

Installation, Operation and Maintenance Manual

Please read and save these instructions for future reference. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with these instructions will result in voiding of the product warranty and may result in personal injury and/or property damage.

Four-way fans offer the flexibility to meet changing needs and to maintain comfortable temperatures in factories, warehouses and other facilities with high ceilings. When temperatures change with production processes or seasonal shifts, the four-way fans can exhaust, supply, recirculate or mix air as required.



General Safety Information

Only qualified personnel should install this fan. Personnel should have a clear understanding of these instructions and should be aware of general safety precautions. Improper installation can result in electric shock, possible injury due to coming in contact with moving parts, as well as other potential hazards. Other considerations may be required if high winds or seismic activity is present. If more information is needed, contact a licensed professional engineer before moving forward.

1. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the National Fire Protection Agency (NFPA), where applicable. Follow the Canadian Electric Code (CEC) in Canada.
2. The rotation of the wheel is critical. It must be free to rotate without striking or rubbing any stationary objects.
3. Motor must be securely and adequately grounded.
4. Do not spin fan wheel faster than max cataloged fan RPM. Adjustments to fan speed significantly affects motor load. If the fan RPM is changed, the motor current should be checked to make sure it is not exceeding the motor nameplate amps.
5. Do not allow the power cable to kink or come in contact with oil, grease, hot surfaces or chemicals. Replace cord immediately if damaged.
6. Verify that the power source is compatible with the equipment.
7. Never open access doors to a duct while the fan is running.

DANGER

Always disconnect, lock and tag power source before installing or servicing. Failure to disconnect power source can result in fire, shock or serious injury.

CAUTION

When servicing the fan, motor may be hot enough to cause pain or injury. Allow motor to cool before servicing.

CAUTION

Precaution should be taken in explosive atmospheres.

DANGER

Pour écarter les risques d'incendie, de choc électrique ou de blessure grave, veiller à toujours débrancher, verrouiller et étiqueter la source de courant avant l'installation ou l'entretien.

ATTENTION

Lors de toute intervention sur la soufflante, le moteur peut être suffisamment chaud pour provoquer une douleur voire une blessure. Laisser le moteur refroidir avant toute maintenance.

ATTENTION

Faire preuve de précaution dans les atmosphères explosives.

Receiving

Upon receiving the product check to ensure all items are accounted for by referencing the delivery receipt or packing list. Inspect each crate or carton for shipping damage before accepting delivery. Alert the carrier of any damage detected. The customer will make a notation of damage (or shortage of items) on the delivery receipt and all copies of the bill of lading which is countersigned by the delivering carrier. If damaged, immediately contact your representative. Any physical damage to the unit after acceptance is not the responsibility of the manufacturer.

Unpacking

Verify that all required parts and the correct quantity of each item have been received. If any items are missing, report shortages to your local representative to arrange for obtaining missing parts. Sometimes it is not possible that all items for the unit be shipped together due to availability of transportation and truck space. Confirmation of shipment(s) must be limited to only items on the bill of lading.

Installation

Follow the steps shown below. Attach the plenum and hood to the roof curb using a suitable fastener in each of the prepunched mounting holes. Care must be taken not to bend or distort the plenum and fan components during installation.

1. Mount and secure the roof curb over the roof opening to the roof structurals.
2. Lower the plenum (factory assembled) through the curb and roof opening until its mounting channels rest on the roof curb. Lifting Lugs are provided. (Figure 1)

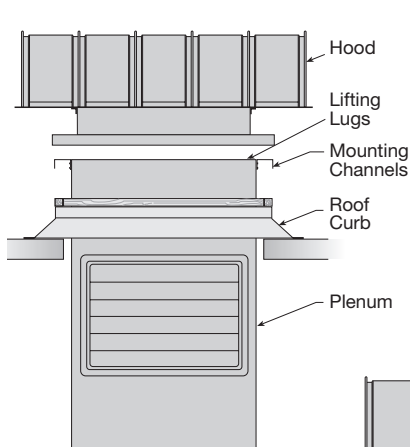


Figure 1

3. Lower the hood onto the curb/plenum assembly. (Figure 1)
4. The hood and plenum are secured to the roof curb. (Figure 2)

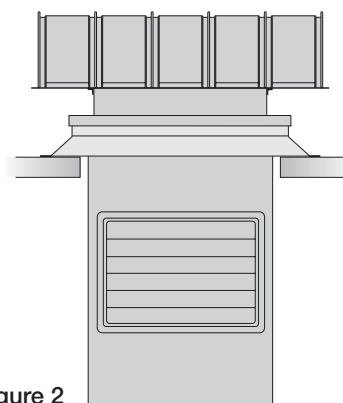


Figure 2

Electrical Connections

Before electrical connections are made, the supply voltage, phase and ampere capacity must be checked for compatibility with the fan motor. In addition, the supply wiring must be properly fused and conform to local and national electrical codes.

If fan is to be wired to a control center, which is available through the manufacturer, the control center wiring instructions must be followed.

Pre-Starting Checks

Check all fasteners and set screws for tightness. The propeller should rotate freely and not rub on the fan panel. The unit was aligned and test run at the factory prior to shipment, however movement of various components may occur during shipment. Proper propeller rotation should be determined by momentarily energizing the fan in the exhaust mode. If the rotation in the exhaust mode is for supply the motor wiring between the fan and the controls should be changed. For 3-phase installations, fan rotation can be reversed by simply interchanging any two of the three electrical leads. For single-phase installations, follow the wiring diagram located on the motor.

Guards are required to protect the fan and nearby personnel. If guards are not ordered with the fan, they must be supplied by the installer. When ordered with the fan, the guard is attached to the bottom of the double venturi panel.

Plenum dampers should open to 45° from closed position. Consult factory before adjusting damper linkages.

Maintenance

DANGER

Always disconnect, lock and tag power source before installing or servicing. Failure to disconnect power source can result in fire, shock or serious injury.

DANGER

Pour écarter les risques d'incendie, de choc électrique ou de blessure grave, veiller à toujours débrancher, verrouiller et étiqueter la source de courant avant l'installation ou l'entretien.

Once the fan has been put into operation, a periodic maintenance program should be set up to preserve the reliability and performance of the fan. Items to be included in this program are:

1. **Motors** - Greasing of motors is intended only when fittings are provided. Many fractional horsepower motors are lubricated for life and require no further lubrication. Motors supplied with grease fittings should be greased in accordance with the motor manufacturer's directions given on the motor nameplate.

2. **Removal of Dust and Dirt** - Non-filtered models require periodic cleaning to maintain proper air performance and reliability. Dirt left to accumulate on propeller blades may cause an unbalanced condition resulting in excessive vibration and premature failure of the fan.

Dust and dirt should also be cleaned from the exterior surface of the fan motor and damper actuator(s). Dirt accumulation on the motor/actuator(s) can block ventilation holes and prevent proper cooling. Motors and actuators should never be sprayed directly with water, steam or solvents.

3. **Maintenance for Filtered Models** - Aluminum mesh filters should be cleaned on a regular basis for optimum fan efficiency. The frequency of cleaning depends upon the cleanliness of the incoming air.

To remove filters in fan sizes 24 and 30, first remove the hood. This is accomplished by removing the two fasteners on one side of the hood and loosening the other two fasteners on the other side of the

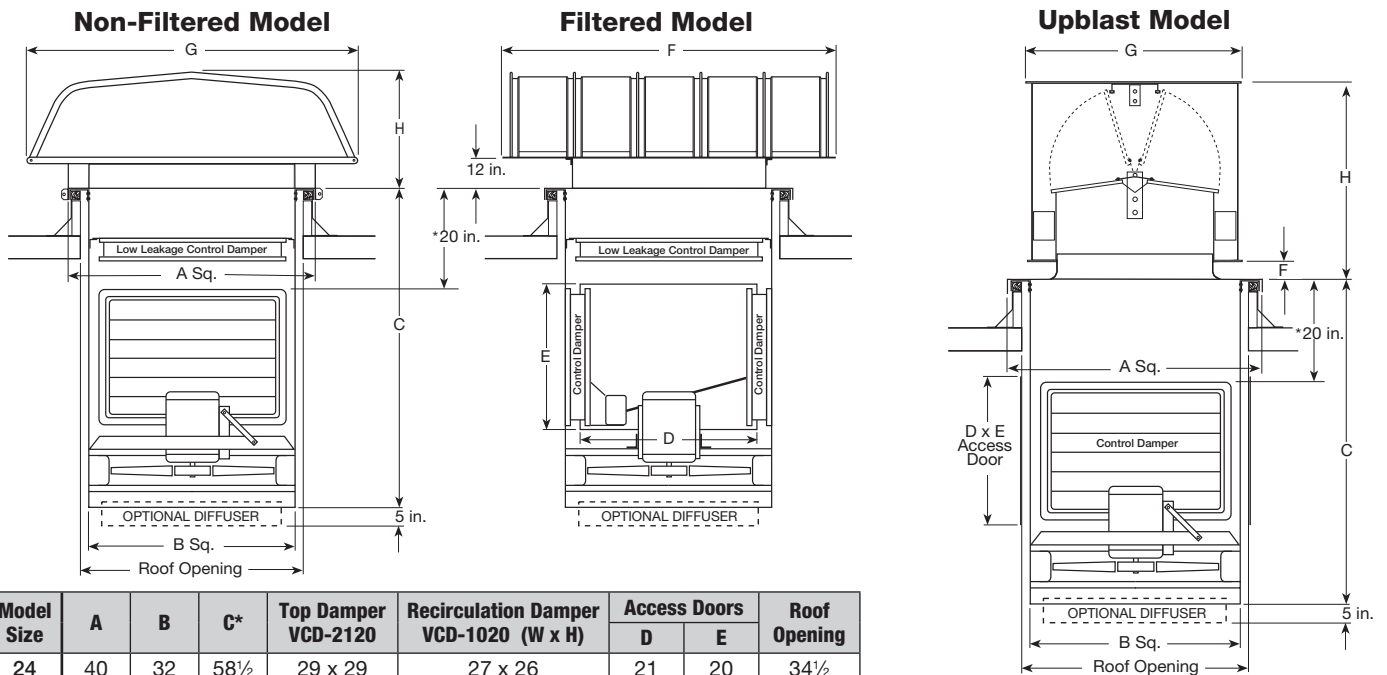
hood. Hinge the hood over onto the roof deck; DO NOT prop the hood up, the hood could come down accidentally causing injury. The filters can then be pulled from the slide-out racks.

On sizes 36 to 54, access panels are provided in the ends of the hood which allow the filters to be removed without removing the hood.

Filters should be washed with a mild detergent in warm water. After the filters are dry, an adhesive spray available at most filter distributors may be applied to increase filter efficiency.

4. **Fasteners** - Fan vibration has a tendency to loosen mechanical fasteners. Periodic inspection should include checking all fasteners for tightness. Particular attention should be paid to fasteners attaching the propeller to the motor shaft and the motor to the motor plate.
5. **Damper Plenum Linkage Adjustments** - Plenum dampers should open to 45° from closed position. Consult factory before adjusting damper linkages.

Dimensional Data



All dimensions shown are in inches.

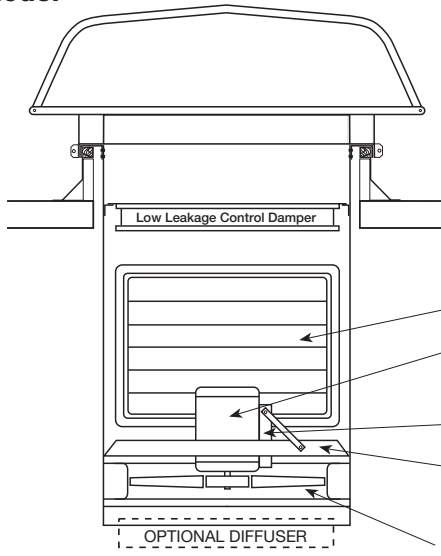
Model Size	Sizes									Approximate Unit Weights (LBS.)					
	Non-Filtered Hood			Filtered Hood			Upblast Hood			Non-Filtered		Filtered Hood		Upblast Hood	
	F	G	H	F	G	H	F	G	H	Alum	Galv	Alum	Galv	Alum	Galv
24	63	66	30	63	66	30	2¼	31%	26¼	570	650	670	750	400	480
30	75	74	32	75	78	32	3½	37%	30%	760	900	860	1000	490	630
36	87	76	33	87	94	33	4½	43¾	33¾	1040	1200	1170	1330	715	875
42	99	86	36½	99	100	36½	4½	50	38½	1200	1400	1330	1530	850	1050
48	111	100	36½	111	112	36½	5½	56¼	41	1470	1700	1620	1850	1110	1340
54	111	112	39	112	124	39	5½	63%	45	1770	2000	1920	2150	1405	1635

All dimensions shown are in inches.

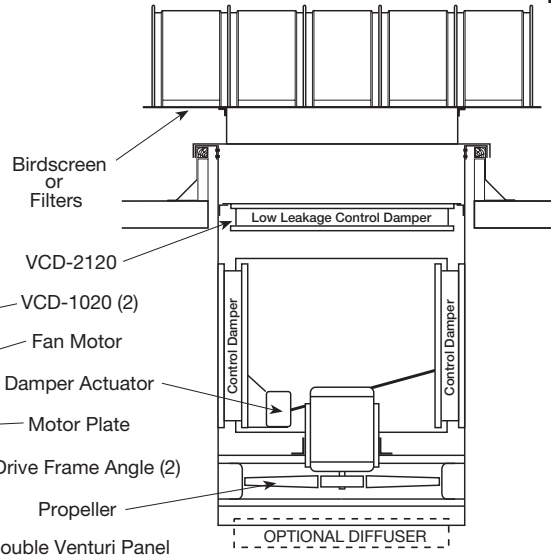


Parts List

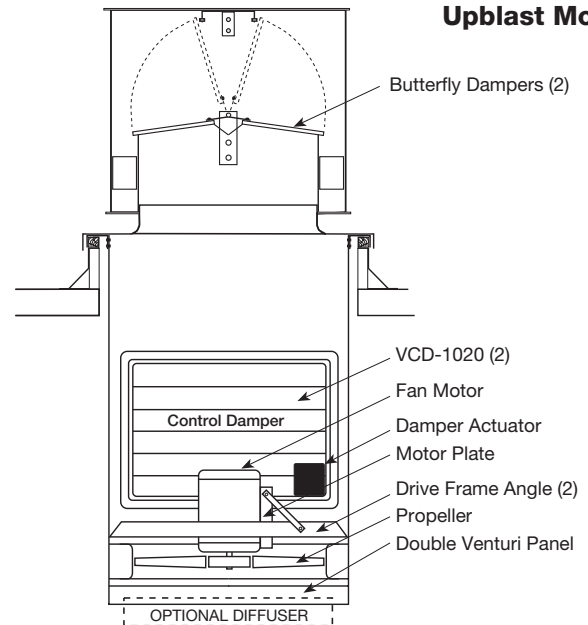
Non-Filtered Model



Filtered Model



Upblast Model



Our Commitment

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

Specific Greenheck product warranties are located on greenheck.com within the product area tabs and in the Library under Warranties.

Greenheck Recirculating Roof Fans catalog provides additional information describing the equipment, fan performance, available accessories, and specification data.

AMCA Publication 410-96, Safety Practices for Users and Installers of Industrial and Commercial Fans, provides additional safety information. This publication can be obtained from AMCA International, Inc. at www.amca.org.

