



**SUPPLEMENTARY INSTALLATION,  
OPERATION AND MAINTENANCE MANUAL  
FOR  
WET CELL**

**EVAPORATIVE COOLING AND HUMIDIFICATION**



UNIT MODEL NO. \_\_\_\_\_  
 UNIT SERIAL NO. \_\_\_\_\_  
 SERVICED BY: \_\_\_\_\_  
 TEL. NO: \_\_\_\_\_

**CANADIAN  
HEAD OFFICE  
AND FACTORY**

**1401 HASTINGS CRES. SE  
CALGARY, ALBERTA  
T2G 4C8  
Ph: (403) 287-4774  
Fx: 888-364-2727**

**USA  
HEAD OFFICE  
AND FACTORY**

**32050 W. 83<sup>rd</sup> STREET  
DESOTO, KANSAS  
66018  
Ph: (913) 583-3181  
Fx: (913) 583-1406**

**CANADIAN  
EASTERN FACTORY**

**1175 TWINNEY DRIVE  
NEWMARKET, ONTARIO  
L3Y 5V7  
Ph: (905) 898-1114  
Fx: (905) 898-7244**

**SALES OFFICES ACROSS CANADA AND USA**

Retain instructions with unit and maintain in a legible condition.  
Please give model number and serial number when contacting  
factory for information and/or parts.

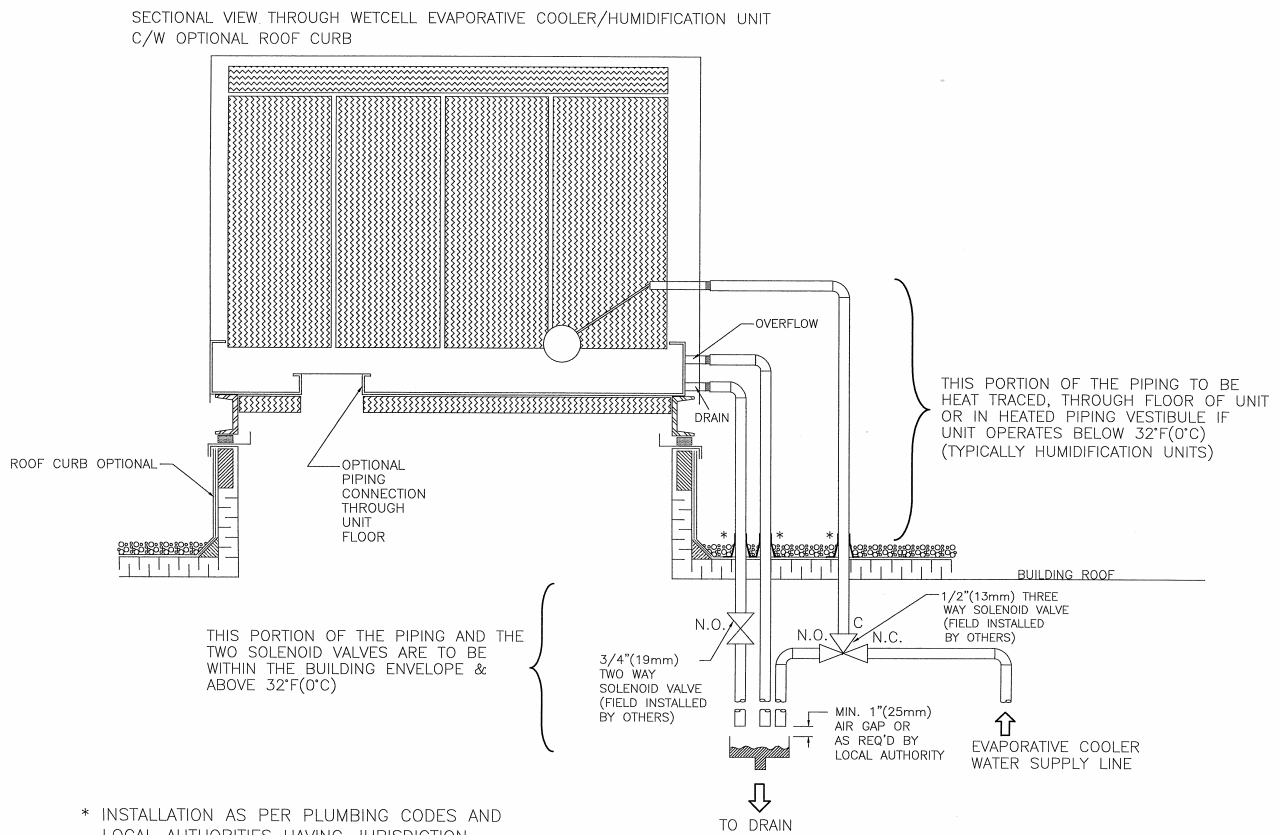
[www.engineeredair.com](http://www.engineeredair.com)

**SUPPLEMENTARY OPERATING AND INSTALLATION INSTRUCTION FOR WET CELL EVAPORATIVE COOLING & HUMIDIFICATION**

**INSTALLATION**

All plumbing shall be installed in accordance with local authorities having jurisdiction.

Humidification units that operate during the winter period shall have supply and drain lines run through a pipe chase within the roof curb, located in a heated vestibule, or heat traced. For recirculating systems with an auto fill and auto drain kit, it is recommended that these solenoid valves be installed inside the building as shown below.

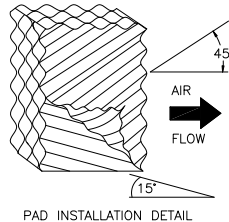


\* INSTALLATION AS PER PLUMBING CODES AND LOCAL AUTHORITIES HAVING JURISDICTION. SEAL ROOF CONNECTIONS AS REQUIRED.

## START-UP CHECK LIST

The start-up and operational checks must be in accordance with safe practices. Start-up must be performed by qualified personnel.

1. The wet cell media is design to operate with the 15° flutes sloping downward and 45° upward with the direction of the airflow. Ensure all wet cell media is position properly and packed against each other without any gaps.



2. Close drain valve and ensure the overflow connection is clear.
3. Inspect all electrical wiring, both field and factory installed, for loose connections.
4. Turn on water supply and electrical power. Refer to other operating and installation manual(s) provided with the equipment for other checklists regarding electrical, blower and motor.
5. For proper operation, an air system balance must be performed to ensure correct airflow. Failure to do so may cause water carryover, damage to equipment and/or building, and may be a cause of poor indoor air quality.
6. To prevent scale formation on a recirculating system, set the bleed valve to bleed off at a rate of 3-6% of the recirculating water. The actual amount will also depend on the pH and hardness of the make up water. Bleed off is not required on non-circulating type of units.
7. Adjust the amount of water feeding to the distribution pad and wet cell pads. Too little water will allow dry spots and scaling, thus reducing humidifier efficiency. Too much water will cause carryover.

## OPERATION

### Non-recirculating system

An external water supply connected directly to the distribution header that distributes water evenly onto distribution pads. The water runs down the cellular pads and is evaporated to achieve the desired humidification and/or evaporative cooling. Excess water is not recirculated and is drained away. A solenoid valve is used for on/off control.

### Recirculating system

Ambient temperature above 40°F (4.4°C), the normally open auto drain solenoid valve is energized, closing the drain line. Ambient temperature above 50°F(10°C), the auto fill (3-way) solenoid valve is energized, opening the external water supply line and allowing the sump to fill with water.

An on/off signal will control the operation of the recirculating pump submerged in the sump. The water is pumped to the distribution header and onto distribution pads. The water runs downs the media pads and is evaporated to achieve the desired humidification and/or evaporative cooling. Excess water is returned to the sump and recirculated.

Ambient temperature below 50°F (10°C), the auto fill (3-way) solenoid valve de-energized, closing the supply line. Ambient temperature below 40°F (4.4°C), the normally open auto drain solenoid valve de-energized, opening the drain line, allowing the sump to drain.

## **MAINTENANCE**

1. Inspect and clean sump regularly to ensure the quality of water in the recirculating system.
2. Clean the water distribution system. This includes the pump screen, impeller and distribution header.
3. Check overflow outlet to ensure outlet is clear.
4. Inspect wet cell pads regularly for scale build up on air entry side on recirculating system. Increasing the amount of bleed off can reduce scale build up.
5. Allow the wet cell media to dry out completely everyday. In most cases, operating the fans at least 30 minutes after the water pumps are turned off will dry out the pad enough to help control algae. Refer to the wet cell media manufacture's literature for additional information on housekeeping and cleaning.
6. Damaged wet cell media may cause water carryover and reduce efficiency. Replace wet cell media with equivalent types only. Wet cell media is extremely fragile. Care must be taken when replacing wet cell pads. Place a piece of sheet metal between pads will reduce damage to media during installation of new pads. Remove sheet metal after installation. Wet cell pads must installed with the 15° flute sloping downward towards the airflow.
7. On recirculating units with float valve, check and remove scale build up on valve linkage to ensure proper operation. Adjust flow to maintain proper water level in the sump (Usually 2" (51mm) below the overflow drain outlet).