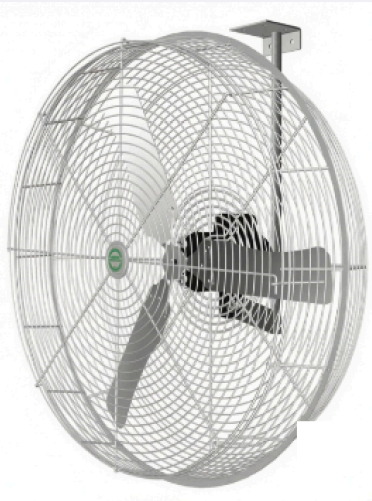


TECHNICAL DATA DOCUMENT

High-Velocity
Fan

36" ½ HP Basket Fan
Models VBS36A · VBS36CF



KEY SPECIFICATIONS

Type	Basket (cage) fan
Diameter	36"
Motor	½ HP
Phase	1 Ph or 3 Ph
Airflow	10,000 CFM
Speed	844–846 RPM
Plume	4' dia × 22'
Mount Height	10–15' from floor
Sound	68 dB @ 10–15'
Weight	63 lbs
Finish	White powder coat
Bracket	30" (included)
IHC Part #	VBS36A · VBS36CF

Specifications

The FanMist High-Velocity Fan is a 36", ½ HP industrial basket fan that moves 10,000 CFM of air through the mist ring mounted on its face — carrying 1000-psi atomized water into a fast-evaporating 4' × 22' plume above plant equipment and workspaces.

Key Functions Summary

- Accelerates evaporation of 1000-psi atomized water
- Supplies unsaturated air and keeps droplets suspended
- Carries moisture into the plant's natural airflow pattern
- Starts 10 seconds before the pump; runs 10 seconds after it
- Rotates and tilts on its bracket to aim each moisture plume
- Controlled automatically by the Pump Station PLC

PART FAMILY

**36" Fan — Single Phase (Part #VBS36A)**

½ HP · 115/230 V · 1 Ph · 10,050 CFM — hard-wired, no cord.

Part #VBS36A-C115 with 115 V cord · **#VBS36A-C230** with 230 V cord

**36" Fan — Three Phase (Part #VBS36CF)**

½ HP · 208–230/460 V · 3 Ph · 10,000 CFM — hard-wired, no cord available.

**Mounting Brackets**

Standard 30" Bracket included with every fan

Part #VRSBR901-HDG Wall / Column Rotating Bracket

Installation Requirements

- Mount 10–15' from floor level — ceiling hung, or wall or column mounted
- Keep a 4' diameter × 22' long plume path free of obstructions
- Mount with the motor capacitor on top; remove the two bottom drain plugs
- Hard-wire to plant power with a dedicated ON/OFF switch and drip loop

TECHNICAL DATA DOCUMENT

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Models VBS36A · VBS36CF

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Model Specifications

02 • Model Specifications

FanMist systems use one of two 36" fan models, selected by the plant power available at the fan locations. Both share the same ½ HP basket-fan construction and deliver approximately 10,000 CFM.

FanMist Models Compared

	VBS36A	VBS36CF
Phase	1 Ph	3 Ph
Voltage	115 / 230 V	208–230 / 460 V
Amperage	6.2 / 3.1 A	2.6 / 1.31 A
Speed	844 RPM	846 RPM
Airflow	10,050 CFM	10,000 CFM
Power Cord	None · cord versions -C115 / -C230	None · not available

Wire supply voltage according to the motor nameplate.

Common to Both Models

Motor	½ HP · 36"	Sound	68 dB at 10–15'
Weight	63 lbs	Finish	White powder coat
Guard	Hinged open-front	Bracket	30", included
Plume	4' dia × 22'	Mist Ring	27" · 14 ports

Features

- Hinged front guard — interior access without removing the fan
- Shipped fully assembled and boxed, with bracket
- Single center bolt lets the fan rotate to aim the plume
- Motor flags with crescent slots set the vertical angle
- Bottom motor drain plugs release internal moisture
- Manual fan override toggle on the Pump Station for testing
- PLC-sequenced with the high-pressure pump
- Two-year FanMist equipment warranty

24" Fan Alternates

Same ½ HP construction for smaller spaces or reduced moisture loads — paired with an 18" (8-port) mist ring.

PART #	DESCRIPTION	AIRFLOW
VBS24	24" – 115/230 V – 4.8/2.4 A – 1 Ph	5,300 CFM
VBS24-110	As VBS24, with 110 V cord	5,300 CFM
VBS243A	24" – 230/460 V – 2.6/1.3 A – 3 Ph · no cord	4,250 CFM
VRSBR2-HDG	Galvanized ceiling bracket, 24" length, for 24" fans	—

TECHNICAL DATA DOCUMENT

High-Velocity
Fan36" ½ HP Basket Fan
Models VBS36A · VBS36CF

KEY SPECIFICATIONS

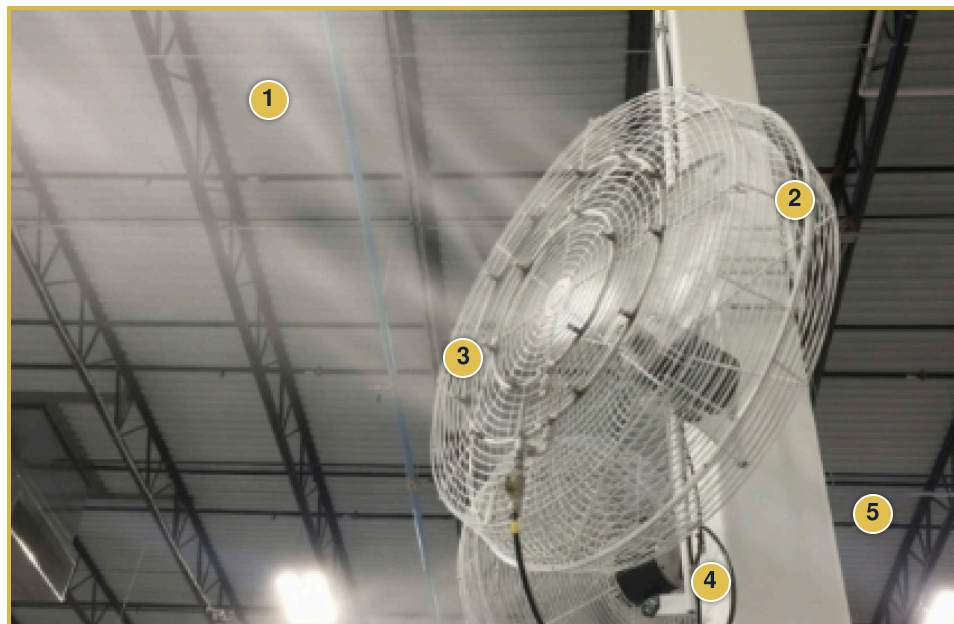
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Fan Physical Integration

03 • Physical Integration

Each fan is a misting station of its own: the mist ring is centered on the front guard, fed by a 3/8" drop-down line from the ceiling supply through its Ball Valve Assembly, and the fan's air stream carries the atomized water out into the plant.

Fig. 1 — FanMist 36" Fan with Mist Ring in Operation



- 1 Moisture Plume
- 2 Hinged Front Guard
- 3 Mist Ring & Nozzles
- 4 3/8" Drop-Down Line (180° sweep)
- 5 Plant Column Mount

Key Integration Notes

- Mist ring centered on the front guard, secured with 4–5 four-inch zip ties
- 27" mist ring (14 ports) on the 36" fan; 18" ring (8 ports) on the 24" fan
- Drop-down line begins at a ceiling 3/8" Slip-Lok tee (90° sweep on the last fan)
- Leave enough tube for a 180° sweep into a straight Ball Valve connection
- Fans powered by plant power; ON/OFF signal from the Pump Station PLC
- Fans start before and stop after the pump, so mist never meets still air

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Accelerated Evaporation

04 • Evaporation Rate

Atomization alone does not complete evaporation. How fully the mist evaporates is governed by the Loading Ratio — the CFM of fan air delivered for each lb/hr of water the mist ring releases.

The Loading Ratio

$$ER = \frac{\text{Fan Airflow (CFM)}}{\text{Mist-Ring Output (lbs/hr)}}$$

Optimal evaporation: Loading Ratio greater than **75 CFM per 1 lb/hr**

≤ 133

lbs/hr maximum mist-ring output on a 36" fan at 10,000 CFM

≤ 71

lbs/hr maximum mist-ring output on a 24" fan at 5,300 CFM

Mist-Ring Output & ER by Nozzle Size

FAN · RING	1.85N	2.64N	3.97N	5.29N	7.94N	10.58N
36" · 10,000 CFM 27" ring · 14 ports	25.9 ER 386	37.0 ER 270	55.6 ER 180	74.1 ER 135	111.2 ER 90	148.1 ER 68
24" · 5,300 CFM 18" ring · 8 ports	14.8 ER 358	21.1 ER 251	31.8 ER 167	42.3 ER 125	63.5 ER 83	84.6 ER 63

lbs/hr per mist ring = ports × rated nozzle output at 1000 psi · ER in CFM per 1 lb/hr. Blue = standard FanMist pairing (7.94N nozzles); amber = below 75, risk of incomplete evaporation.

What the Fan Contributes

- **High air movement & mixing** — keeps droplets suspended and supplies unsaturated air
- **Continuous dilution** — moves near-saturated air away, preventing localized saturation
- **Temperature influence** — draws on warmer ceiling air, which holds more moisture
- **Precise placement** — fan, ring and nozzles sized and pointed into obstacle-free air

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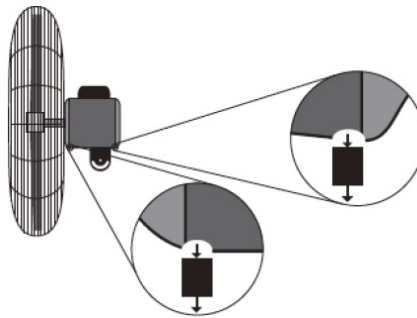
Location & Positioning

Where each fan is placed and which way it points decides how evenly the plant humidifies. Every plume needs open air, and every motor must be oriented so moisture drains out of it.

Selecting Fan Locations

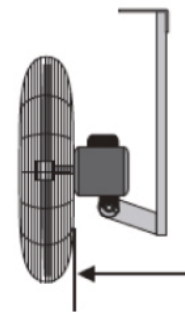
1. Install for easy access — 10–15' from floor level.
2. Ceiling hung, or wall or column mounted (some sites need special bracketing).
3. Give each plume a 4' diameter × 22' long unobstructed air space, generally pointed over aisle-ways.
4. Feed moisture upstream into the plant's natural airflow so it carries humidity downstream toward exhaust.

Fan Orientation



- Always mount with the motor capacitor on top
- Remove the 2 drain plugs at the bottom of the motor
- **Do not** remove the plugs on the top side

Wall Mount Minimum Distance

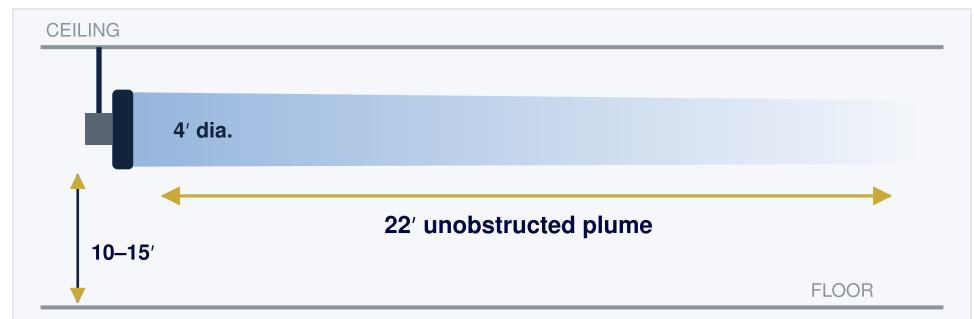


- Close wall mount (2'): point the fan at a 30° angle minimum
- Keep a minimum 5' of unrestricted air space for air supply

Safety Cable

A vinyl steel-braided safety cable securing each fan to a separate plant fixture may be required by local codes (supplied by others).

Fig. 2 — Moisture Plume Clearance (not to scale)



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Mounting & Brackets

06 • Mounting

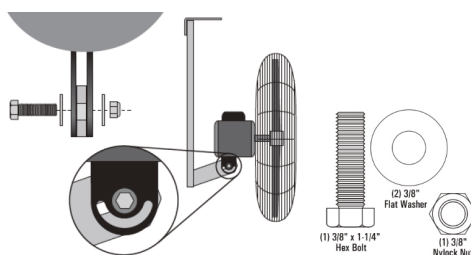
Every fan ships with a standard 30" bracket for hanging from a ceiling truss. A rotating bracket is available for walls and plant columns.

Ceiling Truss Mount — Standard 30" Bracket



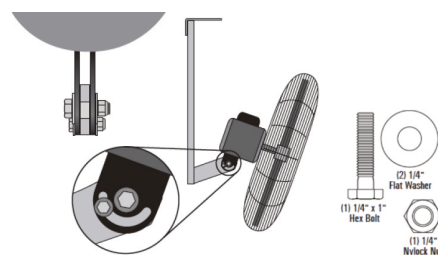
- Pre-drill the hot-dipped galvanized top plate with a 5/8" center hole
- Pass a single ½" hex bolt through the gap in the angle-iron truss
- The single bolt lets the fan pivot to aim the plume
- Bolt, 2 washers and nut sourced locally; 4 corner holes optional

Securing Fan to Bracket



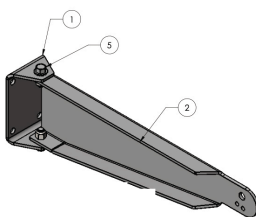
Install the included 3/8" × 1-1/4" hex bolt, 2 washers and 3/8" nylock nut.

Setting the Vertical Angle



Through the crescent openings on the motor flags, install the included ¼" × 1" hex bolt, ¼" washers and nylock nut. Set the angle, then tighten.

Wall / Column Mount — Part #VRSBR901-HDG



Wall End	3" W × 5" H · four .40" corner holes
Pivot Arm	19" overall · rotates
Finish	Hot-dip galvanized
Use	Replaces the 30" bracket · quoted separately

Note: set the pivot arm at a 30° angle minimum to allow sufficient air supply to the rear of the fan.

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Operating Sequence & Timing

07 • Sequence & Timing

NORMAL OPERATING CYCLE

- Humidistat calls for humidity**
FANS OFF PUMP OFF 0 psi
- PLC starts fans — 10-second delay begins**
FANS ON PUMP OFF 0 psi
- PLC starts high-pressure pump (T1 = 10 sec)**
FANS ON PUMP ON Rising — 550 psi in 25 sec
- System reaches operating pressure**
FANS ON PUMP ON 1000 psi MIST PLUME
- Humidistat satisfied — pump stops first**
FANS ON PUMP ON → OFF Dropping
- EDV opens — nozzles close below 300 psi**
FANS ON (10 SEC) PUMP OFF Below 300 psi
- Fans clear the residual mist**
FANS ON (10 SEC) PUMP OFF Low
- Fans stop after delay (T2 = 10 sec)**
FANS OFF PUMP OFF Low

Note: the 10-second fan lead gives the air stream a head start before any water is atomized; the 10-second fan overrun clears residual mist from the space.

PLC FAN CONTROL LOGIC

- Fans ON:** immediately when the humidistat start signal reaches the PLC — Relay "0" sends 24 VAC to the fan contactor.
- Fans OFF:** 10 seconds after the pump stops (off-delay timer T2).
- Pressure Fault:** if 550 psi is not reached in 25 seconds, the system shuts down through its off sequence and stays off until reset.
- Typical Cycle:** 10 minutes ON / 10 minutes OFF; 1,500–2,000 hours average seasonal runtime.

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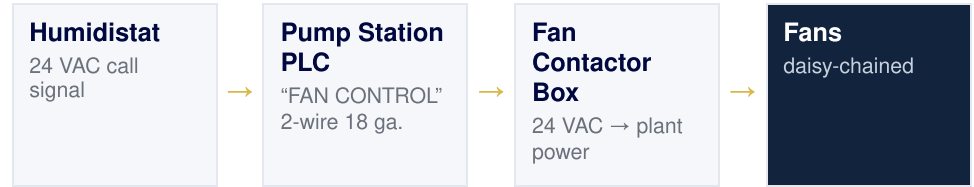
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Electrical Connections

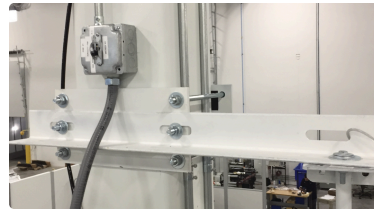
08 • Electrical

Fans run on plant power. The Pump Station sends only a 24 VAC ON/OFF signal, which a contactor relay box converts to switched plant power for the fans.

How Power Flows to the Fans



Power Supply to the Fan



- A. Install a dedicated ON/OFF fan switch.
- B. Include a drip loop to drain moisture away from the motor.
- C. Wire per the motor nameplate; verify rotation with the manual fan override toggle.
- D. All wiring external to the equipment package is provided by others.

Fan Relay Options — Relay in a Box (RIB)

MODEL	DESCRIPTION	CONTROLS
RIB2401B Single Phase	20 A SPDT power relay · 24 VAC/dc / 120 VAC coil · NEMA 1	1–2 fans
RIB243P Three Phase	20 A 3PST-N/O power relay · 24 VAC/dc coil · NEMA 1	1–8 fans

Also available: dry-contact input relays for long 24 VAC wire runs, and wireless RIB relays (one transmitter, any number of receivers).

Manual Fan Override Toggle

Mounted on the pump enclosure exterior, the toggle runs the fans only — for testing fans and checking rotation after installation.

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Troubleshooting Guide

SYMPTOM	POSSIBLE CAUSE	RECOMMENDED ACTION
Fan makes noise or vibrates	Loose mounting or damaged blades	Tighten bracket bolts; inspect blades and safety cable
Fan runs in wrong direction	Motor wiring incorrect	Swap two power leads on a 3-phase motor; re-test with override toggle
Fans do not run when system starts	No 24 VAC signal from the pump PLC	Check relay/contactor coil and "Fan Control" wiring from the pump
Override toggle has no effect	Wiring or contactor failure	Check "Fan Control" strain relief and relay box wiring
Excessive water use or wet spots	Nozzles too large or fans not running	Confirm nozzle size (page 4); verify fan delay and operation
Humidity does not reach set-point	Insufficient output or poor placement	Check load vs. output; reposition fans; verify all nozzles

Service & Care

- Lockout/tagout power (OSHA 1910.147) and depressurize before servicing
- Open the hinged front guard to clean the interior — no need to remove the fan
- Keep the mist ring centered and secured with 4–5 four-inch zip ties
- Fan and accessories carry the two-year FanMist equipment warranty

Related Documents

2026 Parts Price List — Section 08 Fans, Section 09 Mist-Rings · FanMist User Manual — 36" Fan & Fan Relay Options · Omron PLC (IHC–TDD–PLC) · Electric Drain Valve (IHC–TDD–EDV)