

## WS1 AND WD1 HUMIDIFIERS

### I - INTRODUCTION

Lennox offers two styles of humidifiers. The WS1 is a spray type while the WD1 is a drum type. Figure 1 shows cutaways of both the WS1 and WD1. Both install on the return air plenum or duct. A six inch flexible pipe connects each humidifier to the supply air plenum. Figure 2 shows typical applications. On WS1 installations, the warm by-passed air flows through a polyester foam media which has been moistened by a fine spray of water from the nozzle assembly, and then it is re-entered into the return air side. On WD1 installations, the warm by-passed air flows through a cylindrical polyester foam media which has been moistened as it rotates through a water reservoir, and then it is re-entered into the return air side.

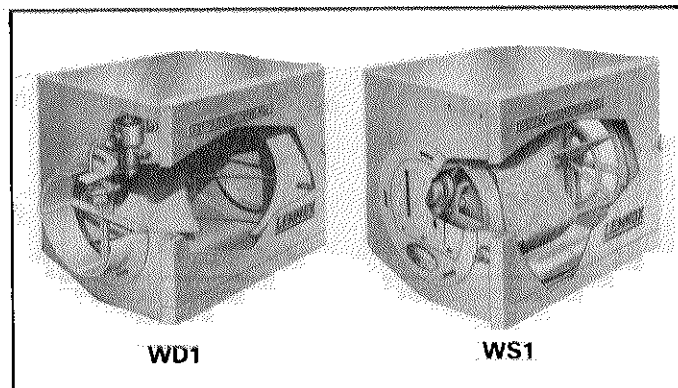


FIGURE 1

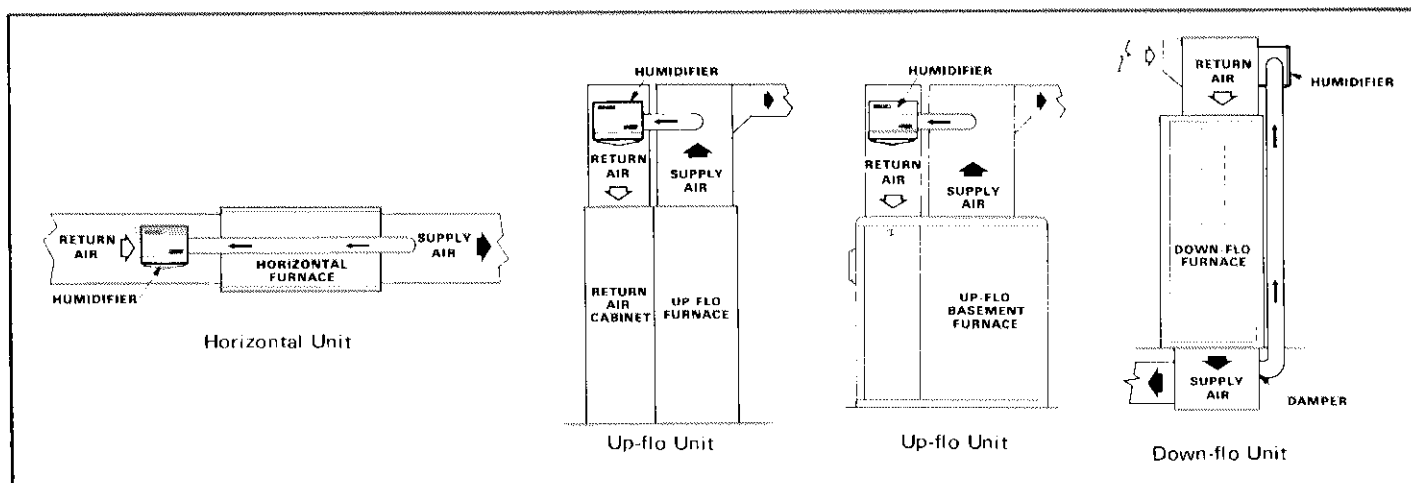


FIGURE 2

### II - UNIT INFORMATION

#### A - Specifications

##### WD1

Model No.	*WD1-15
Filter media size (in.)	6-3/4 diam. x 8 x 1/2
Water supply connection (in.)	1/4 compression
Overflow connection (in.)	3/4 I.D.
Motor operating watts	5
Electrical characteristics	24v-60hz 1ph
Net weight (lbs)	11

\*Rated at 18 gallons per day evaporation in accordance with ARI Standard 610; 140° supply air temperature, .20 static pressure and 30% return air relative humidity.

#### B - Field Wiring

On multi-tap blower motor applications, the humidifier must never be wired through furnace fan control circuit as a motor burnout could occur. For furnaces equipped with a multi-tap blower motor and not equipped with an accessory terminal, a current sensing relay (P-8-9357) is available. This relay is the recommended means for controlling the humidifier solenoid valve in the WS1 and assuring humidifier shut off when blower motor is not energized. When wiring the current sensing relay into humidifier circuit, the secondary side of 24V

##### WS1

Model No.	*WS1-18
Nozzle size (gph)	3.00
Type of nozzle	Delavan WDB
Nozzle spray angle	90°
Filter media cut size (in.)	13-7/8 x 12-1/2 x 1/2
Water supply connection (in.)	1/4 compression
Drain connection (in.)	3/4 I.D.
Unit operating watts	10
Electrical characteristics	24v-60hz 1ph
Net weight (lbs.)	11

\*Rated at 17.4 gallons per day evaporation in accordance with ARI Standard 610; 140° supply air temperature, .20 static pressure and 30% return air relative humidity.

transformer must be in phase with wire wrapped around sensing loop.

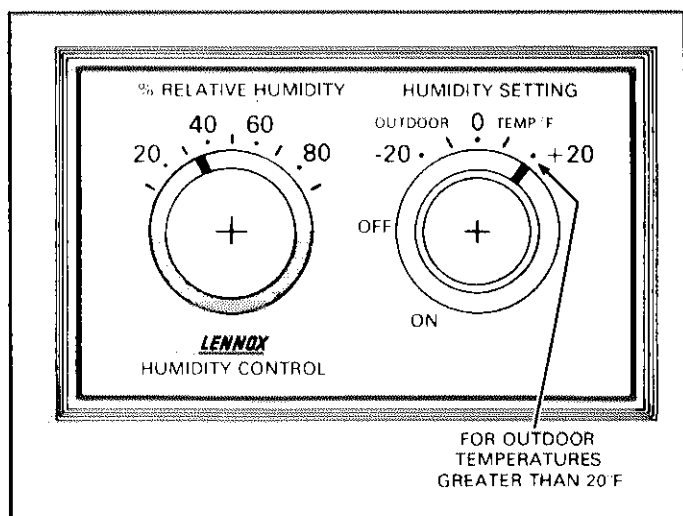
### III - OPERATION

#### A - Start Humidifier

Turn on water supply. Open pull chain damper (chain in). Set humidistat to desired setting. On WD1 adjust water level.

#### B - Proper Humidity Setting (Figure 3)

Settings on the humidistat correspond to approximate out-



**FIGURE 3**

door Fahrenheit temperatures. Set the humidistat to the outdoor temperature when in the -20°F to +20°F range for a resulting normal indoor relative humidity. For outdoor temperatures greater than +20°F the humidistat should be set at +20. As outdoor temperature drops, condensation may appear on coldest areas inside the house (such as windows, exposed concrete walls and other uninsulated areas). A small amount of moisture is normal; but if excessive condensation appears, humidistat should be turned to a lower setting. If a higher relative humidity is desired, the humidistat should be turned to a higher setting up to the maximum +20 setting. Each house is constructed differently and some experimentation may be required to determine the best setting.

### C - Temporary Shut Down

Turn off water supply. Close pull chain damper (chain out). Turn humidistat to off. For seasonal shut down refer to Maintenance.

## IV - MAINTENANCE

Periodic cleaning is required for efficient and safe operation of this humidifier.

### A - Humidifying Seasons

#### Start of Humidifying Season

- 1 - Clean humidifier (see cleaning instructions).
- 2 - Clean or replace media (see cleaning instructions).
- 3 - Turn on water supply. On WD1 adjust water level if required.
- 4 - Open pull chain damper (chain in).
- 5 - Set humidistat to desired level.

#### End of Humidifying Season

- 1 - Turn off water supply.
- 2 - Drain water from pan.
- 3 - Close pull chain damper (chain out).
- 4 - Turn humidistat to "off".

### B - Cleaning Instructions

#### WS1 Humidifiers

- 1 - Turn humidistat to "off" before servicing humidifier.
- 2 - Cabinet and media may be cleaned by washing with detergent and light scraping where necessary. If compo-

nents must be replaced, they should be replaced with the designated parts available from Lennox.

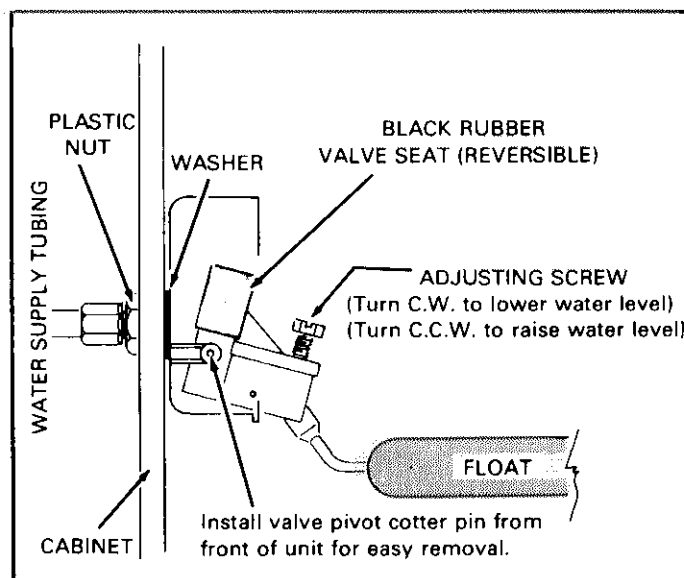
- 3 - Remove media by pulling from under taps at each end of holder. If a bright light is not visible through media, it should be cleaned or replaced with new media (P-8-9880).
- 4 - Replace cleaned or new media under tabs so that approximately 1/2 in. of media extends beyond bottom support of holder.
- 5 - Replace media assembly in cabinet so that spray nozzle is visible from front of cabinet.
- 6 - Turn on humidistat and start furnace. Check for proper nozzle spray. If necessary disassemble nozzle and clean screen and orifice.
- 7 - Replace access panel and return system to normal operation.

#### WD1 Humidifiers

- 1 - Turn humidistat to "off". Shut off water supply.
- 2 - Remove drum by lifting open end out of "V" slot and sliding away from motor shaft.
- 3 - Remove larger cotter pin from valve. Remove float assembly.
- 4 - Drain water from reservoir pan and remove.
- 5 - Cabinet, drum and media may be cleaned by washing with detergent and light scraping where necessary. If components must be replaced with the designated parts available from Lennox.
- 6 - If a bright light is not visible through media, it should be cleaned or replaced with new media (P-8-9879).
- 7 - Flush reservoir pan out and clean or replace with a new pan (LB-23709A).
- 8 - The clutch is located at motor end of drum. Remove any scale build-up on outside of drum hub that would prevent clutch from rotating.

### C - WD1 Water Level Adjustment

Turn adjusting screw clockwise to lower water level. Turn adjusting screw counter-clockwise to raise water level. See Figure 4.



**FIGURE 4**