



## MODEL LB, LBP, LD & LDP Low Silhouette Centrifugal Roof Exhaust Fans

### Installation, Operation and Maintenance Manual

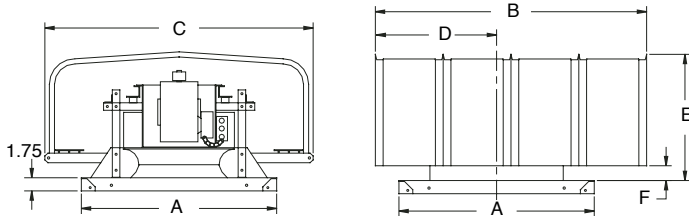
Upon receiving unit, check for any damage and report it immediately to the shipper. Also check to see that all accessory items are accounted for.

Move fan to desired location and fasten securely through mounting holes in base. Shims may be necessary depending upon roof material thickness. The following diagrams depict dimensions for the LB, LBP, LD, and LDP

Access to the motor compartment is accomplished by removing bolts securing the hood to the base. The hood can then be hinged open. (See page 4)

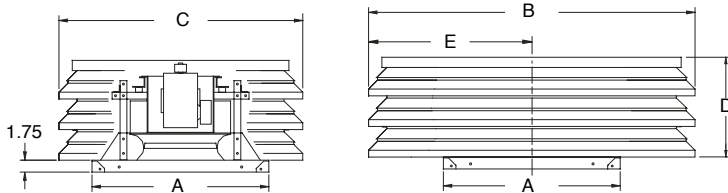
The motor's amperage and voltage ratings must be checked for compatibility to supply voltage prior to final electrical connection. Electrical lead-in wires should be run through the conduit provided between the curb and the bottom of the motor compartment. Wiring must conform to local and national codes.

#### MODEL LB



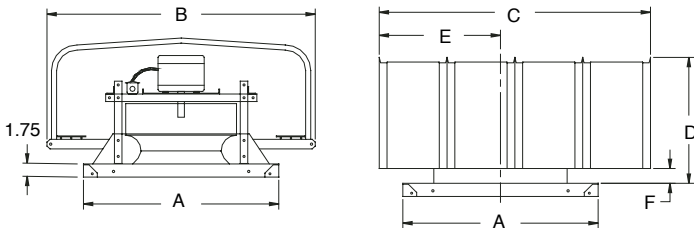
Model	A	B	C	D	E	F	Damper Size	Roof Opening	Weight Galv.
10	22	39	28	17 3/4	17	3 1/4	12	14 1/2	56
14	26	39	35	17	18	4	16	18 1/2	81
18	30	39	40	17 1/8	21	4 1/2	18	20 1/2	135
21	30	51 1/2	43	22 3/4	23	6	18	20 1/2	145
24	34	51 1/4	45 1/2	21	23 1/2	6 3/4	18	20 1/2	188
30	40	62 1/2	50	30 3/4	26 5/8	8 1/2	30	32 1/2	249
36	46	62 1/2	60	26 1/2	32 5/8	9 3/4	36	38 1/2	338
42	52	74 1/2	70 5/8	34 1/2	37 3/8	11 1/2	42	44 1/2	396
48	58	67	70 3/8	56	41 1/2	11 5/8	48	50 1/2	430
54	64	86 1/2	79 1/2	39 1/4	45 3/8	12 1/2	54	56 1/2	596

#### MODEL LBP



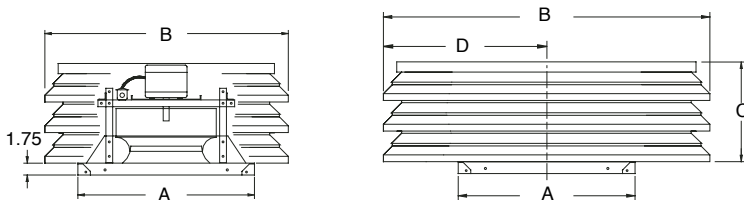
Model	A	B	C	D	E	Damper Size	Roof Opening	Weight Alum.
10	22 x 32 5/8	39	28	17	14	12	14 1/2	99
14	26	40	32	15 1/2	16 3/8	16	18 1/2	116
18	30	46	35 3/8	24 1/4	17 7/8	18	20 1/2	179
21	30	46	30	24 1/2	18	18	20 1/2	191
24	34	49 1/2	40	23 1/2	20	18	20 1/2	239
30	40	58	46	26 1/2	23	30	32 1/2	318
36	46	63	51 3/4	34 3/8	26	36	38 1/2	444
42	52	70 1/2	58	38 1/4	29	42	44 1/2	530
48	58	76 1/2	64	40 3/8	32	48	50 1/2	579
54	64	83 1/2	70	43 5/8	35	54	56 1/2	780

#### MODEL LD



Model	A	B	C	D	E	F	Damper Size	Roof Opening	Weight
60, 65, 70, 75	17	22	27	13	13 1/2	2	8	10 1/2	37
80, 85, 90, 95	19	28	27	16	13 1/2	4	10	12 1/2	45
100, 120	22	30	27	18	13 1/2	2	12	14 1/2	57

#### MODEL LDP



Model	A	B	C	D	Damper Size	Roof Opening	Weight
60, 65, 70, 75	17	23	13 1/2	11 1/2	8	10 1/2	49
80, 85, 90, 95	19	25	16 1/2	12 1/2	10	12 1/2	63
100, 120	22	28	18 1/2	14	12	14 1/2	82

All dimensions are in inches.

## PRE-STARTING CHECKS

Check all fasteners for tightness. The wheel should rotate freely and be aligned as shown in Fig. 1. 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.

### WHEEL OVERLAP DIMENSIONS

MODEL	G
70-120	1/4 in.
10-14	1/4 in.
18-24	3/8 in.
30-54	1/2 in.

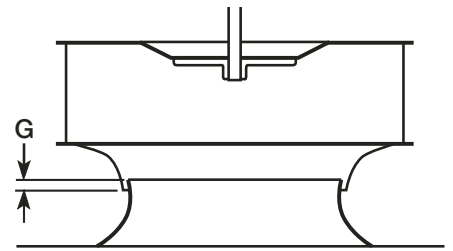


Fig. 1

Direction of wheel rotation is critical. Reversed rotation will result in poor air performance, motor overloading and possible motor burnout. Check wheel rotation by momentarily energizing the unit. Rotation should be clockwise as shown in Fig. 2 and correspond to the rotation decal on the unit. Rotation is determined when the unit is viewed from the motor or shaft pulley side.

Belt tension can be adjusted by loosening four fasteners (marked "R" in Fig. 3) on the drive frame. This allows the motor plate to slide on the drive frame angles for proper positioning. Belt tension should be adjusted to allow 1/64 in. of deflection per inch of belt span. For example, a 15 in. belt span should have 15/64 in. (or about 1/4 in.) of deflection with moderate thumb pressure at mid-point between pulleys (see Fig. 4). Over tightening will cause excessive bearing wear and noise. Too little tension will cause slippage at startup and uneven wear.

### WHEEL ROTATION

All LB fans have CW wheel rotation when viewed from top of fan.

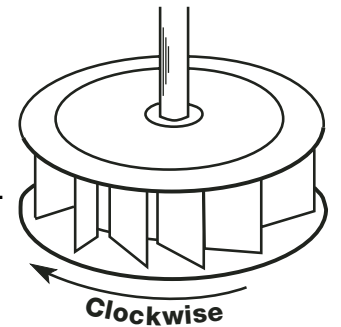


Fig. 2



Fig. 3

$$\text{Deflection} = \frac{\text{Belt Span}}{64}$$

\* NOTE:  
Identical fasteners on opposing side must also be loosened.

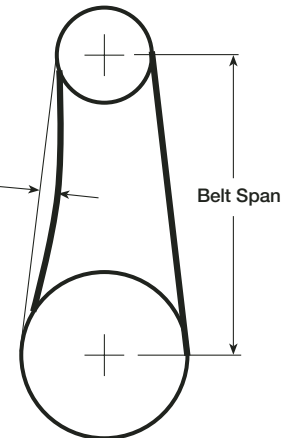


Fig. 4

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. 5).

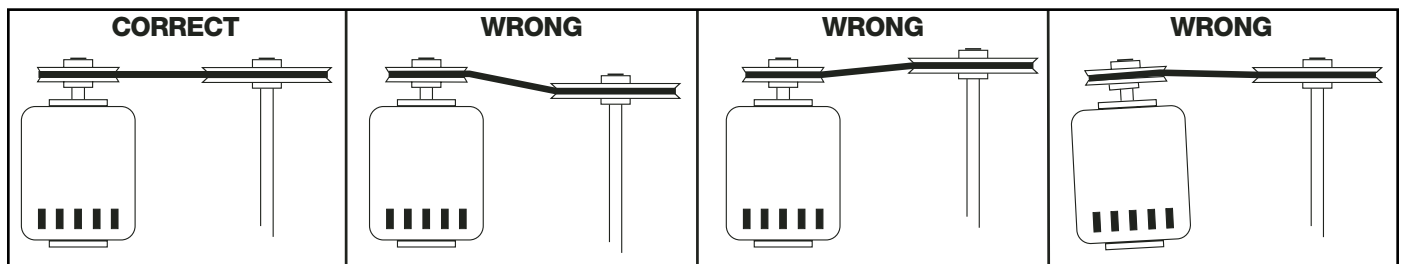


Fig. 5

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 multigroove 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."

Shaft bearings can be classified in two groups: relubricating and non-relubricating. All bearings are factory lubricated and require no further lubrication under normal use (between -20°F and 180°F in a relatively clean environment). Units installed in hot, humid or dirty locations should be equipped with special bearings. These bearings will require frequent lubrication. Caution should be employed to prevent overpacking or contamination. Grease fittings should be wiped clean. The unit should be in operation while lubricating. Extreme care should be used around moving parts. Grease should be pumped in very slowly until a slight bead forms around the seal. A high grade lithium base grease is recommended.

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 hp 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.

Direct drive units require little maintenance except for cleaning, wheel alignment, and oiling according to motor label instructions.

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.

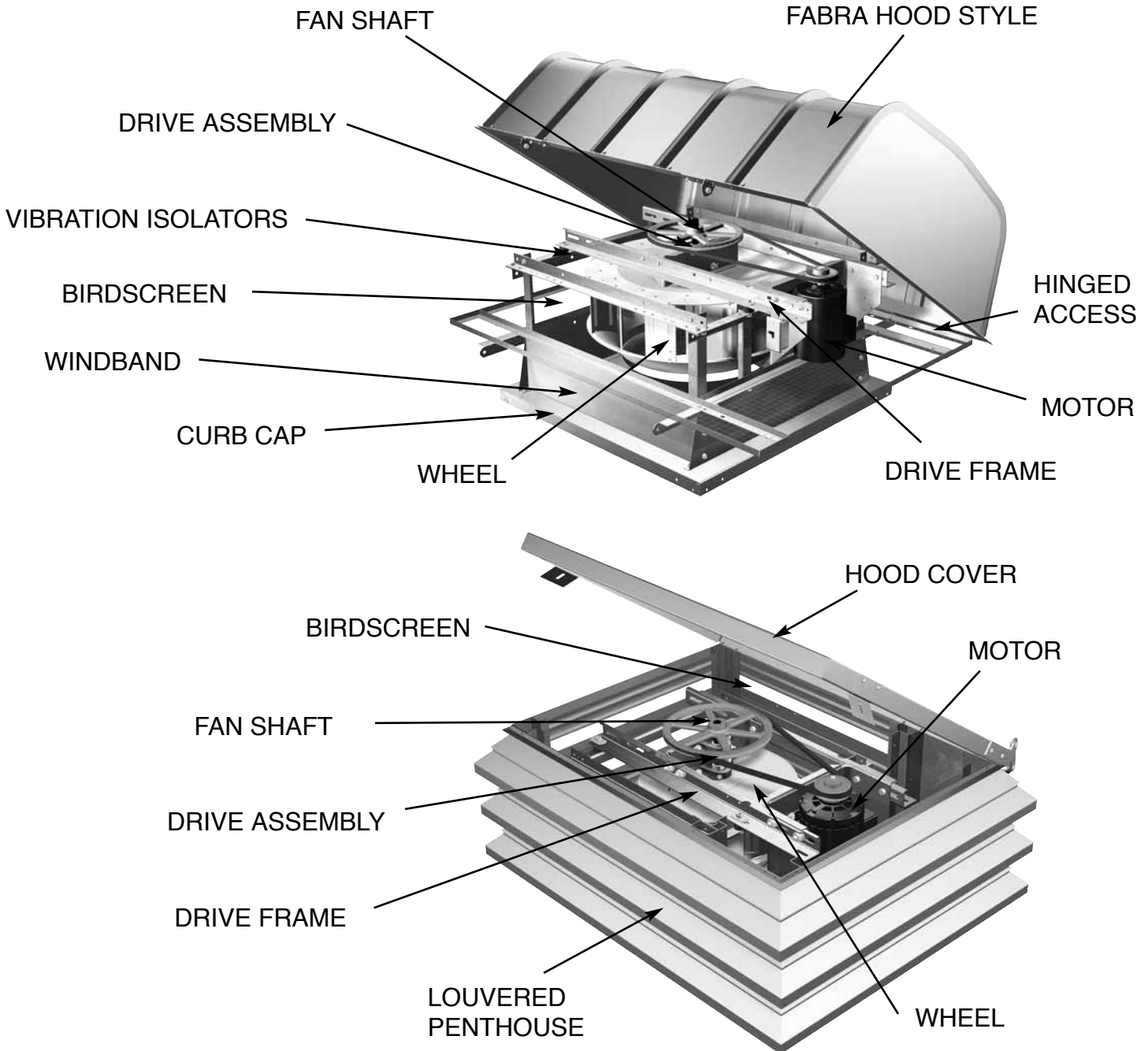
A proper maintenance program will help these units deliver years of dependable service.

## TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTIVE ACTION
REDUCED AIR FLOW	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. 2.
	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. 4 and adjust tension.
	Wheel improperly aligned and rubbing.	Center wheel on inlets (see Fig. 1).
	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



**CAUTION:** A fans manufactured with an explosion resistant motors does not certify the entire unit to be explosion proof. Refer to UL Listing Mark for the fans approved usage.

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

Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by Greenheck prove defective during this period, they should be returned to the nearest authorized motor service station. Greenheck will not be responsible for any removal or installation costs.

