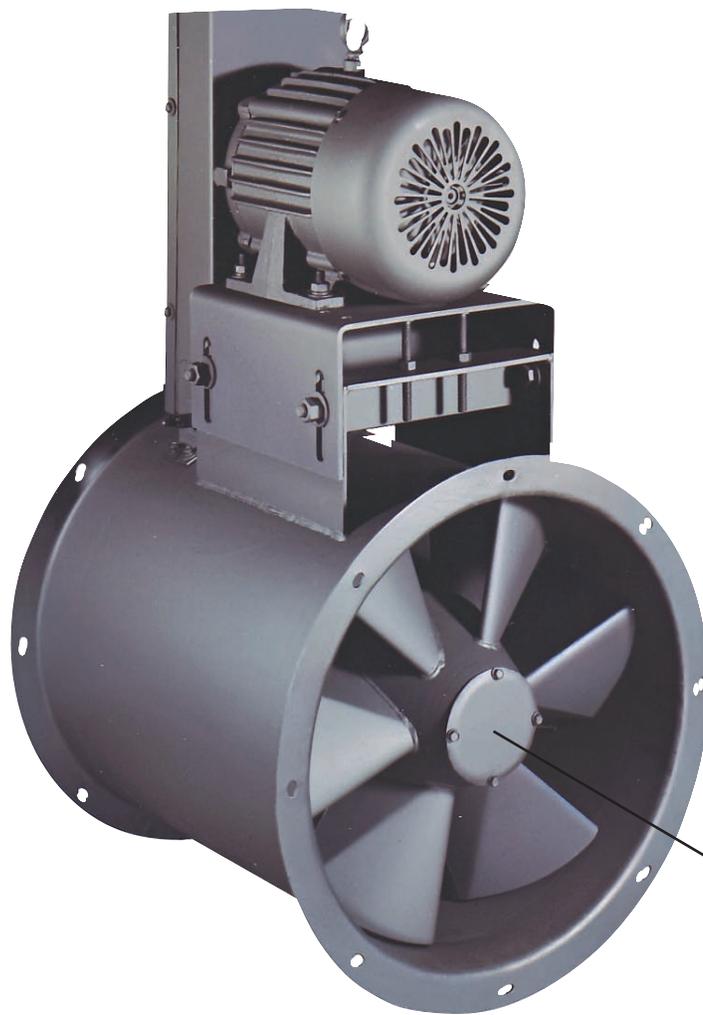




SAFETY – INSTALLATION – OPERATING AND MAINTENANCE INSTRUCTIONS

CHICAGO VANE AXIAL FANS



Steel Wheel (Standard)
Bronze Tip (Optional)



1675 Glen Ellyn Road • Glendale Heights, IL 60139
Phone 630/858-2600 • Fax 630/858-7172
www.chicagoblower.com • E-mail: fans@chicagoblower.com

RECEIVING:

Chicago Blower Corporation equipment is prepared for shipment in accordance with the Uniform Freight Classification. It is thoroughly inspected at the factory and, barring damage in transit, should be in good condition upon arrival.

When a carrier signs Chicago Blower Corporation's bill of lading, the **carrier accepts the responsibility** for any subsequent shortages or damage evident or concealed, and **any claim must be made against the carrier by the purchaser**. Evident shortage or **damage should be noted on the carrier's delivery document** before signature of acceptance. Inspection by the carrier of damage evident or concealed must be requested. After inspection, issue a purchase order for necessary parts or arrange for return of the equipment to Chicago Blower Corporation factory for repair.

Chicago Blower Corporation fans are shipped completely assembled and skidded, and may be handled and moved using good rigging techniques, being careful to avoid concentrated stresses that will distort any of the parts.

STORAGE:

If the fan is not to be installed promptly, store it in a dry location with the bearings and the shaft protected against moisture, dust, corrosion and physical damage. If the fan must be exposed to the elements, protect against these elements with particular attention given to the bearings. **Keep bearings fully greased.**

SAFETY PRECAUTIONS:

The fan which you have purchased is a rotating piece of equipment and can become a source of danger to life or cause injury if not properly applied. The **maximum operating temperature and speed** for which this fan is designed **must not be exceeded**. These limits are given in our catalog, in the order write-up, or on Chicago Blower Corporation drawings.

Personnel who will operate this fan, or those who will perform maintenance thereon, **must be given this bulletin to read and warned of the potential hazards of this equipment.**

This pamphlet contains general recommendations, but specific requirements may apply to the individual installation. Such requirements are outlined in federal, state and local safety codes. Strict compliance with these codes, and strict adherence to these installation instructions are **the responsibility of the user.**

INSTALLATION:

1. Good results **require a proper foundation**. Foundations should be level, rigid, and of sufficient mass for the equipment. Concrete is preferable. Its mass should be at least four times the fan weight. Adequately brace steel platforms in all directions. The minimum natural frequency of any part must be at least 50% higher than the fan or driver running speed.
2. Shim the fan support points before tightening foundation bolts. Do not distort or twist the equipment. Make sure that the fan shaft is level.
3. Chicago Blower requires that all appurtenances, including ductwork or stacks, which are attached to the fan inlet or outlet, be independently supported, unless prior approval has been obtained from Chicago Blower. Excess dead loads or wind loads can distort the fan housing causing misalignment and possible failure. Flexible connections are also necessary to prevent duct expansion or movement from adding loads to the fan.

V-BELT DRIVES:

1. Alignment of the drives must be checked with a straightedge or laser aligner. Belt tension must be properly adjusted to assure good belt and bearing life. Sheave faces should be parallel and aligned within 1/16". **Use balanced sheaves.**
2. All fan bearings have been selected for normal belt tension. Excess belt tension can cause premature bearing failure on fan and motor
3. It is normal on V-drives handling more than 20 HP to "squeal" on start-up. **Do not tighten belts too tight.** Normal belt tension can be determined by being able to depress belt, at mid-point a distance equal to one belt width, with normal finger pressure.
4. Adjust belt tension by loosening the motor base side bolts and lifting or lowering the motor top plate. Retighten side base bolts.

BEARINGS:

1. Lubricate fan bearings per instructions packed with the fan. For ball bearings use Shell Alvania EP2, and for roller bearings use Texico Molytex EP2. Lubricate the bearings immediately on receipt.
2. **Bearings must be properly locked to the shaft.** Check before operation. Make sure bearing locking collar is in position and set screws tight. See bearing instructions.

VERTICAL OPERATION:

If the fan is to operate with its shaft vertical, reset the fan bearings as follows:

1. With the shaft vertical, unlock the drive end bearing set screws and turn the shaft by hand. This allows the wheel end bearing to take the gravity load of the shaft and wheel.
2. Re-lock the drive end bearing locking device and set screws so that this bearing now takes just the belt pull.

OPERATION OF FAN:

After installing the fan per these instructions and those of the manufacturers of components, **make final safety checks** to prevent injury to personnel or damage to the equipment.

1. Check bearings for alignment, proper lubrication, locking collars tight, with wheel and inside of the housing clean and free of debris.
2. Check wheel position for proper clearance. A 3/16" to 5/8" radial gap is satisfactory depending on the fan size.
3. Check all set screws and bolts for tightness.
4. Turn the wheel by hand to see that it rotates freely.
5. Start fan and allow unit to reach full speed, then shut down. During this short period, check for vibration or any unusual noise. If any are observed, locate the cause and correct.
6. The run-in period should be at least eight hours. Check bearings a minimum of once each hour during this period. Overgreasing may cause bearings to heat up. There need be no concern if the bare hand can be held on the bearings briefly. Bearings will vent extra grease and cool down after start-up.
7. Maximum ambient or airstream temperature is 160°F.

MAXIMUM VIBRATION LIMITS

	START-UP	ALARM	SHUT DOWN
RIGIDLY MOUNTED	0.25	0.40	0.50
FLEXIBLY MOUNTED	0.35	0.65	0.70

VALUES SHOWN ARE PEAK VELOCITY
INCHES/SEC. FILTER OUT

MAINTENANCE:

To insure long life and trouble-free service, frequently check all bearing lubrication. See the bearing manufacturer's instructions packed with the fan.

Should excessive vibration develop, check the following possibilities:

- (1) Buildup of dirt or foreign matter on wheel; (2) Bolts on bearings, housings, foundation and driver loose; (3) V-belt drive improperly aligned, belts must have proper tension, sheaves must be balanced; (4) Check bearing locking collars for tightness; (5) Check wheel set screws; (6) Foreign matter entered fan causing damage to wheel, shaft or bearings; (7) Vibration may be coming from a source other than the fan. Stop the fan and determine if the vibration still exists. Disconnect the driver from the fan and operate it by itself to determine if it produces vibration; (8) Proper clearance between the wheel and casing.

If the fan is to remain idle for an extended period, Protect the exposed surfaces. Bearings should be protected in line with manufacturer's recommendations and the shaft should be rotated monthly.