



atmosphere is everything

## **Air Curtain FAQ & Troubleshooting Guide**

### **Mounting & Installation**

#### **How Long Does It Take To Install A Mars Air Curtain?**

The average time required to install a unit is two hours. After the second or third installation, the time can usually be cut to one hour.

#### **Do Mars Air Curtains Require A Cover When Mounted Outside?**

No, they are not normally required as their design protects them from inclement weather. Weatherproof covers may be recommended when the units are exposed to harsh environments or excessive moisture. All unheated units are ETL/UL listed for outdoor use.

#### **Is There Any Difference In The Sound Level If A Mars Air Curtain Is Installed Outside Or Inside?**

Yes, if the level of sound is a problem mount the air curtain outside and the sound will be reduced.

#### **How Far Above The Doorway Header Should The Air Curtain Be Mounted?**

Mount air curtain  $\frac{1}{2}$ " to 2" above the door opening whenever possible. The closer to the top of the door opening, the more effective the air curtain will be. Extended mounting brackets are available in various lengths so the air curtain can be mounted to clear an obstruction. If the unit is mounted higher, move it  $\frac{3}{8}$ " away from the wall for every 1" it is moved above the door.

#### **If There Is An Obstruction Over The Doorway, How Far Away From The Wall Can The Air Curtain Be Installed And Still Function Effectively?**

Not more than 8" for refrigeration and 14" for insects. To seal off the ends, 12" to 18" panels made of sheet metal, plastic strips, or plywood can be installed on each side of the door opening to improve the efficiency of the air curtain. Sometimes the Mars Air Curtain outlet nozzle may be installed between the obstruction and the wall. Precaution is necessary to prevent the obstruction from deflecting the flow of air.

### **What Are The Normal Heights That An Electric Heated Mars Air Curtain Can Be Mounted?**

Electric heated air curtains with ½ HP motors are normally used over customer entrance doorways in restaurants, supermarkets, department stores, personnel entrances, etc. and installed no more than 8' above the floor. The colder the climate the higher the kW heater should be selected. If specifying electric heated models for use over warehouse doorways, use either HV or EP models. Higher kW's should be used in this case. Most electric heated models are supplied with motor control panels and wall mounted thermostats for ON/OFF/Fan Only control.

### **When More Than One Air Curtain Is Installed Over A Doorway, How Close Together Should They Be Mounted?**

Units should be mounted next to each other; however, if the door opening is wider than the units, spacing up to 6" between units is acceptable. LPV25 models can be spaced up to 3" apart. For wider pass-thru openings, use the LoPro series.

### **What Happens If The Air Curtain Is Much Smaller Than The Door-Width Opening?**

Whenever possible, avoid using an air curtain that is shorter than the entire width of the door opening. An undersized air curtain will create unprotected areas on each side, thereby reducing its efficiency level. An air curtain should cover the doorway completely. If necessary, it's always better to use an air curtain that is slightly wider, than shorter, in covering the opening. Some manufacturers will provide their units with extreme side deflectors to help spread the air outward. Avoid using this type of design. The output airflow pattern becomes very irregular. Much of the airflow moves across the opening, causing considerable air velocity loss by the time it hits the floor.

### **When Would A Vertical Mount Be Feasible?**

When installation is not possible over the top of the doorway some Mars Air Curtains may be vertically mounted on either side of the door, blowing across the door opening; this type of installation must be specified at time of order. The pan of the motor/fan assembly will be bolted to the air curtain housing instead of the standard wing nut mount hardware. All motors used in Mars Air Curtains contain thrust bearings and operate efficiently in any position. LoPro units cannot be vertically mounted.

### **Where Are The Junction Boxes?**

Each motor within the air curtain housing will have one watertight junction box mounted internally. Contact factory for specific location. If specified at time of order, the junction box can be located elsewhere.

## **How Does The Air Curtain Mount Over A Large Warehouse Roll-Up Door?**

Mars provides a variety of optional mounting hardware accessories. Side extension plates are available to further extend the outboard mounting hole on the STD, HV, and EP models when being used to clear existing lines and tracks over a doorway. These plates are available in various sizes up to a 9" extension for both ends of the air curtain. Adjustable mounting brackets and extended wall mount brackets for drum type roll-up doors are also available; these types of brackets are used when the air curtain needs to be mounted some distances away from the wall. The brackets are available in various sizes to provide 2 ½" to 23" of clearance. Please consult factory for details.

## **When There Is A Foyer, Where Should The Air Curtain Be Mounted?**

To be most effective, the air curtain should be mounted inside the foyer over the building entrance door. Depending upon climatic conditions, either a heated or unheated model may be used.

## **When An Air Curtain Is Mounted Over A Cooler Doorway, Can The Door Itself Be Removed And The Air Curtain Allowed To Operate Continuously?**

No. Air curtains provide up to an 80% thermal efficiency level. The continual loss of refrigerated air and build-up of humidity within the cooler will cause the compressor to burnout. Air Curtains are meant to be used as an energy saving device when the cooler door needs to be opened for loading and unloading purposes.

## **Should The Air Curtain Be Mounted Inside Or Outside The Doorway?**

Generally, air curtains will operate with equal efficiency, regardless of which side of the doorway it is mounted on. However, there are certain exceptions, as follows:

1. Either side of the door opening is acceptable when used for insect control or over refrigerated coolers.
2. Outside installation is required when used over freezer doors because when mounted inside, the fans tend to gather moisture and freeze, eventually forming a snowball around the fan, causing it to lose operational efficiency.
3. Inside installation is mandatory when used as a thermal barrier in factories, stores, etc., to prevent loss of heat and keep out the cold air.
4. Heated units must always be mounted inside.

## **How Do You Clear Existing Lines And Tracks Over A Doorway?**

Mars provides a variety of optional mounting hardware accessories. Side extension plates are available to further extend the outboard mounting holes on the STD, HV, and EP models. These plates are available in various sizes up to a 9" extension for both ends of the air curtain. Adjustable mounting brackets and extended wall mount brackets for drum type roll-up doors are also available. These types of brackets are used when the air curtain needs to be mounted some distances away from the wall. The brackets are available in various sizes to provide 2 ½" to 23" of clearance. Please consult factory for details.

## **How Do You Mount A Mars Air Curtain Over A Meat Track That Comes Out Through The Center Of The Door Opening?**

Sometimes one unit can be installed over the door opening on top of the track, but very often there are obstructions and the unit would have to be installed much too high. Therefore, one unit on each side of the track would be more efficient because installation is then closer to the top of the door opening. The air curtain should be mounted 3" to 4" away from each side of the track to prevent interference with products being sent through.

## **Operation & Performance**

### **How Far Beyond The Edge Of The Housing Does The Air Spread And What Is The Depth?**

The air leaves the discharge nozzle at very high velocities. The air spread and depth of "air wall" created varies between models. A general rule of thumb is: for units with 1HP motor(s) or less, the air spread is up to 3" and the depth of the wall of air created is about 18", measured 6' from the nozzle. For units with motor(s) larger than 1HP, the air spread is up to 6" and the depth of the wall of air is about 24", measured 6' from the nozzle.

### **What Could The Cause Be If Air Leaving The Nozzle Does Not Seem To Have Much Velocity?**

**Possible causes for low air outlet velocities are:**

1. Incorrect rotation of the fans. This needs to be reversed for correct rotation.
2. If the air directional vanes at the air outlet nozzle are turned beyond a definite limit, they will restrict the air flow.
3. Fan blades need cleaning.
4. Open intake louvers.
5. Turn up adjustable speed knob- if supplied with the unit.
6. Check wiring at motor to ensure proper terminals are wired up.
7. Consult factory.

### **Why Do Mars Air Curtains Have Adjustable Louvers At The Air Intake?**

Adjustable louvers are used to obtain optimum operating efficiency. When used over refrigeration doors, the louvers can be adjusted to regulate the velocity and volume of air at the air outlet. This is important in order to form an air barrier and balance the cold air inside the refrigerated box with the warm outside air. The louvers should be set so the air barely hits the floor. The colder the air, the stronger and stiffer the barrier should be. When used as a barrier to insects, louvers should be set at the maximum open position for full volume of air.

### **When Adjustable Velocity Control Louvers Are Completely Closed, Will The Motor Be Starved For Air And Therefore Overload?**

No, on the contrary, the motor will be working under a lighter load. When the louvers are closed, there is less air to load the fan blades, thus allowing them to operate "free wheeling". The amperage draw of the motor drops significantly.

### **Why Do Mars Air Curtains Have Adjustable Air Directional Vanes At The Air Outlet?**

The air directional vanes in the discharge nozzle can be positioned inward or outward. This design feature provides the capability to compensate for drafts, wind loads, and necessary adjustments to effectively repel flying insects, dust, fumes, odors, and other wind borne contaminants. If the air curtain is mounted internally in a building for environmental separation (i.e. separating a manufacturing area from a clean work area) or over a refrigerated room door for temperature control, the directional vanes should be pointed straight down.

### **What Happens To The Air When It Hits The Ground?**

As the air reaches the floor, it will divide, sending the air inward and outward simultaneously and causing a draft both ways at the floor line. When using an air curtain for insect and dust control, the directional vanes in the air outlet nozzle should be directed outward not only to repel the insects and dust but to also allow the least amount of air to come inward when hitting the floor. If mounted on the outside of the doorway and used for the purpose of holding in air conditioning when the door is open, the directional vanes should be slanted slightly outward. Mounted on the inside of a cooler, the vanes should be turned slightly into the refrigerated room. It is important to remember that when an air curtain is used for refrigeration or climate control, it is absolutely necessary to adjust the velocity control so the air stream gently hits the floor with the least amount of vacuum reaction, thus pulling the air out of the protected room and defeating the intended function of the air curtain and causes icing on the floor.

## **Are There Any Situations That Could Cause Air Curtains To Operate Poorly Or Not At All?**

**Yes. There are three applications to be avoided:**

1. Air curtains will not perform satisfactorily if there is an exhaust fan in operation causing a negative pressure within the building. The curtain of air will be strongest near the nozzle and weakest at the floor. Since air entering the building always seeks the least line of resistance, it will flow into the building a few feet from the floor at the door opening.
2. A wind tunnel effect will prevent air curtains from operating properly. A wind tunnel effect occurs when there are two open doors, one on each side of the building.
3. If an air curtain is mounted on the outside of a building to prevent the entrance of cold air, it will not perform properly. If mounted outside, cold air coming down will hit the floor, bringing cold air into the building. It must be mounted on the inside of a heated room.

## **Should The Customer Use A Thermal Overload Protection Switch In The Electrical Circuit?**

Not necessarily. All motors used in Mars Air Curtains are equipped with an automatic thermal overload switch in the windings of the motor for protection against burnout. If, for any reason, the motor is overheating, the motor will automatically stop. Possible causes for overheating are:

1. Voltage or Phase:
  - A. Wrong voltage being fed to the motor.
  - B. Too low a voltage.
  - C. Phases unbalanced in three phase motors.
2. Excessive vibration in fans caused by debris caught in the vanes.
3. Motor dirty- Air cannot get to motor housing for proper cooling.
4. Wiring hookup not properly followed, or the wire is too light a gauge from electrical panel to air curtain.

## **Are Variable Speed Motors Required On Air Curtains?**

The ability to adjust the outlet airflow is highly desirable; this significantly aids in the air curtain's performance by allowing compensation for varying field conditions. Most Mars Air Curtains boast this feature provided through the adjustable air intake louver. Some models feature variable or multi-fixed speed motors while others include internal volume dampers in the air curtain's discharge nozzle or a combination of the above. NSF certified models do not have any variable speed options. Please note, due to NSF regulations consult factory for specific model offerings.

### **If A Warehouse Or Commercial Building Is Heated, What Are The Advantages Of Installing An Air Curtain?**

Heat rises and tends to stratify. The air curtain will cause the air to circulate, eliminating the stratification; this helps to reduce heating costs. The directing of a space heater toward the air curtain intake, if practical, will assist this action and minimize any cold drafts by bringing the warm air down to floor level with sufficient velocity and at the same time will prevent cold air from entering the building, thus saving on energy bills.

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### **Can Air Curtains Be Used To Hold In Extreme Heat Inside Industrial Conveyor Ovens?**

Yes, as long as the air curtain is mounted on the outside of the oven and operating temperature does not exceed 120° F. The smaller the opening, the more effective the installation as the percent of heat loss is held to a minimum.

### **Can A Mars Air Curtain Be Over A Blast Freezer?**

Yes, use the same models as you would over a regular freezer.

### **What Type Of Maintenance Does The Mars Air Curtain Require?**

All motors have lifetime lubricated sealed ball bearings, making greasing or oiling unnecessary. Blowing or wiping dust off the fans and motors whenever it is visible is advisable to ensure maximum performance.

### **How Far Beyond The Edge Of The Housing Does The Air Spread And What Is The Depth?**

The air leaves the discharge nozzle at very high velocities. The air spread and depth of "air wall" created varies between models. A general rule of thumb is: for units with 1HP motor(s) or less, the air spread is up to 3" and the depth of the wall of air created is about 18", measured 6' from the nozzle. For units with motor(s) larger than 1HP, the air spread is up to 6" and the depth of the wall of air is about 24", measured 6' from the nozzle.

### **Do Mars Air Curtains Meet Osha Requirements?**

The sound level produced by all Mars Air Curtains is below what OSHA considers harmful, making approval unnecessary.

## **Accessories & Options**

### **What Is A Door Limit Switch And When Is It Used?**

A door limit switch activates the air curtain when a door is opened and turns it off when the door is closed. When the door is shut, the switch's contacts are held open. When the door is opened, the contacts are closed, thereby turning the air curtain on. Generally, a door limit switch is installed when a door is intermittently in use, such as over receiving and cold storage doorways. It is preferable to allow the air curtain to operate continuously and not to install a door limit switch if there is heavy in and out traffic. When using a door limit switch a motor control panel is recommended for all three-phase motors and single phase motors with combined capacities of more than 1HP.

### **Can A Limit Switch Be Used On All Types Of Doors?**

Yes. Our combination door limit switch is both a roller and plunger all-in-one and can be used on most hinged, rolling, and sliding doors. We have additional switches available for larger doors, industrial settings, or clean, almost invisible applications.

### **What Is A Motor Control Panel And When Is It Used?**

A motor control panel is an enclosure containing the equipment to start electric motors, usually mounted on the wall near the air curtain to be controlled. The equipment consists of motor starters, a transformer for the control circuit, terminal blocks, and other components to meet specific requirements. It is also used to start, stop, and protect the motors in the air curtains. Motor control panels are available as an option and can be manufactured to meet any requirement. All electric heated models contain a motor control panel as standard equipment. All Mars motor control panels are U.L. Listed.

### **Can Filters Be Used In Front Of Louvers?**

Yes. Filters can be used in conjunction with or instead of louvers. Filters are used when there is an excessive amount of dust and dirt in the air. All Mars NSF Certified models feature a washable aluminum filter as standard. Filters are also supplied with the LPN25-F, LPN28-F and LPN30-F service window models.

### **Which Mars Air Curtains Contain Stainless Steel Blower Wheels?**

The EP models have stainless steel fans. Our other models, and all heated models, have galvanized steel fans, except the LoPro Series models which are aluminum.

## **How to choose which heating option is right for me?**

Many of the MARS air curtains are available in both heated and unheated versions. In most cases, Mars offers four different heating methods: steam or hot water coil, electric and indirect gas-fired. Each offers its own distinct benefits and features.

**Q** The first question is: do I really need a heated air curtain?

**A** The answer is maybe not. Your Mars Air Door effectively creates an efficient insulation barrier between two environments. It's approximately 80% - 90% efficient. It does so by creating a stiff blast of air blowing down from the unit towards the floor. This blast of air create an invisible barrier separating the two environments.

If you have people working near or walking through this moving air, they may feel a breeze. This could cause a wind chill effect, similar to the cooling effects of a blowing fan during the summer. Adding a heated air curtain unit will minimize this effect and make for a comfortable and more productive work place for your employees and customers. Should your facility be located in a cold weather environment creating significant temperature differences between the outside versus the inside temperature, a Mars Air Door heated unit will significantly improve the work environment comfort level and help maintain consistent temperature control. In addition, it will reduce overall utility and maintenance costs by providing a more constant inside temperature.

**Q** OK, that makes sense. So I've decided that I need a heated unit. Which one do I choose; gas, electric, hot water or steam?

**A** The general rule of thumb is to choose the same type of heat used to heat your facility, however, there may be some exceptions. For example: if your facility is steam heated, but the connection to the steam lines is too far, inconvenient or expensive, it may be more feasible to choose gas or electric.

To ensure that we install the correct heating method and proper heating outputs for you, we highly recommend consulting with your friendly Mars factory representatives first for proper selection.

## **Miscellaneous**

### **Does Mars Air Doors Advertise Nationally?**

Yes, a heavy advertising program has always been aimed at the user. Our advertising has appeared in numerous food, beverage, and supermarkets publications as well as heating, air conditioning, and refrigeration trade journals, and engineering publications. We are also in specialized publications such as: Thomas Register, ARCAT, and Auto Quotes automated catalog services.

## What Are The Main Advantages Of The Mars Air Doors Brand Air Curtains?

- All housings are one piece, as specified by architects. Some are used in tandem for larger sized doors.
- C, CH, CHS, models have PolyMars housings. PolyMars housings are advantageous for various climates and décor.
- A variety of over 250 compact models to fit any size doorway in unheated and electric, gas, steam and hot water-heated models.
- Heavy duty totally enclosed motors. All other components are of the highest quality to provide long life and trouble-free service. Two speed motors available as an option. Three speed ½ HP motors are standard equipment on all models. Three-phase motors in single-speed only.
- All motors have a one second motor start to full capacity operation.
- Easy to install and maintain by removing two wing nuts and quickly lifting out the entire motor/fan assembly. Mars originated this "One Man installation" design.
- Designed to fit over doorways up to 12' wide. Can be used in multiples for wider openings.
- Motor/fan assemblies are interchangeable in various models.
- Contain air directional and velocity controls for field adjustments. This is imperative for climate control and over refrigeration doorways.
- Five year parts guarantee on all models except heated, WindGuard models, and Wind Stopping models, which have an eighteen month guarantee. These are the longest guarantees in our industry.
- Freight paid to destination or port of embarkation anywhere within the continental United States (gas-heated and WindGuard models excluded).
- All unheated and electric heated air curtains are UL Listed. Unheated air curtains are also C.U.L. Listed and/or Canadian Standards Association Certified. Gas heated air curtains consist of a UL Listed air curtain equipped with an American Gas Association design-certified duct furnace.

## Troubleshooting Guide

### Unheated Models

#### No Air Blowing out of Discharge Nozzle

##### CAUSE

- No power being supplied to the unit from the electrical power source
- Circuit breaker is tripped
- Blown fuses on power supply
- Motor overload is open or tripped
- Motor contactor / relay defective (if applicable)
- Failed switch

##### SOLUTION

- Confirm power source / check if in on position
- Reset circuit breaker

- Replace fuses
- Allow the motor to cool down; motor has auto reset internal overload; if unit is panel equipped, press reset button on overload inside panel, or replace motor overload if overload remains tripped
- Check voltage to coil; check contacts to see if they are pulling in (see voltage reading chart).
- Replace or repair limit switch (see switch OIP)

### **Motor Is Running But Fans Are Not Spinning**

#### **CAUSE**

- Loose or broken coupling (belt drive)
- Loose set screws on wheel hubs
- Fan spinning inside fan housing
- Broken fan hub

#### **SOLUTION**

- Replace or tighten coupling
- Tighten set screws on motor shaft flats
- Tighten fan on shaft or replace fan
- Replace fan wheels

### **Electrical Controls Not Working When Door Is Open**

#### **CAUSE**

- Switch is in off position
- Door limit switch is not operating

#### **SOLUTION**

- Turn unit's switch to the on position
- Repair or replace door limit switch (see switch OIP)

### **Unit Will Not Turn Off**

#### **CAUSE**

- Door limit switch is permanently closed or energized

#### **SOLUTION**

- Position the door switch in a manner that turns off the unit when the door closes, and turns on the unit when the door opens. Only light pressure required.

### **Low Air Flow**

#### **CAUSE**

- Discharge air vanes out of adjustment
- Obstruction on intake or discharge

- Power leads out of polarity
- Blower motor rotating below normal speed
- Fan rubbing against housing
- Blower wheels clogged with dirt

### **SOLUTION**

- Adjust vanes to proper position (Refer to unit's O&M manual)
- Remove obstruction or move air curtain
- Switch power leads to correct polarity (3 phase models only)
- Apply proper voltage per unit requirement (see unit label) / Adjust adjustable motor speed knob (if applicable)
- Free fan from housing
- Clean and remove dirt from blower wheels

### **Excessive Air Velocity At Door Opening**

#### **CAUSE**

- Nozzle out of adjustment and not angled far out enough
- Air temperature too cold
- Air stream pushing air outside of the building

**\*\* SEE AIR IS NOT HITTING THE FLOOR FOR FURTHER CAUSES**

#### **SOLUTION**

- Adjust nozzle angle to outside
- Add auxiliary heat to overcome wind chill
- Adjust discharge angle back into building

### **Air Not Hitting The Floor**

#### **CAUSE**

- Low air velocity
- Obstruction in the direction of air flow
- Negative building pressure

#### **SOLUTION**

- Adjust vanes to proper position or check installation height (Refer to O&M manual)
- Remove obstruction or move air curtain (Move out 3/8" for every 1" up from the door)
- Provide a make-up air system to relieve negative building pressure

### **Uneven Air**

#### **CAUSE**

- Shaft rotating inside fan
- One motor not functioning

## **SOLUTION**

- Replace fan or tighten fan on shaft
- Replace or repair motor

## **Excessive Noise And Or Vibration**

### **CAUSE**

- Loose or broken coupling (belt drive)
- Loose set screws on wheel hubs
- Fan spinning inside fan housing
- Broken fan hub
- Bearing end caps worn
- Damaged blower wheel
- Bearing end caps worn
- Balancing clips missing

### **SOLUTION**

- Replace or tighten coupling
- Tighten set screws on motor shaft flats
- Tighten fan on shaft or replace fan
- Replace fan wheels
- Replace Bearing end caps
- Replace Blower Wheel
- Replace Bearing end caps
- Replace Blower Wheel

## **Electric Heated Models**

### **No Heat**

#### **CAUSE**

- Thermal overload stuck open or tripped
- Switch is in "Heat" mode
- Thermostat out of adjustment
- Defective coils

#### **SOLUTION**

- Replace thermal overload or reset overload
- Check wiring or replace switch
- Adjust thermostat and check t-stat wiring
- Replace coils / fix air flow issue

## **Low Heat**

### **CAUSE**

- Low ambient conditions
- Incorrect voltage
- Incorrect t-stat setting
- Poor location of t-stat
- Undersized electric coil
- Improper wiring size supplied to unit
- Improper Resistance or no continuity across electric coil

### **SOLUTION**

- Confirm temperature rise with submittal backpage
- Apply proper voltage to the unit per unit requirement (see unit label)
- Set t-stat to the proper setting
- Relocate t-stat to proper location away from discharge nozzle to sense the average room temperature
- Replace higher kw electric coil (check power requirements first)
- Check NEC code and replace wiring with proper wiring size
- Replace electric coil

## **Steam/Hot Water Heated Models**

### **Extreme Heat**

#### **CAUSE**

- Low air flow across coil
- Dirty coil / fins clogged
- Water Flow Rate/ Steam Pressure too high

#### **SOLUTION**

- Speed up fan or check wheel rotation
- Clean / remove dirt from coils
- Reduce steam pressure or water flow rate / pressure

### **Low Heat**

#### **CAUSE**

- Low ambient conditions
- Insufficient steam pressure / water flow
- Inadequate condensation relief (steam coil models only)
- Coil leaking

## **SOLUTION**

- Check temperature rise with submittal back page
- Increase steam pressure / water flow to coil as required
- Increase coil trap diameter
- Repair or replace coil

## **No Heat**

### **CAUSE**

- Defective solenoid valve
- Inadequate water / steam pressure
- Fan Inoperable
- Door switch inoperable

## **SOLUTION**

- Replace solenoid valve
- Increase steam / water flow
- Check fan operation (see "No Air Blowing Out Of Discharge Nozzle")
- Check door limit switch function or replace door limit switch

## **Control Panel - Unheated and Hot Water/Steam Heated Models**

## **Unit Inoperable**

### **CAUSE**

- No Power being supplied to panel
- Circuit breaker is tripped
- HOA is in the "O" or Off position
- Contactor not energizing
- Contactor not energizing
- Contactor not energizing

## **SOLUTION**

- Apply Power supply
- Flip circuit breaker to on position
- Turn HOA switch on panel to "H" or ON position
- Turn HOA switch on panel to "A" or AUTO position when utilizing a switch to automatically turn the air curtain on when the door opens.
- Check fuses or replace fuses
- Push red button on Overload/Motor Protector to reset
- Check transformer or replace transformer

## **Overload (OL)/Motor Protector (MP) Tripping**

### **CAUSE**

- Amperage setting(s) too low on OL/MP during operation
- All motors are wired to one set of motor terminals and use only one OL/MP for overcurrent protection

### **SOLUTION**

- Set the adjustable amperage dial to slightly above the actual running amperage for the unit. Having lower or higher actual voltage will affect the running amperage and may fall beyond the standard range for the panel.
- Be certain that each motor is wired to separate terminals and do not share a common overload. For example: for a 2 motor unit; terminals 11, 21, 31 are for motor 1 and terminals 12, 22, 32 are for motor 2.

## **Low Air Flow**

### **CAUSE**

- Power leads out of polarity
- Blower motor rotating below normal speed

### **SOLUTION**

- Switch power leads to correct polarity
- Apply proper voltage per unit requirement (see unit label) / Adjust adjustable motor speed knob (if applicable)

## **Control Panel - Electric Heated Models**

### **Unit Inoperable**

#### **CAUSE**

- No Power being supplied to panel
- Circuit breaker is tripped
- On/Off switch is in the Off position
- Contactor not energizing
- Contactor not energizing

#### **SOLUTION**

- Apply Power supply
- Flip circuit breaker to on position
- Flip the switch on panel to ON or up position
- Turn HOA switch on panel to "A" or AUTO position when utilizing a switch to automatically turn the air curtain on when the door opens.
- Check fuses or replace fuses
- Check transformer or replace transformer

## **Low Air Flow**

### **CAUSE**

- Power leads out of polarity
- Blower motor rotating below normal speed

### **SOLUTION**

- Switch power leads to correct polarity (3 phase models only)
- Apply proper voltage per unit requirement (see unit label) / Adjust adjustable motor speed knob (if applicable)