

This publication contains installation, operation & maintenance instructions for standard units of the *Air Curtain*.



Carefully read this publication and any supplemental documents prior to any installation or maintenance procedure.

Loren Cook catalog, *Air Curtain*, provides additional information describing the equipment, unit performance, available accessories and specification data.

For additional safety information, refer to AMCA Publication 410-96, *Safety Practices for Users and Installers of Industrial and Commercial Fans*.

All of the publications listed above can be obtained from:

- lorencook.com
- info@lorencook.com
- 417-869-6474 ext. 166

For information and instructions on special equipment, contact Loren Cook Company at 417-869-6474.

Receiving and Inspection

Carefully inspect the fan and accessories for any damage and shortage immediately upon receipt of fan.

- Turn the wheel by hand to ensure it turns freely and does not bind.
- Check dampers for free operation of all moving parts.
- Record on the *Delivery Receipt* any visible sign of damage.

Handling

Lift fan by the outside housing (cabinet). Never lift by the shaft or motor.

Storage

If the fan is stored for any length of time prior to installation, store it in its original shipping crate.



Air Curtain

! WARNING

Rotating Parts & Electrical Shock Hazard:

Fans should be installed and serviced by qualified personnel only.

Disconnect electric power before working on unit (prior to removal of guards or entry into access doors).

Follow proper lockout/tagout procedures to ensure the unit cannot be energized while being installed or serviced.

A disconnect switch should be placed near the fan in order that the power can be swiftly cut off, in case of an emergency and in order that maintenance personnel are provided complete control of the power source.

Grounding is required. All field-installed wiring must be completed by qualified personnel. All field installed wiring must comply with National Electric Code (NFPA 70) and all applicable local codes.

Fans and blowers create pressure at the discharge and vacuum at the inlet. This may cause objects to get pulled into the unit and objects to be propelled rapidly from the discharge. The discharge should always be directed in a safe direction and inlets should not be left unguarded. Any object pulled into the inlet will become a projectile capable of causing serious injury or death.

When air is allowed to move through a non-powered fan, the impeller can rotate, which is referred to as windmilling. Windmilling will cause hazardous conditions due to unexpected rotation of components. Impellers should be blocked in position or air passages blocked to prevent draft when working on fans.

Friction and power loss inside rotating components will cause them to be a potential burn hazard. All components should be approached with caution and/or allowed to cool before contacting them for maintenance.

Under certain lighting conditions, rotating components may appear stationary. Components should be verified to be stationary in a safe manner, before they come into contact with personnel, tools or clothing.

Failure to follow these instructions could result in death or serious injury.

Installation

Fan Installation

Fasten the Air Curtain to the appropriate mounting surface using the mounting brackets shipped with the unit.

Wiring Installation

All wiring should be in accordance with local ordinances and the National Electrical Code, NFPA 70. Ensure the power supply (voltage, frequency, and current carrying capacity of wires) is in accordance with the motor nameplate.

Lock out all power sources before unit is wired to power source.

Run the wires from the starting switch to the top or back knockout. Use existing wires and receptacle. Refer to the *Wiring Diagram* on page 3 for further information.

Follow the wiring diagram in the disconnect switch and the wiring diagram provided with the motor. Correctly label the circuit on the main power box and always identify a closed switch to promote safety (i.e., red tape over a closed switch).

Final Installation Steps

1. Ensure that the blower is mounted securely.
2. Ensure that all accessories are installed.
3. Check for correct amperage with an ammeter and correct voltage with a voltmeter.
4. Check wheel-to-inlet clearance. Ensure that the wheel does not rub against the inlet.

Operation

Pre-Start Checks

1. Lock out all the primary and secondary power sources.
2. Inspect fasteners and setscrews, particularly those used for mounting the fan, and tighten if necessary.
3. Inspect motor wiring.
4. Ensure fan and duct work are clean and free of debris.
5. Test the fan to ensure the rotation of the wheel is the same as indicated by the rotation label.
6. Restore power to the unit.

Start Up

Turn the fan on. In variable speed units, set the fan to its lowest speed. Inspect for the following:

- Direction of rotation.
- Excessive vibration.
- Unusual noise.
- Motor noise.
- Improper motor amperage or voltage.

Improper motor amperage or voltage. If a problem is discovered, immediately shut off the fan. Lock out all electrical power and check for the cause of the trouble. Refer to *Troubleshooting*.

Inspection

Inspection of the fan should be conducted after the first 30 minute interval of satisfactory operation. During the inspection, stop the fan and inspect as per the following directions.

30 Minute Interval

Inspect bolts, setscrews, and motor mounting bolts. Adjust and tighten as necessary. Hand adjust the intake louver and discharge nozzle as needed.

Grille Installation

Attach grille to outlet of housing using the screws provided. For use with optional filter, align holes in filter frame with holes in grille and fasten to housing outlet with screws.

Maintenance

Establish a schedule for inspecting all parts of the fan. The frequency of inspection depends on the operating conditions and location of the fan.

Fans exhausting contaminated air (airborne abrasives) should be inspected every three months.

Regular inspections are recommended for fans exhausting non-contaminated air. **It is recommended the following inspections be conducted twice per year:**

- Inspect bolts and setscrews for tightness. Tighten as necessary.
- Inspect for cleanliness. Clean exterior surfaces only. Removing dust and grease on motor housing assures proper motor cooling.

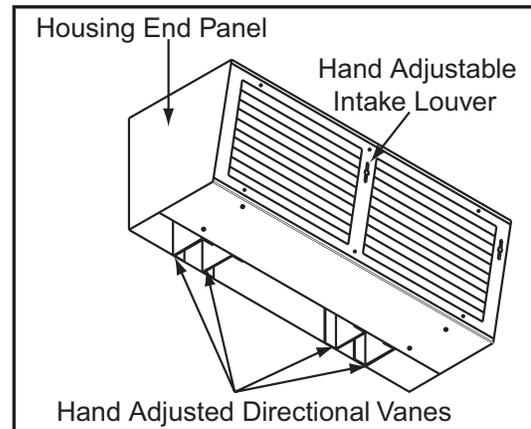


Figure 1

Access

To inspect, clean or repair refer to *Figure 1* and follow these steps:

1. Lock out all the primary and secondary power sources.
2. Remove housing access cover.
3. Disconnect the motor from the electrical supply.
4. Remove motor plate bolts.
5. Slide motor plate and remove motor/blower assembly from box.
6. Remove inlet rings from blower housing (both sides). Motor Bearings
7. Mark the wheel and housing to ensure correct replacement of blower wheels (one is clockwise and the other is counter-clockwise), then remove the blower wheels with an allen wrench.

Reassembly

Reverse the access instructions. Ensure that the wheels do not rub on the inlet rings. When replacing the motor, make sure the motor and wheels are properly aligned with the blower housing.

Lubricants

Loren Cook Company uses petroleum lubricant in a lithium base conforming to NLGI grade 2 consistency. Other grades of grease should not be used unless the bearings and lines have been flushed clean. If another grade of grease is used, it should be lithium-based.

A NLGI grade 2 grease is a light viscosity, low-torque, rust-inhibiting lubricant that is water resistant. Its temperature range is from -30°F to +200°F and capable of intermittent highs of +250°F.

Motor Bearings

Motor bearings are pre-lubricated and sealed. Under normal conditions they will not require further maintenance for a period of ten years. However, it is advisable to have your maintenance department remove and disassemble the motor, and lubricate the bearings after three years of operation in excessive heat and or in a contaminated airstream consisting of airborne abrasives.

Motor Services

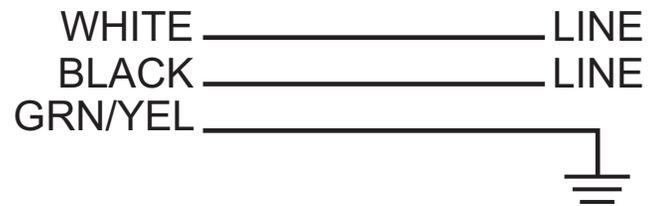
Should the motor prove defective within a one-year period, contact your local Loren Cook Company representative or your nearest authorized electric motor service representative.

Troubleshooting

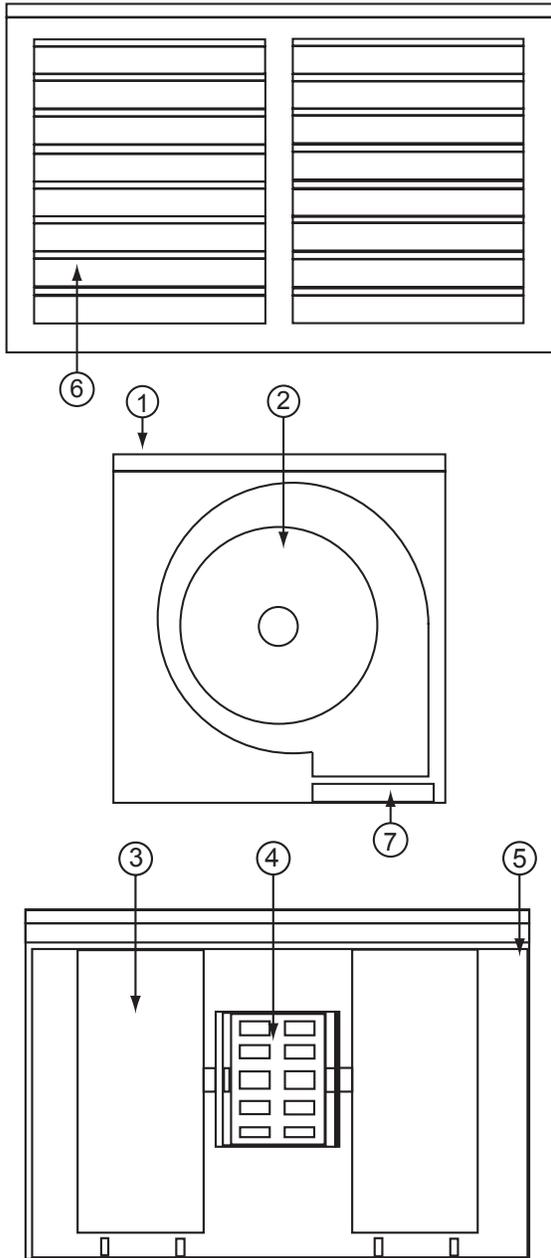
Problem and Potential Cause
<p>Low Capacity or Pressure:</p> <ul style="list-style-type: none">• Incorrect direction of rotation. Make sure the fan rotates in same direction as the arrows on the motor.• Intake louvers and/or discharge nozzles not adjusted properly.• Improper wheel alignment.
<p>Excessive Vibration and Noise:</p> <ul style="list-style-type: none">• Damaged or unbalanced wheel.• Speed too high.• Incorrect direction of rotation. Make sure the fan rotates in same direction as the arrows on the motor.• Fan surge.
<p>Overheated Motor:</p> <ul style="list-style-type: none">• Motor improperly wired.• Incorrect direction of rotation. Make sure the fan rotates in same direction as the arrows on the motor.• Cooling air diverted or blocked.• Improper inlet clearance.• Incorrect fan RPMs.• Incorrect voltage.

Wiring Diagrams

Single Speed, Single Phase Motor



Air Curtain Parts List



Part No.	Gemini 100
1	Mounting Bracket
2	Wheel (2)
3	Blower Housing (2)
4	Motor
5	Insulation
6	Intake Louver
7	Nozzle Deflectors (4)

Limited Warranty

Loren Cook Company warrants that your Loren Cook fan was manufactured free of defects in materials and workmanship, to the extent stated herein. For a period of one (1) year after date of shipment, we will replace any parts found to be defective without charge, except for shipping costs which will be paid by you. This warranty is granted only to the original purchaser placing the fan in service. This warranty is void if the fan or any part thereof has been altered or modified from its original design or has been abused, misused, damaged or is in worn condition or if the fan has been used other than for the uses described in the company manual. This warranty does not cover defects resulting from normal wear and tear. To make a warranty claim, notify Loren Cook Company, General Offices, 2015 East Dale Street, Springfield, Missouri 65803-4637, explaining in writing, in detail, your complaint and referring to the specific model and serial numbers of your fan. Upon receipt by Loren Cook Company of your written complaint, you will be notified, within thirty (30) days of our receipt of your complaint, in writing, as to the manner in which your claim will be handled. If you are entitled to warranty relief, a warranty adjustment will be completed within sixty (60) business days of the receipt of your written complaint by Loren Cook Company. This warranty gives only the original purchaser placing the fan in service specifically the right. You may have other legal rights which vary from state to state.



LOREN COOK COMPANY

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