

**INSTALLATION, OPERATION AND MAINTENANCE MANUAL****FAN DISTRIBUTION UNITS****Model HXBH**

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**I. MOUNTING**

**NOTE:** For Fan Distribution Units shipped attached to humidifiers also refer to Carnes Humidifier Catalog 900-0119.

The fan distribution unit must be mounted securely on a level and plumb surface at least four feet below the ceiling to prevent steam from condensing on the ceiling surface. Allow 30 feet in front of the HXBH for the steam to be absorbed into the air. Do not mount the units above any item that would be damaged if a water leak were to develop. The humidifier or fan distribution unit must never be mounted outside or where it may be exposed to freezing temperatures.

For remote mounted fan distribution units see Tables 1 and 2 below:

Table 1 - Maximum Operating Weight

Model	Weight (lbs.)
HXBH	21

Table 2 - Fastener Recommendations.

Type of Wall	4 Fasteners Required
Wood Studs or Solid Wall	1/4" Lag Screws, 1" minimum length

**II. CONNECTING THE STEAM HOSE - Remote Units**

**Copper or Brass Tube is the only acceptable substitute  
for Carnes Steam Hose or Condensate Hose**

1. For guidelines on typical steam hose installation refer to Humidifier Installation, Operation and Maintenance Instructions.
2. The steam hose should be installed so there is a continuous rise from the humidifier to the bottom connection of the remote unit. Support the steam hose at intermediate points to prevent dips or pockets. If there are any low point add a "T" fitting to drain condensate.
3. Any turns should have a minimum of 8" to prevent the hose from kinking.
4. Fasten the steam hose to the connection point on the manifold of the remote unit with one of the hose clamps provided.
5. Push the steam hose through the opening on the top of the humidifier cabinet and slip over the outlet stub on top of the cylinder. Fasten with the hose clamp provided.

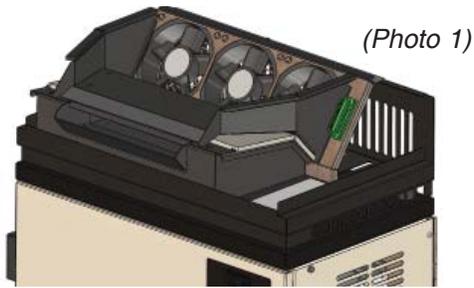
**III. CONNECTING THE CONDENSATE RETURN HOSE  
- Remote Mounted Units**

1. Fasten the condensate return line to the connection point on the manifold of the remote unit with the hose clamp provided.
2. Follow the steam hose to the humidifier cabinet and secure the return line to the steam hose.
3. Connect the condensate return line from the fan distributor unit to the condensate return line at the top of the humidifier cabinet.
4. If it is impossible to maintain a drop to the top of the cabinet, it is permissible to run the condensate return line directly to the air gap drain fitting or some other common drain. If condensate is run to a common drain, a trap must be incorporated close to the drain to prevent steam and/or hot water from entering.

*(Continued on reverse side of sheet)*

#### IV. ELECTRICAL CONNECTIONS

All wiring must be installed per local and national codes. This unit requires a permanent connection. Cord connections are not permitted. The Fan Distribution Unit's fans are powered and controlled by the 12-pin connector on the back of the fan bracket at the top of the unit (Photo 1).



1. Fan distribution units shipped attached to the humidifier unit (identified as B\_ added to Model #) all primary internal wiring is done by factory. The connector is pre-wired in the factory when the Fan Distribution Unit is mounted onto the humidifier (Photo 2).



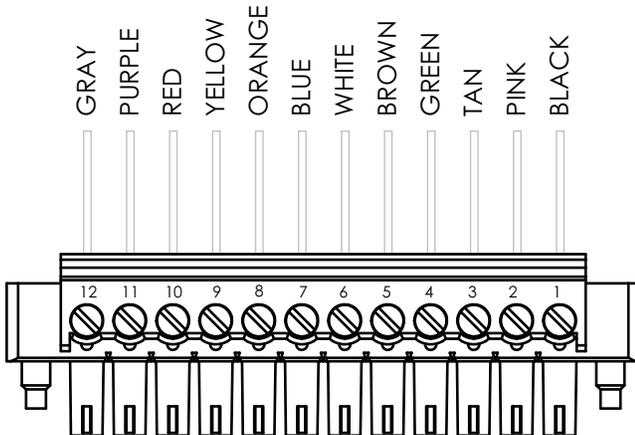
2. Remote fan distribution units (identified as R\_ added to Model #) will require appropriate steam hose and condensate return hose. Connection clamps are included. When the unit is remote mounted (Photo 3), the customer must field wire it by using one of the four selectable lengths provided by the manufacturer or must provide their own 12-conductor cable.



3. 12-conductor connectors are provided to route the necessary fan signals to a remote fan distribution unit from the humidifier. One male connector is inserted into the 12-pin female connector on the top/right hand side of the humidifier. A similar connector is located on the back of the fan module of the blower package. Wire routing to a remote blower package is performed by the customer in the field. Each end of the cable should attach a 12-pin male connector provided by the manufacturer. The customer must take care to make sure pin 1 on one end of the cable is routed to pin 1 on the other end, pin 2 is routed to pin 2, etc. The 12-pin female connector is located on the top panel on the right hand side of the humidifier. A detailed wiring diagram is provided in Table 3.

4. The fans are powered by a 12VDC (low voltage, class 2 circuit) connection supplied from the circuit board. The connectors can carry up to 800mA of current to the fans. Do not use any gauge wire smaller than 28 AWG. 22AWG is recommended. Before starting up the unit, please make sure there are jumpers on J17 (terminals 2 & 4) and J18. These connection terminal blocks are located along the bottom edge of the circuit board.
5. The attached humidifier recognizes air flow from tachometer outputs embedded in the 12-conductor cable line. When the fans are rotating, the air flow switch is activated. If the humidifier senses an insufficient tachometer reading, the unit will shut down.

Table 3 — Wiring Diagram



**FOR USE WITH ALL HUMIDIFIER MODELS:**  
 REMOTE MOUNTED FAN DISTRIBUTION MODELS:  
 HXBHB\_ and HXBHC\_

**Wire Description:**

Wire, 22 AWG, 12 Wire Shielded Cable  
 UL AMW Style 2464 and/or 2567

**SELECTABLE LENGTHS:**

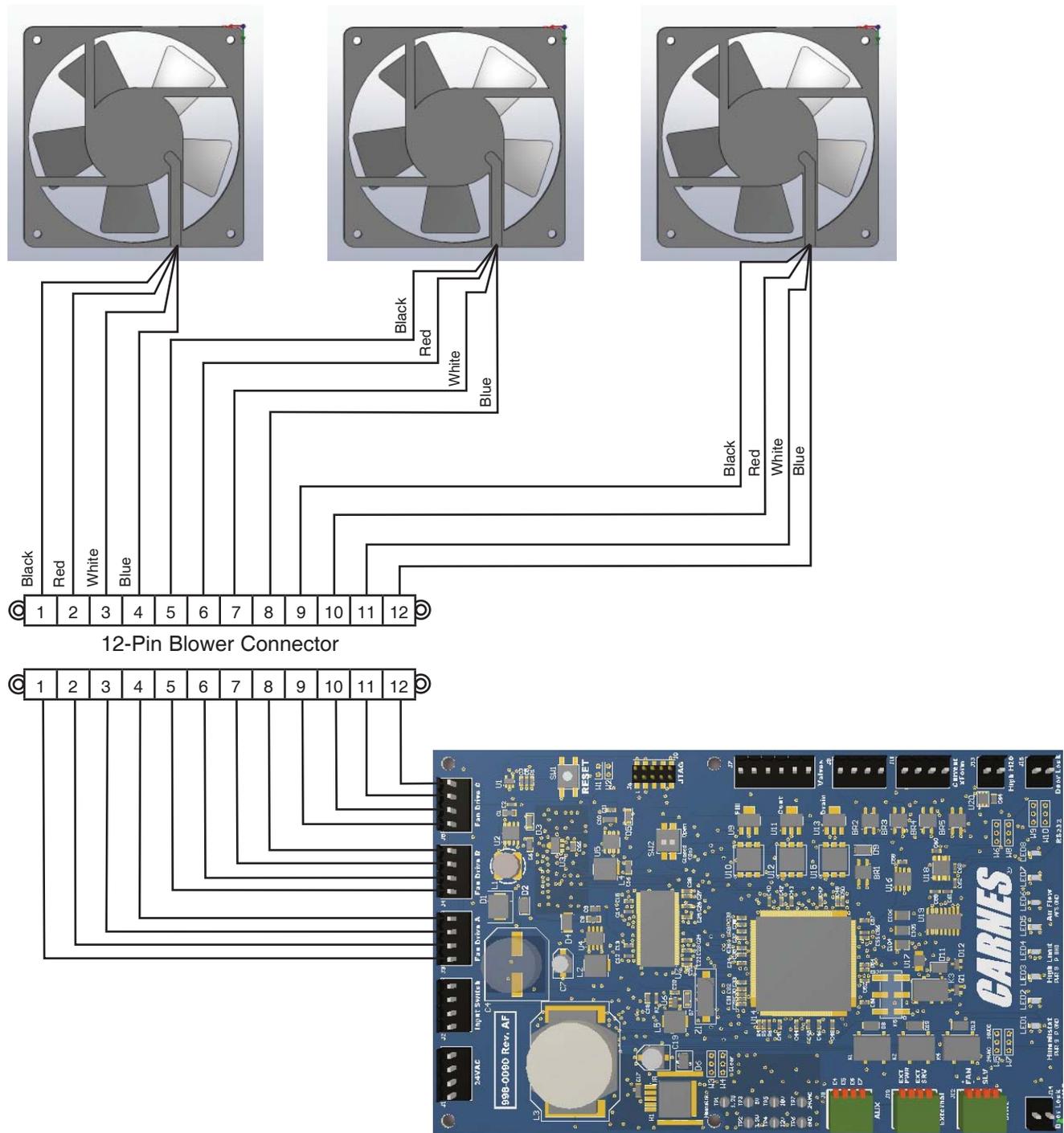
- J — 5 feet (Model Number for ordering wire only: H690-5081)
- K — 10 Feet (Model Number for ordering wire only: H690-5082)
- L — 20 Feet (Model Number for ordering wire only: H690-5083)
- M — 40 Feet (Model Number for ordering wire only: H690-5084)

**WIRING INSTRUCTIONS:**

1. Strip 1.75-2" from jacket of the wire cable (on open end only).
2. Strip 3/10 - 4/10" per wire on all 12 wires.
3. Install in connector in order shown (Wiring Diagram - Table 3) and tighten screws.

## Model HXBH

The HXBH (Remote) or “B” or “F” (Mounted) is the standard fan distribution unit for all “H” series humidifiers.



## V. OPERATION

1. Follow start up procedures as shown in Humidifier Installation, Operation and Maintenance Instructions.
2. The humidifier will not generate steam unless the fan in the distribution unit is running, this can be overridden by jumping connector J18 on the humidifier circuit board.

## VI. MAINTENANCE

1. Inspect the fans, inspect the water trap.