



Model S-CUBE Belt Drive Emergency Smoke Control Centrifugal Roof Exhaust Fan

Installation, Operating and Maintenance Manual

Receiving Unit:

Upon receiving unit, check for any damage and report it immediately to the shipper. Also check to see that all accessory items are accounted for.

Move fan to desired location and fasten securely through mounting holes in base. Shims may be necessary depending upon roofing material thickness.

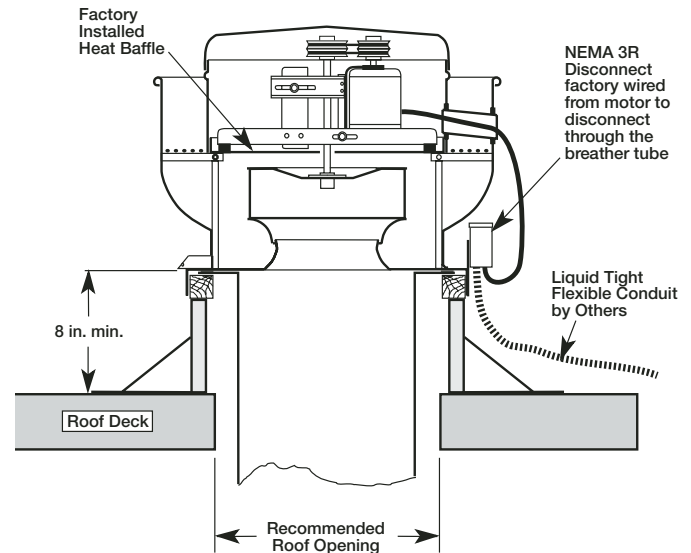
Access to Motor Compartment:

Access to the motor compartment is accomplished by removing the screws designated "R" in Fig. 1. The cover can then be removed and placed on a flat surface in an area protected from strong winds.

Electrical Connection:

The motor's amperage and voltage rating must be checked for compatibility to the supply voltage prior to final electrical connection. Also, the motor itself cannot have Thermal Overload. For Emergency Smoke Removal S-CUBE applications, the electrical supply must enter the motor compartment through the breather tube. Disconnect must be mounted outside the fans motor compartment. **Consult local code authorities for your specific requirements.** Shown below is the UL Listed label that the fan will bear.

Recommended Emergency Smoke Control Installation



Use of any non-approved smoke control damper is NOT permitted.

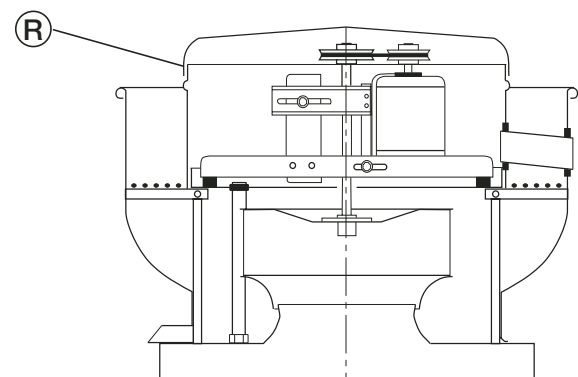



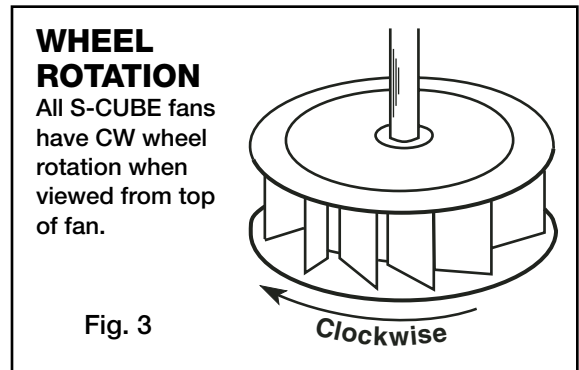
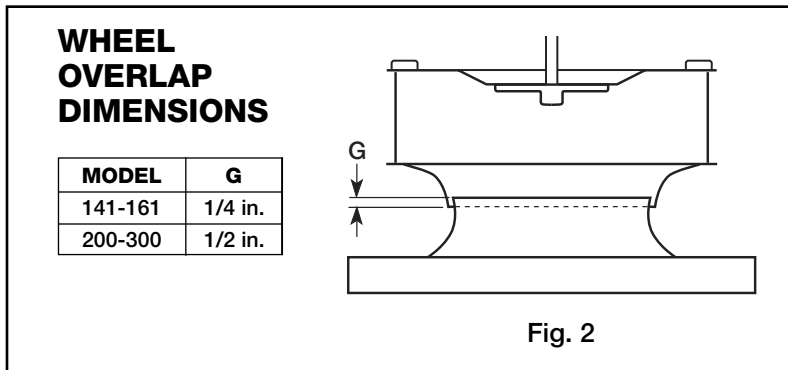
Fig. 1

	<p>-- IMPORTANT --</p>
	<p>ELECTRICAL -- If fan motor is <u>NOT</u> thermally protected, remote overload protection must be installed having adequate rating as to voltage, frequency, horsepower, and full load current per phase. Where connected to a circuit protected by fuses, use time delay fuses. For supply connection, use wires rated for at least 90° C (194° F).</p> <p>INSTALLATION -- When connecting electrical power to this fan, do not restrict motor movement. Motor must have sufficient movement for possible future belt or wheel adjustment.</p>
<p>Listed Power Ventilator For Smoke Control Systems 76Y9</p>	<p>454975</p>

For belt drive units in Emergency Smoke Removal installations, the electrical supply must be kept out of the airstream. They may also require an isolated power supply so that if power is cut to the building in the event of a fire, the fan will continue to operate. Check the local and national electrical codes for emergency smoke removal fans.

Pre-Starting Checks

Check all fasteners for tightness. The wheel should rotate freely and be aligned as shown in Fig. 2. Wheel position is preset and the unit is test run at the factory. Movement may occur during shipment, and realignment may be necessary. Centering can be accomplished by loosening the bolts holding the drive frame to the shock mounts and repositioning the drive frame. Wheel and inlet cone overlap can be adjusted by loosening the set screws in the wheel and moving the wheel to the desired position.



Direction of wheel rotation is critical. Reversed rotation will result in poor air performance, motor overloading and possible burnout. Check wheel rotation (viewing from the shaft side) by momentarily energizing the unit. Rotation should be clockwise as shown in Fig. 3 and correspond to the rotation decal on the unit.

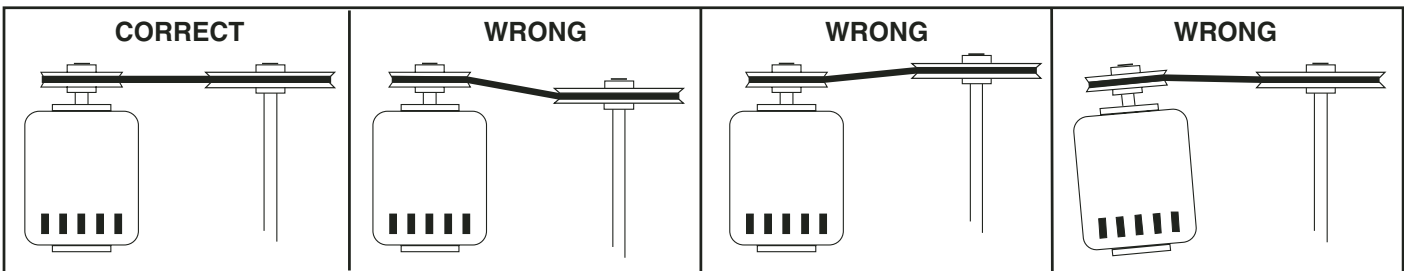
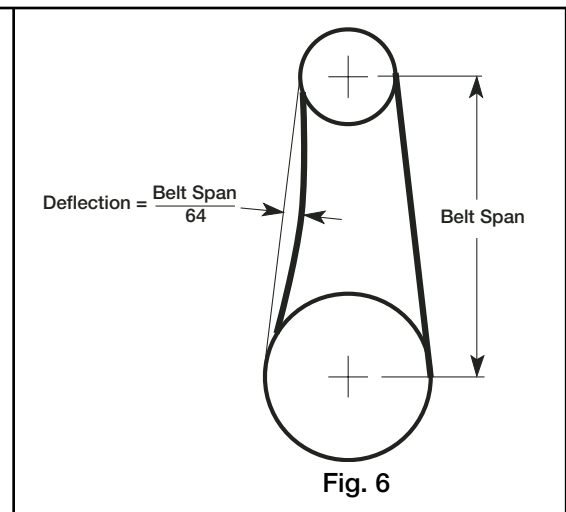
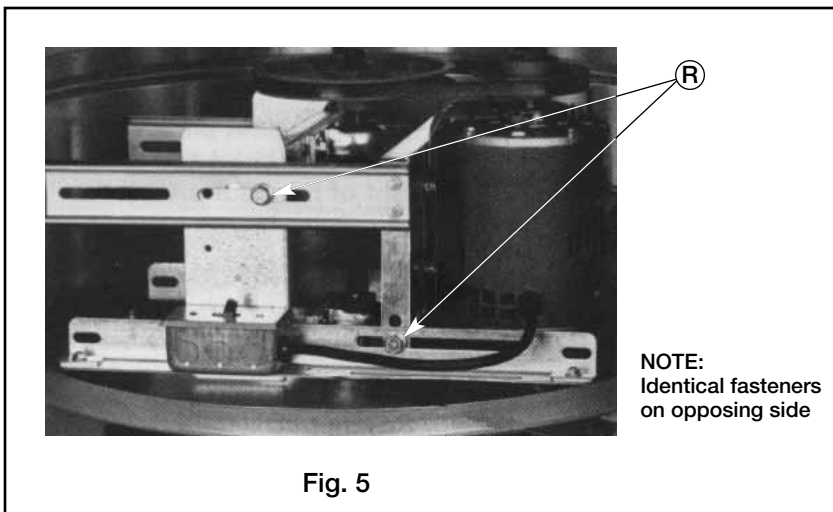


Fig. 4

If adjustments are made, it is very important to check the pulleys for proper alignment. Misaligned pulleys lead to excessive belt wear, vibration, noise and power loss. (See Fig. 4)

For all S-CUBE units, belt tension can be adjusted by loosening four fasteners (marked "R") on the drive frame. The motor plate slides on the slotted adjusting arms and drive frame angles in the same manner (see Fig. 5). Belt tension should be adjusted to allow 1/64 inch of deflection per inch of belt span. For example, a 15 inch belt span should have 15/64 inch (or about 1/4 inch) of deflection with moderate thumb pressure at mid-point between pulleys. (See Fig. 6). Overtightening will cause excessive bearing wear and noise. Too little tension will cause slippage at startup and uneven wear.



The adjustable motor pulley is factory set for the RPM specified. Speed can be increased by closing or decreased by opening the adjustable motor sheave. Two groove variable pitch pulleys must be adjusted an equal number of turns open or closed. Any increase in speed represents a substantial increase in the horsepower required by a unit. Motor amperage should always be checked to avoid serious damage to the motor when speed is varied.

MAINTENANCE

Belts tend to stretch after a period of time. They should be checked periodically for wear and tightness. When replacing belts, use the same type as supplied with the unit. Matched belts should always be used on units with multi-groove pulleys. For belt replacement, loosen the tensioning device far enough to allow removal of the belt by hand. Do not force belts on or off. This may cause cords to break, leading to premature belt failure. Once installed, adjust belts as shown in “Pre-Starting Checks.”

Bearings are the most critical moving part of the fan and should be inspected at periodic intervals. Locking collars and set screws, in addition to fasteners attaching the bearings to the bearing plate, must be checked for tightness. In a clean environment and temperatures above 32°F./below 200° F., fan shaft bearings with grease fittings should be lubricated semi-annually using a high quality lithium based grease. If unusual environmental conditions exist, temperatures below 32°F./above 200°F., moisture or contaminants, more frequent lubrication is required.

With the unit running, add grease very slowly with a manual grease gun until a slight bead of grease forms at the seal. Be careful not to unseat the seal by over lubricating or using excessive pressure.

Motor maintenance is generally limited to cleaning and lubrication (where applicable). Cleaning should be limited to exterior surfaces only. Removing dust buildup on motor housing ensures proper motor cooling. Greasing of motors is only intended when fittings are provided. Many fractional motors are permanently lubricated and should not be lubricated further. Motors supplied with grease fittings should be greased in accordance with manufacturers’ recommendations. Where motor temperatures do not exceed 104°F (40°C), the grease should be replaced after 2000 hours of running time as a general rule.

Wheels require very little attention when moving clean air. Occasionally, oil and dust may accumulate causing imbalance. When this occurs, the wheel and housing should be cleaned to ensure smooth and safe operation.

The unit should be made non-functional when cleaning the wheel or housing (fuses removed, disconnect locked off, etc.).

All fasteners should be checked for tightness each time maintenance checks are performed prior to restarting unit.

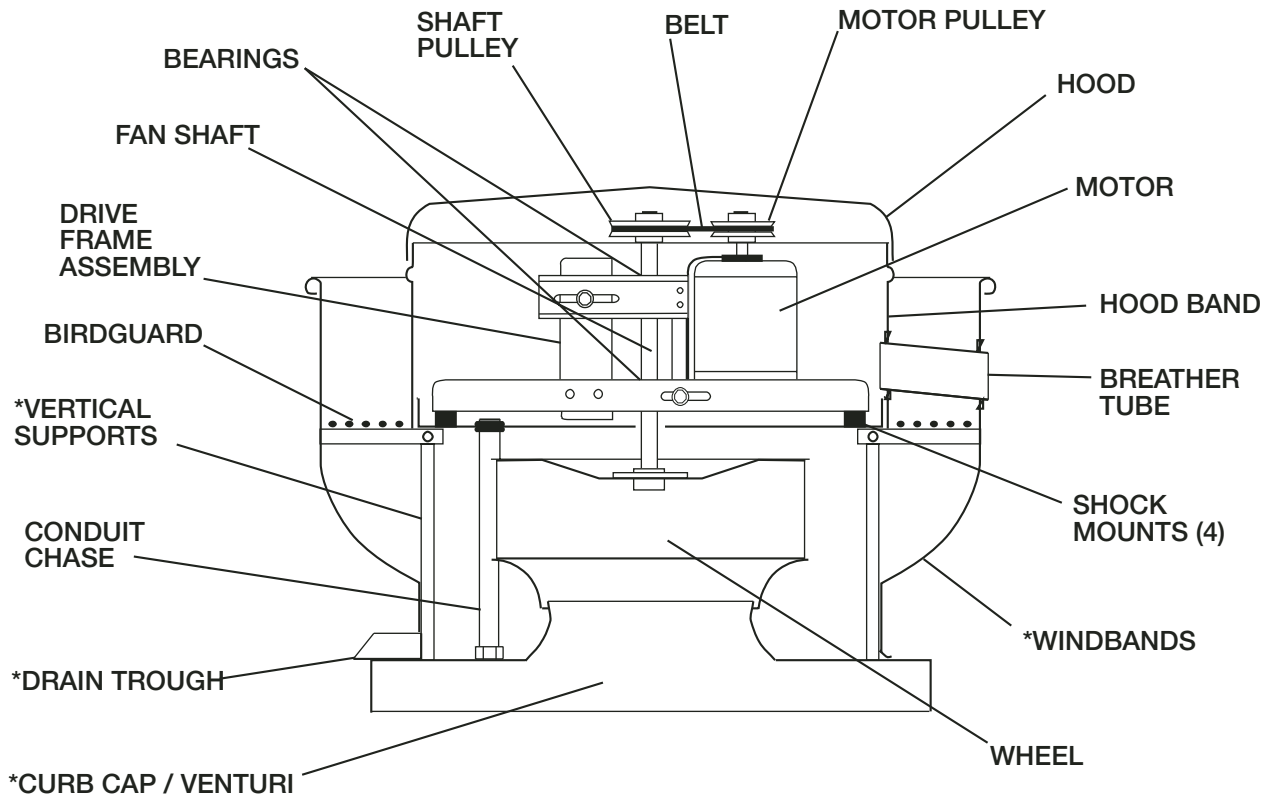
A proper maintenance program will help these units deliver years of dependable service.

TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTIVE ACTION
REDUCED AIRFLOW	System resistance too high	Check system: Proper operation of backdraft or control dampers, obstruction in ductwork, etc.
	Unit running backwards	Correct as shown in Fig. 3.
	Excessive dirt buildup on wheels	Clean wheel.
	Improper wheel alignment	Center wheel on inlets.
EXCESSIVE NOISE OR VIBRATION	Bad bearings	Replace.
	Belts too tight or too loose	Refer to Fig. 6 and adjust tension.
	Wheel improperly aligned and rubbing	Center wheel on inlets. See Fig. 2.
	Loose drive or motor pulleys	Align and tighten. See “Pre-Starting Checks.”
	Foreign objects in wheel or housing	Remove objects, check for damage or unbalance.
	Unbalance of wheel caused by excessive dirt and grease buildup	Remove buildup.

NOTE: Before taking any corrective action, make certain unit is not capable of operation during repairs.

PARTS LIST



* For replacement, the windband, vertical supports, drain trough and curb cap/venturi come as one complete assembly.

NOTE: Each fan bears a manufacturer's nameplate with model number and serial number embossed. This information will assist the local Greenheck representative and the factory in providing service and replacement parts.

WARRANTY

Greenheck warrants this equipment to be free from defects in material and workmanship for a period of one year from the date of purchase.

Any units or parts which prove to be defective during the warranty period will be replaced at our option when returned to our factory, transportation paid.

The motor is warranted by the motor manufacturer for a period of one year. Should the motor prove defective during this period, it should be returned to the nearest authorized motor service station.

Greenheck will not be responsible for any installation or removal costs.



P.O. Box 410 • Schofield, WI 54476-0410 • greenheck.com