

# REEL



## USER OPERATING MANUAL



## DF-50 DIFFUSION™ HAZER & DF-50 DMX Option

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## **DF-50 DIFFUSION™HAZER**

### **INTRODUCTION**

The *DF-50 Diffusion™ Hazer* is the cleanest most cost effective atmospheric Hazer available in the market today. Fluid use is less than 2 ounces an hour! The Diffusion™ Fog produced is totally odorless and can only be detected visually. No more sore throats or burning eyes. This patented machine utilizes a triple filtered system that breaks down the Diffusion™ Fluid (food grade mineral oil) to a uniform 1 micron sized droplet or less. The unit is totally self-contained needing only the proper power rating and a sufficient amount of fluid.

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### **UNPACKING**

Each DF-50 is carefully checked and tested to strict factory standards before being shipped. In each carton is the DF-50 and the accompanying power cord.

Warning: Do not connect the power cord to the unit and switch on until you have thoroughly read the operating instructions section of this manual.

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## **DF-50 DIFFUSION <sup>TM</sup>HAZER**

### **OPERATING INSTRUCTIONS OVERVIEW**

The DF-50 Diffusion HAZER should NOT be considered as a standard fog machine. Because of the minute particulate size of the fog produced and its long lasting hang time (3+ hours in an enclosed area) it is not necessary to have the concentration of fog that is normally associated with other machines. The particles produced are so minute that they are hardly visible to the eye. Although you may think the concentration is insufficient, you will find that after a very short period of use the DF-50 will have produced more than a sufficient amount of atmosphere.

Due to the efficiency of the machine it is recommended that the machine be used intermittently, NOT continuously, and in situations where the machine is not monitored by an operator, it is suggested you use a timer to switch the machine ON and OFF. Under normal conditions you may find that a running time of 10 minutes ON each 15-20 minutes should provide the desired atmosphere, however length of running time will vary for each job.

Another important factor in the operation of the DF-50 is that it should NOT be fully enclosed (exceptions are an approved case), if the air temperature around the machine rises too high the thermal sensor in the machine will turn it OFF. The machine works on the principle of drawing air from the rear of the machine and passing air through the machine, then out the front of the machine mixed with the diffusion particles. Therefore, a steady flow of cool air is recommended for the machine, hence it is best operated in an unobstructed position.

If the machine is used non-stop (and this is NOT recommended) over a long period you may create a situation whereby the concentration of smoke is too much, which can result in build-up of residue in the environment. You may also experience some residue after a long period of using the machine as recommended and this can be seen on equipment close by, especially those with air filters and fans etc. However, normal periodic cleaning of this equipment will prevent this. If the machine is to be used continuously, then a timer should be used to create a 10 second off period to allow the water trap to automatically drain.

## **DF-50 DIFFUSION™HAZER**

### **OPERATING**

#### ***Always***

1. Transport the unit right side up or empty.
2. Before operating, fill with Diffusion™ Fog Fluid just below the top of the tank window on the side of the unit. *ALWAYS TAKE CARE NOT TO OVERFILL.*
3. Check the machine for correct voltage.
4. Check the female plug for tight connection before plugging the male end into an AC voltage receptacle. DC voltage will result in damage to the machine.
5. If the circuit breaker trips, turn OFF the machine and reset by depressing the breaker button, then turn back ON. Be sure to plug directly into a wall outlet or use a 2.5mm<sup>2</sup> extension cord. Note: When starting the voltage must not drop below 200 volts (220v units only). If it continues to trip contact your dealer.
6. The machine must be level to operate properly.
7. The machine holds 2 liter's or 1/2 gallon of fluid. DO NOT OVERFILL. If you overfill, then it may be necessary to remove the cover to clean-up the excess fluid.

### **FILLING INSTRUCTIONS**

1. Unscrew the cap on the top of the unit and pour fluid into the opening. Be careful not to overfill.
2. Do not use more than 2 liter's or 1/2 gallon of fluid.
3. Check the level by using the sight window on the side of the unit.
4. If overfilled, empty excess by tipping to the side and pouring back out of the spout. If you have spilled fluid inside the machine it may be necessary to remove the cover to clean-up the excess fluid. If this is required DISCONNECT the machine from the power supply before opening.

### **CAUTION**

Only **Diffusion™ Fog Fluid** may be used in the operation of the DF50. Any other fluid may clog the machine, cause sever damage and will void the manufacturers warranty coverage.

**DO NOT ATTEMPT TO SERVICE THE DF-50  
CALL YOUR DEALER IF YOU HAVE ANY QUESTIONS**

## **DF-50 DIFFUSION™HAZER**

### **ROUTINE MAINTENANCE**

**FLUID LEVEL:** Using the glass sight level on the side of the machine fill with a sufficient amount of fluid to approximately 1/2" below the top level. If you overfill, then tip the machine on its side to dispose of the excess.

**COMPRESSOR:** No maintenance is required and no attempt should be made to service the compressor. The compressor is rated at MTBF 5000+ hours before any rebuild may be necessary.

**AIR FILTER:** Remove top of the black filter element. By twisting counter clockwise ¼ turn. Remove wool element and was in soap and water, then reassemble.

**WATER TRAP:** To maintain maximum filtering efficiency and to avoid excessive pressure drop, the filter must be kept clean. To access the filter you need to remove the cover of the DF-50. Turn the drain valve to remove any bowl accumulation before it reaches level of lower baffle. A visible coating of dirt or condensate on the filter element or excessive pressure drop indicates cleaning is necessary.

To clean, depressurize air line and remove bowl. Wash filter elements with household soap. Elements should be replaced if soiled or creating excessive pressure drop. Blow out body with compressed air. **Clean bowl only with household soap.**

**TANK:** No maintenance is required and no attempt should be made to service.

**If any problems occur, you should contact your dealer**

## **DF-50 DIFFUSION™HAZER**

### **USEFUL TIPS**

The DF-50 Diffusion™ Hazer provides a fine atmospheric mist. The recommended level for use in an eight hour day is 5mg/CuM, and this represents a fine mist, NOT fog or smoke. When this mist is just visible to the eye, then you would have maximum working concentration.

- ◆ Always use Diffusion™ Fog Fluid. Operation with any other fluid will invalidate the warranty and fail to meet CAL/OSHA tested standards.
- ◆ If required, you may use an “RE’ Fan or other type of fan to disperse the mist produced, but it is not recommended to mist through the fan as this will result in build-up on the fan blades.
- ◆ It is NOT necessary to place the unit where mist is required as the DF-50 will provide an even amount of atmospheric ambiance.
- ◆ Do not leave the machine ON continuously in a small room as this will result in too high a concentration and may leave unwanted residue.
- ◆ DO NOT block the supply of air to the back of the unit as you will prevent the compressor from performing efficiently and may overheat the compressor.

## **DF-50 DIFFUSION™HAZER**

### **SPECIFICATIONS**

SIZE:	35cmH x 38cmL x 21cmW 14"H x 15"L x 8"W
WEIGHT:	16 kg or 35 lbs. net without fluid
POWER:	100v 50-60Hz 120v 60Hz 200-240v 1.9A 50Hz
FLUID:	Diffusion™ brand haze fluid
FLUID CAPACITY:	2 Liters or ½ gallon
RUNTIME:	35+ Hours
FOG HANG TIME:	3+ Hours in an enclosed space
SAFETY TESTING:	CAL-OSHA Tested (Test results on request) League of American Theaters Actors Equity
WARRANTY:	5 years parts and labor on compressor 1 year parts and labor on all other components

The DF-50 is designed and manufactured in the United States.

We reserve the right to change specifications without prior notice.

## **DF-50 DIFFUSION <sup>TM</sup>HAZER**

### ***IMPORTANT MESSAGE!***

#### **THE FOLLOWING WILL VOID THE MANUFACTURERS WARRANTY.**

- *The use of non-approved Diffusion <sup>TM</sup> Fluid.*
- *Using the DF-50 in a non-approved case.*
- *Alteration of the unit in any manner without factory authorization.*
- *Use of the unit without proper ventilation for cooling.*
- *Use of improper voltage requirements.*

If you have any questions before using the DF-50 Diffusion<sup>TM</sup> Hazer, please contact your dealer or distributor.



## DF-50 DMX OPTION

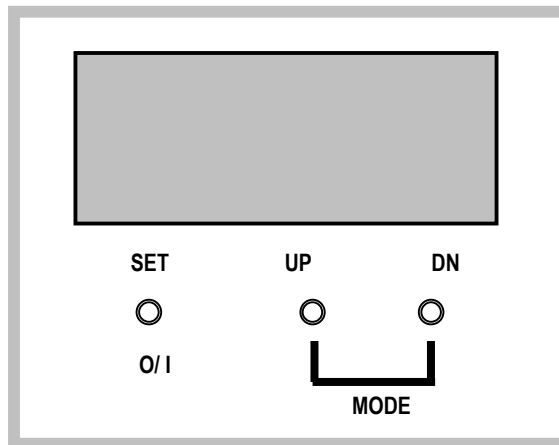
The DF-50 DMX version, now available, allows three modes of operation. This new DMX feature enables control of the DF-50 from a light board, from internal auto settings or from the standard manual On/Off. The DMX interface is fully USITT 1990 compliant featuring an address range of 1-512 and industry standard 5 pin XLR connectors. The DMX input is short circuit protected.

### How the DMX and AUTO feature works

The DF-50 DMX uses a single address to provide proportional control. When the DF-50 DMX version is in the DMX or internal auto settings mode it operates on a 100 second duty cycle. These modes allow the user to set the DF-50 to cycle ON and OFF as a percentage of 100 seconds. For example if the unit is set to 60% the DF-50 will automatically turn ON for 60 seconds and OFF for 40 seconds until the user changes the setting or removes the power supply. When the power supply is disconnected from the DF-50 the settings for the most recent use remain stored for operation until the power supply is restored.

### Initial Set-Up

When your DF-50 DMX arrives it will be set in the “DF-50” mode (manual ON / OFF operation). When the unit is initially plugged in the LED menu screen in the front upper right hand corner of the unit will illuminate and indicate which mode it is in. Underneath the LED screen are three small red buttons with upper and lower sets of labels. The upper labels read across “SET” above the first button, “UP” above the second button and “DOWN” above the third button. The lower labels read “O / I” below the first button and “MODE” below the second and third buttons.



### Switching Modes of Operation

By pushing both red buttons above the “MODE” label the mode menu will appear in the LED screen. Once you are in the mode menu use the individual buttons associated with the “UP” and “DOWN” labels to scroll through the three different modes. To select the desired mode of operation press the “SET” button.

### DF-50 Mode (manual ON / OFF)

In the Manual ON / OFF Mode you can turn the unit on or off by simply pressing the button above the “O / I”.

### **Auto Mode (internal automatic control)**

In the Auto Mode the user sets the desired percent of output proportionately to the number of seconds the DF-50 will produce haze during its 100-second duty cycle. This can be done once you are in the "AUTO" mode by simply pushing the buttons labeled "UP" or "DOWN" to change the value. For example: if the operator desires to set the DF-50 to produce haze at 65% of the unit's normal capacity (65 seconds during its 100 second duty cycle) the operator would simply change the value up or down until the LED screen indicated 65%. It is not necessary to press the "SET" button in this mode when changing the output level. The unit will adapt immediately to the new setting. The unit will remain at this new setting until the output percentage is changed again.

### **DMX Mode (lighting board controlled)**

In the DMX Mode the user simply sets the control board slide bar proportionately to the desired percentage of time the DF-50 will produce haze during the 100 second duty cycle. For example: if the operator desires to set the DF-50 to produce haze for 25% of full output (25 seconds during its 100 second duty cycle) the operator would simply position the lighting board control setting at approximately one fourth (1/4) of its full range.

### **Addressing the DF-50 DMX to the lighting control board console**

To set the address for the lighting board control device the unit must be in DMX mode. Once you have pressed the "SET" to be in the DMX mode you must press the "SET" button a second time to enter the address selection. Using the "UP" and "DOWN" buttons you can select the desired address to be associated with the appropriate control on the lighting board console. Once the address is selected press the "SET" button again to return to the DMX mode. The unit is now ready to be operated from the lighting control board.

### **Termination**

The last device on the DMX line should be properly terminated to prevent signal reflections and possible corruption of data. A standard DMX terminating plug containing a 120ohm – 1/2 watt resistor placed across pins 2&3 is recommended.

### **XLR Pin out**

- Pin 2 DMX512 common
- Pin 2 Data-
- Pin 3 Data+
- Pin 4&5 Not used (passed thru)

### **DMX Daisy Chains and Slaving**

The DMX option on the DF-50 enables the user to daisy chain a variety of other DMX compatible equipment off of one DMX cable connection through the DF-50. The DF-50 DMX does not have the internal software capability to control additional DF-50's or other equipment. Other equipment will need to be addressed directly to the lighting board.

### **Trouble Shooting**

When the DF-50 control panel display shows "-- -- %" The DMX signal has been interrupted or corrupted for more than 1 second or no DMX signal is present. Check the cable connections. Also, always be sure the DMX controller is set to an address supported by the console.