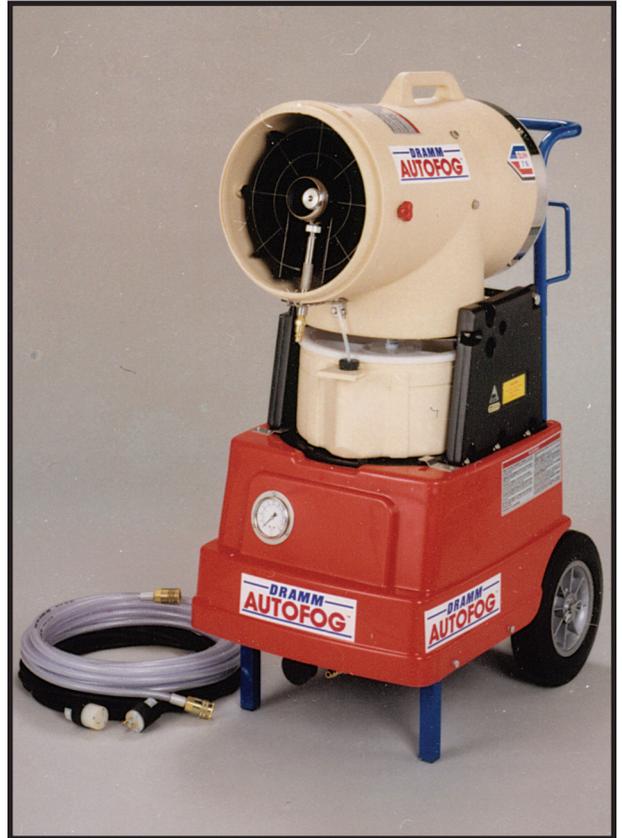


DRAMM



AUTOFOG

Owners Manual Models LVH & SLVH

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DRAMM

AUTOFOG

Models: LVH & SLVH

SLVH 120 Volt 60 HZ • LVH 240 Volt 60 HZ

SLVH 1332 Watts • LVH 1920 Watts

SLVH 11.1 AMPs • LVH 8.0 AMPs

Serial Number

Limited Warranty

This is a Limited Warranty as defined in the consumer product warranty and Federal Trade Commission Improvement Act. This warranty gives you specific legal rights which may vary from state to state.

Dramm Corporation and Arimitsu Industry Company Incorporated warrants each Autofog (namely SLVH-20A and LVH-20A) to be free from defects in materials and workmanship to the original purchaser for a period of 6 months. Parts subject to wear are not covered under this limited warranty. (Nozzle "O" ring, nozzle tip, compressor air filter, chemical line, and pressure gauge are not covered under warranty). Defects or damages due to the misuse, non-observance of safety standards, or non-observance of EPA chemical guidelines are not covered under this limited warranty. Please read and follow the instructions and heed warnings stated in the operating manual and on the AUTOFOG sprayer, model LVH or SLVH.

Dramm Corporation makes no other further warranty, expressed or implied, and all other or further warranties, including any warranties of merchantability or fitness for a particular purpose are expressly excluded.

Under no circumstances will Dramm Corporation or Arimitsu Industry Company Incorporated be liable for loss of product, profit or any other special, incidental or consequential damages including, but not limited to, plant damage, property or persons. Dramm Corporation or Arimitsu Industry Company Incorporated makes no warranty, expressed or implied, in regard to the efficacy of any pesticide or other chemical which may be applied using the Dramm Autofog.

It is understood that the limit of seller liability for breach of any warranty shall be at maximum, the invoice price of goods.

This warranty begins on the date of original purchase. This warranty is void if there is no proof of purchase or warranty registration on file. Mail the warranty registration card to the Dramm Corporation and keep the bill of sale or invoice. If warranty service is required, please include a written description of the equipment malfunction, a return address and telephone number. The Autofog, model SLVH or LVH, must be thoroughly cleaned of all chemical residue and sent prepaid to:

Dramm Corporation
2000 North 18th Street
Manitowoc, WI 54220

OPERATIONAL WARNINGS

AUTOFOG

Models: LVH & SLVH

- Use only 120 volt electrical outlet for the SLVH and 240 volt outlet for the LVH
- Use only 3-pronged grounded extension cords & receptacle boxes
- Keep all electrical connections away from liquids
- EXERCISE NORMALLY ACCEPTED SAFETY PROCEDURES WHEN USING ELECTRICITY.
- Be certain all hoses and connections are secure prior to using the Autofog
- Do not drag the hoses over sharp objects or bend excessively
- Before servicing the unit, disconnect the Autofog from the power source
- WHEN APPLYING HAZARDOUS CHEMICALS CARE AND LOGIC must be adhered to. Particle size is very small
- BEWARE OF INHALATION. ENSURE THAT NO HUMANS OR PETS ARE IN THE ENCLOSURE TO BE TREATED - Death or health problems from pesticides/chemicals could occur!
- THE CHEMICAL VAPOR WILL NOT BE VISIBLE! It is your responsibility to ensure no one can enter the enclosure for the required Re-Entry Interval as stated on the chemical label.
- POST HAZARD SIGNS.
- DO NOT USE THIS MACHINE IN AN ENCLOSURE WHERE VAPORS CAN ENTER ANY TYPE OF AIR VENT.
- Ensure vapors can not reach buildings or homes in close proximity to treated enclosure.
- MIX ONLY THE AMOUNT OF CHEMICAL SOLUTION WHICH WILL BE USED. NEVER keep, store or hold-over unused chemical solution.
- BEFORE RE-ENTRY, AIR MUST BE CHANGED BY VENTING.
- FOLLOW ALL E.P.A. GUIDELINES for Re-Entry
- WEAR PROTECTIVE CLOTHING: Gas mask, hood, gloves and boots.
- ENSURE ENCLOSURE (greenhouse, barn or building) IS SECURELY CLOSED with no vents open.
- BE SURE TO CONNECT TO CORRECT VOLTAGE RECEPTACLE. Your machine is labelled 120 Volt - single phase or 240 volt-single phase. Contact you electrician for an accurate voltage/phase reading.
- AFTER USE - Triple rinse pesticide/chemical tank. Clean nozzle and suction line thoroughly.
- Store unit in a safe location away from children and unauthorized personnel.
- IF YOU USE THIS MACHINE FOR PESTICIDE/CHEMICAL APPLICATION- DO NOT USE IT FOR MIST/FOG COOLING.
- FOLLOW ALL E.P.A. GUIDELINES

How Does My Autofog Work?

The Dramm Autofog applies chemicals using the ultra low volume (ULV) principle. The Autofog will apply the same amount of active chemical as hydraulic spraying in a given area but using reduced amounts of water. Because Low Volume application is very efficient, many growers have found that lower volumes of chemical can also be used with the same results.

Typically, hydraulic wet sprays average 30-40 gallons of water used per 10,000 square feet. The Autofog will require a minimum of two litres of water and the chemical to fog 10,000 square feet. A specially designed solution tank and agitator prevents chemicals from settling out.

The Dramm Autofog uses a patented, specially designed nozzle to create spray droplets with an average of 5 μ (microns) in diameter (VMD, Volume mean diameter) with a particle spectrum of sub-micronic to 10 μ VMD. Air enters the nozzle from the oilless compressor and then exits the nozzle at supersonic speeds. This movement of air creates a low pressure that draws solution from the chemical tank. As the solution exits the nozzle it is atomized into billions of tiny particles. The atomized chemical particles stay suspended for up to 6 hours and are distributed by the Autofog's fan, horizontal air fans (HAF's) and natural air currents.

Note: Dramm offers an instructional video on our website. Please watch this before using your machine.

Operating Instructions

Before programming the Dramm Autostart Autofog™ control panel, prepare the Autofog™ for the actual fogging process.

Place the compressor/control carriage and the fogger head in the proper location for the application.

Determine the total solution volume for the application. Actual running time/fogging time will be determined by the amount of solution.

Connect the Autofog™ to the power source (notice the power lamp that is illuminated on the control panel).

The Autostart Autofog™ timers are conventional 24 hour electro-mechanical timers. The face of the times show both hours (Outer Clock Dial) and minutes (Inner Clock Dial) so that start and running times can be synchronized exactly. The time on the left side of the control panel (as you face it) operates the fan agitator. The time on the right side of the control panel operates the compressor.

When programming the times it is important to start the fan/agitator at least 15 minutes early to agitate the chemical solution, especially when fogging wettable powder formulations. This pre-agitation process assures that the nozzle does not clog with chemical that has settled to the bottom of the solution tank. Additionally, this process will create a momentum of air to ensure even distribution throughout the house. Always run the fan/agitator longer than the compressor to circulate fog in the house for an extra 1/2 hour.

Remember that the LVH-20A will disperse 3 litres of solution per hour and the SLVH-20A will disperse 2 litres of solution per hour. Set the actual running time based on these output rates.

Equipment Precautions/Pre-Operation Checklist

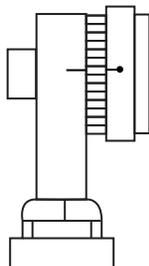
I. GREENHOUSE:

- a. For the most effective performance the greenhouse must be airtight. Take time to repair any broken glass, torn poly and gaps or openings in vents and door frames.
- b. The entire greenhouse area being treated should be vacant. No humans or animals should be present.
- c. We recommend that the fogging process take place at the end of the day. Secure the greenhouse and post hazard signs before spraying.
- d. Avoid applications when the temperature is over 85°F in the greenhouse or when relative humidity exceeds 85%.
- e. When utilizing HAF's (Horizontal Air Fans) they should be run for 1/2 hour longer than actual spraying time.
- f. Follow all EPA guidelines regarding application or pesticides.

II. COMPRESSOR/FOGGER:

- a. Test run the Autofog with clear water for 1-2 minutes. Remember to pass even clear water through the solution tank strainer.
- b. Discharge volume of clear water is 45 cc/minute for the SLVH-20A and 55 cc/minute with the LVH-20A. When testing the unit, pull the suction hose out of the solution tank and place it in the small pitcher included with your machine (Fill it with 110 cc). The pitcher should be empty after a 2 - 2 1/2 minute test run. Be sure to check discharge volume occasionally to assure best results.

You will get an accurate output volume if the nozzle cap is closed completely and then returned to match the red check marks. See diagram below.



NOTE: Output volume will vary 2.5 - 3.0 cc/minute for each notch in the nozzle cap.

NOTE: Check the O-Ring located inside the nozzle cap for wear or damage. Replace if necessary.

- c. Observe the operating pressure. The gauge will read 2.0 Kg/cm² or about 18 - 19 PSI on the LVH-20. A reading of 1.6 Kg/cm² or about 14 - 23 PSI will be normal on the SLVH-20. Check for leaks in the piping when the pressure is too low. Eliminate clogs if the pressure is too high. Pressure readings may vary from location to location. Small differences are inconsequential. See troubleshooting.
- d. Cold weather operation: When temperature falls below 25°F run the compressor in a warm environment before placing the motor/compressor assembly outdoors. The bearing grease may harden in very cold temperatures causing the compressor to not perform properly. Unless absolutely necessary, do not operate the Autofog in sub -25° weather.

Introduction to Programming the Autofog

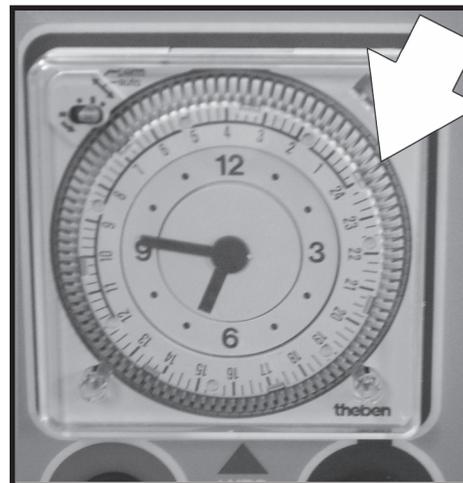
The Dramm Autofog™ is an air assisted, micro particle generator for applying chemicals in enclosed areas. Using the Ultra Low Volume principle, the Autofog™ creates billions of tiny particles (5 μ average diameter) which completely fill the entire treatment area and evenly cover all surfaces. These particles circulate in the air pattern created by the Autofog's fan ensuring even coverage throughout the greenhouse. Because of their extremely small size, these particles eliminate costly run-off and damaging burn.

The Dramm Autofog™ can treat between 12,000 and 28,000 sq ft (model SLVH-20A) or between 30,000 and 70,000 sq ft (model LVH-20A) automatically, without an operator, saving in labor costs and health risks. Simply move the Autofog™ to the desired location, mix your chemical, set your timers and leave. The Autofog™ will start automatically at the time you desire, pre-circulate the air, apply the chemical and shut itself off. After the appropriate REI has passed, ventilate the greenhouse and remove the machine.

The Autofog™ uses a surgical, oilless compressor to protect against leakage of machine oil into the treatment area. The chemical tank has a conical centerpiece in the bottom of the tank. This special design prevents the chemical, especially wettable powders, from accumulating in the center of the tank while agitation is taking place. This ensures homogeneous solution at all times. All components of the Autofog™ are made from corrosion resistant materials, ensuring a long reliable life. Clean up is easy and maintenance is simple. The Autofog will remain reliable for many years with very little maintenance.

Timer Programming

1. Plug the AutoFog into the appropriate power source. (110v for SLVH, 220v for LVH)
2. Set both clocks to the correct time. The timers are 24 hour for accuracy between day and night. Make sure to fine-tune the two clocks and synchronize them as closely as possible.
3. Determine the operation time block (example 6:00p - 10:00p) for the Fan/Agitator timer. For best results, start the fan and agitator 30 minutes earlier than the compressor to preventilate the greenhouse and to pre-mix the chemical solution before spraying. Additionally, keep the fan running for 15 - 30 minutes longer than the compressor so that the fog is distributed evenly in the greenhouse.
4. Set the Fan/Agitator timer by flipping the blue pins to the outside.
(see photo)
5. The AutoFog will run only during the time that the pins are flipped to the outside of the clock. **DO NOT FLIP THE START AND STOP TIME ONLY.**
Each pin represents 15 minutes of time.
6. Determine the operation time block (example 6:30p - 9:30p) for the compressor. The compressor is what actually fogs the chemical solution. **FOG WILL DISPENSE DURING OPERATION OF THE COMPRESSOR.**
7. Set the Compressor timer by flipping the blue pins to the outside
(see photo) in the same manner as with the Fan/Agitation timer.
8. Flip the two toggle switches just below the timers to "AUTO" for automatic operation.
9. The AutoFog is now ready and will begin fogging at the appropriate time. See discharge chart on page 9. Make sure the treatment area is secure and will be empty of all personnel a that time.



A video on programming your timer is available on our website.

Discharge Chart

LVH		SLVH	
WATER VOLUME IN LITRES	DISCHARGE TIMES FOR LVH	WATER VOLUME IN LITRES	DISCHARGE TIMES FOR SLVH
1.0	0:20 min	1.0	0:30 min
2.0	0:40 min	2.0	1:00 hr.
3.0	1:00 hr.	3.0	1:30 hr.
4.0	1:20 hr.	4.0	2:00 hr.
5.0	1:40 hr.	5.0	2:30 hr.
6.0	2:00 hr.	6.0	3:00 hr.
7.0	2:20 hr.	7.0	3:30 hr.
8.0	2:40 hr.		
9.0	3:00 hr.		
10.0	3:20 hr.		
11.0	3:40 hr.		
12.0	4:00 hr.		
13.0	4:20 hr.		
14.0	4:40 hr.		

Note: Remember to add 1/2 hour to spraying time when setting the timer.

WARNING: The standard model Autofog uses a nozzle that is manufactured with brass components. The use of oxidizers will damage this nozzle within several applications.

If you plan to use oxidizers in your Autofog, **CONTACT DRAMM BEFORE THE FIRST USE OF YOUR MACHINE** to purchase a stainless steel nozzle at a reduced cost. After your machine has been used, Dramm cannot accept the original nozzle back for credit.

Application of Chemicals

I. WARNING: All EPA Guidelines on the handling, application, and re-entry periods for pesticides must be adhered to. Only crops which are labelled by pesticide should be treated.

II. FOGGING: Chemical rates on chemical labels are stated as amount of chemical to be diluted into 100 gallons of water. Most chemical labels do not advise how much of the spray concentrate should be applied to a given area. Greenhouse growers apply from 25 to 300 gallons of spray concentrate per 10,000 square feet, the average application is 30-40 gallons per 10,000 sq. feet.

NOTE: Some chemicals DO state amounts of chemical per acre. In this case, follow the area rates on the label

III. The Autofog is a low-volume applicator. Low-volume means application of pesticide with low volumes of water. The same amount of chemical is applied to a given area as conventional spraying, but in greatly reduced quantities of water. This is possible since low-volume equipment produces very small particle sizes (0.5 to 10.0 microns) vs. conventional spray particles of 200 to 400 microns, which facilitate uniform leaf coverage.

Preparation of Pesticide Mixture & Application

- A. Determine area (square feet) to be treated.

The Autofog uses 2 litres of water per 10,000 square feet of treatment area per meter of plant height.

Example - Your pesticide manager has decided to treat 30,000 sq. ft.

Two litres water + pesticide for 10,000 square feet.

THESE ARE MINIMUM AMOUNTS OF WATER. You may always use more water in any application. This is often recommended for Wettable powder formulations or any chemical that does not dissolve easily. Use common sense: If a chemical solution seems too thick to apply through the Autofog, add more water to thin the solution.

Always wear protective clothing including gloves, hood etc. when mixing pesticide solutions. Read label of pesticide chemical and determine amount of chemical needed per 10,000 square feet. Increase amount of chemical as needed by the appropriate percentage of 10,000 sq. ft. that you are treating. i.e.: if you are treating 15,000 sq. ft. multiply the amount of chemical for 10,000 sq ft by 1.5 for chemical rate calculation

In some instances, water quality can have an effect on the solubility and/or efficacy of the chemical. If problems occur use distilled water in the Autofog.

- B. When using E.C.'s or flowables dilute chemical into a small amount of water then dilute with additional water to reach needed quantity. Strain into tank.
- C. When mixing W.P. formulations: Use the mixing pitcher & rod provided. First place the power into pitcher & add water, stirring to make a lump free paste. Continue to add water until you have a sprayable mixture. **ALWAYS** strain the solution into the tank.

NOTE: ALWAYS STRAIN ANY MATERIAL, EVEN CLEAR WATER BEFORE IT ENTERS THE SOLUTION TANK.

- D. Place tank with pesticide mixture on machine.
1. Set timer
 2. Start machine
 3. Vacate, secure greenhouse and post hazard signs on all entrances.
- E. Timer should be set for 1/2 hour longer than it takes to empty your insecticide tank.
- F. The pesticide will be expelled into greenhouse area during the period when no one is present. The small particles (0.5 microns to 10 microns) will be carried uniformly to every area of the greenhouse by air currents. These micro particles can stay airborne for up to six hours. During this period, the particles contact the foliage and insects and deposition occurs.
- G. **Since the chemical (Hazardous Material) will not be visible, you must insure no one can enter the area during application and REI (Re-Entry Interval).**

Preparation of Pesticide Mixture & Application

H. **Before re-entry ventilate treated area. Always follow all EPA Guidelines for pesticide application and re-entry.**

Chemical Calculation

IV. If you spray 25 gallons of spray concentrate into 10,000 square feet of greenhouse area you are applying 25% of the chemical mixed in 100 gallons of water.

Chemical labelled rate/100 gallons	Multiplier (25%)	Chemical needed in 10,000 sq. ft.
Example: 16 Oz.	X .25	= 4 Oz.
OR 12 Oz.	X .25	= 3 Oz.

If you spray 40 gallons per 10,000 square feet you will need ...

Example: 16 Oz.	X .40	= 6.4 Oz.
OR 12 Oz.	X .40	= 4.8 Oz.

The chart on page 12 carries out this multiplication for you and reduces the amount by 5% to compensate for the fact that there will be no run-off.

The Autofog produces many times more particles to produce much more uniform coverage and increase the efficiency of greenhouse chemicals.

Dilution Chart

LOW RATE – 25 Gallons per 10,000 ft.

Chemical labelled rate per 100 gallons	=	Rate for Minimum Amount of per 10M sq. ft.	water for 10M sq. ft.
4 Oz. X .20	=	0.8 Oz.	2 litres
6 Oz. X .20	=	1.2 Oz.	2 liters
8 Oz. X .20	=	1.6 Oz.	2 liters
10 Oz. X .20	=	2.0 Oz.	2 liters
12 Oz. X .20	=	2.4 Oz.	2 liters
14 Oz. X .20	=	2.8 Oz.	2 liters
16 Oz. X .20	=	3.2 Oz.	2 liters
18 Oz. X .20	=	3.6 Oz.	2 liters
20 Oz. X .20	=	4.0 Oz.	2 liters

HIGH RATE – 40 Gallons per 10,000 ft.

Chemical labeled rate per 100 gallons	=	Rate for per 10M sq. ft.	Minimum Amount of water for 10M sq. ft.
4 Oz. X .35	=	1.4 Oz.	2 liters
6 Oz. X .35	=	2.1 Oz.	2 liters
8 Oz. X .35	=	2.8 Oz.	2 liters
10 Oz. X .35	=	3.5 Oz.	2 liters
12 Oz. X .35	=	4.2 Oz.	2 liters
14 Oz. X .35	=	4.9 Oz.	2 liters
16 Oz. X .35	=	5.6 Oz.	2 liters
18 Oz. X .35	=	6.3 Oz.	2 liters
20 Oz. X .35	=	7.0 Oz.	2 liters

NOTE: 1 LITRE = 33.6 ounces: WE DO NOT RECOMMEND CONCENTRATION STRONGER THAN A RATIO OF 15 TO 1 (4 OUNCES OF PESTICIDES NEEDS 60 OUNCES, OR 1.8 LITRES OF WATER) FOR W.P.'S, OR A RATIO OF 10 TO 1 FOR E.C.'S OR FLOWABLES.

NOTE: New chemicals or chemicals which have been relabeled may recommend an area rate or amount of chemical per acre. If this is a chemical you intend to use this labelled rate needs to be followed. Example - If label reads, apply 20 ounces of chemical per acre you need to divide 20 ounces by 4.36 (43,560 sq. ft./acre) or 4.59 ounces are needed for 10,000 sq. ft.

E.C. = Emulsifiable Concentrate: W.F. = Water Flowable

W.P. = Wettable Powders

Solution Tank

The Autofog solution tank has a very special design that promotes constant agitation of the mixture. Notice how the cone keeps all of the solution in the path of the agitator blade. This feature is very important when spraying wettable powder solutions that tend to be heavier thicker solutions that will precipitate quickly if not agitated.

Before setting the tank on the fogger frame, check that the agitator rotates smoothly. Do not forget to leave the screen/agitator on the tank before setting it in the fogger frame. Check that both mixing joints are aligned (the small tabs located on the bottom of the fan and on top of the solution tank).

After each application, clean the solution tank thoroughly using warm water and a soft brush.

Sprayer Location

The Autofog system is designed for ease of operation and protection of the components. The motor/compressor unit can be placed outside the greenhouse where the operator can control the unit and the control panel, motor and compressor parts are not exposed to the chemical spray. This will prolong the life of the Autofog and provide an added measure of safety should the controls need to be reached during application.

I. COMPRESSOR:

Set motor/compressor unit outside the greenhouse when spraying, avoiding rain and splashing water whenever possible.

II. FOGGING UNITS:

Placement of the fogging unit in the greenhouse is very important. It is best to spray from a center aisle or main aisle to create a good flow of air that will distribute chemical particles throughout the greenhouse. The fogger head should be placed above the crop and below any baskets. Make sure that the Autofog nozzle is unobstructed and that nothing is directly in the path of the Autofog.

Place the Autofog between 30-40 feet from the end wall to allow an air reservoir behind the unit.

For best results fog in the direction of the bays. Do not aim the Autofog across the gutters.

Additional Air Movement – Horizontal Air Flow Fan

Because the droplets created by the Autofog are so small, air flow is critical for even distribution of solution. The SLVH model Autofog can treat up to 12,000 sq ft alone or up to 26,000 sq ft with additional HAF fans. The LVH model Autofog can treat up to 30,000 sq ft alone or up to 70,000 sq ft with additional HAF fans. Type of crop, gutter height and other factors may limit these coverage areas.

The arrangement of the additional HAF fans can be a critical factor in determining coverage in an area. For recommendations on HAF layouts or for a Dramm designed HAF system that will maximize the Autofog's efficacy as well as temperature, humidity and CO2 distribution contact Dramm.

For best results, do not aim the Autofog against any fans in the greenhouse. Aim the Autofog so that it is blowing along with the air pattern established by the HAF fans.

Always spray over the crop, as the chemical solution is concentrated and may cause some damage or spotting. If necessary, you may have to construct a plastic curtain or screen to eliminate direct contact.

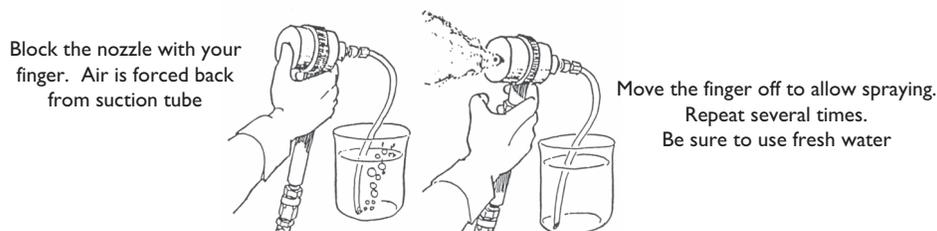
Cleaning & Maintenance

The key to successful results with the Autofog is keeping the machine clean. There are only a few steps involved, so it will be very easy. Be sure to clean the machine after every use.

- I. Using warm water and a soft brush wash the ...
 - A. Solution tank
 - B. Solution tank cover (filter) - Handle with care.
 - C. Agitator blades.
 - D. Suction tube strainer.
 - E. Suction tube - loosen the lock nut on the nozzle and remove from housing.
Blow air through nozzle/suction tube. See diagram below:

A video of this cleaning procedure is available on our website.

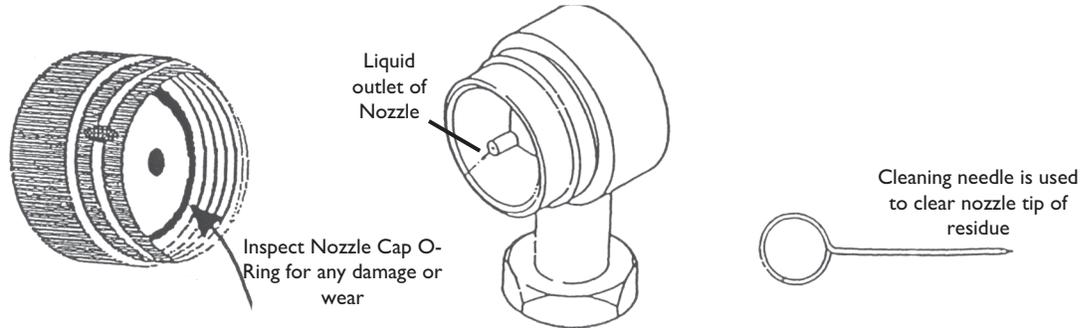
Note: Always wear a glove when covering the nozzle.



- F. Any time wettable powders are used, or every 3-5 times with other chemicals, remove the entire nozzle and allow to soak in a bucket of hot water for several hours. This will dissolve any chemicals that have begun to build up over time.
- G. Replace the chemical solution line once per year to prevent internal build-up from clogging nozzle.

Cleaning & Maintenance

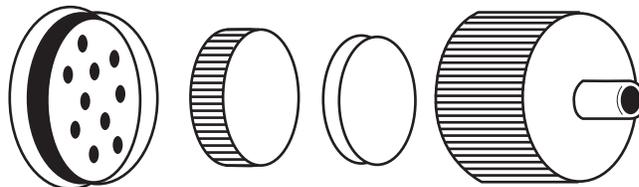
- II. Remove the nozzle cap after each use and wipe off any chemical residue. Always handle the nozzle and cap with care, especially the nozzle tip (See diagram below).



- III. With a damp cloth wipe clean the following parts:

- A. Fogging unit shell
- B. Fan guard
- C. Fan blades
- D. Any other exposed areas

- IV. After every 25 hours of use, be sure to clean the air filter(s) on the compressor. Brush any excess off of the filter; then rinse with warm water. Use a mild detergent if necessary. **ALWAYS** let the filter air dry completely before reinstalling.



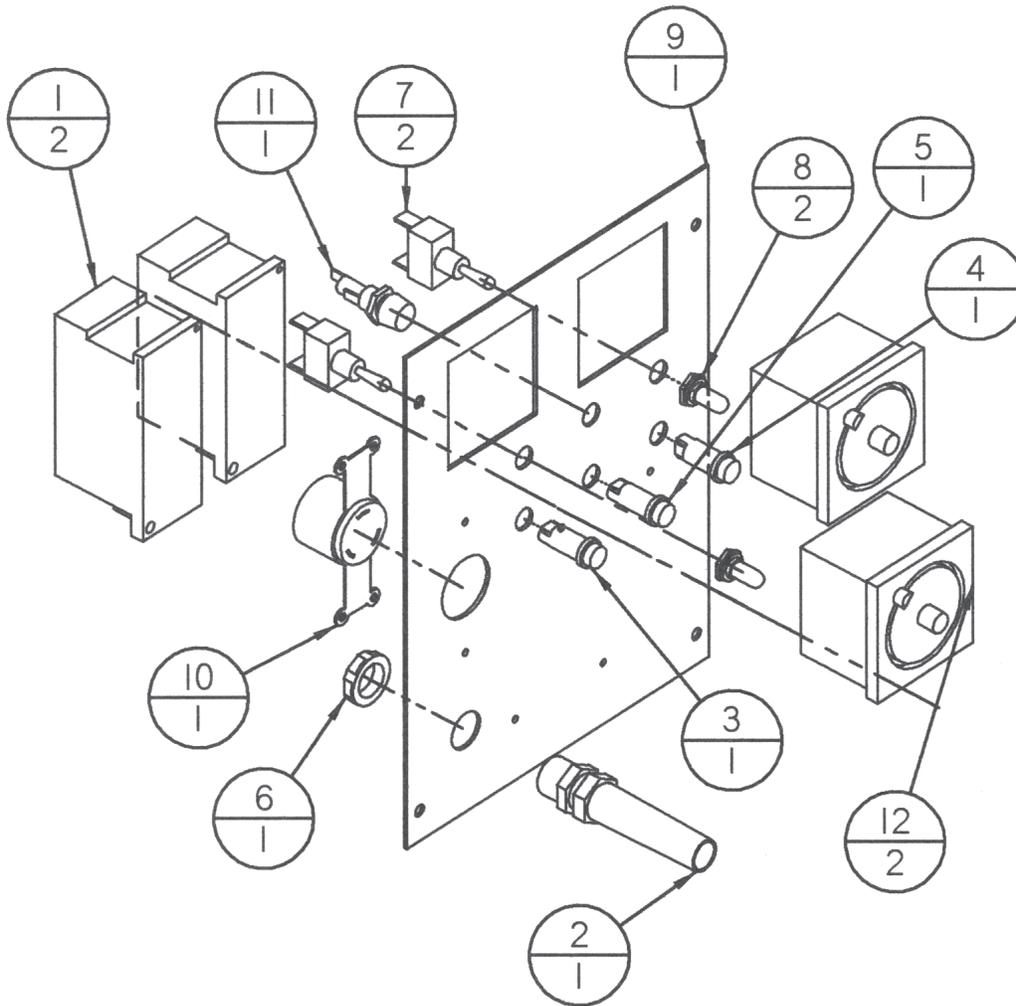
REPLACE FILTER AFTER
500 Hours of Use

- V. Store the unit where it is away from excessive moisture. **DO NOT STORE IN THE GREENHOUSE.** If storing the machine for a long period of time, cover the equipment with plastic in a suitable place.

Dramm offers an Annual Maintenance Kit (AMK) to keep your AutoFOG in top shape. Contact us annually to order this kit.

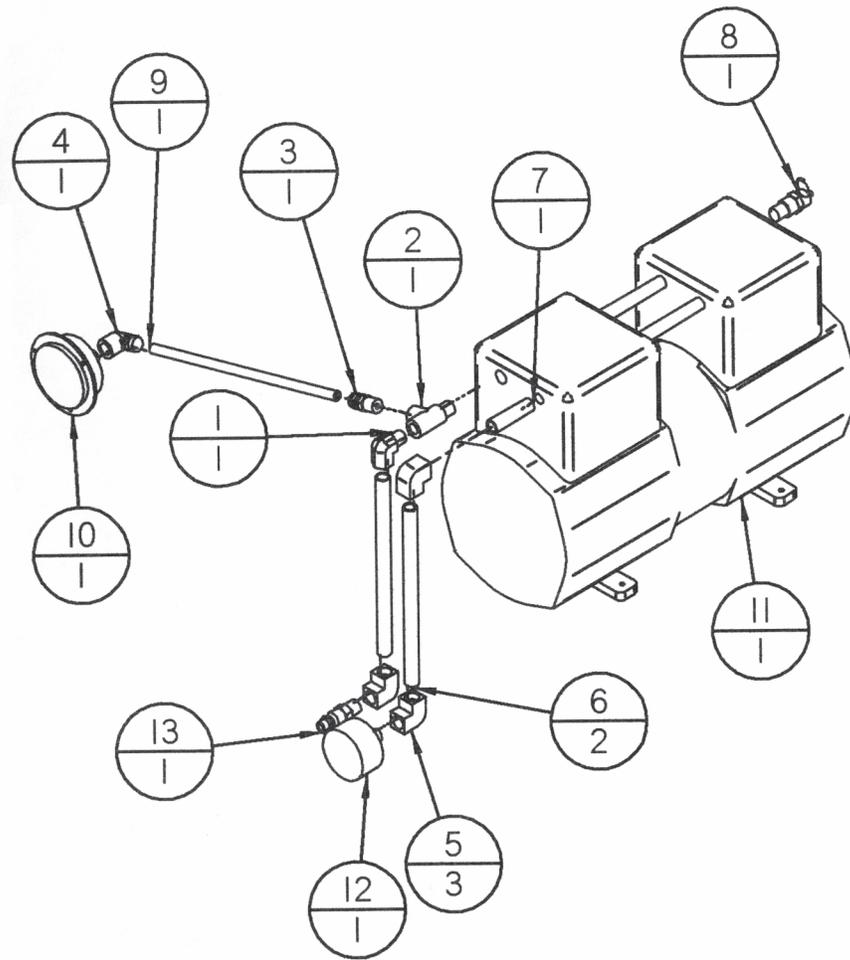
A video showing the maintenance involved in the AMK is available on our website.

LVH Control Panel Assembly



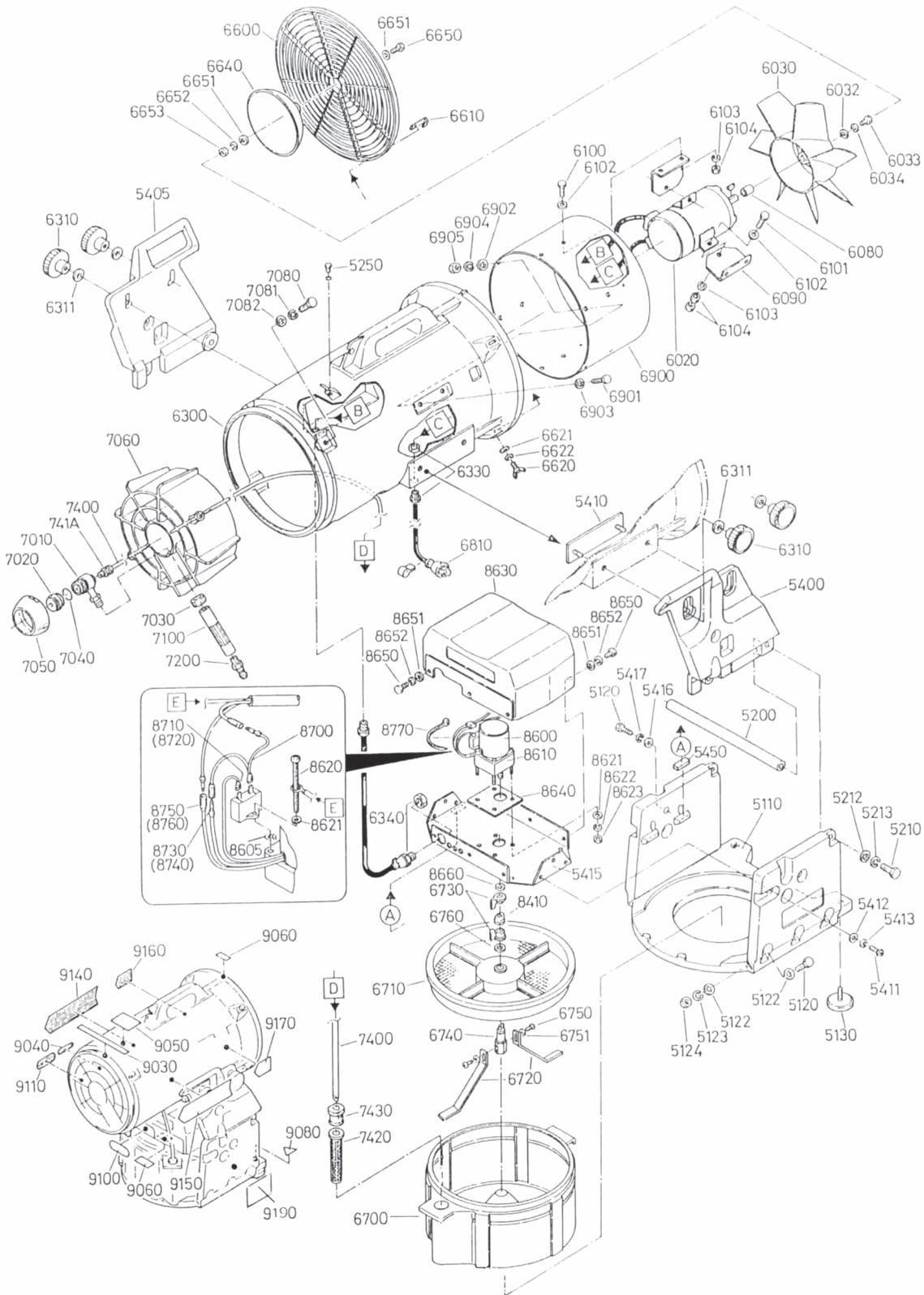
REF #	PART NUMBER	DESCRIPTION	QTY
1	LC1K0910-U7(LR2K0314)	Contactor & Relay	2
2	3251	Strain Relief	1
3	5TF2LGN-2	Green Pilot Light	1
4	5TF2LAN-2	Amber Pilot Light	1
5	5TF2LRN-2	Red Pilot Light	1
6	8463	1/2 Nylon Nut	1
7	91-0003	Toggle Switch	2
8	C1131//28	Switch Boot	2
9	D11203	Control Panel	1
10	HBL4560	Receptacle	1
11	HTB-261	Fuse Holder	1
12	SUL-189-H	24 Hour Timer	2

LVH Plumbing Assembly



REF #	PART NUMBER	DESCRIPTION	QTY
1	116-BX04	1/4" Elbow	1
2	127-B-04	1/4" Male Run Tee	1
3	268-P-06X04	1/4 NPT X 3/8 Tube	1
4	270-P-06X04	1/4 NPT X 3/8 Tube Elbow	1
5	42068	1/4 Elbow	3
6	4568K144	1/4 X 8" Brass Nipple	2
7	46987	1/4 X 2 Brass Nipple	1
8	5A707	Relief Valve	1
9	66P	3/8 Tubing	1
10	7016 2 1/2	Pressure Gauge	1
11	9Z717	Compressor 220 Volt	1
12	AIR FILTER	Air Filter	1
13	BHOE	Male Quick Disconnect	1

LVH Fogger Head Assembly



LVH Fogger Head Parts List

REF #	PART NUMBER	DESCRIPTION	QTY
5110	D7525051101	Frame	1
5120	9101R08025	Bolt	8
5122	9162S08000	Washer	16
5123	9163S08000	Spring Washer	8
5124	9140R08000	Nut	8
5130	D7513051301	Adjuster Knob	2
5200	D752905200	Bar	1
5210	9101R10025	Bolt	2
5212	9162S10000	Washer	2
5213	9163S10000	Spring Washer	2
5250	D752505250	Plug	1
5400	D7529054001	Bracket L	1
5405	D7529054051	Bracket R	1
5410	D752905410	Bolt of Body Holder	2
5411	9130R06020	Screw	4
5412	9162S06000	Washer	8
5413	9163S06000	Spring Washer	4
5414	9140R06000	Nut	4
5415	D752905415	Bracket	1
5450	D752505450	Spacer	4
6020	D753046020	Fan Motor	1
6030	D750876030	Fan	1
6031	9162S12000	Washer	1
6032	9162S06000	Washer	10
6033	9101R06012	Bolt	7
6034	9163S06000	Spring Washer	10
6050	9455RC040	Terminal	4
6060	9456B10M00	Terminal	1
6080	D752906920	Collar	1
6090	D752506090	Bracket	3
6101	9101R06016	Bolt	3
6104	9140R06000	Nut	18
6300	D7529063001	Case	1
6310	D752906310	Knob	4
6311	D751306314	Washer	4
6330	B090413460	Bushing	2
6340	B080013450	Cap Complete	1
6600	D750986600	Fan Guard	1
6610	D7529066101	Holder for Fan Guard	4
6620	D752507130	Bolt	4
6621	9162S05000	Washer	4

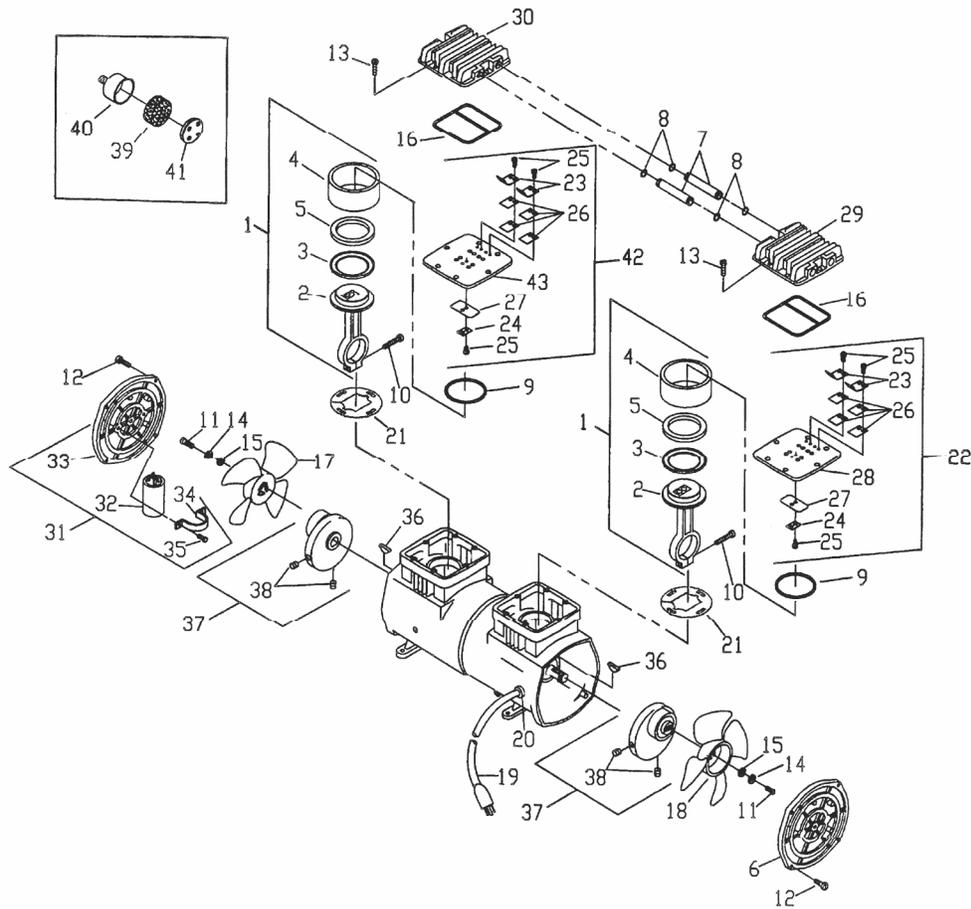
LVH Fogger Head Parts List

REF #	PART NUMBER	DESCRIPTION	QTY
6622	9163S05000	Spring Washer	4
6640	D752906640	Cap	1
6650	9101R06020	Bolt	7
6651	9162S06000	Washer	14
6652	9163S06000	Spring Washer	7
6653	9140R06000	Nut	7
6700	J750A4	Tank Assembly	1
6710	D7513067101	Strainer	1
6720	D7513067201	Agitator	2
6730	D751306730	Joint	2
6740	D750896740	Shaft	1
6750	9130R04010	Screw	4
6751	9162S04000	Washer	4
6760	D751306760	Adjust Spacer	1
6810	D751307210	Coupler	1
6900	D752906900	Fan Case	1
6901	9101R06020	Bolt	6
6902	9162S06000	Washer	12
6903	9163S06000	Spring Washer	6
700A	D75130700A2	Nozzle Base Assembly	1
741A	D75130741A	Adapter Assembly	1
7010	D7513070102	Nozzle Base	1
7020	D7513070201	Cap	1
7030	D751307030	Nut	1
7040	9203B15025	O-Ring	1
7050	D7513070501	Cap	1
7060	D752907060	Resonance Box Rear	1
7080	9101R08016	Bolt	2
7081	9162S08000	Washer	2
7082	9163S08000	Spring Washer	2
7100	D750907100	Connection Pipe	1
7400	9376A02070	Tube	1
7410	D751307410	Adapter Body	1
7420	D7513074201	Strainer	1
7430	D751307430	Stopcock	1
7440	9377A0200S	Adapter Sleeve	1
7450	9377A0200N	Adapter Nut	1
7460	9201H15006	O-Ring	1
8410	D750998410	Metal For Shaft	1
8600	D753048600	Motor	1
8605	9164S04000	Screw	4

LVH Fogger Head Parts List

REF #	PART NUMBER	DESCRIPTION	QTY
8610	D750998610	Gear Case	1
8620	9130R04045	Screw	4
8621	9162S04000	Washer	8
8622	9163S04000	Spring Washer	4
8623	9140R04000	Nut	4
8630	D752908630	Cover	1
8640	D752908640	Gasket	1
8650	9101R06012	Bolt	6
8651	9162S06000	Washer	6
8652	9163S0600	Spring Washer	6
8660	D750998660	Gasket	1
8700	D752508700	Cable Assembly	1
8710	9456B20G00	Terminal	1
8720	9457AG0100	Cap	1
8730	9456B10M00	Terminal	1
8740	9457AM0500	Cap	1
8750	9456B10F00	Terminal	1
8760	9456AF0900	Cap	1
8770	9335A02000	Lock Band	1
9530	D751309530	Cylinder	1
9540	D751309540	Agitator Bar	1
9590	D7525095901	Duct Band	1
7400	9376A02070	Tube	1
7410	D751307410	Adapter Body	1
7420	D7513074201	Strainer	1
7430	D751307430	Stopcock	1

LVH Compressor Assembly



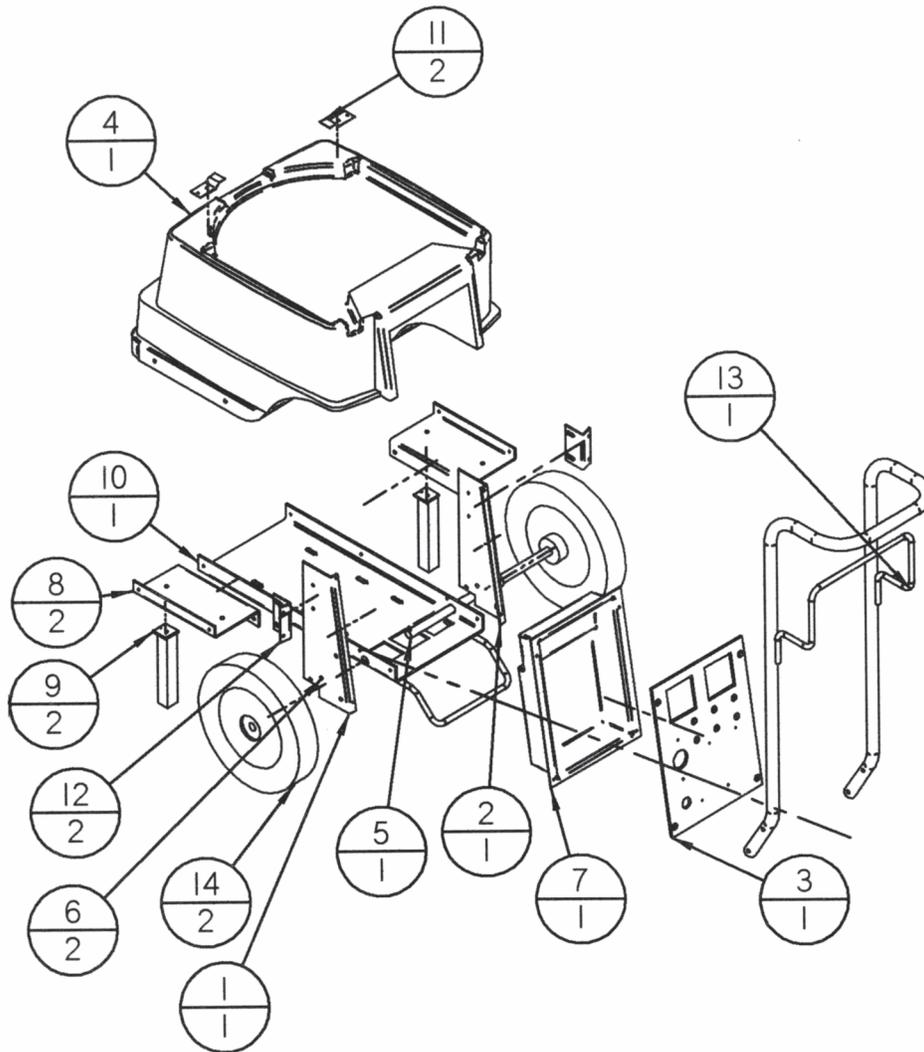
MODEL #	PART NUMBER	DESCRIPTION
2807CE72	608602	Stator w/Sleeve Assy. (Not Shown)

KEY	PART #	COMPONENT PART	DESCRIPTION	QTY
1	666888		Connecting Rod Assy.	2
2		607206	Connecting Rod	2
3		614557	Piston Cup	2
4		618110	Piston Sleeve	2
5		626521	Retainer-Piston Cup	2
6	614509		Front Cover	2
7	625623		Connector Tube	2
8	623122		O-Ring - Connector Tube	4
9	623638		O-Ring - Valve Plate	2

LVH Compressor Parts List

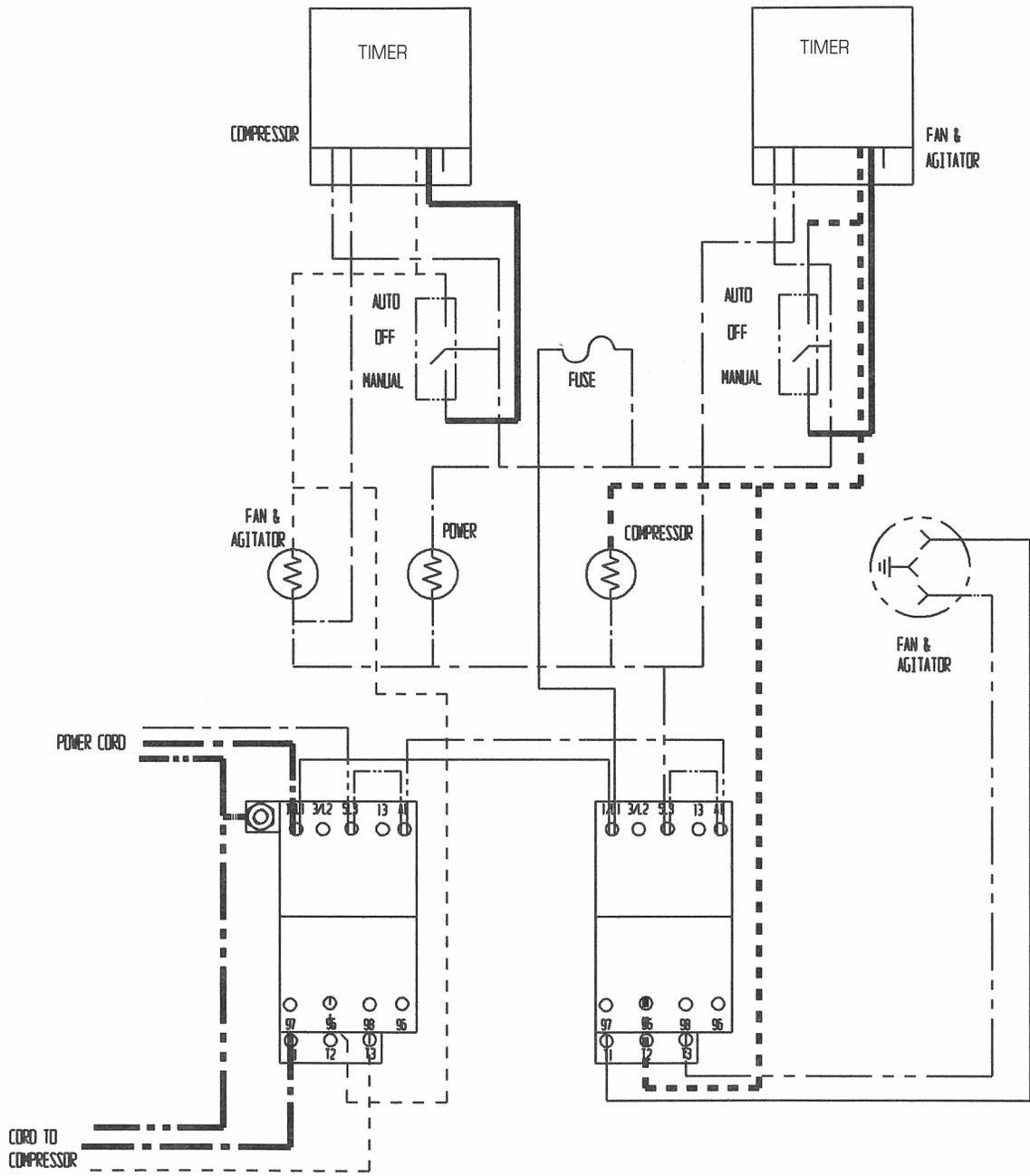
KEY	PART #	COMPONENT PART	DESCRIPTION	QTY
10	625114		Screw - Connecting Rod	2
11	625354		Screw - Fan	2
12	625448		Screw - Front Cover	8
13	625646		Screw - Head	12
14	626509		Lockwasher - Fan	2
15	626563		Washer - Fan/Cap Brkt	4
16	638760		O-Ring Gasket - Head	2
17	688716		Fan - White	2
18	933810		Fan - Black	1
19	633903		Cord Assembly	1
20	633904		Strain relief	1
21	638415		Dust Shield	2
22	662526-504		Valve Plate Assy.	1
23		617124	Valve Flapper Restraint	4
24		617135	Valve Keeper Strip	2
25		625446	Screw - Valve Flapper	12
26		656708	Valve Flapper - Exhaust	8
27		656887	Valve Flapper - Intake	2
28		662519-504	Valve Plate	1
29	661117-504		Head	1
30	661118-504		Head	1
31	662369		Front Cover Assembly	1
32		603159	Capacitor - 30 Mfd	1
33		614639	Front Cover	1
34		617443	Capacitor Bracket	1
35		625434	Screw - Bracket	2
36	626618		Woodruff Key	2
37	667174		Ecc. & Bearing Assy.	2
38		625008	Set Screw - Eccentric	2
39	641010		Filer	1
40	660776		Filter Body	1
41	660803		Filter Body Cap	1
42	656284-504		Valve Plate Assy.	1
43		662214-504	Valve Plate	1

LVH & SLVH Assembly



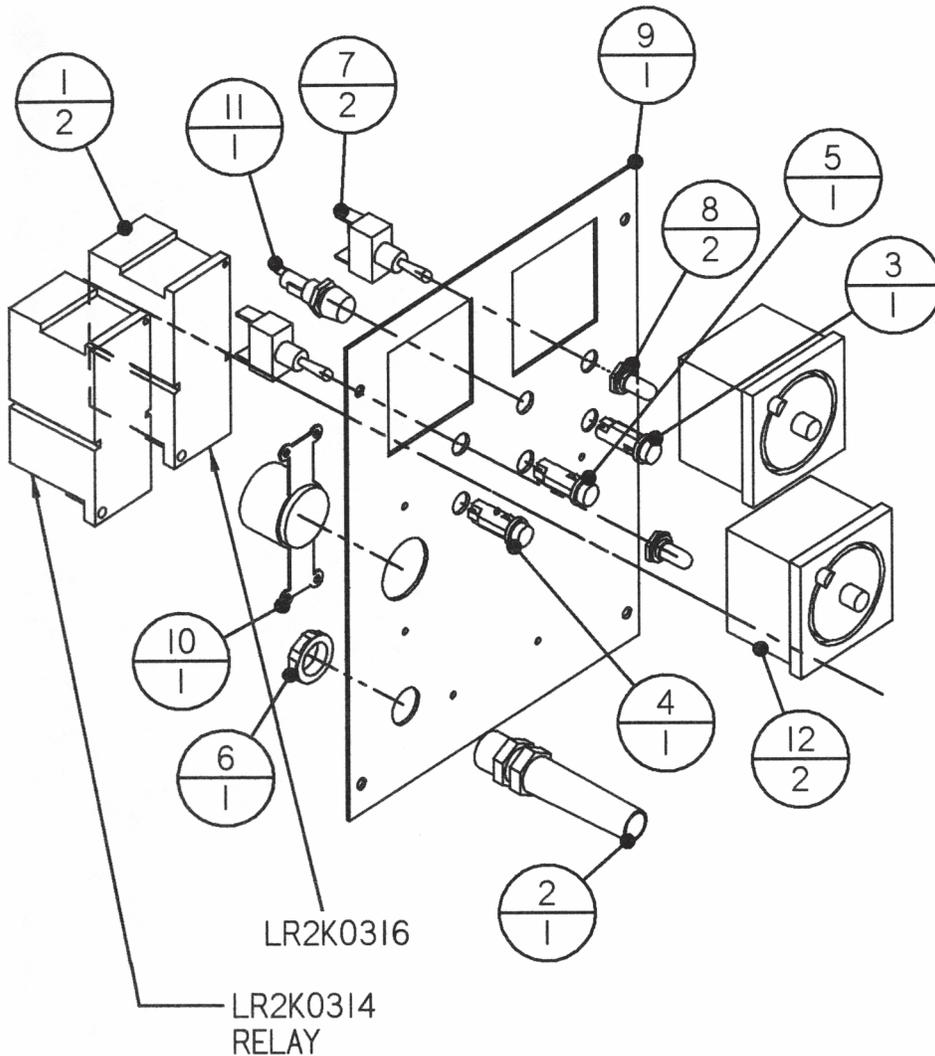
REF #	PART NUMBER	DESCRIPTION	QTY
1	D11202	Panel Support	1
2	D11202A RH	Panel Support	1
3	D1103	Control Panel	1
4	D11208	Cover	1
5	D11213	Axle	1
6	D11214	Spacer	2
7	D11218	Electrical Cover	1
8	D11220	Wing	2
9	D11223	Leg Assembly	2
10	D11239	Bottom Channel	1
11	D11240	Hold Down	2
12	D11242	Cover Support	2
13	D11246	Handle Assembly	1
14	SN10275-OP 5/8	10 X 2 Wheel	2

LVH & SLVH Wiring Diagram



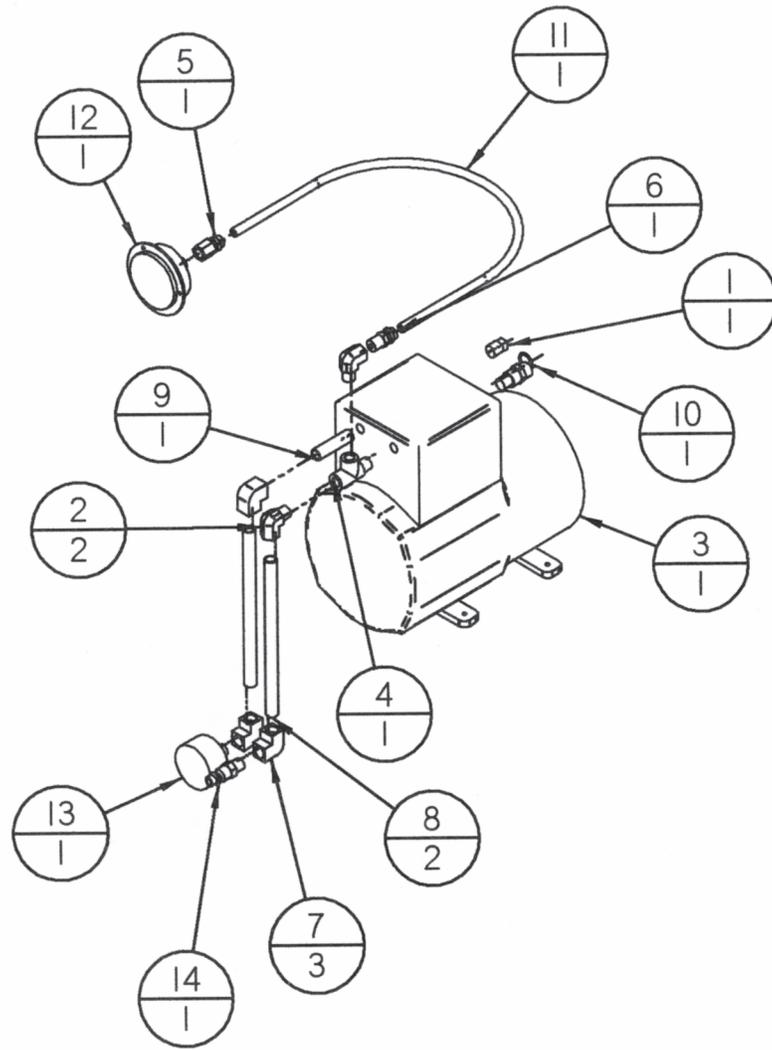
WIRE COLORS	
— · · · —	GREEN
— · · —	BLACK
- - - - -	GRAY
— — — — —	BLUE
— — — — —	RED
- - - - -	ORANGE
— — — — —	YELLOW
- - - - -	WHITE

SLVH Control Panel Assembly



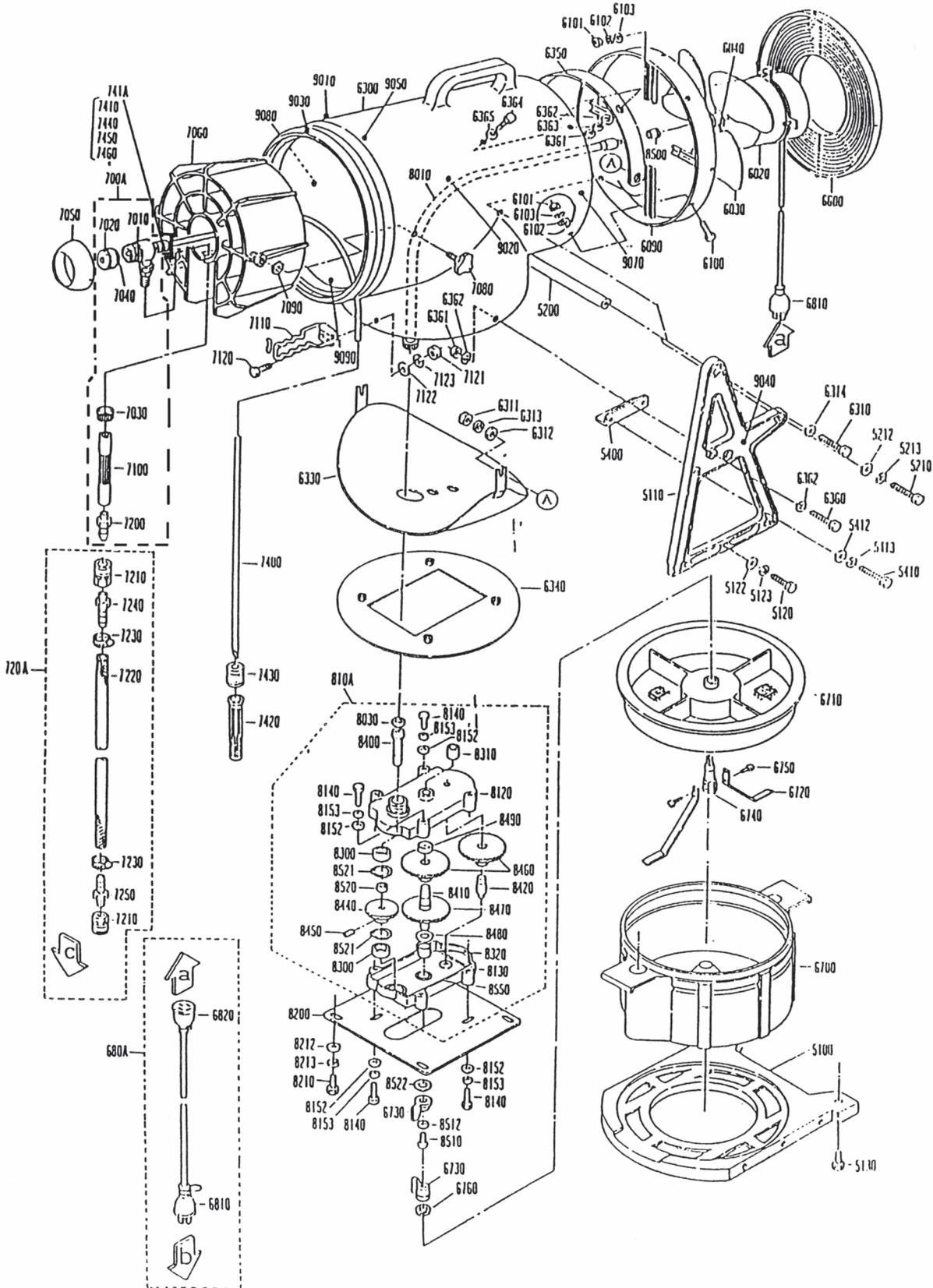
REF #	PART NUMBER	DESCRIPTION	QTY
1	LC1K0910-F7	Contactor & Relay	2
2	3251	Strain Relief	1
3	5TF2LAN-1	Pilot Light 120V amber	1
4	5TF2LGN-1	Pilot Light 120V green	1
5	5TF2LRN-1	Pilot Light 120V red	1
6	8463	1/2 Nylon Nut	1
7	91-0003	Toggle Switch	2
8	C1131//28	Switch Boot	2
9	D11203	Control Panel	1
10	HBL4710	Receptacle	1
11	HTB-261	Fuse Holder	1
12	SUL-189-H	24 Hour Timer	2

SLVH Plumbing Assembly



REF #	PART NUMBER	DESCRIPTION	QTY
1	109-B-04	1/4" Plug	1
2	116-BX04	1/4" Elbow	2
3	1208PK80	Compressor 120 Volt	1
4	127-B-04	1/4" Male Run Tee	1
5	266P06X04	1/4 NPTF X 3/8 Tube	1
6	268-P-06X04	1/4 NPT X 3/8 Tube	1
7	42068	1/4 Elbow	3
8	4568K144	1/4 X 8" Brass Nipple	2
9	46987	1/4 X 2 Brass Nipple	1
10	5A707	Relief Valve	1
11	66P	3/8 Tubing	1
12	7016 2 1/2	Pressure Gauge	1
13	AIR FILTER	Air Filter	1
14	BHOE	Male Quick Disconnect	1

SLVH Fogger Head Assembly



SLVH Fogger Head Parts List

REF #	PART NUMBER	DESCRIPTION	QTY
5100	D7513051001	Bottom Plate	1
5110	D751305110	Frame	2
5120	9101R08030	Bolt	6
5122	9162S08000	Washer	6
5123	9163S08000	Spring Washer	6
5130	D751305130	Adjuster	2
5200	D751305200	Lever	1
5210	9101R10035	Bolt	2
5212	9162S10000	Washer	2
5213	9163S10000	Spring Washer	2
5400	D751305400	Supporter	2
5410	9101R06020	Bolt	4
5412	9162S06000	Washer	4
5413	9163S06000	Spring Washer	4
6020	D7513660201	Fan Motor	1
6030	D7513060301	Fan	1
6040	D761306040	Bolt	1
6090	D7513060902	Bracket SUS304	1
6100	9101R06020	Bolt	8
6101	9140R06000	Nut	8
6102	9162S06000	Washer	12
6103	9163S06000	Spring Washer	8
6300	D751306300	Wind Channel	1
6310	9101R08040	Bolt	2
6311	9140R08000	Nut	2
6312	9162S08000	Washer	2
6313	9163S08000	Spring Washer	2
6314	D751306314	Washer	2
6330	D751306330	Bottom Plate (Blind)	1
6340	D7513063401	Bottom Plate	1
6350	D7513063501	Plate SUS304	1
6360	9101R08030	Bolt	2
6361	9140R08000	Nut	4
6362	9162S08000	Washer	8
6363	9163S08000	Spring Washer	4
6364	9101R08030	Bolt	2
6365	D751306314	Washer	2
6600	D751306600	Fan Guard	1
6700	D751306700	Tank	1
6710	D7513067101	Strainer	1
6720	D7513067201	Agitator	2
6730	D751306730	Joint	2

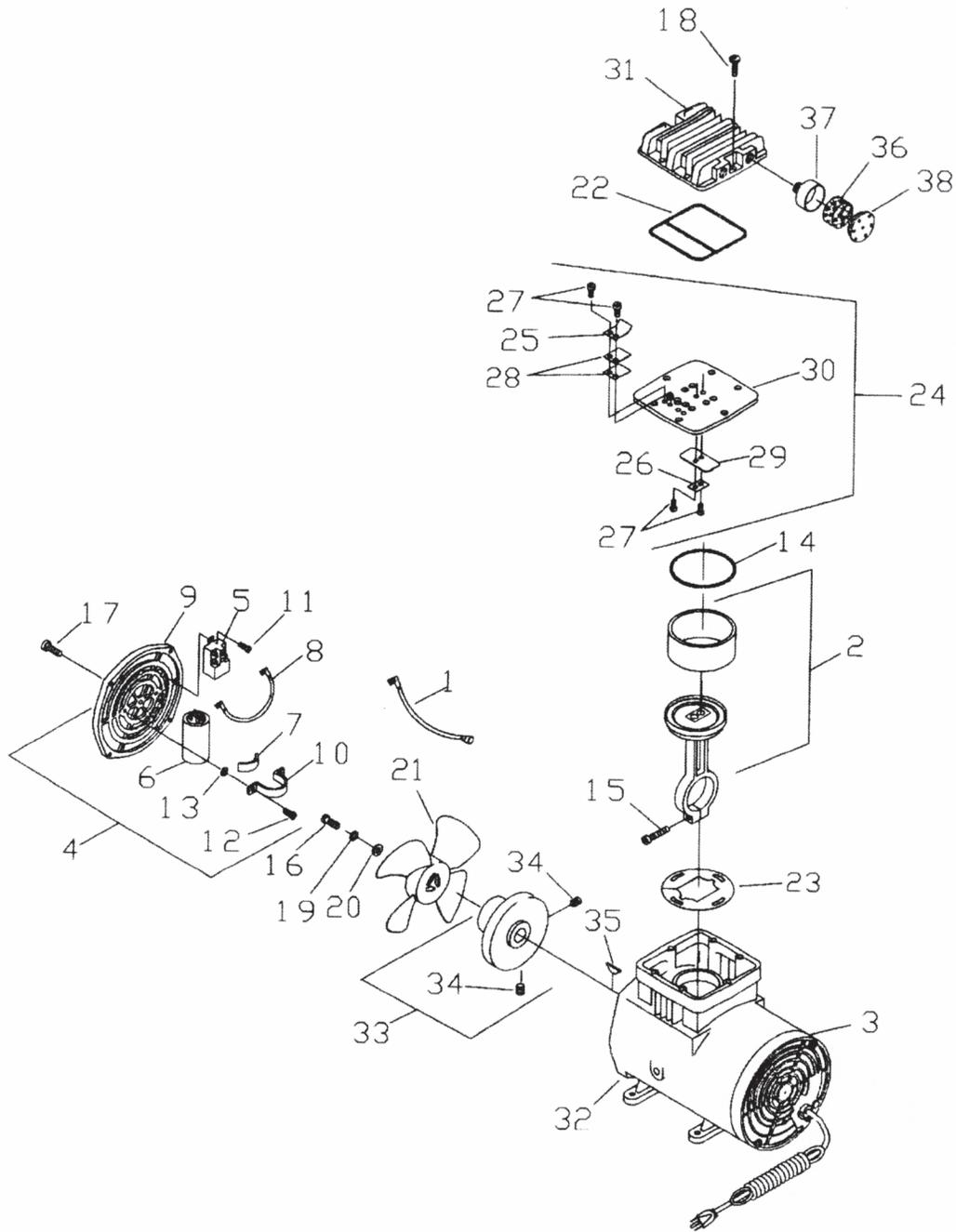
SLVH Fogger Head Parts List

REF #	PART NUMBER	DESCRIPTION	QTY
6740	D751306740	Shaft	1
6750	9130R04010	Screw	4
6760	D751306760	Spacer	1
680A	D75133680A1	Cabtyre Assembly 1.25	1
6810	D751336810	Plug 2P, 15A	1
6820	D751336820	Connector 2P, 15A	1
700A	D751367000A	Nozzle Assembly (SLV)	1
7010	D751367101	Nozzle Base	1
7020	D7513670201	Cap	1
7030	D751307030	Lock Nut	1
7040	9203B15025	O-Ring S-25	1
7050	D7513070501	Cap	1
7060	D751307060	Resonance Box	1
7080	D751307080	Knob Bolt	2
7090	9165S08000	Toothed Washer	3
7100	D751307100	Connection Pipe	1
7110	D751307110	Support	1
7120	9101R06020	Bolt	2
7121	9140R06000	Nut	2
7122	9162S06000	Washer	2
7123	9163S06000	Spring Washer	2
720A	D75130720A	Air Hose Assembly	1
7200	D751307200	Male Quick Connector Coupler	1
7210	D7513072010	Female Quick Connector Coupler	2
7220	9409B0810M	Hose	1
7230	9213B15000	Ferrule	2
7400	9375A02050	Tube	1
741A	D75130741A	Adapter Assembly	1
7410	D751307410	Adapter Body	1
7420	D7513074201	Strainer	1
7430	D751307430	Stopcock	1
7440	9377A0200S	Adapter Sleeve	1
7450	9377A0200N	Adapter Nut	1
7460	9201H15006	O-Ring P-6	1
8010	D7513080101	Flexible Shaft	1
8030	D751308030	Gasket	1
810A	D7513081201A	Gear Case Assembly	1
8120	D7513081201A	Gear Case Upper	1
8130	D7513081301	Gear Case Lower	1
8140	9101R06035	Bolt	4
8152	9162S06000	Washer	4
8153	9163S06000	Spring Washer	4

SLVH Fogger Head Parts List

REF #	PART NUMBER	DESCRIPTION	QTY
8200	D7513082001	Gear Base	1
8210	9101R06020	Bolt	4
8212	9162S06000	Washer	4
8213	9163S06000	Spring Washer	4
8300	D751308300	Ball Bearing	2
8310	D751308310	Bushing	1
8320	D751308320	Bushing	1
8400	D7513084001	Shaft	1`
8410	D751308410	Shaft	1
8420	D751308420	Shaft	1
8440	D751308440	Gear	1
8450	9134S04006	Set Screw	1
8460	F200005710	Gear	2
8130	D7513081301	Gear Case Lower	1
8140	9101R06035	Bolt	4
8152	9162S06000	Washer	4
8153	9163S06000	Spring Washer	4
8200	D7513082001	Gear Base	1
8210	9101R06020	Bolt	4
8212	9162S06000	Washer	4
8213	9163S06000	Spring Washer	4
8300	D751308300	Ball Bearing	2
8310	D751308310	Bushing	1
8320	D751308320	Bushing	1
8400	D7513084001	Shaft	1`
8410	D751308410	Shaft	1
8420	D751308420	Shaft	1
8440	D751308440	Gear	1
8450	9134S04006	Set Screw	1
8460	F200005710	Gear	2
8130	D7513081301	Gear Case Lower	1
8140	9101R06035	Bolt	4
8152	9162S06000	Washer	4
8153	9163S06000	Spring Washer	4
8200	D7513082001	Gear Base	1
8210	9101R06020	Bolt	4

SLVH Compressor Assembly



ITEM	DELETE	ADD	DESCRIPTION	QTY
24	662525-540	662528	Valve Plate Assembly - Black	1

SLVH Compressor Parts List

KEY	PART #	COMPONENT PART	DESCRIPTION	QTY
1	604128		Lead Wire (Brown)	1
2	666889		Connecting Rod Assy.	1
3	614596-504		Motor End Cap Assy. - Grey	1
4	614770		Front Cover Assembly	1
5		602215	Relay - 115V 60Hz	1
6		603021	Capacitor	1
7		604127	Foam Strip	1
8		604286	Lead Wire Assy. - Blue	1
9		614509	Front Cover	1
10		617136	Capacitor Bracket	1
11		625245	Screw - Relay	2
12		625434	Screw - Capacitor Bracket	2
13		626563	Washer	2
14	623638		O-Ring - Valve Plate	1
15	625114		Screw - Connecting Rod	1
16	625354		Screw - Fan	1
17	625448		Screw - Front Cover	4
18	625646		Screw Head	6
19	626509		Lockwasher	1
20	626563		Washer - Fan	1
21	633718		Fan	1
22	638760		O-Ring Head	1
23	638415		Dust Shield	1
24	662525-504		Valve Plate Assembly - Grey	1
25		617124	Valve Flapper Restraint	2
26		617135	Valve Keeper Strip	1
27		625446	Screw - Valve Flappers	6
28		656708	Valve Flapper	4
29		656887	Valve Flapper	1
30		662518-504	Valve Plate - Grey	1
31	661218-504		Head - Grey	1
32	661430-504		Housing - Grey	1
33	667176		Eccentric & Bearing Assy.	
34		625008	Set Screw	1
35	626618		Woodruff Key	1
36	641010		Filter	1
37	660776		Filter Body	1
38	660803		Filter Body Cap	1

Troubleshooting

PROBLEM	CAUSE	SOLUTION
<ul style="list-style-type: none"> • Spray pattern exits nozzle in short bursts. Should exit as a steady stream. 	<ul style="list-style-type: none"> • The nozzle cap is not secure or properly lined up. • The nozzle cap has an O-Ring inside which may be damaged • Suction tube is clogged or damaged • The nozzle may be clogged with foreign material. • The suction tube is above the surface of the solution in the tank. • Suction tube strainer is clogged. • Moisture in the air line may restrict spraying. 	<ul style="list-style-type: none"> • Screw it on completely and then turn the cap counterclockwise so the two check marks on the nozzle line up. • Replace the O-Ring if it is cracked, broken or in some way damaged. • Inspect the suction tube for clogging or damage. To remove the suction tube from the nozzle first loosed the nut that holds the tube to the nozzle. Now- pull the tube out of the nozzle. Notice the metal sleeve on the tube, inspect it carefully. In most cases the sleeve must be replaced as it is damaged, dented, bent or cracked. <p>*Note: Spray clear water through the machine and with a gloved hand, cover the nozzle tip. This reverses the flow of air and blows the suction tube clear of any debris. Do not over tighten nut.</p> <ul style="list-style-type: none"> • Clean the inside of the nozzle. • Make sure the suction tube is pushed down completely. • Clean it thoroughly. •Clean air hose. Refer to cleaning
<ul style="list-style-type: none"> • No spray exits the nozzle 	<ul style="list-style-type: none"> • Insufficient air flow from the compressor may be caused by clogged piping or dirty air filter(s). • Suction tube is not connected properly or is damaged and leaking air into the nozzle which disrupts the venturi effect. 	<ul style="list-style-type: none"> • Check the piping and clean dirty filters • Replace the suction tube and its connector.

Troubleshooting

PROBLEM	CAUSE	SOLUTION
<ul style="list-style-type: none"> • Pressure gauge reads too low 	<ul style="list-style-type: none"> • Piston and piston ring in compressor are worn out. • Pressure gauge may be defective or broken. 	<ul style="list-style-type: none"> • Replace both. • Replace it.
<ul style="list-style-type: none"> • Pressure gauge reads too high 	<ul style="list-style-type: none"> • Piping is clogged. • Clogged nozzle or nozzle cap will cause pressure to rise. 	<ul style="list-style-type: none"> • Check entire piping for obstructions and replace any defective or clogged sections. • Clean thoroughly.
<ul style="list-style-type: none"> • Abnormal noise or vibration 	<ul style="list-style-type: none"> • Anchor bolts are loose causing vibration. • Compressor set-up vibrates due to unstable position. 	<ul style="list-style-type: none"> • Re-tighten bolts and nuts. • Set the compressor on stable ground when operating.

