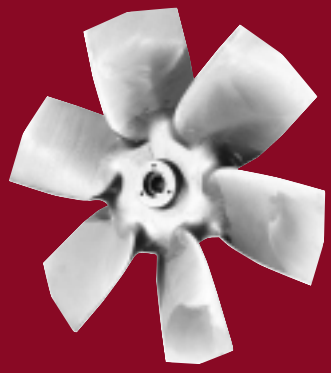
# Duct Axial® Fans

Series 46 Series 46V Series 48 Series 48V



# HARTZELL®

Hartzell Fan, Inc., Piqua, Ohio 45356
www.hartzellfan.com

Bulletin A-118-V November 2004

# Index



**Certified Ratings for Air Performance**

Hartzell Fan, Inc. certifies that the Direct Drive Axial Fan, Series 48 and Series 48V Direct Drive Duct Vaneaxial Fan, on pages 8 and 9; and Belt Drive Duct Axial Fan, Series 46, and 46V Belt Drive Duct Vaneaxial Fan, on pages 11 through 15, are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.

## How To Use Model Code Index:

**Example:**

Assume a needed performance of 11,000 CFM at 3/4" SP, standard air. Reading the rating table on page 9, we find a 36" fan capable of 11,388 CFM, with RPM of 870 and brake horsepower (BHP) of 2.06. Required motor horsepower is 3.

The model code can be constructed as follows: Type will be a production item (code A), product series for the Duct Axial® Fan is 48, size of the wheel is 36", number of blades on the fan is 6, blade code for this item is DA, material for construction is steel (code ST), motor enclosure is air over (AO), motor horsepower is 3 (code K), and motor RPM/phase is 870 (code 5).

**Note:** All other information fields must be filled with hyphens (/) dashes (-) if they are not applicable to the fan being considered.

# Hartzell Model Code Explanation

A 48 – – – 36 6 DA – – – ST AO K 5

Type
- A – Production Item
- S – Stock Item
- Q – Special Quote

Product Series
Arrangement (centrifugals only)
Size (nominal wheel diameter, inches)
Class/Blades (class for centrifugals; blades for axial)
Wheel Code
Wheel Width/Blade Angle (width (%) centrifugals/angle axials)
Material of Construction
Motor Enclosure
Motor Horsepower
Motor RPM/Phase

Motor RPM/Phase

| 3 Phase | 1 Phase |
|---|---|
| 2 = 3450 | B = 3450 |
| 3 = 1750 | C = 1750 |
| 4 = 1140 | D = 1140 |
| 5 = 870 | E = 870 |
| 6 = 690 | F = 690 |
| 7 = 575 | G = 575 |

## Motor Horsepower

| Horsepower | 1/4 | 1/3 | 1/2 | 3/4 | 1 | 1 1/2 | 2 | 3 | 5 | 7 1/2 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code Letter | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U |

This bulletin lists Hartzell's complete line of Duct Axial® Fans and accessories. More than 70 Hartzell offices can provide specific performance and installation data to meet your requirements. Call your Hartzell representative for assistance. Visit our website **(www.hartzellfan.com)** or call toll-free **(1-800-336-3267)** for the name of your Hartzell representative.

# General Construction Features

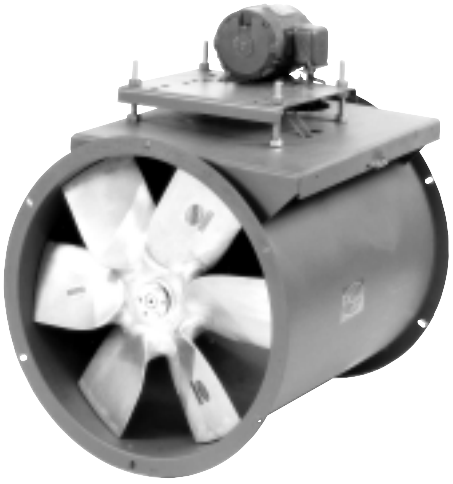
- **Applications** –Hartzell Duct Axial® fans are ideal for applications where static pressure requirements fall between those of a low-pressure duct fan and a vaneaxial blower. Duct Axial® fans, Type DA, combine the best features of the rugged, highly efficient vaneaxial blower and the economical performance of the duct fan providing maximum efficiency in the static pressure range from 1" to 4", at low speeds, and with low noise characteristics. The six-blade, one-piece airfoil propeller is designed to move large volumes of air at medium static pressures.

  These efficient fans can be used to remove fumes, steam, hot air, and smoke; or to supply air for cooling, drying, general ventilation or in make-up air applications.
- **Performance** –Ranges from 1204 CFM at free air to 45,100 CFM at 3" static pressure. Maximum static pressure: 4".
- **Standard Construction** –Housings are hot rolled steel with rolled steel flanges. Exterior dimensions of the Duct Axial® fans match those of Hartzell's regular duct fans; both have identical inside and outside diameters, drum lengths and bolt circles. Duct Axial® fans are available in sizes 12" – 60".

  These fans are supplied with an industrial grade enamel industrial coating, suitable for indoor or outdoor industrial structural application.

  The Type DA propeller is a one-piece cast aluminum alloy airfoil. It is designed for a broad range of tip speeds and performs efficiently throughout; it operates from free air to full block off with no stall in the fan curve. The Type DA propeller is fully machined, and static and dynamically balanced individually. It is fitted with split taper bushings for easy installation and removal.
- **Available Construction** –The Hartzell medium pressure Duct Axial® fans are also available with fabricated steel wheels. The type HS is a six-blade fabricated carbon steel counterpart of the cast aluminum DA. It is used primarily for high temperature applications. The CS fabricated six-blade propeller is constructed of 304 stainless steel and is applied primarily in corrosive applications. These fabricated versions of the Hartzell Duct Axial® fan are available in sizes 12" – 36".

**Duct Axial® Fan Direct Drive**



**Duct Axial® Fan Belt Drive**


## Type DA Propeller

- Six blade
- Airfoil design
- Cast aluminum alloy 319 construction
- Laminar performance and flow delivery from free air to full block off
- Available in sizes 12" – 60"
- Maximum temperature 350°F
- Performance tables shown on pages 9 and 12–15

## Type HS and CS Propellers

- Six blade
- Single camber airfoil design
- Fabricated steel (Type HS) or stainless steel 304 (Type CS) construction
- Laminar performance from free air to block off available in sizes 12" – 36"
- Maximum temperature 500°F
- Performance tables shown on pages 17–19

# Selection Guide

## How To Use Capacity Tables

1. Select size, RPM and BHP for a given air delivery and pressure of a Duct Axial® fan from the rating tables, pages 9, 12–15, and 17–20.

   Performance ratings are based on standard air conditions, sea level 70°F and 29.92 inches barometric pressure giving an air density of .075 lbs. per cubic foot. The specific gravity of air equals 1.00 at these conditions.

2. If non-standard temperature or altitude is involved, correct to standard air density (see Table 1).

3. For speeds above ratings consult factory.

## Altitude – Temperature Correction

Temperatures above or below 70°F at sea level (0 ft.) are read vertically between the double lines giving the proper correction factors. Altitudes above sea level at a constant 70°F temperature are read horizontally between the double lines giving those factors. Any other factors are obtained by reading down to the desired temperature, then across to the desired altitude.

EXAMPLE: Assume the required performance to be 16,500 CFM, .75" SP, 175°F, and 3000 ft. altitude.

1. Table 1 gives a factor of 1.34.
2. .75" SP x 1.34 = 1.00 SP for 70°F at sea level.
3. A 36" Series 48 Direct Drive Duct Axial® Fan selected from the Rating Table on page 9 for the new conditions shows 16,511 CFM, 1.00 SP at 1160 RPM with 4.36 BHP.
4. Correct the horsepower and pressure in Step 3 to non-standard performance by dividing by the factors:

   1.00" SP / 1.34 = .75" SP

   4.36 BHP / 1.34 = 3.25 BHP

5. Final performance of the direct drive Duct Axial® fan at the assumed conditions:

   16,500 CFM, .75" SP, 1160 RPM,

   3.25 BHP, 175°F, and 3000 ft. altitude.

   Motor must be suitable for 175°F and 3000 ft. altitude also.

**Table 1 Combined Altitude – Temperature Correction Factors**

| °F. TEMP \ ALT. FT. | 0 | 1000 | 2000 | 3000 | 4000 | 5000 | 6000 | 7000 | 8000 | 9000 | 10000 | 11000 | 12000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -50 | 0.77 | 0.80 | 0.83 | 0.86 | 0.89 | 0.92 | 0.96 | 1.00 | 1.04 | 1.08 | 1.12 | 1.16 | 1.21 |
| -25 | 0.82 | 0.85 | 0.89 | 0.92 | 0.95 | 0.98 | 1.03 | 1.07 | 1.11 | 1.15 | 1.20 | 1.24 | 1.29 |
| 0 | 0.87 | 0.90 | 0.94 | 0.97 | 1.01 | 1.04 | 1.09 | 1.13 | 1.17 | 1.22 | 1.27 | .131 | 1.37 |
| 25 | 0.91 | 0.95 | 0.98 | 1.02 | 1.06 | 1.09 | 1.14 | 1.18 | 1.23 | 1.27 | 1.33 | 1.37 | 1.43 |
| 50 | 0.96 | 1.00 | 1.04 | 1.08 | 1.11 | 1.15 | 1.20 | 1.25 | 1.30 | 1.34 | 1.40 | 1.45 | 1.51 |
| 70 | 1.00 | 1.04 | 1.08 | 1.12 | 1.16 | 1.20 | 1.25 | 1.30 | 1.35 | 1.40 | 1.46 | 1.51 | 1.57 |
| 100 | 1.06 | 1.10 | 1.14 | 1.19 | 1.23 | 1.27 | 1.33 | 1.38 | 1.43 | 1.48 | 1.55 | 1.60 | 1.66 |
| 125 | 1.10 | 1.14 | 1.19 | 1.23 | 1.28 | 1.32 | 1.38 | 1.43 | 1.49 | 1.54 | 1.61 | 1.66 | 1.73 |
| 150 | 1.15 | 1.20 | 1.24 | 1.29 | 1.33 | 1.38 | 1.44 | 1.50 | 1.55 | 1.61 | 1.68 | 1.74 | 1.81 |
| 175 | 1.20 | 1.25 | 1.30 | 1.34 | 1.39 | 1.44 | 1.50 | 1.56 | 1.62 | 1.68 | 1.75 | 1.81 | 1.88 |
| 200 | 1.25 | 1.30 | 1.35 | 1.40 | 1.45 | 1.50 | 1.56 | 1.63 | 1.69 | 1.75 | 1.83 | 1.89 | 1.96 |
| 225 | 1.29 | 1.34 | 1.39 | 1.44 | 1.50 | 1.55 | 1.61 | 1.68 | 1.74 | 1.81 | 1.88 | 1.95 | 2.03 |
| 250 | 1.34 | 1.39 | 1.45 | 1.50 | 1.55 | 1.61 | 1.68 | 1.74 | 1.81 | 1.88 | 1.96 | 2.02 | 2.10 |
| 275 | 1.39 | 1.45 | 1.50 | 1.56 | 1.61 | 1.67 | 1.74 | 1.81 | 1.88 | 1.95 | 2.03 | 2.10 | 2.18 |
| 300 | 1.43 | 1.49 | 1.54 | 1.60 | 1.66 | 1.72 | 1.79 | 1.86 | 1.93 | 2.00 | 2.09 | 2.16 | 2.25 |
| 325 | 1.48 | 1.54 | 1.60 | 1.66 | 1.72 | 1.78 | 1.85 | 1.92 | 2.00 | 2.07 | 2.16 | 2.23 | 2.32 |
| 350 | 1.53 | 1.59 | 1.65 | 1.71 | 1.77 | 1.84 | 1.91 | 1.99 | 2.07 | 2.14 | 2.23 | 2.31 | 2.40 |

**Note: Table 1 has inverted values.**
**Actual density ratio is the reciprocal of the above values.**

## High Temperature Construction

**Direct Drive Duct Axial® Fans – Series 48 and 48V**

Temperature:
104°F standard.

104° to 140°F – Class F insulation required on motor.

140° to 176°F – Class H insulation required on motor.

176° to 212°F – Class HH insulation required on motor.

For direct drive units with airstream temperatures above 212°F, contact factory.

**Belt Drive Duct Axial® Fans – Series 46 and 46V with Type DA or CS**

For applications with airstream temperatures between 200°F and 350°F, high temperature construction is required. High temperature construction consists of purging fan bearings with high temperature grease as well as opening the end of the bearing cover so that cool ambient air is drawn over the belts and bearings. Extended lubrication tube material is changed to copper tubing. If the motor ambient temperature is higher than 104°F, specially insulated motors are required.

For airstream temperatures above 350°F, use Type HS Propeller up to 500°F; above 500°F, contact factory.

## Discharge Cones

Ratings shown in this bulletin are for Duct Axial® fans with inlet and outlet ducts of the same diameter as the fan. Discharge cones may be used on the duct fans to adapt to larger diameters (see Fig. A). The result is a static pressure regain.

Table 2 shows the amount of additional static pressure capability, which results from using the discharge cone. Add the amount of .45 ($VP_1 - VP_2$) to the duct fan's static pressure.

$$SP_2 = SP_1 + .45(VP_1 - VP_2)$$

Thus, a Duct Axial® fan selected for 4000 FPM O.V. at 3/4" SP using a size 18"-21" cone, the static pressure capability would be raised from .750" to .957" static pressure. Regain calculations are approximate and are not part of the AMCA certified ratings.

Discharge cones may also be used to transform large ducts to the Duct Axial® fan inlet size (see Fig. B). Since these cones have gently tapered sides, the friction loss is negligible, about .08 x the difference in velocity pressures (see Table 3).

If the fan is to be used with ducts smaller in diameter than the unit (see Fig. C), the difference in velocity pressure across the cone must be added to the static pressure for which the Duct Axial® fan is used.

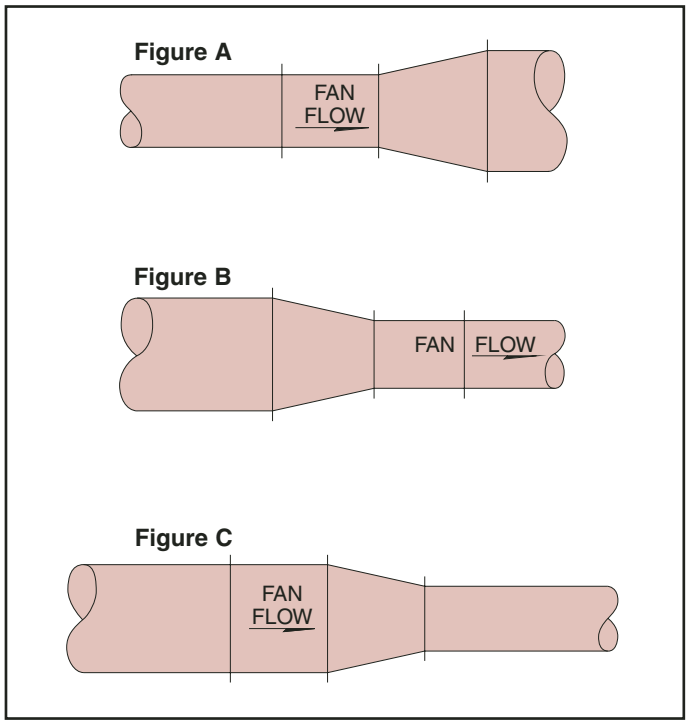



**Table 2 Additional Static Pressure Capability (Regain) Inches W.G.**

| F.P.M. VELOCITY | PRESSURE INCHES | F.P.M. VELOCITY | PRESSURE INCHES | F.P.M. VELOCITY | PRESSURE INCHES |
|---|---|---|---|---|---|
| 1000 | 0.012 | 2750 | 0.099 | 4500 | 0.261 |
| 1250 | 0.020 | 3000 | 0.117 | 4750 | 0.290 |
| 1500 | 0.029 | 3250 | 0.138 | 5000 | 0.323 |
| 1750 | 0.040 | 3500 | 0.160 | 5250 | 0.356 |
| 2000 | 0.052 | 3750 | 0.183 | 5500 | 0.392 |
| 2250 | 0.065 | 4000 | 0.207 | 5750 | 0.428 |
| 2500 | 0.081 | 4250 | 0.233 | 6000 | 0.467 |

**Note: For an included cone angle of 25°- 30°.**

**Table 3**

**Corresponding Air Velocities for Various Pressures in inches of water (air weight: .07488 lbs. per cu.ft.)**

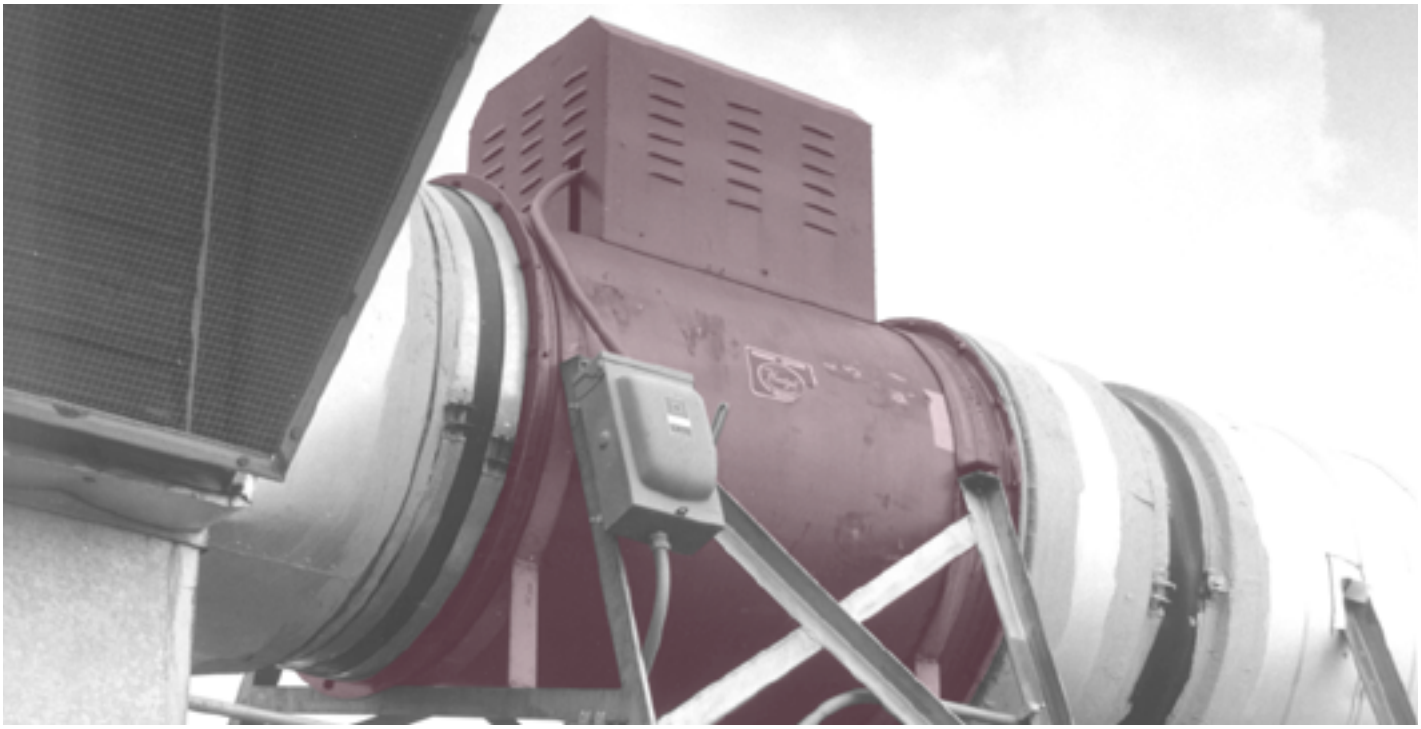
| F.P.M. VELOCITY | PRESSURE INCHES | F.P.M. VELOCITY | PRESSURE INCHES |
|---|---|---|---|
| 500 | 0.0156 | 2250 | 0.316 |
| 600 | 0.0225 | 2500 | 0.391 |
| 700 | 0.0305 | 2750 | 0.473 |
| 800 | 0.0400 | 3000 | 0.562 |
| 900 | 0.0504 | 3250 | 0.661 |
| 1000 | 0.0625 | 3500 | 0.768 |
| 1100 | 0.0758 | 3750 | 0.880 |
| 1200 | 0.0900 | 4000 | 1.000 |
| 1300 | 0.106 | 4250 | 1.130 |
| 1400 | 0.122 | 4500 | 1.265 |
| 1500 | 0.141 | 4750 | 1.410 |
| 1600 | 0.160 | 5000 | 1.560 |
| 1700 | 0.181 | 5250 | 1.720 |
| 1800 | 0.203 | 5500 | 1.890 |
| 1900 | 0.226 | 5750 | 2.060 |
| 2000 | 0.250 | 6000 | 2.250 |

# Metric Conversion Table

| FROM | TO | MULTIPLY BY |
|---|---|---|
| Inches (in.) | Millimeter (mm) | 25.400 |
| Feet (ft.) | Meter (m) | 0.3048 |
| Velocity (ft./min.) | Meter/Second (m/s) | 0.00508 |
| Volume Flow (cfm) | Cubic Meter/Second ($m^3/s$) | 0.00047195 |
| Pressure (in. w.g.) | Pascal ($N/m^2$) | 248.36 |
| Density ($lb./ft^3$) | Kilogram/Cubic Meter ($Kg/m^3$) | 16.018 |
| Power (hp) | Watt (w) | 745.70 |
| Square Foot ($ft^2$) | Square Meter ($m^2$) | 0.09290 |
| Square Inch ($in^2$) | Square Meter ($m^2$) | 0.0006451 |

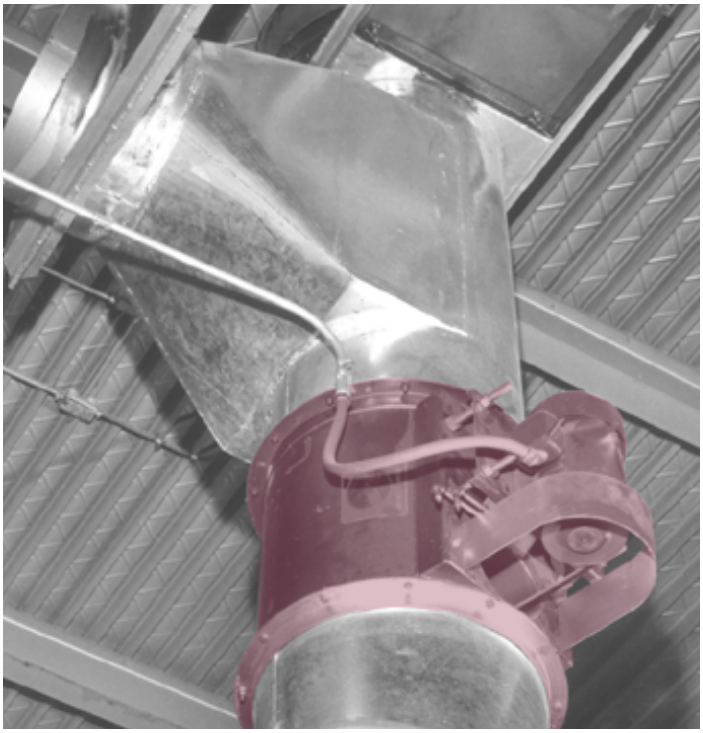
# Fan Installation

Hartzell's DA fans can often be the most economical choice for pressures from 1" to 4". Duct Axial® fans are engineered and built to become an integral part of duct systems for general ventilation, removal of contaminated air or air supply. Special equipment is not needed for installation and the units can be used in any position from vertical to horizontal.



Horizontal, roof-mounted, belt drive Duct Axial® fan performs integral function in heat recovery system.

Belt drive Duct Axial® fan with stack cap mounted at the end of duct system.

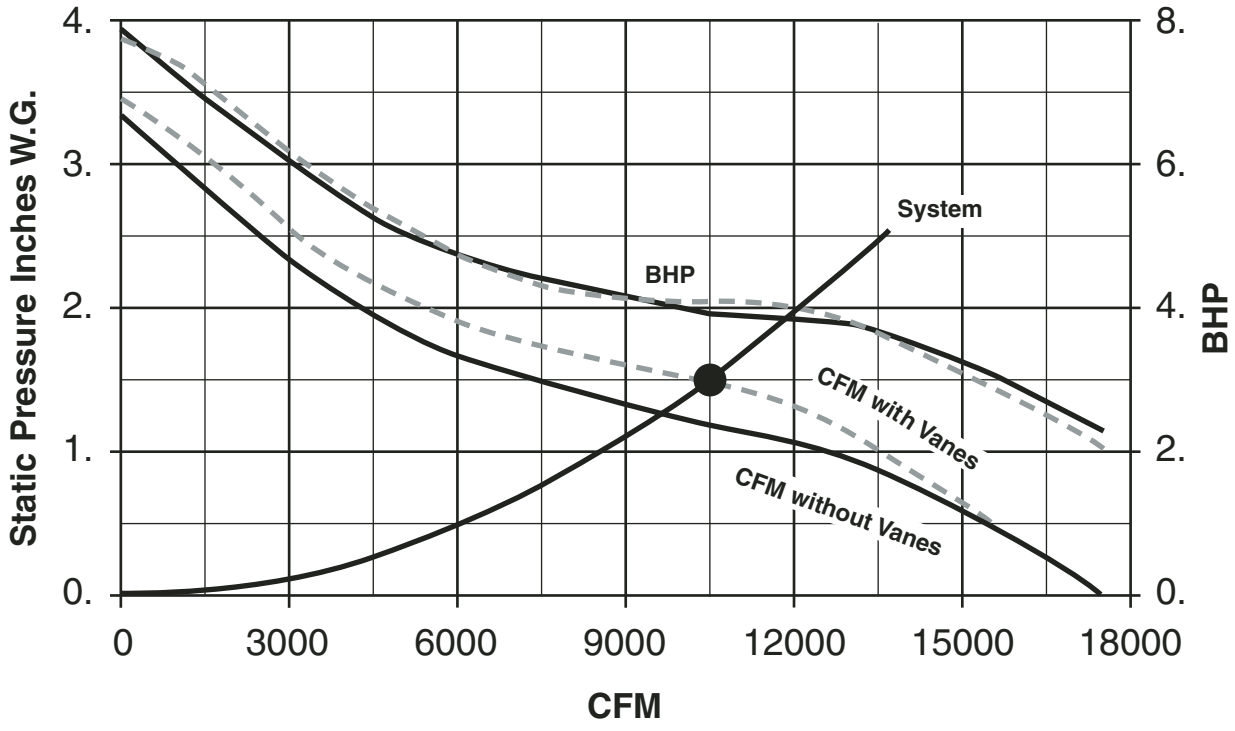


Belt drive Duct Axial® fan installed vertically in duct system, exhausting process heat to the outside.

# Vane Section

The addition of a specially designed vane section to the Duct Axial® fan changes the design configuration to a vaneaxial. The addition of the vane section to the discharge side of any Duct Axial® fan – direct drive or belt drive – makes it perform efficiently as a low-powered vaneaxial on the upper side of its pressure curve. Near free air the guide vanes offer no advantage, but beyond the mid-range, the vanes provide about 30% more static pressure with the same horsepower.

**Comparison of 36" Type DA without vanes and with vanes.**
**Belt Driven Fans. Constant speed.**




## Example:

Given a desired performance of 10,500 CFM at 1.5" static pressure, a Duct Axial® fan without the vane section will meet the desired performance running at 1122 RPM and requiring 5.24 brake horsepower. By adding the vane section, the performance of 10,500 CFM can be achieved by running the unit at 1027 RPM, consuming only 4.0 BHP. A 30% energy savings is realized by merely adding the vane section, as well as a 10% reduction in the noise level of the fan.

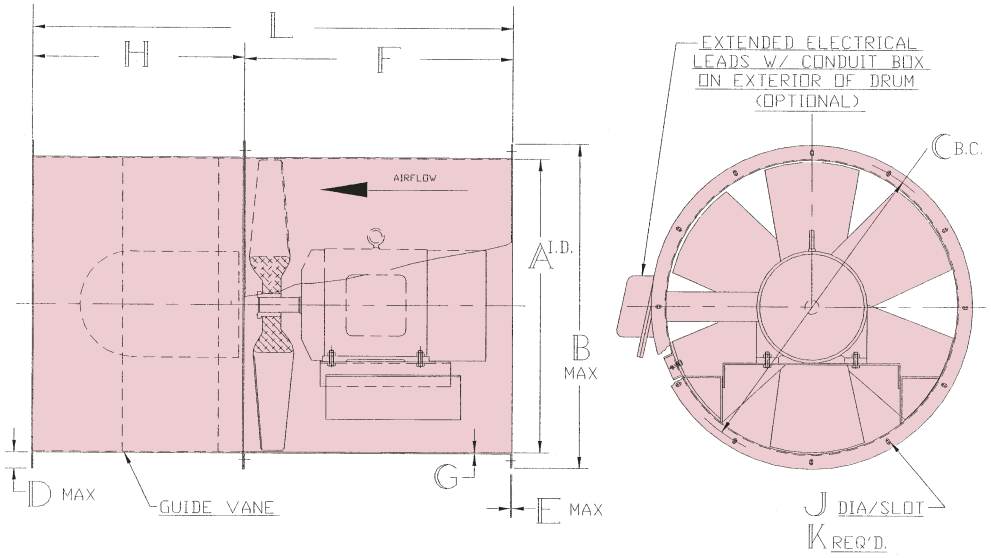
# Direct Drive Duct Axial® Fan


## Series 48 (Shown)
## Series 48V (With Vanes)

- **Applications:** Handling relatively clean and corrosive-free air at temperatures not exceeding the motor rating.
- Available in **sizes** 12" to 60"...**performance** from 1204 CFM at free air to 45,100 CFM at 3" SP.
- **Propellers:** 6 blade airfoil design, cast aluminum with taperlock bushing. Type DA.
- **Hot-rolled steel housing** standard, material code ST. Also available in aluminum, material code AL. Sizes 12" – 60".
- **Rigid Motor Mounts** – provide support for foot-mounted motors. Designed for minimum resistance to airflow.
- **Extended Lube Tubes** from motor to exterior of fan housing are standard. Extended motor leads to exterior of housing are available as an option.
- **Accessories** (see pages 22 and 23)
- **Protective coatings** (see page 21)
- **Maximum temperature same as motor** (see page 4)
- **Vane Section** (see page 7) can be used with Direct Drive units. For performance characteristics refer to Series 48V style in rating table.

amca CERTIFIED RATINGS AIR PERFORMANCE — AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC.

Hartzell Fan, Inc. certifies that the Series 48 Direct Drive Axial® Fan and Series 48V Direct Drive Duct Vaneaxial Fan shown hereon are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.




## Principal Dimensions – Series 48, 48V

| FAN SIZE | A | MAX. B | C | MAX. D | MAX E | | F | MAX G | | H | J | K | L | MAX. MOTOR FRAME |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | STL. | ALUM. | | STL. | ALUM. | | | | | |
| **12** | 12 7/8 | 15 5/8 | 14 5/8 | 1 1/4 | 12 GA | .190 | 22 | 12 GA | .125 | 6 | 5/16 | 6 | 28 | 56 |
| **16** | 16 7/8 | 19 5/8 | 18 5/8 | 1 1/4 | 12 GA | .190 | 25 | 12 GA | .125 | 10 | 5/16 x 5/8 | 6 | 35 | 182T |
| **18** | 18 7/8 | 21 5/8 | 20 5/8 | 1 1/4 | 12 GA | .190 | 25 | 12 GA | .125 | 11 | 5/16 x 5/8 | 6 | 36 | 182T |
| **24** | 24 7/8 | 29 1/8 | 26 7/8 | 2 | 10 GA | .250 | 31 | 10 GA | .190 | 13 | 7/16 x 3/4 | 6 | 44 | 182T |
| **28** | 28 7/8 | 33 1/8 | 30 7/8 | 2 | 10 GA | .250 | 31 | 10 GA | .190 | 13 | 7/16 x 3/4 | 6 | 44 | 184T |
| **32** | 33 | 37 1/4 | 35 | 2 | 10 GA | .250 | 34 | 10 GA | .190 | 15 | 7/16 x 3/4 | 6 | 49 | 215T |
| **36** | 37 | 41 3/8 | 39 | 2 | 10 GA | .250 | 34 | 10 GA | .190 | 16 | 7/16 x 3/4 | 6 | 50 | 254T |
| **44** | 45 | 49 3/8 | 47 1/2 | 2 | 10 GA | .250 | 42 | 10 GA | .190 | 19 | 7/16 x 3/4 | 12 | 61 | 256T |
| **48** | 49 1/8 | 53 1/2 | 51 5/8 | 2 | 10 GA | .375 | 42 | 10 GA | .190 | 22 | 7/16 x 3/4 | 12 | 64 | 284T |
| **54** | 55 3/8 | 60 3/4 | 57 5/8 | 2 1/2 | .375 | .375 | 42 | 7 GA | .25 | 23 | 7/16 x 3/4 | 12 | 65 | 365T |
| **60** | 61 3/8 | 66 3/4 | 63 5/8 | 2 1/2 | .375 | .375 | 42 | 7 GA | .25 | 25 | 7/16 x 3/4 | 12 | 67 | 405T |

**NOTES:** Dimensions and specifications are subject to change. Certified prints are available.

## Series 48(V) A48---_ _6DA---ST_ _ _ _ and A48V--__6DA---ST_ _ _ _

| Size | Model | Motor | | Cubic Feet Per Minute vs. Static Pressure | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0" | | ½" | | ¾" | | 1" | | 1¼" | | 2" | | 2½" | | 3" | | 3½" | | 4" | | 4½" | |
| | | HP | RPM | CFM | BHP | CFM | BHP | CFM | BHP | CFM | BHP | CFM | BHP | CFM | BHP | CFM | BHP | CFM | BHP | CFM | BHP | CFM | BHP | CFM | BHP |
| 12 | A48---126DA---ST___3 | _ | 1725 | 1154 | 0.04 | 223 | 0.10 | 34 | 0.12 | | | | | | | | | | | | | | | | |
| | A48V--126DA---ST___3 | _ | | 1157 | 0.04 | 337 | 0.09 | 96 | 0.13 | | | | | | | | | | | | | | | | |
| | A48--126DA---ST___2 | _ | 3450 | 2308 | 0.35 | 2035 | 0.46 | 1891 | 0.52 | 1716 | 0.57 | 797 | 0.64 | 446 | 0.78 | 242 | 0.90 | 67 | 1.00 | | | | | | |
| | A48V--126DA---ST___2 | _ | | 2313 | 0.33 | 2058 | 0.44 | 1926 | 0.47 | 1763 | 0.52 | 1388 | 0.61 | 673 | 0.72 | 398 | 0.89 | 192 | 1.04 | | | | | | |
| 16 | A48---166DA---ST___3 | _ | 1760 | 2932 | 0.24 | 2381 | 0.37 | 1616 | 0.41 | 1142 | 0.50 | 601 | 0.68 | 112 | 0.81 | | | | | | | | | | |
| | A48V---166DA---ST___3 | _ | | 2934 | 0.24 | 2463 | 0.39 | 2148 | 0.46 | 1299 | 0.51 | 719 | 0.69 | 257 | 0.84 | | | | | | | | | | |
| | A48---166DA---ST___2 | _ | 3450 | 5747 | 1.78 | 5516 | 2.00 | 5390 | 2.12 | 5256 | 2.26 | 4956 | 2.57 | 4608 | 2.82 | 4108 | 3.00 | 2951 | 3.12 | 2475 | 3.48 | 2137 | 3.90 | 1843 | 4.37 |
| | A48V---166DA---ST___2 | _ | | 5751 | 1.79 | 5527 | 2.10 | 5411 | 2.25 | 5292 | 2.40 | 5047 | 2.70 | 4785 | 3.00 | 4487 | 3.28 | 4111 | 3.53 | 2861 | 3.58 | 2430 | 3.97 | 2104 | 4.32 |
| 18 | A48---186DA---ST___4 | _ | 1160 | 2703 | 0.09 | 876 | 0.21 | 445 | 0.27 | | | | | | | | | | | | | | | | |
| | A48V---186DA---ST___4 | _ | | 2665 | 0.10 | 1212 | 0.19 | 596 | 0.26 | 202 | 0.33 | | | | | | | | | | | | | | |
| | A48---186DA---ST___3 | _ | 1760 | 4101 | 0.33 | 3448 | 0.52 | 2887 | 0.59 | 1614 | 0.65 | 909 | 0.84 | 398 | 1.04 | | | | | | | | | | |
| | A48V---186DA---ST___3 | _ | | 4043 | 0.34 | 3487 | 0.50 | 3088 | 0.57 | 2257 | 0.61 | 1210 | 0.82 | 613 | 1.04 | | | | | | | | | | |
| 24 | A48---246DA---ST___5 | _ | 860 | 4459 | 0.14 | 1438 | 0.35 | 647 | 0.46 | | | | | | | | | | | | | | | | |
| | A48V---246DA---ST___5 | _ | | 4427 | 0.14 | 1954 | 0.31 | 847 | 0.44 | | | | | | | | | | | | | | | | |
| | A48---246DA---ST___4 | _ | 1160 | 6015 | 0.34 | 4666 | 0.66 | 2468 | 0.79 | 1702 | 0.92 | 589 | 1.19 | | | | | | | | | | | | |
| | A48V---246DA---ST___4 | _ | | 5972 | 0.33 | 4753 | 0.62 | 3849 | 0.72 | 2265 | 0.83 | 829 | 1.17 | | | | | | | | | | | | |
| 28 | A48---286DA---ST___5 | _ | 860 | 7155 | 0.34 | 3852 | 0.61 | 2439 | 0.78 | 1392 | 0.96 | | | | | | | | | | | | | | |
| | A48V---286DA---ST___5 | _ | | 7052 | 0.32 | 5188 | 0.60 | 2929 | 0.71 | 1823 | 0.92 | 267 | 1.26 | | | | | | | | | | | | |
| | A48---286DA---ST___4 | _ | 1160 | 9650 | 0.84 | 8193 | 1.24 | 7146 | 1.46 | 4588 | 1.56 | 2774 | 2.05 | 1465 | 2.58 | 504 | 2.96 | | | | | | | | |
| | A48V---286DA---ST___4 | _ | | 9512 | 0.77 | 8290 | 1.24 | 7569 | 1.39 | 6608 | 1.53 | 3384 | 1.90 | 2034 | 2.45 | 914 | 2.96 | | | | | | | | |
| 32 | A48---326DA---ST___5 | _ | 860 | 10663 | 0.60 | 8184 | 1.13 | 4686 | 1.31 | 3445 | 1.60 | 1265 | 2.20 | | | | | | | | | | | | |
| | A48V---326DA---ST___5 | _ | | 10557 | 0.60 | 8489 | 1.07 | 7036 | 1.25 | 3896 | 1.46 | 1668 | 2.12 | | | | | | | | | | | | |
| | A48---326DA---ST___4 | _ | 1160 | 14382 | 1.48 | 12671 | 2.27 | 11765 | 2.60 | 10545 | 2.84 | 5776 | 3.42 | 4043 | 4.21 | 2298 | 5.02 | 973 | 5.67 | | | | | | |
| | A48V---326DA---ST___4 | _ | | 14240 | 1.47 | 12775 | 2.14 | 12004 | 2.46 | 11113 | 2.70 | 8367 | 3.14 | 4420 | 3.95 | 2859 | 4.76 | 1550 | 5.62 | | | | | | |
| 36 | A48---366DA---ST___5 | _ | 870 | 15041 | 1.06 | 12492 | 1.84 | 10261 | 2.10 | 6428 | 2.36 | 3484 | 3.10 | 1517 | 3.90 | | | | | | | | | | |
| | A48V---366DA---ST___5 | _ | | 14942 | 1.06 | 12694 | 1.76 | 11388 | 2.06 | 9599 | 2.28 | 4398 | 2.96 | 2020 | 3.80 | 605 | 4.61 | | | | | | | | |
| | A48---366DA---ST___4 | _ | 1160 | 20055 | 2.51 | 18346 | 3.54 | 17299 | 4.10 | 16109 | 4.55 | 10745 | 5.13 | 7495 | 6.02 | 5268 | 7.02 | 3539 | 8.04 | 2156 | 9.13 | 928 | 10.10 | | |
| | A48V---366DA---ST___4 | _ | | 19922 | 2.52 | 18353 | 3.53 | 17451 | 3.95 | 16511 | 4.36 | 14400 | 5.10 | 10223 | 5.48 | 6559 | 6.58 | 4740 | 7.77 | 2881 | 8.88 | 1557 | 9.83 | | |
| 44 | A48---446DA---ST___7 | _ | 575 | 17969 | 0.92 | 12175 | 1.67 | 7247 | 2.05 | 4839 | 2.51 | 1177 | 3.44 | | | | | | | | | | | | |
| | A48V---446DA---ST___7 | _ | | 17981 | 0.90 | 13543 | 1.65 | 8868 | 1.87 | 5459 | 2.32 | 1742 | 3.36 | | | | | | | | | | | | |
| | A48---446DA---ST___6 | _ | 690 | 21562 | 1.60 | 17748 | 2.68 | 13626 | 2.90 | 9370 | 3.36 | 5412 | 4.49 | 2333 | 5.69 | | | | | | | | | | |
| | A48V---446DA---ST___6 | _ | | 21578 | 1.56 | 18277 | 2.63 | 15935 | 2.89 | 12361 | 3.17 | 6074 | 4.16 | 2947 | 5.48 | | | | | | | | | | |
| | A48---446DA---ST___5 | _ | 870 | 27187 | 3.20 | 24494 | 4.66 | 22727 | 5.28 | 20574 | 5.67 | 12440 | 6.48 | 9053 | 7.86 | 6240 | 9.38 | 3776 | 10.97 | 1476 | 12.05 | | | | |
| | A48V---446DA---ST___5 | _ | | 27206 | 3.13 | 24757 | 4.48 | 23329 | 5.19 | 21627 | 5.56 | 17025 | 6.29 | 10316 | 7.14 | 6980 | 8.73 | 4503 | 10.45 | 2351 | 11.76 | | | | |
| | A48---446DA---ST___4 | _ | 1170 | 36562 | 7.79 | 34706 | 9.78 | 33651 | 10.74 | 32475 | 11.68 | 29720 | 13.20 | 25857 | 14.02 | 18110 | 14.96 | 15263 | 16.89 | 12759 | 18.70 | 10408 | 20.53 | 8472 | 22.72 |
| | A48V---446DA---ST___4 | _ | | 36588 | 7.62 | 34837 | 9.33 | 33899 | 10.26 | 32908 | 11.27 | 30691 | 12.98 | 27978 | 13.78 | 24658 | 14.84 | 19340 | 15.59 | 14591 | 16.91 | 11795 | 18.91 | 9477 | 21.13 |
| 48 | A48---486DA---ST___6 | _ | 690 | 27877 | 2.45 | 23920 | 3.91 | 21049 | 4.34 | 14378 | 4.63 | 9219 | 6.03 | 5482 | 7.63 | 2223 | 9.01 | | | | | | | | |
| | A48V---486DA---ST___6 | _ | | 27896 | 2.40 | 24413 | 3.81 | 22139 | 4.26 | 19234 | 4.62 | 10501 | 5.48 | 6163 | 7.14 | 3074 | 8.75 | | | | | | | | |
| | A48---486DA---ST___5 | _ | 850 | 34341 | 4.58 | 31402 | 6.43 | 29539 | 7.27 | 27348 | 7.89 | 18002 | 8.60 | 13449 | 10.37 | 9810 | 12.06 | 6949 | 14.12 | 4239 | 16.03 | 1682 | 17.31 | | |
| | A48V---486DA---ST___5 | _ | | 34365 | 4.48 | 31664 | 6.15 | 30131 | 7.09 | 28374 | 7.76 | 23881 | 8.59 | 16039 | 9.38 | 11119 | 11.10 | 7795 | 13.20 | 5185 | 15.36 | 2799 | 16.92 | | |
| | A48---486DA---ST___4 | _ | 1140 | 46057 | 11.05 | 44000 | 13.57 | 42856 | 14.79 | 41594 | 15.99 | 38681 | 18.13 | 35158 | 19.48 | 27498 | 20.13 | 21411 | 22.09 | 18567 | 24.55 | 15755 | 26.79 | 13142 | 29.10 |
| | A48V---486DA---ST___4 | _ | | 46090 | 10.81 | 44142 | 12.95 | 43107 | 14.09 | 42025 | 15.35 | 39666 | 17.81 | 36869 | 19.14 | 33533 | 20.19 | 29448 | 21.59 | 22712 | 22.36 | 17985 | 24.27 | 14896 | 26.80 |
| 54 | A48---546DA---ST___6 | _ | 695 | 39774 | 4.47 | 35613 | 6.60 | 32851 | 7.47 | 29406 | 7.98 | 17480 | 9.34 | 12361 | 11.33 | 8278 | 13.65 | 4566 | 15.83 | 1041 | 17.19 | | | | |
| | A48V---546DA---ST___6 | _ | | 39803 | 4.38 | 36035 | 6.35 | 33806 | 7.35 | 31119 | 7.84 | 23289 | 8.86 | 14044 | 10.36 | 9268 | 12.75 | 5681 | 15.21 | 2353 | 16.86 | | | | |
| | A48---546DA---ST___5 | _ | 870 | 49790 | 8.78 | 46683 | 11.47 | 44845 | 12.77 | 42747 | 13.98 | 37641 | 15.54 | 25773 | 16.55 | 20646 | 19.12 | 16529 | 21.57 | 12937 | 24.25 | 9855 | 27.28 | 6860 | 30.12 |
| | A48V---546DA---ST___5 | _ | | 49825 | 8.59 | 46916 | 10.93 | 45330 | 12.28 | 43622 | 13.63 | 39577 | 15.26 | 34414 | 16.52 | 25979 | 17.60 | 18832 | 19.59 | 14553 | 22.44 | 11073 | 25.52 | 8194 | 28.69 |
| | A48---546DA---ST___4 | _ | 1160 | 66386 | 20.81 | 64151 | 24.44 | 62945 | 26.22 | 61662 | 27.98 | 58789 | 31.38 | 55467 | 34.33 | 51638 | 36.34 | 45914 | 37.54 | 35141 | 38.91 | 30321 | 42.17 | 27190 | 45.72 |
| | A48V---546DA---ST___4 | _ | | 66433 | 20.36 | 64304 | 23.42 | 63190 | 25.01 | 62037 | 26.67 | 59608 | 30.32 | 56942 | 33.75 | 53886 | 35.71 | 50378 | 37.00 | 46372 | 38.93 | 41459 | 40.89 | 33783 | 41.87 |
| 60 | A48---606DA---ST___6 | _ | 690 | 53946 | 7.37 | 49451 | 10.27 | 46619 | 11.61 | 43300 | 12.61 | 29275 | 13.67 | 21648 | 16.41 | 15995 | 19.04 | 11516 | 22.24 | 7310 | 25.36 | 3381 | 27.51 | | |
| | A48V---606DA---ST___6 | _ | | 53984 | 7.21 | 49844 | 9.82 | 47506 | 11.30 | 44843 | 12.40 | 38077 | 13.70 | 26367 | 14.92 | 18153 | 17.49 | 12881 | 20.75 | 8763 | 24.17 | 5089 | 26.82 | | |
| | A48---606DA---ST___5 | _ | 870 | 68018 | 14.76 | 64635 | 18.47 | 62718 | 20.26 | 60586 | 22.01 | 55603 | 24.89 | 49007 | 26.50 | 34501 | 28.06 | 28912 | 31.60 | 24354 | 35.03 | 19960 | 38.35 | 16344 | 42.36 |
| | A48V---606DA---ST___5 | _ | | 68066 | 14.44 | 64873 | 17.62 | 63163 | 19.35 | 61362 | 21.22 | 57348 | 24.49 | 52462 | 26.02 | 46515 | 27.94 | 37330 | 29.43 | 27929 | 31.61 | 22647 | 35.26 | 18306 | 39.33 |

**Performance shown is for installation Type D: ducted inlet/ducted outlet. Performance ratings do not include the effects of appurtenances in the airstream. Series 48 denotes standard configuration. Series 48V denotes addition of guide vane section.**

**Bold-type information provided in the Rating Table above is needed when preparing a model code. See page 2 for the complete Hartzell Model Code Explanation and example.**

# This page is reserved for future use.

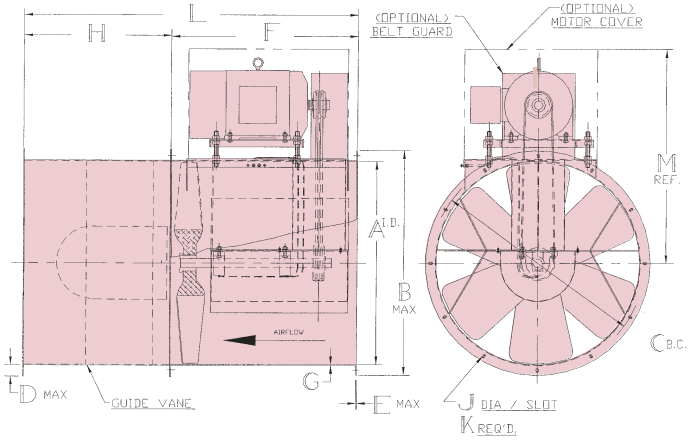
# Belt Drive Duct Axial® Fan


**Series 46 (Shown)**
**Series 46V (with Vanes)**

Hartzell Fan, Inc. certifies that the Series 46 Belt Drive Duct Axial® Fan and Series 46V Belt Drive Duct Vaneaxial Fan, shown hereon are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.

- **Hartzell Fan Heavy Duty Construction** – Designed for industrial use for long reliable service. Available in **sizes** 12" to 60" **performance** from 600 to 70,000 CFM, and static pressure capability up to 4" W.G. See pages 12 through 15.
- **Applications** – Where it is advantageous to have the motor out of the airstream or the versatility of a belt drive configuration. Maximum temperature 200°F with standard construction. For temperatures to 350°F, see page 4 "High Temperature Construction."
- **Propellers** – Type DA, six-blade, airfoil design, cast aluminum construction mounted with split taperlock bushing and safety retainer plate for easy installation and removal. Moves large volumes of air at moderate pressures.
- **Housing** – One-piece, heavy gauge hot rolled steel housing, material code ST, with continuously welded steel drum and flanges. Also available with aluminum housing, material code AL.
- **Motor Out of the Airstream** – Exterior mounting on fully adjustable platform style motor base supported by external housing assembly base weldment. Open-end motors are standard. Motors larger than 30HP will be shipped separately for mounting on unit at job site. Motor frame size limits are identified in the dimension table.
- **Bearings** are heavy duty ball or roller type, in cast iron pillow block housings, selected for minimum L-50 Life of 400,000 hours for horizontal fans; and 250,000 hours for vertical fans, and include extended lubrication fittings as standard. Shafts are turned ground and polished 1045 steel sized to operate well below critical speed.
- **Drives** – Drive sheaves are cast iron and belts are "V" type, heat, oil, and static resistant and sized for continuous service with high service factor. Variable pitch drive sheaves are standard on fans up to and including 10 HP, through 48" size.
- **Bearings, Shaft and Drive Protection** – Drive components are enclosed in an inner drum and protected from the airstream. This casing is positioned on the negative air pressure side of the propeller. Access to the shaft and bearings is through a removable bearing cover. Shaft seal and cover plate are an available accessory, see page 22.
- **Vane section** – Series 46V Vane section improves performance at many operating points. See page 7 for description and refer to Series 46V in rating tables for performance characteristics.
- **Accessories and Protective Coatings** – See pages 21 – 23.

Stock Models Available in Hartzell's HRS Program.




## Principal Dimensions — Series 46, 46V

| FAN SIZE | A | MAX. B | C | MAX. D | MAX E | | F | MAX G | | H | J | K | L | M | MAX. MOTOR FRAME |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | STL. | ALUM. | | STL. | ALUM. | | | | | | |
| **12** | 12 7/8 | 15 5/8 | 14 5/8 | 1 1/4 | 12 GA | .190 | 22 | 12 GA | 1/8 | 6 | 5/16 | 6 | 28 | 24 5/8 | 145T |
| **16** | 16 7/8 | 19 5/8 | 18 5/8 | 1 1/4 | 12 GA | .190 | 25 | 12 GA | 1/8 | 10 | 5/16 x 5/8 | 6 | 35 | 30 1/8 | 182T |
| **18** | 18 7/8 | 21 5/8 | 20 5/8 | 1 1/4 | 12 GA | .190 | 25 | 12 GA | 1/8 | 11 | 5/16 x 5/8 | 6 | 36 | 31 1/8 | 213T |
| **24** | 24 7/8 | 29 1/8 | 26 7/8 | 2 | 10 GA | .250 | 31 | 10 GA | .190 | 13 | 7/16 x 3/4 | 6 | 44 | 39 7/8 | 215T |
| **28** | 28 7/8 | 33 1/8 | 30 7/8 | 2 | 10 GA | .250 | 31 | 10 GA | .190 | 13 | 7/16 x 3/4 | 6 | 44 | 41 7/8 | 254T |
| **32** | 33 | 37 1/4 | 35 | 2 | 10 GA | .250 | 34 | 10 GA | .190 | 15 | 7/16 x 3/4 | 6 | 49 | 45 1/4 | 254T |
| **36** | 37 | 41 3/8 | 39 | 2 | 10 GA | .250 | 34 | 10 GA | .190 | 16 | 7/16 x 3/4 | 6 | 50 | 47 1/4 | 256T |
| **44** | 45 | 49 3/8 | 47 1/2 | 2 | 10 GA | .250 | 42 | 10 GA | .190 | 19 | 7/16 x 3/4 | 12 | 61 | 58 3/4 | 286T |
| **48** | 49 1/8 | 53 1/2 | 51 5/8 | 2 | 10 GA | .375 | 42 | 10 GA | .190 | 22 | 7/16 x 3/4 | 12 | 64 | 60 3/4 | 324T |
| **54** | 55 3/8 | 60 3/4 | 57 5/8 | 2 1/2 | .375 | .375 | 42 | 7 GA | .25 | 23 | 7/16 x 3/4 | 12 | 65 | 51 3/4 | 326T |
| **60** | 61 3/8 | 66 3/4 | 63 5/8 | 2 1/2 | .375 | .375 | 42 | 7 GA | .25 | 25 | 7/16 x 3/4 | 12 | 67 | 54 3/4 | 364T |

**NOTES: Dimensions and specifications are subject to change. Certified prints are available. Selected configurations of shaded sizes are available as stocked models in Hartzell's HRS Program.**

## Size 12 – Type DA – A46---126DA---ST_ _ _ _ and A46V--126DA---ST_ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | | 4" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 600 | 664 | 959 | 0.03 | 2029 | 0.31 | 2587 | 0.67 | 2989 | 1.07 | 3313 | 1.50 | 3597 | 1.96 | | | | |
| 46V | | | 958 | 0.03 | 1896 | 0.25 | 2447 | 0.57 | 2831 | 0.89 | 3145 | 1.24 | 3418 | 1.63 | 3664 | 2.04 | | |
| 46 | 800 | 885 | 1278 | 0.07 | 2214 | 0.39 | 2819 | 0.82 | 3248 | 1.30 | 3596 | 1.81 | | | | | | |
| 46V | | | 1278 | 0.06 | 2040 | 0.30 | 2642 | 0.68 | 3067 | 1.10 | 3405 | 1.53 | 3687 | 1.97 | | | | |
| 46 | 1000 | 1106 | 1598 | 0.14 | 2358 | 0.47 | 3016 | 0.99 | 3474 | 1.54 | 3841 | 2.12 | | | | | | |
| 46V | | | 1597 | 0.12 | 2210 | 0.38 | 2792 | 0.78 | 3252 | 1.26 | 3618 | 1.78 | | | | | | |
| 46 | 1200 | 1327 | 1918 | 0.23 | 2527 | 0.56 | 3183 | 1.16 | 3671 | 1.79 | | | | | | | | |
| 46V | | | 1917 | 0.21 | 2441 | 0.51 | 2937 | 0.89 | 3403 | 1.41 | 3792 | 1.99 | | | | | | |
| 46 | 1400 | 1548 | 2237 | 0.37 | 2743 | 0.71 | 3324 | 1.30 | 3847 | 2.05 | | | | | | | | |
| 46V | | | 2236 | 0.33 | 2694 | 0.68 | 3111 | 1.05 | 3544 | 1.57 | 3939 | 2.18 | | | | | | |
| 46 | 1600 | 1770 | 2557 | 0.55 | 3002 | 0.92 | 3484 | 1.49 | 3990 | 2.26 | | | | | | | | |
| 46V | | | 2555 | 0.50 | 2962 | 0.89 | 3335 | 1.30 | 3704 | 1.78 | | | | | | | | |
| 46 | 1800 | 1991 | 2877 | 0.79 | 3274 | 1.18 | 3677 | 1.73 | | | | | | | | | | |
| 46V | | | 2875 | 0.71 | 3240 | 1.14 | 3579 | 1.61 | 3902 | 2.08 | | | | | | | | |
| 46 | 2000 | 2212 | 3196 | 1.08 | 3556 | 1.50 | 3904 | 2.05 | | | | | | | | | | |
| 46V | | | 3194 | 0.97 | 3526 | 1.44 | 3836 | 1.97 | | | | | | | | | | |
| 46 | 2200 | 2433 | 3516 | 1.44 | 3844 | 1.88 | | | | | | | | | | | | |
| 46V | | | 3514 | 1.29 | 3817 | 1.80 | | | | | | | | | | | | |
| 46 | 2400 | 2655 | 3835 | 1.87 | | | | | | | | | | | | | | |
| 46V | | | 3833 | 1.67 | 4113 | 2.22 | | | | | | | | | | | | |

## Size 16 – Type DA – A46---166DA---ST_ _ _ _ and A46V--166DA---ST_ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | | 4" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 1200 | 773 | 719 | 0.02 | 1455 | 0.28 | 1872 | 0.65 | 2167 | 1.06 | 2408 | 1.51 | 2615 | 2.00 | 2801 | 2.52 | | |
| 46V | | | 767 | 0.03 | 1284 | 0.20 | 1683 | 0.47 | 1969 | 0.81 | 2197 | 1.20 | 2396 | 1.63 | 2573 | 2.08 | 2885 | 3.07 |
| 46 | 1600 | 1030 | 958 | 0.05 | 1582 | 0.34 | 2025 | 0.77 | 2347 | 1.26 | 2603 | 1.77 | 2822 | 2.32 | 3016 | 2.90 | | |
| 46V | | | 1023 | 0.06 | 1423 | 0.25 | 1789 | 0.53 | 2098 | 0.89 | 2350 | 1.30 | 2562 | 1.76 | 2745 | 2.26 | 3066 | 3.34 |
| 46 | 2000 | 1288 | 1198 | 0.11 | 1652 | 0.40 | 2160 | 0.89 | 2494 | 1.43 | 2769 | 2.03 | 3003 | 2.65 | 3207 | 3.30 | | |
| 46V | | | 1279 | 0.12 | 1602 | 0.34 | 1913 | 0.63 | 2202 | 0.99 | 2463 | 1.42 | 2690 | 1.89 | 2891 | 2.41 | | |
| 46 | 2400 | 1545 | 1437 | 0.19 | 1800 | 0.50 | 2259 | 1.00 | 2629 | 1.61 | 2910 | 2.25 | 3156 | 2.95 | | | | |
| 46V | | | 1534 | 0.21 | 1807 | 0.45 | 2070 | 0.77 | 2325 | 1.14 | 2567 | 1.56 | 2796 | 2.05 | 3004 | 2.58 | | |
| 46 | 2800 | 1803 | 1677 | 0.29 | 1976 | 0.64 | 2328 | 1.12 | 2747 | 1.79 | 3046 | 2.50 | 3292 | 3.23 | | | | |
| 46V | | | 1790 | 0.33 | 2029 | 0.61 | 2252 | 0.95 | 2477 | 1.34 | 2695 | 1.77 | 2903 | 2.25 | 3107 | 2.78 | | |
| 46 | 3200 | 2060 | 1916 | 0.44 | 2171 | 0.81 | 2467 | 1.31 | 2797 | 1.93 | 3164 | 2.74 | | | | | | |
| 46V | | | 2046 | 0.50 | 2259 | 0.80 | 2453 | 1.16 | 2651 | 1.58 | 2847 | 2.04 | 3038 | 2.53 | 3222 | 3.06 | | |
| 46 | 3600 | 2318 | 2156 | 0.62 | 2379 | 1.03 | 2632 | 1.55 | 2905 | 2.17 | 3217 | 2.93 | | | | | | |
| 46V | | | 2301 | 0.71 | 2495 | 1.05 | 2668 | 1.43 | 2842 | 1.87 | 3017 | 2.35 | 3192 | 2.87 | 3362 | 3.41 | | |
| 46 | 4000 | 2575 | 2396 | 0.86 | 2597 | 1.30 | 2814 | 1.84 | 3053 | 2.48 | 3304 | 3.20 | | | | | | |
| 46V | | | 2557 | 0.97 | 2733 | 1.34 | 2892 | 1.75 | 3047 | 2.21 | 3205 | 2.72 | 3362 | 3.26 | | | | |
| 46 | 4400 | 2833 | 2635 | 1.14 | 2820 | 1.62 | 3008 | 2.17 | 3220 | 2.84 | | | | | | | | |
| 46V | | | 2813 | 1.29 | 2974 | 1.70 | 3122 | 2.14 | 3262 | 2.62 | 3405 | 3.14 | | | | | | |
| 46 | 4800 | 3090 | 2875 | 1.48 | 3046 | 2.00 | 3211 | 2.57 | 3400 | 3.26 | | | | | | | | |
| 46V | | | 3068 | 1.68 | 3218 | 2.12 | 3356 | 2.59 | 3486 | 3.09 | | | | | | | | |

## Size 18 – Type DA – A46---186DA---ST_ _ _ _ and A46V--186DA---ST_ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | | 4" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 2000 | 1029 | 920 | 0.07 | 1448 | 0.43 | 1939 | 1.07 | 2261 | 1.76 | 2499 | 2.49 | 2703 | 3.27 | 2885 | 4.08 | 3203 | 5.84 |
| 46V | | | 924 | 0.07 | 1335 | 0.34 | 1724 | 0.76 | 2051 | 1.31 | 2304 | 1.93 | 2509 | 2.59 | 2690 | 3.30 | 3003 | 4.84 |
| 46 | 2500 | 1287 | 1150 | 0.14 | 1555 | 0.52 | 2010 | 1.16 | 2384 | 1.98 | 2667 | 2.84 | 2890 | 3.72 | 3079 | 4.63 | 3408 | 6.57 |
| 46V | | | 1155 | 0.14 | 1506 | 0.45 | 1801 | 0.85 | 2117 | 1.40 | 2397 | 2.07 | 2634 | 2.80 | 2835 | 3.57 | 3165 | 5.23 |
| 46 | 3000 | 1544 | 1380 | 0.25 | 1722 | 0.66 | 2072 | 1.26 | 2455 | 2.12 | 2773 | 3.09 | 3032 | 4.11 | 3250 | 5.16 | 3597 | 7.30 |
| 46V | | | 1386 | 0.25 | 1690 | 0.60 | 1944 | 1.03 | 2193 | 1.54 | 2459 | 2.20 | 2707 | 2.95 | 2928 | 3.77 | 3301 | 5.57 |
| 46 | 3500 | 1801 | 1610 | 0.39 | 1905 | 0.85 | 2188 | 1.45 | 2512 | 2.26 | 2838 | 3.28 | 3123 | 4.39 | 3365 | 5.56 | 3762 | 7.99 |
| 46V | | | 1617 | 0.39 | 1883 | 0.79 | 2117 | 1.26 | 2324 | 1.78 | 2539 | 2.39 | 2769 | 3.13 | 2990 | 3.96 | 3386 | 5.83 |
| 46 | 4000 | 2059 | 1840 | 0.59 | 2097 | 1.07 | 2351 | 1.73 | 2601 | 2.47 | 2895 | 3.46 | 3183 | 4.61 | 3443 | 5.87 | 3878 | 8.53 |
| 46V | | | 1848 | 0.58 | 2082 | 1.01 | 2299 | 1.54 | 2492 | 2.11 | 2671 | 2.71 | 2857 | 3.40 | 3058 | 4.20 | 3448 | 6.07 |
| 46 | 4500 | 2316 | 2071 | 0.83 | 2297 | 1.35 | 2528 | 2.06 | 2747 | 2.82 | 2978 | 3.72 | 3241 | 4.85 | 3499 | 6.13 | | |
| 46V | | | 2079 | 0.83 | 2287 | 1.30 | 2488 | 1.87 | 2670 | 2.49 | 2837 | 3.13 | 2995 | 3.81 | 3156 | 4.56 | 3512 | 6.38 |
| 46 | 5000 | 2573 | 2301 | 1.15 | 2504 | 1.69 | 2713 | 2.45 | 2915 | 3.26 | 3109 | 4.14 | 3324 | 5.18 | 3560 | 6.42 | | |
| 46V | | | 2310 | 1.14 | 2496 | 1.64 | 2682 | 2.26 | 2853 | 2.93 | 3012 | 3.62 | 3161 | 4.34 | 3303 | 5.09 | 3601 | 6.81 |
| 46 | 5500 | 2830 | 2531 | 1.52 | 2714 | 2.11 | 2905 | 2.89 | 3092 | 3.77 | 3272 | 4.69 | 3448 | 5.67 | 3645 | 6.83 | | |
| 46V | | | 2541 | 1.52 | 2710 | 2.06 | 2881 | 2.71 | 3043 | 3.43 | 3193 | 4.17 | 3335 | 4.95 | 3470 | 5.74 | 3727 | 7.42 |
| 46 | 6000 | 3088 | 2761 | 1.98 | 2929 | 2.60 | 3102 | 3.40 | 3277 | 4.35 | 3445 | 5.32 | 3609 | 6.34 | 3770 | 7.42 | | |
| 46V | | | 2772 | 1.97 | 2927 | 2.55 | 3083 | 3.24 | 3237 | 4.01 | 3380 | 4.80 | 3515 | 5.62 | 3645 | 6.47 | 3889 | 8.22 |
| 46 | 6500 | 3345 | 2991 | 2.52 | 3146 | 3.18 | 3305 | 4.00 | 3466 | 4.98 | 3625 | 6.03 | 3778 | 7.09 | 3929 | 8.21 | | |
| 46V | | | 3003 | 2.50 | 3146 | 3.13 | 3290 | 3.85 | 3434 | 4.65 | 3571 | 5.50 | 3700 | 6.37 | 3825 | 7.26 | | |

**Performance shown is for belt drive fans, installation Type D: ducted inlet/ducted outlet.**
**Power ratings (BHP) include drive losses.**
**Performance ratings do not include the effects of appurtenances in the airstream.**

**Series 46 denotes standard configuration. Series 46V denotes addition of guide vane section.**
**To complete model code add motor enclosure code, motor horsepower code, and motor speed code. Refer to page 2 for additional model code information.**

## Size 24 – Type DA – A46---246DA---ST_ _ _ _ and A46V--246DA---ST_ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | | 4" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 3600 | 1067 | 722 | 0.12 | 1046 | 0.61 | 1369 | 1.41 | 1631 | 2.40 | 1826 | 3.47 | 1982 | 4.61 | 2115 | 5.79 | 2350 | 8.38 |
| 46V | | | 704 | 0.11 | 992 | 0.50 | 1256 | 1.09 | 1486 | 1.87 | 1670 | 2.75 | 1819 | 3.70 | 1944 | 4.69 | 2166 | 6.85 |
| 46 | 4500 | 1333 | 903 | 0.23 | 1165 | 0.79 | 1416 | 1.56 | 1680 | 2.60 | 1910 | 3.82 | 2093 | 5.10 | 2247 | 6.44 | 2498 | 9.27 |
| 46V | | | 880 | 0.21 | 1118 | 0.67 | 1331 | 1.24 | 1543 | 2.01 | 1739 | 2.95 | 1908 | 3.98 | 2054 | 5.09 | 2293 | 7.45 |
| 46 | 5400 | 1600 | 1083 | 0.40 | 1303 | 1.03 | 1517 | 1.84 | 1725 | 2.82 | 1947 | 4.05 | 2154 | 5.47 | 2331 | 6.96 | 2618 | 10.10 |
| 46V | | | 1055 | 0.37 | 1259 | 0.89 | 1443 | 1.51 | 1617 | 2.24 | 1795 | 3.15 | 1967 | 4.21 | 2123 | 5.38 | 2389 | 7.93 |
| 46 | 6300 | 1867 | 1264 | 0.64 | 1452 | 1.34 | 1638 | 2.21 | 1820 | 3.21 | 1997 | 4.37 | 2186 | 5.75 | 2374 | 7.33 | 2696 | 10.80 |
| 46V | | | 1231 | 0.58 | 1409 | 1.19 | 1571 | 1.86 | 1726 | 2.63 | 1874 | 3.49 | 2026 | 4.50 | 2179 | 5.66 | 2456 | 8.31 |
| 46 | 7200 | 2133 | 1444 | 0.95 | 1609 | 1.73 | 1773 | 2.67 | 1934 | 3.72 | 2092 | 4.90 | 2248 | 6.21 | 2408 | 7.70 | 2738 | 11.20 |
| 46V | | | 1407 | 0.87 | 1565 | 1.56 | 1711 | 2.28 | 1849 | 3.10 | 1983 | 4.00 | 2113 | 4.98 | 2243 | 6.06 | 2511 | 8.69 |
| 46 | 8100 | 2400 | 1625 | 1.36 | 1772 | 2.21 | 1918 | 3.21 | 2062 | 4.34 | 2205 | 5.56 | 2345 | 6.89 | 2484 | 8.34 | | |
| 46V | | | 1583 | 1.24 | 1724 | 2.02 | 1857 | 2.80 | 1983 | 3.67 | 2104 | 4.61 | 2224 | 5.62 | 2340 | 6.71 | 2573 | 9.18 |
| 46 | 9000 | 2667 | 1805 | 1.86 | 1938 | 2.79 | 2069 | 3.86 | 2200 | 5.06 | 2329 | 6.34 | 2458 | 7.71 | 2584 | 9.18 | | |
| 46V | | | 1759 | 1.70 | 1887 | 2.57 | 2008 | 3.42 | 2124 | 4.34 | 2236 | 5.33 | 2345 | 6.39 | 2452 | 7.52 | 2661 | 9.96 |
| 46 | 9900 | 2933 | 1986 | 2.48 | 2107 | 3.49 | 2226 | 4.62 | 2345 | 5.88 | 2464 | 7.24 | 2581 | 8.67 | 2698 | 10.2 | | |
| 46V | | | 1935 | 2.26 | 2052 | 3.22 | 2164 | 4.16 | 2271 | 5.12 | 2374 | 6.17 | 2475 | 7.28 | 2574 | 8.45 | 2769 | 11.00 |
| 46 | 10800 | 3200 | 2167 | 3.22 | 2277 | 4.31 | 2386 | 5.51 | 2496 | 6.83 | 2605 | 8.26 | 2714 | 9.76 | 2821 | 11.3 | | |
| 46V | | | 2111 | 2.93 | 2219 | 3.98 | 2322 | 5.01 | 2422 | 6.04 | 2518 | 7.13 | 2613 | 8.29 | 2705 | 9.51 | | |
| 46 | 11700 | 3467 | 2347 | 4.09 | 2450 | 5.27 | 2550 | 6.54 | 2651 | 7.92 | 2752 | 9.42 | 2853 | 11.0 | | | | |
| 46V | | | 2287 | 3.73 | 2387 | 4.86 | 2483 | 5.99 | 2576 | 7.10 | 2667 | 8.23 | 2755 | 9.44 | 2842 | 10.7 | | |

## Size 28 – Type DA – A46---286DA---ST_ _ _ _ and A46V--286DA---ST_ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | | 4" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 4800 | 1056 | 587 | 0.14 | 895 | 0.78 | 1160 | 1.80 | 1341 | 2.97 | 1493 | 4.25 | 1627 | 5.62 | 1747 | 7.09 | 1958 | 10.30 |
| 46V | | | 599 | 0.14 | 850 | 0.69 | 1076 | 1.46 | 1272 | 2.46 | 1423 | 3.58 | 1556 | 4.83 | 1675 | 6.19 | 1883 | 9.21 |
| 46 | 6000 | 1319 | 734 | 0.28 | 971 | 0.97 | 1229 | 2.04 | 1429 | 3.35 | 1583 | 4.76 | 1716 | 6.28 | 1837 | 7.89 | 2053 | 11.30 |
| 46V | | | 749 | 0.28 | 957 | 0.92 | 1140 | 1.71 | 1322 | 2.70 | 1495 | 3.92 | 1631 | 5.22 | 1751 | 6.62 | 1964 | 9.74 |
| 46 | 7200 | 1583 | 880 | 0.48 | 1082 | 1.26 | 1287 | 2.31 | 1499 | 3.71 | 1670 | 5.27 | 1806 | 6.91 | 1927 | 8.65 | 2141 | 12.40 |
| 46V | | | 899 | 0.48 | 1079 | 1.23 | 1236 | 2.10 | 1385 | 3.08 | 1536 | 4.24 | 1690 | 5.63 | 1823 | 7.13 | 2039 | 10.30 |
| 46 | 8400 | 1847 | 1027 | 0.76 | 1204 | 1.64 | 1366 | 2.70 | 1554 | 4.09 | 1735 | 5.75 | 1891 | 7.56 | 2015 | 9.41 | 2232 | 13.40 |
| 46V | | | 1049 | 0.76 | 1209 | 1.63 | 1345 | 2.57 | 1479 | 3.64 | 1605 | 4.79 | 1731 | 6.07 | 1867 | 7.60 | 2110 | 11.00 |
| 46 | 9600 | 2111 | 1174 | 1.13 | 1330 | 2.11 | 1474 | 3.26 | 1623 | 4.60 | 1789 | 6.26 | 1949 | 8.14 | 2092 | 10.20 | 2320 | 14.40 |
| 46V | | | 1198 | 1.14 | 1343 | 2.12 | 1465 | 3.15 | 1583 | 4.29 | 1699 | 5.54 | 1810 | 6.84 | 1920 | 8.26 | 2153 | 11.60 |
| 46 | 10800 | 2375 | 1321 | 1.61 | 1459 | 2.68 | 1592 | 3.93 | 1715 | 5.28 | 1856 | 6.90 | 2004 | 8.78 | 2147 | 10.90 | 2402 | 15.40 |
| 46V | | | 1348 | 1.62 | 1480 | 2.72 | 1592 | 3.86 | 1697 | 5.07 | 1802 | 6.39 | 1905 | 7.80 | 2004 | 9.250 | 2199 | 12.40 |
| 46 | 12000 | 2639 | 1467 | 2.20 | 1592 | 3.37 | 1715 | 4.74 | 1828 | 6.17 | 1941 | 7.74 | 2070 | 9.59 | 2204 | 11.70 | 2458 | 16.40 |
| 46V | | | 1498 | 2.22 | 1618 | 3.44 | 1723 | 4.69 | 1819 | 5.99 | 1914 | 7.37 | 2008 | 8.86 | 2101 | 10.40 | 2279 | 13.70 |
| 46 | 13200 | 2903 | 1614 | 2.93 | 1728 | 4.19 | 1840 | 5.65 | 1947 | 7.20 | 2048 | 8.83 | 2154 | 10.60 | 2271 | 12.70 | | |
| 46V | | | 1648 | 2.96 | 1758 | 4.29 | 1857 | 5.66 | 1947 | 7.06 | 2033 | 8.52 | 2119 | 10.10 | 2205 | 11.70 | 2372 | 15.20 |
| 46 | 14400 | 3167 | 1761 | 3.81 | 1865 | 5.17 | 1969 | 6.71 | 2069 | 8.39 | 2164 | 10.10 | 2257 | 11.90 | 2355 | 13.90 | | |
| 46V | | | 1798 | 3.84 | 1900 | 5.29 | 1993 | 6.78 | 2078 | 8.28 | 2158 | 9.84 | 2237 | 11.40 | 2316 | 13.20 | 2472 | 16.80 |
| 46 | 15600 | 3430 | 1908 | 4.84 | 2004 | 6.30 | 2100 | 7.93 | 2194 | 9.70 | 2284 | 11.50 | 2371 | 13.40 | 2456 | 15.40 | | |
| 46V | | | 1947 | 4.88 | 2043 | 6.45 | 2130 | 8.05 | 2211 | 9.68 | 2287 | 11.30 | 2360 | 13.00 | 2432 | 14.80 | | |

## Size 32 – Type DA – A46---326DA---ST_ _ _ _ and A46V--326DA---ST_ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | | 4" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 7500 | 1263 | 622 | 0.28 | 851 | 1.18 | 1100 | 2.62 | 1282 | 4.24 | 1434 | 6.06 | 1562 | 8.00 | 1674 | 10.10 | 1865 | 14.40 |
| 46V | | | 624 | 0.29 | 813 | 1.04 | 981 | 2.04 | 1152 | 3.35 | 1298 | 4.89 | 1420 | 6.58 | 1521 | 8.390 | 1691 | 12.30 |
| 46 | 9000 | 1515 | 746 | 0.49 | 939 | 1.49 | 1141 | 2.91 | 1340 | 4.75 | 1493 | 6.67 | 1629 | 8.78 | 1748 | 11.00 | 1951 | 15.80 |
| 46V | | | 749 | 0.50 | 911 | 1.37 | 1054 | 2.41 | 1195 | 3.70 | 1339 | 5.25 | 1469 | 7.01 | 1583 | 8.920 | 1775 | 13.10 |
| 46 | 10500 | 1768 | 871 | 0.78 | 1037 | 1.90 | 1198 | 3.30 | 1386 | 5.22 | 1551 | 7.36 | 1686 | 9.56 | 1809 | 11.90 | 2023 | 17.00 |
| 46V | | | 874 | 0.80 | 1016 | 1.80 | 1142 | 2.90 | 1263 | 4.21 | 1384 | 5.73 | 1509 | 7.50 | 1626 | 9.450 | 1832 | 13.80 |
| 46 | 12000 | 2020 | 995 | 1.16 | 1141 | 2.42 | 1283 | 3.87 | 1427 | 5.65 | 1598 | 7.99 | 1744 | 10.40 | 1867 | 12.90 | | |
| 46V | | | 998 | 1.19 | 1127 | 2.32 | 1239 | 3.53 | 1347 | 4.88 | 1451 | 6.42 | 1556 | 8.14 | 1667 | 10.10 | 1875 | 14.50 |
| 46 | 13500 | 2273 | 1119 | 1.65 | 1249 | 3.06 | 1377 | 4.60 | 1502 | 6.39 | 1633 | 8.52 | 1789 | 11.20 | 1923 | 14.00 | | |
| 46V | | | 1123 | 1.69 | 1240 | 2.96 | 1341 | 4.29 | 1439 | 5.71 | 1535 | 7.29 | 1627 | 9.02 | 1719 | 10.90 | 1915 | 15.30 |
| 46 | 15000 | 2525 | 1244 | 2.27 | 1360 | 3.83 | 1477 | 5.47 | 1589 | 7.32 | 1702 | 9.42 | 1823 | 11.90 | 1964 | 14.80 | | |
| 46V | | | 1248 | 2.32 | 1356 | 3.73 | 1448 | 5.19 | 1538 | 6.71 | 1625 | 8.33 | 1710 | 10.10 | 1794 | 12.00 | 1962 | 16.30 |
| 46 | 16500 | 2778 | 1368 | 3.02 | 1474 | 4.73 | 1580 | 6.50 | 1684 | 8.42 | 1786 | 10.60 | 1889 | 12.90 | 1999 | 15.60 | | |
| 46V | | | 1373 | 3.09 | 1472 | 4.63 | 1558 | 6.22 | 1640 | 7.86 | 1721 | 9.57 | 1800 | 11.40 | 1878 | 13.40 | | |
| 46 | 18000 | 3031 | 1493 | 3.92 | 1593 | 5.80 | 1687 | 7.69 | 1784 | 9.70 | 1877 | 11.90 | 1971 | 14.30 | 2066 | 16.90 | | |
| 46V | | | 1498 | 4.01 | 1590 | 5.69 | 1671 | 7.41 | 1747 | 9.18 | 1821 | 11.00 | 1895 | 12.90 | 1967 | 14.90 | | |
| 46 | 19500 | 3283 | 1617 | 4.98 | 1714 | 7.06 | 1796 | 9.05 | 1886 | 11.20 | 1974 | 13.40 | 2060 | 15.90 | | | | |
| 46V | | | 1622 | 5.10 | 1708 | 6.92 | 1785 | 8.76 | 1856 | 10.70 | 1925 | 12.60 | 1994 | 14.60 | 2062 | 16.70 | | |
| 46 | 21000 | 3536 | 1741 | 6.23 | 1836 | 8.50 | 1907 | 10.60 | 1991 | 12.80 | 2075 | 15.20 | | | | | | |
| 46V | | | 1747 | 6.37 | 1827 | 8.32 | 1901 | 10.30 | 1968 | 12.30 | 2032 | 14.40 | 2097 | 16.50 | | | | |

**Performance shown is for belt drive fans, installation Type D: ducted inlet/ducted outlet.**
**Power ratings (BHP) include drive losses.**
**Performance ratings do not include the effects of appurtenances in the airstream.**

**Series 46 denotes standard configuration. Series 46V denotes addition of guide vane section.**
**To complete model code add motor enclosure code, motor horsepower code, and motor speed code. Refer to page 2 for additional model code information.**

## Size 36 – Type DA – A46---366DA---ST_ _ _ _ and A46V--366DA---ST_ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | | 4" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 8000 | 1071 | 475 | 0.22 | 703 | 1.22 | 907 | 2.77 | 1062 | 4.69 | 1189 | 6.82 | 1297 | 9.09 | 1392 | 11.50 | 1558 | 16.70 |
| 46V | | | 473 | 0.20 | 661 | 1.02 | 830 | 2.12 | 985 | 3.58 | 1111 | 5.33 | 1216 | 7.30 | 1310 | 9.43 | 1473 | 14.10 |
| 46 | 10000 | 1339 | 594 | 0.44 | 775 | 1.54 | 958 | 3.12 | 1116 | 5.13 | 1248 | 7.44 | 1362 | 9.96 | 1462 | 12.60 | 1636 | 18.30 |
| 46V | | | 592 | 0.38 | 751 | 1.35 | 882 | 2.50 | 1020 | 3.94 | 1151 | 5.67 | 1266 | 7.64 | 1366 | 9.83 | 1535 | 14.70 |
| 46 | 12000 | 1607 | 712 | 0.75 | 866 | 2.00 | 1016 | 3.64 | 1167 | 5.65 | 1300 | 8.03 | 1418 | 10.70 | 1522 | 13.60 | 1703 | 19.70 |
| 46V | | | 710 | 0.66 | 848 | 1.75 | 965 | 3.09 | 1072 | 4.51 | 1188 | 6.21 | 1300 | 8.17 | 1405 | 10.30 | 1588 | 15.30 |
| 46 | 14000 | 1875 | 831 | 1.19 | 963 | 2.58 | 1090 | 4.31 | 1223 | 6.38 | 1351 | 8.77 | 1469 | 11.50 | 1575 | 14.40 | 1761 | 21.00 |
| 46V | | | 829 | 1.05 | 950 | 2.29 | 1056 | 3.78 | 1151 | 5.34 | 1243 | 7.01 | 1342 | 8.94 | 1440 | 11.10 | 1625 | 16.00 |
| 46 | 16000 | 2143 | 950 | 1.78 | 1066 | 3.29 | 1179 | 5.17 | 1291 | 7.30 | 1407 | 9.74 | 1519 | 12.40 | 1626 | 15.40 | 1814 | 22.10 |
| 46V | | | 947 | 1.57 | 1055 | 3.02 | 1151 | 4.52 | 1240 | 6.34 | 1322 | 8.12 | 1401 | 10.00 | 1487 | 12.10 | 1660 | 17.00 |
| 46 | 18000 | 2411 | 1068 | 2.54 | 1171 | 4.17 | 1274 | 6.20 | 1372 | 8.44 | 1473 | 10.90 | 1576 | 13.70 | 1677 | 16.70 | | |
| 46V | | | 1065 | 2.24 | 1164 | 3.92 | 1251 | 5.43 | 1334 | 7.39 | 1410 | 9.430 | 1482 | 11.40 | 1552 | 13.50 | 1705 | 18.30 |
| 46 | 20000 | 2679 | 1187 | 3.48 | 1280 | 5.25 | 1373 | 7.41 | 1462 | 9.79 | 1551 | 12.40 | 1642 | 15.20 | 1735 | 18.20 | | |
| 46V | | | 1184 | 3.07 | 1273 | 4.98 | 1354 | 6.61 | 1430 | 8.56 | 1503 | 10.80 | 1571 | 13.10 | 1636 | 15.30 | 1764 | 20.00 |
| 46 | 22000 | 2946 | 1306 | 4.63 | 1390 | 6.54 | 1475 | 8.82 | 1558 | 11.40 | 1638 | 14.00 | 1718 | 16.90 | 1802 | 20.00 | | |
| 46V | | | 1302 | 4.08 | 1384 | 6.21 | 1459 | 8.05 | 1529 | 9.94 | 1598 | 12.30 | 1663 | 14.80 | 1725 | 17.30 | 1842 | 22.20 |
| 46 | 24000 | 3214 | 1425 | 6.02 | 1502 | 8.07 | 1579 | 10.50 | 1656 | 13.10 | 1731 | 16.00 | 1805 | 19.00 | 1878 | 22.10 | | |
| 46V | | | 1420 | 5.30 | 1497 | 7.65 | 1566 | 9.71 | 1632 | 11.70 | 1696 | 14.00 | 1758 | 16.60 | 1818 | 19.40 | | |
| 46 | 26000 | 3482 | 1543 | 7.65 | 1614 | 9.84 | 1686 | 12.30 | 1757 | 15.20 | 1828 | 18.20 | 1896 | 21.30 | | | | |
| 46V | | | 1539 | 6.74 | 1609 | 9.29 | 1675 | 11.60 | 1737 | 13.70 | 1796 | 15.90 | 1855 | 18.60 | 1912 | 21.50 | | |

## Size 44 – Type DA – A46---44DA---ST_ _ _ _ and A46V--44DA---ST_ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | | 4" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 12000 | 1086 | 392 | 0.35 | 587 | 1.96 | 763 | 4.38 | 885 | 7.23 | 977 | 10.5 | 1055 | 13.9 | 1126 | 17.5 | 1251 | 25.0 |
| 46V | | | 393 | 0.34 | 553 | 1.65 | 699 | 3.50 | 825 | 5.84 | 924 | 8.49 | 1004 | 11.4 | 1075 | 14.5 | 1202 | 21.3 |
| 46 | 15000 | 1358 | 490 | 0.68 | 641 | 2.44 | 804 | 5.05 | 940 | 8.15 | 1046 | 11.6 | 1132 | 15.3 | 1204 | 19.4 | 1330 | 28.0 |
| 46V | | | 492 | 0.66 | 623 | 2.19 | 741 | 4.10 | 859 | 6.50 | 966 | 9.30 | 1058 | 12.4 | 1138 | 15.7 | 1266 | 22.9 |
| 46 | 18000 | 1630 | 588 | 1.17 | 713 | 3.07 | 846 | 5.83 | 980 | 9.14 | 1095 | 12.8 | 1191 | 16.8 | 1273 | 21.1 | 1408 | 30.3 |
| 46V | | | 590 | 1.14 | 701 | 2.87 | 805 | 5.00 | 900 | 7.40 | 1000 | 10.2 | 1094 | 13.4 | 1179 | 16.9 | 1324 | 24.6 |
| 46 | 21000 | 1901 | 686 | 1.86 | 794 | 3.92 | 902 | 6.81 | 1020 | 10.3 | 1134 | 14.2 | 1236 | 18.4 | 1326 | 22.9 | 1475 | 32.6 |
| 46V | | | 688 | 1.81 | 784 | 3.77 | 876 | 6.10 | 962 | 8.68 | 1044 | 11.5 | 1130 | 14.7 | 1213 | 18.3 | 1364 | 26.2 |
| 46 | 24000 | 2173 | 784 | 2.77 | 879 | 5.08 | 972 | 8.01 | 1070 | 11.6 | 1174 | 15.7 | 1274 | 20.1 | 1367 | 24.9 | | |
| 46V | | | 787 | 2.70 | 872 | 4.91 | 952 | 7.40 | 1031 | 10.2 | 1106 | 13.2 | 1177 | 16.4 | 1251 | 20.0 | 1398 | 28.0 |
| 46 | 27000 | 2445 | 882 | 3.95 | 966 | 6.54 | 1050 | 9.48 | 1132 | 13.2 | 1223 | 17.4 | 1315 | 22.0 | 1405 | 27.0 | | |
| 46V | | | 885 | 3.84 | 962 | 6.31 | 1033 | 8.97 | 1105 | 12.0 | 1174 | 15.2 | 1240 | 18.6 | 1304 | 22.2 | 1435 | 30.1 |
| 46 | 30000 | 2716 | 980 | 5.41 | 1056 | 8.30 | 1132 | 11.3 | 1205 | 15.1 | 1281 | 19.5 | 1364 | 24.2 | 1447 | 29.3 | | |
| 46V | | | 983 | 5.26 | 1053 | 8.00 | 1118 | 10.9 | 1182 | 14.0 | 1246 | 17.5 | 1308 | 21.1 | 1368 | 24.8 | 1482 | 32.8 |
| 46 | 33000 | 2988 | 1078 | 7.21 | 1147 | 10.4 | 1216 | 13.6 | 1284 | 17.4 | 1351 | 21.9 | 1421 | 26.7 | 1496 | 31.9 | | |
| 46V | | | 1082 | 7.01 | 1146 | 10.0 | 1205 | 13.1 | 1263 | 16.4 | 1322 | 20.0 | 1380 | 23.9 | 1436 | 27.9 | | |
| 46 | 36000 | 3259 | 1176 | 9.36 | 1239 | 12.8 | 1302 | 16.3 | 1366 | 20.0 | 1427 | 24.6 | 1488 | 29.6 | | | | |
| 46V | | | 1180 | 9.10 | 1239 | 12.4 | 1294 | 15.7 | 1348 | 19.2 | 1401 | 23.0 | 1455 | 27.0 | 1508 | 31.2 | | |
| 46 | 39000 | 3531 | 1274 | 11.9 | 1332 | 15.6 | 1390 | 19.4 | 1449 | 23.2 | 1507 | 27.7 | 1563 | 32.8 | | | | |
| 46V | | | 1278 | 11.6 | 1333 | 15.1 | 1385 | 18.7 | 1435 | 22.4 | 1484 | 26.3 | 1533 | 30.5 | | | | |

## Size 48 – Type DA – A46---486DA---ST_ _ _ _ and A46V--486DA---ST_ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | | 4" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 14000 | 1064 | 354 | 0.39 | 536 | 2.29 | 698 | 5.15 | 809 | 8.50 | 892 | 12.3 | 964 | 16.4 | 1028 | 20.6 | 1143 | 29.4 |
| 46V | | | 355 | 0.38 | 503 | 1.92 | 639 | 4.11 | 754 | 6.88 | 844 | 10.0 | 918 | 13.4 | 983 | 17.1 | 1100 | 25.2 |
| 46 | 17500 | 1330 | 442 | 0.76 | 583 | 2.84 | 735 | 5.92 | 859 | 9.57 | 955 | 13.6 | 1034 | 18.0 | 1099 | 22.8 | 1215 | 33.0 |
| 46V | | | 444 | 0.74 | 566 | 2.53 | 676 | 4.79 | 786 | 7.64 | 884 | 11.0 | 968 | 14.6 | 1040 | 18.5 | 1157 | 27.0 |
| 46 | 21000 | 1595 | 531 | 1.32 | 648 | 3.56 | 772 | 6.81 | 896 | 10.7 | 1001 | 15.1 | 1089 | 19.8 | 1163 | 24.8 | 1285 | 35.7 |
| 46V | | | 532 | 1.28 | 636 | 3.32 | 732 | 5.82 | 822 | 8.65 | 915 | 12.0 | 1001 | 15.8 | 1079 | 19.9 | 1211 | 29.0 |
| 46 | 24500 | 1861 | 619 | 2.09 | 720 | 4.52 | 821 | 7.93 | 932 | 12.0 | 1037 | 16.6 | 1130 | 21.6 | 1212 | 26.9 | 1347 | 38.3 |
| 46V | | | 621 | 2.04 | 711 | 4.34 | 796 | 7.07 | 876 | 10.1 | 952 | 13.4 | 1033 | 17.3 | 1110 | 21.5 | 1248 | 30.8 |
| 46 | 28000 | 2127 | 708 | 3.13 | 796 | 5.83 | 883 | 9.30 | 975 | 13.6 | 1073 | 18.3 | 1165 | 23.6 | 1250 | 29.2 | 1396 | 41.2 |
| 46V | | | 710 | 3.04 | 789 | 5.63 | 864 | 8.55 | 938 | 11.9 | 1007 | 15.4 | 1073 | 19.2 | 1143 | 23.4 | 1279 | 32.9 |
| 46 | 31500 | 2393 | 796 | 4.45 | 875 | 7.47 | 952 | 11.0 | 1030 | 15.4 | 1115 | 20.3 | 1201 | 25.8 | 1284 | 31.6 | 1435 | 44.2 |
| 46V | | | 799 | 4.33 | 870 | 7.22 | 937 | 10.3 | 1004 | 13.9 | 1068 | 17.7 | 1129 | 21.6 | 1188 | 25.8 | 1311 | 35.3 |
| 46 | 35000 | 2659 | 885 | 6.10 | 955 | 9.46 | 1026 | 13.0 | 1095 | 17.5 | 1166 | 22.7 | 1244 | 28.3 | 1322 | 34.3 | | |
| 46V | | | 887 | 5.93 | 952 | 9.13 | 1013 | 12.5 | 1073 | 16.2 | 1133 | 20.3 | 1190 | 24.5 | 1245 | 28.9 | 1351 | 38.3 |
| 46 | 38500 | 2925 | 973 | 8.13 | 1037 | 11.8 | 1102 | 15.6 | 1165 | 20.1 | 1227 | 25.4 | 1294 | 31.1 | 1365 | 37.3 | | |
| 46V | | | 976 | 7.90 | 1036 | 11.4 | 1091 | 15.0 | 1146 | 18.9 | 1200 | 23.2 | 1254 | 27.7 | 1306 | 32.4 | 1406 | 42.2 |
| 46 | 42000 | 3191 | 1062 | 10.5 | 1120 | 14.6 | 1179 | 18.6 | 1238 | 23.1 | 1295 | 28.5 | 1353 | 34.4 | 1415 | 40.8 | | |
| 46V | | | 1065 | 10.3 | 1120 | 14.1 | 1172 | 18.0 | 1221 | 22.1 | 1271 | 26.5 | 1322 | 31.3 | 1371 | 36.2 | | |
| 46 | 45500 | 3457 | 1150 | 13.4 | 1204 | 17.8 | 1258 | 22.1 | 1313 | 26.7 | 1367 | 32.0 | 1419 | 38.1 | 1472 | 44.7 | | |
| 46V | | | 1154 | 13.0 | 1204 | 17.1 | 1253 | 21.4 | 1299 | 25.7 | 1345 | 30.3 | 1392 | 35.3 | 1438 | 40.5 | | |

**Performance shown is for belt drive fans, installation Type D: ducted inlet/ducted outlet.**
**Power ratings (BHP) include drive losses.**
**Performance ratings do not include the effects of appurtenances in the airstream.**

**Series 46 denotes standard configuration. Series 46V denotes addition of guide vane section.**
**To complete model code add motor enclosure code, motor horsepower code, and motor speed code. Refer to page 2 for additional model code information.**

## Size 54 – Type DA – A46---546DA---ST_ _ _ _ and A46V--546DA---ST_ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | | 4" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 20000 | 1196 | 357 | 0.72 | 498 | 3.23 | 640 | 7.00 | 746 | 11.4 | 827 | 16.4 | 892 | 21.8 | 950 | 27.6 | 1052 | 39.6 |
| 46V | | | 358 | 0.70 | 477 | 2.81 | 585 | 5.60 | 687 | 9.16 | 773 | 13.3 | 843 | 17.7 | 902 | 22.5 | 1006 | 32.9 |
| 46 | 24000 | 1435 | 428 | 1.24 | 543 | 3.95 | 668 | 7.93 | 780 | 12.7 | 870 | 18.0 | 944 | 23.7 | 1006 | 29.8 | 1109 | 43.2 |
| 46V | | | 430 | 1.20 | 531 | 3.59 | 623 | 6.57 | 713 | 10.1 | 799 | 14.4 | 876 | 19.1 | 943 | 24.2 | 1052 | 35.1 |
| 46 | 28000 | 1674 | 500 | 1.96 | 598 | 4.86 | 701 | 9.04 | 808 | 14.1 | 903 | 19.7 | 983 | 25.7 | 1052 | 32.2 | 1165 | 46.1 |
| 46V | | | 501 | 1.91 | 588 | 4.59 | 671 | 7.85 | 747 | 11.5 | 825 | 15.7 | 901 | 20.5 | 970 | 25.8 | 1091 | 37.3 |
| 46 | 32000 | 1913 | 571 | 2.93 | 658 | 6.06 | 743 | 10.4 | 838 | 15.6 | 931 | 21.5 | 1015 | 27.9 | 1088 | 34.6 | 1211 | 49.2 |
| 46V | | | 573 | 2.85 | 650 | 5.84 | 724 | 9.35 | 793 | 13.3 | 859 | 17.5 | 927 | 22.3 | 995 | 27.7 | 1118 | 39.5 |
| 46 | 36000 | 2153 | 642 | 4.18 | 719 | 7.64 | 795 | 12.0 | 875 | 17.4 | 960 | 23.5 | 1042 | 30.2 | 1118 | 37.3 | 1249 | 52.5 |
| 46V | | | 644 | 4.06 | 714 | 7.39 | 779 | 11.1 | 844 | 15.3 | 905 | 19.8 | 963 | 24.6 | 1023 | 29.9 | 1143 | 41.9 |
| 46 | 40000 | 2392 | 714 | 5.73 | 783 | 9.56 | 852 | 14.0 | 920 | 19.6 | 995 | 25.8 | 1072 | 32.7 | 1146 | 40.1 | 1280 | 56.0 |
| 46V | | | 716 | 5.57 | 779 | 9.24 | 838 | 13.2 | 897 | 17.7 | 954 | 22.5 | 1009 | 27.5 | 1061 | 32.8 | 1169 | 44.8 |
| 46 | 44000 | 2631 | 785 | 7.62 | 848 | 11.8 | 911 | 16.3 | 973 | 22.0 | 1037 | 28.5 | 1106 | 35.5 | 1176 | 43.1 | | |
| 46V | | | 788 | 7.41 | 846 | 11.4 | 900 | 15.7 | 953 | 20.3 | 1007 | 25.5 | 1058 | 30.8 | 1107 | 36.3 | 1202 | 48.2 |
| 46 | 48000 | 2870 | 856 | 9.90 | 914 | 14.5 | 972 | 19.2 | 1029 | 24.9 | 1085 | 31.6 | 1146 | 38.8 | 1210 | 46.5 | | |
| 46V | | | 859 | 9.62 | 913 | 14.0 | 963 | 18.5 | 1012 | 23.4 | 1061 | 28.8 | 1110 | 34.4 | 1156 | 40.3 | 1245 | 52.6 |
| 46 | 52000 | 3109 | 928 | 12.6 | 981 | 17.6 | 1035 | 22.6 | 1088 | 28.2 | 1140 | 35.0 | 1192 | 42.5 | 1249 | 50.4 | | |
| 46V | | | 931 | 12.2 | 980 | 16.9 | 1027 | 21.8 | 1072 | 26.9 | 1118 | 32.5 | 1163 | 38.4 | 1208 | 44.6 | 1293 | 57.4 |
| 46 | 56000 | 3348 | 999 | 15.7 | 1048 | 21.1 | 1098 | 26.5 | 1148 | 32.1 | 1197 | 38.9 | 1245 | 46.5 | 1294 | 54.7 | | |
| 46V | | | 1002 | 15.3 | 1049 | 20.3 | 1093 | 25.6 | 1135 | 31.0 | 1177 | 36.7 | 1219 | 42.8 | 1261 | 49.3 | | |

## Size 60 – Type DA – A46---606DA---ST_ _ _ _ and A46V--606DA---ST_ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | | 4" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 25000 | 1217 | 327 | 0.92 | 451 | 4.03 | 579 | 8.70 | 675 | 14.2 | 749 | 20.3 | 807 | 27.0 | 860 | 34.2 | 952 | 49.2 |
| 46V | | | 328 | 0.90 | 434 | 3.53 | 529 | 6.97 | 621 | 11.4 | 699 | 16.4 | 763 | 22.0 | 816 | 27.8 | 910 | 40.8 |
| 46 | 30000 | 1460 | 392 | 1.59 | 493 | 4.95 | 604 | 9.88 | 706 | 15.8 | 787 | 22.3 | 854 | 29.4 | 911 | 36.9 | 1004 | 53.5 |
| 46V | | | 393 | 1.55 | 483 | 4.53 | 565 | 8.22 | 645 | 12.6 | 722 | 17.8 | 791 | 23.6 | 852 | 29.9 | 952 | 43.5 |
| 46 | 35000 | 1704 | 457 | 2.53 | 545 | 6.13 | 636 | 11.3 | 731 | 17.5 | 817 | 24.4 | 889 | 31.9 | 952 | 39.9 | 1055 | 57.1 |
| 46V | | | 459 | 2.46 | 536 | 5.79 | 610 | 9.85 | 678 | 14.4 | 746 | 19.6 | 814 | 25.5 | 877 | 32.0 | 986 | 46.3 |
| 46 | 40000 | 1947 | 522 | 3.78 | 600 | 7.68 | 675 | 13.0 | 759 | 19.5 | 842 | 26.7 | 917 | 34.6 | 984 | 43.0 | 1096 | 61.1 |
| 46V | | | 524 | 3.67 | 593 | 7.41 | 658 | 11.8 | 720 | 16.6 | 779 | 21.9 | 839 | 27.8 | 900 | 34.4 | 1011 | 49.0 |
| 46 | 45000 | 2190 | 588 | 5.38 | 656 | 9.71 | 724 | 15.1 | 794 | 21.8 | 870 | 29.3 | 943 | 37.5 | 1011 | 46.3 | 1129 | 65.3 |
| 46V | | | 590 | 5.23 | 651 | 9.38 | 710 | 14.0 | 767 | 19.3 | 821 | 24.8 | 873 | 30.8 | 926 | 37.3 | 1033 | 52.1 |
| 46 | 50000 | 2434 | 653 | 7.38 | 715 | 12.2 | 776 | 17.6 | 836 | 24.6 | 902 | 32.3 | 970 | 40.7 | 1036 | 49.9 | | |
| 46V | | | 655 | 7.18 | 711 | 11.8 | 764 | 16.7 | 816 | 22.2 | 867 | 28.2 | 915 | 34.5 | 962 | 41.0 | 1058 | 55.7 |
| 46 | 55000 | 2677 | 718 | 9.82 | 774 | 15.1 | 830 | 20.6 | 885 | 27.7 | 941 | 35.7 | 1003 | 44.4 | 1064 | 53.7 | | |
| 46V | | | 721 | 9.55 | 772 | 14.6 | 820 | 19.8 | 868 | 25.6 | 915 | 32.0 | 961 | 38.6 | 1005 | 45.5 | 1089 | 60.2 |
| 46 | 60000 | 2920 | 784 | 12.8 | 835 | 18.5 | 886 | 24.4 | 937 | 31.4 | 987 | 39.6 | 1040 | 48.5 | 1096 | 58.1 | | |
| 46V | | | 786 | 12.4 | 834 | 17.9 | 878 | 23.5 | 922 | 29.6 | 966 | 36.2 | 1009 | 43.3 | 1050 | 50.5 | 1130 | 65.8 |
| 46 | 65000 | 3164 | 849 | 16.2 | 896 | 22.5 | 944 | 28.7 | 991 | 35.6 | 1037 | 44.0 | 1083 | 53.3 | 1134 | 63.1 | | |
| 46V | | | 852 | 15.8 | 896 | 21.6 | 937 | 27.7 | 978 | 34.1 | 1018 | 41.0 | 1058 | 48.3 | 1098 | 56.0 | | |
| 46 | 70000 | 3407 | 914 | 20.3 | 958 | 27.0 | 1002 | 33.7 | 1046 | 40.7 | 1090 | 49.0 | 1132 | 58.4 | 1176 | 68.6 | | |
| 46V | | | 917 | 19.7 | 958 | 26.0 | 997 | 32.5 | 1035 | 39.3 | 1072 | 46.3 | 1110 | 54.0 | 1147 | 62.0 | | |

**Performance shown is for belt drive fans, installation Type D: ducted inlet/ducted outlet.**
**Power ratings (BHP) include drive losses.**
**Performance ratings do not include the effects of appurtenances in the airstream.**

**Series 46 denotes standard configuration. Series 46V denotes addition of guide vane section.**
**To complete model code add motor enclosure code, motor horsepower code, and motor speed code. Refer to page 2 for additional model code information.**

# Belt Drive Duct Axial® Fan

## Series 46 High Temperature Fan
## Series 46 Corrosive Resistant Fan

**Applications:**

**Series 46 with HS Propeller**

- Smoke and heat transmitted to 500°F

**Series 46 with CS Propeller**

- Corrosive areas where aluminum or fiberglass construction fails
- Food industry requiring stainless steel construction

## General Construction Features

- **Sizes** 12" to 54"...**performance** from 1942 CFM at free air to 27,500 CFM at 2" SP.
- **Motor out of the airstream,** exterior mounting. Propeller shaft rotates in two ball-bearings mounted on steel supports welded to the inner shell of the housing.
- **Belts** are oil, heat and static resistant type, oversized for continuous duty.
- **Extended lube tubes** from bearings to exterior of fan housing are standard.
- **Installation position** – Can be used in any position from horizontal to vertical.
- **Vane Section** – See Page 7. For performance characteristics, refer to rating tables, Pages 17, 18, 19 and 20.
- **Direct Drive Units** – Ratings for direct drive fans are available. On direct drive units, temperature must not exceed the motor ratings.

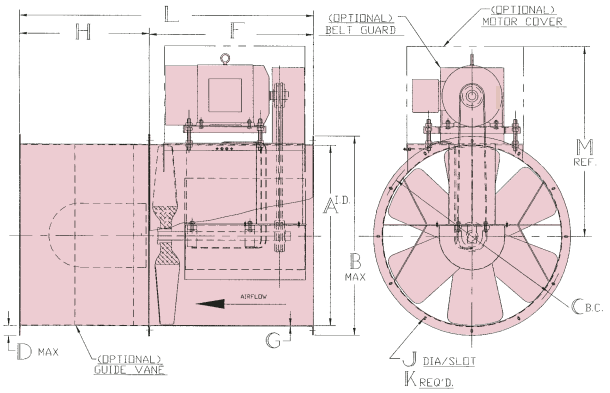
## Standard Features with HS Propeller

- **Housings** – Hot-rolled steel is standard, material code ST. Stainless steel also available.
- **Propellers** – Six-bladed single-camber airfoil design of welded steel construction with split taper bushing. Type HS.
- **Temperature** – Standard high temperature construction – 500°F maximum with ambient air less than 125°F. Units are furnished with high temperature grease, heat slinger, heat deflection plate and motor base heat sink.
- **Finish** – High temperature units are coated with an air dry enamel black finish as standard.

## Standard Features with CS Propeller

- **Housings** – 304 stainless steel is standard, material code S4.
- **Propellers** – Six-bladed single-camber, airfoil design of 304 stainless steel construction with straight bore. Type CS.
- **Flanges** – All sizes are furnished with welded ring flanges.
- **Maximum temperature** for corrosive applications is 200°F.
- **Shaft Seal and Slinger** – Standard for units in temperatures below 200°F. Seal is not gas tight.

Stock Models Available in Hartzell's HRS Program.




### Principal Dimensions – Series 46 and 46V with CS or HS Propellers

| Fan Size | A | B | C | D | F | J | K | L | M | Max. Mtr. Frame | Weight-Less Motor & Options | Inst. Wgt. Vane Section |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 12⅞ | 15⅛ | 14⅝ | 1 | 22 | 5/16 | 6 | 28 | 24⅝ | 145T | 75 lbs. | 16 lbs. |
| 14 | 14⅞ | 17⅛ | 16⅝ | 1 | 22 | 5/16 | 6 | 32 | 25⅝ | 145T | 100 lbs. | 34 lbs. |
| 16 | 16⅞ | 19⅝ | 18⅝ | 1¼ | 25 | 5/16 x 5/8 | 6 | 35 | 30⅛ | 182T | 117 lbs. | 27 lbs. |
| 18 | 18⅞ | 21⅝ | 20⅝ | 1¼ | 25 | 5/16 x 5/8 | 6 | 36 | 31⅛ | 213T | 138 lbs. | 41 lbs. |
| 20 | 20⅞ | 23⅝ | 22⅜ | 1¼ | 31 | 5/16 x 5/8 | 6 | 43 | 32⅛ | 213T | 186 lbs. | 49 lbs. |
| 24 | 24⅞ | 29⅛ | 26⅞ | 2 | 31 | 7/16 x ¾ | 6 | 44 | 39⅞ | 215T | 274 lbs. | 80 lbs. |
| 28 | 28⅞ | 33⅛ | 30⅞ | 2 | 31 | 7/16 x ¾ | 6 | 44 | 41⅞ | 254T | 317 lbs. | 98 lbs. |
| 32 | 33 | 37¼ | 35 | 2 | 34 | 7/16 x ¾ | 6 | 49 | 45¼ | 254T | 393 lbs. | 126 lbs. |
| 36 | 37 | 41⅜ | 39 | 2 | 34 | 7/16 x ¾ | 6 | 50 | 47¼ | 256T | 450 lbs. | 157 lbs. |
| 42 | 42⅞ | 46⅝ | 45 | 2 | 42 | 7/16 x ¾ | 12 | 61 | 45 13/16 | 286T | 654 lbs. | 182 lbs. |
| 48 | 49⅛ | 53½ | 51⅝ | 2 | 42 | 7/16 x ¾ | 12 | 64 | 60¾ | 324T | 761 lbs. | 271 lbs. |
| 54 | 55⅜ | 60¾ | 57⅝ | 2½ | 42 | 7/16 x ¾ | 12 | 65 | 51¾ | 326T | 932 lbs. | 324 lbs. |

**NOTES: Dimensions and specifications are subject to change. Certified prints are available. Selected configurations of shaded sizes are available as stocked models in Hartzell's HRS Program.**

## Size 12 – Type CS or HS – A46---126_S---_ _ _ _ _ _ and A46V--126_S---_ _ _ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ¼" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 1,000 | 1106 | 1079 | 0.03 | 1502 | 0.09 | 1988 | 0.21 | 2686 | 0.51 | 3162 | 0.86 | 3535 | 1.25 | 3854 | 1.68 | 4139 | 2.14 |
| 46V | | | 1085 | 0.03 | 1447 | 0.08 | 1845 | 0.17 | 2444 | 0.41 | 2877 | 0.70 | 3219 | 1.02 | 3503 | 1.37 | 3751 | 1.74 |
| 46 | 1250 | 1383 | 1349 | 0.05 | 1675 | 0.12 | 2051 | 0.23 | 2776 | 0.57 | 3301 | 0.95 | 3711 | 1.36 | 4054 | 1.82 | | |
| 46V | | | 1356 | 0.05 | 1650 | 0.12 | 1947 | 0.21 | 2548 | 0.45 | 3005 | 0.75 | 3376 | 1.10 | 3689 | 1.48 | 3961 | 1.89 |
| 46 | 1500 | 1659 | 1618 | 0.08 | 1891 | 0.17 | 2176 | 0.28 | 2828 | 0.61 | 3391 | 1.04 | 3836 | 1.49 | 4206 | 1.97 | | |
| 46V | | | 1627 | 0.09 | 1881 | 0.17 | 2108 | 0.26 | 2643 | 0.51 | 3109 | 0.82 | 3495 | 1.18 | 3825 | 1.57 | 4118 | 2.01 |
| 46 | 1750 | 1936 | 1888 | 0.13 | 2126 | 0.23 | 2355 | 0.35 | 2894 | 0.65 | 3446 | 1.10 | 3921 | 1.61 | | | | |
| 46V | | | 1898 | 0.14 | 2123 | 0.23 | 2318 | 0.33 | 2745 | 0.58 | 3203 | 0.90 | 3597 | 1.27 | 3939 | 1.68 | 4241 | 2.12 |
| 46 | 2000 | 2212 | 2158 | 0.20 | 2371 | 0.31 | 2566 | 0.43 | 3005 | 0.73 | 3501 | 1.16 | 3976 | 1.68 | | | | |
| 46V | | | 2169 | 0.21 | 2373 | 0.31 | 2545 | 0.43 | 2893 | 0.68 | 3298 | 1.00 | 3690 | 1.37 | 4038 | 1.79 | | |
| 46 | 2250 | 2489 | 2427 | 0.29 | 2624 | 0.41 | 2793 | 0.54 | 3162 | 0.85 | 3585 | 1.24 | 4028 | 1.76 | | | | |
| 46V | | | 2440 | 0.31 | 2627 | 0.42 | 2783 | 0.54 | 3085 | 0.81 | 3419 | 1.12 | 3785 | 1.50 | 4131 | 1.93 | | |
| 46 | 2500 | 2765 | 2697 | 0.39 | 2881 | 0.53 | 3031 | 0.67 | 3350 | 1.00 | 3709 | 1.38 | 4102 | 1.86 | | | | |
| 46V | | | 2711 | 0.42 | 2884 | 0.54 | 3027 | 0.68 | 3300 | 0.96 | 3579 | 1.28 | 3895 | 1.66 | 4226 | 2.09 | | |
| 46 | 2750 | 3042 | 2967 | 0.52 | 3140 | 0.67 | 3275 | 0.82 | 3560 | 1.17 | 3869 | 1.56 | 4209 | 2.01 | | | | |
| 46V | | | 2983 | 0.56 | 3143 | 0.69 | 3277 | 0.83 | 3526 | 1.15 | 3774 | 1.48 | 4040 | 1.85 | | | | |
| 46 | 3000 | 3318 | 3236 | 0.68 | 3400 | 0.84 | 3526 | 1.00 | 3782 | 1.36 | 4054 | 1.77 | | | | | | |
| 46V | | | 3254 | 0.72 | 3403 | 0.86 | 3530 | 1.02 | 3761 | 1.36 | 3987 | 1.71 | 4216 | 2.08 | | | | |
| 46 | 3250 | 3595 | 3506 | 0.86 | 3660 | 1.04 | 3780 | 1.21 | 4014 | 1.59 | | | | | | | | |
| 46V | | | 3525 | 0.92 | 3664 | 1.07 | 3785 | 1.24 | 4001 | 1.60 | 4211 | 1.97 | | | | | | |

## Size 14 – Type CS or HS – A46---146_S---_ _ _ _ _ _ and A46V--146_S---_ _ _ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ¼" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 1,200 | 994 | 959 | 0.03 | 1327 | 0.11 | 1751 | 0.26 | 2367 | 0.63 | 2788 | 1.05 | 3117 | 1.53 | 3398 | 2.06 | 3650 | 2.62 |
| 46V | | | 964 | 0.03 | 1279 | 0.11 | 1627 | 0.21 | 2154 | 0.50 | 2537 | 0.86 | 2839 | 1.25 | 3090 | 1.68 | 3309 | 2.14 |
| 46 | 1500 | 1243 | 1199 | 0.06 | 1483 | 0.15 | 1808 | 0.29 | 2445 | 0.70 | 2909 | 1.17 | 3272 | 1.68 | 3575 | 2.23 | | |
| 46V | | | 1205 | 0.07 | 1462 | 0.15 | 1719 | 0.26 | 2246 | 0.55 | 2649 | 0.92 | 2976 | 1.35 | 3253 | 1.82 | 3493 | 2.32 |
| 46 | 1800 | 1492 | 1438 | 0.11 | 1676 | 0.21 | 1923 | 0.34 | 2491 | 0.74 | 2987 | 1.28 | 3381 | 1.83 | | | | |
| 46V | | | 1446 | 0.11 | 1668 | 0.21 | 1865 | 0.32 | 2330 | 0.62 | 2740 | 1.01 | 3081 | 1.45 | 3371 | 1.93 | 3630 | 2.47 |
| 46 | 2100 | 1740 | 1678 | 0.17 | 1886 | 0.29 | 2084 | 0.43 | 2552 | 0.81 | 3035 | 1.34 | 3453 | 1.97 | | | | |
| 46V | | | 1687 | 0.18 | 1884 | 0.29 | 2053 | 0.42 | 2423 | 0.72 | 2824 | 1.11 | 3170 | 1.56 | 3472 | 2.06 | | |
| 46 | 2400 | 1989 | 1918 | 0.25 | 2104 | 0.39 | 2273 | 0.54 | 2654 | 0.91 | 3085 | 1.42 | 3501 | 2.06 | | | | |
| 46V | | | 1928 | 0.27 | 2106 | 0.39 | 2256 | 0.53 | 2558 | 0.84 | 2909 | 1.23 | 3254 | 1.69 | 3559 | 2.21 | | |
| 46 | 2700 | 2237 | 2158 | 0.36 | 2330 | 0.51 | 2477 | 0.67 | 2797 | 1.06 | 3163 | 1.53 | 3549 | 2.16 | | | | |
| 46V | | | 2169 | 0.38 | 2333 | 0.52 | 2468 | 0.67 | 2731 | 1.00 | 3019 | 1.39 | 3338 | 1.85 | 3642 | 2.38 | | |
| 46 | 3000 | 2486 | 2397 | 0.50 | 2558 | 0.66 | 2688 | 0.83 | 2966 | 1.24 | 3276 | 1.70 | 3617 | 2.29 | | | | |
| 46V | | | 2410 | 0.53 | 2561 | 0.68 | 2686 | 0.84 | 2924 | 1.20 | 3165 | 1.59 | 3438 | 2.05 | | | | |
| 46 | 3300 | 2734 | 2637 | 0.66 | 2788 | 0.84 | 2906 | 1.02 | 3154 | 1.45 | 3421 | 1.94 | | | | | | |
| 46V | | | 2651 | 0.70 | 2791 | 0.86 | 2908 | 1.04 | 3126 | 1.43 | 3341 | 1.84 | 3570 | 2.29 | | | | |
| 46 | 3600 | 2983 | 2877 | 0.86 | 3020 | 1.05 | 3130 | 1.25 | 3353 | 1.70 | 3588 | 2.21 | | | | | | |
| 46V | | | 2892 | 0.91 | 3022 | 1.09 | 3133 | 1.28 | 3335 | 1.69 | 3532 | 2.13 | | | | | | |
| 46 | 3900 | 3232 | 3117 | 1.09 | 3251 | 1.30 | 3356 | 1.52 | 3559 | 1.98 | | | | | | | | |
| 46V | | | 3133 | 1.16 | 3255 | 1.35 | 3361 | 1.55 | 3549 | 2.00 | | | | | | | | |

## Size 16 – Type CS or HS – A46---166_S---_ _ _ _ _ _ and A46V--166_S---_ _ _ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ¼" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 1,400 | 901 | 861 | 0.04 | 1189 | 0.14 | 1566 | 0.31 | 2118 | 0.75 | 2495 | 1.26 | 2791 | 1.83 | 3042 | 2.46 | | |
| 46V | | | 866 | 0.04 | 1146 | 0.13 | 1456 | 0.25 | 1928 | 0.60 | 2270 | 1.02 | 2541 | 1.50 | 2767 | 2.01 | 2962 | 2.55 |
| 46 | 1800 | 1159 | 1107 | 0.08 | 1353 | 0.19 | 1630 | 0.35 | 2194 | 0.84 | 2616 | 1.41 | 2944 | 2.03 | 3219 | 2.70 | | |
| 46V | | | 1113 | 0.09 | 1337 | 0.19 | 1555 | 0.32 | 2021 | 0.67 | 2384 | 1.12 | 2678 | 1.63 | 2929 | 2.19 | 3146 | 2.80 |
| 46 | 2200 | 1416 | 1353 | 0.15 | 1556 | 0.28 | 1761 | 0.44 | 2242 | 0.91 | 2686 | 1.55 | 3047 | 2.24 | | | | |
| 46V | | | 1360 | 0.16 | 1551 | 0.28 | 1719 | 0.42 | 2107 | 0.78 | 2474 | 1.24 | 2782 | 1.76 | 3045 | 2.35 | | |
| 46 | 2600 | 1674 | 1599 | 0.25 | 1775 | 0.39 | 1940 | 0.57 | 2319 | 1.01 | 2733 | 1.64 | 3109 | 2.40 | | | | |
| 46V | | | 1608 | 0.26 | 1776 | 0.40 | 1918 | 0.56 | 2218 | 0.92 | 2561 | 1.38 | 2869 | 1.93 | 3142 | 2.53 | | |
| 46 | 3000 | 1932 | 1845 | 0.38 | 2004 | 0.55 | 2142 | 0.74 | 2448 | 1.18 | 2797 | 1.77 | 3156 | 2.52 | | | | |
| 46V | | | 1855 | 0.40 | 2006 | 0.56 | 2132 | 0.73 | 2379 | 1.12 | 2658 | 1.58 | 2957 | 2.13 | 3228 | 2.75 | | |
| 46 | 3400 | 2189 | 2091 | 0.55 | 2237 | 0.74 | 2357 | 0.94 | 2613 | 1.42 | 2902 | 1.97 | 3217 | 2.69 | | | | |
| 46V | | | 2103 | 0.58 | 2240 | 0.76 | 2354 | 0.95 | 2571 | 1.37 | 2796 | 1.83 | 3050 | 2.38 | | | | |
| 46 | 3800 | 2447 | 2337 | 0.77 | 2473 | 0.98 | 2580 | 1.20 | 2803 | 1.71 | 3046 | 2.28 | | | | | | |
| 46V | | | 2350 | 0.82 | 2476 | 1.01 | 2581 | 1.22 | 2777 | 1.67 | 2972 | 2.16 | 3180 | 2.70 | | | | |
| 46 | 4200 | 2704 | 2584 | 1.03 | 2711 | 1.27 | 2809 | 1.51 | 3007 | 2.04 | 3217 | 2.65 | | | | | | |
| 46V | | | 2597 | 1.10 | 2713 | 1.31 | 2812 | 1.54 | 2992 | 2.03 | 3167 | 2.55 | | | | | | |
| 46 | 4600 | 2962 | 2830 | 1.36 | 2949 | 1.62 | 3042 | 1.87 | 3220 | 2.44 | | | | | | | | |
| 46V | | | 2845 | 1.45 | 2952 | 1.67 | 3046 | 1.92 | 3212 | 2.45 | | | | | | | | |
| 46 | 5000 | 3219 | 3076 | 1.74 | 3187 | 2.03 | | | | | | | | | | | | |
| 46V | | | 3092 | 1.86 | 3192 | 2.10 | | | | | | | | | | | | |

**Performance shown is for belt drive fans, installation Type D: ducted inlet/ducted outlet.**
**Power ratings (BHP) include drive losses.**
**Performance ratings do not include the effects of appurtenances in the airstream.**

**Series 46 denotes standard configuration. Series 46V denotes addition of guide vane section. To complete model code add wheel code, material of construction, motor enclosure code, motor horsepower code, and motor speed code. Refer to page 2 for additional model code information. Note: HS prop material of construction is steel (code ST). CS prop material of construction is 304 stainless steel (code S4).**

## Size 18 – Type CS or HS – A46---186_S---_ _ _ _ _ _ and A46V--186_S---_ _ _ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ¼" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 2,000 | 1029 | 781 | 0.05 | 1045 | 0.17 | 1388 | 0.38 | 1883 | 0.92 | 2192 | 1.50 | 2447 | 2.15 | 2670 | 2.86 | 2875 | 3.61 |
| 46V | | | 795 | 0.06 | 1016 | 0.16 | 1260 | 0.29 | 1695 | 0.68 | 1999 | 1.18 | 2242 | 1.73 | 2450 | 2.34 | 2633 | 2.97 |
| 46 | 2500 | 1287 | 976 | 0.10 | 1174 | 0.23 | 1424 | 0.43 | 1944 | 1.01 | 2315 | 1.70 | 2581 | 2.42 | 2807 | 3.18 | | |
| 46V | | | 994 | 0.11 | 1171 | 0.23 | 1351 | 0.37 | 1747 | 0.76 | 2082 | 1.26 | 2345 | 1.85 | 2564 | 2.51 | 2757 | 3.20 |
| 46 | 3000 | 1544 | 1172 | 0.17 | 1333 | 0.32 | 1515 | 0.51 | 1970 | 1.10 | 2376 | 1.85 | 2691 | 2.66 | | | | |
| 46V | | | 1193 | 0.19 | 1342 | 0.33 | 1486 | 0.48 | 1806 | 0.87 | 2133 | 1.38 | 2417 | 1.98 | 2659 | 2.64 | 2861 | 3.38 |
| 46 | 3500 | 1801 | 1367 | 0.28 | 1506 | 0.44 | 1650 | 0.64 | 2010 | 1.20 | 2405 | 1.97 | 2746 | 2.86 | | | | |
| 46V | | | 1392 | 0.30 | 1521 | 0.46 | 1644 | 0.63 | 1902 | 1.03 | 2187 | 1.54 | 2467 | 2.14 | 2718 | 2.82 | | |
| 46 | 4000 | 2059 | 1562 | 0.41 | 1686 | 0.60 | 1805 | 0.81 | 2090 | 1.35 | 2433 | 2.11 | 2775 | 3.02 | | | | |
| 46V | | | 1590 | 0.45 | 1705 | 0.63 | 1813 | 0.82 | 2032 | 1.24 | 2268 | 1.75 | 2520 | 2.35 | 2766 | 3.03 | | |
| 46 | 4500 | 2316 | 1757 | 0.59 | 1868 | 0.79 | 1973 | 1.02 | 2207 | 1.57 | 2490 | 2.29 | 2801 | 3.20 | | | | |
| 46V | | | 1789 | 0.64 | 1892 | 0.84 | 1989 | 1.05 | 2180 | 1.50 | 2382 | 2.02 | 2597 | 2.62 | 2821 | 3.30 | | |
| 46 | 5000 | 2573 | 1953 | 0.80 | 2053 | 1.03 | 2148 | 1.27 | 2349 | 1.84 | 2580 | 2.54 | 2848 | 3.42 | | | | |
| 46V | | | 1988 | 0.88 | 2081 | 1.09 | 2169 | 1.33 | 2341 | 1.82 | 2517 | 2.36 | 2702 | 2.96 | | | | |
| 46 | 5500 | 2830 | 2148 | 1.07 | 2240 | 1.32 | 2327 | 1.58 | 2503 | 2.16 | 2700 | 2.87 | | | | | | |
| 46V | | | 2187 | 1.17 | 2271 | 1.40 | 2353 | 1.66 | 2510 | 2.19 | 2666 | 2.75 | 2830 | 3.38 | | | | |
| 46 | 6000 | 3088 | 2343 | 1.39 | 2427 | 1.65 | 2509 | 1.94 | 2666 | 2.55 | 2840 | 3.27 | | | | | | |
| 46V | | | 2386 | 1.52 | 2463 | 1.77 | 2539 | 2.04 | 2684 | 2.62 | 2827 | 3.22 | | | | | | |
| 46 | 6500 | 3345 | 2539 | 1.77 | 2616 | 2.05 | 2692 | 2.35 | 2838 | 3.00 | | | | | | | | |
| 46V | | | 2584 | 1.93 | 2657 | 2.21 | 2726 | 2.49 | 2861 | 3.11 | | | | | | | | |

## Size 20 – Type CS or HS – A46---206_S---_ _ _ _ _ _ and A46V--206_S---_ _ _ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ¼" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 2,400 | 1010 | 761 | 0.07 | 982 | 0.21 | 1275 | 0.45 | 1742 | 1.09 | 2037 | 1.79 | 2271 | 2.56 | 2476 | 3.38 | | |
| 46V | | | 775 | 0.08 | 964 | 0.20 | 1169 | 0.36 | 1565 | 0.81 | 1852 | 1.38 | 2077 | 2.03 | 2270 | 2.74 | 2441 | 3.50 |
| 46 | 3000 | 1262 | 951 | 0.14 | 1120 | 0.29 | 1324 | 0.52 | 1788 | 1.20 | 2140 | 2.01 | 2400 | 2.88 | 2608 | 3.78 | | |
| 46V | | | 968 | 0.15 | 1121 | 0.30 | 1273 | 0.46 | 1613 | 0.91 | 1922 | 1.49 | 2172 | 2.17 | 2375 | 2.93 | 2555 | 3.76 |
| 46 | 3600 | 1515 | 1141 | 0.24 | 1281 | 0.42 | 1431 | 0.64 | 1813 | 1.30 | 2186 | 2.18 | 2485 | 3.16 | | | | |
| 46V | | | 1162 | 0.26 | 1291 | 0.43 | 1414 | 0.62 | 1682 | 1.07 | 1969 | 1.65 | 2230 | 2.34 | 2456 | 3.11 | | |
| 46 | 4200 | 1767 | 1332 | 0.38 | 1452 | 0.58 | 1573 | 0.82 | 1867 | 1.45 | 2210 | 2.33 | 2526 | 3.38 | | | | |
| 46V | | | 1356 | 0.42 | 1467 | 0.61 | 1573 | 0.82 | 1792 | 1.29 | 2031 | 1.87 | 2277 | 2.56 | 2507 | 3.35 | | |
| 46 | 4800 | 2020 | 1522 | 0.57 | 1629 | 0.79 | 1730 | 1.04 | 1964 | 1.68 | 2249 | 2.52 | 2550 | 3.58 | | | | |
| 46V | | | 1549 | 0.62 | 1648 | 0.84 | 1742 | 1.07 | 1927 | 1.58 | 2125 | 2.17 | 2339 | 2.85 | 2555 | 3.64 | | |
| 46 | 5400 | 2272 | 1712 | 0.81 | 1808 | 1.06 | 1898 | 1.33 | 2093 | 1.98 | 2322 | 2.79 | 2585 | 3.81 | | | | |
| 46V | | | 1743 | 0.89 | 1831 | 1.13 | 1916 | 1.39 | 2080 | 1.93 | 2250 | 2.54 | 2428 | 3.23 | | | | |
| 46 | 6000 | 2524 | 1902 | 1.12 | 1989 | 1.39 | 2071 | 1.68 | 2239 | 2.35 | 2429 | 3.16 | | | | | | |
| 46V | | | 1937 | 1.22 | 2016 | 1.48 | 2093 | 1.76 | 2242 | 2.36 | 2390 | 3.00 | 2546 | 3.71 | | | | |
| 46 | 6600 | 2777 | 2093 | 1.49 | 2172 | 1.78 | 2247 | 2.10 | 2396 | 2.80 | 2560 | 3.62 | | | | | | |
| 46V | | | 2130 | 1.62 | 2203 | 1.91 | 2274 | 2.21 | 2410 | 2.86 | 2543 | 3.54 | | | | | | |
| 46 | 7200 | 3029 | 2283 | 1.93 | 2355 | 2.25 | 2426 | 2.59 | 2561 | 3.33 | | | | | | | | |
| 46V | | | 2324 | 2.11 | 2391 | 2.42 | 2456 | 2.75 | 2582 | 3.44 | | | | | | | | |
| 46 | 7800 | 3282 | 2473 | 2.45 | 2540 | 2.80 | 2606 | 3.17 | | | | | | | | | | |
| 46V | | | 2518 | 2.68 | 2580 | 3.02 | | | | | | | | | | | | |

## Size 24 – Type CS or HS – A46---246_S---_ _ _ _ _ _ and A46V--246_S---_ _ _ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ¼" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 3,600 | 1067 | 632 | 0.11 | 808 | 0.31 | 1004 | 0.60 | 1317 | 1.40 | 1543 | 2.33 | 1721 | 3.37 | 1876 | 4.49 | 2015 | 5.70 |
| 46V | | | 634 | 0.11 | 794 | 0.30 | 964 | 0.55 | 1268 | 1.24 | 1477 | 2.06 | 1653 | 3.00 | 1811 | 4.03 | 1954 | 5.15 |
| 46 | 4500 | 1333 | 790 | 0.21 | 920 | 0.44 | 1081 | 0.76 | 1380 | 1.57 | 1620 | 2.59 | 1815 | 3.73 | 1976 | 4.95 | 2118 | 6.24 |
| 46V | | | 793 | 0.21 | 915 | 0.43 | 1049 | 0.71 | 1326 | 1.42 | 1561 | 2.31 | 1738 | 3.30 | 1893 | 4.38 | 2033 | 5.55 |
| 46 | 5400 | 1600 | 948 | 0.37 | 1050 | 0.62 | 1179 | 0.96 | 1444 | 1.80 | 1683 | 2.85 | 1886 | 4.06 | 2060 | 5.38 | | |
| 46V | | | 952 | 0.37 | 1049 | 0.62 | 1164 | 0.94 | 1386 | 1.65 | 1618 | 2.57 | 1820 | 3.64 | 1978 | 4.78 | 2119 | 6.00 |
| 46 | 6300 | 1867 | 1107 | 0.58 | 1191 | 0.88 | 1292 | 1.21 | 1523 | 2.12 | 1744 | 3.17 | 1947 | 4.42 | 2127 | 5.81 | | |
| 46V | | | 1110 | 0.58 | 1195 | 0.89 | 1284 | 1.21 | 1476 | 1.98 | 1673 | 2.89 | 1872 | 3.99 | 2051 | 5.21 | | |
| 46 | 7200 | 2133 | 1265 | 0.87 | 1337 | 1.21 | 1420 | 1.55 | 1617 | 2.51 | 1817 | 3.61 | 2008 | 4.84 | 2187 | 6.26 | | |
| 46V | | | 1269 | 0.87 | 1343 | 1.23 | 1416 | 1.56 | 1588 | 2.41 | 1749 | 3.32 | 1927 | 4.41 | 2102 | 5.66 | | |
| 46 | 8100 | 2400 | 1423 | 1.24 | 1486 | 1.62 | 1557 | 2.00 | 1722 | 2.96 | 1903 | 4.13 | 2080 | 5.40 | | | | |
| 46V | | | 1427 | 1.24 | 1494 | 1.65 | 1558 | 2.01 | 1706 | 2.91 | 1855 | 3.90 | 2000 | 4.96 | 2158 | 6.20 | | |
| 46 | 9000 | 2667 | 1581 | 1.69 | 1638 | 2.12 | 1699 | 2.54 | 1839 | 3.50 | 2001 | 4.75 | 2162 | 6.07 | | | | |
| 46V | | | 1586 | 1.70 | 1646 | 2.16 | 1704 | 2.58 | 1829 | 3.48 | 1969 | 4.58 | 2099 | 5.68 | | | | |
| 46 | 9900 | 2933 | 1739 | 2.26 | 1790 | 2.72 | 1845 | 3.19 | 1966 | 4.16 | 2107 | 5.41 | | | | | | |
| 46V | | | 1745 | 2.27 | 1800 | 2.77 | 1853 | 3.24 | 1960 | 4.16 | 2087 | 5.33 | | | | | | |
| 46 | 10800 | 3200 | 1897 | 2.93 | 1944 | 3.44 | 1993 | 3.95 | 2101 | 4.97 | | | | | | | | |
| 46V | | | 1903 | 2.94 | 1954 | 3.50 | 2003 | 4.02 | 2099 | 4.99 | | | | | | | | |
| 46 | 11700 | 3467 | 2055 | 3.72 | 2098 | 4.27 | 2143 | 4.83 | | | | | | | | | | |
| 46V | | | 2062 | 3.74 | 2109 | 4.35 | 2154 | 4.92 | | | | | | | | | | |

**Performance shown is for belt drive fans, installation Type D: ducted inlet/ducted outlet.**
**Power ratings (BHP) include drive losses.**
**Performance ratings do not include the effects of appurtenances in the airstream.**

**Series 46 denotes standard configuration. Series 46V denotes addition of guide vane section. To complete model code add wheel code, material of construction, motor enclosure code, motor horsepower code, and motor speed code. Refer to page 2 for additional model code information. Note: HS prop material of construction is steel (code ST). CS prop material of construction is 304 stainless steel (code S4).**

## Size 28 – Type Type CS or HS – A46---286_S---_ _ _ _ _ _ and A46V--286_S---_ _ _ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ¼" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 3,600 | 792 | 465 | 0.08 | 657 | 0.31 | 846 | 0.66 | 1112 | 1.58 | 1297 | 2.65 | 1450 | 3.85 | 1585 | 5.16 | 1708 | 6.57 |
| 46V | | | 466 | 0.08 | 634 | 0.29 | 814 | 0.60 | 1064 | 1.40 | 1248 | 2.36 | 1405 | 3.47 | 1542 | 4.70 | 1664 | 6.02 |
| 46 | 4800 | 1056 | 620 | 0.19 | 752 | 0.45 | 910 | 0.82 | 1182 | 1.81 | 1388 | 3.02 | 1550 | 4.35 | 1687 | 5.78 | 1810 | 7.32 |
| 46V | | | 622 | 0.19 | 745 | 0.44 | 875 | 0.76 | 1140 | 1.63 | 1330 | 2.68 | 1485 | 3.85 | 1620 | 5.15 | 1746 | 6.56 |
| 46 | 6000 | 1319 | 775 | 0.36 | 872 | 0.66 | 996 | 1.07 | 1241 | 2.08 | 1454 | 3.37 | 1630 | 4.83 | 1779 | 6.40 | | |
| 46V | | | 777 | 0.37 | 870 | 0.66 | 978 | 1.03 | 1191 | 1.90 | 1401 | 3.03 | 1567 | 4.30 | 1704 | 5.67 | 1827 | 7.14 |
| 46 | 7200 | 1583 | 930 | 0.63 | 1008 | 0.98 | 1102 | 1.39 | 1313 | 2.48 | 1513 | 3.77 | 1692 | 5.30 | 1849 | 6.98 | | |
| 46V | | | 933 | 0.63 | 1010 | 0.99 | 1094 | 1.38 | 1267 | 2.30 | 1452 | 3.43 | 1629 | 4.77 | 1784 | 6.25 | | |
| 46 | 8400 | 1847 | 1084 | 1.00 | 1150 | 1.40 | 1225 | 1.83 | 1402 | 3.00 | 1581 | 4.33 | 1751 | 5.85 | | | | |
| 46V | | | 1088 | 1.00 | 1155 | 1.43 | 1221 | 1.83 | 1375 | 2.87 | 1521 | 3.98 | 1680 | 5.32 | 1835 | 6.85 | | |
| 46 | 9600 | 2111 | 1239 | 1.49 | 1296 | 1.96 | 1358 | 2.42 | 1504 | 3.60 | 1664 | 5.04 | 1820 | 6.60 | | | | |
| 46V | | | 1244 | 1.50 | 1302 | 1.99 | 1359 | 2.44 | 1490 | 3.54 | 1620 | 4.75 | 1749 | 6.05 | | | | |
| 46 | 10800 | 2375 | 1394 | 2.12 | 1444 | 2.64 | 1497 | 3.17 | 1619 | 4.34 | 1760 | 5.89 | | | | | | |
| 46V | | | 1399 | 2.13 | 1452 | 2.70 | 1502 | 3.21 | 1611 | 4.32 | 1733 | 5.68 | 1846 | 7.04 | | | | |
| 46 | 12000 | 2639 | 1549 | 2.91 | 1594 | 3.49 | 1641 | 4.07 | 1745 | 5.27 | 1865 | 6.82 | | | | | | |
| 46V | | | 1554 | 2.92 | 1602 | 3.55 | 1648 | 4.14 | 1740 | 5.28 | 1849 | 6.72 | | | | | | |
| 46 | 13200 | 2903 | 1704 | 3.87 | 1744 | 4.51 | 1786 | 5.15 | 1878 | 6.44 | | | | | | | | |
| 46V | | | 1710 | 3.89 | 1753 | 4.59 | 1795 | 5.25 | 1877 | 6.48 | | | | | | | | |
| 46 | 14400 | 3167 | 1859 | 5.03 | | | | | | | | | | | | | | |
| 46V | | | 1865 | 5.05 | | | | | | | | | | | | | | |

## Size 32 – Type CS or HS – A46---326_S---_ _ _ _ _ _ and A46V--326_S---_ _ _ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ¼" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 6,000 | 1010 | 435 | 0.15 | 582 | 0.51 | 742 | 1.09 | 993 | 2.46 | 1173 | 4.06 | 1315 | 5.86 | 1435 | 7.85 | 1543 | 9.98 |
| 46V | | | 439 | 0.16 | 574 | 0.49 | 701 | 0.92 | 925 | 2.10 | 1096 | 3.58 | 1236 | 5.26 | 1357 | 7.07 | 1466 | 8.98 |
| 46 | 7500 | 1263 | 544 | 0.30 | 661 | 0.70 | 783 | 1.27 | 1028 | 2.83 | 1220 | 4.58 | 1374 | 6.51 | 1504 | 8.59 | 1617 | 10.90 |
| 46V | | | 549 | 0.31 | 660 | 0.70 | 761 | 1.17 | 963 | 2.37 | 1137 | 3.89 | 1282 | 5.67 | 1407 | 7.63 | 1519 | 9.72 |
| 46 | 9000 | 1515 | 653 | 0.52 | 752 | 0.99 | 847 | 1.55 | 1061 | 3.20 | 1255 | 5.14 | 1417 | 7.22 | 1556 | 9.45 | | |
| 46V | | | 659 | 0.54 | 753 | 1.00 | 840 | 1.51 | 1008 | 2.75 | 1175 | 4.28 | 1322 | 6.09 | 1450 | 8.13 | 1564 | 10.30 |
| 46 | 10500 | 1768 | 761 | 0.83 | 851 | 1.39 | 928 | 1.96 | 1104 | 3.56 | 1287 | 5.71 | 1452 | 7.96 | 1595 | 10.40 | | |
| 46V | | | 768 | 0.86 | 850 | 1.40 | 927 | 1.95 | 1070 | 3.26 | 1218 | 4.83 | 1360 | 6.64 | 1490 | 8.68 | 1606 | 11.00 |
| 46 | 12000 | 2020 | 870 | 1.24 | 952 | 1.89 | 1018 | 2.50 | 1163 | 4.07 | 1324 | 6.19 | 1484 | 8.73 | 1628 | 11.30 | | |
| 46V | | | 878 | 1.28 | 950 | 1.90 | 1019 | 2.50 | 1148 | 3.90 | 1273 | 5.52 | 1402 | 7.37 | 1527 | 9.43 | 1645 | 11.70 |
| 46 | 13500 | 2273 | 979 | 1.76 | 1054 | 2.51 | 1114 | 3.18 | 1237 | 4.76 | 1375 | 6.82 | 1519 | 9.37 | | | | |
| 46V | | | 988 | 1.83 | 1051 | 2.53 | 1114 | 3.20 | 1231 | 4.68 | 1343 | 6.37 | 1455 | 8.26 | 1570 | 10.40 | | |
| 46 | 15000 | 2525 | 1088 | 2.42 | 1157 | 3.26 | 1213 | 4.01 | 1321 | 5.64 | 1438 | 7.65 | 1566 | 10.10 | | | | |
| 46V | | | 1098 | 2.50 | 1155 | 3.30 | 1212 | 4.04 | 1320 | 5.61 | 1422 | 7.39 | 1521 | 9.34 | 1623 | 11.50 | | |
| 46 | 16500 | 2778 | 1196 | 3.21 | 1260 | 4.15 | 1314 | 5.00 | 1411 | 6.69 | 1513 | 8.71 | 1624 | 11.10 | | | | |
| 46V | | | 1207 | 3.33 | 1260 | 4.21 | 1311 | 5.04 | 1411 | 6.70 | 1506 | 8.57 | 1598 | 10.60 | | | | |
| 46 | 18000 | 3031 | 1305 | 4.17 | 1365 | 5.20 | 1416 | 6.15 | 1504 | 7.94 | 1597 | 10.00 | | | | | | |
| 46V | | | 1317 | 4.33 | 1365 | 5.28 | 1412 | 6.21 | 1506 | 7.98 | 1594 | 9.94 | | | | | | |
| 46 | 19500 | 3283 | 1414 | 5.31 | 1470 | 6.43 | 1518 | 7.48 | 1602 | 9.41 | | | | | | | | |
| 46V | | | 1427 | 5.50 | 1471 | 6.54 | 1515 | 7.55 | 1602 | 9.47 | | | | | | | | |

## Size 36 – Type CS or HS – A46---366_S---_ _ _ _ _ _ and A46V--366_S---_ _ _ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ¼" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 6,000 | 804 | 343 | 0.12 | 499 | 0.52 | 656 | 1.16 | 877 | 2.68 | 1031 | 4.48 | 1155 | 6.52 | 1262 | 8.76 | 1358 | 11.20 |
| 46V | | | 347 | 0.13 | 483 | 0.48 | 615 | 0.97 | 818 | 2.34 | 969 | 4.01 | 1094 | 5.88 | 1201 | 7.88 | 1298 | 10.00 |
| 46 | 8000 | 1071 | 458 | 0.29 | 571 | 0.73 | 693 | 1.41 | 919 | 3.17 | 1090 | 5.15 | 1226 | 7.35 | 1341 | 9.75 | 1440 | 12.40 |
| 46V | | | 462 | 0.30 | 569 | 0.73 | 666 | 1.26 | 860 | 2.65 | 1016 | 4.43 | 1145 | 6.48 | 1258 | 8.73 | 1358 | 11.10 |
| 46 | 10000 | 1339 | 572 | 0.56 | 665 | 1.09 | 754 | 1.74 | 953 | 3.68 | 1130 | 5.90 | 1275 | 8.31 | 1399 | 10.90 | | |
| 46V | | | 578 | 0.58 | 665 | 1.10 | 746 | 1.69 | 903 | 3.13 | 1057 | 4.92 | 1189 | 7.04 | 1304 | 9.42 | 1407 | 12.00 |
| 46 | 12000 | 1607 | 687 | 0.97 | 768 | 1.62 | 838 | 2.29 | 997 | 4.16 | 1163 | 6.69 | 1312 | 9.32 | 1442 | 12.10 | | |
| 46V | | | 693 | 1.00 | 767 | 1.63 | 837 | 2.27 | 967 | 3.81 | 1100 | 5.65 | 1229 | 7.77 | 1347 | 10.20 | 1451 | 12.80 |
| 46 | 14000 | 1875 | 801 | 1.53 | 874 | 2.31 | 933 | 3.03 | 1061 | 4.87 | 1203 | 7.36 | 1346 | 10.40 | | | | |
| 46V | | | 809 | 1.59 | 872 | 2.33 | 934 | 3.05 | 1049 | 4.70 | 1159 | 6.61 | 1274 | 8.78 | 1386 | 11.20 | | |
| 46 | 16000 | 2143 | 916 | 2.29 | 982 | 3.20 | 1035 | 4.01 | 1142 | 5.88 | 1260 | 8.28 | 1386 | 11.20 | | | | |
| 46V | | | 924 | 2.37 | 980 | 3.23 | 1035 | 4.04 | 1138 | 5.81 | 1236 | 7.82 | 1333 | 10.10 | 1434 | 12.50 | | |
| 46 | 18000 | 2411 | 1030 | 3.26 | 1091 | 4.30 | 1140 | 5.23 | 1233 | 7.17 | 1332 | 9.53 | 1440 | 12.40 | | | | |
| 46V | | | 1040 | 3.38 | 1090 | 4.35 | 1138 | 5.27 | 1233 | 7.16 | 1322 | 9.29 | 1408 | 11.60 | | | | |
| 46 | 20000 | 2679 | 1145 | 4.47 | 1200 | 5.64 | 1247 | 6.70 | 1330 | 8.75 | 1416 | 11.20 | | | | | | |
| 46V | | | 1156 | 4.63 | 1200 | 5.72 | 1244 | 6.76 | 1331 | 8.79 | 1413 | 11.00 | | | | | | |
| 46 | 22000 | 2946 | 1259 | 5.95 | 1310 | 7.24 | 1355 | 8.45 | 1431 | 10.70 | | | | | | | | |
| 46V | | | 1271 | 6.17 | 1312 | 7.37 | 1352 | 8.53 | 1431 | 10.70 | | | | | | | | |
| 46 | 24000 | 3214 | 1374 | 7.72 | 1421 | 9.14 | 1463 | 10.50 | | | | | | | | | | |
| 46V | | | 1387 | 8.00 | 1424 | 9.32 | 1461 | 10.60 | | | | | | | | | | |

**Performance shown is for belt drive fans, installation Type D: ducted inlet/ducted outlet.**
**Power ratings (BHP) include drive losses.**
**Performance ratings do not include the effects of appurtenances in the airstream.**

**Series 46 denotes standard configuration. Series 46V denotes addition of guide vane section. To complete model code add wheel code, material of construction, motor enclosure code, motor horsepower code, and motor speed code. Refer to page 2 for additional model code information. Note: HS prop material of construction is steel (code ST). CS prop material of construction is 304 stainless steel (code S4).**

## Size 42 – Type Type CS or HS – A46---426_S---_ _ _ _ _ _ and A46V--426_S---_ _ _ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ¼" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 8,000 | 798 | 257 | 0.12 | 408 | 0.70 | 544 | 1.58 | 724 | 3.70 | 850 | 6.27 | 952 | 9.17 | 1042 | 12.3 | 1122 | 15.7 |
| 46V | | | 259 | 0.13 | 389 | 0.61 | 508 | 1.33 | 678 | 3.29 | 804 | 5.65 | 907 | 8.25 | 997 | 11.1 | 1077 | 14.2 |
| 46 | 10000 | 997 | 321 | 0.24 | 438 | 0.84 | 564 | 1.83 | 754 | 4.16 | 890 | 6.86 | 998 | 9.95 | 1089 | 13.3 | 1171 | 17.0 |
| 46V | | | 324 | 0.25 | 430 | 0.80 | 531 | 1.54 | 703 | 3.56 | 833 | 6.09 | 940 | 8.94 | 1032 | 12.0 | 1114 | 15.3 |
| 46 | 12000 | 1197 | 385 | 0.41 | 481 | 1.07 | 585 | 2.06 | 777 | 4.64 | 921 | 7.55 | 1036 | 10.8 | 1133 | 14.3 | 1217 | 18.1 |
| 46V | | | 389 | 0.43 | 480 | 1.06 | 562 | 1.84 | 726 | 3.87 | 858 | 6.50 | 968 | 9.50 | 1063 | 12.8 | 1147 | 16.3 |
| 46 | 14000 | 1396 | 449 | 0.66 | 533 | 1.39 | 616 | 2.35 | 796 | 5.14 | 944 | 8.27 | 1065 | 11.7 | 1167 | 15.4 | 1257 | 19.3 |
| 46V | | | 454 | 0.68 | 533 | 1.39 | 605 | 2.23 | 749 | 4.32 | 882 | 6.93 | 993 | 10.0 | 1089 | 13.5 | 1176 | 17.2 |
| 46 | 16000 | 1596 | 514 | 0.98 | 588 | 1.81 | 657 | 2.77 | 816 | 5.60 | 964 | 9.01 | 1089 | 12.6 | 1195 | 16.5 | | |
| 46V | | | 518 | 1.02 | 588 | 1.83 | 653 | 2.71 | 778 | 4.88 | 904 | 7.53 | 1016 | 10.6 | 1114 | 14.2 | 1202 | 18.0 |
| 46 | 18000 | 1795 | 578 | 1.40 | 646 | 2.35 | 706 | 3.33 | 842 | 6.08 | 983 | 9.78 | 1109 | 13.6 | 1218 | 17.7 | | |
| 46V | | | 583 | 1.45 | 646 | 2.36 | 705 | 3.31 | 816 | 5.56 | 929 | 8.26 | 1038 | 11.4 | 1138 | 14.9 | 1226 | 18.8 |
| 46 | 20000 | 1995 | 642 | 1.91 | 706 | 2.99 | 759 | 4.02 | 875 | 6.72 | 1004 | 10.4 | 1127 | 14.7 | 1238 | 19.0 | | |
| 46V | | | 648 | 1.98 | 705 | 3.02 | 759 | 4.02 | 860 | 6.38 | 960 | 9.15 | 1062 | 12.3 | 1159 | 15.8 | 1250 | 19.7 |
| 46 | 22000 | 2194 | 706 | 2.55 | 766 | 3.75 | 814 | 4.84 | 916 | 7.54 | 1030 | 11.2 | 1147 | 15.6 | | | | |
| 46V | | | 713 | 2.64 | 764 | 3.79 | 815 | 4.87 | 908 | 7.35 | 998 | 10.2 | 1091 | 13.4 | 1183 | 17.0 | | |
| 46 | 24000 | 2394 | 770 | 3.31 | 827 | 4.64 | 872 | 5.83 | 962 | 8.56 | 1063 | 12.1 | 1170 | 16.4 | | | | |
| 46V | | | 778 | 3.43 | 825 | 4.69 | 871 | 5.87 | 959 | 8.46 | 1042 | 11.4 | 1125 | 14.7 | 1210 | 18.3 | | |
| 46 | 26000 | 2593 | 835 | 4.21 | 887 | 5.66 | 930 | 6.96 | 1013 | 9.76 | 1102 | 13.2 | 1199 | 17.5 | | | | |
| 46V | | | 842 | 4.36 | 886 | 5.73 | 929 | 7.02 | 1012 | 9.72 | 1090 | 12.8 | 1165 | 16.1 | 1243 | 19.8 | | |

## Size 48 – Type CS or HS – A46---486_S---_ _ _ _ _ _ and A46V--486_S---_ _ _ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ¼" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 10,000 | 760 | 245 | 0.18 | 370 | 0.88 | 490 | 1.98 | 654 | 4.58 | 768 | 7.71 | 861 | 11.3 | 941 | 15.1 | 1013 | 19.3 |
| 46V | | | 248 | 0.19 | 356 | 0.79 | 459 | 1.65 | 611 | 4.04 | 724 | 6.93 | 817 | 10.1 | 898 | 13.6 | 970 | 17.3 |
| 46 | 12000 | 912 | 294 | 0.31 | 395 | 1.04 | 505 | 2.24 | 676 | 5.06 | 798 | 8.33 | 895 | 12.1 | 977 | 16.1 | 1050 | 20.5 |
| 46V | | | 297 | 0.32 | 389 | 0.99 | 477 | 1.89 | 630 | 4.32 | 746 | 7.37 | 841 | 10.8 | 924 | 14.5 | 998 | 18.5 |
| 46 | 14000 | 1064 | 343 | 0.50 | 429 | 1.28 | 522 | 2.46 | 693 | 5.56 | 821 | 9.04 | 923 | 12.9 | 1010 | 17.1 | 1084 | 21.7 |
| 46V | | | 347 | 0.51 | 427 | 1.27 | 501 | 2.20 | 647 | 4.64 | 765 | 7.78 | 863 | 11.4 | 947 | 15.3 | 1022 | 19.5 |
| 46 | 16000 | 1216 | 392 | 0.74 | 468 | 1.61 | 545 | 2.76 | 707 | 6.07 | 839 | 9.78 | 946 | 13.8 | 1037 | 18.2 | | |
| 46V | | | 396 | 0.77 | 468 | 1.61 | 533 | 2.59 | 665 | 5.09 | 783 | 8.22 | 882 | 11.9 | 968 | 16.0 | 1045 | 20.4 |
| 46 | 18000 | 1368 | 441 | 1.05 | 510 | 2.02 | 575 | 3.16 | 722 | 6.56 | 854 | 10.5 | 965 | 14.8 | 1059 | 19.4 | | |
| 46V | | | 446 | 1.09 | 510 | 2.03 | 570 | 3.07 | 686 | 5.63 | 800 | 8.79 | 900 | 12.5 | 987 | 16.7 | 1065 | 21.3 |
| 46 | 20000 | 1519 | 490 | 1.44 | 554 | 2.52 | 610 | 3.68 | 740 | 7.02 | 869 | 11.3 | 981 | 15.8 | 1078 | 20.6 | | |
| 46V | | | 495 | 1.50 | 554 | 2.54 | 608 | 3.64 | 712 | 6.29 | 818 | 9.50 | 917 | 13.2 | 1005 | 17.4 | 1084 | 22.1 |
| 46 | 22000 | 1671 | 540 | 1.92 | 599 | 3.12 | 649 | 4.32 | 762 | 7.59 | 884 | 12.0 | 995 | 16.9 | 1094 | 21.9 | | |
| 46V | | | 545 | 1.99 | 598 | 3.15 | 649 | 4.31 | 744 | 7.06 | 839 | 10.3 | 934 | 14.1 | 1023 | 18.3 | 1102 | 23.0 |
| 46 | 24000 | 1823 | 589 | 2.49 | 644 | 3.82 | 690 | 5.07 | 790 | 8.31 | 901 | 12.7 | 1010 | 17.9 | | | | |
| 46V | | | 594 | 2.59 | 643 | 3.86 | 691 | 5.09 | 779 | 7.96 | 865 | 11.3 | 954 | 15.1 | 1039 | 19.3 | | |
| 46 | 26000 | 1975 | 638 | 3.17 | 690 | 4.63 | 733 | 5.95 | 822 | 9.19 | 922 | 13.5 | 1025 | 18.8 | | | | |
| 46V | | | 644 | 3.29 | 689 | 4.68 | 733 | 5.99 | 816 | 8.98 | 895 | 12.4 | 976 | 16.3 | 1058 | 20.6 | | |
| 46 | 28000 | 2127 | 687 | 3.96 | 737 | 5.56 | 777 | 6.98 | 858 | 10.3 | 948 | 14.5 | 1043 | 19.7 | | | | |
| 46V | | | 693 | 4.11 | 735 | 5.61 | 777 | 7.02 | 855 | 10.1 | 929 | 13.7 | 1003 | 17.6 | 1079 | 21.9 | | |

## Size 54 – Type CS or HS – A46---546_S---_ _ _ _ _ _ and A46V--546_S---_ _ _ _ _ _

| Series | CFM | Outlet Velocity FPM | Static Pressure | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0" | | ¼" | | ½" | | 1" | | 1½" | | 2" | | 2½" | | 3" | |
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 46 | 12,500 | 747 | 196 | 0.18 | 318 | 1.11 | 425 | 2.51 | 564 | 5.90 | 662 | 10.0 | 742 | 14.6 | 812 | 19.7 | 875 | 25.1 |
| 46V | | | 198 | 0.19 | 302 | 0.96 | 396 | 2.12 | 529 | 5.27 | 627 | 9.02 | 708 | 13.2 | 778 | 17.7 | 841 | 22.7 |
| 46 | 15000 | 897 | 235 | 0.32 | 334 | 1.27 | 437 | 2.82 | 584 | 6.46 | 688 | 10.7 | 771 | 15.6 | 842 | 21.0 | 905 | 26.7 |
| 46V | | | 237 | 0.33 | 326 | 1.18 | 410 | 2.36 | 545 | 5.61 | 645 | 9.61 | 728 | 14.1 | 800 | 18.9 | 864 | 24.0 |
| 46 | 17500 | 1046 | 274 | 0.50 | 357 | 1.50 | 449 | 3.12 | 600 | 7.05 | 709 | 11.6 | 797 | 16.6 | 869 | 22.2 | 934 | 28.2 |
| 46V | | | 277 | 0.52 | 354 | 1.46 | 426 | 2.68 | 559 | 5.96 | 662 | 10.1 | 747 | 14.8 | 820 | 20.0 | 885 | 25.4 |
| 46 | 20000 | 1196 | 314 | 0.75 | 386 | 1.84 | 463 | 3.41 | 612 | 7.67 | 726 | 12.4 | 817 | 17.7 | 895 | 23.4 | 961 | 29.7 |
| 46V | | | 317 | 0.78 | 385 | 1.82 | 448 | 3.09 | 573 | 6.40 | 677 | 10.6 | 763 | 15.5 | 838 | 20.9 | 904 | 26.6 |
| 46 | 22500 | 1345 | 353 | 1.07 | 418 | 2.26 | 483 | 3.80 | 624 | 8.31 | 740 | 13.3 | 835 | 18.9 | 915 | 24.8 | 985 | 31.2 |
| 46V | | | 356 | 1.10 | 418 | 2.26 | 475 | 3.60 | 587 | 6.97 | 691 | 11.2 | 778 | 16.2 | 854 | 21.7 | 922 | 27.7 |
| 46 | 25000 | 1495 | 392 | 1.46 | 452 | 2.77 | 508 | 4.31 | 636 | 8.88 | 752 | 14.3 | 850 | 20.1 | 932 | 26.3 | | |
| 46V | | | 396 | 1.52 | 452 | 2.79 | 504 | 4.20 | 605 | 7.66 | 704 | 11.9 | 793 | 16.9 | 869 | 22.6 | 938 | 28.7 |
| 46 | 27500 | 1644 | 431 | 1.95 | 487 | 3.40 | 537 | 4.96 | 650 | 9.45 | 764 | 15.2 | 862 | 21.3 | 947 | 27.8 | | |
| 46V | | | 435 | 2.02 | 487 | 3.42 | 535 | 4.91 | 626 | 8.47 | 719 | 12.8 | 806 | 17.8 | 883 | 23.5 | 953 | 29.7 |
| 46 | 30000 | 1794 | 471 | 2.53 | 523 | 4.13 | 568 | 5.74 | 668 | 10.1 | 776 | 16.1 | 874 | 22.6 | 960 | 29.3 | | |
| 46V | | | 475 | 2.62 | 522 | 4.16 | 567 | 5.72 | 651 | 9.41 | 736 | 13.8 | 820 | 18.9 | 898 | 24.5 | 967 | 30.8 |
| 46 | 32500 | 1943 | 510 | 3.21 | 559 | 4.97 | 600 | 6.64 | 690 | 11.0 | 789 | 16.9 | 885 | 23.9 | 972 | 30.9 | | |
| 46V | | | 514 | 3.33 | 558 | 5.02 | 600 | 6.66 | 679 | 10.5 | 756 | 15.0 | 835 | 20.1 | 911 | 25.8 | 981 | 32.0 |
| 46 | 35000 | 2093 | 549 | 4.01 | 596 | 5.93 | 634 | 7.68 | 715 | 12.0 | 805 | 17.9 | 897 | 25.0 | 984 | 32.5 | | |
| 46V | | | 554 | 4.16 | 595 | 5.99 | 634 | 7.72 | 708 | 11.7 | 779 | 16.3 | 852 | 21.5 | 925 | 27.2 | | |

**Performance shown is for belt drive fans, installation Type D: ducted inlet/ducted outlet.**
**Power ratings (BHP) include drive losses.**
**Performance ratings do not include the effects of appurtenances in the airstream.**

**Series 46 denotes standard configuration. Series 46V denotes addition of guide vane section. To complete model code add wheel code, material of construction, motor enclosure code, motor horsepower code, and motor speed code. Refer to page 2 for additional model code information. Note: HS prop material of construction is steel (code ST). CS prop material of construction is 304 stainless steel (code S4).**

# Fiberglass Fans/Protective Coatings

Series 35

## Fiberglass Duct Axial® Fans Belt Drive

For installations where extreme corrosive fumes are encountered, Hartzell fiberglass Duct Axial® fans give unsurpassed resistance to a wide variety of corrosive elements at a cost substantially below that of corrosion resistant metals. Fiberglass fans can be used in most applications where corrosive elements exist in fume and vapor form at temperatures less than 200°F.

Hartzell fiberglass belt drive Duct Axial® fans are identical in design and performance to standard Hartzell Duct Axial® fans. Propellers, duct section and bearing covers are constructed of special corrosion-resistant fiberglass resin, plus flame-retardant additives to reduce the flame spread rate below 25.

- **Stainless steel shaft** with neoprene slinger and fiberglass neoprene seal.
- **Internal bolts** are stainless steel and resin-coated after assembly. Bolts and shaft are optional.
- **Variable pitch drives** are standard on most models. Belt adjustment is easy.
- **Lubrication fittings** outside the duct and tubes are standard and are not exposed to the main fan airstream.
- **Bearings** are heavy-duty ball or roller type.
- **Bearings, belts and pulleys** are on the intake or negative pressure side.
- **Sealed bearing covers.**
- **Sizes** from 12" to 60", performance from 1330 CFM at free air to 61,500 CFM at 2" static pressure.

For complete details on fiberglass fans and blowers, see Bulletins A-131, A-137, A-139, A-140, A-141, A-410 and A-160.

## Protective Coatings

On special request, protective coatings over standard Duct Axial® fans are available. These coatings are generally adequate protection against a moderately corrosive atmosphere.

Commonly used protective coatings include: double build epoxy, coal tar epoxy, inorganic zinc and polyurethane. These are air dry coatings. Other protective coatings are available to specifications upon request.

All Hartzell fans and blowers for corrosive applications are guaranteed for one year from the date of shipment.

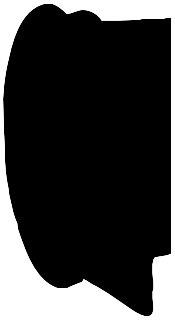
For specific information on fiberglass Duct Axial® fans or protective coatings, contact your Hartzell sales representative. He is prepared to recommend the most dependable solution to your corrosion problem and provide experienced technical help.

# Options and Accessories

## Companion Flanges

Drilled to fit the flanges of the fan; allows easy installation.

## Inlet Bell



Spun inlet orifice bell may be used in place of the inlet duct in installations where no duct work precedes the fan.

## Guards

Spiral ring guard offers protection on intake or discharge side. Available in steel only.

## Protective Coatings

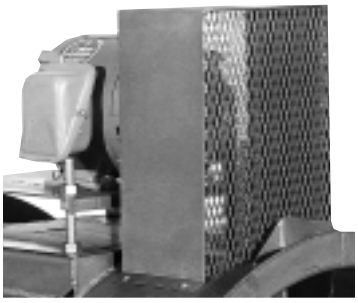
For corrosive applications, fans can be furnished with suitable protective coatings or constructed of stainless steel, or fiberglass.

## Extended Electrical Leads

Motor electrical leads extended to the exterior of the fan casing are optional on direct drive duct Axial® fans.

## Belt Guard

Covers motor sheave and belts outside fan housing. Steel construction.



## Access Door

Hinged, quick release latches on access door allows for maintenance of internal parts of duct Axial® fans. Available for direct and belted drive units. Standard position for access door of belt drive duct fans is at 6 o'clock when motor is at 12. For direct drive units, standard position is at 10 o'clock.

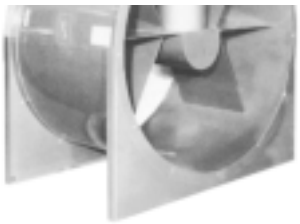
## Combination Motor Cover and Belt Guard

Designed to fit all belt drive duct Axial® fans. Covers are vented. Specify horizontal or vertical mounting. Steel construction.

**Caution: The drive assembly or the periphery of the blades of a fan less than seven (7) feet above the floor or working level must be guarded to be in accordance with OSHA regulations.**

## Mounting Feet

Bolted to the inlet and discharge flanges, mounting feet allow positioning of the duct Axial® fan on the floor, ceiling, wall or platform. Can be used with vibration isolators.



## Ceiling Suspension

Horizontal or vertical mount. Brackets can be used with vibration isolators. Horizontal mounting shown.

## Vibration Isolators

Rubber-in-shear or spring type isolators available on all models.

## Shaft Seal and Slinger

Neoprene shaft seal held in position by coated steel cover plate, along with a neoprene shaft slinger, which is positioned between the bearing cover and propeller, are optional on standard and coated steel belt drive duct Axial® fans. These should be used when fans are placed in corrosive atmospheres which warrant protective coating and/or stainless steel shafting or hardware. Seal is not gas tight. (Note: shaft seal, cover plate and neoprene slinger are standard on aluminum belt duct fans.)

## SAFETY ACCESSORIES, APPLICATION AND USE WARNING

The safe application and use of equipment supplied by Hartzell Fan, Inc. is the responsibility of the installer, the user, the owner, and the employer. Since the application and use of its equipment can vary greatly, Hartzell Fan, Inc. offers various product types, optional safety accessories, and sound performance data per laboratory tests. Hartzell Fan, Inc. sells its equipment with and without safety accessories, and accordingly, it can supply such safety accessories only upon receipt of an order. The need for safety accessories will frequently depend upon the type of system, fan location and operating procedures being employed. The proper protective safety accessories to meet company standards, local codes, and the requirements of the Occupation Safety and Health Act must be determined by the user since safety requirements vary depending on the location and use of the equipment. If applicable local conditions, standards, codes or OSHA rules require the addition of the safety accessories, the user should specify and obtain the required safety accessories from Hartzell Fan, Inc. and should not allow the operation of the equipment without them. Owners, employers, users and installers should read RECOMMENDED SAFETY PRACTICES FOR USERS AND INSTALLERS OF INDUSTRIAL AND COMMERCIAL FANS published by the Air Movement Control Association International, Inc., 30 West University Drive, Arlington Heights, Illinois 60004. A copy of this publication is enclosed with each fan shipped from Hartzell Fan, Inc., and is available upon request at Hartzell's office in Piqua, Ohio 45356

Please contact Hartzell Fan, Inc. or your local Hartzell representative for more information on product types, safety accessories, and sound performance estimates.

Remember, the selection of safety accessories and the safe application and use of equipment supplied by Hartzell Fan, Inc. is **your** responsibility.

# Accessories

## Sound Muffler

This sound attenuative device is a simple lined tube that can be used on either the intake or exhaust side of a Hartzell duct fan to reduce the noise. *It cannot be used in wet atmosphere or with air velocities over 5000 FPM or above 250°F in the airstream.* The resistance to airflow is negligible since the internal surface is fairly smooth and the internal diameter of the muffler is the same as the fan with no internal obstruction to impede airflow.

*In general, the muffler should be mounted between the fan and the area of concern (the listener). If both the intake and exhaust of the fan are critical, use a muffler on both sides of the fan.*

The outstanding features of this muffler are:

- The typical attenuation for fans with discharge velocities from 1500-3000 FPM is approximately as follows for one muffler:

| Band | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| dB Attenuation | 0 | 1 | 3 | 10 | 13 | 12 | 10 | 8 |

- For one muffler the reduction in sone value is approximately 35%. With a muffler on both intake and exhaust, the sones are reduced approximately 50%.
- There is no appreciable static pressure loss when one or two mufflers are inserted into a duct system.
- The mounting flanges match the corresponding fan flanges and are drilled for easy attachment. By using flexible connections between fan and muffler, the sound attenuation is helped, particularly in the lower bands.
- The absorbent material has a black rubberized surface next to the airstream which prevents erosion up to 5000 FPM velocity, and is held in place with an expanded metal liner.

# General Construction Options

## Duct Fan with Bomb Bay Construction

The Bomb Bay arrangement offers easy access to the drive assembly. Unlatching the Bomb Bay section facilitates maintenance of belts, bearings, propeller and shaft of belt drive units and motor and propeller of direct drive units without removing the fan from the system.

## Swing Out Construction

Duct Axial® Fans are available with a fan casing that is split, and swings out away from the assembly on a heavy-duty hinge. This feature allows easy, safe access to the fan propeller, shaft, bearing and drive components for inspection, cleaning, maintenance or removal without removing the entire fan or having personnel working directly over the roof opening.

*Dimensions on Bomb Bay and Swing Out construction vary from standard units. Vane Section requires special construction. Please contact factory. Request certified prints. Unit pictured with roof mounted options.*

## Roof Mounted

### Upblast

Together with stack cap and curb panel (shown), the Hartzell duct Axial® fans can be mounted as upblast roof exhausters. The backdraft dampers in the stack cap offer weather proof closure for vertical air discharge. The venturi curb panel offers a secure mounting base for the fan and an efficient inlet air condition.

Minimum velocity required through the stack cap for damper operation is 1300 fpm – maximum is 3200 fpm. For performance, refer to the appropriate duct fan rating table in this bulletin, allowing approximately 1/8" static pressure for stack cap resistance.

### Hooded

When required, the Hartzell duct Axial® fans with curb panels can be supplied with a weather hood. These built-up hooded power roof ventilators can be configured for exhaust or to supply air flow.

Air delivery and pressure drop through the hood are affected by air velocity. Please contact the factory for selection.

# Hartzell Warranty

## LIMITED WARRANTIES

Hartzell represents to Buyer that any goods to be delivered hereunder will be produced in compliance with the requirements of the Fair Labor Standards Act of 1938 as amended.

Hartzell also warrants to Buyer its goods to be free from defects in workmanship and material under normal use and service for one (1) year after tender of delivery by Hartzell, plus six (6) months allowance for shipment to approved stocking dealers & distributors. No warranty extends to future performance of goods and any claims for breach of warranty or otherwise accrues upon tender of delivery.

The foregoing constitute Hartzell's sole and exclusive warranties in lieu of all other warranties, whether written, oral, express, implied or statutory.

## LIMITATION OF LIABILITY FOR BREACH OF WARRANTY

Hartzell's obligation for any breach of warranty is limited to repairing or replacing, at its option, without cost to Buyer at its factory any goods which shall, within such a warranty period, be returned to it with transportation charges prepaid, and which its examination shall disclose to its satisfaction to have been defective. Any request for repair or replacement should be directed to Hartzell Fan, Inc., P.O. Box 919, Piqua, Ohio 45356. Hartzell will not pay for any repairs made outside its factory without its prior written consent. This does not apply to any such Hartzell goods which have failed as a result of faulty installation or abuse, or incorrect electrical connections or alterations, made by others, or use under abnormal operating conditions or misapplication of the goods.

## LIMITATION OF LIABILITY

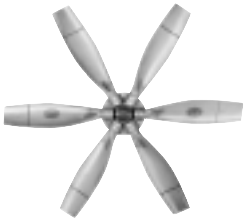
To the extent the above limitation of liability for breach of warranty is not applicable, the liability of Hartzell on any claim of any kind, including negligence, for any loss or damage arising out of or connected with, or resulting from the sale and purchase of the goods or services covered by these Terms and Conditions of Sale or from the performance or breach of any contract pertaining to such sale or purchase or from the design manufacture, sale, delivery, resale, installation, technical direction installation, inspection repair, operation or use of any goods or services covered by these Terms and Conditions shall, in no case exceed the price allocable to the goods or services which gave rise to the claim and shall terminate one year after tender of delivery of said goods or services.

In no event whether as a result of breach of contract, or warranty or alleged negligence, defects incorrect advice or other causes, shall Hartzell be liable for special or consequential damages, including, but not limited to, loss of profits or revenue, loss of use of the equipment or any associated equipment, cost of substitute equipment, facilities or services, down time costs, or claims of customers of the Buyer for such damages. Hartzell neither assumes nor authorizes any person to assume for it any other liability in connection with the sale of its goods or services.

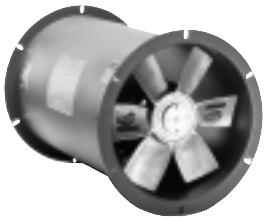
**NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS.**

HARTZELL DOES NOT WARRANT THAT SAID GOODS ARE OF MERCHANTABLE QUALITY OR THAT THEY ARE FIT FOR ANY PARTICULAR PURPOSE. THERE IS NO IMPLIED WARRANTY OF MERCHANTABILITY AND THERE IS NO IMPLIED WARRANTY OF FITNESS.

**Propeller Fans**



**Cooling Tower & Heat Exchanger Fans**

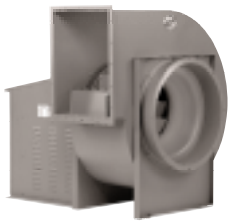


**Duct Fans**

**Duct Axial Fans**

**Vaneaxial Blowers**

**Cool Blast & Utility Fans**



**Steel Centrifugal Blowers**

**Roof Ventilators – Steel & Fiberglass**

**Heating Equipment – Gas & Steam**

**Fiberglass Axial Flow Fans**

**Fiberglass Centrifugal Blowers**

**Marine – Mine Duty Blowers**

**Hartzell Fan, Inc., Piqua, Ohio 45356 • Plants in Piqua, Ohio and Portland, Indiana.**

**www.hartzellfan.com**

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