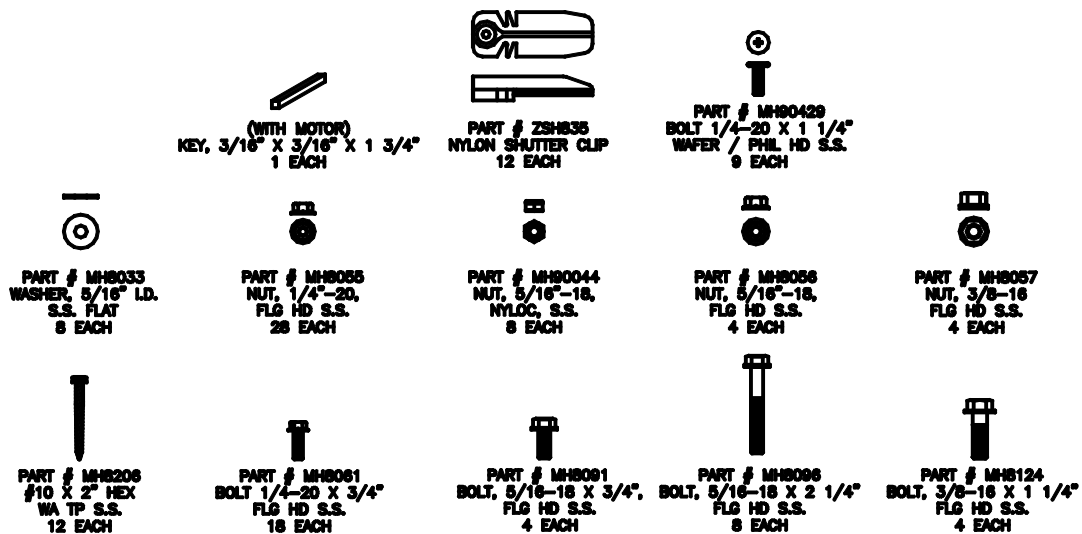


# **HPM 36'' HYPERMAX DIRECT DRIVE FANS**



Step 1.

Unpackage and become familiar with all of the fan components and hardware. The legend below will help to familiarize you with the hardware required for this assembly. The chart at left below identifies the parts for various possible configurations.

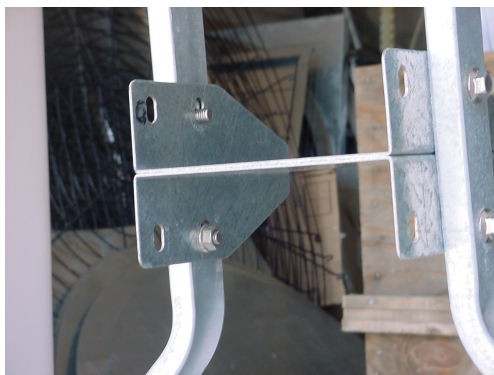


PART NUMBER REFERENCE CHART

| PART DESCRIPTION                | HPM36"  |
|---------------------------------|---------|
| HOUSING (WHITE)                 | FP348W  |
| HOUSING (BLACK)                 | FP348   |
| CONE SECTION FIBERGLASS (WHITE) | FPN349W |
| CONE SECTION FIBERGLASS (BLACK) | FPN349  |
| GUARD SCREEN FOR FIBERGLASS     | FP408CH |
| CONE POLY (WHITE)               | FP349S  |
| CONE POLY (BLACK)               | FP349PB |
| GUARD SCREEN FOR POLY           | FP408CH |
| MOTOR MOUNT TUBE, GALVANIZED    | FP522   |
| MOTOR PLATE, GALVANIZED         | FP513   |
| MOTOR MOUNT TUBE, S.S.          | FP523   |
| MOTOR PLATE, S.S.               | FP515   |

Step 2.

Assemble the motor plates to the motor mount tubes using 3/8"-16 x 1 1/4" flange head bolts (# MH8124) and 3/8"-16 flange nuts (# MH8057) refer to photo at right below. Make sure the back-to-back plates are placed in the lower set of holes in the motor mount tubes and that the bolts are inserted in the rear holes on the motor plates (refer to photo at far below left). The tops of the motor mount tubes can be identified by the indexing mark near the top set of holes (refer to photo below left). **Do not tighten fasteners at this time.**



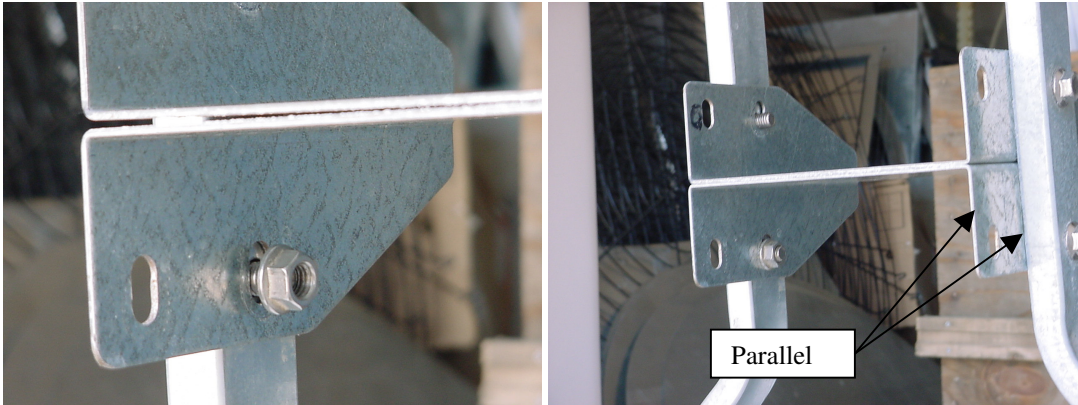
Step 3.

Mount the loosely assembled motor mount subassembly to the housing using the 5/16"-18 x 2 1/4" hex head bolts (# MH8097) with 5/16" flat washers (# MH8033) and 5/16"-18 Nyloc nuts (# MH90044). Insert the bolts with washers from the outside of the housing inward and through the motor mount tubes. Take care to mount the motor mount subassembly into the housing with the top of the tubes (identified in step 2) toward the top of the housing (deeper portion of the housing is the top). Once all eight 5/16"-18 x 2 1/4" bolts are installed and the 5/16"-18 nuts are started, tighten all fasteners securely (to approximately 140 – 150 in. lbs.)



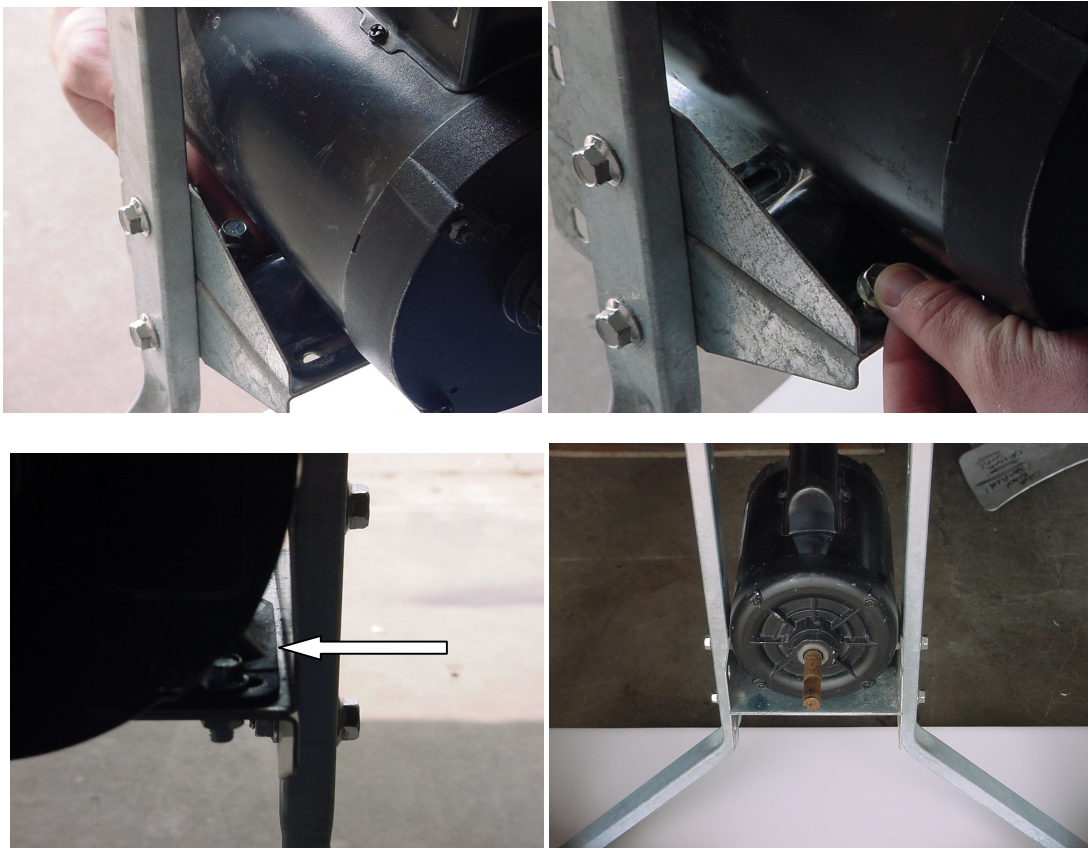
**Step 4.**

Position the motor plates as shown in photo at left below with the motor plate pushed upward so the bolt is at the bottom of the slot. Making sure that front edge of the motor plates are parallel with the motor mount tubes (refer to photo at right below), tighten securely (approximately 15 – 20 ft. lbs.).



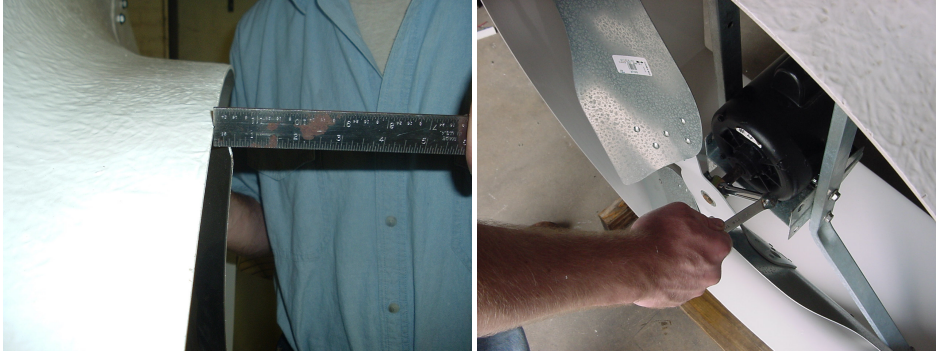
**Step 5.**

Position the motor onto the motor plates with the shaft toward the discharge side of the fan housing. Insert the four 5/16"-18 x 3/4" flange head bolts (# MH8091) and 5/16"-18 flange nuts (# MH8056) refer to photo at left below. Align the side edge of the motor's base plate with the inside side edge of the motor mount plate (refer to arrow in photo below left) and make sure there is even space on each side (refer to photo below right) and that the edges are parallel and tighten securely (approximately 140 – 150 in. lbs.).



**Step 6A. (Galvanized Blade)**

Install the blade onto the motor shaft along with the 3/16" x 3/16" key supplied with the motor. The setscrew hub on the blade shall be positioned toward the intake side of the fan housing. Approximately 1/2" of the blade tip should protrude from the orifice lip when the blade is properly positioned (refer to photo at left below). Once the blade has been properly positioned securely tighten the setscrews (approximately 80 - 85 in. lbs.)



**Step 6B. (Cast Aluminum Blade)**

Install the blade with Tran Torque onto the motor shaft and position the blade so the Tran Torque is flush with the motor shaft and the hex portion of the Tran Torque protrudes from the blade hub (refer to photo at left below). When the blade is positioned properly tighten the Tran Torque to approximately 150 ft. lbs. of torque (refer to photo at right below).



**Step 7.**

Once the blade has been install, rotate the blade and check to ensure equal tip clearance all the way around the orifice. Some lateral adjustment of the motor plates may be necessary to achieve blade centering.

Step 8.

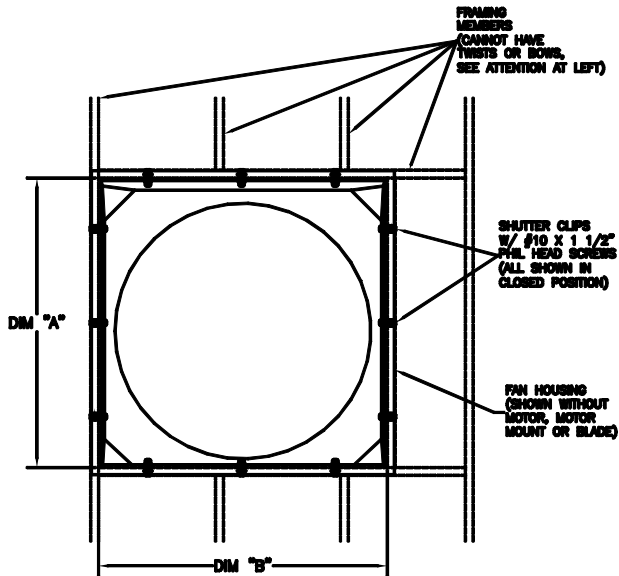
Install the assembled fan into the wall opening (**the wall opening must be square, plumb & flat**), taking care that the housing slopes downward. Use the shutter clips and the self-tapping #10 x 1 1/2" Phillips pan head screws to fasten the fan to the wall (refer to drawing of framing detail below). Take care to screw the shutter clips through the predrilled shutter clip holes in the fan housing. Manually rotate the fan blade to check it for centering, the clearance between the blade tips and the edge of the orifice should be equal all the way around the orifice. If some further adjustment is needed see Step 7.

ROUGH OPENING CHART

|         | PMC FAN SIZE |
|---------|--------------|
|         | 36"          |
| DIM "A" | 44 1/2"      |
| DIM "B" | 44 1/2"      |

**ATTENTION:**

It is of the utmost importance to have the opening in the wall square, plumb and flat (to within 1/8"). These conditions must be verified prior to installing the fan into the wall rough opening.



Step 9A (Fiberglass Cone)

Assemble the discharge cone using four, 1/4"-20 x 3/4" bolts (# MH8061) and nuts (# MH8055) on each standing seam. Do not tighten the fasteners at this time.



Step 9B (Poly Cone)

The poly cone is a one-piece part and requires no assembly.

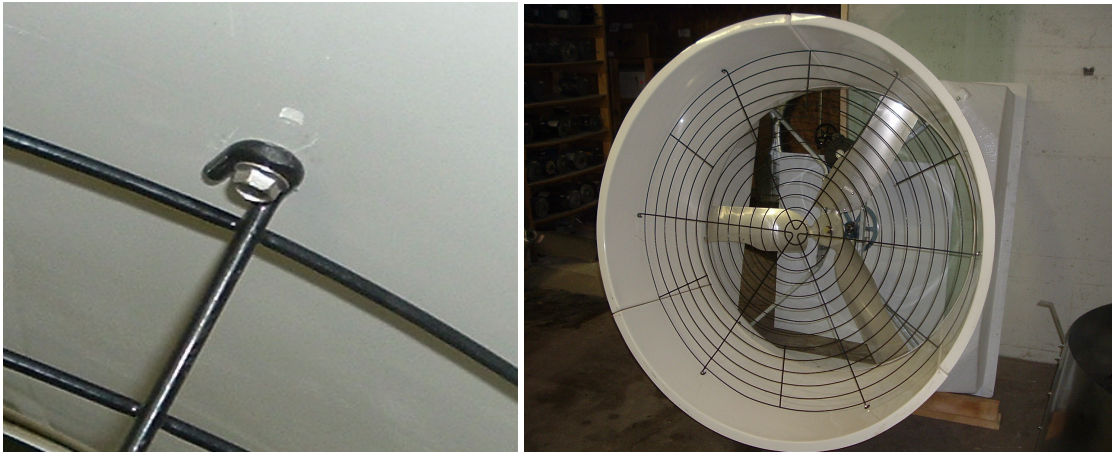
**Step 10.**

Mount the assembled cone onto the fan housing (this must be done after the fan housing has been installed into the wall). If using a fiberglass cone ensure that one of the standing seams is located top dead center of the fan orifice. Using eight 1/4"-20 x 1 1/4" wafer head bolts (# MH90429) and 1/4"-20 nuts (# MH8055) to fasten the cone to the fan housing. The bolts must be inserted from the inside of the fan orifice through the cone so that the nuts are on the outside. This is very important that the bolt head is the only thing inside of the orifice to reduce the risk of the fan blade hitting anything.



**Step 11.**

After the cone has been mounted to the fan housing, install the guard screen into the discharge cone using eight 1/4"-20 x 3/4" bolts (# MH8061) and 1/4"-20 nuts (# MH8055). Note that the bolt heads shall be to the inside (refer to photo at left below) against the guard screen loop and the nuts shall be on the outside of the cone.



**Step 12.**

Install the shutter onto the fan housing on the inside of the building using the shutter clips. When installing the shutter, make sure the shutter vanes open upward (as noted by arrow).



## FAN MAINTENANCE

**CAUTION:** Disconnect electrical power before servicing fan.

**Inspect propeller:** Check to see that the propeller is secure on the shaft and that there are no signs of damage.

**Fasteners:** Retighten nuts and bolts on a quarterly basis.

| FASTENER / DEVICE               | RECOMMENDED TORQUE |
|---------------------------------|--------------------|
| ¼"-20 X ¾" HX HD BOLT           | 80 – 85 IN. LBS.   |
| 5/16"-18 X ¾" HX HD BOLT        | 140 – 150 IN. LBS. |
| 5/16"-18 X 2" HX HD BOLT        | 140 – 150 IN. LBS. |
| 3/8"-16 X 1 ¼" HX HD BOLT       | 15 – 20 FT. LBS.   |
| ¼" SETSCREWS (BEARINGS)         | 80 – 85 IN. LBS.   |
| 5/16" SETSCREWS (PULLEYS)       | 80 – 85 IN. LBS.   |
| 5/16" SETSCREWS (BLADE)         | 80 – 85 IN. LBS.   |
| 1" I.D. X 1 ½" O.D. TRAN TORQUE | 150 FT. LBS.       |

**Lubrication:** Lubricate the pillow block bearings on a quarterly basis with a NLG1 type grease.

### Clean Fan:

**Motor:** Remove any dust accumulation from motor using a brush or cloth. **(DO NOT USE A PRESSURE WASHER ON THE MOTOR)** A clean motor will run cooler and last longer. Check if the motor is secure in its mount.

**Shutter:** Carefully clean dust from shutter vanes and frame so that shutter opens and closes freely. If shutters are extremely dirty you can lose up to 45% of your fan capacity.

**Guard:** Clean any dust or dirt buildup from fan guards using a brush. Dirty guards can also reduce airflow.

**Housing:** Remove dust and dirt accumulations from housing with a pressure washer.

**If any portion of the fan is cleaned with a power washer or any liquid it is highly recommended to run the fan for a minimum of 15 minutes to allow the fan and motor to dry before it is left idle for any length of time.**

**Inspect Fan Controls:** All controls should be inspected every six months to assure optimum protection of your ventilation system.

- Check all covers for a tight fit.
- Wipe enclosures with a damp rag to remove dirt and dust.
- Clean sensors with a damp rag to remove dirt and dust. Be very careful not to damage sensors.
- **NEVER CLEAN ELECTRICAL EQUIPMENT WITH A PRESSURE WASHER!**

**WIRING:** Be sure power is “OFF” before doing any wiring. All wiring will be installed in accordance with national, state and local electrical codes. Fans used to ventilate livestock buildings or other rooms where continuous air movement is essential should be connected to individual electrical circuits. For electrical connection requirements, refer to diagram on the motor nameplate or the enclosed wiring diagram. Motors are pre-wired for 230 volts. Motor overload protection should be provided for each fan. A circuit breaker switch or slow blow motor type fuse must be used.

Three phase motors do not include overload protection. Specifications subject to change without notice.

**NOTE:** A safety cut-off switch should be located adjacent to the fan.

**PROPER SHUTTER INSTALLATION:** When installing the shutter, make sure the shutter vanes open upward.

**WARNING** If these ventilation products are used to support life in agricultural structures where failure of the system could result in loss or injury, the user must provide an adequate backup and alarm system. The user must accept all risks of such loss or injury due to the possible failure of the ventilation system.

**CAUTION** Do not install fan with moving parts within seven feet of floor or grade level without a guard that complies with OSHA Regulations. Do not use unless electrical wiring complies with all applicable codes. Do not wire without providing for power source disconnect at the fan itself. Do not service except by a qualified maintenance technician and only after disconnecting the power source. Do not install in room where flammable material is stored or flammable vapors might build up. Failure to observe all of these precautions can result in serious injury or death.

## SERVICE AND TECHNICAL ASSISTANCE

Your dealer or the Valco Service Department will be happy to answer all your technical questions which will improve your use of the Hypermax Power Miser series fan. **Be prepared with the model number and necessary information before you place a call to your dealer or Valco.** If your fan requires service when the warranty period has expired, please contact your dealer for assistance or return the unit to Valco for repair.

### Inquiries



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