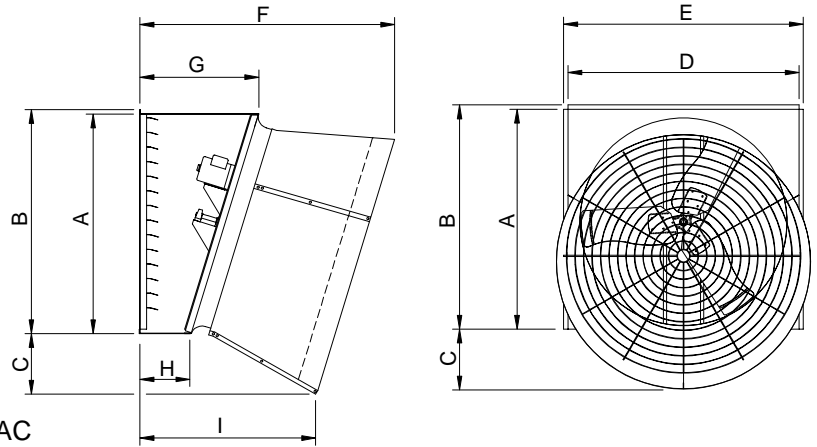


Each Crate includes:

- 1 - 48" Belt Drive Fan
- 1 - Plastic Shutter
- 1 - Hardware Package (HP1004) includes:
 - 12 - 1/4" - 20 x 1 1/4" Hex Screws, ZP
 - 12 - 1/4" - 20 Nut Hex Screws, ZP
 - 24 - 1/4" Flat Washers, ZP
 - 2 - #10 x 1/2" Tek Screws, ZP
 - 5 - Wire Ties, Black



Fan Specifications:

Power: 100-115/208-230 VAC or 200-230/460 VAC
 Phase: 1 3
 Hertz: 60 60

NOTE: Crate may contain Fan Accessories.

CAT. NO.	FAN DIA.	NO. OF BLADES	A	B	C	D	E	F	G	H	I	Wall Opening (I.D., framed)
GBxxxC	48"	3	51 5/8"	52 5/8"	12 7/8"	54 3/8"	55 7/8"	57"	27 7/8"	11 3/4"	38 3/4"	52 1/4" H. x 55" W.

UNPACKING THE EQUIPMENT

Before beginning installation, check the overall condition of the equipment. Remove packing materials, and examine all components for signs of shipping damage. Any shipping damage is the customer's responsibility and should be reported immediately to the freight carrier.

INSTALLATION INSTRUCTIONS

- 1) Construct the framed opening at correct size according to the above chart and your fan size.
See Figure 1.

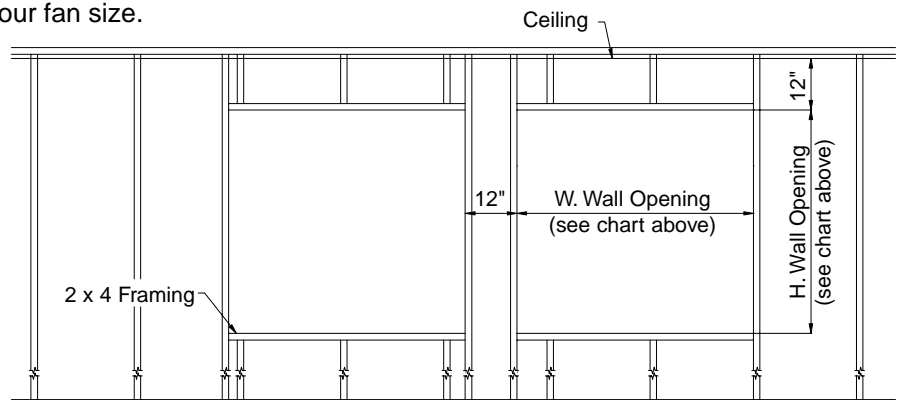


Figure 1

⚠ WARNING



ROTATING FAN BLADES.
Operation of fan without wire screens or guards may result in direct contact with blades and cause severe personal injury or death.

- 2) Remove shutter and the four #10 x 1/2" TEK screws shown in **Figure 2**. Save these screws.
- 3) Remove, the 1/4 x 1" TEK screws located on the top, bottom, left and right sides of the housing. **CAUTION: fan is now loose.**
- 4) Firmly grasp the motor struts and pull the orifice panel forward in the housing until the holes in the orifice panel line up with the second set of holes in the housing. **See Figure 3.** Using the 1/4 x 1" TEK screws removed in Step 3, reattach the orifice panel to the housing.
- 5) Reinstall the #10 x 1/2" TEK screws into the same holes they were removed from in Step 3.

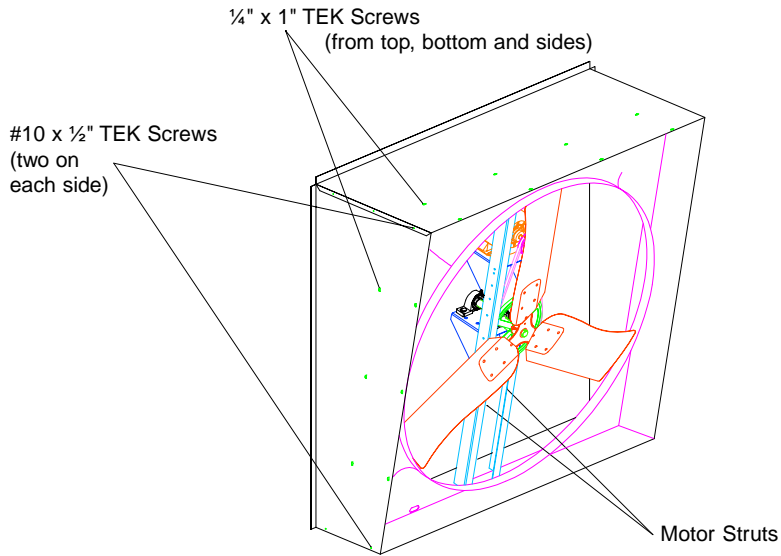


Figure 2
SHIPPING POSITION

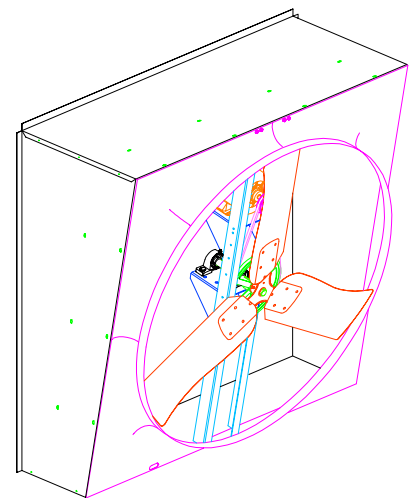


Figure 3
CONE INSTALLATION POSITION

- 6) Insert fan into the framed opening from the inside and fasten with 1/4" diameter lag screws or #14 tapping screws (not provided). **See Figure 4.**
- 7) Install the cone as described in Discharge Cone "GC" Series Installation Instructions, on **QM1014.**

- 8) Proceed to the Electrical Wiring Section before installing the shutter.

SHUTTER INSTALLATION:
Insert shutter into fan housing **See Figure 5.** Rotate shutter clips down over shutter flange to secure in place. Gently push shutter blades open by hand, checking for smooth operation. Installation is now complete.

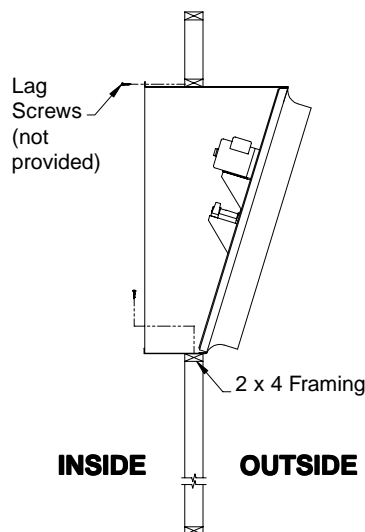


Figure 4

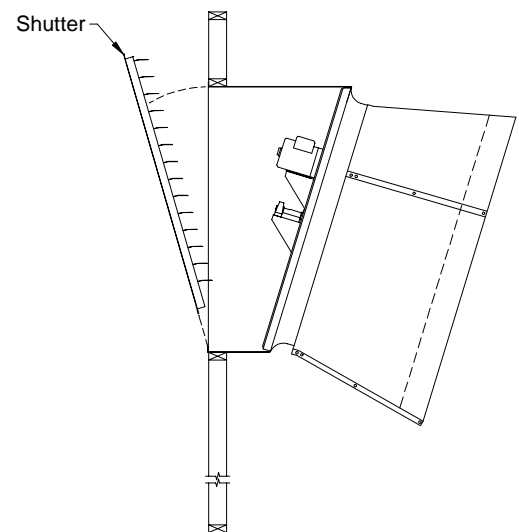


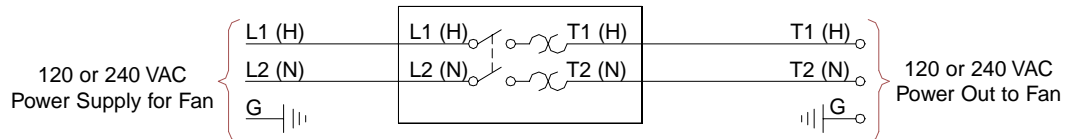
Figure 5

ELECTRICAL WIRING



All wiring should 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, with a minimum of two circuits per room. For electrical connection requirements, refer to diagram on motor nameplate and to information enclosed with the Aerotech environmental control to be used.

Single Phase Fans: motor overload protection should be provided for each fan. A Circuit Breaker Switch or slow blow motor type fuses must be used **See Figure 6**. See Aerotech form **QM1400** for proper size. **NOTE:** A safety cut-off switch should be located adjacent to each fan.



KEY:

L1 = Line 1 H = Hot
L2 = Line 2 N = Neutral
G = Ground

NOTE: Information in parenthesis refers to 120 VAC control.

Figure 6
Single Phase - Motor Overload Protection with Disconnect (SY2000 or Equivalent)

Three Phase Fans:

- 1) The use of a quality frequency drive and the installation of line reactors is recommended to reduce voltage spikes and harmonic distortion.
- 2) Minimum operating frequency of 30 Hz.
- 3) Will require three pole contactors with overload protection (by others) if a frequency drive is not used.

»Install shutter at this time, go back to Step 8 in the Installation Instructions Section.

OPERATION



- 1) **INITIAL START-UP:** With electrical power off, verify that the fan propeller turns freely and that all fasteners are secure. Turn on electrical power and confirm that the fan operates smoothly.
- 2) **ADJUSTMENTS:** Set the fan control to the temperature shown on your Aerotech ventilations system drawing, or to a value which will provide the desired environmental conditions.
- 3) **BELT ADJUSTMENTS:** After 3 days of operation you must tighten fan belt. See Maintenance Section: Belt Tension.

MAINTENANCE



The following inspection and cleaning procedures should be performed monthly:

- 1) **INSPECT PROPELLER:** Check that propeller is secure on motor shaft and that there are no signs of damage. The blades are of a self-cleaning design and should not require maintenance.
- 2) **CLEAN** regularly for best results:
 - **FAN MOTOR:** Remove any dust accumulation from motor using a brush or cloth. (**DO NOT** use a pressure washer). A clean motor will run cooler and last longer. At the same time, verify that the motor is secure in its mount.
 - **SHUTTER:** Carefully clean dust from shutter blades and frame so that shutter opens and closes freely. A brush or cloth should be used.
 - **GUARD:** Clean any dust or feathers from fan guards using a brush. Dirty guards can reduce airflow.

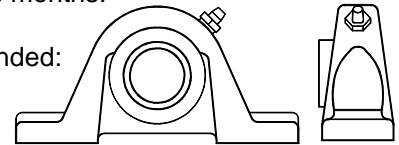
3) **CHECK FASTENERS:** For safety, all fasteners should be inspected. Tighten any loose connections.

4) **INSPECT FAN CONTROL:** With power disconnected, inspect all electrical connections. Wiring should be secure and in good condition. Remove any dust build-up from control case and sensor using a soft brush or cloth. **NEVER CLEAN ELECTRICAL EQUIPMENT WITH A PRESSURE WASHER!**

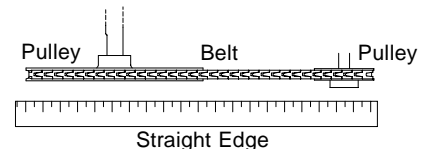
5) **GREASE BEARINGS:** Grease bearings every 4-6 months. Use no more than 2 shots when greasing fan.

- A premium non-water based grease is recommended:

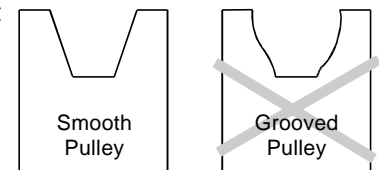
- Shell Alvania #2	- Mobil Mobilux #2
- Exxon Unirex N2	- Texaco Premium RB
- Mobil 532	- Texaco Multifak #2



6) **CHECK DRIVE ALIGNMENT:** Use a straight edge to check the alignment of the pulleys. If an adjustment is needed, remove the belt, then loosen the set screw in one pulley and move it. Remember to tighten the set screw after making an adjustment. Drive alignment is very important for long belt life and proper operation.

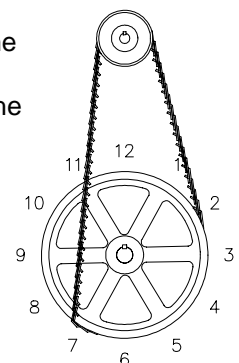


7) **CHECKING PULLEYS:** Roll the belt off and look at both pulleys. If the pulley has grooves in it or is no longer smooth, it needs replacement. A loose or slipping belt will reduce fan performance up to 60% and cause premature belt failure.



8) **BELT TIGHTENING:** All belts must be checked for proper tension after the first 3 days of fan operation and every 4-6 months thereafter.

- Roll the belt off the pulleys by forcing it side ways off the larger pulley as you turn the drive by hand.
- Reinstall the belt by wrapping it around the smaller pulley and then starting it over the larger pulley.
- As you continue rolling it onto the larger pulley, the belt should become taut in the position shown below.
- If the belt becomes taut before reaching the position shown, add one link and try again.
- If the belt is still loose when in the position shown, remove one link and try again.



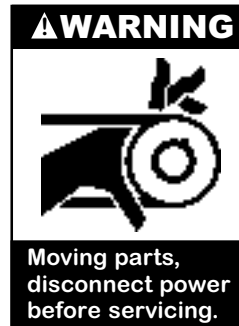
WINTERIZING FAN

In most climates, it is probable that the ventilation system will never need to operate at a total capacity during the colder winter months. Consequently, it is advisable to "winterize" those fans which will not be used in cold weather to avoid unnecessary heat loss and condensation.

To winterize, turn fan control "off". Install the insulated closure panel over the fan intake. If you don't have an insulated closure panel, a piece of rigid insulation material can be used. **Remember the insulation panel must be removed before warmer weather returns.**

NOTE: At least one single speed fan should be left uncovered and with power available to provide air movement in the event of variable speed control difficulties.

TROUBLE SHOOTING



SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
Fan Not Operating	<ol style="list-style-type: none"> 1. Fan control set above room temperature 2. Blown fuse or open circuit breaker 3. Propeller blade contacting fan housing 4. Fan control defective 5. Motor defective 	<p>Set to a lower temperature</p> <p>Replace fuse or reset breaker</p> <p>Realign motor in fan housing</p> <p>Repair or replace control</p> <p>Repair or replace motor</p>
Fan Operating-Insufficient Airflow	<ol style="list-style-type: none"> 1. Frequency drive improperly adjusted 2. Shutter jammed 3. Guard dirty 	<p>Three Phase fans, see page 3.</p> <p>Clean shutter & fan housing</p> <p>Clean guard</p>
Excessive Fan Noise	<ol style="list-style-type: none"> 1. Frequency drive defective 2. Motor bearing defective 	<p>Repair or replace control</p> <p>Repair or replace motor</p>
Excessive Fan Vibration	<ol style="list-style-type: none"> 1. Motor loose in mount 2. Propeller damaged 3. Motor shaft bent 	<p>Tighten fasteners</p> <p>Replace propeller</p> <p>Repair or replace motor</p>
Fan never turns off	<ol style="list-style-type: none"> 1. Override thermostat set incorrectly 2. Control set for continuous operation 	<p>Set to the correct temperature</p> <p>Set speed control correctly</p>

WARRANTY: See Aerotech, Inc. Limited Warranty Statement

AEROTECH, INC.

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FORM: QM1168

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