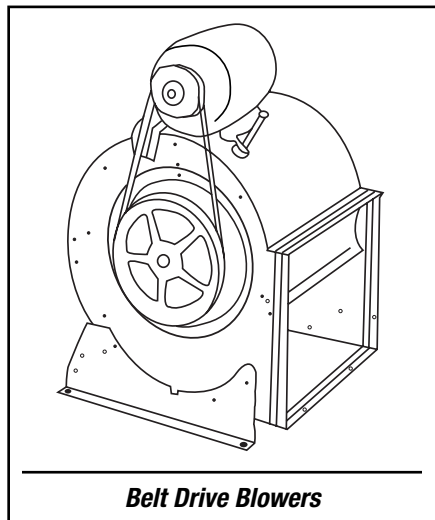


BELT DRIVE BLOWERS

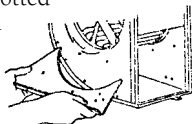


A GOOD INSTALLATION PAYS OFF ...

There's good money to be made in the new or replacement blower business. But, you can eat up your profits in expensive service call-backs if you fail to install and adjust the blower correctly. Follow these simple steps for trouble-free installation.

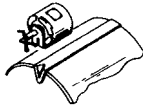
1. BEGIN BY MOUNTING BLOWER FEET ...

Feet can be mounted in any of four standard positions by using the slotted holes and screw holes in the housing sides. Any variation in position may be easily obtained by trimming off the tabs and drilling new screw holes. The hardware bag contains rubber Vibro-Pads. Slip one into each of the corner holes of the feet.



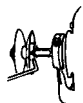
2. ATTACH MOTOR MOUNTING BRACKET ...

to the blower housing using the sheet metal screws, provided. Attach the motor on the mount, but don't tighten the bolts until after installing and aligning the belt and pulleys. Bolt the tension-adjusting bracket to the motor, start the adjusting screw, add the locknut, and place the rubber bumper on the end.



3. MOUNT VARIABLE-PITCH MOTOR PULLEY ...

on the motor shaft with its movable face towards the end of the shaft, away from the motor. On the side of the pulley nearest the motor, tighten the setscrew on the "flat" or "key" of the motor shaft. Leave some clearance between the pulley and the end bell of the motor.



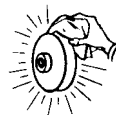
4. MOUNT BLOWER PULLEY ...

on the blower shaft by tightening its setscrew securely on the "flat" of the shaft. Be sure the blower pulley is perpendicular to the shaft; it will be used later as a guide for aligning the drive.



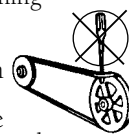
5. WIPE OFF PULLEYS AND BELT ...

with a clean rag to get rid of oil and dirt. Dirt and grease are tough abrasives that cause the belt to wear out faster, throwing it out of balance and shortening its life.



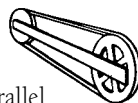
6. INSTALL V-BELT ...

in the pulley grooves by loosening the belt take-up or the adjusting screw on the motor. Do not "roll" or "snap" the belt on the pulleys; this causes too much strain on the pulleys. Be sure the belt doesn't "bottom" in the pulley grooves.



7. ALIGN BOTH PULLEY AND SHAFTS ...

by moving the motor on its motor mount. Hold a straight edge flush against the blower pulley, then move the motor until the belt is parallel to the straight edge.



8. A PULLEY ALIGNMENT SHORT-CUT ...

Sight down the top of the belt from slightly above it. If the belt is straight where it leaves the pulley and does not bend, the alignment is fairly accurate.

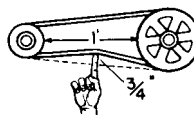


9. CHECK BELT TENSION ...

before proceeding further. Remember that a V-belt "rides" the inside of the pulley faces. Since the sides of the belt wedge in the pulleys, the V-belt does not have to be tight. It should be as loose as possible without slipping in the pulley grooves.



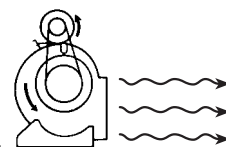
Belt-Tension Adjustment Tip: Using the belt take-up or motor-adjusting screw, tighten the belt until the slack side can be depressed about 3/4" for each foot of span between the pulleys.



WARNING: Excessive belt tension is the most frequent cause of bearing wear and noise.

10. RUN THE MOTOR ...

to determine the direction of rotation. If necessary to reverse the rotation, follow the instructions on the motor terminal block for reversing the lead wires. The directions are usually found under the cover where the lead wires enter the motor. Run the blower for about five minutes, or until the belt tends to "seat" itself in the pulley groove.



11. INSTALL THE BLOWER ...

in the furnace or air conditioning unit following the checklist below:

- Center and seal the blower outlet in the blower opening, so there is no air leakage.
- Support the blower by its mounting feet. Avoid metal-to-metal contact.
- Wire the motor according to the diagram supplied with the unit, or its control, following all local codes.
- Anchor the wiring with resilient clips to keep it from rattling or transmitting vibration noises.

12. ADJUST BLOWER SPEED ...

The blower speed can be adjusted to increase or decrease its output of air in a furnace or air conditioning unit by following the steps on page 2.

PREVENTATIVE MAINTENANCE FOR BELT DRIVE BLOWERS

Show the homeowner how they can perform basic service on the blower:

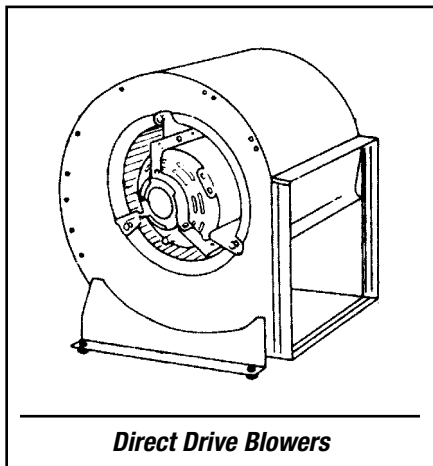
- Oil the motor seasonally with medium weight (SAE 20) motor oil.
- Vacuum the blower and blower compartment seasonally.
- If the blower has oil-type bearings, they must be oiled regularly. See detailed oiling information on the blower housing.
- Change filters seasonally and replace when dirty.
- The cabinet door should be kept closed except when performing service.

HOW TO ORDER REPLACEMENT PARTS ...

A complete selection is offered in the LAU Universal Replacement Blowers and Parts Catalog. You will want to carry this catalog with you on service calls. It's a quick reference to the blowers and parts you may need to expedite service to your customers.

Ask your local distributor for a copy.

DIRECT DRIVE BLOWERS

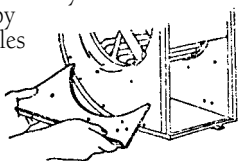


A GOOD INSTALLATION PAYS OFF ...

for you and your homeowner. Here are four simple steps to follow for trouble-free installation.

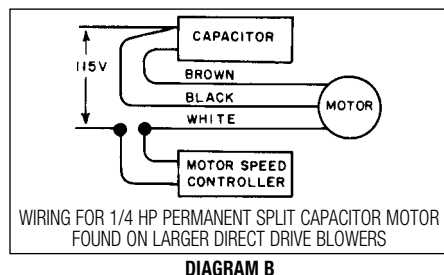
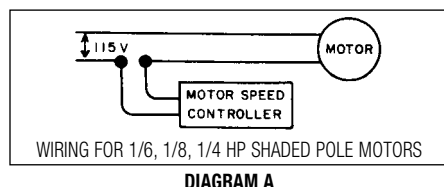
1. BEGIN BY MOUNTING BLOWER FEET ...

Feet can be mounted in any of four standard positions by using the slotted holes and screw holes in the housing sides. Any variation in position may be easily obtained by trimming off the tabs and drilling new screw holes. The hardware bag contains rubber Vibro-Pads. Slip one into each of the corner holes of the feet.



2. MOUNT VARIABLE MOTOR SPEED CONTROLLER ...

to the blower housing or remotely on the unit. Finger tip control gives an infinite number of motor speeds. Wire to the blower motor by following diagram (A), below. Use a capacitor when PSC motors larger than 1/4 hp are used. See wiring diagram (B).



3. INSTALL THE BLOWER ...

in the furnace or air conditioning unit following this checklist.

- Center and seal the blower outlet in the blower opening of the unit, so that there is no air leakage.
- Support the blower by its mounting feet. Avoid metal-to-metal contact.
- Wire the motor according to the diagram supplied with the unit, or its control, following all local codes.
- Anchor the wiring with resilient clips to keep it from rattling or transmitting vibration noises.

4. ADJUST BLOWER SPEED ...

The blower speed can be adjusted to increase or decrease its output of air in a furnace or air conditioning unit by following the steps to the right.

PREVENTATIVE MAINTENANCE FOR DIRECT DRIVE BLOWERS

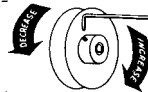
Show the homeowner how they can perform basic service on the blower:

- Oil the motor seasonally with medium weight (SAE 20) motor oil.
- Vacuum the blower and blower compartment seasonally.
- Change filters seasonally and replace when dirty.

BLOWER SPEED ADJUSTMENT AND INSTALLATION TIPS

BELT DRIVE ...

Loosen the setscrew on the outer face of the variable pitch motor pulley and turn the face. The speed is reduced by turning the outer face to move the two pulley faces farther apart. The speed is increased by turning the outer face to move the faces closer together.



Be sure to retighten the setscrew against the flat spot on the pulley hub after adjusting the speed of the blower. Readjust the belt tension and align the belt and pulleys.

DIRECT DRIVE ...

The finger-tip control on the top of the Variable Motor Speed Controller adjusts the voltage of the motor, controlling its speed.

ALL BLOWERS ...

Install the filters in the unit before running the blower, especially during new home construction. If the unit is not equipped with filters, protect the blower and motor from airborne dust and dirt by fitting standard furnace filters on the return air side of the unit, until construction is completed. All units should have filters, which trap abrasive dirt that could cause damage to the blower bearings and motor.

In a forced warm air furnace, use this procedure to obtain a recommended heat-rise of about 90°F (unless otherwise specified by the manufacturer).

Place one thermometer in the return air plenum and one in the warm air plenum. After the temperature of the warm air side has leveled off with the blower and burner running, compare the readings of the two thermometers. If the difference is less than 90°F, slow down the blower speed. If it is more, increase the blower speed. Keep adjusting until a rise of approximately 90°F is maintained.

In an air conditioning unit, use a 20°F drop instead of the 90°F rise specified above for heating purposes (unless otherwise specified by the manufacturer of the unit). The air delivery should be sufficient to keep the coils from frosting and the refrigerant suction pressure from rising.

CHECKLIST FOR BOTH BLOWERS:	BELT DRIVE	DIRECT DRIVE
PULLEYS ... Be sure they are tight on their shafts and are in line.	✓	
BELT ... If worn, replace it after determining and correcting the cause of wear (i.e. belt too loose, belt too tight, pulleys not in line, shafts not parallel, dirt and grease on belt and pulleys, etc.)	✓	
ELECTRICAL CONNECTIONS ... Be sure lead cable is resiliently anchored and cannot rattle or transmit vibrations.	✓	✓
BLOWER OUTLET ... See that the outlet is centered in the blower opening of the unit and sealed against air leakage.	✓	✓
NOISE ... Make sure there is no metal-to-metal contact.	✓	✓
BLOWER BEARINGS ... Worn bearings mean trouble. Replace bearings and shaft if necessary.	✓	
WHEEL ... See that the wheel is centered in the blower housing and that the thrust collars are tight on the shaft.	✓	✓
LUBRICATION ... Oil the motor and blower bearings, if needed.	✓	
FILTERS ... Filters should be replaced at the beginning of each season and should be changed during the season.	✓	✓

BLOWER TIPS

Below is the formula to determine the blower speed:

BLOWER RPM FORMULA

$\frac{\text{Motor Pulley Dia.}}{\text{Blower Pulley Dia.}} \times \text{Motor RPM}$

- You cannot bench test a blower at free air as it will probably overload the motor.
- If you double the RPM of a fan or blower you would:
 - Get **twice** the CFM.
 - Get **four** times the SP.
 - Require **eight** times the HP.
- When giving the dimensions of a wheel:
 - First** dimension should be diameter.
 - Second** dimension stated should be width.
- Specifying Rotation:
 - Double Inlet Wheel = Viewing Hub Side
 - Single Inlet Wheel = Viewing Back Plate



TEMPERATURE LIMITS

Over 100° – DD motors may overheat.

Over 135° – Lau-Pak and other sleeve bearings will lose lubricant.

Over 180° – Belts will not withstand heat.

Over 200° – (1) Ball Bearings may need special lubricant.

(2) Do not use Clamplok hub construction.

(3) Keyways required on wheel hubs and shaft.

Over 250° – Consult manufacturer.

DECIMAL TO FRACTIONAL CONVERSION GUIDE

Decimal Unit	Conversion
.25	$\frac{1}{4}$ "
.31	$\frac{5}{16}$ "
.38	$\frac{3}{8}$ "
.50	$\frac{1}{2}$ "
.63	$\frac{5}{8}$ "
.69	$1\frac{1}{16}$ "
.75	$\frac{3}{4}$ "
.88	$\frac{7}{8}$ "
1.125	$1\frac{1}{8}$ "
1.19	$1\frac{3}{16}$ "

Decimal Unit	Conversion
1.25	$1\frac{1}{4}$ "
1.31	$1\frac{5}{16}$ "
1.38	$1\frac{3}{8}$ "
1.44	$1\frac{7}{16}$ "
1.63	$1\frac{5}{8}$ "
2.19	$2\frac{3}{16}$ "
2.25	$2\frac{1}{4}$ "
2.44	$2\frac{7}{16}$ "
2.69	$2\frac{11}{16}$ "
2.94	$2\frac{15}{16}$ "

Specifications are subject to change without notice or obligation.