

BELT DRIVE VANEAXIAL FIXED PITCH FANS

BULLETIN 673
JANUARY, 2018



- Capacities to 100,000 CFM
- Static pressures to 9"WG
- Temperatures to 200°F.



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VANEAXIAL FANS

Vaneaxial Fixed Pitch Fans are designed and constructed for high pressure ventilating and industrial process applications requiring the compactness of an axial fan.

DESIGN FEATURES

- **Capacities** – to 100,000 CFM.
- **Pressures** – to 9" WG.
- **Fifteen belt-drive sizes** – 12" through 60" wheel diameters.
- **Multiple hub ratios are available** – for increased selection flexibility.
- **Choice of belt-drive configurations** – belt drive in five mounting positions.
- **Precision rolled tube** – for minimum tip clearance and maximum efficiency.



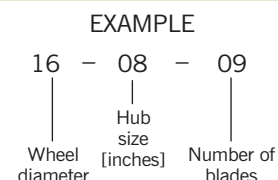
Arrangement 9-D with access door, motor, V-belt drive, and belt guard.

CONSTRUCTION FEATURES

- **Cast aluminum wheel** – airfoil blades provide highly efficient, quiet operation for clean-air applications.
- **Heavy-gauge welded components** – provide structural strength, durability, and minimal leakage.
- **Bearings** – selected to provide long service life... 50,000 hours average minimum L-10. External lubrication fittings are standard.
- **Industrial finish** – nyb green industrial grade coating.
- **Straightening vanes** – aerodynamically designed vanes convert velocity pressure to static pressure for maximum efficiency.
- **Flanged connections** – Welded flanges with slotted holes.
- **Lubrication** – extended lubrication lines with external fittings provided on all belt-drive Vaneaxial Fixed Pitch Fans.
- **Adjustable motor mount** – positive screw adjustment for easy belt-tensioning.
- **Shafting** – straightened to close tolerance to minimize “run out” and ensure smooth operation.
- **Balance** – all wheels are precision-balanced prior to assembly. Fans with motors and drives mounted by nyb are checked at the specified running speed.
- **Inner-tube construction** – Structurally supports bearings and drive in airstream. Removable end cover allows access to bearings and drive.
- **Tapered hub with split taper bushing** – for ease in wheel removal.
- **Non-belt well design** – for improved fan efficiencies throughout operating range. Includes sealed belt guard minimizing airstream leakage.

SIZING NOMENCLATURE

6-digit model number designates the wheel diameter, hub size, and number of blades.



MOUNTING ARRANGEMENTS

Arrangement 9-M with motor and V-belt drive. Fork openings allow for easy maneuvering during installation.



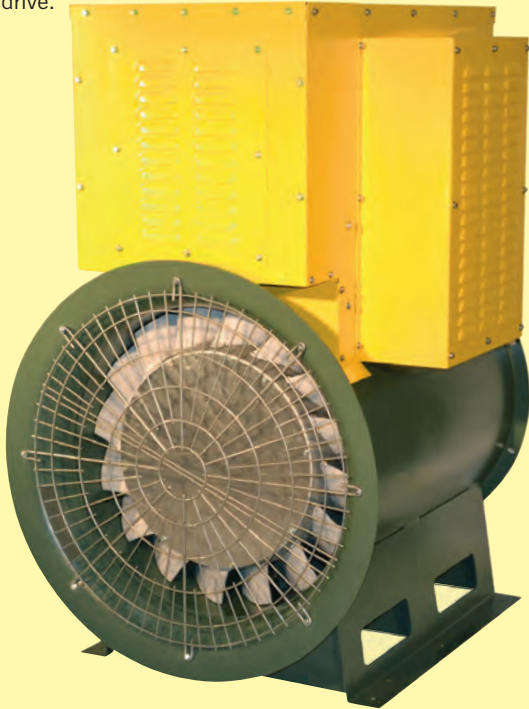
Arrangement 9-D with access door, motor, V-belt drive, and belt guard.



| | | | |
|--|--|---|--|
| <p>ARRANGEMENT</p> <p>9-M</p> <p>WITH MOUNTING LEGS</p> | | <p>Fabricated mounting legs facilitate fan mounting on the floor, ceiling, or in a vertical position on a wall. Flange connections are standard.</p> | <p>9-M Mounting Positions viewed from discharge end</p> |
| <p>ARRANGEMENT</p> <p>9-V</p> <p>FOR VERTICAL MOUNTING</p> | | <p>Fans are equipped with four mounting brackets suitable for floor, platform, or ceiling mounting. Motor is located on centerline between two of the four brackets. Flange connections are standard.</p> | <p>9-V Mounting Positions</p> |
| <p>ARRANGEMENT</p> <p>9-S</p> <p>FOR SUSPENDED MOUNTING</p> | | <p>Fans for suspended mounting are equipped with side supports suitable for attachment to rods hung from the ceiling structure. Flange connections are standard.</p> | <p>9-S Mounting Positions</p> |
| <p>ARRANGEMENT</p> <p>9-D</p> <p>FOR DUCT MOUNTING</p> | | <p>Units feature flanges on inlet and discharge for mounting to the duct work.</p> | |
| <p>ARRANGEMENT</p> <p>9-R</p> <p>FOR ROOF MOUNTING</p> | | <p>Roof-mounted fans are furnished with curb caps and collars extending below the curb cap for easy connection. Stackhoods and weather covers are optional.</p> | |

ACCESSORIES AND MODIFICATIONS

Arrangement 9-M with inlet bell with guard, weather cover, motor, and V-belt drive.



Arrangement 9-R with stack hood, curb cap, access door, motor, V-belt drive, and belt guard.

1. INLET BELL WITH GUARD

Inlet bell minimizes losses associated with non-ducted inlet applications. Includes wire guard.

2. VIBRATION ISOLATION –not shown

Rubber-in-shear or spring-type isolation mounts reduce the transmission of vibration to the mounting structure.

3. SAFETY EQUIPMENT/WEATHER COVER

Belt guards are included as standard. Inlet and outlet guards, and louvered weather covers are available. Selection of appropriate safety accessories is the responsibility of the system designer familiar with the specific installation.

4. COMPANION FLANGES –not shown

Fit flush with fan inlet and outlet flanges, provided with matching hole pattern.

5. STACK HOOD

Stack hood with built-in back-draft damper for vertical outdoor exhaust applications.

6. CURB CAP

Gusseted cover with nailer holes on perimeter includes flange for vertical fan mounting.

7. DRAINS –not shown

For horizontal mounted fans...drain located at the lowest point of the housing tube.

8. ACCESS DOOR

Gasketed, latch-type door swings open on hinges after turning cam levers...bolt-on door also available...provides visual access to wheel...available in all sizes.

9. SHAFT SEAL –not shown *Requires belt well.

Ceramic-felt seal elements encased between metal backing plate and retaining disc...elements can be easily split for field installation and maintenance...lubricated lip seals with extended lines are also available.

10. MOTORS AND DRIVES

A wide-array of motor and drive components are available factory-mounted by **nyb**.

11. DAMPERS –not shown

Bolt-on vortex damper assembly provides volume control...for modulating systems...electric and pneumatic damper operators also available.

12. SPARK-RESISTANT CONSTRUCTION –not shown

AMCA B [wheel type] SRC and AMCA C [buffer type] SRC construction available on Sizes 16-60. SRC construction not available with inlet damper or inlet guard. *Requires belt well.

13. BELT WELL –not shown

Minimizes belt and bearing exposure to gas stream contaminants. Includes belt guard as standard.

Protective coatings and special alloys are available to combat corrosion problems.

HOUSINGS AND STRUCTURALS

Special corrosion resistant paints and spray coatings are available under a variety of trade names. **nyb** works with experienced coating applicators who can apply coatings to meet a wide range of requirements.

ACCESSORY PERFORMANCE

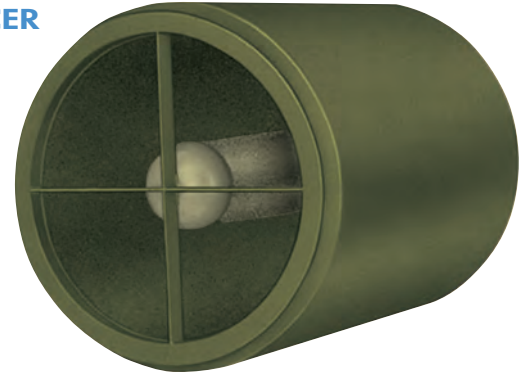
INLET BELL

Catalog ratings shown in this bulletin are for Vaneaxial Fixed Pitch Fans with free inlet and ducted outlet. When no inlet duct is used, entrance loss must be added to the static pressure calculated for the system. For bare inlets, that loss is equal to the fan velocity pressure. **Example:** 4200 FPM velocity = 1.1"WG [see Chart I at right]. Inlet bells render such loss negligible and are available at nominal cost. Sizes 12 through 48 constructed of fiberglass reinforced plastic; Sizes 54 and 60 constructed of steel.

CHART I VELOCITY PRESSURE

| Velocity [FPM] | VP |
|----------------|-------|
| 1000 | .062 |
| 1400 | .122 |
| 1800 | .202 |
| 2200 | .301 |
| 2600 | .421 |
| 3000 | .560 |
| 3400 | .719 |
| 3800 | .899 |
| 4200 | 1.098 |
| 4800 | 1.317 |
| 5000 | 1.556 |
| 5200 | 1.686 |
| 5400 | 1.815 |
| 5600 | 1.955 |
| 5800 | 2.093 |
| 6000 | 2.244 |

SILENCER



Available for all sizes of Vaneaxial Fixed Pitch Fans with matching standard flanges for either inlet or outlet applications. Silencers are available in two sizes to better match system cost as well as sound attenuation parameters. All silencers utilize heavy-welded steel construction filled with high-density acoustical absorption material. For more detailed application information and attenuation performance, refer to Engineering Supplement ES-673.

SAFETY EQUIPMENT

Safe operation of air-moving equipment is dependent on proper installation and maintenance. This includes selection and use of appropriate safety accessories for the specific installation. Such safety accessories are available from **nyb**. However, selection of the appropriate devices is the responsibility of the system designer who must be aware of the fan location, fan accessibility in the particular installation, and adjacent equipment. Neither **nyb** nor its sales representatives are in a position to make such a determination. 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, 30 West University Drive, Arlington Heights, Illinois 60004.

FAN TO SIZE AND DRAWINGS ON DEMAND

Fan to Size online allows customers to select fans without the need to download software on their computers or tablets. Fans can be selected by product categories, types or applications. Additionally, drawings are generated to supplement fan selections.



FAN TO SIZE SELECTION BENEFITS

- Compare multiple product lines.
- Metric or English units.
- Add silencers.
- Add accessories.
- Save data for future use.
- Calculate density based on rarefaction, compression, and molecular weight.

DRAWINGS ON DEMAND BENEFITS

- Generate drawing package specifically tailored to the user's application requirements.
- Fan-performance curves.
- Select fan's rotation, discharge position, motor frame size and u-base.
- Add accessories (dampers, silencers, stack hoods, curb caps)
- Installation and Maintenance Manuals.

How to Use Capacity Tables

For a given fan size, CFM, and static pressure, capacity tables can be used to obtain outlet velocity, fan RPM, and BHP. If capacities are at conditions other than 70°F, sea level, or standard density [.075 lb./cu. ft.], correction factors must be applied to static pressure and BHP.

| PROCEDURES | STEPS | EXAMPLE: A belt-drive fan is required for 18000 CFM at 3"WG at 100°F and 6000 feet above sea level. |
|---|-------|--|
| If conditions other than standard are involved, correct static pressure for actual altitude and temperature using Chart IV. | 1 | Chart IV gives a 1.33 factor for 100°F and 6000 feet. Corrected SP is 3"WG x 1.33 = 4"WG at 70°F and sea level. Select fan from capacity tables for 18000 CFM at 4"WG. |
| Select size, RPM, and BHP of fan from capacity table. | 2 | A Size 27-12-09 is selected for 18000 CFM at 4"WG at 2859 RPM and 23.9 BHP. |
| Check maximum safe speed of fan at operating temperatures as shown in Charts II or III. | 3 | From Chart II and III, the maximum safe speed for a Size 27-12-09 fan at 100°F and 2906 RPM (2965 x .98). Fan is satisfactory for operation at 100°F. |
| Determine actual performance at operating conditions by correcting SP and BHP. | 4 | Actual performance: 18000 CFM at 3"WG (4" ÷ 1.33) at 2859 RPM at 18.0 BHP (22.7 ÷ 1.33) at 100°F and 6000 feet above sea level. |

MAXIMUM SAFE SPEED INFORMATION

Chart II details maximum safe speed of standard wheels at 70°F. When temperatures are involved, multiply the appropriate safe operating speed shown in Chart II by the factor shown in Chart III. Maximum operating temperature for standard fans is 120°F. For temperatures above 120°F, as indicated by tinted areas in Charts III and IV select drive for a minimum of 2.0 service factor.

CHART II

MAXIMUM FAN STRUCTURE OPERATING SPEEDS FOR TEMPERATURES TO 200°F

Maximum operating speeds apply only to wheels operated at or below stated temperature and free of material build-up, corrosion, or wear.

| Size | RPM | Size | RPM |
|----------|------|----------|------|
| 12-06-06 | 4500 | 29-12-09 | 2760 |
| 14-06-06 | 4500 | 29-16-12 | 2760 |
| 14-08-08 | 4500 | 29-20-16 | 2760 |
| 16-08-09 | 4500 | 32-16-09 | 2380 |
| 16-12-12 | 4300 | 32-20-12 | 2380 |
| 18-08-09 | 4500 | 36-16-09 | 2130 |
| 18-12-12 | 4200 | 36-20-12 | 2130 |
| 21-08-09 | 3500 | 36-26-15 | 2130 |
| 21-12-12 | 3900 | 38-16-09 | 2020 |
| 21-16-16 | 3550 | 38-20-12 | 1750 |
| 24-12-09 | 3600 | 38-26-15 | 2020 |
| 24-16-12 | 3170 | 42-20-09 | 1770 |
| 27-12-09 | 2965 | 42-26-12 | 1770 |
| 27-16-12 | 2965 | 48-20-09 | 1600 |
| 27-20-16 | 2965 | 48-26-12 | 1600 |
| | | 54-26-09 | 1385 |
| | | 60-26-09 | 1200 |

CHART III

TEMPERATURE CORRECTION FACTORS FOR WHEEL SAFE SPEEDS

| Temp. °F | Aluminum Wheel |
|----------|----------------|
| -50 | 1.00 |
| 70 | 1.00 |
| 100 | .98 |
| 200 | .98 |

* nyb recommends low temperature grease for applications below -20°F

CHART IV CORRECTION FACTORS FOR TEMPERATURE AND ALTITUDE

| Temperature °F | Altitude—feet above sea level | | | | | | | | | | | | |
|----------------|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|-------|
| | 0 | 500 | 1000 | 1500 | 2000 | 3000 | 4000 | 5000 | 6000 | 7000 | 8000 | 9000 | 10000 |
| -50 | .77 | .79 | .80 | .82 | .83 | .86 | .89 | .92 | .96 | 1.00 | 1.04 | 1.08 | 1.12 |
| -25 | .82 | .84 | .85 | .87 | .89 | .92 | .95 | .98 | 1.03 | 1.07 | 1.11 | 1.15 | 1.19 |
| 0 | .87 | .89 | .91 | .92 | .94 | .97 | 1.01 | 1.04 | 1.09 | 1.13 | 1.18 | 1.22 | 1.26 |
| 20 | .91 | .93 | .95 | .97 | .98 | 1.02 | 1.06 | 1.09 | 1.14 | 1.18 | 1.23 | 1.27 | 1.32 |
| 40 | .94 | .96 | .98 | 1.00 | 1.02 | 1.05 | 1.09 | 1.13 | 1.18 | 1.22 | 1.27 | 1.32 | 1.36 |
| 60 | .98 | 1.00 | 1.02 | 1.04 | 1.06 | 1.10 | 1.14 | 1.18 | 1.23 | 1.27 | 1.32 | 1.37 | 1.42 |
| 70 | 1.00 | 1.02 | 1.04 | 1.06 | 1.08 | 1.12 | 1.16 | 1.20 | 1.25 | 1.30 | 1.35 | 1.40 | 1.45 |
| 80 | 1.02 | 1.04 | 1.06 | 1.08 | 1.10 | 1.14 | 1.18 | 1.22 | 1.28 | 1.33 | 1.38 | 1.43 | 1.48 |
| 100 | 1.06 | 1.08 | 1.10 | 1.12 | 1.15 | 1.19 | 1.23 | 1.27 | 1.33 | 1.38 | 1.43 | 1.48 | 1.54 |
| 120 | 1.09 | 1.11 | 1.13 | 1.16 | 1.18 | 1.22 | 1.26 | 1.31 | 1.36 | 1.42 | 1.47 | 1.53 | 1.58 |
| 140 | 1.13 | 1.15 | 1.18 | 1.20 | 1.22 | 1.27 | 1.31 | 1.36 | 1.41 | 1.47 | 1.53 | 1.58 | 1.64 |
| 160 | 1.17 | 1.19 | 1.22 | 1.24 | 1.26 | 1.31 | 1.36 | 1.40 | 1.46 | 1.52 | 1.58 | 1.64 | 1.70 |
| 180 | 1.21 | 1.23 | 1.26 | 1.28 | 1.31 | 1.36 | 1.40 | 1.45 | 1.51 | 1.57 | 1.63 | 1.69 | 1.75 |
| 200 | 1.25 | 1.28 | 1.30 | 1.33 | 1.35 | 1.40 | 1.45 | 1.50 | 1.56 | 1.63 | 1.69 | 1.75 | 1.81 |

BELT-DRIVE VANEAXIAL FIXED PITCH FANS

Belt-drive Vaneaxial Fixed Pitch Fans are available in Sizes 12 through 60. Standard Design is provided less a belt well for improved airflow performance and efficiencies. For applications requiring sealed drives, spark-resistant construction, or temperatures in the range of 120 to 200 degree F, fans can be furnished with an optional belt well to isolate the bearings and drive components from airborne moisture and contaminants. In the event that system pressures or flow requirements change, belt-drive Vaneaxial fans offer inherent performance flexibility. New performance is easily achieved by modifying readily accessible drives.



| SIZE 12 06-06 40° Angle | CFM | OV | 1/4"SP | | 1/2"SP | | 3/4"SP | | 1"SP | | 1 1/4"SP | | 1 1/2"SP | | 1 3/4"SP | | 2"SP | | 2 1/4"SP | |
|---|------|------|--------|------|--------|------|--------|------|------|------|----------|------|----------|------|----------|------|------|------|----------|-----|
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| | | | 1500 | 1852 | 2250 | 0.39 | 2450 | 0.52 | 2662 | 0.68 | 2974 | 0.95 | 3322 | 1.32 | 3642 | 1.74 | | | | |
| 1800 | 2222 | 2616 | 0.60 | 2799 | 0.75 | 2960 | 0.91 | 3136 | 1.10 | 3442 | 1.43 | 3590 | 1.65 | 3748 | 1.89 | 3932 | 2.19 | 4206 | 2.68 | |
| 2100 | 2592 | 2990 | 0.88 | 3156 | 1.07 | 3306 | 1.25 | 3442 | 1.43 | 3590 | 1.65 | 3748 | 1.89 | 3932 | 2.19 | 4206 | 2.68 | | | |
| 2400 | 2963 | 3371 | 1.25 | 3520 | 1.46 | 3658 | 1.67 | 3786 | 1.88 | 3908 | 2.09 | 4032 | 2.33 | 4168 | 2.59 | 4303 | 2.86 | 4458 | 3.20 | |
| 2600 | 3209 | 3632 | 1.55 | 3762 | 1.77 | 3898 | 2.01 | 4022 | 2.23 | 4134 | 2.45 | 4246 | 2.69 | 4365 | 2.95 | 4486 | 3.22 | | | |
| 2900 | 3580 | 4022 | 2.10 | 4139 | 2.34 | 4260 | 2.59 | 4380 | 2.85 | 4490 | 3.11 | | | | | | | | | |
| 3100 | 3827 | 4283 | 2.53 | 4394 | 2.79 | | | | | | | | | | | | | | | |
| 3200 | 3950 | 4414 | 2.76 | | | | | | | | | | | | | | | | | |

| SIZE 14 06-06 40° Angle | CFM | OV | 1/4"SP | | 1/2"SP | | 3/4"SP | | 1"SP | | 1 1/4"SP | | 1 1/2"SP | | 1 3/4"SP | | 2"SP | | 2 1/2"SP | |
|---|------|------|--------|------|--------|------|--------|------|------|------|----------|------|----------|------|----------|------|------|------|----------|-----|
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| | | | 2500 | 2277 | 2255 | 0.57 | 2430 | 0.75 | 2598 | 0.94 | 2774 | 1.17 | 2985 | 1.46 | | | | | | |
| 2800 | 2551 | 2486 | 0.75 | 2642 | 0.95 | 2799 | 1.16 | 2945 | 1.37 | 3105 | 1.63 | 3265 | 1.91 | | | | | | | |
| 3100 | 2824 | 2722 | 0.97 | 2859 | 1.18 | 3005 | 1.41 | 3140 | 1.64 | 3276 | 1.89 | 3417 | 2.18 | 3554 | 2.47 | 3772 | 2.95 | | | |
| 3400 | 3097 | 2960 | 1.24 | 3085 | 1.46 | 3214 | 1.70 | 3342 | 1.95 | 3466 | 2.21 | 3590 | 2.49 | 3720 | 2.80 | 3848 | 3.12 | | | |
| 3700 | 3370 | 3200 | 1.55 | 3311 | 1.79 | 3432 | 2.05 | 3550 | 2.31 | 3670 | 2.60 | 3782 | 2.88 | 3898 | 3.19 | 4014 | 3.51 | 4246 | 4.20 | |
| 4000 | 3644 | 3437 | 1.91 | 3545 | 2.17 | 3656 | 2.45 | 3766 | 2.74 | 3873 | 3.02 | 3984 | 3.33 | 4086 | 3.63 | 4192 | 3.96 | 4410 | 4.68 | |
| 4300 | 3917 | 3680 | 2.33 | 3782 | 2.61 | 3882 | 2.90 | 3984 | 3.20 | 4086 | 3.51 | 4190 | 3.84 | 4288 | 4.15 | 4385 | 4.48 | | | |
| 4600 | 4190 | 3926 | 2.82 | 4018 | 3.11 | 4110 | 3.41 | 4206 | 3.73 | 4303 | 4.06 | 4400 | 4.40 | 4492 | 4.73 | | | | | |

| SIZE 14 08-08 40° Angle | CFM | OV | 1/4"SP | | 1/2"SP | | 1"SP | | 1 1/2"SP | | 2"SP | | 2 1/2"SP | | 3"SP | | 3 1/2"SP | | 3 3/4"SP | |
|---|------|------|--------|------|--------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|----------|-----|
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| | | | 2400 | 2186 | 2375 | 0.66 | 2486 | 0.79 | 2698 | 1.07 | 2925 | 1.40 | 3165 | 1.85 | | | | | | |
| 2800 | 2551 | 2733 | 0.98 | 2834 | 1.14 | 3020 | 1.46 | 3194 | 1.81 | 3397 | 2.19 | 3570 | 2.64 | | | | | | | |
| 3200 | 2915 | 3100 | 1.42 | 3185 | 1.59 | 3351 | 1.95 | 3506 | 2.32 | 3662 | 2.74 | 3844 | 3.17 | 4000 | 3.65 | 4190 | 4.30 | 4336 | 4.76 | |
| 3400 | 3097 | 3285 | 1.69 | 3366 | 1.87 | 3522 | 2.24 | 3672 | 2.62 | 3820 | 3.04 | 3970 | 3.51 | 4139 | 3.97 | 4283 | 4.51 | 4354 | 4.80 | |
| 3600 | 3279 | 3466 | 1.97 | 3545 | 2.17 | 3694 | 2.56 | 3840 | 2.97 | 3975 | 3.40 | 4110 | 3.86 | 4272 | 4.35 | 4422 | 4.86 | 4490 | 5.15 | |
| 3800 | 3461 | 3652 | 2.30 | 3724 | 2.50 | 3868 | 2.92 | 4004 | 3.34 | 4134 | 3.79 | 4272 | 4.25 | 4400 | 4.78 | | | | | |
| 4100 | 3735 | 3926 | 2.85 | 3994 | 3.06 | 4128 | 3.51 | 4258 | 3.97 | 4385 | 4.43 | 4500 | 4.92 | | | | | | | |
| 4300 | 3917 | 4114 | 3.27 | 4178 | 3.49 | 4303 | 3.95 | 4432 | 4.45 | | | | | | | | | | | |

| SIZE 16 08-09 40° Angle | CFM | OV | 1/2"SP | | 3/4"SP | | 1"SP | | 1 1/2"SP | | 2"SP | | 2 1/2"SP | | 3"SP | | 3 1/2"SP | | 4"SP | |
|---|------|------|--------|------|--------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|-----|
| | | | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| | | | 4000 | 2777 | 2521 | 1.36 | 2616 | 1.55 | 2708 | 1.75 | 2876 | 2.21 | 3070 | 2.72 | | | | | | |
| 4400 | 3055 | 2733 | 1.72 | 2824 | 1.93 | 2910 | 2.15 | 3070 | 2.62 | 3225 | 3.14 | | | | | | | | | |
| 4800 | 3333 | 2950 | 2.15 | 3034 | 2.38 | 3114 | 2.61 | 3265 | 3.09 | 3412 | 3.64 | 3560 | 4.22 | 3720 | 4.86 | 3944 | 5.85 | | | |
| 5200 | 3611 | 3170 | 2.65 | 3245 | 2.89 | 3322 | 3.14 | 3468 | 3.65 | 3598 | 4.20 | 3729 | 4.80 | 3882 | 5.47 | 4026 | 6.16 | 4216 | 7.15 | |
| 5600 | 3888 | 3391 | 3.23 | 3462 | 3.49 | 3534 | 3.76 | 3672 | 4.30 | 3802 | 4.86 | 3926 | 5.48 | 4042 | 6.16 | 4186 | 6.86 | 4322 | 7.61 | |
| 6000 | 4166 | 3616 | 3.91 | 3680 | 4.17 | 3748 | 4.45 | 3878 | 5.03 | 4000 | 5.61 | 4114 | 6.25 | 4236 | 6.91 | 4342 | 7.65 | 4478 | 8.39 | |
| 6400 | 4444 | 3836 | 4.65 | 3902 | 4.95 | 3964 | 5.24 | 4086 | 5.84 | 4206 | 6.47 | 4322 | 7.11 | 4422 | 7.80 | | | | | |
| 6800 | 4722 | 4062 | 5.50 | 4119 | 5.79 | 4182 | 6.12 | 4298 | 6.76 | 4410 | 7.41 | | | | | | | | | |

Performance certified is for installation Type B: Free inlet, Ducted outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories).

MATERIAL SPECIFICATIONS

Dimensions in inches. Weights in pounds. WR² in lb.-ft.². Tolerance: ±1/8"

| Size | No. of blades | Wheel weight | Wheel WR ² | Bushing type | Shaft diameter | Bearings | Approximate bare fan weight | | | | Housing gauge |
|----------|---------------|--------------|-----------------------|--------------|-----------------------------------|----------|-----------------------------|------|------|------|---------------|
| | | | | | | | 9-D & 9-V | 9-M | 9-S | 9-R† | |
| 12-06-06 | 6 | 9.8 | 0.8 | P1 | 1 ³ / ₁₆ | A | 120 | 135 | 130 | 185 | 10 |
| 14-06-06 | 6 | 10.3 | 1.0 | P1 | 1 ³ / ₁₆ | B | 135 | 155 | 145 | 210 | 10 |
| 14-08-08 | 8 | 12.5 | 1.5 | P1 | 1 ⁷ / ₁₆ | C | 170 | 190 | 180 | 245 | 10 |
| 16-08-09 | 9 | 13.5 | 2.0 | P1 | 1 ⁷ / ₁₆ | C | 185 | 210 | 200 | 280 | 10 |
| 16-12-12 | 12 | 22.8 | 4.8 | P1 | 1 ⁷ / ₁₆ | C | 230 | 255 | 240 | 320 | 10 |
| 18-08-09 | 9 | 14.0 | 2.3 | P1 | 1 ⁷ / ₁₆ | C | 225 | 255 | 240 | 325 | 10 |
| 18-12-12 | 12 | 25.5 | 6.8 | P1 | 1 ¹¹ / ₁₆ | C | 265 | 295 | 280 | 365 | 10 |
| 21-08-09 | 9 | 15.0 | 3.0 | P1 | 1 ¹¹ / ₁₆ | C | 260 | 295 | 275 | 375 | 10 |
| 21-12-12 | 12 | 27.8 | 8.8 | P1 | 1 ¹¹ / ₁₆ | C | 300 | 340 | 320 | 415 | 10 |
| 21-16-16 | 16 | 57.0 | 24.5 | Q1 | 1 ¹¹ / ₁₆ | C | 325 | 365 | 345 | 440 | 10 |
| 24-12-09 | 9 | 28.3 | 10.0 | P1 | 1 ¹¹ / ₁₆ | C | 310 | 350 | 325 | 455 | 10 |
| 24-16-12 | 12 | 58.5 | 29.0 | Q1 | 1 ¹¹ / ₁₆ | C | 365 | 410 | 385 | 515 | 10 |
| 27-12-09 | 9 | 30.0 | 12.3 | P1 | 1 ¹¹ / ₁₆ | C | 330 | 380 | 345 | 495 | 10 |
| 27-16-12 | 12 | 65.0 | 37.8 | Q1 | 1 ¹⁵ / ₁₆ | C | 410 | 460 | 425 | 570 | 10 |
| 27-20-16 | 16 | 91.0 | 68.0 | Q1 | 1 ¹⁵ / ₁₆ | C | 435 | 490 | 455 | 600 | 10 |
| 29-12-09 | 9 | 31.3 | 13.5 | P1 | 1 ¹⁵ / ₁₆ * | C | 365 | 425 | 385 | 545 | 10 |
| 29-16-12 | 12 | 66.5 | 42.5 | Q1 | 2 ³ / ₁₆ | C | 465 | 525 | 485 | 640 | 10 |
| 29-20-16 | 16 | 94.5 | 75.0 | Q1 | 2 ³ / ₁₆ | C | 495 | 555 | 510 | 670 | 10 |
| 32-16-09 | 9 | 68.5 | 47.5 | Q1 | 2 ³ / ₁₆ | C | 485 | 550 | 500 | 700 | 10 |
| 32-20-12 | 12 | 106.5 | 90.0 | Q1 | 2 ³ / ₁₆ | C | 575 | 640 | 590 | 790 | 10 |
| 36-16-09 | 9 | 74.5 | 61.0 | Q1 | 2 ³ / ₁₆ | C | 530 | 600 | 545 | 790 | 10 |
| 36-20-12 | 12 | 116.0 | 115 | Q1 | 2 ³ / ₁₆ | C | 655 | 735 | 680 | 920 | 10 |
| 36-26-15 | 15 | 232.5 | 268 | R1 | 2 ³ / ₁₆ | C | 780 | 860 | 800 | 1040 | 10 |
| 38-16-09 | 9 | 70.0 | 62.0 | Q1 | 2 ³ / ₁₆ | C | 630 | 740 | 650 | 920 | 7 |
| 38-20-12 | 12 | 120.0 | 123 | Q1 | 2 ⁷ / ₁₆ | C | 810 | 935 | 835 | 1105 | 7 |
| 38-26-15 | 15 | 205.5 | 250 | R1 | 2 ⁷ / ₁₆ | C | 900 | 1025 | 920 | 1190 | 7 |
| 42-20-09 | 9 | 131.0 | 141 | Q1 | 2 ¹¹ / ₁₆ | C | 900 | 1035 | 920 | 1235 | 7 |
| 42-26-12 | 12 | 245.5 | 324 | R1 | 2 ¹¹ / ₁₆ | C | 1125 | 1270 | 1150 | 1465 | 7 |
| 48-20-09 | 9 | 122.0 | 147 | Q1 | 2 ¹¹ / ₁₆ | C | 965 | 1135 | 990 | 1370 | 7 |
| 48-26-12 | 12 | 258.5 | 394 | R1 | 2 ¹¹ / ₁₆ | C | 1220 | 1395 | 1245 | 1625 | 7 |
| 54-26-09 | 9 | 245.5 | 399 | R1 | 2 ¹¹ / ₁₆ | C | 1310 | 1520 | 1360 | 1810 | 7 |
| 60-26-09 | 9 | 260.0 | 460 | R1 | 2 ¹¹ / ₁₆ | C | 1455 | 1715 | 1505 | 2035 | 7 |

* Shaft diameter at bearings is 1¹⁵/₁₆" with a 1¹¹/₁₆" turndown at the wheel for the P1 bushing.

Bearing types: A-Standard D-Lok B-Medium D-LOK C-Link-Belt 22400 Series. All Sizes:Flange bearings

Bearings: For fan sizes 12-06-06 through 21-08-09 both bearings are fixed. For fans sizes 21-12-12 through 60-26-09, the non-drive bearing is fixed and the drive bearing is expansion.

nyb reserves the right to substitute bearings of equal quality. Wheel weight includes bushing.

†9R weights are for fan and curb cap. Does not include weights for stack hood and weather cover.

MATERIAL SPECIFICATIONS

Dimensions in inches. Tolerance: $\pm 1/8"$

MOTOR SIZE CAPABILITY

| Size | Maximum C-[N-W] | Maximum frame size |
|----------|-------------------|--------------------|
| 12-06-06 | 16 ^{3/8} | 213T |
| 14-06-06 | 16 ^{3/4} | 215T |
| 14-08-08 | 19 | 256T |
| 16-08-09 | 18 ^{3/8} | 256T |
| 16-12-12 | 22 ^{1/8} | 324T |
| 18-08-09 | 22 ^{5/8} | 324T |
| 18-12-12 | 24 ^{1/8} | 364T |
| 21-08-09 | 22 ^{5/8} | 326T |
| 21-12-12 | 24 ^{1/8} | 364T |
| 21-16-16 | 24 ^{1/8} | 364T |
| 24-12-09 | 22 ^{5/8} | 324T |
| 24-16-12 | 24 ^{1/8} | 364T |
| 27-12-09 | 22 ^{5/8} | 326T |
| 27-16-12 | 24 ^{1/8} | 365T |
| 27-20-16 | 25 | 365T |
| 29-12-09 | 24 ^{5/8} | 364T |
| 29-16-12 | 27 ^{5/8} | 405T |
| 29-20-16 | 27 ^{5/8} | 405T |
| 32-16-09 | 25 ^{1/4} | 364T |
| 32-20-12 | 27 ^{5/8} | 405T |
| 36-16-09 | 25 ^{1/4} | 365T |
| 36-20-12 | 31 ^{5/8} | 405T |
| 36-26-15 | 32 ^{7/8} | 405T |
| 38-16-09 | 27 ^{5/8} | 405T |
| 38-20-12 | 36 ^{1/8} | 445T |
| 38-26-15 | 36 ^{1/8} | 445T |
| 42-20-09 | 34 ^{7/8} | 405T |
| 42-26-12 | 38 ^{7/8} | 445T |
| 48-20-09 | 34 ^{3/8} | 445T |
| 48-26-12 | 38 ^{3/8} | 445T |
| 54-26-09 | 41 ^{7/8} | 445T |
| 60-26-09 | 44 ^{1/2} | 445T |

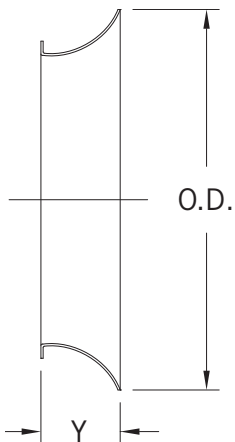
Maximum frame sizes are listed per size.

FAN FLANGE DIMENSIONS

| Size | Flange gauge | Fan ID | Bolting circle | Flange OD | Flange Slots* | |
|----------|--------------|--------------------|---------------------|-------------------|---------------|--------------|
| | | | | | No. | Size |
| 12-06-06 | 7 | 12 ^{3/16} | 13 ^{15/16} | 15 ^{1/2} | 8 | 7/16 x 13/16 |
| 14-06-06 | 7 | 14 ^{3/16} | 15 ^{15/16} | 17 ^{1/2} | 8 | 7/16 x 13/16 |
| 14-08-08 | 7 | 14 ^{3/16} | 15 ^{15/16} | 17 ^{1/2} | 8 | 7/16 x 13/16 |
| 16-08-09 | 7 | 16 ^{1/4} | 18 | 19 ^{5/8} | 8 | 7/16 x 13/16 |
| 16-12-12 | 7 | 16 ^{1/4} | 18 | 19 ^{5/8} | 8 | 7/16 x 13/16 |
| 18-08-09 | 7 | 18 ^{1/4} | 20 | 21 ^{5/8} | 8 | 7/16 x 13/16 |
| 18-12-12 | 7 | 18 ^{1/4} | 20 | 21 ^{5/8} | 8 | 7/16 x 13/16 |
| 21-08-09 | 7 | 21 ^{3/16} | 23 | 24 ^{5/8} | 8 | 7/16 x 13/16 |
| 21-12-12 | 7 | 21 ^{3/16} | 23 | 24 ^{5/8} | 8 | 7/16 x 13/16 |
| 21-16-16 | 7 | 21 ^{3/16} | 23 | 24 ^{5/8} | 8 | 7/16 x 13/16 |
| 24-12-09 | 7 | 24 ^{3/8} | 26 ^{1/8} | 27 ^{3/4} | 8 | 7/16 x 13/16 |
| 24-16-12 | 7 | 24 ^{3/8} | 26 ^{1/8} | 27 ^{3/4} | 8 | 7/16 x 13/16 |
| 27-12-09 | 7 | 27 ^{3/8} | 29 ^{1/8} | 30 ^{3/4} | 8 | 7/16 x 13/16 |
| 27-16-12 | 7 | 27 ^{3/8} | 29 ^{1/8} | 30 ^{3/4} | 8 | 7/16 x 13/16 |
| 27-20-16 | 7 | 27 ^{3/8} | 29 ^{1/8} | 30 ^{3/4} | 8 | 7/16 x 13/16 |
| 29-12-09 | 7 | 29 ^{3/16} | 31 | 32 ^{5/8} | 16 | 7/16 x 13/16 |
| 29-16-12 | 7 | 29 ^{3/16} | 31 | 32 ^{5/8} | 16 | 7/16 x 13/16 |
| 29-20-16 | 7 | 29 ^{3/16} | 31 | 32 ^{5/8} | 16 | 7/16 x 13/16 |
| 32-16-09 | 7 | 32 ^{1/2} | 34 ^{1/4} | 35 ^{7/8} | 16 | 7/16 x 13/16 |
| 32-20-12 | 7 | 32 ^{1/2} | 34 ^{1/4} | 35 ^{7/8} | 16 | 7/16 x 13/16 |
| 36-16-09 | 7 | 36 ^{1/2} | 38 ^{5/16} | 41 | 16 | 7/16 x 13/16 |
| 36-20-12 | 7 | 36 ^{1/2} | 38 ^{5/16} | 41 | 16 | 7/16 x 13/16 |
| 36-26-15 | 7 | 36 ^{1/2} | 38 ^{5/16} | 41 | 16 | 7/16 x 13/16 |
| 38-16-09 | 1/4" | 38 | 40 ^{1/4} | 42 ^{1/2} | 16 | 9/16 x 1 |
| 38-20-12 | 1/4" | 38 | 40 ^{1/4} | 42 ^{1/2} | 16 | 9/16 x 1 |
| 38-26-15 | 1/4" | 38 | 40 ^{1/4} | 42 ^{1/2} | 16 | 9/16 x 1 |
| 42-20-09 | 1/4" | 42 ^{3/4} | 45 | 47 ^{1/4} | 16 | 9/16 x 1 |
| 42-26-12 | 1/4" | 42 ^{3/4} | 45 | 47 ^{1/4} | 16 | 9/16 x 1 |
| 48-20-09 | 1/4" | 48 ^{3/4} | 51 | 53 ^{3/8} | 16 | 9/16 x 1 |
| 48-26-12 | 1/4" | 48 ^{3/4} | 51 | 53 ^{3/8} | 16 | 9/16 x 1 |
| 54-26-09 | 1/4" | 55 | 57 ^{7/16} | 59 ^{5/8} | 16 | 9/16 x 1 |
| 60-26-09 | 1/4" | 61 | 63 ^{7/16} | 65 ^{5/8} | 16 | 9/16 x 1 |

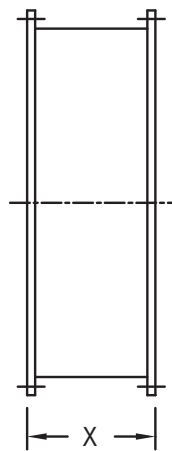
*Slots spaced equally, straddling centerline.

INLET BELL DIMENSIONS



| Size | Y | O.D. |
|------|--------------------|---------------------|
| 12 | 2 ^{1/8} | 16 ^{3/16} |
| 14 | 2 ^{1/2} | 18 ^{15/16} |
| 16 | 2 ^{15/16} | 21 ^{3/4} |
| 18 | 3 ^{3/16} | 24 ^{1/4} |
| 21 | 3 ^{11/16} | 28 ^{1/4} |
| 24 | 4 ^{1/16} | 32 ^{1/8} |
| 27 | 4 ^{11/16} | 36 ^{3/8} |
| 29 | 5 | 38 ^{7/8} |
| 32 | 5 ^{3/4} | 43 ^{1/2} |
| 36 | 6 ^{1/4} | 48 ^{1/2} |
| 38 | 6 ^{5/8} | 50 ^{7/8} |
| 42 | 7 ^{1/4} | 56 ^{3/4} |
| 48 | 8 ^{1/4} | 64 ^{3/4} |
| 54 | 9 ^{1/8} | 73 |
| 60 | 10 ^{1/8} | 81 |

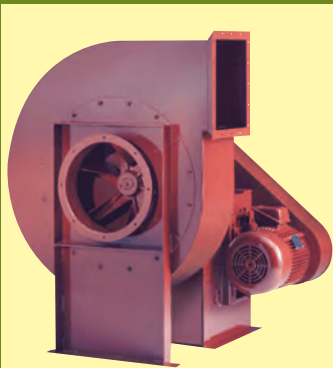
INLET VANE DAMPER DIMENSIONS



| Size | X | |
|------|--------|--------|
| | Type A | Type B |
| 12 | 9 | 12 |
| 14 | 9 | 12 |
| 16 | 9 | 12 |
| 18 | 10 | 12 |
| 21 | 10 | 12 |
| 24 | 10 | 12 |
| 27 | 10 | 12 |
| 29 | 10 | 12 |
| 32 | 10 | 12 |
| 36 | 10 | 12 |
| 38 | 10 | 12 |
| 42 | 11 | 12 |
| 48 | 11 | 12 |
| 54 | 11 | 12 |
| 60 | 12 | 12 |

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.

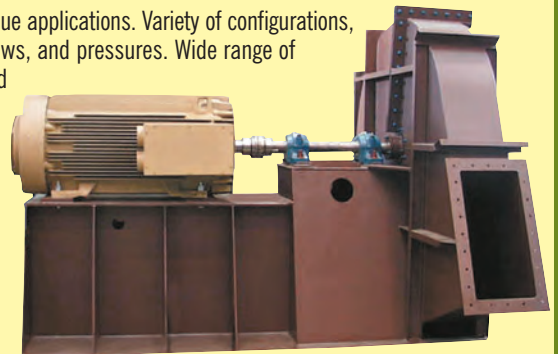


FIBERGLASS REINFORCED PLASTIC [FRP]

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



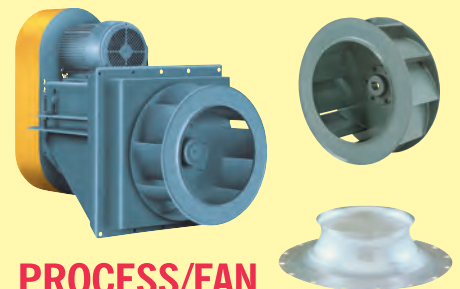
ROOF VENTILATORS

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



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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.