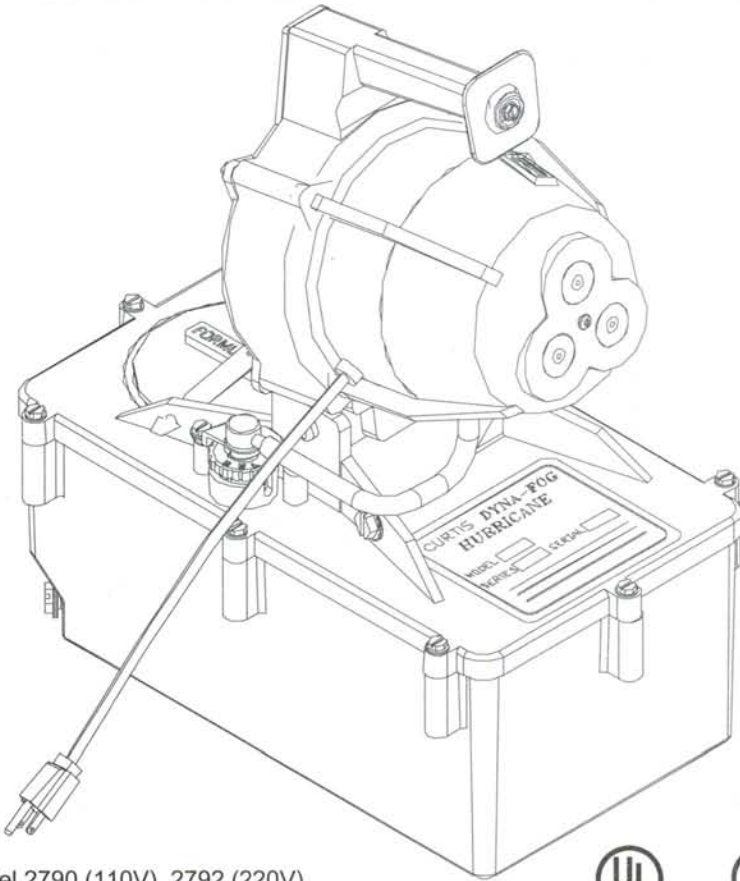


# Dyna-Fog® Hurricane

"Cold Fog" ULV/Mister



Model 2790 (110V), 2792 (220V)

With Float Valve: 2738 (110V), 2739 (220V)



Instruction Manual  
For  
Operation, Service and Maintenance

# INDEX

Page Number

SPECIFICATIONS .....	1
WORKING PRINCIPLES .....	2
MAJOR COMPONENTS .....	3
NOZZLE DIRECTION .....	3
FLOW RATE .....	4
SAFETY PRECAUTIONS .....	5
Electric Power .....	5
Formulations .....	5
Aerosol Concentration .....	6
Aerosol Ignition .....	6
Proper and Improper Use .....	6
MAINTENANCE .....	7
ELECTRICAL SCHEMATIC .....	8
EXPLODED ISOMETRIC DIAGRAM .....	9
PART LIST FOR ISOMETRIC DIAGRAM .....	10
FLOAT VALVE ASSEMBLY (OPTION) .....	11
FLOAT VALVE ADJUSTMENT .....	11
NOISE LEVEL COMPARISON .....	12
DYNA-FOG® , WIDE ASSORTMENT OF MACHINES .....	13

## SPECIFICATIONS

The Hurricane™ machine is an electric "Cold Fog" ULV/Mister with three rugged nylon nozzles. This device is intended for applications of both oil bases (following necessary precautions) and water based chemical treatments including wettable powders and wet flowables. The body and tank are made of high-density chemical resistant polyethylene. The applicator is useful for dispensing most chemicals which are labeled for aerosol or mist applications such as disinfectants, deodorizers, germicides, insecticides, etc., in locations such as hospitals, schools, nursing homes, greenhouses, stables, warehouses, homes, and farm buildings. The particle sizes generated range from 7 to 30 microns VMD, depending on the flow rate and viscosity of the materials.

MODEL 2790 HURRICANE™ 110-130 VAC

MODEL 2792 HURRICANE™ 210-250 VAC

MODEL 2738 HURRICANE™ W/FLOAT VALVE, 110-130 VAC

MODEL 2739 HURRICANE™ W/FLOAT VALVE, 210-250 VAC

### MOTOR:

2790 CONTINUOUS DUTY

110-130 VOLTS AC

6.85 AMPS

50/60 HZ

20,000 RPM

2792 CONTINUOUS DUTY

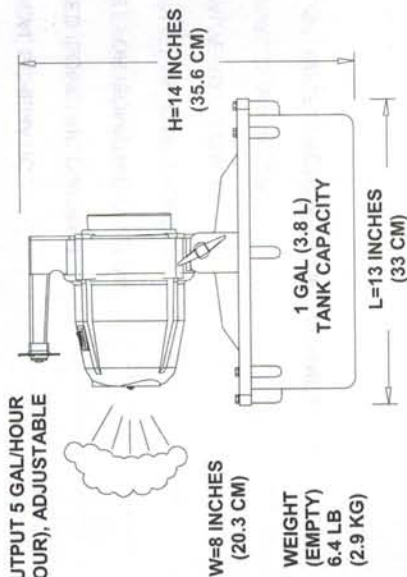
210-250 VOLTS AC

3.4 AMPS

50/60 HZ

20,000 RPM

MAX OUTPUT 5 GAL/HOUR  
(19 L/HOUR), ADJUSTABLE

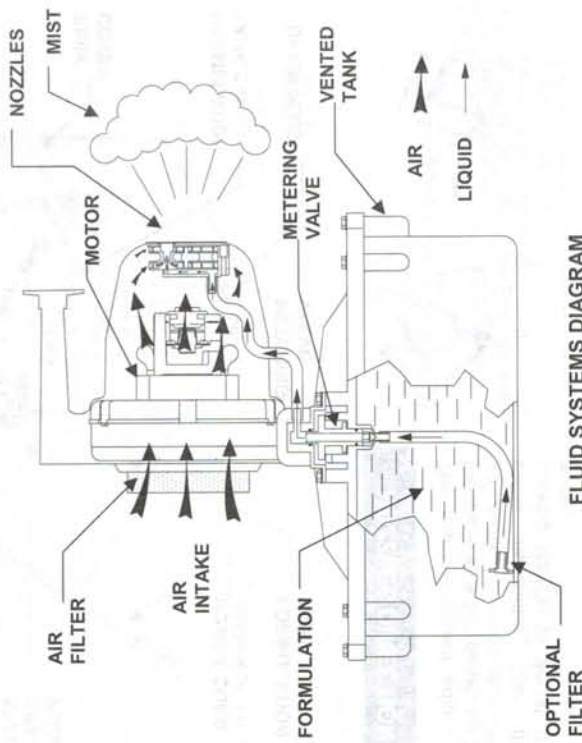


Cord Type SJ60, 18" (46 cm) length; optional 25 Ft (7.6 m) extension cord available.

## WORKING PRINCIPLES

The machine consists of a motor/blower assembly, a nozzle system, a nozzle housing, a formulation tank and a metering valve. The various components are identified in 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 the air to be rotated counterclockwise. The intersection action of the circular 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 sized droplets. After break-up, the droplets are driven away from the machine by the air passing through the nozzle system.

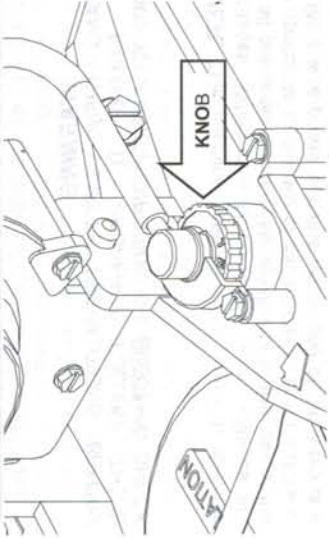
Generally, the size of the output droplets increases with increasing flow rate and with increasing viscosity.





## FLOW RATE

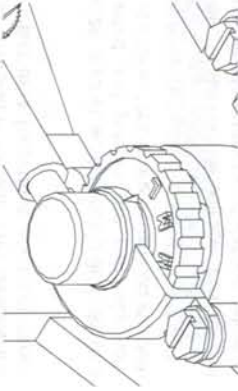
Turning the knob of the control valve regulates the flow rate. If the knob is rotated clockwise, the flow rate will be reduced. If the knob is rotated counterclockwise, the flow rate will be increased. As reference, the diagrams below illustrate the average flow rate at three different positions using water.



### Metering Valve Setting in LOW Position

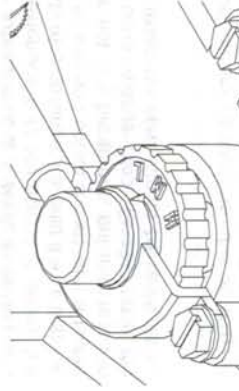
Flow Rate =	6.4 Ounces/Minute
=	3.0 Gal/Hour
=	189 ml/min
=	11.3 L/Hour

Smaller flow rated can be obtained locating the valve setting below the L setting, up to virtually "no flow" position.



### Metering Valve Setting in MED. Position

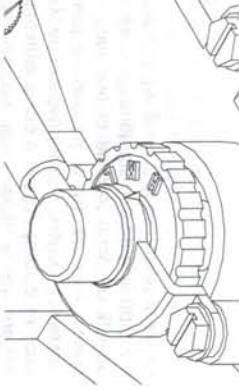
Flow Rate =	8.0 Ounces/Minute
=	3.7 Gal/Hour
=	236 ml/min
=	14.2 L/Hour



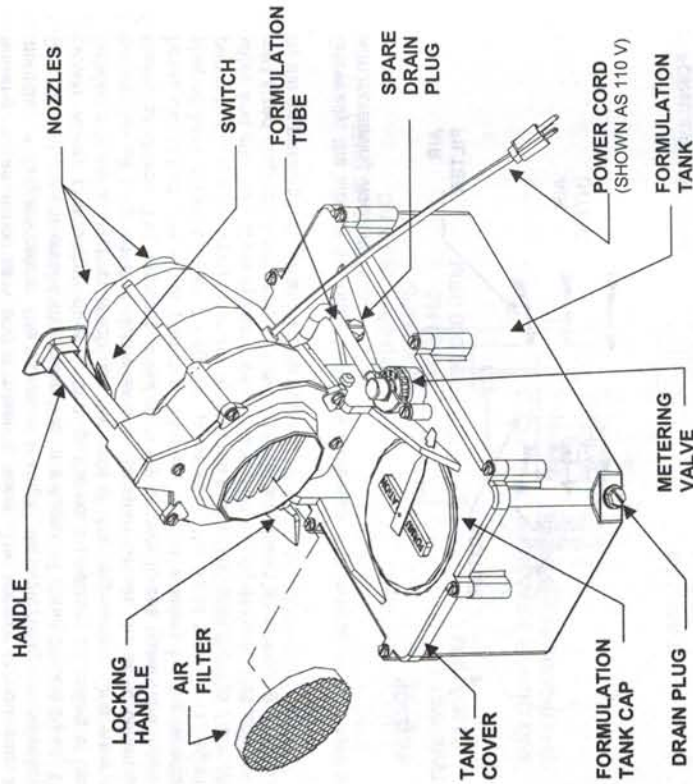
### Metering Valve Setting in HIGH Position

Flow Rate =	9.0 Ounces/Minute
=	4.2 Gal/Hour
=	266 ml/min
=	15.9 L/Hour

The maximum flow could be obtained by fully opening the valve.

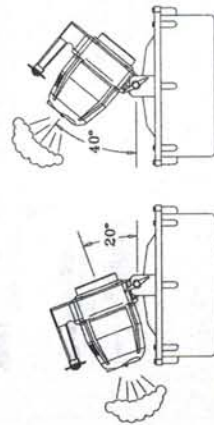


## MAJOR COMPONENTS



## 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.



## SAFETY PRECAUTIONS

### WARNING

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

- ELECTRIC POWER.** This machine uses electrical power at common commercially 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.

- 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.

- 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.
- 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 properly 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.



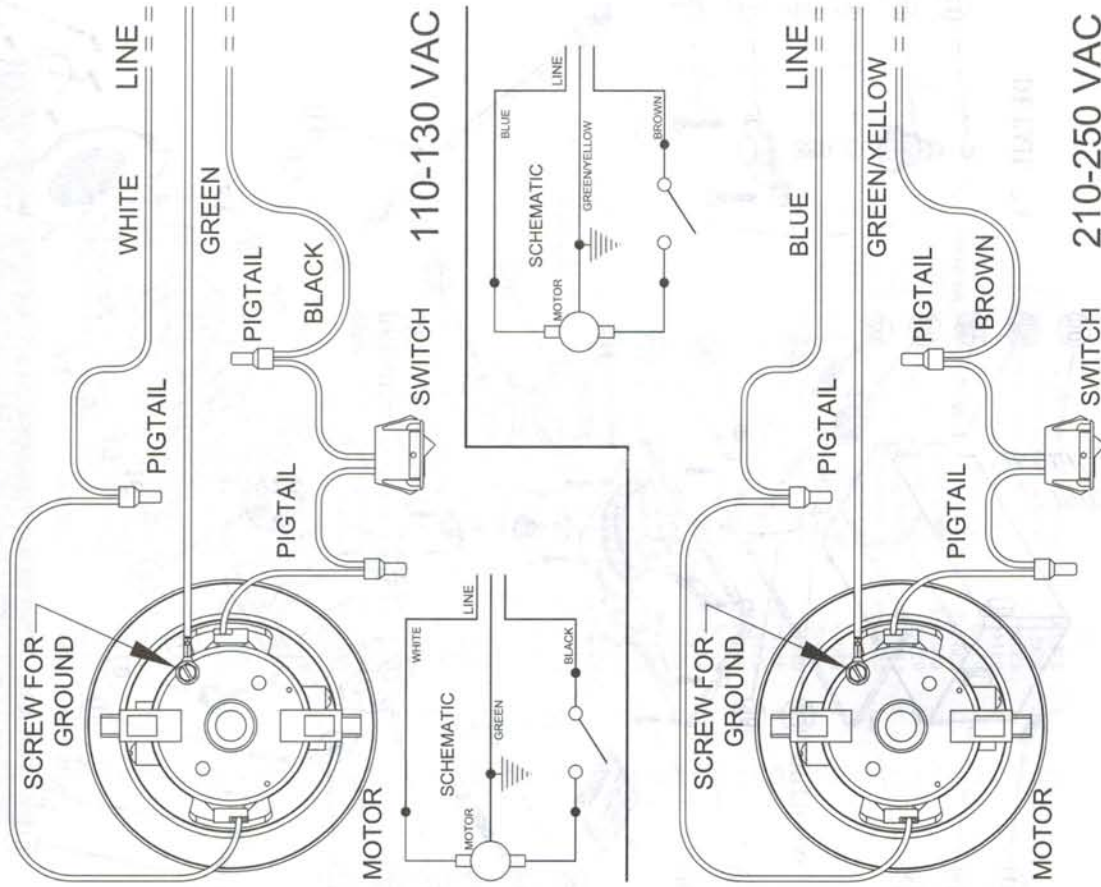
## DO NOT

- 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 #5, 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 stem, as this will affect the calibration of the machine.
5. Clean the Air Intake Filter after every application. If the filter gets saturated (wet and dripping) while the machine is working, stop the machine and clean the filter.

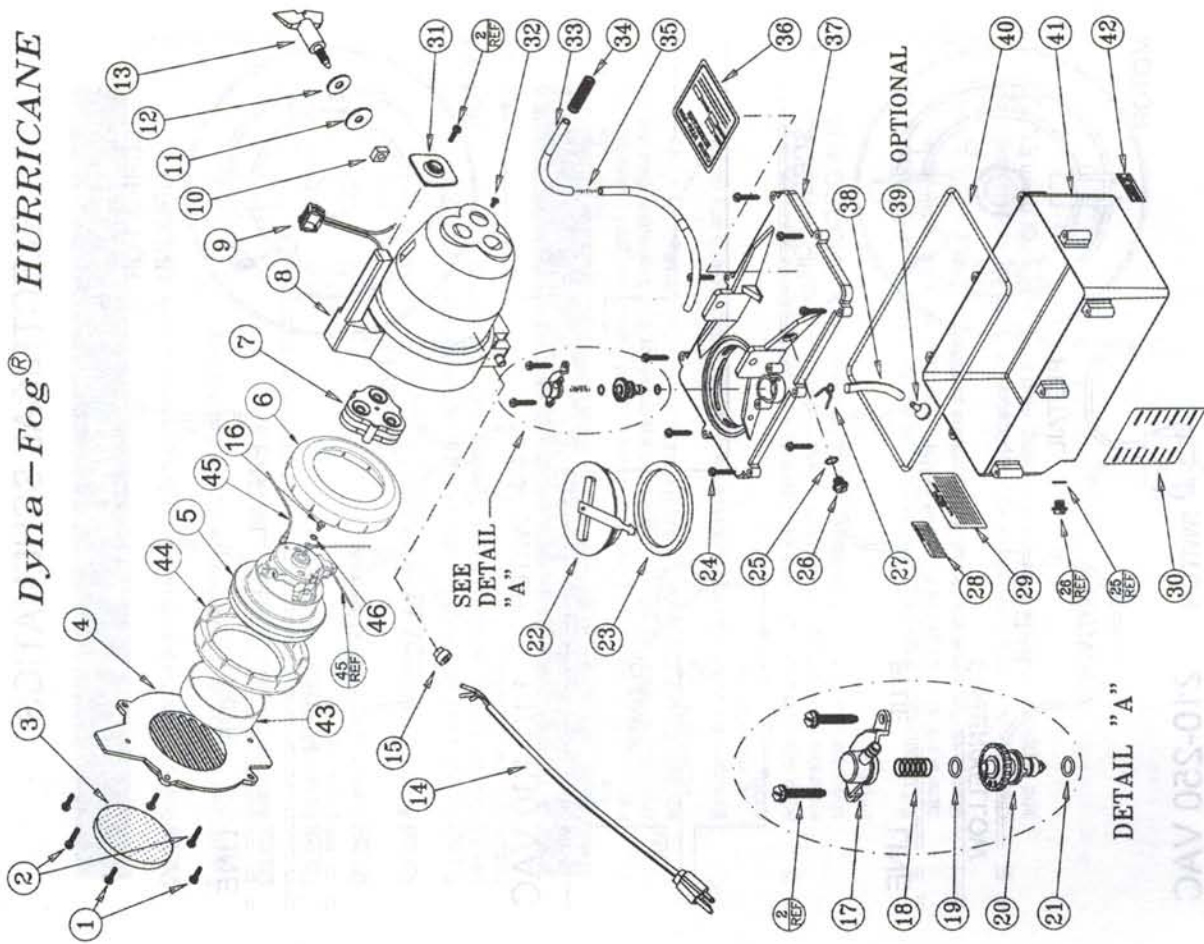
## ELECTRICAL SCHEMATICS



# Dyna-Fog® HURRICANE

## Dyna-Fog® HURRICANE, Machine Part List

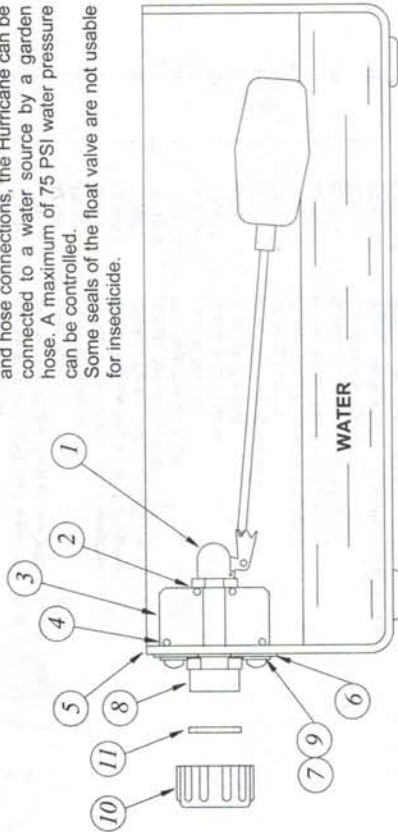
ITEM	QTY	PIN	DESCRIPTION
1	4	62161	Screw 10 X3/4 High-Low Thread, PHCR, S.S.
2	5	62162	Screw 10-16X3/4, Slotted Hex WH, Type AB, Tap
3	1	62124	Filter, Air
4	1	62002-54	Housing Closure, Blue
5	1	62147-1	Motor, Blower AY., 120V, Panasonic
6	1	62147-2	Motor, Blower AY., 240V, Panasonic
7	1	62366	Gasket, Foam, Die Cut (.187 Thk.)
8	1	62045-54	Nozzle Assembly, Blue
9	1	62001-54	Housing, Drilled, Blue
10	1	62006-1	Switch, Rocker
11	1	62367	Nut, 3/8-16 Square
12	1	62083	Washer, Friction
13	1	62128	Washer, Locking Handle
14	1	62010-54	Locking Handle
15	1	62031-2	Power Cord Assembly, 115 VAC
16	1	62051-1	Power Cord, 240 VAC
17	1	20180-3	Strain relief Connector, 115 VAC
18	1	20180-4	Strain Relief, 230 VAC
19	1	9425089	Screw, #8-32X3/8, Hex, Slotted Type "F" Tap.
20	1	62360-54	Retainer Assembly, Blue
21	1	4306	Spring
22	1	10100-204	"O" Ring, Viton
23	1	62358-54	Valve Stem, Blue
24	1	10100-12	"O" Ring
25	1	62033-54	Tank Cap Assembly, Blue (Cap+Strap+Washer)
26	1	62127-1	Gasket, Cap
27	1	62160	Screw, 10-16X1.25, Slotted Hex WH, Type AB, Tap
28	1	10100-13	"O" Ring .431-.421 ID
29	1	62123	Plug, 1/2X13 Thread (Red)
30	1	62030-1	Clamp, Hose, .375, S.S.
31	1	62057	Label, Warning
32	1	62029-1	Label, Caution
33	1	62126	Label, Tank Level
34	1	62053-54	Hand Stop, blue
35	1	62361-2	Screw 10-24X3/4 PHCR, Tap, S.S.
36	1	62054-2	Guard, Tube, 4" (inside Housing)
37	1	62017-1	Tube, Gres., .312
38	1	74312-3	Spring, Anticrimp, S.S. (used on some models)
39	1	62052	Hurricane ID Label, 115 VAC
40	1	62040	Hurricane ID Label, 230 VAC
41	1	29626-8	Tank Cover, Blue
42	1	62346	Tubing, Vinyl, .375 OD
43	1	62011-1	Filter, Plastic, Pickup (Optional)
44	1	62003-2	Gasket Cord
45	1	63409	Tank (rectangular), Formulation, Machined
46	1	62144-1	Label, Made in USA
47	1	62144-1	Spacer, PVC, Motor
48	1	62366-1	Gasket, Foam, Die Cut (.375 THK.)
49	1	62471	Wire Av., On/Off Switch
50	1	138530	Washer, Lock, #8, INTO





## TANK AND FLOAT VALVE ASSEMBLY, P/N 62104

With the addition of the Optional float valve, and hose connections, the Hurricane can be connected to a water source by a garden hose. A maximum of 75 PSI water pressure can be controlled. Some seals of the float valve are not usable for insecticide.

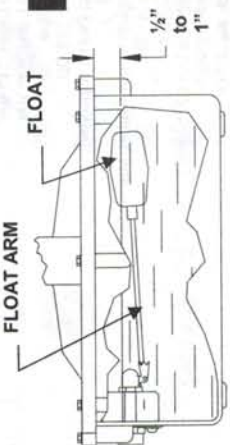


ITEM	PART NO	QTY	DESCRIPTION
1	62105	1	Float Valve Assembly
2	10000-014	1	"O" Ring
3	62103	1	Adapter - Float Valve
4	10000-134	1	"O" Ring
5	62003-1	1	Formulation Tank (float)
6	62102	1	Plate - Float Valve
7	159920	4	Screw, 10-24 X 1/2, PHCR
8	62101	1	Adapter Hose/MPT
9	138479	4	Lock Washer # 10, Ext.
10 (*)	62106-1	1	Cap
11 (*)	62109	1	Gasket

\* Items 10 and 11 are not part of the Assembly P/N 62104. Shown as reference.

### FLOAT VALVE ADJUSTMENT

Because the manufacturing tolerances and differences in water pressures, the float valve may not shut off completely because the float hits the tank top. If this happens, gently bend the float arm down slightly so that the buoyant force can be utilized to close the valve. Keep the distance as shown.



-Page 11-

## NOISE LEVEL COMPARISON

TYPICAL SOUND	TYPICAL MUSIC	SPL, Db
Chest wall vibrates, chinking, giddiness		150
Jet taking off, 25 meters		140
Threshold of pain		130
Artillery, 100 yards	Cannon (peaks)	120
Pneumatic chipper		110
Riveter, nearby	Very loud rock (peaks)	100
Loud car horn, nearby	Very loud classical (peaks)	90
	Very loud classical (avg.)	80
Inside N.Y. subway	Loud classical music	70
Heavy truck		60
Inside motor bus	Moderately loud classical	50
Noisy traffic, corner		40
Noisy office	Soft popular music	30
Business office	Soft classical music	20
Conversational Speech		10
Private office	Very soft music	0
Background noise, city home		
Background noise, suburb		
Library		
Background, country night		
Whisper, leaves rustling		
Good recording studio		
Threshold of hearing		

Pain Threshold

Hearing Protection Recommended

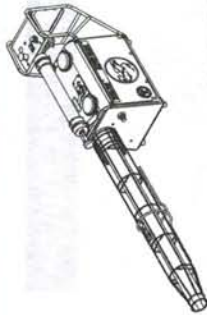
Hurricane

The Hurricane hand held electric aerosol applicator is a relatively quiet machine, as shown in above comparison.

- Page 12 -



**DYNA-FOG® Offers a complete and wide assortment of aerosol generator systems.**

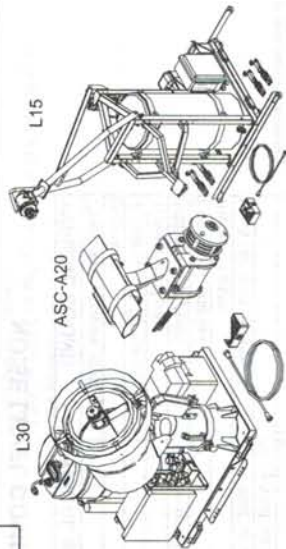


**PULSE-JET POWERED THERMAL FOGGERS:**

From 0-120 GPH (0-453 LPH) output. Our complete line include different models like the Superhawk, Golden Eagle, Trailblazer, Patriot, Blackhawk, Mister III, Mister Max, SilverCloud and Model 1200.  
Portable or Truck mounted machines. Different models are available for Oil base or Water base formulations.

**ELECTRIC ROTARY ATOMIZERS:**

**DYNA-JET L30:** Slate of the Art, Electric Rotary Atomizer ULV Aerosol Generator. 12 VDC, Light Weight, Truck mounted Machine with FMI pump. Optional Radar Sincroflow.  
**DYNA-JET L15:** Drift Sprayer for migratory pest control like Locust. Flow Rate from 0 to 2000 ml/min. Optional Radar Sincroflow.  
**ASC-A20:** Slate of the Art, Electric Rotary Atomizer, for use on Fixed Wing and Rotary Wing aircraft.



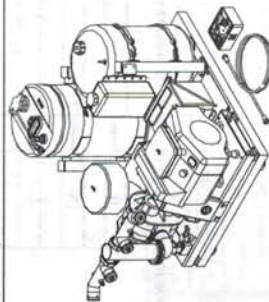
**WIND DRIVEN ROTARY ATOMIZERS:**

The ASC-A10 is a wind driven atomizer designed for Fixed Wing aircraft. The speed of the atomizer controls the droplet size and can be adjusted by changing the angle of the blades. Also available is the ASC-A10H for Rotary Wing application. No other Rotary atomizer for aircraft can handle the amount of Flow rate as the ASC Atomizer.  
Several accessories are available to meet your requirements. Also available in 12 or 24 VDC, see rotary atomizers above model ASC-A20.



**ELECTRIC HAND-HELD ULV/MIST GENERATORS:**

Full line of electric cold fog applicators with 1 Gal (3.8 L) tank, available in 115 and 230 VAC. An Electric Thermal version is available. For bigger Formulation capacity we have some models with 3 Gal (11.4 L) tank.



**COMBUSTION ENGINE DRIVEN ULV AEROSOL GENERATORS:**

Truck mounted Units powered by 8, 9, 11 or 18 HP four cycle, OHV Gasoline Engine. Diesel version available. One, two or four nozzles. Optional full remote control of boom functions (rotation of turntable and angle of nozzles).  
Diversity of pumping systems, Gear, Piston and Diaphragm. Pressurized system available for overseas market.  
Optional Radar Sincroflow.  
40 cc Two cycle portable machines also available.



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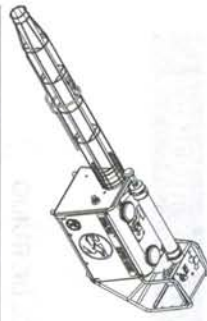
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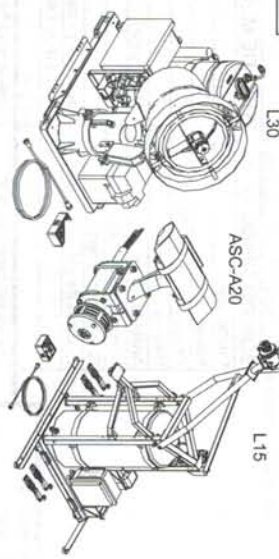
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**DYNA-FOG® Ofrece un completo y amplio surtido de sistemas generadores de aerosol**



**TERMONEBULIZADORES CON MOTOR PULSO-RESONANTES:**

Con flujos desde 0-120 GPH (0-453 LPH). Nuestra completa línea incluye modelos como Superhawk, Golden Eagle, Trailblazer, Patriot, Blackhawk, Mister III, Mister Max, SilverCloud and Model 1200.  
Máquina portátil o de montar en camión. Diferentes modelos para formulaciones base agua o base aceite.



L30

ASC-A20

L15

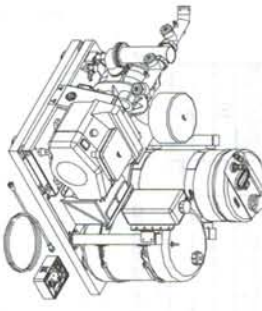
**ATOMIZADORES ROTATIVOS CONDUCTIDOS POR VIENTO:**

El ASC-A10 es un atomizador conducido por viento diseñado para aeronaves de ala fija. La velocidad rotacional del atomizador controla el tamaño de la gota, y puede ser ajustada cambiando el ángulo de los alabes. También está disponible el ASC-A10H para aplicaciones de ala rotativa (helicoptero).  
Ningún otro atomizador rotativo para aviación puede manejar la cantidad de flujo como lo hace el ASC.  
Diferentes accesorios están disponibles para cumplir con sus requerimientos. También disponible en 12 o 24 VDC, vea el modelo ASC-A20 arriba en atomizadores rotativos.



**GENERADORES ULV/ROCIO ELECTRICOS DE SOSTENER EN LA MANO:**

Completa línea de aplicadores de niebla fría con tanque de 1 Gal (3.8 L), disponibles en 115 y 230 VAC. Una versión térmica eléctrica es disponible. Para mas capacidad del tanque, tenemos un modelo de 3 Gal (11.4 L).



**GENERADORES DE AEROSOL CONDUCIDOS POR MOTOR DE COMBUSTION:**

Unidades de montar en vehículo. Motor a gasolina de 8, 9, 11 o 18 HP y cuatro tiempos, OHV. Versión Diesel disponible. Una, dos o cuatro boquillas. Sistema opcional de control completo de funciones del brazo portaboquillas (rotación de tornamesa/ángulo de boquillas).  
Diversos sistemas de bombeo. Engranaje, Piston y Diafragma. Sistema presurizado disponible para mercado de exportación. Radar Sincroflow opcional.



CYCLONE ULTRA-FLEX

HURRICANE

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