

UNIVERSAL REPLACEMENT PROPELLERS



GENERAL INFORMATION

The simplest form of an axial fan consists of a propeller, usually with three to five aluminum blades mounted in a venturi. This type of fan finds wide use in applications requiring high air volumes at low static pressures. The performance characteristics of propellers may vary in many ways. Some general guidelines are:

- Increased blade pitch increases CFM and HP.
- Decreased blade pitch decreases CFM and HP.
- Increasing the number of blades increases static pressure characteristics.

ADVANTAGES OF PROPELLERS

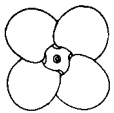
- Straight through air flow pattern
- Low cost
- Light weight
- High volume

TYPICAL APPLICATIONS

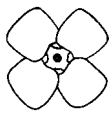
- Roof Top Unit Heaters
- Condensing Units
- Walk-In Refrigeration Units
- Pedestal Fans, Mancoolers, Ventilating Fans

BLADE SHAPE

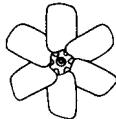
There are only three basic shapes that are of interest in the propeller selection – **round**, **wide pressure** blade and **narrow pressure** blade.



Round



Wide



Narrow

The round shaped blades are used for free air delivery and low pressure applications, and are quieter.

The wide pressure blade is used in most applications operating at substantial static pressures. It has excellent pressure characteristics and reasonable noise levels.

The narrow pressure blade is generally used in applications where higher static pressure exists, such as multi-row coils or places where minimum axial depth is necessary.

PROPS FOR THE REPLACEMENT BUSINESS

BOTH FREE AIR AND CONDENSER DESIGNS

- 2-, 3-, 4-, 5-, and 6-Blade Propellers.
- Up to 60" in diameter, up to 40° pitches.
- Hubs and Bushings: 1/4" to 1 1/8" bore.

PROPELLER VIBRATION

Propellers are, by nature, rather flexible and subject to vibration. Commercially available propellers will have a number of natural frequencies occurring as different parts of the propeller vibrate, or as they vibrate in different modes. Lau exercises great care in designing propellers so natural frequencies do not occur at frequencies normally found in systems.

PITCH SELECTION

A pitch gauge is used to measure the pitch and rotation of a propeller.

- Pitch is measured at the spider lobe.
- Consult the chart for pitch selection to avoid motor overload.
- **Make certain that the propeller horsepower does not exceed the motor horsepower.**
- On "Free Air" type propellers, use the brake horsepower published under the RPM in the performance chart.
- **On "Condenser" type applications, where static pressure is unknown, use the brake horsepower published at .3" static pressure for the appropriate RPM.**

PROPELLER ROTATION

- The direction of rotation of a propeller is determined to be clockwise (CW) or counter-clockwise (CCW) when viewed from the air discharge side (the cupped side of the blade).
- The discharge side is the concave ("cupped") side of the blade.

Easy "Sandbox Method" Method of Determining Rotation

- Imagine standing in a sandbox and dropping the propeller face up or face down on the sand. Regardless of which side is up, the direction of rotation is the same as the direction required to turn the propeller into the sand.

LABOR SAVING SERVICE TOOL AND PARTS

Lau's Labor Saving Service Tools save you time and money at the job site. Quality Lau replacement parts withstand the increased workload expected of replacement parts, for reduced call-backs and happier customers.

HORSEPOWER CONVERSION CHART

Use to convert decimal horsepower to commonly available fractional horsepower motors.

(For watt conversion, use the formula 745.7 watts = 1 HP)

| Decimal Horsepower | | | | | | | | | | | | | | | | | |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0.010 | 0.014 | 0.017 | 0.020 | 0.025 | 0.033 | 0.040 | 0.050 | 0.067 | 0.083 | 0.100 | 0.125 | 0.167 | 0.250 | 0.333 | 0.500 | 0.750 | 1.000 |
| Fractional Horsepower | | | | | | | | | | | | | | | | | |
| 1/100 | 1/70 | 1/60 | 1/50 | 1/40 | 1/30 | 1/25 | 1/20 | 1/15 | 1/12 | 1/10 | 1/8 | 1/6 | 1/4 | 1/3 | 1/2 | 3/4 | 1 |

SHIPPING NOTE:

Most Lau products are suitable for normal parcel shipping services such as FedEx or UPS. However, some products are too large and must be shipped via common carrier.

Next Day or 2nd Day parcel service: Most products are suitable for such expedited services at special handling costs. However, due to the bulkiness of the majority of products featured in this catalog, you can avoid unpleasant surprises by checking with our Customer Service to verify cost before you request expedited service.

Specifications are subject to change without notice or obligation.