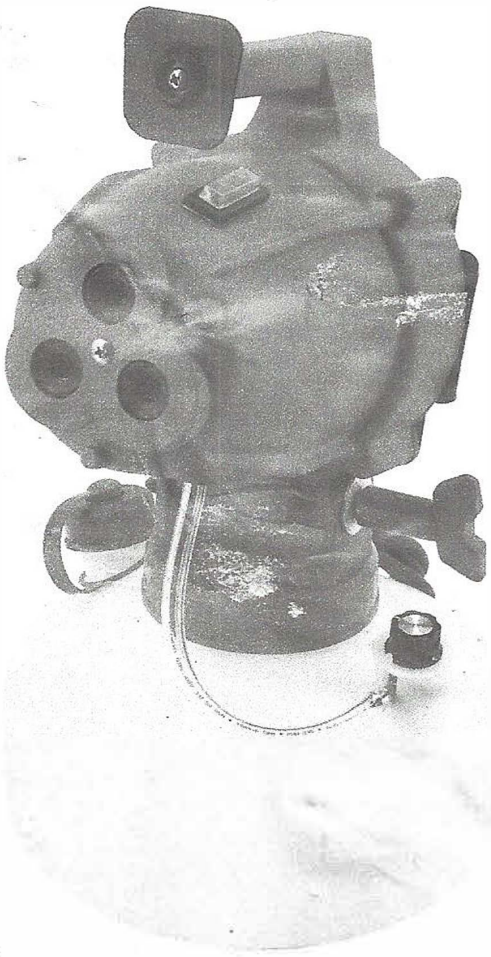
Gencle™

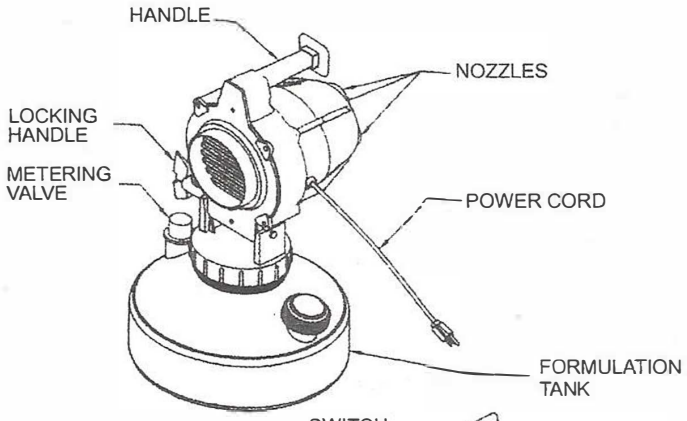
# ELECTRIC COLD-SPRAYER

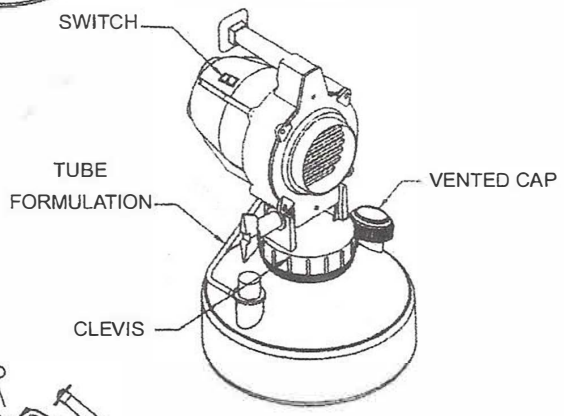
**ULV/MIST SPRAYER**

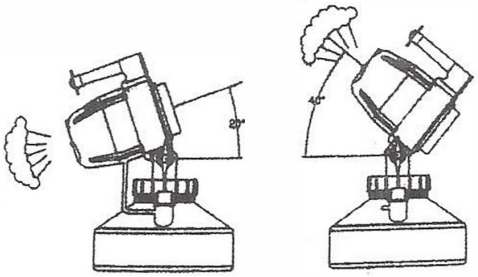


GOOD QUALITY, BETTER LIFE!

# MAJOR COMPONENTS



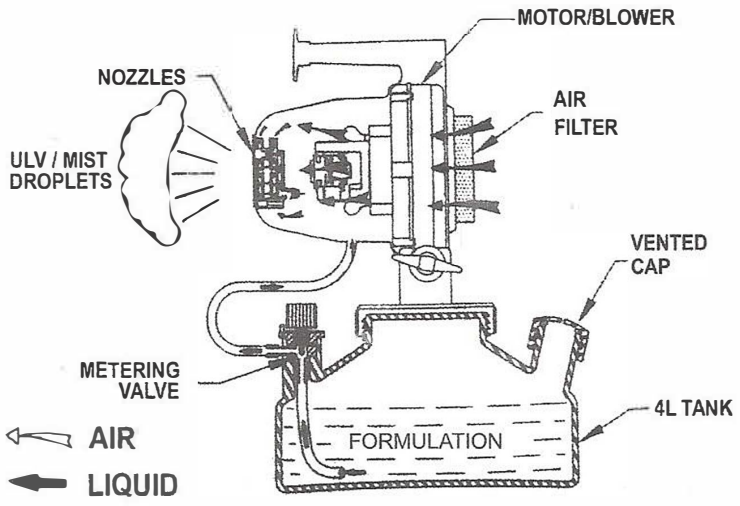
## NOZZLES DIRECTION

The machine allows adjusting the angle in a 60˚ range, up to 40˚ above horizontal, and -20˚ below horizontal. Use the Locking Handle to adjust the angle.

# WORKING PRINCIPLES

The machine consists of a motor/blower assembly, a nozzle system, nozzle housing, a formulation tank and a metering valve, The various components are identified in a diagram below. The blower is a single stage/centrifugal impeller/axial flow driven by a universal motor operating at a speed of about 20,000 RPM. The blower moves a large amount of air through the nozzle system consisting of three individual nozzles, each of which has two sets of directing vanes. One vane set causes the air to be rotated clockwise and the other causes forces shears the material being dispensed into small particles. Further, the air rushing by the specially shaped liquid tubes creates a negative pressure in the liquid tube. This negative pressure causes the liquid to be drawn from the formulation tank through the control valve and into the nozzle system where it is pneumatically sheared into aerosol or mist size droplets, After break-up, the droplets are driven away from the machine by the air passing through the nozzle system.

**Generally, the size of the output droplets increases with increasing flow rate and with increasing viscosity.**




FLUID SYSTEMS DIAGRAM

# SAFETY PRECAUTIONS

## WARNING

READ AND UNDERSTAND THESE SAFETY PRECAUTIONS BEFORE OPERATING MACHINE. FAILURE TO PROPERLY FOLLOW THESE PRECAUTIONS MAY LEAD TO A FIRE, EXPOSION OR ELECTRIC SHOCK HAZARD.

1. **ELECTRIC POWER.** This machine uses electrical power at common commercialty available voltages. When directly contacted, such voltages are hazardous to human life. All precautions commonly applicable to the use of the electric power general are applicable to the use of this machine. This machine is designed to operate from three wire power systems where one of the wires is a safety ground. Do not disconnect the safety ground or use extension cords or "cheater" plugs to connect this machine to a two-wire system. This defeats the purpose of the safety ground and may result in a hazardous electrical shock condition.

   When making repairs on the machine, use an area or work bench that is dry and not electrically conductive. Dry natural wood and plastics are generally non-conductive at the working voltages of this machine. Metals are usually conductive. Do not probe inside the machine.

   Extension cords must be properly sized and rated for the voltage, current and length of an individual cord. Consult the nameplate current and voltage rating of your machine and the marked rating of the extension cord. A single extension cord only should be used. When two or more extension cord are placed in series, the rated current carrying capacities of the cords may no longer be valid If an extension cord gets warm to the touch, discontinue its use and obtain a cord with a higher current rate. Improper extension cords are not only hazardous, but may result in poor machine .performance due to excessive voltage drop. Finally, since the machine uses oil-based formulation, the extension cord should be rated as oil resistant.

2. **FORMULATIONS.** Many formulations are combustible; that is, they all can be caused to burn. This is true of even high flash point or "no" flash point formulation (fine particle dust in a grain mill has "no" flash point). A combustible liquid vapor can more easily be ignited because it more readily form a uniform mixture with the air which contains the Oxygen needed for combustion. However, fine particles of combustible liquids or solid suspended in the air very closely spaced are capable of propagating flame from one to another once an ignition starts. A good analogy is the grain mill explosion. Although the fine particle dust in a grain mill has "no" flash point, the phenomena of the grain mill explosion is an all too common occurrence.

Where a high flash point or "no" flash point liquid formulation will ignite far less readily than a low flash point liquid and for this reason is strongly advocated .The higher or "no" flash point formulation can ignite if the proper conditions exist. These conditions are basically two: 1. A sufficiently volume of liquid in the form of fine particles suspended in the air; and 2. A sufficiently high energy source of ignition.

3. **AEROSOL CONCENTRATION.** It has been fully established that an acceptable level of liquid in the atmosphere is one gallon per 50,000 cubic feet (2.7 Liter per 1,000 cubic meters). There is a safety margin of at least 5 to 1 in this figure

4. **AEROSOL IGNITION.** If a combustible atmosphere is established or a combustible deposit is laid down, a source of ignition may cause a fire. Sources of ignition can be gas or oil pilot lights or sparks from electrical controls. Therefore, it is strongly recommended that all such sources be eliminated by extinguishing all pilot lights and turning off all unnecessary electric power. To avoid danger of fire or explosion in an enclosed space, the enclosed volume fogging time and required formulation volume should be carefully calculated.

## PROPER AND IMPROPER USE.

The following rules apply to the operation of this machine:

### DO

Read the entire manual before operating the machine and pay particular attention to all CAUTIONS and WARNINGS.

Store formulation in its original labeled container.

Use an extension cord which is propedy rated for voltage, current and length and which is free from nicks, cracks and other signs of prior abuse. For lengths up to 100 feet (30.5 meters) cord No. 12AWG wire are usually adequate.

Replace damaged or worn electric cord immediately.

Turn the flow valve CLOCKWISE to the OFF position after each spray application while the motor is still operating to allow clearing of the lines. This will also prevent a siphon effect if the unit is ever accidentally knocked over with the valve remaining open.

Always comply with any requirements for protective clothing, goggles, gloves, facial masks or respirator required by the formulation label.

Ensure that formulation are applied only in strict compliance with the formulation label as well as local State and Federal regulations.

## DO NOT

Do not Spray flammable liquids near open flame or other source of ignition.

Do not Use a machine that is broken or damaged in any way.

Do not Alter the machine by adding or removing parts.

Do not Restrict the motor blower inlet area.

Do not Tamper with the output nozzle.

Do not Allow the machine to operate unattended.

Do not Apply more than one gallon of formulation per 50,000 cubic feet (2.7 Liters per 1,000 cubic meters) enclosed space. Exceeding this concentration is both hazardous and wasteful.

## MAINTENANCE

1. Periodically clean the formulation tank using a hot water/detergent solution. Fully open the machine valve and operate the machine for 3 to 5 minutes, flushing the solution through the valve, lines and nozzle.

2. Examine the electrical cord for evidence of damage and replace any damaged cord immediately.

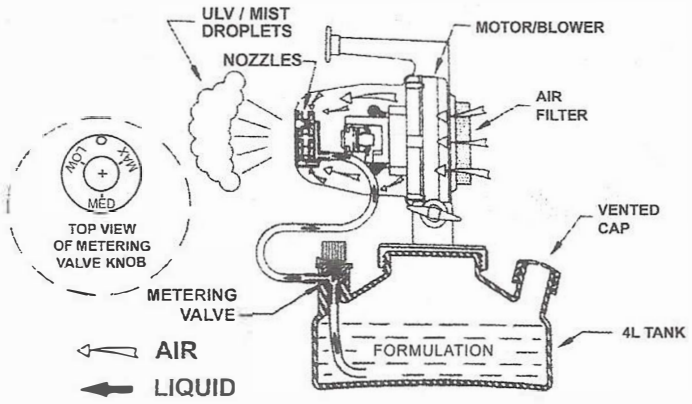
3. After 400-500 hours of operation, carefully remove the blower assembly and examine the brushes and the commutator bars of the blower motor. If brushes show excessive wear or damage, replace the blower assembly (see ITEM #24, page 10).

4. If it becomes necessary to disassemble the Machine Flow Valve for cleaning, be careful not to enlarge the metering orifice or damage the taper of the valve steam, as this will affect the calibration of the machine.

# FLOW RATE

Turning the Knob of the Metering Valve regulates the Flow Rate. If the knob is rotated clockwise, the flow rate will be reduced. If the knob is rotated counterclockwise, the flow rate will be increased.

AS reference, the average flow rate is shown in the bottom table at three different positions of the Metering Valve knob when using water.



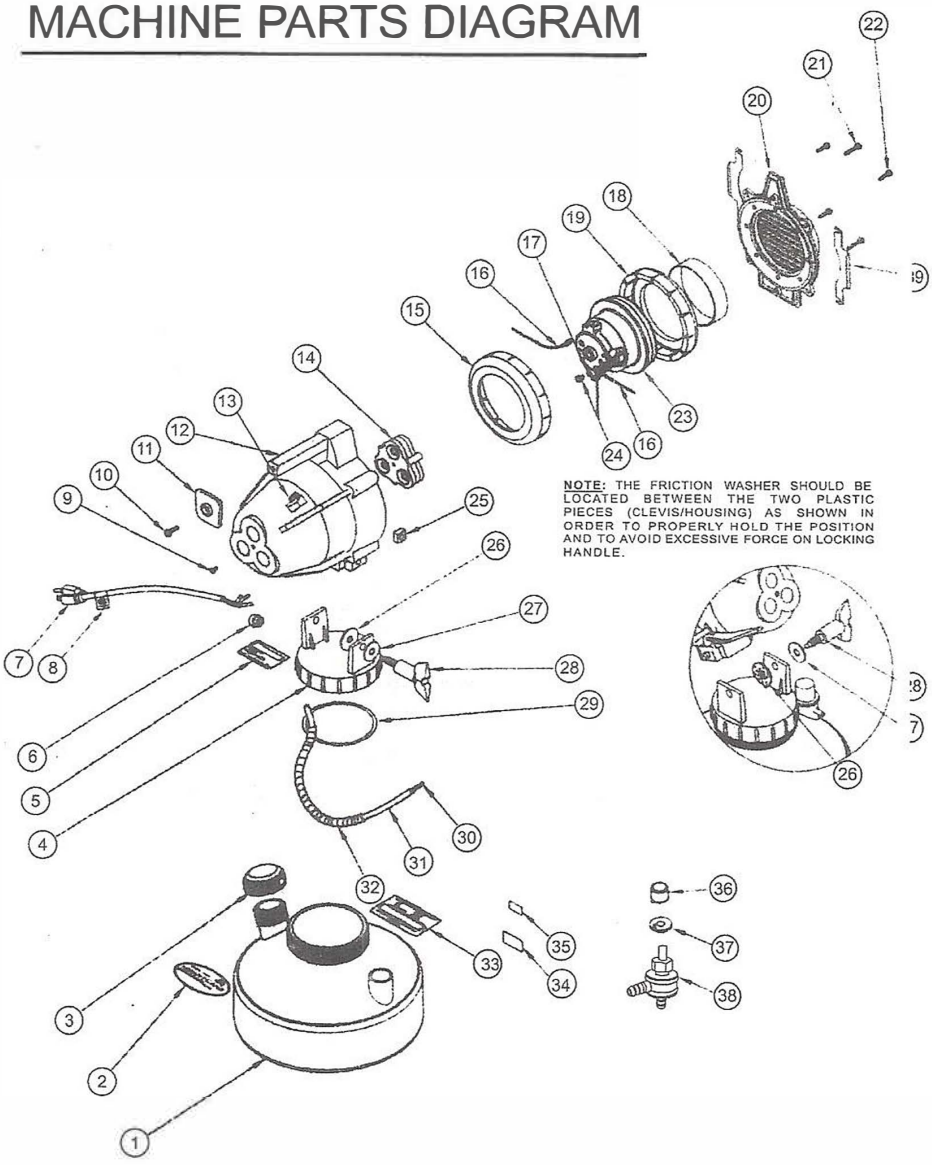

| METERING VALVE SETTING | FLOW RATE AND DROPLET SIZE | | | |
|---|---|---|---|---|
| | FLOW RATE | | | DROPLET SIZE |
| | ML/MIN | L/H | GPH | MICRONS - VOLUME MEDIA DIAMETER |
| LOW (*) | 70 | 4.2 | 1.1 | 14 MICRONS |
| MED (*) | 225 | 13.2 | 3.6 | 20 MICRONS |
| MAX (*) | 330 | 19.8 | 5.2 | 25 MICRONS |

***CAUTION**: Read and follow the instructions on the formulation manufacturer's label and in the operation manual*

**IMPORTANT:** This device is designed to dispense formulations in a SPRAY (Cold Fog) .or MIST. Many of the formulations which may be dispensed with this machine require registration with approval by various government agencies.

(*) Note: All flow rate information in the table above is based on spraying water. Thicker viscosity liquids will flow at lower rates than what is shown and produce bigger droplet size. Calibrate flow rate before attempting to spray.

# MACHINE PARTS DIAGRAM



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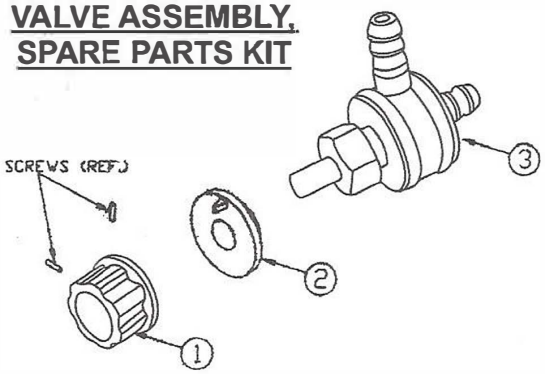
# PARTS LIST

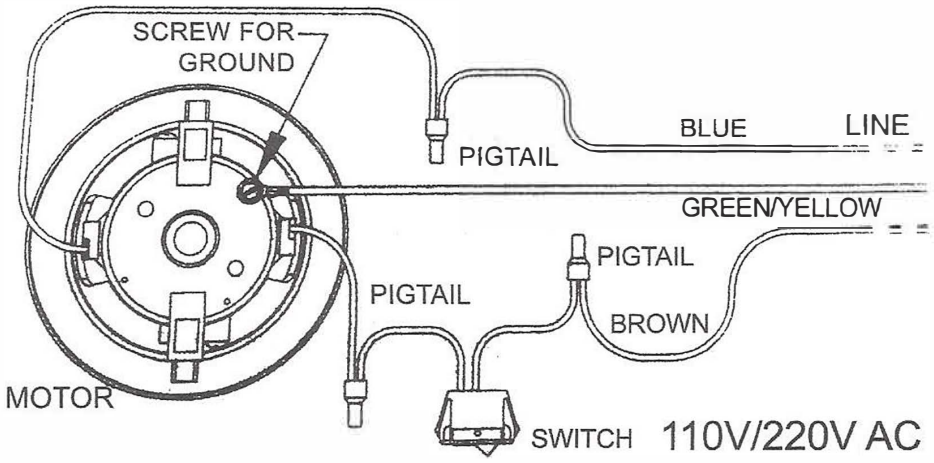
| ITEM | QTY | PART NUMBER | ITEM DESCRIPTION |
|---|---|---|---|
| 1 | 1 | 62130-10 | TANK |
| 2 | 1 | 63156 | LABEL |
| 3 | 1 | 62135-1 | CAP ASSEMBLY |
| 4 | 1 | 62131-1 | CLEVIS |
| 5 | 1 | 62151-2 | LABEL, 220V |
| 6 | 1 | 20180 | STRAIN CONNECTOR |
| 7 | 1 | 62051 | POWER CORD |
| 8 | 1 | 86855 | TAG |
| 9 | 1 | 63261-2 | SCREW |
| 10 | 1 | 62378 | SCREW |
| 11 | 1 | 62053-54 | HAND STOP |
| 12 | 1 | 62001-54 | HOUSING |
| 13 | 1 | 62006-1 | SWITCH |
| 14 | 1 | 62045-54 | NOZZLE ASSEMBLY |
| 15 | 1 | 62366 | GASKET |
| 16 | 2 | 62471-1 | WIRE ASSEBMLY |
| 17 | 1 | 138530 | WASHER |
| 18 | 1 | 62144-1 | SAPCER |
| 19 | 1 | 62366-1 | GASKET |
| 20 | 1 | 62027 | COVER |
| 21 | 2 | 62160 | SCREW |
| 22 | 4 | 62161 | SCREW |
| 23 | 1 | 62147 | MOTOR, BLOWER ASSEMBLY |
| 24 | 1 | 9425089 | SCREW |
| 25 | 1 | 62367 | NUT |
| 26 | 1 | 62083 | WASHER |
| 27 | 1 | 62128 | WASHER |
| 28 | 1 | 62010-54 | LOCKING HANDLE |
| 29 | 1 | 10000-343 | O-RING |
| 30 | 1 | 74312-3 | SPRING |
| 31 | 1 | 62054-1 | TUBE |
| 32 | 1 | 62017-1 | GUARD, TUBE |
| 33 | 1 | 62151-2 | LABEL |
| 34 | 1 | 62057 | WARNING LABEL |
| 35 | 1 | 63409 | LABEL |
| 36 | 1 | 64956 | KNOB ASSEMBLY |
| 37 | 1 | 62134-1 | VALVE INDICATOR |
| 38 | 1 | 62195-1 | VALVE ASSEMBLY |
| 39 | 2 | 62233 | BRACKET |

## VALVE ASSEMBLY, SPARE PARTS KIT




| ITEM | QTY | PART NUMBER | ITEM DESCRIPTION |
|---|---|---|---|
| 1 | 1 | 64956-2 | KNOB ASSEMBLY |
| 2 | 1 | 62134-1 | VALVE INDICATOR, METERING |
| 3 | 1 | 62195 | VALVE AY., BRASS (WITH FILTER) |

## ELECTRICAL SCHEMATICS

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