



- Installation with Final Bracketing
- Installation of Fan Mist Rings
- Fan Power with Dedicated Fan Switch
- Fan Remote Contactor Relay Junction Box

## Fans: 1/2 hp 24” diameter and 36” diameter fans

All fans are located on columns, walls or ceiling hung, allowing for easy access and locating each fan at about 12-15’ from floor level. Each fan location needs to permit access for installation and continuing access as may be required.

Fans are always located in consideration of using plant indoor mechanical air movement patterns for assisting in overall humidity control distribution. Plan all fan locations in context to all known incoming air makeup and exhaust air locations. The principle is to make sure we are feeding humidity upstream and using the downstream flow of air by working with mechanically controlled plant air flow patterns to assist with the natural behavior of moisture in air which will naturally and quickly seek equilibrium over all available air space (Dalton’s Law of Partial Pressures).

All fans are completely integrated sequentially by the operation of the pump PLC controlling the on/off timing of both the pump and fan cycles of operation. The PLC coordinates the on/off signals from the zone humidistat. During the on cycle, fans turn on ten seconds ahead of the pump. When humidity is satisfied, fans turn off ten seconds after the pump off signal to make sure all moisture is cleanly evaporated.

Fans are shipped fully assembled and boxed – remove fan from packaging and make sure no debris is left inside the housing or fan guard. All fans are powder coated with front guards which open for easy internal access. Fans are rated at 68 Db at 10-15’ distance. Fan weighs 63 lbs. Fans are UL certified with single speed direct drive motors and sealed ball bearings.

All fans are hard wired. Connect the appropriate size and length of wire to the fan motor. Make sure fans are not wired incorrectly causing fans to run backwards.. A separate toggle switch (one per zone) is included on the pump to pre-test fans for correct wiring.

Fan Mounting: Brackets require on-site center drilled 5/8” for 1/2” bolt fastening bracket to customized bracketing. This allows fan to be rotated pointing moisture plumes in object free directions allowing complete evaporation within a 4’ diameter x 20’ long air space (avoid any possibility for condensation issues interfering with plant objects). Fans are generally located and pointed in directions over aislesways.





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### Fans May Require Final Bracketing Fabrication

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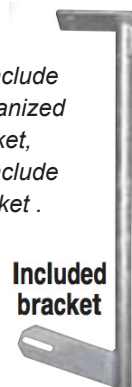


*Fabricated Bracketing: Four 36” fans mounted to square column with 3” x 1/4” angle iron with pre-drilled holes for 1/2” bolts. Fan Bracket (included with fan) is fixed to the angle iron with 1/2” bolt to allow fan to be rotated for final direction of moisture plume.*



36” fans include a 30” galvanized steel bracket, 24” fans include a 24” bracket .

**Included bracket**



Shown as backside of fan installed with bracket fixed to fan.



### Specifications for 24” and 36” Fan

Fan Description	Part#	HP	Volts	Amps	Phs	CFM
24” Diameter Fan	IHC-24-1	1/2	115/230	4.8/2.4	1	5300
24” Diameter Fan	IHC-24-3	1/2	230/460	2.6/1.3	3	4250
36” Diameter Fan	IHC-36-1	1/2	115/230	6.2/3.1	1	9880
36” Diameter Fan	IHC-36-3	1/2	208-230/460	2.6/1.3	3	9910





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## Fan Mist Rings: Installation

Mist Rings are shipped with the pump station shipment and require on-site installation to the face of each fan.

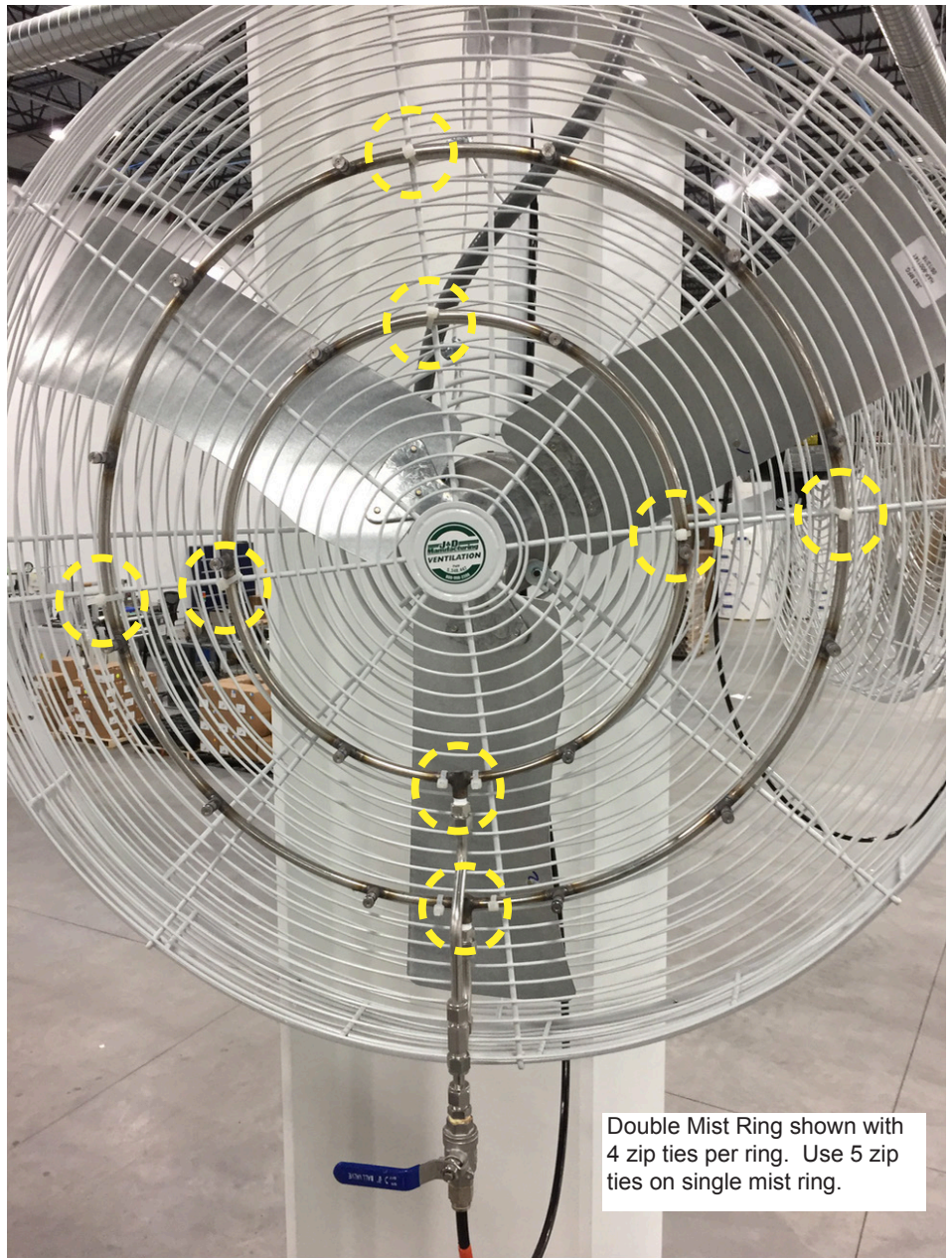
Mist rings are either single mist rings or double mist rings depending on the specifications for each project.

Mist rings are attached to the front of the fan grille, centering the mist ring on the face of the fan and securing with 5 zip ties to the fan grille if single mist ring, or 4 zip ties per ring on a double mist ring assembly. Make sure mist rings are centered on the discharge grille of the fans with the water supply connection facing down as shown.

Each mist ring comes standard with a ball valve assembly including a Slip-Lok fitting to receive the 3/8” high pressure tube routed from the pump station.

The diameter of the mist ring dictates the number of nozzle ports (10/24 female thread) which receive the male end 10/24 thread high pressure nozzles.

Always flush mist rings to clean out any potential debris prior to system startup.



Double Mist Ring shown with 4 zip ties per ring. Use 5 zip ties on single mist ring.

### Mist Ring Specifications

(3/8” Diameter – Stainless Steel – 10/24 female thread)

Mist Ring Size	Part#	# Nozzle Ports
15” Diameter Single Mist Ring	IHC-MR-15-6	6
18” Diameter Single Mist Ring	IHC-MR-18-8	8
24” Diameter Single Mist Ring	IHC-MR-24-12	12
15” & 24” Diameter Double Mist Ring	IHC-MR-2415-18	18

### Ball Valve Assembly For Single Mist Rings

Part #	Description
IHC-38SL-18MA	3/8” Slip Lok x 1/8” MNPT adapter (1 ea / ring)
IHC-38BV	3/8” Stainless steel ball valve (1 ea / ring)
IHC-38SL-38MA	3/8” Slip Lok x 3/8” MNPT adapter (2 ea / ring)





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## Fan Power Supply with Dedicated Fan Switch & Final Connections

### Fan Wiring Instructions:

- Recommended to install On/Off Switch with each fan per example.
- Fans are hard wired with grounded cord connected directly into the fan motor and to an appropriate grounded outlet in accordance with all local codes and ordinances.
- Route wire to motor with drip loop and secure. Drip loop will drain accumulated moisture away from the motor.
- Configure internal wires to match supply voltage and wire according to motor nameplate. Test to verify correct fan rotation.

### Additional Information:

- Safety Cable may be required depending upon local codes.
- Final connecting of drop down high pressure lines from each tee can be zip tied from the ceiling down onto the bracket.
- Make sure you plan enough line for drop downs to easily make a gentle sweep to easily connect into the ball valve Slip-Lok connection.





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## Providing for Remote Contactor Relay Junction Box (electrician supplies)

Plant power is provided to all fans via a remote contactor relay box which is controlled by a 24VAC cable from the pump station where connections are labeled “Control Box 1” and “Control Box 2” corresponding to Zone 1 and Zone 2 remote relay junction boxes.

The relay junction box receives the on/off signal from the pump PLC. Fans are energized by the signal which opens and closes electrical power to the fans. The number of relays used is to be sized by the fan voltage and corresponding maximum amperage draw for all fans in a zone. More than one relay box may be required per zone. 24 VAC power is provided at the pump. Recommended to use 18 gauge 2 wire cable (two connections per control box).

*The rationale for the design choice we have integrated into the pump design using 24VAC is to provide for a simplified wiring design using the least amount of higher voltage wiring for supply of plant power to the fans. Using relay boxes allow for closer utilization of plant utilities to fans where plant power can be easily accessed and longer runs back to the pump are completed with low voltage 24Vac 18 gauge 2 wire cable.*

