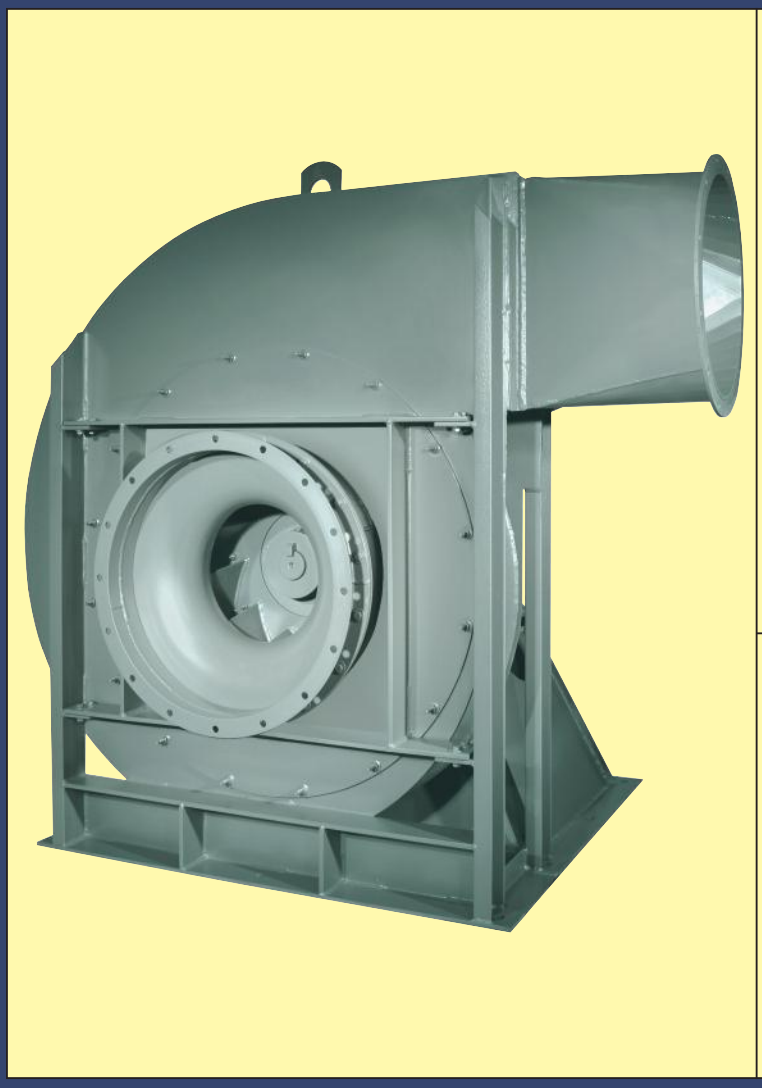
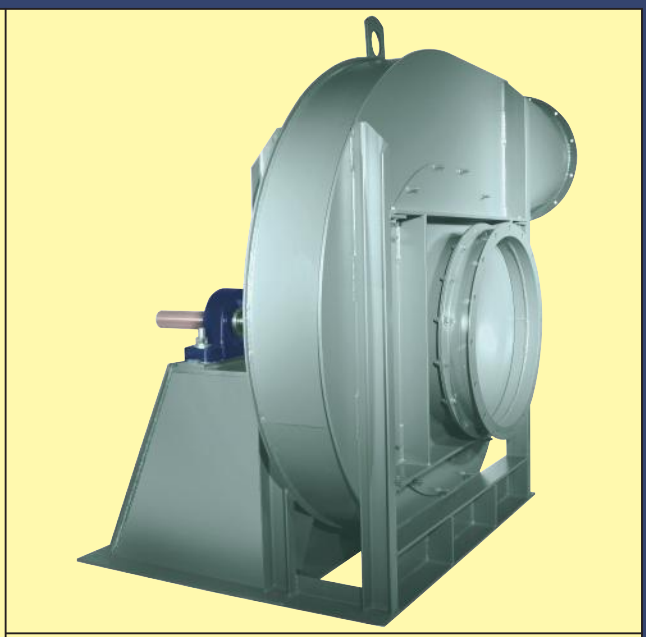
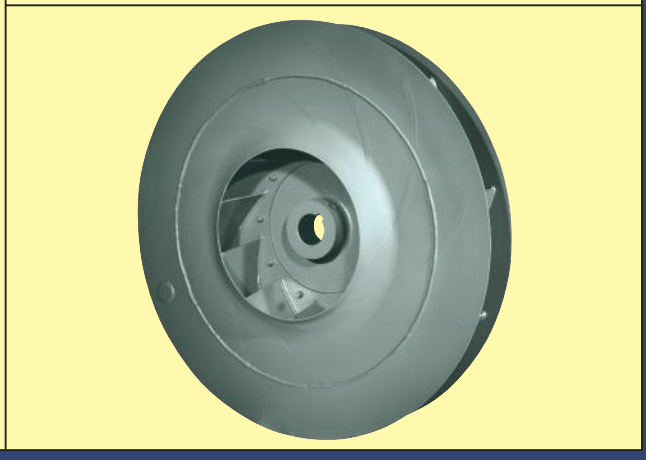
BULLETIN 491
JANUARY, 2014

# BACKWARD-CURVED PRESSURE BLOWER FANS







- Capacities to 80,000 CFM
- Static pressures to 110"WG
- Temperatures to 800°F.

THE NEW YORK BLOWER COMPANY
7660 Quincy Street
Willowbrook, IL 60527-5530

Visit us on the Web: http://www.nyb.com
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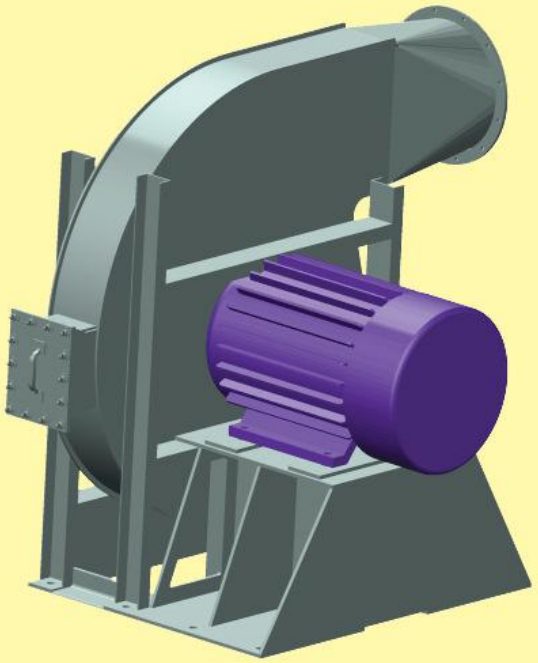
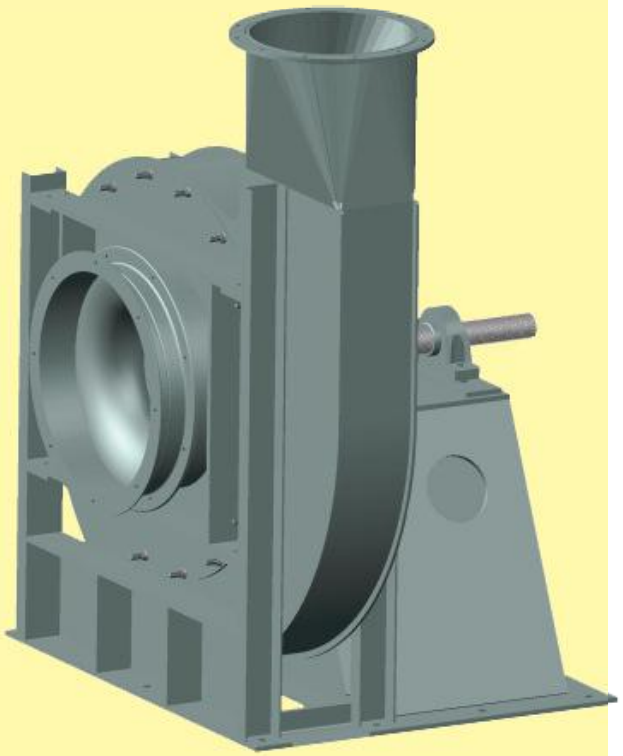
# BC Pressure Blower Fans

Size 33, Arrangement 4
BC Pressure Blower.





Size 27 Belt Drive BC Pressure
Blower less Motor, Drive, and Base.

## Standard high efficiency, BC Pressure Blower Fans for clean air and light particulate-laden applications.

### DESIGN FEATURES

- Single-thickness, backward-curved wheel constructed of high-strength, low alloy steel for dependable operation in moist or light particulate-laden airstreams.
- Wheel sizes from 24″ to 73″ blade diameters.
- Capacities to 80,000 CFM.
- Pressures to 110″WG.
- Mechanical efficiency to 84%.
- Temperatures to 800°F.
- Choice of direct-drive or belt-drive arrangements.
- Integral-base construction eliminates the need for field erection of independent bearing pedestals and sole plates…complete factory-assembled units up to Size 73 are test run and balanced prior to shipment.
- Available in clockwise and counterclockwise rotations in any of seven standard discharge positions.

### CONSTRUCTION FEATURES

**Flanged inlet and outlet**—standard on all sizes…furnished with bolt holes for ease of installation.

**Lifting eyes**—standard on all sizes for ease of handling.

**Shafting**—high quality, close tolerance, turned, ground, and polished.

**Shaft seal**—ceramic-felt shaft seals standard on all Arr. 1 and 8 fans…multiple seal elements compressed between metal backing plate and retainer.

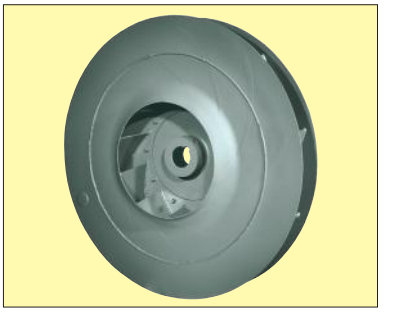
**Precision balancing**—all BC Pressure Blower wheels are dynamically balanced before final assembly…after final assembly all fans are given a final balance check on a rigid test bed at the specified running speed.

**Heavy-duty bearings**—selected for long life through applicable speed range.

**Standard two-coat paint system**—two coats of medium green industrial enamel. Heat Fans (301°F.–800°F.) are coated with high-temperature paint.

# BC Pressure Blower Wheels

**BC Pressure Blower wheels**—rugged, all-welded wheels designed for clean air applications but capable of handling light particulate-laden or moist airstreams. Air-handling efficiencies of the BC Pressure Blower Fans are higher than common radial fans and, therefore, offer lower noise levels. See pages 7–9 for performance information, or use **nyb** Electronic Catalog Software for more specific details.




## ELECTRONIC CATALOG

Fan-selection program corrects for altitude, temperature, rarefication, adjusts maximum safe speed for wheel width, and generates performance curves. Also includes complete product literature, guide specifications, installation and maintenance literature, Engineering Letters, web-site launch, and a listing of New York Blower sales representatives.

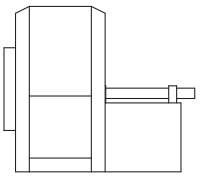
## SAFETY EQUIPMENT

Belt guards, inlet and outlet guards, shaft and bearing guards, and coupling guards are available from The New York Blower Company. Contact your **nyb** representative for further information.

NOTE: Safe operation of air-moving equipment is dependent on proper installation and maintenance including selection and use of appropriate safety accessories for the specific installation. The system designer must consider providing guards for all exposed moving parts as well as protection from access to high-velocity airstreams. Improper application, installation, maintenance, or safety-guard selection can create danger to life and limb of personnel. Users and/or installers should read "Recommended Safety Practices For Air Moving Devices" as published by the Air Movement and Control Association International, 30 West University Drive, Arlington Heights, Illinois 60004, which is included with the packing slips for all shipments from **nyb** and available on request.

# Arrangement Flexibility

### ARRANGEMENT 1

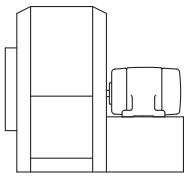


Overhung wheel on shaft and bearing assembly isolates fan bearings from airstream. Normally this arrangement is used for V-belt-drive fans which provides flexibility in fan performance.

Available in 24″ to 66″ wheel diameters.

Maximum temperature:
Standard fan: 300˚F.
Heat fan: 800˚F.

### ARRANGEMENT 4

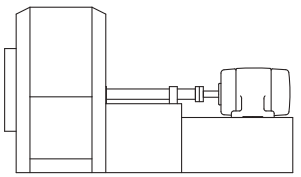


Wheel mounted directly on motor shaft to provide the most compact design. Elimination of shaft and bearings for minimum maintenance. Narrow-width wheel designs permit higher speeds and pressures.

Available in 24″ to 49″ wheel diameters.

Maximum temperature: 180˚F.

### ARRANGEMENT 8



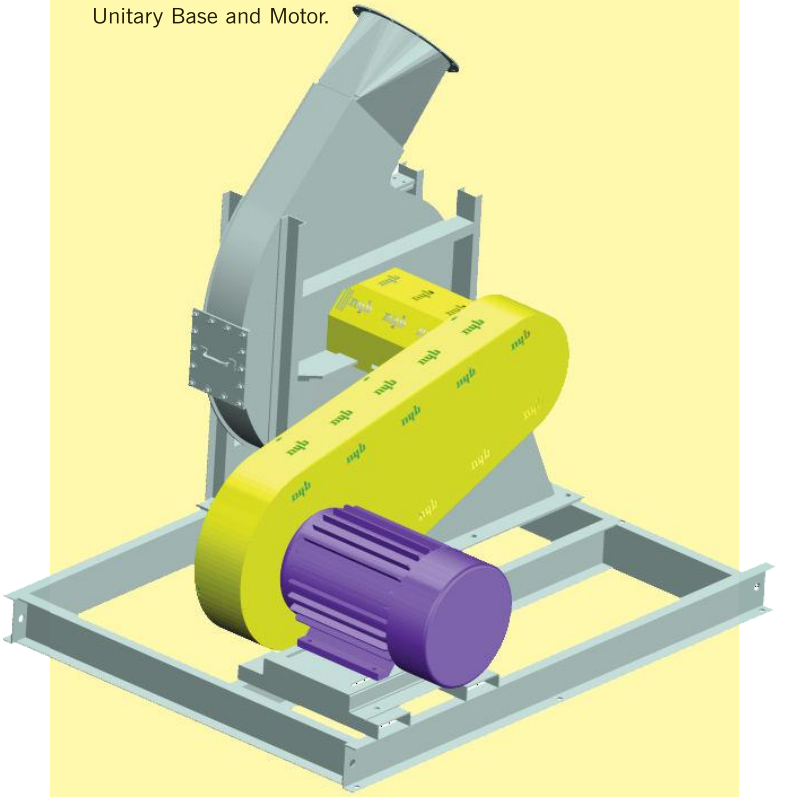
Similar to Arrangement 1 but with integral motor base to accommodate motor and coupling.

Available in 24″ to 73″ wheel diameters.

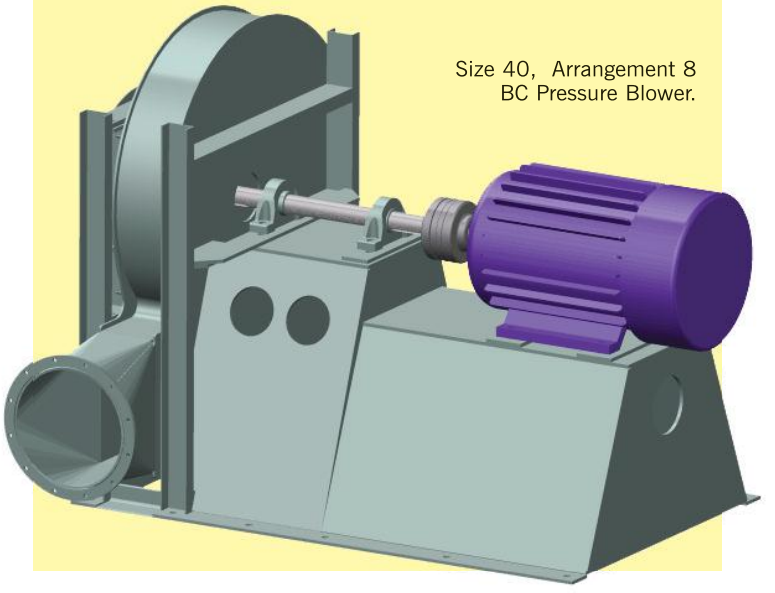
Maximum temperature:
Standard fan: 300˚F.
Heat fan: 800˚F.

# ACCESSORIES

Size 27, Arrangement 1
BC Pressure Blower with
Unitary Base and Motor.

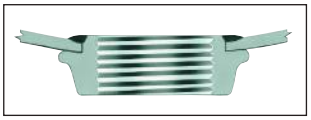


Size 40, Arrangement 8
BC Pressure Blower.



- **COMPANION FLANGES**
  Designed to fit flush with fan inlet and outlet flanges, provided with a matching hole pattern.

- **DRAIN**
  Welded tank flange [NPT], 1½″ located at the lowest point in the housing scroll.



- **CLEANOUT DOOR**
  Two types of gasketed door available...**bolted:** closely spaced studs keep door securely sealed...**raised bolted:** allows for insulation when desired, door raised 2″ from the fan housing.

- **INLET BOX**
  Minimizes entry losses normally associated with 90° turns at or near fan inlet...also available with parallel-blade damper for efficient volume control.

- **SHAFT SEALS**
  Ceramic-felt shaft seals consist of compressed ceramic felt elements are standard on Arrangements 1 and 8. Lubricated lip seals [Buna-N, Teflon®, and Viton®] and gas-purgeable mechanical seals are also available. Consult your **nyb** representative for availability.
  [Teflon is a registered trademark of DuPont]
  [Viton is a registered trademark of DuPont Dow Elastomers.]

- **INLET DAMPERS**
  External vane construction provides prespun air effect to control fan performance efficiently...maximum temperature: 800°F.

- **VIBRATION ISOLATION**
  Rubber-in-shear or spring-type isolation mounted to rugged structural unitary base reduces the transmission of vibration to the mounting structure.

- **UNITARY BASE**
  Arrangement 1 fan, motor, and guards can be mounted and shipped on a rugged, structural-steel base. Factory-assembled and run-tested prior to shipment.

- **OTHER ACCESSORIES**
  Also available from **nyb** are drive components such as motors, couplings, and v-belt drives as well as a variety of preventive-maintenance products including vibration detectors, bearing-temperature detectors, and zero-speed switches.

# MODIFICATIONS

- **COATINGS**
  Cost-effective protective coatings under a variety of trade names are available to increase the fan's resistance to adverse, corrosive environments.

- **INSULATION STUDS**
  2-inch long weld-studs located on 12-inch centers on all surfaces of housing exterior...recommended for use with field-installed insulation...studs are normally mild steel; stainless steel available on request.

- **HEAT-FAN CONSTRUCTION**
  Standard Arrangement 1 and 8 BC Pressure Blower Fans are designed to handle airstreams to 300°F.

  BC Pressure Blower Fans handling 301°F. to 800°F. airstreams are furnished with shaft cooler and shaft cooler guard, and all surfaces are coated with high-temperature paint.

  NOTE: Contact **nyb** when the intended service involves a temperature rate change exceeding 20°F. per minute.

- **NARROW-WIDTH AND SPECIAL DIAMETER CONSTRUCTION**
  Wheel widths and diameters can be adjusted to meet volume and pressure requirements at most efficient operating point.

- **SPLIT-HOUSING CONSTRUCTION**
  Provides for wheel and shaft removal...split portion can be removed without disturbing the inlet or outlet connections. This modification is standard on Size 73.

- **SPARK-RESISTANT CONSTRUCTION [SRC]**
  Intended to minimize the potential for any two or more fan components to generate sparks within the airstream by rubbing or striking during operation.

  The following types are available:

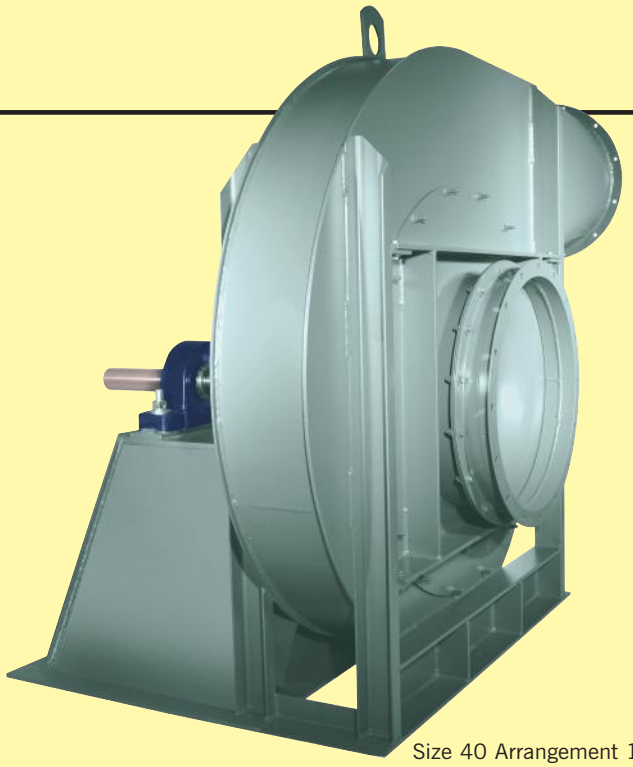
  **AMCA A [AIRSTREAM] SRC**
  To include all airstream parts constructed of a spark-resistant alloy...maximum temperature: 200°F.

  **AMCA B [WHEEL] SRC**
  To include the fan wheel constructed of a spark-resistant alloy and a buffer plate around the housing shaft-hole opening...maximum temperature: 200°F.

  **AMCA C [BUFFER] SRC**
  To include a spark-resistant alloy buffer affixed to the housing interior adjacent to the wheel backplate, a spark-resistant alloy inlet cone, and a buffer plate around the housing shaft-hole opening...maximum temperature: 650°F.

  **ALL TYPES SRC**
  Fan is to be so constructed such that no bearings, drive components, or electrical apparatus are located in the airstream...the user must electrically ground all fan and system components.

  Refer to Engineering Letter 15 for the full meaning and limits of spark-resistant construction.



Size 40 Arrangement 1
BC Pressure Blower Fan.

Size 40 BC Pressure Blower.

- **SPECIAL ALLOYS**
  BC Pressure Blower Fans are available with various grades of stainless steel for corrosive, non-abrasive airstream contaminants. Wheels can be furnished in Alloy 2205 stainless steel to minimize speed derate. Consult **nyb** if other materials are required.

- **TECHNICAL SUPPORT**
  **nyb** has developed numerous engineering and application support tools for system designers and operators. For further information, contact your local **nyb** sales representative or visit our web site at www.nyb.com.

# BC Pressure Blower Fans

## SPEED CAPABILITIES

Maximum safe operating speeds are shown in Chart I for BC Pressure Blower Fans with the standard high-strength steel wheel and the standard shaft and bearings as listed. Substitution of alternate wheel alloys, or modifications to the standard shaft and bearing selection, may alter the maximum safe speed.

Chart II provides safe speed correction factors for various temperatures and the common alternate wheel alloys. These factors apply to the wheel safe speeds listed in Chart I.

Example: A Size 36 BC Pressure Blower Fan Arr. 8 with an Alloy 2205 HP wheel operating at a maximum airstream temperature of 600°F. will have a maximum safe operating speed of 2160 RPM [3600 x .60].

# Correction Factors

Performance is based on actual cubic feet per minute [ACFM] at the blower inlet at standard density [.075 lbs./ft.$^3$] and static pressure at the blower outlet. Static pressure capabilities are shown in inches water gauge ["WG].

Air density corrections are necessary for proper selection when air density varies from the standard .075 lbs./ft.$^3$ at 70˚F. at sea level. This also occurs when negative static pressure exists [rarefication] on the inlet side of the fan. Multiply the required static pressure at conditions by the appropriate factors in Charts III, IV, and V to obtain corrected pressure for blower selection. Pressure and BHP will be reduced at conditions by the inverse of these factors. Multiply one factor by the other if temperature, altitude, and rarefication are non-standard. For example: If the installation is located at an altitude of 4000 feet, the gas temperature is 300°F., and the inlet pressure is –40"WG, the correction factor is 1.84 [1.16 x 1.43 x 1.11].

## Chart I
### MAXIMUM OPERATING SPEEDS BC PRESSURE BLOWER FAN WHEELS, SHAFTS, AND BEARINGS

| Fan size | Wheel Max Safe Speed | | Arr. 1 | | | Arr. 8 | |
|---|---|---|---|---|---|---|---|
| | | | Shaft dia. | Bearing Type* | | Shaft dia. | Bearing Type* |
| | Arr. 1 MP | Arr. 4/8 HP | | Inboard | Outboard | | |
| 24 | 4040 | 4040 | 1 15/16 | B | D | 1 15/16 | B |
| 27 | 3665 | 3665 | 2 3/16 | B | D | 1 15/16 | B |
| 30 | 3250 | 4105 | 2 7/16 | B | D | 2 3/16 | C |
| 33 | 2980 | 3720 | 2 7/16 | C | | 2 7/16 | C |
| 36 | 2980 | 3600 | 2 11/16 | C | | 2 15/16 | C |
| 40 | 2430 | 3600 | 2 15/16 | D | | 3 7/16 | C |
| 44 | 2175 | 2845 | 2 15/16 | D | | 3 7/16 | C |
| 49 | 1975 | 2580 | 3 7/16 | D | | 3 7/16 | C |
| 54 | 1800 | 2045 | 3 15/16 | D | | 3 7/16 | E |
| 60 | 1625 | 1830 | 4 7/16 | E | | 3 15/16 | E |
| 66 | 1500 | 1545 | 4 7/16 | E | | 4 7/16 | E |
| 73 | — | 1500 | — | — | | 4 7/16 | E |

*Bearing Type:
- B Medium Duty Ball, Concentric Lock
- C Heavy Duty Ball, Adapter Mount
- D Spherical Roller, Concentric Lock
- E Split Housing Spherical Roller, Adapter Mount

## Chart II
### TEMPERATURE CORRECTION FACTORS FOR MAXIMUM OPERATING SPEEDS

| Air-stream Temp. [°F] | Standard HSLA Steel Wheel | | | Aluminum | | | Stainless 316 | | | Alloy 2205 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Arr. 1 (MP) | Arr. 4/8 (HP) | | Arr. 1 (MP) | Arr. 4/8 (HP) | | Arr. 1 (MP) | Arr. 4/8 (HP) | | Arr. 1 (MP) | Arr. 4/8 (HP) | |
| | All Sizes | Sizes 24-33 | Sizes 36-73 | All Sizes | Sizes 24-33 | Sizes 36-73 | All Sizes | Sizes 24-33 | Sizes 36-73 | All Sizes | Sizes 24-33 | Sizes 36-73 |
| -50° | 1.0 | | 1.0 | 0.97 | | 0.85 | 0.64 | | 0.56 | 0.85 | | 0.74 |
| 70° | 1.0 | | 1.0 | 0.97 | | 0.85 | 0.64 | | 0.56 | 0.85 | | 0.74 |
| 200° | 0.97 | | 0.96 | 0.95 | | 0.83 | 0.61 | | 0.53 | 0.79 | | 0.69 |
| 300° | 0.94 | | 0.95 | -- | | -- | 0.58 | | 0.51 | 0.76 | | 0.66 |
| 400° | 0.91 | | 0.95 | -- | | -- | 0.56 | | 0.49 | 0.73 | | 0.64 |
| 500° | 0.88 | | 0.94 | -- | | -- | 0.54 | | 0.47 | 0.70 | | 0.62 |
| 600° | 0.85 | | 0.92 | -- | | -- | 0.53 | | 0.46 | 0.68 | | 0.60 |
| 700° | 0.81 | | 0.91 | -- | | -- | 0.52 | | 0.45 | -- | | -- |
| 800° | 0.77 | | 0.89 | -- | | -- | 0.51 | | 0.45 | -- | | -- |

## Chart III
### TEMPERATURE CORRECTIONS

| Temp. °F. | Factor |
|---|---|
| 0 | .87 |
| 20 | .91 |
| 40 | .94 |
| 60 | .98 |
| 70 | 1.00 |
| 80 | 1.02 |
| 100 | 1.06 |
| 120 | 1.09 |
| 140 | 1.13 |
| 160 | 1.17 |
| 180 | 1.21 |
| 200 | 1.25 |
| 300 | 1.43 |
| 400 | 1.62 |
| 500 | 1.81 |
| 600 | 2.00 |
| 800 | 2.38 |

## Chart IV
### ALTITUDE [ft.] CORRECTIONS

| Alt. | Factor |
|---|---|
| 0 | 1.00 |
| 500 | 1.02 |
| 1000 | 1.04 |
| 1500 | 1.06 |
| 2000 | 1.08 |
| 2500 | 1.10 |
| 3000 | 1.12 |
| 3500 | 1.14 |
| 4000 | 1.16 |
| 4500 | 1.18 |
| 5000 | 1.20 |
| 5500 | 1.23 |
| 6000 | 1.25 |
| 7000 | 1.30 |
| 8000 | 1.35 |
| 9000 | 1.40 |
| 10000 | 1.45 |

## Chart V
### RAREFICATION CORRECTIONS

| Neg. inlet pressure "WG | Factor |
|---|---|
| 40 | 1.11 |
| 45 | 1.12 |
| 50 | 1.14 |
| 55 | 1.16 |
| 60 | 1.17 |
| 65 | 1.19 |
| 70 | 1.21 |
| 75 | 1.23 |
| 85 | 1.26 |
| 90 | 1.28 |
| 95 | 1.30 |
| 100 | 1.32 |
| 105 | 1.35 |
| 110 | 1.37 |

NOTE: If correction factor for both temperature and altitude is required, multiply factors from Charts III and IV together: 3000′ and 600°F. 1.12 x 2.00 = 2.24 [combined factor].

# Using Capacity Curves

Performance is shown according to sizes for quick reference. Brake horsepower increments are identified on each curve.

1. Ratings are based on standard 70°F. air at a density of .075 pounds per cubic foot. See page 6 for density correction factors.
2. Performance shown is for BC Pressure Blower Fans with outlet ducts, and with or without inlet ducts.
3. For a given selection, check the required fan speed at the maximum operating temperature against the maximum safe speeds shown in Chart I on page 6.

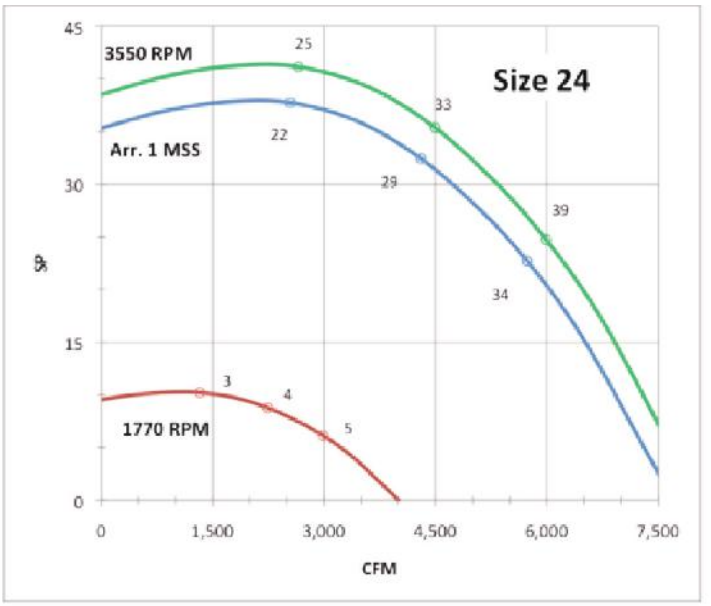
## Chart VI
**UNIT MAXIMUM OPERATING SPEED**

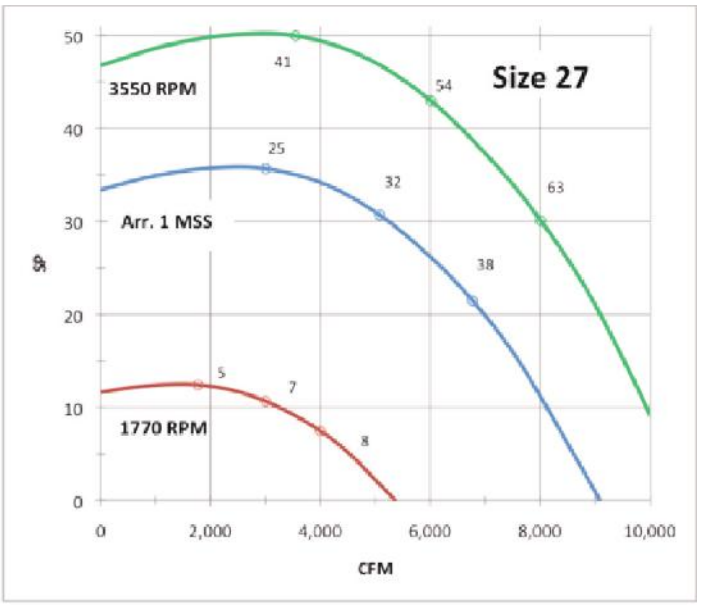
| Size | Arr. 1 | Arr. 4 | Arr. 8 |
|---|---|---|---|
| 24 | 3400 | 3600 | 3600 |
| 27 | 3000 | 3600 | 3600 |
| 30 | 3000 | 3600 | 3600 |
| 33 | 2900 | 3600 | 3600 |
| 36 | 2800 | 3600 | 3600 |
| 40 | 2400 | 3600 | 3600 |

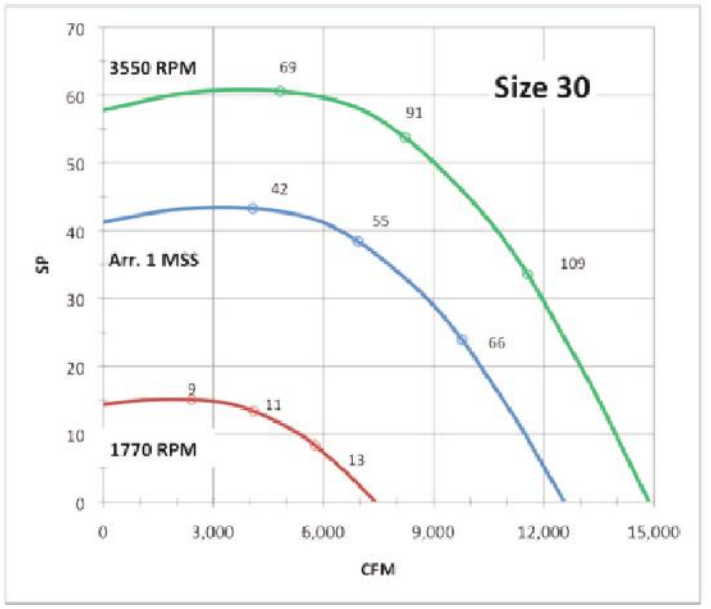
## Chart VI
**UNIT MAXIMUM OPERATING SPEED**

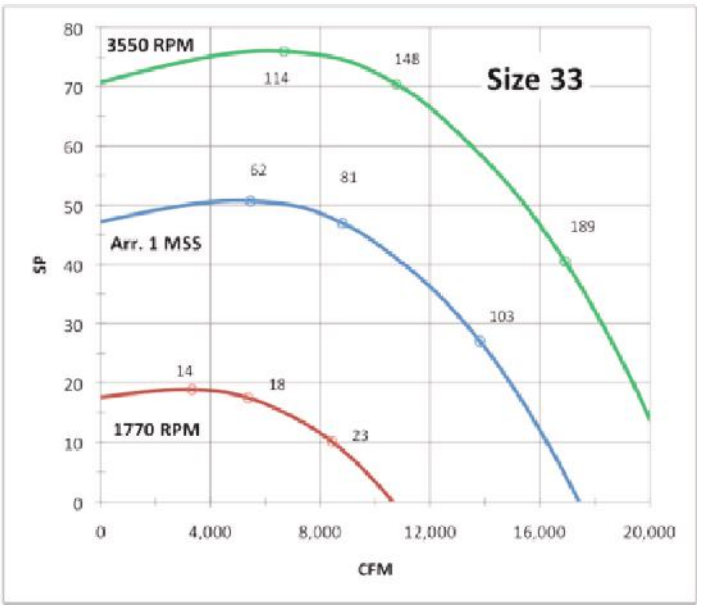
| Size | Arr. 1 | Arr. 4 | Arr. 8 |
|---|---|---|---|
| 44 | 2000 | 3000* | 2500 |
| 49 | 1900 | 2600* | 2200 |
| 54 | 1800 | — | 2000 |
| 60 | 1600 | — | 1800 |
| 66 | 1500 | — | 1500 |
| 73 | — | — | 1500 |

*Requires narrow width wheel construction.

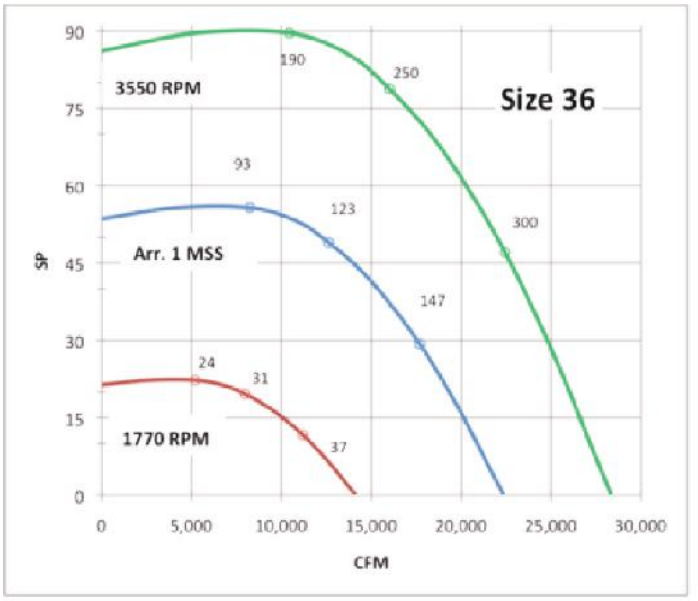


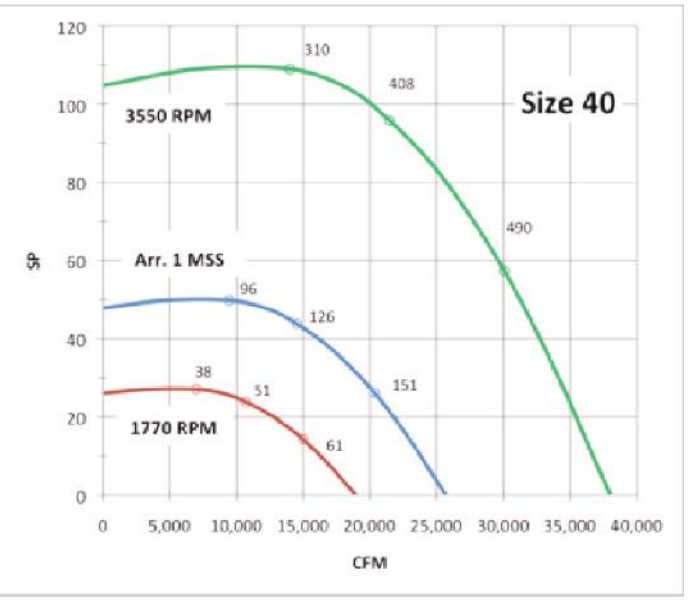



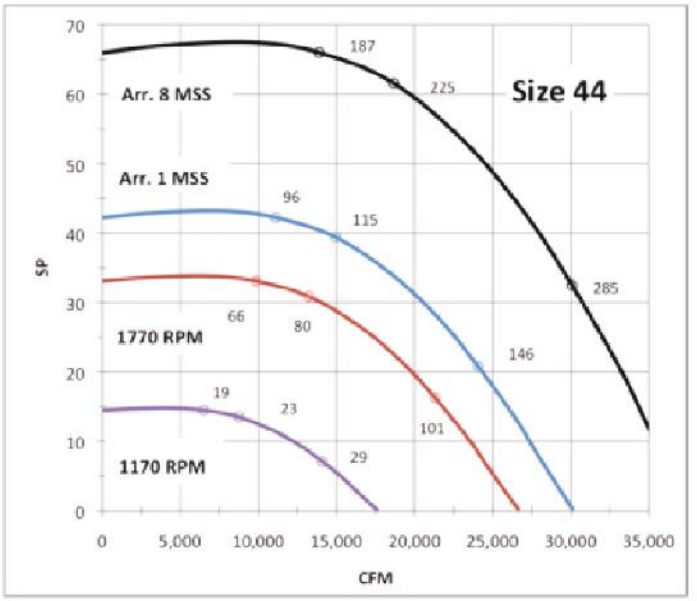



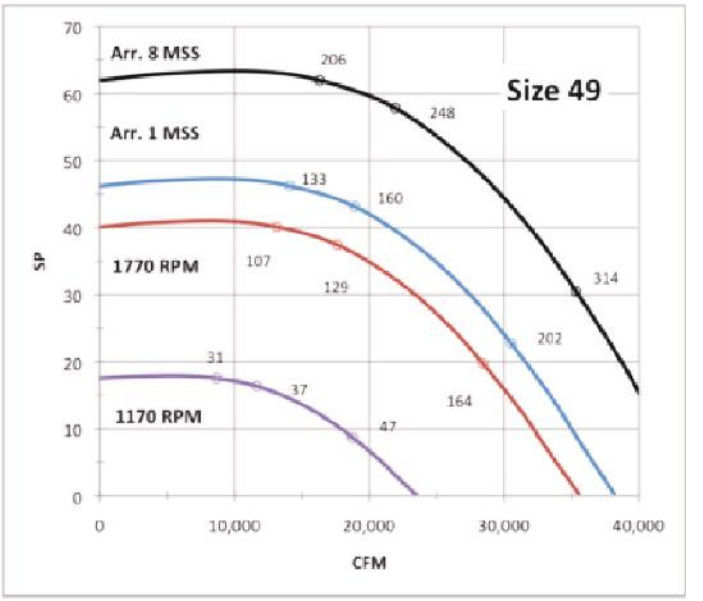



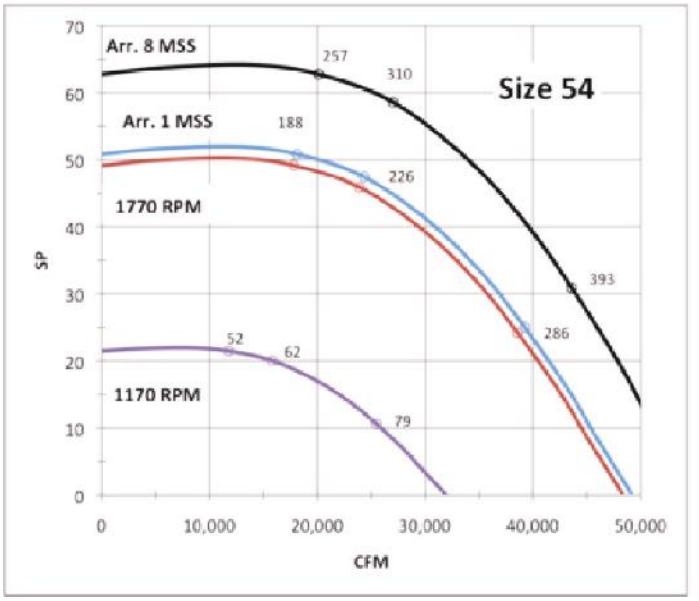
# Capacity Curves

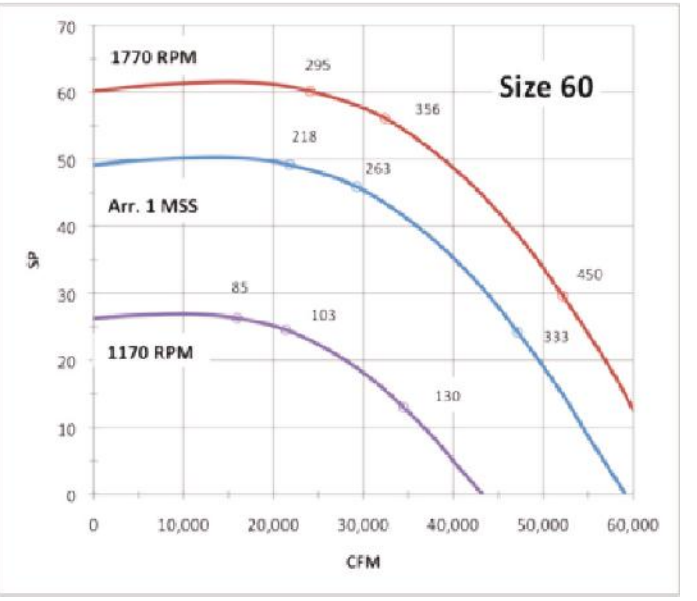


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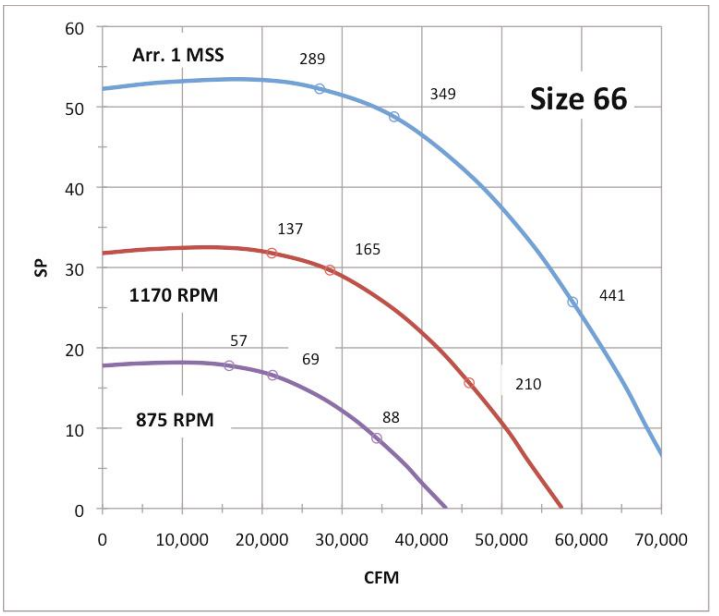
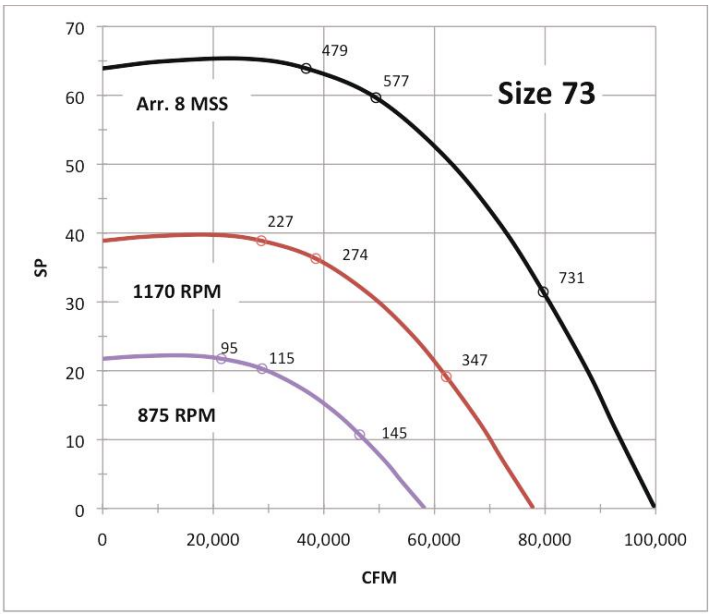


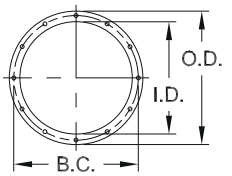

## MATERIAL SPECIFICATIONS [INCHES, POUNDS, WR² IN LB-FT²]

| Size | Housing | | | Base bars | Base angles | Bearing pedestal | | Wheel | | | | Bare fan weight [lbs.]‡ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Arr. 1 | | Arr. 4/8 | | |
| | Side | Scroll | Support channels | | | Top | Sides | Weight [lbs.]* | WR² [lbs.-ft.²]* | Weight [lbs.]* | WR² [lbs.-ft.²]* | Arr. 1 |
| 24 | ¼ | ¼ | 3″-4.1# | 3 x ⅜ | 3 x 2 x 3/16 | ⅜ | ⅜ | 86 | 44 | 86 | 44 | 952 |
| 27 | ¼ | ¼ | 3″-4.1# | 3 x ⅜ | 3 x 2 x 3/16 | ⅜ | ⅜ | 99 | 62 | 100 | 62 | 1118 |
| 30 | ¼ | ¼ | 3″-4.1# | 3 x ⅜ | 3 x 2 x 3/16 | ⅜ | ⅜ | 145 | 102 | 148 | 103 | 1359 |
| 33 | ¼ | ¼ | 4″-5.4# | 4 x ½ | 4 x 3 x ¼ | ½ | ⅜ | 167 | 145 | 170 | 147 | 1779 |
| 36 | ⅜ | ¼ | 4″-5.4# | 4 x ½ | 4 x 3 x ¼ | ½ | ⅜ | 225 | 261 | 230 | 265 | 2321 |
| 40 | ⅜ | ¼ | 4″-5.4# | 4 x ½ | 4 x 3 x ¼ | ½ | ⅜ | 328 | 465 | 339 | 474 | 2700 |
| 44 | ⅜ | ¼ | 4″-5.4# | 4 x ½ | 4 x 3 x ¼ | ½ | ⅜ | 362 | 623 | 371 | 633 | 3151 |
| 49 | ⅜ | ¼ | 5″-6.7# | 5 x ⅝ | 5 x 3½ x 5/16 | ⅝ | ⅜ | 423 | 905 | 436 | 919 | 3944 |
| 54 | ⅜ | ¼ | 5″-6.7# | 5 x ⅝ | 5 x 3½ x 5/16 | ⅝ | ⅜ | 533 | 1354 | 549 | 1372 | 4741 |
| 60 | ⅜ | ¼ | 5″-6.7# | 5 x ⅝ | 5 x 3½ x 5/16 | ⅝ | ⅜ | 631 | 2017 | 648 | 2042 | 5838 |
| 66 | ⅜ | ¼ | 5″-6.7# | 5 x ⅝ | 5 x 3½ x 5/16 | ⅝ | ⅜ | 776 | 3122 | 794 | 3163 | 6770 |
| 73 | ⅜ | ¼ | 6″-8.2# | 6 x ¾ | 6 x 4 x ⅜ | ⅝ | ½ | — | — | 1242 | 6229 | — |

* Wheel weight and WR2 will change with special diameter and narrow-width construction. Consult **nyb**.
‡ Bare fan weights for Arr. 4 and Arr. 8 fans are available on application. Consult **nyb**.

## FLANGED INLET

Furnished as standard with holes on the centerline.



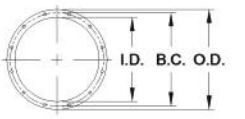

### DIMENSIONS [INCHES]

| Size | Inside diameter | Bolt circle | Outside diameter | Holes | |
|---|---|---|---|---|---|
| | | | | Number | Diameter |
| 24 | 16⅜ | 17⅞ | 19⅜ | 8 | 7/16 |
| 27 | 18¼ | 19⅝ | 21¼ | 8 | 7/16 |
| 30 | 20 | 21¾ | 23 | 16 | 9/16 |
| 33 | 21¾ | 23½ | 24¾ | 16 | 9/16 |
| 36 | 24⅜ | 26⅛ | 27⅜ | 16 | 9/16 |
| 40 | 26⅞ | 29⅛ | 30⅞ | 16 | 9/16 |
| 44 | 29½ | 31¾ | 33½ | 16 | 9/16 |
| 49 | 32⅞ | 35⅛ | 36⅞ | 16 | 9/16 |
| 54 | 36⅛ | 38⅜ | 40⅛ | 16 | 9/16 |
| 60 | 40⅛ | 42⅜ | 44⅛ | 16 | 9/16 |
| 66 | 43⅞ | 46⅛ | 47⅞ | 24 | 9/16 |
| 73 | 48⅞ | 51⅛ | 52⅞ | 24 | 9/16 |

Tolerance: ±⅛″

## FLANGED OUTLET

Furnished as standard with holes straddling the centerline.




### DIMENSIONS [INCHES]

| Size | Inside diameter | Bolt circle | Outside diameter | Holes | |
|---|---|---|---|---|---|
| | | | | Number | Diameter |
| 24 | 12 | 14 | 15 | 12 | 7/16 |
| 27 | 14 | 16 | 17 | 12 | 7/16 |
| 30 | 16 | 18 | 19 | 12 | 9/16 |
| 33 | 18 | 20 | 22 | 12 | 9/16 |
| 36 | 20 | 21¾ | 24 | 12 | 9/16 |
| 40 | 22 | 23¾ | 26 | 16 | 9/16 |
| 44 | 24 | 25⅞ | 28 | 16 | 9/16 |
| 49 | 26 | 28⅜ | 31 | 16 | 9/16 |
| 54 | 28 | 30⅜ | 33 | 16 | 9/16 |
| 60 | 32 | 34⅜ | 37 | 16 | 9/16 |
| 66 | 36 | 38⅜ | 41 | 24 | 9/16 |
| 73 | 40 | 42⅜ | 45 | 24 | 9/16 |

Tolerance: ±⅛″

# DIMENSIONS [INCHES] Not to be used for construction unless certified.

## ALL ARRANGEMENTS

| Size | A | | | | B | | C | D | F | G | H | J | K | | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | TH/TAD | BH/BAU | UB/TAU | DB | * | DB | | | | | Arr. 1 | | Arr. 1 | Arr. 8 | |
| 24 | 20 1/2 | 28 3/4 | 23 5/8 | 20 7/8 | 29 1/4 | 20 7/8 | 21 3/16 | 17 3/8 | 24 13/16 | 18 1/16 | 36 1/2 | 6 1/2 | 5 1/2 | 5 1/2 | 16 3/8 |
| 27 | 22 1/4 | 31 1/4 | 25 3/4 | 22 1/2 | 31 7/8 | 22 1/2 | 23 1/4 | 19 1/8 | 27 1/4 | 19 13/16 | 40 1/4 | 7 | 6 | 6 | 18 1/4 |
| 30 | 24 1/2 | 34 1/4 | 28 1/4 | 24 1/2 | 35 | 24 1/2 | 25 3/4 | 21 1/4 | 30 1/4 | 22 | 44 1/8 | 7 5/8 | 6 1/2 | 6 | 20 |
| 33 | 26 5/8 | 37 1/8 | 30 3/4 | 27 1/8 | 38 1/8 | 27 1/8 | 28 1/4 | 23 3/8 | 33 3/16 | 24 1/16 | 48 | 8 1/4 | 7 | 6 | 21 3/4 |
| 36 | 29 | 40 5/8 | 33 5/8 | 28 3/4 | 41 3/4 | 28 3/4 | 31 1/4 | 25 7/8 | 36 11/16 | 26 5/8 | 53 1/8 | 8 7/8 | 7 1/2 | 6 | 24 3/8 |
| 40 | 31 3/4 | 44 1/4 | 36 3/4 | 31 1/4 | 45 1/4 | 31 1/4 | 34 3/8 | 28 9/16 | 40 3/8 | 29 1/4 | 59 | 10 1/4 | 8 | 7 | 26 7/8 |
| 44 | 34 3/4 | 48 1/2 | 40 3/8 | 34 | 49 5/8 | 34 | 38 | 31 5/8 | 44 5/8 | 32 3/8 | 64 1/4 | 10 7/8 | 8 1/2 | 7 | 29 1/2 |
| 49 | 37 7/8 | 52 7/8 | 44 1/8 | 37 | 54 1/4 | 37 | 41 3/4 | 34 13/16 | 49 1/16 | 35 9/16 | 69 3/4 | 11 3/4 | 9 | 7 | 32 7/8 |
| 54 | 41 5/8 | 58 | 48 1/2 | 40 1/2 | 59 1/2 | 40 1/2 | 46 3/16 | 38 1/2 | 54 1/4 | 39 5/16 | 76 5/8 | 12 5/8 | 9 1/2 | 7 | 36 1/8 |
| 60 | 45 5/8 | 63 5/8 | 53 1/4 | 44 1/4 | 65 5/8 | 44 1/4 | 51 | 42 5/8 | 59 15/16 | 43 3/8 | 84 5/8 | 13 5/8 | 10 | 8 | 40 1/8 |
| 66 | 49 7/8 | 69 1/2 | 58 1/4 | 48 1/4 | 71 1/2 | 48 1/4 | 56 1/16 | 46 7/8 | 65 7/8 | 47 11/16 | 91 3/4 | 14 3/4 | 10 1/2 | 8 | 43 7/8 |
| 73 | 55 5/8 | 77 3/8 | 64 7/8 | 52 7/8 | 78 3/4 | 52 7/8 | 61 15/16 | 51 7/8 | 72 13/16 | 52 11/16 | — | 15 7/8 | — | 8 | 48 7/8 |

| Size | M | N | | O | P | R | S | | T | U | a | b | | c | d | Base holes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Arr. 1 | Arr. 8 | Arr. 1 | DB | | Arr. 1 | Arr. 8 | | | | * | DB | | | |
| 24 | 6 1/2 | 18 | 18 | 27 1/2 | 28 | 4 3/4 | 8 13/16 | 8 13/16 | 17 | 18 1/2 | 19 5/8 | 38 1/4 | 35 1/2 | 23 | 16 3/4 | 3/4" |
| 27 | 7 1/4 | 20 | 20 | 30 1/4 | 30 1/2 | 5 1/8 | 9 13/16 | 9 13/16 | 18 1/2 | 20 | 21 1/2 | 42 1/16 | 39 | 25 1/4 | 18 3/8 | 3/4" |
| 30 | 8 | 22 | 22 | 33 | 33 1/4 | 5 1/2 | 10 13/16 | 10 13/16 | 20 1/4 | 21 3/4 | 23 7/8 | 46 1/2 | 42 3/4 | 28 | 20 3/8 | 3/4" |
| 33 | 8 3/4 | 24 | 24 | 36 3/4 | 37 1/2 | 6 3/8 | 11 13/16 | 11 13/16 | 22 1/2 | 24 1/2 | 26 3/16 | 51 1/4 | 48 1/2 | 30 3/4 | 22 3/8 | 3/4" |
| 36 | 9 3/4 | 26 | 26 | 39 3/4 | 40 1/2 | 6 7/8 | 12 13/16 | 12 13/16 | 24 1/2 | 26 1/2 | 28 15/16 | 56 5/16 | 52 1/2 | 33 15/16 | 24 11/16 | 1" |
| 40 | 10 3/4 | 30 | 30 | 44 3/4 | 43 1/4 | 7 3/8 | 14 13/16 | 14 13/16 | 26 1/4 | 28 1/4 | 31 13/16 | 61 3/8 | 56 1/4 | 37 3/8 | 27 1/8 | 1" |
| 44 | 11 7/8 | 33 | 33 | 48 7/8 | 47 3/4 | 7 15/16 | 16 5/16 | 16 5/16 | 28 3/4 | 30 3/4 | 35 3/16 | 67 3/8 | 61 3/4 | 41 5/16 | 29 15/16 | 1" |
| 49 | 13 | 35 | 35 | 53 | 52 3/4 | 9 | 17 5/16 | 17 5/16 | 31 3/4 | 34 1/4 | 38 5/8 | 73 15/16 | 68 1/4 | 45 7/16 | 32 15/16 | 1" |
| 54 | 14 1/2 | 36 | 36 | 55 1/2 | 57 1/2 | 9 3/4 | 17 13/16 | 17 13/16 | 34 1/2 | 37 | 42 11/16 | 80 15/16 | 74 | 50 3/16 | 36 3/8 | 1" |
| 60 | 16 | 38 | 38 | 59 | 63 | 10 1/2 | 18 13/16 | 18 13/16 | 38 | 40 1/2 | 47 3/16 | 89 5/8 | 81 1/2 | 55 7/16 | 40 1/8 | 1" |
| 66 | 17 1/2 | 40 | 40 | 62 1/2 | 69 1/4 | 11 1/4 | 19 13/16 | 19 13/16 | 41 1/4 | 43 3/4 | 51 7/8 | 98 3/16 | 89 3/4 | 60 15/16 | 44 1/8 | 1" |
| 73 | 19 3/8 | — | 42 | — | 76 1/4 | 12 11/16 | — | 20 13/16 | 45 3/4 | 48 3/4 | 57 5/16 | 108 1/4 | 98 3/4 | 67 3/8 | 48 11/16 | 1" |

* For TH, BH, UB, TAD, BAU, or TAU discharge.

NOTE: Various fan discharges will have housing and scroll bracing additional to what is shown.

## ARRANGEMENT 4/8

| Size | Frame size | H | N | O | | S | SS |
|---|---|---|---|---|---|---|---|
| | | Arr. 8 | Arr. 4 | Arr. 4 | Arr. 8 | Arr. 4 | Arr. 8 |
| 24 | 254T | 56 1/4 | 15 5/8 | 25 1/8 | 52 3/4 | 6 5/16 | 11 5/16 |
| | 256T | 58 | 17 3/8 | 26 7/8 | 54 1/2 | 7 3/16 | 12 3/16 |
| | 284T | 58 5/8 | 17 3/8 | 26 7/8 | 55 1/8 | 7 3/16 | 12 1/2 |
| | 284TS | 57 1/4 | 17 3/8 | 26 7/8 | 53 3/4 | 7 3/16 | 11 13/16 |
| | 286T | 60 1/8 | 18 7/8 | 28 3/8 | 56 5/8 | 7 15/16 | 13 1/4 |
| | 286TS | 58 3/4 | 18 7/8 | 28 3/8 | 55 1/4 | 7 15/16 | 12 9/16 |
| | 324TS | 60 1/4 | 19 7/8 | 29 3/8 | 56 3/4 | 8 7/16 | 13 5/16 |
| | 326TS | 61 3/4 | 21 3/8 | 30 7/8 | 58 1/4 | 9 3/16 | 14 1/16 |
| 27 | 254T | 60 | 15 5/8 | 25 7/8 | 56 | 6 5/16 | 11 9/16 |
| | 256T | 61 3/4 | 17 3/8 | 27 5/8 | 57 3/4 | 7 3/16 | 12 7/16 |
| | 284T | 62 3/8 | 17 3/8 | 27 5/8 | 58 3/8 | 7 3/16 | 12 3/4 |
| | 286T | 63 7/8 | 18 7/8 | 29 1/8 | 59 7/8 | 7 15/16 | 13 1/2 |
| | 324TS | 64 | 19 7/8 | 30 1/8 | 60 | 8 7/16 | 13 9/16 |
| | 326TS | 65 1/2 | 21 3/8 | 31 5/8 | 61 1/2 | 9 3/16 | 14 5/16 |
| | 364TS | 65 3/8 | 21 1/4 | 31 1/2 | 61 3/8 | 9 1/8 | 14 1/4 |
| | 365TS | 66 3/8 | 22 1/4 | 32 1/2 | 62 3/8 | 9 5/8 | 14 3/4 |
| 30 | 254T | 63 3/8 | 15 5/8 | 26 5/8 | 58 3/4 | 6 5/16 | 11 9/16 |
| | 256T | 65 1/8 | 17 3/8 | 28 3/8 | 60 1/2 | 7 3/16 | 12 7/16 |
| | 284T | 65 3/4 | 17 3/8 | 28 3/8 | 61 1/8 | 7 3/16 | 12 3/4 |
| | 286T | 67 1/4 | 18 7/8 | 29 7/8 | 62 5/8 | 7 15/16 | 13 1/2 |
| | 324TS | 67 3/8 | 19 7/8 | 30 7/8 | 62 3/4 | 8 7/16 | 13 9/16 |
| | 326TS | 68 7/8 | 21 3/8 | 32 3/8 | 64 1/4 | 9 3/16 | 14 5/16 |
| | 364TS | 68 3/4 | 21 1/4 | 32 1/4 | 64 1/8 | 9 1/8 | 14 1/4 |
| | 365TS | 69 3/4 | 22 1/4 | 33 1/4 | 65 1/8 | 9 5/8 | 14 3/4 |
| | 404TS | 71 | 23 1/8 | 34 1/8 | 66 3/8 | 10 5/8 | 15 3/8 |
| | 405TS | 72 1/2 | 24 5/8 | 35 5/8 | 67 7/8 | 10 13/16 | 16 1/8 |
| | 444TS | 75 5/8 | 27 1/4 | 38 1/4 | 71 | 12 1/8 | 17 11/16 |
| | 445TS | 77 5/8 | 29 1/4 | 40 1/4 | 73 | 13 1/8 | 18 11/16 |
| 33 | 254T | 66 3/4 | 15 5/8 | 28 3/8 | 62 1/2 | 5 13/16 | 11 1/16 |
| | 256T | 68 1/2 | 17 3/8 | 30 1/8 | 64 1/4 | 6 11/16 | 11 15/16 |
| | 284T | 69 1/8 | 17 3/8 | 30 1/8 | 64 7/8 | 6 11/16 | 12 1/4 |
| | 286T | 70 5/8 | 18 7/8 | 31 5/8 | 66 3/8 | 7 7/16 | 13 |
| | 324T | 72 1/4 | 19 7/8 | 32 5/8 | 68 | 7 15/16 | 13 13/16 |
| | 326T | 73 3/4 | 21 3/8 | 34 1/8 | 69 1/2 | 8 11/16 | 14 9/16 |
| | 364TS | 72 1/8 | 21 1/4 | 34 | 67 7/8 | 8 5/8 | 13 3/4 |
| | 365TS | 73 1/8 | 22 1/4 | 35 | 68 7/8 | 9 1/8 | 14 1/4 |
| | 404TS | 74 3/8 | 23 1/8 | 35 7/8 | 70 1/8 | 9 9/16 | 14 7/8 |
| | 405TS | 75 7/8 | 24 5/8 | 37 3/8 | 71 5/8 | 10 5/16 | 15 5/8 |
| | 444TS | 79 | 27 1/4 | 40 | 74 3/4 | 11 5/8 | 17 3/16 |
| | 445TS | 81 | 29 1/4 | 42 | 76 3/4 | 12 5/8 | 18 3/16 |
| | 447TS | 84 1/2 | 32 3/4 | 45 1/2 | 80 1/4 | 14 3/8 | 19 15/16 |

## ARRANGEMENT 4/8

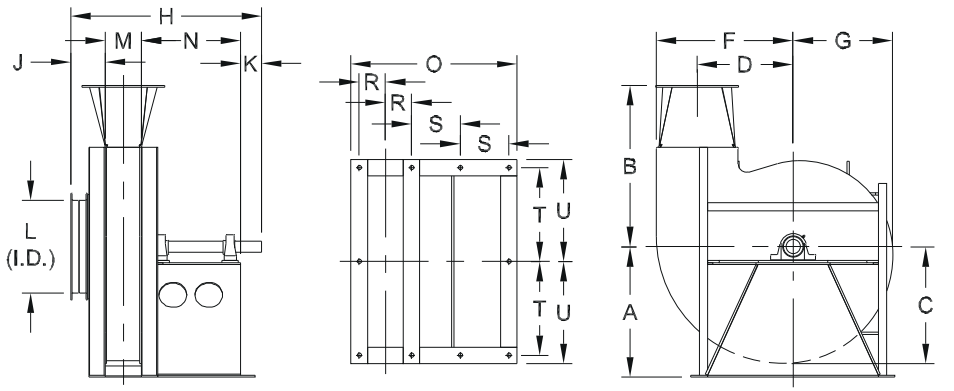
| Size | Frame size | H | N | O | | S | SS |
|---|---|---|---|---|---|---|---|
| | | Arr. 8 | Arr. 4 | Arr. 4 | Arr. 8 | Arr. 4 | Arr. 8 |
| 36 | 284T | 72 3/4 | 17 3/8 | 31 1/8 | 67 7/8 | 6 11/16 | 12 1/4 |
| | 286T | 74 1/4 | 18 7/8 | 32 5/8 | 69 3/8 | 7 7/16 | 13 |
| | 324T | 75 7/8 | 19 7/8 | 33 5/8 | 71 | 7 15/16 | 13 13/16 |
| | 326T | 77 3/8 | 21 3/8 | 35 1/8 | 72 1/2 | 8 11/16 | 14 9/16 |
| | 364T | 77 7/8 | 21 1/4 | 35 | 73 | 8 5/8 | 14 13/16 |
| | 365T | 78 7/8 | 22 1/4 | 36 | 74 | 9 1/8 | 15 5/16 |
| | 404T | 81 | 23 1/8 | 36 7/8 | 76 1/8 | 9 9/16 | 16 3/8 |
| | 405T | 82 1/2 | 24 5/8 | 38 3/8 | 77 5/8 | 10 5/16 | 17 1/8 |
| 40 | 324T | 83 1/4 | 19 7/8 | 34 5/8 | 77 | 7 15/16 | 14 5/16 |
| | 326T | 84 3/4 | 21 3/8 | 36 1/8 | 78 1/2 | 8 11/16 | 15 1/16 |
| | 364T | 85 1/4 | 21 1/4 | 36 | 79 | 8 5/8 | 15 5/16 |
| | 365T | 86 1/4 | 22 1/4 | 37 | 80 | 9 1/8 | 15 13/16 |
| | 404T | 87 3/8 | 23 1/8 | 37 7/8 | 82 1/8 | 9 9/16 | 16 7/8 |
| | 405T | 89 7/8 | 24 5/8 | 39 3/8 | 83 5/8 | 10 15/16 | 17 5/8 |
| | 444T | 93 3/4 | 27 1/4 | 42 | 87 1/2 | 11 5/8 | 19 9/16 |
| | 445T | 95 3/4 | 29 1/4 | 44 | 89 1/2 | 12 5/8 | 20 9/16 |
| 44 | 364T | 90 | 21 1/4 | 37 1/8 | 83 1/8 | 8 5/8 | 15 5/16 |
| | 365T | 91 | 22 1/4 | 38 1/8 | 84 1/8 | 9 1/8 | 15 13/16 |
| | 404T | 93 1/8 | 23 1/8 | 39 | 86 1/4 | 9 9/16 | 16 7/8 |
| | 405T | 94 5/8 | 24 5/8 | 40 1/2 | 87 3/4 | 10 5/16 | 17 5/8 |
| | 444T | 98 1/2 | 27 1/4 | 43 1/8 | 91 5/8 | 11 5/8 | 19 9/16 |
| | 445T | 100 1/2 | 29 1/4 | 45 1/8 | 93 5/8 | 12 5/8 | 20 9/16 |
| 49 | 404T | 97 1/8 | 23 1/8 | 41 1/8 | 90 3/8 | 9 1/16 | 16 3/8 |
| | 405T | 98 5/8 | 24 5/8 | 42 5/8 | 91 7/8 | 9 13/16 | 17 1/8 |
| | 444T | 102 1/2 | 27 1/4 | 45 1/4 | 95 3/4 | 11 1/8 | 19 1/16 |
| | 445T | 104 1/2 | 29 1/4 | 47 1/4 | 97 3/4 | 12 1/8 | 20 1/16 |
| | 447T | 108 | 32 3/4 | 50 3/4 | 101 1/4 | 13 7/8 | 21 13/16 |
| 54 | 444T | 105 7/8 | — | — | 98 1/4 | — | 19 1/16 |
| | 445T | 107 7/8 | — | — | 100 1/4 | — | 20 1/16 |
| | 447T | 111 3/8 | — | — | 103 3/4 | — | 21 13/16 |
| 60 | 444T | 111 3/8 | — | — | 102 3/4 | — | 19 9/16 |
| | 445T | 113 3/8 | — | — | 104 3/4 | — | 20 9/16 |
| | 447T | 116 7/8 | — | — | 108 1/4 | — | 22 5/16 |
| 66 | 444T | 116 | — | — | 106 1/4 | — | 19 9/16 |
| | 445T | 118 | — | — | 108 1/4 | — | 20 9/16 |
| | 447T | 121 1/2 | — | — | 111 3/4 | — | 22 5/16 |
| 73 | 444T | 121 | — | — | 111 1/8 | — | 19 1/16 |
| | 445T | 123 | — | — | 113 1/8 | — | 20 1/16 |
| | 447T | 126 1/2 | — | — | 116 5/8 | — | 21 13/16 |

NOTE: Arr. 8 pedestals are designed per job for non-NEMA frame size motors.

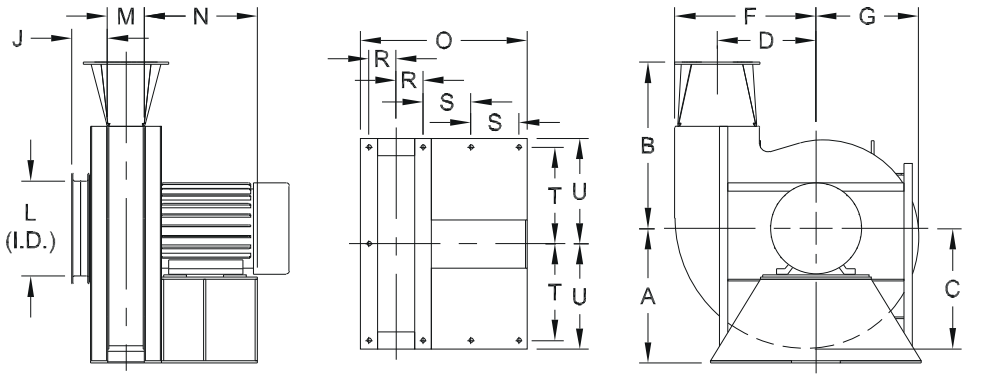
Tolerance: ± 1/8"

# DRAWINGS Dimensions not to be used for construction unless certified.

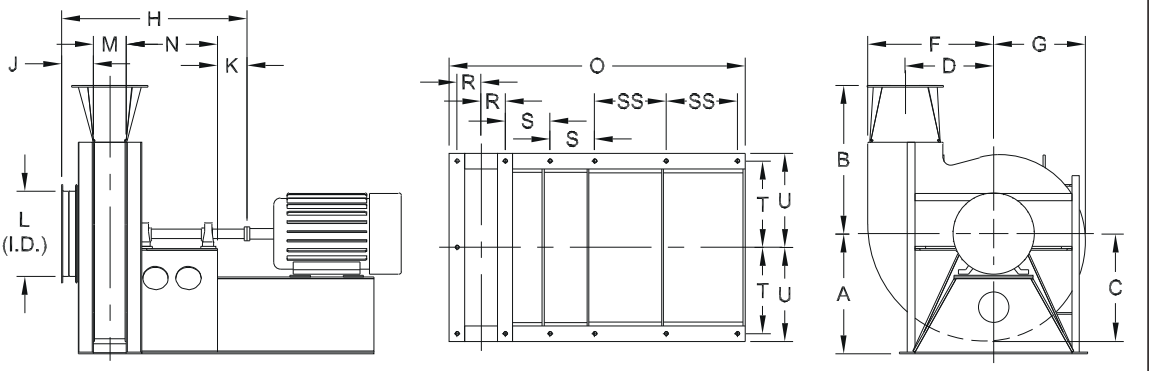
## ARRANGEMENT 1




## ARRANGEMENT 4

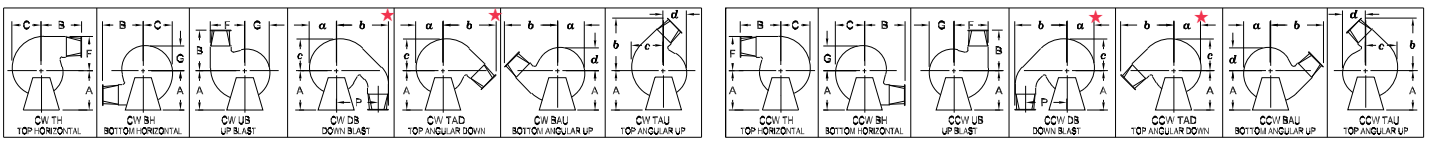



## ARRANGEMENT 8




M and D are outside housing dimensions. J is from housing side over inlet. L is inside diameter.

## FAN DISCHARGES – VIEWED FROM DRIVE SIDE

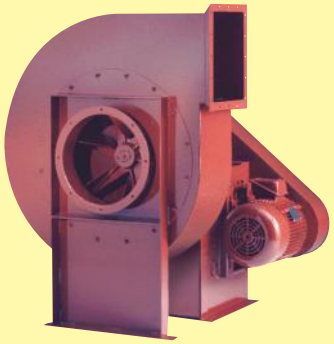



★ Down Blast and Top Angular Down discharge positions must be evaluated for clearance of accessories such as unitary base, etc. Consult **nyb** with specific details.

The New York Blower Company has a policy of continuous product development and reserves the right to change designs and specifications without notice.

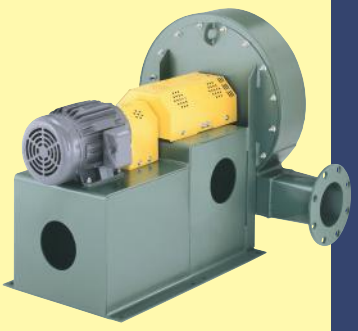
# Complete Selection of Air-Moving Equipment

The New York Blower Company offers thousands of different types, models, and sizes of air-moving equipment. Contact your nyb representative for assistance in identifying the best fan for your application.



## DUST/MATERIAL HANDLING

Wide range of duty available with unique fan lines capable of handling light dust to heavy material. Typical applications include dust-collection and high-pressure process along with material-conveying.



## AIR-HANDLING [CENTRIFUGAL]

Designed for clean to moderately dirty gas streams. Commercial and industrial HVAC, process cooling, light material-conveying, heat removal, and dryer exhaust are just a few of the numerous sample applications

## AIR-HANDLING [AXIAL]

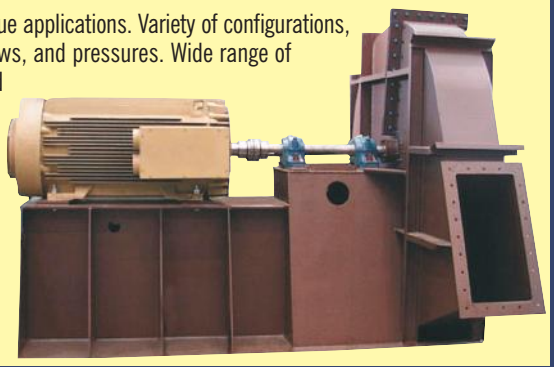
For the ideal handling of clean to moderately dirty airstreams. Commercial and industrial HVAC, drying and cooling systems, fume extraction, and process-heat removal are typical applications.

## FIBERGLASS REINFORCED PLASTIC [FRP]

Choice of performance and duty for corrosive gas streams. Applications include chemical process, wastewater treatment, laboratory hood exhaust, and tank aeration.

## CUSTOM PRODUCTS

Designed for unique applications. Variety of configurations, temperatures, flows, and pressures. Wide range of modifications and accessories are available to meet the most demanding specifications.



# Leading the industry forward since 1889

## ROOF VENTILATORS

Including both hooded and upblast ventilators, propeller fans, and centrifugal roof exhausters. These units are ideal for industrial, commercial, and institutional applications.

nyb

## HEATING PRODUCTS

Industrial-duty steam unit heaters with steam heating coils are available for facility heating and process-heat transfer.

## PROCESS/FAN COMPONENTS

Plug fans, plenum fans, wheels, inlet cones, and housings for a wide variety of OEM applications. Process/fan components are used in air-handling units, ovens, dryers, freezer tunnels, and filtration systems.