

# Hartzell

AIR MOVEMENT

## Fiberglass Centrifugal Fans

SERIES 41, 41P, 41U, 42, 43



### Hartzell Air Movement

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### Contact

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### Website

www.hartzellairmovement.com

# THE HARTZELL DIFFERENCE

*Building the highest quality fans in America for generations*



## QUALITY AT EVERY TURN.

Hartzell Air Movement exceeds the standard in the air movement industry, committed to delivering top-quality, reliable products. And our relationship with our customers, and our knowledgeable, inventive, flexible and hardworking employees are the reasons we've continued and thrived, right here in the USA, for six generations.

### Customers choose Hartzell for our:

- Durability and high performance
- Low cost of ownership
- Leadership in performance testing and certification
- Advanced engineering and manufacturing processes
- Innovative design and manufacturing
- Trusted brand name

### Experienced Hartzell team to assist you from design to shipping

ISO 9001:2015 Certification  
AMCA Accredited Laboratory  
Complete Fans and Blowers  
Centrifugal Wheels  
Airfoil Propellers



## HARTZELL ADVANTAGES

### A LIFETIME OF VALUE

- Industrial fans are field proven, 100% tested, with virtually no incident of return
- Energy efficient designs that provide a lower total cost of ownership

### LEADERSHIP IN PERFORMANCE

- Products certified by AMCA that meet DOE recommended efficiencies
- Highly efficient industrial fan designs that are the quietest in the market
- Airfoil shape blades with industry leading measured efficiencies

### ADVANCED ENGINEERING & MANUFACTURING

- Proven manufacturing techniques on state of the art equipment in ISO 9001:2015 registered facilities
- Engineering team utilizes the latest design tools in 3D CAD and other modeling software

### CREATIVE DESIGN & MANUFACTURING TEAM

- Offering the greatest number of industrial fan design choices
- Building products to meet your rigorous application; no limiting catalog

### TRUSTED BRAND NAME

- Extensive talent pool bringing over 145 years of knowledge and experience to you

### 5-YEAR WARRANTY

- The industry's first and only manufacturer that stands behind their products for a full 5-years



- Register your 5 year warranty
- Download your installation manual
- Order replacement parts



For more information, contact your local Hartzell Sales Representative. [info@hartzell.com](mailto:info@hartzell.com)

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# HARTZELL WARRANTY

## LIMITED WARRANTIES, LIMITATION OF LIABILITY, AND LIMITATION OF LIABILITY FOR BREACH OF WARRANTY

### 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.

The details of the Hartzell warranty can be found at <http://www.hartzellairmovement.com/warranty-service>

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# PERFORMANCE GUARANTEED

Your products are only as good as the components that go into them. We know you have high expectations, and so does Hartzell Air Movement. We know you expect the most reliable and durable industrial air movement products available, so we're holding ourselves to a higher standard. We're so sure that our products will out-perform industry standards, we're backing that promise with the industry's first – and only – five-year warranty.

At Hartzell, these are words we live by. They guide us every day. Good enough isn't how you design your products. It's not how we engineer, build and support our products — or provide ongoing service to our customers. When we looked at the industry standard two-year warranty, we knew we had to do better. And we did — by offering the Hartzell **FIVE-YEAR WARRANTY**.

Register for your 5year warranty at <https://www.hartzellairmovement.com/warranty-and-parts/five-year-warranty>

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Hartzell Air Movement  
proudly manufactures  
our fans right here in  
the USA!



**MADE IN  
U.S.A.**

## Content

<b>Options &amp; Accessories</b>	10
<b>In-line Backward Curved Fan</b>	
Series 40	13
<b>Backward Curved Fan</b>	
Series 41	15
<b>Packaged Backward Curved Fan</b>	
Series 41P	21
<b>41U Utility Set</b>	
Series 41U	24
<b>Pressure Blower</b>	
Series 42	26
<b>Radial Blower</b>	
Series 43	28
<b>Corrosion Resistance Guide</b>	30
<b>Temperature/Altitude Correction</b>	31



# ADVANTAGES OF FIBERGLASS CONSTRUCTION

A variety of corrosion problems plague the water and wastewater industry. Although fans and blowers made of coated steel or metals such as stainless, Hastelloy and monel can handle some of these challenges, Hartzell's fiberglass products provide unsurpassed resistance to a great majority of corrosive elements at a cost substantially below that of corrosion resistant metals.

## ADVANTAGES

### ✓ FIBERGLASS OFFERS SUPERIOR CORROSION RESISTANT PROPERTIES

- ✓ Weighs 25% - 50% less than comparable equipment made of metal alloys
- ✓ Has an extremely high strength-to-weight ratio, stronger than steel on a per-pound basis
- ✓ Has excellent dimensional stability
- ✓ Will not become brittle at low temperatures and at -40°F laminated fiberglass will be stronger than at room temperature
- ✓ Offers a distinct price advantage over stainless and Monel (as much as 1/3 in original cost)
- ✓ Has a longer service life and requires less maintenance
- ✓ Offers weather-resistant characteristics – it will not tarnish and will never need painting
- ✓ Is extremely durable and highly resistant to impact

When optional surface veil, electrical grounding and dynamic balancing are applied, Hartzell Air Movement conforms to ASTM D4167-21 and ASTM E84-2008 Standard Specifications for Fiber-Reinforced Plastic (FRP) Fans and Blowers.

# SUPERIOR CORROSION RESISTANCE

## RESIN TRANSFER MOLDED



Hartzell offers the *ONLY* fiberglass wheels & propellers available in a solid, one-piece design from the mold.

- ✓ Solid, one-piece design from an RTM mold – up to 60" dia.
- ✓ Consistent wheels and propellers with 98%+ exact wheels and propellers. Only variation is in the requested finishes.
- ✓ Repeatable Process
- ✓ Available in 12" - 60" diameters
- ✓ Much stronger wheels and propellers

Hartzell's fiberglass wheels and propellers are unique in the fan and blower industry.

They are manufactured as a single fiberglass piece using a multi-section RTM mold, ensuring that each wheel and prop is aerodynamically identical and provides reliable, repeatable performance without the variability of hand-made and taped components.

The superior design is a result of a substantial investment in research, development, tooling, and manufacturing methods by Hartzell Air Movement.



# Basics of Fan Selection

The first consideration in any fan selection is the amount of air to be moved and the resistance to this air movement. With specific performance and application criteria in mind, propeller and centrifugal fan selections typically require decisions based on the following criteria.

## Belt Drive vs. Direct Drive

Belt drive fans offer the ability to adjust fan speed for system balancing if necessary. They also offer more flexibility in speeds and motor selections. In a cost comparison, belt drive fans are typically less costly than comparable size direct drive fans with low speed motors.

Direct drive fans are often preferred for jobs where maintenance access is difficult. Maintenance costs are generally lower with direct drive fans since there are no belts or bearings to replace and no pulleys to adjust.

## Larger Fans vs. Smaller Fans

In most applications, several fans may meet the specified airflow and pressure requirements. Just as larger fans tend to turn slower and generate less sound, they also tend to have higher initial costs but lower operating costs. Smaller fans have more stable performance curves, lower initial costs, higher sound levels and higher operating costs because of their higher speeds.

## Low Sound vs. High Static Pressure

Fans selected for high static pressures run at higher speeds and produce higher tip speeds resulting in higher sound levels. Conversely, in low pressure applications fans generally run at lower speeds, produce lower noise levels and are recommended for sound sensitive applications.

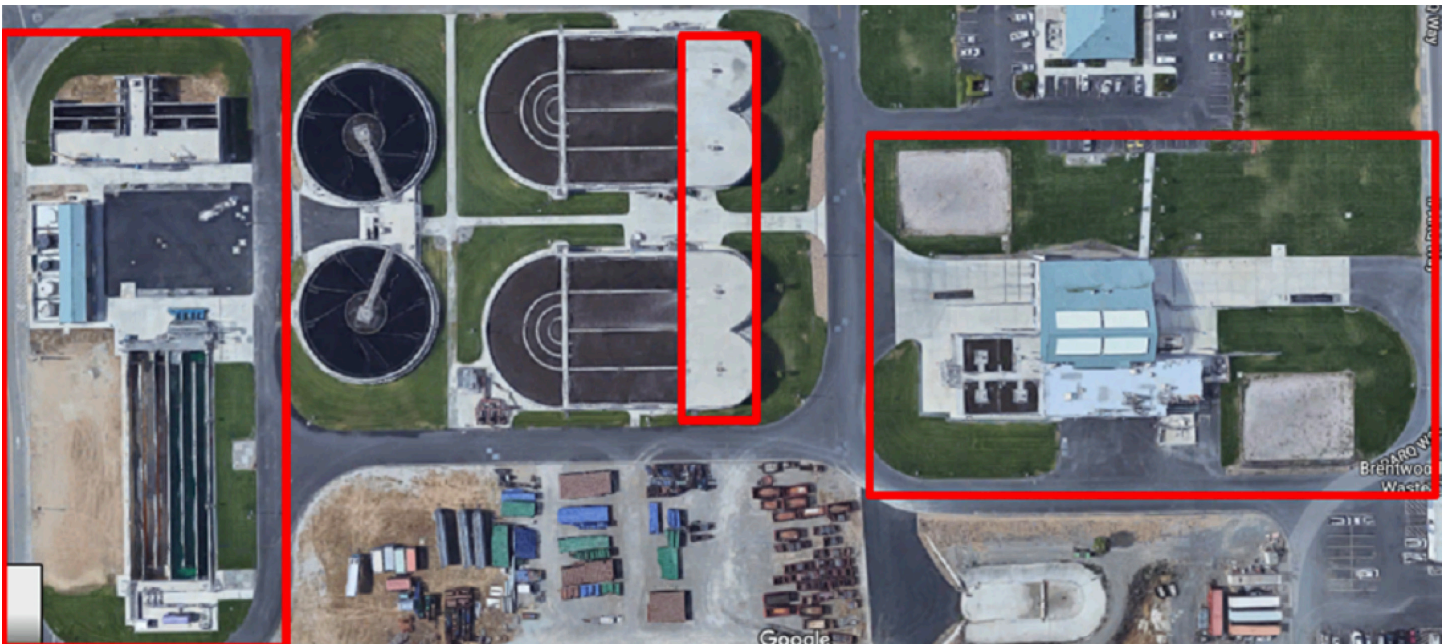
## How Accessories Affect Static Pressure

All accessory losses must be accounted for when calculating the static pressure load for a fan. For example, when fans are used in conjunction with properly applied accessories, lower pressure capabilities can be specified.

When fans are over-specified to compensate for losses that do not actually exist, both cost and sound levels can be higher than necessary. This most commonly results from larger motors and higher tip speeds.

## Motor Service Factor

Some motors are cooled by the airstream. With an uninterrupted flow of cooling air, motors may be operated in their service factor range (up to 15% above the motor nameplate horsepower without damage due to overheating. Less overloads are recommended for applications using totally enclosed or explosion resistant motors.



Wastewater plant installation with 30 fiberglass fans

Hartzell's fiberglass centrifugal fans can be found in many applications that expose components to caustic fumes, acidic fumes, and / or salt laden air. In the above Wastewater Treatment example fiberglass fans are used for: Fan Room Exhaust, Grit/Pump Room Exhaust, Solids Exhaust, Storage Supply/Exhaust, Channel Exhaust, Filter Gallery Exhaust, Influent Pump Station Supply, and Polymer Room Supply / Exhaust and have all been in service for over 20 years.

# Standard Construction

**FRP Construction:** All structural parts in the airstream are fiberglass and resin. All fiberglass surfaces are protected with a minimum 10-mil thickness of chemical, flame, and ultraviolet resistant resin.

**FRP Components & Housing:** Constructed of fiberglass and premium corrosive resistant vinyl ester resin with a Class I flame spread rate of 25 or less.

**Wheel:** Constructed of fiberglass and Derakane 510-A corrosion resistant vinyl ester resin with a Class I flame spread rate of 25 or less.

*See the Corrosion Resistance Guide on page 29 for resin characteristics.*

## General Features

**Applications:** Developed for compatible corrosive applications where it is advantageous to have fiberglass materials and have the motor out of the airstream.

**Shafts:** Shaft material is carbon steel as standard, turned, ground, polished, and keyed at both ends with fiberglass sleeve in the airstream. Shafts are sized to operate well below critical speed. 304 stainless steel, 316 stainless steel, or monel shafting is available as an option at extra cost.

**Bearings:** Bearings are heavy duty, deep row radial ball or double row spherical roller type self-aligning and shielded in cast iron housings. Long inner races insure even load distribution, providing a high radial and thrust load capacity. Bearings have a minimum L-50 life of 250,000 hours for Series 41, 42, 43, and Series 40 mounted horizontally. For Series 40 in a vertical mounting L-50 of 500,000 hours. Bearings are relubricable for continuous service and include extended lubrication fittings as standard.

**Shaft Seal:** A fiberglass and neoprene shaft seal is placed where the shaft leaves the housing along with a neoprene shaft slinger between the seal and wheel on belt drive units. The seal is not gas tight. Except Series 40, Hartzell offers special seals for those very harsh environments. Type 304 stainless steel or 316 stainless steel single and double lip shaft seals are available both with teflon or viton bands. Purge valve / greaser is optional on double lip seals.

**Hardware:** Internal hardware (airstream) is encapsulated type 304 stainless steel. All external hardware (out of airstream) is zinc plated as standard. Where metal is subject to attack by the corrosive elements being handled, all metal parts can be resin-coated after assembly.

Also available: – Type 304 SS, 316 SS, or Monel complete fan  
– Type 316 SS or Monel airstream

**Motor:** The motor is exterior mounted out of the airstream on a fully adjustable platform-style motor base supported by an external housing assembly base. Totally Enclosed motors are standard. Motor frame size limits are identified in the Principal Dimensions table.

**V-Belt Drives:** Oversized for long life and continuous duty. Variable pitch drives are a standard option for 10 HP and below and fixed pitch are a standard option above 10 HP. Belts are oil, heat, and static resistant type.

**Easy Installation and Maintenance –** Motor, drives and bearings are readily accessible for ease in wiring, installation, adjustment, and lubrication. Weather cover and guards are available.

**Balancing:** The fan is dynamically balanced to the requirements of Fan Application Category BV-3 of AMCA/ANSI Std. 204. All fans receive vibration test and inspection prior to shipment.

**Spark Resistant Construction:** Available as an option.

**Protective Coatings:** Available as an option for abrasive or extremely corrosive environments.

*For Series 42 & Series 43 Belt Drive Units:*

**V-Belt Drive:** Oversized for continuous duty. Belts are oil, heat and static resistant type.

**Bearings:** Heavy-duty, self-aligning, pillow block bearings are standard.

**Shaft Seal:** A fiberglass and neoprene shaft seal is placed where the shaft leaves the housing along with a neoprene shaft slinger between the seal and wheel. The seal is not gas tight

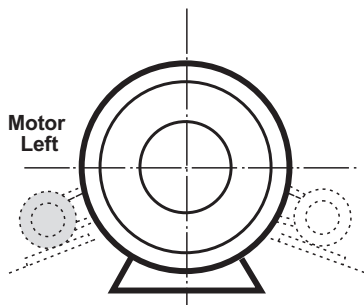
*For Series 41P & Series 41U Units:*

**Motor Out of Airstream:** The motor is interior mounted on an adjustable motor pivot base as standard. Motors can be furnished as TEFC, Mill and Chemical Duty or to other specifications on request.

**Hartzell FRP Centrifugal Fans – Series Comparison Chart**

Series	Drive Type		Mounting Types			Location		Motor Location		Performance	
	Belt	Direct	Floor	Roof Curb	Wall	Indoor	Out-door	Out of Airstream	In Airstream	Maximum Volume (CFM)	Maximum S.P. (in. W.G.)
40	X		X	X	X	X	X	X		94,000	14
41	X	X	X			X	X	X	Shaft only on direct drive units	100,000	30
41P	X		X			X	X	X		32,000	12
41U	X		X			X	X	X		10,300	6
42	X	X	X			X	X	X	Shaft only on direct drive units	2,000	12
43	X	X	X			X	X	X	Shaft only on direct drive units	18,000	18

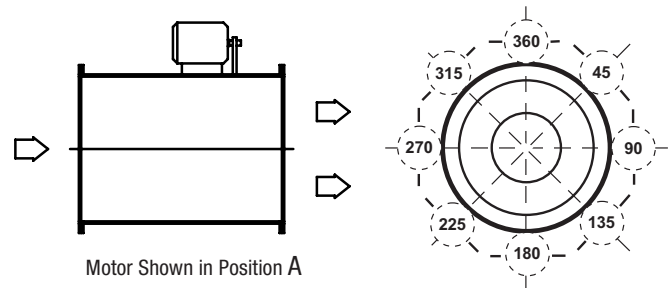
# In-Line Centrifugal Fan Arrangements



**View Facing Outlet**

## Arrangement 1

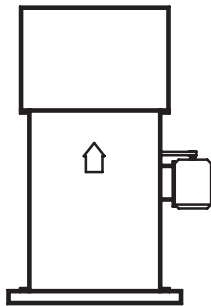
For belt drive. Impeller overhung on a shaft supported by bearing mounted with casing. Motor mounted independent of casing. Horizontal discharge.



## Arrangement 9

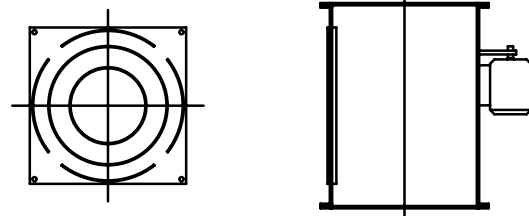
For belt drive. Impeller overhung on a shaft supported by bearings mounted with casing. Fan may be rotated to achieve motor positions. For horizontal and vertical discharge. Duct mounting shown.

Arrangement 9 can be furnished with supports for floor, wall or ceiling mounting. The position of these supports determines which motor locations are available for motor placement. Generally motor locations 135, 180 and 225 are not available on floor, wall or inverted ceiling mounted fans and motor locations 45, 90, 270 & 315 may not be available for ceiling hung fans.



## Arrangement 9 – PRV

When desirable, the in-line centrifugal fan can be mounted as a power roof ventilator for exhaust application. Together with a stack cap and panel, the three elements combine to provide an efficient roof exhauster. Back draft dampers in the stack cap offer weatherproof closure for vertical air discharge.



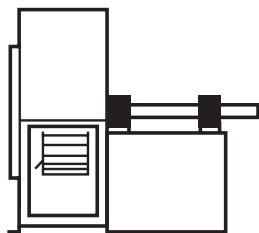
## Vertical Mounting

Another method for mounting vertical fans is shown in the view above. Specify fan to be furnished with ceiling mounting brackets, floor mounting brackets or both.

Specify either upblast or downblast discharge for vertically mounted fans.

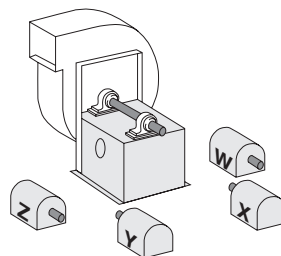


# Centrifugal Fan Arrangements



## Arrangement 1

Unit furnished with shaft and bearings, less motor and drive. Designed to be driven by a separately mounted motor. Impeller is overhung – two bearings on base. **Series 41 & 43 only.**

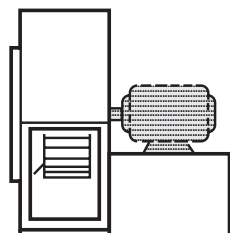


## Motor Position Designation

Motor position designation is necessary when ordering the following for Arrangement 1 fans:

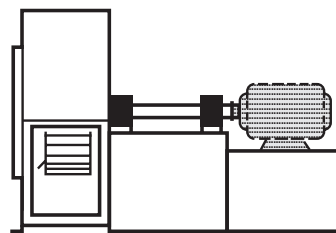
- 1 – V Belt Drive
- 2 – Vibration Bases
- 3 – Belt Guards

Note: Location of motor is determined by facing the drive side of the fan and designating the motor position by letters W, X, Y, or Z. Consider discharge location and height when specifying.



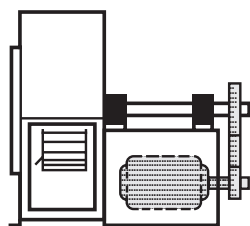
## Arrangement 4

Direct drive packaged unit, wheel is overhung and attached to the shaft of the electric motor. No bearings on fan. Temperature limitations: 200°F. **Series 41 & 42 only.**



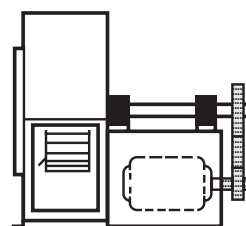
## Arrangement 8

Direct coupled configuration with motor mounted to common fan base. Impeller is overhung and supported by two bearings on fan base. **Series 41 and 43 only.**



## Arrangement 9

Belt drive configuration with motor mounted on outside of bearing base support. Packaged unit, wheel is overhung, slide rail motor base permits easy adjustment of belt tension. Available on either left or right hand side of base (when facing drive end of shaft). **Series 41 & 43 only.**



## Arrangement 10

Belt drive configuration with motor mounted inside base. Packaged unit, wheel is overhung. **Series 41, 42, 43, 41P, & 41U.**

Adapted from AMCA Standard 99-2404-03, Drive Arrangements for Centrifugal Fans, and AMCA Standard 99-2407-03, Motor Positions for Belt or Chain Drive Centrifugal Fans, with written permission from Air Movement and Control Association International, Inc.

# In-Line Centrifugal Fan Classifications

Hartzell Series 40 Fiberglass Backward Curved Centrifugal Fans, Type FA, are designed and classified with two classes of construction. Class I construction covers light to medium duty performance. Class II construction is required for maximum fan performance, but is inappropriate under light duty applications due to inadequate loading of the bearings.

Series 40 Fans are available in Class I and II construction in 100% width and 66% width. These parameters are explained in the following table.

FAN CLASS	PERFORMANCE RANGE
I	Light to Medium Duty
II	Maximum Fan Performance

# Centrifugal Fan Classifications

Series 41 and 41P Fiberglass Backward Curved Centrifugal Fans, Type FA, are designed and classified to perform within the centrifugal fan classification parameters established by AMCA Standard No. 2408; AMCA Publication 99. Hartzell Series 41 Fiberglass Backward Curved Centrifugal Fans, Type FA, 100% width are available in Class I and II

construction. Hartzell Series 41 in 66% width are available in Class I, II, and III construction. Hartzell Series 41 in 33% width are available in Class II, III, and IV construction. Series 41P are available up through Class II construction only. See performance tables for specific ratings. These parameters are explained in the following table.

FAN CLASS	PERFORMANCE RANGE*		
	100% WIDTH	66% WIDTH	33% WIDTH
I	5" @ 2300 FPM to 2½" @ 3200 FPM	6" @ 1300 FPM to 2" @ 2700 FPM	
II	8½" @ 3000 FPM to 4¼" @ 4175 FPM	10" @ 2300 FPM to 2" @ 4000 FPM	14" @ 1400 FPM to 12" @ 1800 FPM
III		16" @ 2500 FPM to 4" @ 4000 FPM	22" @ 1500 FPM to 12" @ 3500 FPM
IV			30" @ 1700 FPM to 30" @ 3200 FPM

\* At standard air conditions (70°F, 29.92 in. HG barometric pressure, .075 lbs./ft.3). Static pressure shown in inches of water; outlet velocity shown in feet per minute. Performance Ranges apply only to 100% width construction.

## Performance Guaranteed



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At Hartzell, these are words we live by. They guide us every day. Good enough isn't how you design your products. It's not how we engineer, build and support our products — or provide ongoing service to our customers. When we looked at the industry standard two-year warranty, we knew we had to do better. And we did — by offering the Hartzell **FIVE-YEAR WARRANTY**.

# Options and Accessories

## Abrasive/Erosive Resistant Coating

HartKoate is an abrasive/erosive resistant coating developed by Hartzell Air Movement for application in environments where abrasive/erosive conditions may exist. HartKoate helps prevent premature deterioration of equipment in environments where uncoated fans may fail.

HartKoate is applied to a 50-60 mil thickness suitable for temperatures to 200°F.

HartKoate is particularly appropriate for use when water mist and/or abrasive particles exist in the airstream.

Contact your Hartzell representative for further details concerning the application of HartKoate coating to fiberglass fans in corrosive atmospheres.

## Hi-Cor Construction

All airstream surfaces exposed to corrosive environment will be protected with a layer of Synthetic (Nexus) surfacing veil. An additional final coat of resin will be applied for extra corrosion resistance.

When Hi-Cor construction is required, the factory should be consulted concerning the corrosive environment involved.

## Electrostatically Grounded

For applications in which fiberglass products are handling gas fumes that are not only corrosive but also potentially explosive, the equipment should be specially constructed to control and remove static electricity. Interior airstream surfaces can be coated with a "carbon rich" resin coat.

Grounding straps are secured from the side of the housing to the fan's steel base. All that remains to effectively ground the airstream is to ground the fan base at the time of installation.

## ASTM D4167-21 Construction

(ASTM D4167-97, Standard Specification for Fiber-Reinforced Plastic Fans and Blowers.)

For corrosive systems where ASTM construction is specified this construction option adds:

- Synthetic veil
- Electrostatically conductive surface coating applied to airstream housing and impeller surfaces
- Special nameplates
- Special final dynamic balancing to fan

## Fan Sound Reduction

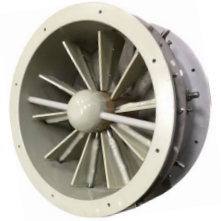
When fan sound is an issue, Hartzell has the solutions.

- Special insulated housings
- Inlet and outlet silencers
- Sound Blankets
- Sound Enclosures

Please contact factory for what options are best for your application.

## Inlet Control Damper

Dampers are mounted on the blower's drilled inlet flange to increase the efficiency of the system and permit control of air volume. Dampers are fiberglass, epoxy coated or stainless steel construction.



## Outlet Control Damper

Dampers are mounted directly on the blower outlet to control the volume of air delivered to the system. Opposed and parallel blade dampers are available in steel, stainless steel, coated steel and solid fiberglass.

### Parallel Blade Type

Best suited for applications requiring accurate air volume in a range from wide open to 75% open. Usually used for balancing the system or for modulated control when pressure drop is variable.



Parallel Blade

### Opposed Blade Type

Best suited for control over a broad range of air volume with more precise control.



Opposed Blade

Both types of outlet control dampers are available in three classifications:

**Class I** – Maximum static pressure: 5" S.P.  
Maximum velocity: 3,900 FPM

**Class II** – Maximum static pressure: 8½" S.P.  
Maximum velocity: 5,100 FPM

**Class III** – Maximum static pressure: 20" S.P.  
Maximum velocity: 6,000 FPM

## Discharge Backdraft Damper

Automatic gravity operated backdraft damper eliminates backflow of air when fan is not operating. Can handle up to 4,000 FPM and 16" of S.P.

## Round Volume Control Damper

Designed for up to 30" S.P. and available with near zero leakage.



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# Options and Accessories (cont.)

## Drain

PVC female threaded 1" NPT for Series 40, 41, 41P, 41U, and 43 (sizes 30 & 36)

1/2" NPT for Series 42 and Series 43. Sizes 16" – 26"



## Access Door

Raised, bolted door held in place with zinc plated bolts and gasketed for a tight seal.

**Not Available on Series 40 and 42.**



## Inspection Door

Allows for periodic visual inspection of the wheel. Constructed of fiberglass, fastened with stainless steel bolts and gasketed for tight seal. **Not available on Series 43 only.**



## Flanged Inlet

A fiberglass inlet flange is available (Standard on Series 40). Flanges are drilled upon request. Note: A flanged and drilled inlet is required when an inlet control damper is used.

## Flanged Outlet

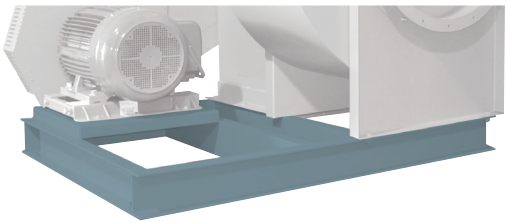
Flanged outlets are standard on the Series 40, 41 and 41P, 42, and 43. A bolt-on flanged outlet is available for the Series 41U. Drilled flanges are available on all series.

## Vibration Isolators

Rubber-in-shear or spring type isolators are available.

## Arrangement 1 Sub-Base

Common structural support for an Arrangement 1 fan and motor. Please specify motor mounting position. Epoxy coated steel construction. **Series 41 and 43 only.**



## Arrangement E Motor Base

Accommodates a larger frame size motor than the standard arrangement 9 base. **Series 41 and 43 only.**

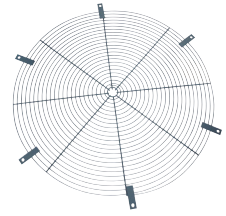


## Additional Arrangements

Arrangement 8 and other arrangements (not shown in this catalog) are available. Please contact the factory.

## Inlet and Outlet Guards

A spiral ring guard can be furnished for the inlet side and a wire mesh guard can be furnished for the outlet. Series 40 outlet guard same as inlet.



## Combination Drive Guard & Weather Cover

Constructed of epoxy coated steel. Covers motor and shaft sheaves as well as belts. Guards the drive and provides weather protection. Please specify fan arrangement.



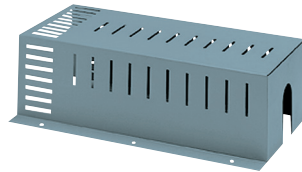
Arrangement 9



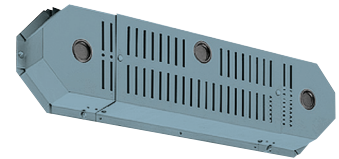
Arrangement 10

## Drive Guards

Encloses the drive assembly while permitting circulation of ambient air. Standard features include: tach opening, belt tension openings and adjustable length. **Series 41, 42, 43 only.**



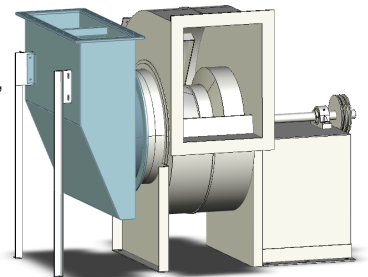
Shaft Guard  
Arrangements 1, 8, & 9



Belt Drive Guard  
Arrangements 1 & 9

## Inlet Box

Constructed of solid fiberglass, an inlet box improves entry conditions and minimizes losses, which are generally associated with duct elbows at the fan inlet. Inlet boxes are designed for specific applications. Please contact factory. **Available for Series 41, 41P, 41U and 43.**



## Disconnect Switch

An on/off switch mounted to the unit to provide safety during maintenance.

## Shaft Seals

Standard friction shaft seals are available in Neoprene, Teflon, and Viton. Available on all fiberglass centrifugal fans. Single Lip and Double Lip shaft seals are available in types 304 SS and 316 SS with either Teflon or Viton inserts. Double Lip has optional Purge / Greaser. **Available for Series 41, 41P, 42, and 43.**



# Options and Accessories | Series 40 ONLY

## Companion Flanges

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



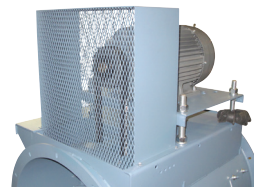
## Fiberglass Weather Cover

Designed to fit fiberglass in-line centrifugal fans. The cover is solid fiberglass and die-formed with injection molded louvers.

## Weather Cover

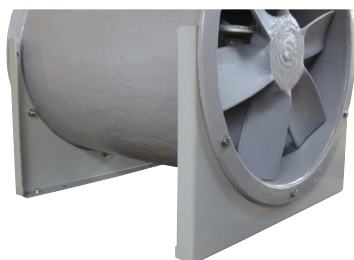
Designed to fit belt drive in-line centrifugal fans. The cover is epoxy coated steel and vented. Specify horizontal or vertical mounting.

## Belt Guard



Covers motor sheave and belts outside the fan housing. Epoxy coated, 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/Ceiling Suspension

Bolted to the inlet and discharge flanges, mounting feet allow for positioning of the duct fan on a floor, ceiling, wall or platform. Can be used with vibration isolators. Epoxy coated steel construction.



## Hooded Roof Ventilator

When required, the Hartzell Fiberglass In-Line Centrifugal Fan can be supplied with a fiberglass weather hood. These power roof ventilators can be used for intake or exhaust.

## Vibration Isolators

Rubber-in-shear or spring type isolators are available. When using vibration isolators, mounting feet or a panel must be specified.



## Roof Mounted Upblast

Together with a fiberglass curb panel and fiberglass stack cap, the Hartzell Fiberglass In-Line Centrifugal Fan can be mounted as a roof exhaust. The stack cap has back draft dampers to provide a weather tight closure for vertical air discharge.

## CFM Limitations for Damper Lid Operation

Fan Size	Without Outlet Transition		With Outlet Transition	
	Minimum*	Maximum**	Minimum*	Maximum**
12	2,615	5,975	1,195	2,725
15	3,210	7,335	2,080	4,750
22	8,065	18,435	6,200	14,175
27	10,175	23,250	8,065	18,435
33	15,120	34,560	12,525	28,630
40	22,890	52,315	17,960	41,055
49	CF	CF	22,890	52,315
60	CF	CF	28,180	64,410

\*Minimum CFM to open lids \*\*Maximum CFM to prevent lid damage  
CF - Contact Factory for ratings.

# Series 40

## Fiberglass In-Line Centrifugal Fan, Belt Drive

The Series 40 In-Line Centrifugal Fan offers non-overloading horsepower, high efficiency, low noise, and economy for corrosive atmospheres. It is unique in the fan and blower industry. It combines the design advantages of the axial flow fan with the performance characteristics of the centrifugal fan. The design saves space by incorporating a tubular housing, as opposed to a traditional scroll-type centrifugal housing, and allows for the unit to be installed directly in a duct system. The "tubular centrifugal" or in-line fan utilizes the Type FA backward curved, airfoil-bladed wheel in a vane-equipped housing and produces straight airflow with the same inlet and discharge dimensions.

### Features

**Performance:** Type FA fiberglass airfoil wheel with inlet cone and built in aerodynamically designed straightening vanes produces from 800 CFM to 94,000 CFM at pressures from free delivery to 12" W.G. at high efficiencies with non-overloading horsepower, low noise, and low RPM. Power Ratings (BHP) includes Belt Drive Losses.

**Temperature:** Suitable for temperatures up to 200°F.  
Note: Temperature correction factors must be applied when operating at other than ambient conditions (70°F). See Maximum Safe Speed Correction Factors chart on page 30.

**Sizes:** 12" – 60"

**Classifications:** Available in Class I and II in both 100% and 66% widths.

**Arrangements:** Available in arrangements 1 and 9. Also available in a Power Roof Ventilator configuration.

For performance data, please visit [www.hartzellflow.com](http://www.hartzellflow.com) or contact your local sales representative.



Hartzell Air Movement certifies that the Series 40, Fiberglass In-Line Centrifugal Fans, shown herein are licensed to bear the AMCA seal for sound and air performance. Ratings are based on tests and procedures performed in accordance with AMCA Publication 211 and Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. For performance and sound data, please visit [www.hartzellflow.com](http://www.hartzellflow.com) or contact your local sales representative.



Type FA Wheel



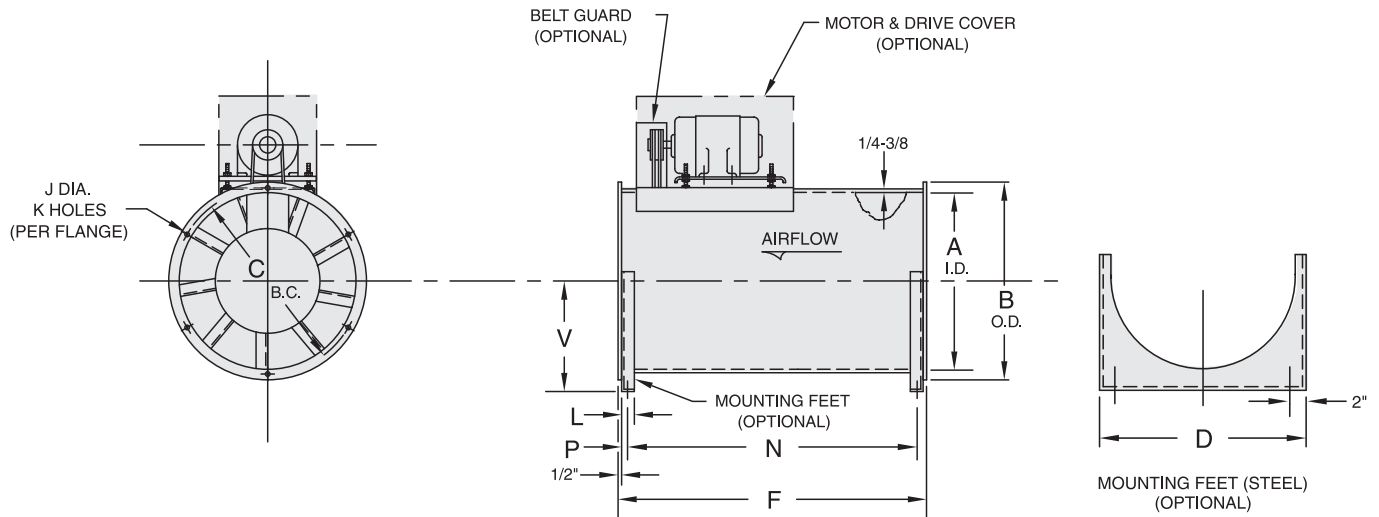
Series 40 Fiberglass In-Line Centrifugal Fan at a wastewater treatment plant.



# Arrangement 9 Dimensions

Series 40, Type FA – Sizes 12" to 60"

Standard Construction – Classes I & II – Maximum Temperature: 200°F



Principal Dimensions (inches) – Series 40 – Sizes 12" – 60"

Size	A	B	C	F	J	K	L	N	P	Max Motor Frame
12	18 <sup>7</sup> / <sub>8</sub>	22 <sup>1</sup> / <sub>8</sub>	20 <sup>1</sup> / <sub>2</sub>	25	7 <sup>1</sup> / <sub>16</sub>	6	1 <sup>1</sup> / <sub>2</sub>	22 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>4</sub>	213T
15	20 <sup>7</sup> / <sub>8</sub>	24 <sup>1</sup> / <sub>8</sub>	22 <sup>1</sup> / <sub>2</sub>	35 <sup>3</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>16</sub>	6	1 <sup>1</sup> / <sub>2</sub>	33 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	215T
22	33	36 <sup>1</sup> / <sub>2</sub>	34 <sup>7</sup> / <sub>8</sub>	44 <sup>3</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>16</sub>	6	1 <sup>1</sup> / <sub>2</sub>	41 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	256T
27	37	40 <sup>1</sup> / <sub>8</sub>	38 <sup>7</sup> / <sub>8</sub>	48	7 <sup>1</sup> / <sub>16</sub>	6	1 <sup>1</sup> / <sub>2</sub>	45 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>4</sub>	286T
33	45	49 <sup>1</sup> / <sub>8</sub>	47 <sup>1</sup> / <sub>8</sub>	57	7 <sup>1</sup> / <sub>16</sub>	12	1 <sup>1</sup> / <sub>2</sub>	54 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>4</sub>	326T
40	54 <sup>7</sup> / <sub>8</sub>	59 <sup>5</sup> / <sub>8</sub>	57 <sup>5</sup> / <sub>8</sub>	64	7 <sup>1</sup> / <sub>16</sub>	12	2 <sup>1</sup> / <sub>2</sub>	60 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>4</sub>	365T
49	66 <sup>7</sup> / <sub>8</sub>	72 <sup>1</sup> / <sub>2</sub>	70 <sup>1</sup> / <sub>4</sub>	85 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>16</sub>	12	2 <sup>1</sup> / <sub>2</sub>	82	1 <sup>1</sup> / <sub>4</sub>	405T
60	81 <sup>7</sup> / <sub>8</sub>	88	85 <sup>3</sup> / <sub>4</sub>	103 <sup>5</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>16</sub>	12	2 <sup>1</sup> / <sub>2</sub>	100 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	405T

Mounting Feet (optional)

Size	D	V
12	22 <sup>1</sup> / <sub>2</sub>	12 <sup>5</sup> / <sub>8</sub>
15	24 <sup>1</sup> / <sub>2</sub>	14
22	36 <sup>5</sup> / <sub>8</sub>	20 <sup>1</sup> / <sub>8</sub>
27	44 <sup>3</sup> / <sub>4</sub>	24 <sup>1</sup> / <sub>8</sub>
33	48 <sup>3</sup> / <sub>4</sub>	26 <sup>1</sup> / <sub>8</sub>
40	60 <sup>1</sup> / <sub>8</sub>	31 <sup>7</sup> / <sub>8</sub>
49	75	37 <sup>1</sup> / <sub>2</sub>
60	90 <sup>1</sup> / <sub>2</sub>	47 <sup>1</sup> / <sub>16</sub>

Dimensions and specifications are subject to change. Certified prints are available.

# Material Specifications/Weight

Series 40

Class	Fan Size	Fan Shaft	Installation Weight	
			100%	66%
I	12	1 <sup>3</sup> / <sub>16</sub>	93	93
	15	1 <sup>3</sup> / <sub>16</sub>	146	144
	22	2 <sup>3</sup> / <sub>16</sub>	312	307
	27	1 <sup>15</sup> / <sub>16</sub>	537	526
	33	2 <sup>3</sup> / <sub>16</sub>	672	657
	40	2 <sup>11</sup> / <sub>16</sub>	962	935
	49	2 <sup>15</sup> / <sub>16</sub>	1594	1545
	60	3 <sup>3</sup> / <sub>16</sub>	2399	2308
II	12	1 <sup>3</sup> / <sub>16</sub>	96	96
	15	1 <sup>11</sup> / <sub>16</sub>	159	157
	22	1 <sup>11</sup> / <sub>16</sub>	302	297
	27	1 <sup>15</sup> / <sub>16</sub>	543	532
	33	2 <sup>3</sup> / <sub>16</sub>	683	668
	40	2 <sup>11</sup> / <sub>16</sub>	990	963
	49	2 <sup>15</sup> / <sub>16</sub>	1611	1563
	60	3 <sup>11</sup> / <sub>16</sub>	2507	2416

Dimensions and specifications are subject to change. Certified prints are available. Installation weight is approximate and is less motor, drives and optional equipment.

# Series 41

## Backward Curved Centrifugal Fan, Belt or Direct Drive

The Series 41 Fiberglass Backward Curved Centrifugal Fan offers non-overloading horsepower characteristics, high efficiency, low noise and economy for corrosive atmospheres. It is available in SWSI (single width single inlet) only.

### Features

**Sizes:** 12"– 60"

**Classifications:** Available in classes I and II in 100% widths. Available in classes I, II, and III in 66% widths. Available in classes II, III and IV in 33% width.

**Arrangements:** Available in belt drive arrangements 1, 9 and 10; direct drive arrangement 4; and direct coupled arrangement 8. Please contact the factory for arrangement 8 dimensions.

**Performance:** Type FA fiberglass airfoil wheel with inlet cone and aerodynamically designed housing produces from 800 CFM to 100,000 CFM at pressures from free delivery to 30" W.G. at high efficiencies with non-overloading horsepower, low noise and low RPM.

**Temperature Limitations:** Suitable for temperatures up to 220°F. Note: Temperature correction factors must be applied when operating at other than ambient conditions (70°F). See Maximum Safe Speed Correction Factors chart on page 30.

**Rotation and Discharge Positions:** Available in both clockwise and counter clockwise rotations in all standard discharge positions. Housing for 12" through 36" sizes are field rotatable.

**Flanged Duct Connections:** Outlet flange is standard, inlet flange is optional. Drilled flanges are optional. Inlet is slip-fit as standard.

For performance data, please visit [www.hartzellflow.com](http://www.hartzellflow.com) or contact your local sales representative.



Type FA Wheel



Hartzell Air Movement certifies that the Series 41, Fiberglass Backward Curved Centrifugal Fan, Type FA, shown herein is licensed to bear the AMCA seal for sound and air performance. Ratings are based on tests and procedures performed in accordance with AMCA Publication 211 and Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. For performance and sound data, please visit [www.hartzellflow.com](http://www.hartzellflow.com) or contact your local sales representative.

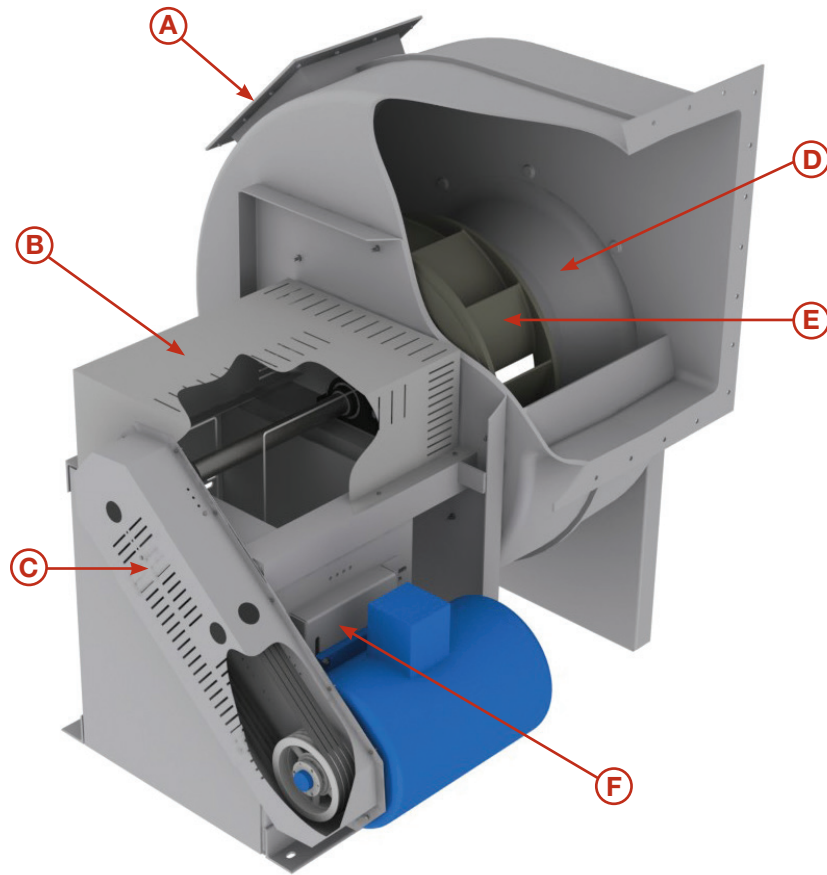


Series 41 Fiberglass Backward Curved Centrifugal Fan with Scrubber



Series 41 Fiberglass Backward Curved Centrifugal Fan

# Series 41 Sectional View



## A. Access Door (Optional)

Raised, bolted door held in place with zinc plated bolts and gasketed for a tight seal. Allows for easy access to wheel compartment.

## B. Shaft Guard (Optional)

Encloses the shaft/bearing assembly while permitting circulation of ambient air.

## C. Drive Guard (Optional)

Encloses the drive assembly while permitting circulation of ambient air. Standard features include tach opening, belt tension openings and adjustable length to maximize air and sound performance.

## D. Inlet Cone

Guides air smoothly into the wheel to maximize performance.

## E. Type FA Wheel

Available in clockwise and counter clockwise rotation.

## F. Drive Tensioning Motor Base

Provides easy method to adjust belt tension for belt driven fans.



Series 41 Fiberglass Backward Curved Centrifugal Fan, Arrangement 8



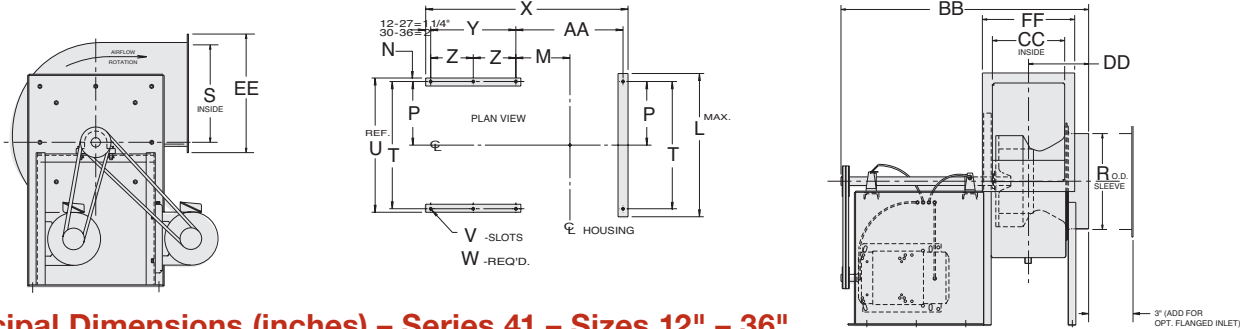
Series 41 Fiberglass Backward Curved Centrifugal Fan with Stack Caps



# Arrangements 1, 9 or 10 Dimensions

Series 41, Type FA – Sizes 12" to 36" – Rotatable Housing

Standard Construction – Classes I, II, III and IV – Maximum Temperature: 220°F



## Principal Dimensions (inches) – Series 41 – Sizes 12" – 36"

Fan Size	B			C	D	E	F		G	H	J	L		M			N
	A	Class I/II	Class III/IV				Class I/II	Class III/IV				Class I/II	Class III/IV	100% Width	66% Width	33% Width	
12	18 1/2	15 1/2	15 1/2	13	11 3/8	12 3/8	20 5/32	20 5/32	10 13/16	10 1/16	9 3/8	18 3/4	18 3/4	7 5/32	6 27/32	N/A	1
15	21 1/2	18 19/32	19 5/8	16 3/16	15 5/8	16 11/16	24 19/32	25 5/16	14 15/16	14	13 1/16	21 3/4	20 3/4	8 3/8	7 11/16	N/A	1
18	24 1/4	21 15/16	22 7/8	19	18 1/16	19 9/16	28 15/16	29 19/32	17 5/16	16 3/16	15 1/16	28 3/4	27 3/4	11 3/16	10 3/8	N/A	15 1/16
22	30	26 7/32	27 3/16	21 1/8	22 11/16	24 1/16	33 15/32	34 1/8	21 5/16	19 15/16	18 9/16	29 1/8	28 5/8	11 1/8	10 3/8	5 59/64	1
24	33 15/16	28 5/32	29 1/4	23	24 7/16	25 15/16	36 1/4	36 15/16	22 15/16	21 1/16	19 15/16	31	30	11 7/8	10 3/4	6 13/64	1
27	32 3/8	32 1/2	32 1/2	24	27 7/16	29 1/8	39 15/16	39 15/16	25 13/16	24 1/8	22 7/16	33 3/8	33 3/8	13 3/16	11 15/16	6 53/64	1
30	37	35	35	28 1/4	29 9/16	31 3/8	44 23/32	44 23/32	27 3/4	25 15/16	24 1/16	38 3/8	38 3/8	17	15 5/8	10 3/64	2 1/8
33	40	38 3/16	38 3/16	28 11/16	33 3/4	35 1/4	47 1/4	47 1/4	31 1/4	29 1/4	27 3/16	38 3/8	38 3/8	18 1/2	16 5/8	10 57/64	2 1/8

Fan Size	P	R	S	T	U	V	W	X			Y	Z	AA		
								100% Width	66% Width	33% Width			100% Width	66% Width	33% Width
12	8 1/8	12 1/4	12 7/8	16 1/4	18 1/4	1 1/16 X 1 11/16	6	28 1/8	26 31/32	N/A	12 3/4	--	13 1/4	12 5/8	N/A
15	9 1/8	16 1/2	16 1/8	18 1/4	20 1/4	1 1/16 X 1 11/16	6	34	32 3/4	N/A	15 3/4	--	16	14 1/16	N/A
18	12 11/16	19 1/2	19 3/8	25 3/8	27 1/4	1 1/16 X 1 11/16	8	41	39 1/2	N/A	18 3/4	9 3/8	20	18 1/4	N/A
22	12 11/16	23 7/8	23 3/8	25 3/8	27 3/8	1 1/16 X 1 11/16	8	44 1/16	42	39 29/32	20 1/4	10 3/8	21 1/16	19 1/2	17 17/32
24	12 11/16	25 7/8	25 3/4	25 3/8	27 3/8	1 1/16 X 1 11/16	8	47 7/8	46	43 11/32	22 1/2	11 1/4	23 3/8	20 7/8	18 9/32
27	11	28 3/4	29	22	24	1 1/16 X 1 11/16	8	50 9/16	48 3/16	45 15/32	22 1/2	11 1/4	25 13/16	23 5/16	20 23/32
30	16 7/8	31 3/16	31 1/2	33 3/4	38	1 3/16 X 1 1/4	8	57 1/16	54 3/8	51 17/32	22 3/4	11 3/8	30 13/16	28 1/8	25 9/32
33	16 7/8	34 3/16	34 11/16	33 3/4	38	1 3/16 X 1 1/4	8	62 1/16	59 1/16	56 11/32	25 3/4	12 7/8	33 1/16	30 3/16	37 3/32

Fan Size	BB			CC			DD			EE						FF						
	100% Width	66% Width	33% Width	100% Width	66% Width	33% Width	100% Width	66% Width	33% Width	100% Width		66% Width		33% Width		100% Width		66% Width		33% Width		
	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV
12	33 1/8	31 31/32	N/A	9 3/32	8 3/8	N/A	8	7 7/16	N/A	18 1/8	18 1/8	18 1/8	18 1/8	N/A	N/A	14 3/8	14 3/8	13 1/2	13 1/2	N/A	N/A	N/A
15	38 3/4	37 1/16	N/A	11 11/16	10 5/16	N/A	9 1/16	8 5/16	N/A	21 1/16	23 1/8	21 1/16	23 1/8	N/A	N/A	16 5/8	18 11/16	15 1/4	17 1/16	N/A	N/A	N/A
18	45 1/4	47 11/16	N/A	14	12 5/16	N/A	10 1/2	9 3/8	N/A	24 1/2	26 3/8	24 1/2	26 3/8	N/A	N/A	19 1/16	21	17 3/8	19 1/16	N/A	N/A	N/A
22	49 5/8	47 5/16	45 15/32	17 3/8	15 1/16	12 21/32	12 1/8	11	6 59/64	28 3/4	30 5/8	28 3/4	30 5/8	28 3/4	30 5/8	22 1/4	24 1/8	20 3/16	22 1/16	18 3/32	19 31/32	
24	54 1/8	51 11/16	49 9/32	18 5/8	16 3/8	14 3/32	12 5/16	11 1/16	7 17/64	30 13/16	32 3/4	30 13/16	32 3/4	30 13/16	32 3/4	23 1/16	25 5/8	21 1/2	23 3/8	19 9/32	21 3/32	
27	56 3/4	53 13/16	51 21/32	21	18 1/2	15 29/32	14 1/8	12 7/8	7 49/64	36	36	36	36	36	36	28	28	25 1/2	25 1/2	22 29/32	22 29/32	
30	63 1/16	60 3/8	57 17/32	22 9/16	20 1/16	17 9/32	15 1/16	13 1/16	8 9/64	38 1/2	38 1/2	38 1/2	38 1/2	38 1/2	38 1/2	29 9/16	29 9/16	27 1/16	27 1/16	24 9/32	24 9/32	
33	69 1/8	65 1/16	63 3/32	25 1/8	22 1/8	19 3/32	16 1/4	14 3/4	8 41/64	41 11/16	41 11/16	41 11/16	41 11/16	41 11/16	41 11/16	32 1/8	32 1/8	29 1/8	29 1/8	26 3/32	26 3/32	

Dimensions and specifications are subject to change. Clockwise Rotation is shown. Certified prints are available.

## Fan Discharges

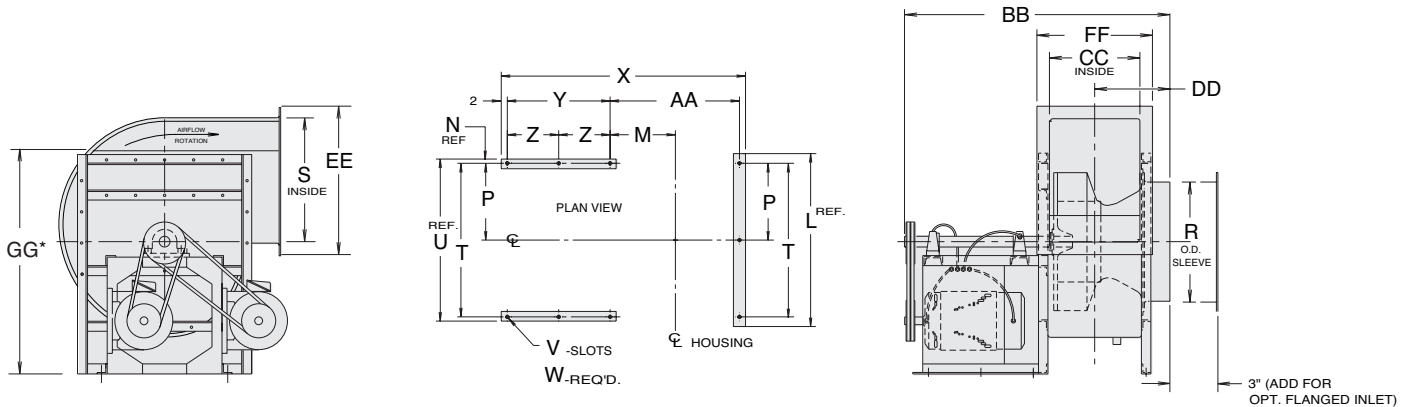
TAD, BAD and DB discharges require a discharge extension. Please contact the factory.

TOP HORIZONTAL	BOTTOM HORIZONTAL	BOTTOM ANGULAR UP	UP BLAST	TOP ANGULAR UP
<b>CLOCKWISE</b>				
	FOR TOP ANGULAR DOWN, BOTTOM ANGULAR DOWN AND DOWN BLAST, CONTACT FACTORY.			
<b>COUNTERCLOCKWISE</b>				
	FOR TOP ANGULAR DOWN, BOTTOM ANGULAR DOWN AND DOWN BLAST, CONTACT FACTORY.			

# Arrangements 1, 9 or 10 Dimensions

Series 41, Type FA – Sizes 40" to 60" – Fixed Housing

Standard Construction – Classes I, II, III and IV – Maximum Temperature: 220°F



## Principal Dimensions (inches) – Series 41 – Sizes 40" – 60"

Fan Size	A				B	C	D	E	F	G	H	J	L	M		
	TAU-TH	TAD	BH	BAU-UB										100% Width	66% Width	33% Width
40	47	47	47	47	46 <sup>13</sup> / <sub>16</sub>	35 <sup>5</sup> / <sub>16</sub>	40 <sup>1</sup> / <sub>4</sub>	42 <sup>3</sup> / <sub>4</sub>	58 <sup>1</sup> / <sub>16</sub>	37 <sup>3</sup> / <sub>4</sub>	35 <sup>1</sup> / <sub>4</sub>	32 <sup>3</sup> / <sub>4</sub>	55 <sup>1</sup> / <sub>4</sub>	21 <sup>3</sup> / <sub>16</sub>	19 <sup>3</sup> / <sub>8</sub>	11 <sup>59</sup> / <sub>64</sub>
44	51 <sup>1</sup> / <sub>4</sub>	51 <sup>1</sup> / <sub>4</sub>	51 <sup>1</sup> / <sub>4</sub>	51 <sup>1</sup> / <sub>4</sub>	52 <sup>3</sup> / <sub>8</sub>	39 <sup>11</sup> / <sub>16</sub>	45 <sup>1</sup> / <sub>2</sub>	48 <sup>1</sup> / <sub>4</sub>	65 <sup>1</sup> / <sub>8</sub>	42 <sup>3</sup> / <sub>4</sub>	40	37 <sup>3</sup> / <sub>16</sub>	59 <sup>5</sup> / <sub>8</sub>	22 <sup>7</sup> / <sub>8</sub>	20 <sup>7</sup> / <sub>8</sub>	12 <sup>39</sup> / <sub>64</sub>
49	56 <sup>1</sup> / <sub>2</sub>	56 <sup>1</sup> / <sub>2</sub>	56 <sup>1</sup> / <sub>2</sub>	56 <sup>1</sup> / <sub>2</sub>	57 <sup>7</sup> / <sub>8</sub>	43 <sup>11</sup> / <sub>16</sub>	49 <sup>1</sup> / <sub>16</sub>	52 <sup>1</sup> / <sub>2</sub>	71 <sup>5</sup> / <sub>16</sub>	46	42 <sup>15</sup> / <sub>16</sub>	39 <sup>7</sup> / <sub>8</sub>	71 <sup>1</sup> / <sub>2</sub>	24 <sup>9</sup> / <sub>16</sub>	22 <sup>3</sup> / <sub>8</sub>	13 <sup>17</sup> / <sub>64</sub>
54	54 <sup>1</sup> / <sub>4</sub>	47 <sup>3</sup> / <sub>4</sub>	64	61	62 <sup>7</sup> / <sub>8</sub>	48 <sup>3</sup> / <sub>8</sub>	54 <sup>3</sup> / <sub>8</sub>	57 <sup>3</sup> / <sub>4</sub>	78 <sup>11</sup> / <sub>16</sub>	51	47 <sup>7</sup> / <sub>16</sub>	44 <sup>1</sup> / <sub>4</sub>	69 <sup>5</sup> / <sub>8</sub>	27 <sup>3</sup> / <sub>8</sub>	24 <sup>15</sup> / <sub>16</sub>	14 <sup>7</sup> / <sub>8</sub>
60	60	52 <sup>1</sup> / <sub>2</sub>	70	67 <sup>1</sup> / <sub>2</sub>	69 <sup>1</sup> / <sub>16</sub>	53 <sup>1</sup> / <sub>2</sub>	59 <sup>7</sup> / <sub>8</sub>	63 <sup>3</sup> / <sub>4</sub>	86 <sup>11</sup> / <sub>16</sub>	56 <sup>1</sup> / <sub>8</sub>	52 <sup>3</sup> / <sub>8</sub>	48 <sup>5</sup> / <sub>8</sub>	75 <sup>1</sup> / <sub>2</sub>	29 <sup>3</sup> / <sub>8</sub>	26 <sup>15</sup> / <sub>16</sub>	15 <sup>51</sup> / <sub>64</sub>

Fan Size	N	P	R	S	T	U	V	W	X			Y	Z	AA		
									100% Width	66% Width	33% Width			100% Width	66% Width	33% Width
40	2	22	42 <sup>5</sup> / <sub>8</sub>	43 <sup>5</sup> / <sub>16</sub>	44	48	1 <sup>13</sup> / <sub>16</sub> X 1 <sup>1</sup> / <sub>4</sub>	9	70 <sup>1</sup> / <sub>8</sub>	66 <sup>1</sup> / <sub>2</sub>	62 <sup>23</sup> / <sub>32</sub>	27 <sup>3</sup> / <sub>4</sub>	13 <sup>7</sup> / <sub>8</sub>	38 <sup>3</sup> / <sub>8</sub>	35 <sup>1</sup> / <sub>4</sub>	31 <sup>15</sup> / <sub>32</sub>
44	2	22	47 <sup>7</sup> / <sub>8</sub>	47 <sup>7</sup> / <sub>8</sub>	44	48	1 <sup>13</sup> / <sub>16</sub> X 1 <sup>1</sup> / <sub>4</sub>	9	73 <sup>7</sup> / <sub>16</sub>	69 <sup>9</sup> / <sub>16</sub>	65 <sup>7</sup> / <sub>32</sub>	27 <sup>3</sup> / <sub>4</sub>	13 <sup>7</sup> / <sub>8</sub>	42 <sup>3</sup> / <sub>16</sub>	38 <sup>3</sup> / <sub>16</sub>	33 <sup>3</sup> / <sub>32</sub>
49	2 <sup>1</sup> / <sub>2</sub>	22 <sup>1</sup> / <sub>2</sub>	51 <sup>7</sup> / <sub>8</sub>	52 <sup>5</sup> / <sub>8</sub>	45	50	1 <sup>13</sup> / <sub>16</sub> X 1 <sup>1</sup> / <sub>4</sub>	9	81 <sup>7</sup> / <sub>8</sub>	77 <sup>7</sup> / <sub>16</sub>	72 <sup>27</sup> / <sub>32</sub>	32 <sup>3</sup> / <sub>4</sub>	16 <sup>3</sup> / <sub>8</sub>	45 <sup>5</sup> / <sub>8</sub>	41 <sup>1</sup> / <sub>16</sub>	36 <sup>19</sup> / <sub>32</sub>
54	2	27	57 <sup>1</sup> / <sub>16</sub>	58 <sup>3</sup> / <sub>8</sub>	54	58	1 <sup>13</sup> / <sub>16</sub> X 1 <sup>1</sup> / <sub>4</sub>	9	86 <sup>1</sup> / <sub>16</sub>	81 <sup>1</sup> / <sub>8</sub>	76 <sup>1</sup> / <sub>16</sub>	32	16	50 <sup>9</sup> / <sub>16</sub>	45 <sup>5</sup> / <sub>8</sub>	40 <sup>9</sup> / <sub>16</sub>
60	2	27	63 <sup>1</sup> / <sub>16</sub>	64 <sup>9</sup> / <sub>16</sub>	54	58	1 <sup>13</sup> / <sub>16</sub> X 1 <sup>1</sup> / <sub>4</sub>	9	90 <sup>1</sup> / <sub>2</sub>	85 <sup>1</sup> / <sub>16</sub>	79 <sup>7</sup> / <sub>16</sub>	32	16	55	49 <sup>9</sup> / <sub>16</sub>	43 <sup>1</sup> / <sub>16</sub>

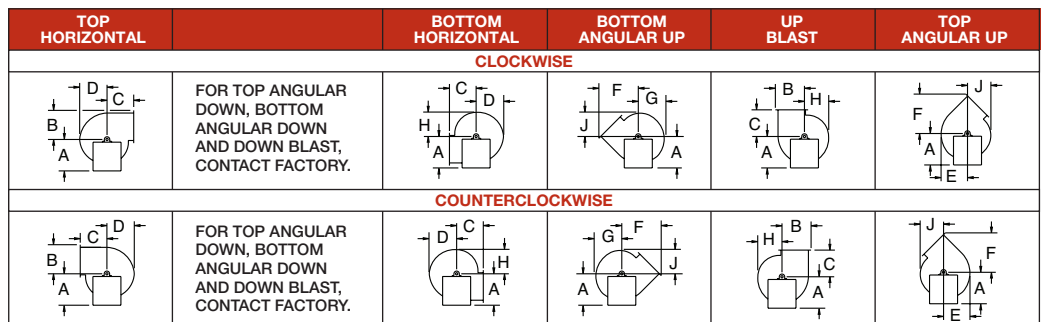
Fan Size	BB			CC			DD			EE	FF			GG*
	100% Width	66% Width	33% Width	100% Width	66% Width	33% Width	100% Width	66% Width	33% Width		100% Width	66% Width	33% Width	
40	78 <sup>13</sup> / <sub>16</sub>	75 <sup>3</sup> / <sub>16</sub>	71 <sup>13</sup> / <sub>16</sub>	31 <sup>3</sup> / <sub>8</sub>	27 <sup>3</sup> / <sub>4</sub>	23 <sup>31</sup> / <sub>32</sub>	19 <sup>1</sup> / <sub>2</sub>	17 <sup>11</sup> / <sub>16</sub>	10 <sup>15</sup> / <sub>64</sub>	50 <sup>5</sup> / <sub>16</sub>	38 <sup>3</sup> / <sub>8</sub>	34 <sup>3</sup> / <sub>4</sub>	30 <sup>31</sup> / <sub>32</sub>	--
44	82 <sup>7</sup> / <sub>16</sub>	78 <sup>7</sup> / <sub>16</sub>	74 <sup>7</sup> / <sub>32</sub>	34 <sup>11</sup> / <sub>16</sub>	30 <sup>1</sup> / <sub>16</sub>	26 <sup>5</sup> / <sub>32</sub>	21 <sup>1</sup> / <sub>4</sub>	19 <sup>1</sup> / <sub>4</sub>	10 <sup>63</sup> / <sub>64</sub>	56 <sup>7</sup> / <sub>8</sub>	43 <sup>11</sup> / <sub>16</sub>	39 <sup>11</sup> / <sub>16</sub>	35 <sup>15</sup> / <sub>32</sub>	--
49	90 <sup>7</sup> / <sub>8</sub>	86 <sup>7</sup> / <sub>16</sub>	81 <sup>27</sup> / <sub>32</sub>	38 <sup>1</sup> / <sub>8</sub>	33 <sup>1</sup> / <sub>16</sub>	29 <sup>3</sup> / <sub>32</sub>	22 <sup>15</sup> / <sub>16</sub>	20 <sup>3</sup> / <sub>4</sub>	11 <sup>41</sup> / <sub>64</sub>	61 <sup>5</sup> / <sub>8</sub>	47 <sup>7</sup> / <sub>8</sub>	42 <sup>11</sup> / <sub>16</sub>	38 <sup>3</sup> / <sub>32</sub>	--
54	94 <sup>13</sup> / <sub>16</sub>	89 <sup>7</sup> / <sub>8</sub>	84 <sup>13</sup> / <sub>16</sub>	42 <sup>5</sup> / <sub>16</sub>	37 <sup>3</sup> / <sub>8</sub>	32 <sup>3</sup> / <sub>16</sub>	25	22 <sup>9</sup> / <sub>16</sub>	12 <sup>1</sup> / <sub>2</sub>	67 <sup>3</sup> / <sub>8</sub>	51 <sup>5</sup> / <sub>16</sub>	46 <sup>3</sup> / <sub>8</sub>	41 <sup>5</sup> / <sub>16</sub>	98 <sup>1</sup> / <sub>4</sub>
60	99 <sup>5</sup> / <sub>16</sub>	93 <sup>7</sup> / <sub>8</sub>	88 <sup>1</sup> / <sub>4</sub>	46 <sup>3</sup> / <sub>4</sub>	41 <sup>5</sup> / <sub>16</sub>	35 <sup>1</sup> / <sub>16</sub>	27 <sup>1</sup> / <sub>4</sub>	24 <sup>3</sup> / <sub>16</sub>	13 <sup>27</sup> / <sub>64</sub>	73 <sup>3</sup> / <sub>16</sub>	55 <sup>3</sup> / <sub>4</sub>	50 <sup>5</sup> / <sub>16</sub>	44 <sup>11</sup> / <sub>16</sub>	107 <sup>3</sup> / <sub>8</sub>

Dimensions and specifications are subject to change. Clockwise Rotation is shown. Certified prints are available.

## Fan Discharges

TAD, BAD and DB discharges require a discharge extension. Please contact the factory.

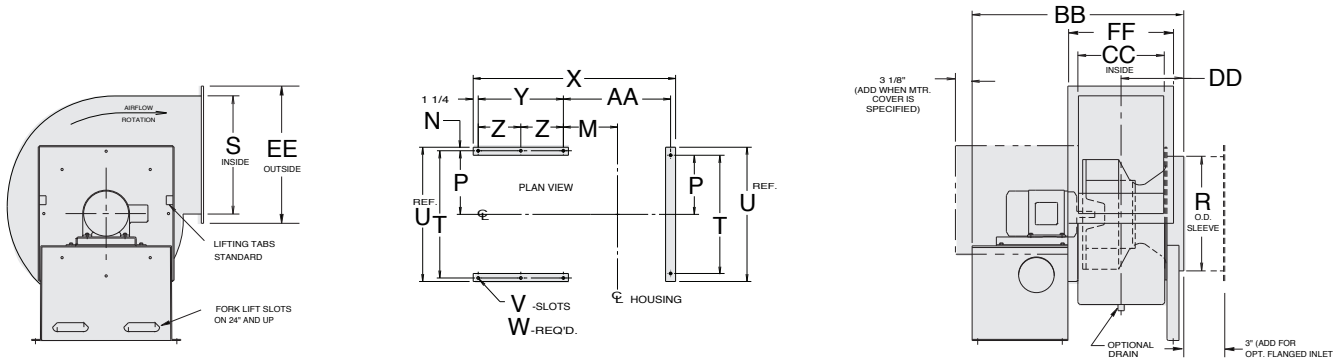
\*For TAU discharges on 54" and 60" sizes only, the dimension is for the location of a removable split scroll to allow for shipping. Assembly is required in the field.



# Arrangement 4 Dimensions

Series 41, Type FA – Sizes 12" to 33" – Rotatable Housing

Standard Construction – Classes I, II, III and IV – Maximum Temperature: 200°F



## Principal Dimensions (inches) – Series 41 – Sizes 12" – 33"

Fan Size	A	B		C	D	E	F		G	H	J	M			N
		Class I/II	Class III/IV				Class I/II	Class III/IV				100% Width	66% Width	33% Width	
12	16	15½	15½	13	11⅝	12⅝	20⅝ <sub>32</sub>	20⅝ <sub>32</sub>	10⅝ <sub>16</sub>	10⅝ <sub>16</sub>	9⅝	8⅝ <sub>16</sub>	7⅝	N/A	⅝
15	18¾	18⅞ <sub>32</sub>	19⅝	16⅞ <sub>16</sub>	15⅞	16⅞ <sub>16</sub>	24⅞ <sub>32</sub>	25⅞ <sub>16</sub>	14⅞ <sub>16</sub>	14	13⅞ <sub>16</sub>	9⅞ <sub>16</sub>	9	N/A	⅝
18	22	21⅞ <sub>16</sub>	22⅞	19	18⅞ <sub>16</sub>	19⅞ <sub>16</sub>	28⅞ <sub>16</sub>	29⅞ <sub>32</sub>	17⅞ <sub>16</sub>	16⅞ <sub>16</sub>	15⅞ <sub>16</sub>	10⅞ <sub>16</sub>	10⅞	N/A	⅝
22	26¾	26⅞ <sub>32</sub>	27⅞ <sub>16</sub>	21⅞	22⅞ <sub>16</sub>	24⅞ <sub>16</sub>	33⅞ <sub>32</sub>	34⅞	21⅞ <sub>16</sub>	19⅞ <sub>16</sub>	18⅞ <sub>16</sub>	12⅞	11⅞ <sub>16</sub>	7⅞ <sub>64</sub>	⅝
24	28½	28⅞ <sub>32</sub>	29¼	23	24⅞ <sub>16</sub>	25⅞ <sub>16</sub>	36¼	36⅞ <sub>16</sub>	22⅞ <sub>16</sub>	21⅞ <sub>16</sub>	19⅞ <sub>16</sub>	13⅞	12¼	7⅞ <sub>64</sub>	⅞
27	32¼	32½	32½	24	27⅞ <sub>16</sub>	29⅞	39⅞ <sub>16</sub>	39⅞ <sub>16</sub>	25⅞ <sub>16</sub>	24⅞	22⅞ <sub>16</sub>	14⅞	13⅞	8⅞ <sub>64</sub>	⅞
30	34¾	35	35	28¼	29⅞ <sub>16</sub>	31⅞	44⅞ <sub>32</sub>	44⅞ <sub>32</sub>	27⅞	25⅞ <sub>16</sub>	24⅞ <sub>16</sub>	15⅞ <sub>16</sub>	14⅞ <sub>16</sub>	8⅞ <sub>64</sub>	⅞
33	38	38⅞ <sub>16</sub>	38⅞ <sub>16</sub>	28⅞ <sub>16</sub>	33¼	35¼	47¼	47¼	31¼	29¼	27⅞ <sub>16</sub>	16⅞ <sub>16</sub>	15⅞ <sub>16</sub>	9⅞ <sub>64</sub>	⅞

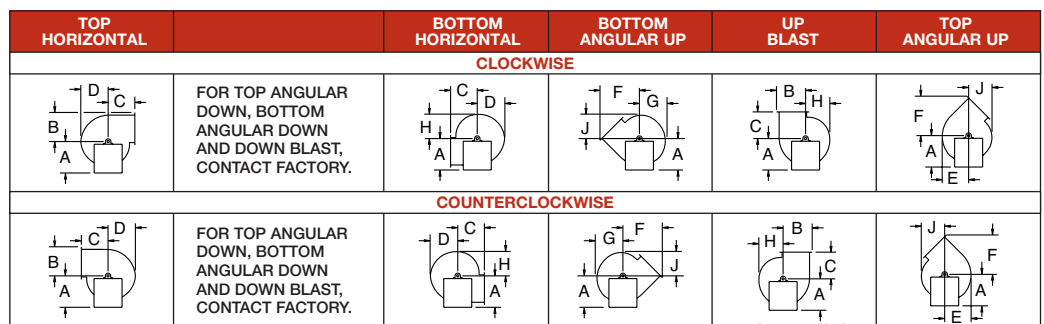
Fan Size	P	R	S	T	U	V	W	X			Y	Z	AA		
								100% Width	66% Width	33% Width			100% Width	66% Width	33% Width
12	9⅞	12¼	12⅞	18¼	19½	⅞ X 1⅞ <sub>16</sub>	6	26⅞ <sub>16</sub>	25⅞ <sub>32</sub>	N/A	9½	--	14⅞ <sub>16</sub>	13⅞ <sub>32</sub>	N/A
15	10¾	16½	16⅞	21½	22¾	⅞ X 1⅞ <sub>16</sub>	6	36	34⅞	N/A	16½	--	17¼	15⅞ <sub>16</sub>	N/A
18	12⅞	19½	19⅞	24¾	27¾	⅞ X 1⅞ <sub>16</sub>	6	40⅞ <sub>16</sub>	39¼	N/A	19	--	19⅞ <sub>16</sub>	18	N/A
22	14½	23⅞	23⅞	29	30¼	⅞ X 1⅞ <sub>16</sub>	6	44¼	42⅞ <sub>16</sub>	40⅞ <sub>32</sub>	19	--	23	21	18⅞ <sub>32</sub>
24	15⅞	25⅞	25¼	31¾	33½	1⅞ X 1⅞ <sub>16</sub>	6	45⅞ <sub>16</sub>	43⅞	41⅞ <sub>32</sub>	19	--	24⅞ <sub>16</sub>	22⅞	20⅞ <sub>32</sub>
27	17⅞	28¼	29	35¼	37	1⅞ X 1⅞ <sub>16</sub>	6	48½	46	43⅞ <sub>32</sub>	19	--	27¼	24¾	22⅞ <sub>32</sub>
30	18⅞	31⅞ <sub>16</sub>	31½	37¾	39½	1⅞ X 1⅞ <sub>16</sub>	8	52⅞ <sub>16</sub>	50¼	46⅞ <sub>32</sub>	21½	10¼	29⅞ <sub>16</sub>	26½	23⅞ <sub>32</sub>
33	20⅞	34⅞ <sub>16</sub>	34⅞ <sub>16</sub>	41¼	43	1⅞ X 1⅞ <sub>16</sub>	8	57½	54⅞ <sub>16</sub>	51⅞ <sub>32</sub>	23¼	11⅞	31½	28⅞ <sub>16</sub>	25⅞ <sub>32</sub>

Fan Size	BB			CC			DD			EE					FF							
	100% Width	66% Width	33% Width	100% Width	66% Width	33% Width	100% Width	66% Width	33% Width	100% Width		66% Width		33% Width		100% Width		66% Width		33% Width		
	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV	Class I/II	Class III/IV
12	27⅞ <sub>16</sub>	26⅞ <sub>32</sub>	N/A	9⅞ <sub>32</sub>	8⅞	N/A	8	7⅞ <sub>16</sub>	N/A	18⅞	18⅞	18⅞	18⅞	N/A	N/A	14⅞	14⅞	13½	13½	N/A	N/A	N/A
15	36⅞ <sub>16</sub>	35¼	N/A	11⅞ <sub>16</sub>	10⅞ <sub>16</sub>	N/A	9¼	8½	N/A	21⅞ <sub>16</sub>	23⅞	21⅞	23⅞	N/A	N/A	16⅞	18⅞ <sub>16</sub>	15¼	17⅞ <sub>16</sub>	N/A	N/A	N/A
18	41⅞	39¾	N/A	14	12⅞ <sub>16</sub>	N/A	10⅞ <sub>16</sub>	9⅞	N/A	24½	26⅞	24½	26⅞	N/A	N/A	19⅞ <sub>16</sub>	21	17⅞	19⅞ <sub>16</sub>	N/A	N/A	N/A
22	45⅞	42⅞ <sub>16</sub>	40⅞ <sub>32</sub>	17⅞	15⅞ <sub>16</sub>	12⅞ <sub>32</sub>	12	11	6⅞ <sub>64</sub>	28¼	30⅞	28¼	30⅞	28¼	30⅞	22¼	24⅞	20⅞ <sub>16</sub>	22⅞ <sub>16</sub>	18⅞ <sub>32</sub>	19⅞ <sub>32</sub>	
24	46⅞ <sub>16</sub>	44⅞ <sub>16</sub>	41⅞ <sub>32</sub>	18⅞	16⅞ <sub>16</sub>	14⅞ <sub>32</sub>	12⅞ <sub>16</sub>	11⅞ <sub>16</sub>	7⅞ <sub>64</sub>	30⅞ <sub>16</sub>	32¼	30⅞ <sub>16</sub>	32¼	30⅞ <sub>16</sub>	32¼	23⅞ <sub>16</sub>	25⅞	21⅞ <sub>16</sub>	21⅞	19⅞ <sub>32</sub>	21⅞ <sub>32</sub>	
27	49	46½	43⅞ <sub>32</sub>	21	18½	15⅞ <sub>32</sub>	14⅞	12⅞	7⅞ <sub>64</sub>	36	36	36	36	36	36	28	28	25½	25½	22⅞ <sub>32</sub>	22⅞ <sub>32</sub>	
30	53½	50¾	47⅞ <sub>32</sub>	22⅞ <sub>16</sub>	20⅞ <sub>16</sub>	17⅞ <sub>32</sub>	15⅞ <sub>16</sub>	13⅞ <sub>16</sub>	8⅞ <sub>64</sub>	38½	38½	38½	38½	38½	38½	29⅞ <sub>16</sub>	29⅞ <sub>16</sub>	27⅞ <sub>16</sub>	27⅞ <sub>16</sub>	24⅞ <sub>32</sub>	24⅞ <sub>32</sub>	
33	58⅞ <sub>16</sub>	52⅞ <sub>16</sub>	51⅞ <sub>32</sub>	25⅞	22⅞	19⅞ <sub>32</sub>	16¼	14¼	8⅞ <sub>64</sub>	41⅞ <sub>16</sub>	41⅞ <sub>16</sub>	41⅞ <sub>16</sub>	41⅞ <sub>16</sub>	41⅞ <sub>16</sub>	41⅞ <sub>16</sub>	32⅞	32⅞	29⅞	29⅞	26⅞ <sub>32</sub>	26⅞ <sub>32</sub>	

Dimensions and specifications are subject to change. Clockwise rotation is shown. Certified prints are available.

## Fan Discharges

TAD, BAD and DB discharges require a discharge extension. Please contact the factory.



# Material Specifications/Weights

## – Series 41

Class	Fan Size	Flanges						Shaft		FA Type Wheel WR <sup>2</sup> (lbs.-ft. <sup>2</sup> )	Motor Frames			Installation Weights (lbs. less motor)	
		Inlet		Outlet				100% & 66% Width	33% Width		Min. Arr. 4	Max. Arr. 4	Max. Arr. 9 & 10	Arr. 4	Arr. 9 & 10
		Thickness	Holes	Thickness	Holes 100%	Holes 66%	Holes 33%	Shaft Size	Shaft Size						
I	12	1/8	7/16	1/4	7/16	7/16	—	1 3/16	—	1.6	56	184T	184T	160	193
	15	3/16	7/16	1/4	7/16	7/16	—	1 3/16	—	4.7	182T	256T	215T	235	230
	18	3/16	7/16	1/4	7/16	7/16	—	1 7/16	—	11	213T	286T	256T	350	355
	22	1/4	7/16	1/4	7/16	7/16	7/16	1 7/16	—	29	254T	286T	256T	490	490
	24	1/4	7/16	1/4	7/16	7/16	7/16	1 7/16	—	44	254T	286T	286T	580	605
	27	5/16	7/16	3/8	7/16	7/16	7/16	2 3/16	—	78	284T	286T	286T	660	770
	30	5/16	7/16	3/8	7/16	7/16	7/16	2 7/16	—	119	284T	326T	286T	935	975
	33	5/16	7/16	3/8	7/16	7/16	7/16	2 7/16	—	160	324T	365T	326T	1145	1185
	36	5/16	7/16	3/8	7/16	7/16	7/16	2 11/16	—	251	—	—	326T	—	1550
	40	5/16	7/16	1/2	7/16	7/16	7/16	2 5/16	—	423	—	—	365T	—	2015
	44	3/8	7/16	1/2	7/16	7/16	7/16	2 5/16	—	717	—	—	365T	—	2515
	49	3/8	9/16	1/2	7/16	7/16	7/16	2 5/16	—	1180	—	—	405T	—	2940
54	7/16	9/16	1/2	7/16	7/16	7/16	2 5/16	—	1810	—	—	405T	—	3340	
60	7/16	9/16	1/2	7/16	7/16	7/16	2 5/16	—	2875	—	—	405T	—	3670	
II	12	1/8	7/16	1/4	7/16	7/16	—	1 7/16	—	1.6	56	184T	184T	160	202
	15	3/16	7/16	1/4	7/16	7/16	—	1 7/16	—	4.7	182T	256T	215T	235	235
	18	3/16	7/16	1/4	7/16	7/16	—	1 11/16	—	11	213T	286T	256T	350	355
	22	1/4	7/16	1/4	7/16	7/16	7/16	1 11/16	1 11/16	29	254T	286T	256T*	490	505
	24	1/4	7/16	1/4	7/16	7/16	7/16	1 11/16	1 11/16	44	254T	286T	286T*	580	625
	27	5/16	9/16	3/8	7/16	7/16	7/16	2 3/16	2 3/16	78	284T	286T	286T*	660	800
	30	5/16	9/16	3/8	7/16	7/16	7/16	2 7/16	2 7/16	119	284T	326T	286T*	935	995
	33	5/16	9/16	3/8	9/16	9/16	9/16	2 7/16	2 7/16	160	324T	365T	326T*	1145	1195
	36	5/16	9/16	3/8	9/16	9/16	9/16	2 11/16	2 11/16	251	—	—	326T*	—	1620
	40	5/16	9/16	1/2	9/16	9/16	9/16	2 5/16	2 5/16	423	—	—	365T*	—	2060
	44	3/8	9/16	1/2	9/16	9/16	9/16	2 5/16	2 5/16	717	—	—	365T*	—	2560
	49	3/8	11/16	1/2	9/16	9/16	9/16	2 5/16	2 5/16	1180	—	—	405T*	—	3040
54	7/16	11/16	1/2	9/16	9/16	9/16	2 5/16	2 5/16	1810	—	—	405T*	—	3480	
60	7/16	11/16	1/2	9/16	9/16	9/16	2 5/16	2 5/16	2875	—	—	405T*	—	3670	
III	12	1/8	9/16	1/4	9/16	9/16	—	1 11/16	—	1.6	56	184T	184T	160	213
	15	3/16	9/16	1/4	9/16	9/16	—	1 11/16	—	4.7	182T	256T	215T*	235	250
	18	3/16	9/16	1/4	9/16	9/16	—	1 5/16	—	11	213T	286T	256T*	350	375
	22	1/4	9/16	1/4	9/16	9/16	9/16	1 5/16	1 5/16	29	254T	286T	256T*	490	525
	24	1/4	9/16	1/4	9/16	9/16	9/16	1 5/16	2 3/16	44	254T	286T	286T*	580	635
	27	5/16	9/16	3/8	9/16	9/16	9/16	2 3/16	2 3/16	78	284T	286T	286T*	660	820
	30	5/16	9/16	3/8	9/16	9/16	9/16	2 7/16	2 7/16	119	284T	326T	286T*	935	1040
	33	5/16	9/16	3/8	9/16	9/16	9/16	2 7/16	2 11/16	160	324T	365T	326T*	1145	1210
	36	5/16	9/16	3/8	9/16	9/16	9/16	2 11/16	2 11/16	251	—	—	326T*	—	1630
	40	5/16	9/16	1/2	9/16	9/16	9/16	2 5/16	2 5/16	423	—	—	365T*	—	2080
	44	3/8	9/16	1/2	9/16	9/16	9/16	2 5/16	2 5/16	717	—	—	365T*	—	2580
	49	3/8	11/16	1/2	9/16	9/16	9/16	2 5/16	3 7/16	1180	—	—	405T*	—	3110
54	7/16	11/16	1/2	11/16	11/16	11/16	2 5/16	3 7/16	1810	—	—	405T*	—	3500	
60	7/16	11/16	1/2	11/16	11/16	11/16	2 5/16	3 7/16	2875	—	—	405T*	—	3800	
IV	22	1/4	9/16	1/4	—	—	9/16	—	1 5/16	—	213	286	256*	474	505
	24	1/4	9/16	1/4	—	—	9/19	—	2 3/16	—	213	286	286*	627	625
	27	5/16	9/16	3/8	—	—	9/16	—	2 3/16	—	213	286	286*	896	800
	30	5/16	9/19	3/8	—	—	9/19	—	2 7/16	—	213	286	286*	1095	905
	33	5/16	9/16	3/8	—	—	9/16	—	2 11/16	—	—	—	326*	—	1195
	36	5/16	9/19	3/8	—	—	9/19	—	2 11/16	—	—	—	326*	—	1620
	40	5/16	9/16	1/2	—	—	9/16	—	2 5/16	—	—	—	365*	—	2060
	44	3/8	9/19	1/2	—	—	9/19	—	2 5/16	—	—	—	365*	—	2560
	49	3/8	11/16	1/2	—	—	9/16	—	3 7/16	—	—	—	405*	—	3040
	54	7/16	11/16	1/2	—	—	11/16	—	3 7/16	—	—	—	405*	—	3480
	60	7/16	11/16	1/2	—	—	11/16	—	3 7/16	—	—	—	405*	—	3670

\* Motor frames exceeding these values must be Arrangement E, 1, or 8. For maximum motor frame size, other arrangements & dimensions, please contact the factory.



# Series 41P

## Backward Curved Centrifugal Fan, Belt Drive, Packaged

The Series 41P Fiberglass Backward Curved Centrifugal Fan offers non-overloading horsepower characteristics, high efficiency, low noise, and economy for corrosive atmospheres in a compact packaged Class II design.

### Features

- **Sizes** – 12" – 36"
- **Classification** – Class II construction
- **Arrangements** – Available in belt drive arrangement 10 with weather cover in both 100% and 66% widths. Sizes 22" - 36" are also available in 33% width.
- **Performance** – Type FA fiberglass airfoil wheel with inlet cone and aerodynamically designed housing produces from 800 CFM to 30,000 CFM at pressures from free delivery to 12" W.G. at high efficiencies with non-overloading horsepower, low noise, and low RPM.
- **Temperature Limitations** – Suitable for temperatures up to 220°F. Note: Temperature correction factors must be applied when operating at other than ambient conditions (70°F). See Maximum Safe Speed Correction Factors chart on page 30.
- **Rotation and Discharge Positions** – Available in clockwise and counter clockwise rotations in all standard discharge positions. Rotatable housing.
- **Flanged Duct Connections** – Outlet flange is standard, inlet flange is optional. Flange bolt holes are optional.

For performance data, please visit [www.hartzellflow.com](http://www.hartzellflow.com) or contact your local sales representative.



\*Shown with optional accessories.

Type FA Wheel



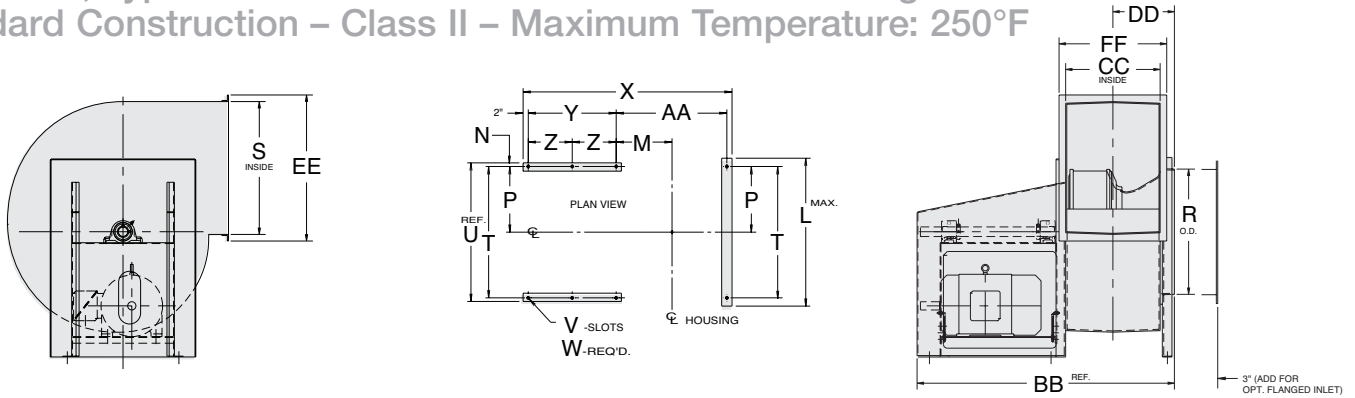
Hartzell Air Movement certifies that the Series 41P, Fiberglass Backward Curved Centrifugal Fan, Packaged, shown herein is licensed to bear the AMCA seal for sound and air performance. Ratings are based on tests and procedures performed in accordance with AMCA Publication 211 and Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. For performance and sound data, please visit [www.hartzellflow.com](http://www.hartzellflow.com) or contact your local sales representative.



Series 41P Backward Curved Centrifugal Fan, Packaged

# Arrangement 10 Dimensions

Series 41P, Type FA – Sizes 12" to 36" – Rotatable Housing  
 Standard Construction – Class II – Maximum Temperature: 250°F



## Principal Dimensions (inches) – Series 41P – Sizes 12" – 36"

Fan Size	A	B	C	D	E	F	G	H	J	L	M		N
											100% Width	66% Width	
12	17	15½	13	11½	12¾	20⅞	10⅞	10⅞	11⅙	20¼	7⅙	7⅞	5⅞
15	17	18⅞	16⅜	14½	15⅙	24⅝	13⅜	12⅝	13¼	20¼	9⅙	8⅜	5⅞
18	20	21⅙	19	17½	18⅞	28⅙	16⅞	15¼	15¼	24¼	9⅙	8½	5⅞
22	24¼	26¼	21⅞	21⅙	22⅙	33½	19⅙	18⅞	17⅙	29¼	10⅞	9⅞	5⅞
24	27	28⅙	23	23⅞	24⅝	36⅙	21⅙	20⅞	18⅙	31⅞	11⅞	10½	5⅞
27	28½	32½	24	26	27⅙	39⅙	24⅙	22⅝	20⅙	34⅞	13⅙	11⅙	13⅙
30	30½	35	28½	28¼	30⅙	44⅙	26⅞	24⅙	22¼	37⅞	14	12⅝	13⅙
33	37	38⅙	28⅙	31	33	47¼	29	27	24⅙	41⅞	15⅞	13⅝	13⅙
36	37	41⅙	31¼	33¼	36	51⅙	31⅝	29⅞	27⅙	44⅞	16¼	14⅝	13⅙

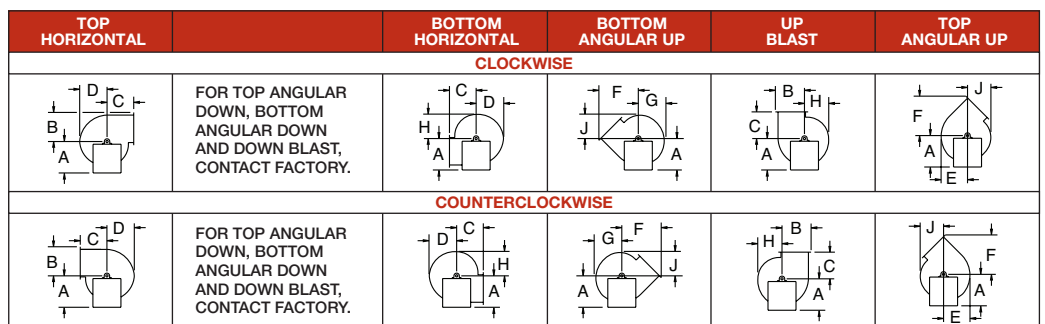
Fan Size	P	R	S	T	U	V	W	X		Y	Z	AA	
								100% Width	66% Width			100% Width	66% Width
12	9¼	12¼	12⅞	19½	20¼	⅙ X 1	6	36⅙	36	19⅞	--	14⅙	13⅞
15	9¼	16⅞	16⅞	19½	20¼	⅙ X 1	6	39⅙	37⅞	19⅞	--	16⅙	15
18	10½	19⅞	19⅞	21	22¼	⅙ X 1	6	46⅞	44⅞	25¼	--	17⅞	16⅞
22	11⅙	23¼	23⅙	22¼	23½	⅙ X 1	6	49¼	47⅞	25¼	--	21	18⅞
24	10½	25¼	25¼	21	22¼	⅙ X 1	6	50¼	48½	25¼	--	22½	20¼
27	13⅙	28⅞	29	26⅞	28	⅙ X 1½	8	58	55⅙	29⅞	14⅙	25⅞	22⅙
30	13⅞	31⅙	31½	27¼	29⅞	⅙ X 1½	8	63⅙	60⅙	33	16½	27⅙	24⅙
33	13⅞	34⅙	34⅙	27¼	29⅞	⅙ X 1½	8	65⅙	62½	33	16½	29⅙	26½
36	13⅞	37⅙	37⅙	27¼	29⅞	⅙ X 1½	8	67⅙	64½	33	16½	31⅙	28½

Fan Size	BB		CC		DD		EE	FF	
	100% Width	66% Width	100% Width	66% Width	100% Width	66% Width		100% Width	66% Width
12	37⅞	37	9⅙	8⅙	8⅞	7⅙	18⅞	14⅞	13½
15	40⅞	38⅞	11⅙	10⅞	9⅞	8½	21⅙	16⅞	15¼
18	47⅙	45⅞	14	12⅞	10⅞	9⅙	24½	19⅙	17⅞
22	50⅙	48⅞	17⅞	15⅙	12⅞	11⅙	28¼	22¼	20⅞
24	51¼	49½	18⅙	16⅞	12⅙	11¼	30⅙	23⅙	21½
27	59	56½	21	18½	14⅙	13⅙	36	28	25½
30	64⅙	61½	22⅙	20⅞	15¼	13⅞	38½	29⅙	27⅞
33	66⅙	63⅙	25⅞	22⅞	16⅙	14⅙	41⅞	32⅞	29⅞
36	68⅙	65⅙	27⅙	24⅞	17⅙	15⅙	44⅙	34⅞	31⅞

Dimensions and specifications are subject to change. Clockwise Rotation is shown. Certified prints are available.

## Fan Discharges

Scrolls are rotatable. BH and BAU discharges require a height adjusting sub-base. TAD, BAD and DB discharges require a discharge extension. Please contact the factory.





# Series 41P

## Material Specifications/Weights

Class	Fan Size	Flanges				Shaft Size	Maximum Motor Frame Arr. #10	Installation Weights (Lbs. Less Motor)
		Inlet		Outlet				
		Thickness	Holes	Thickness	Holes 100% & 66%			
II	12	1/8	7/16	1/4	7/16	1 11/16	215T	188
	15	3/16	7/16	1/4	7/16	1 11/16	215T	215
	18	3/16	7/16	1/4	7/16	1 15/16	254T	309
	22	1/4	7/16	1/4	7/16	1 11/16	256T	397
	24	1/4	7/16	1/4	7/16	1 15/16	256T	554
	27	5/16	9/16	3/8	7/16	2 3/16	286T	728
	30	5/16	9/16	3/8	7/16	2 3/16	324T	878
	33	5/16	9/16	3/8	7/16	2 3/16	324T	1013
	36	5/16	9/16	3/8	7/16	2 3/16	326T	1131

Be sure to log on to [www.hartzellflow.com](http://www.hartzellflow.com) to generate your own fan curves and make thousands of fan selections! You can view 2D fan drawings and 3D models in seconds!



Series 41P Backward Curved Centrifugal Fans, Packaged

# Series 41U

## Fiberglass Backward Curved Utility Set

The Series 41U Backward Curved Centrifugal Fan offers non-overloading horsepower characteristics, high efficiency, low noise and economy for most applications where corrosive elements exist in fume and vapor form. It is available in SWSI (single width single inlet) only.

### Features

- **Sizes** – 12", 18", and 24"
- **Arrangement** – Available in belt drive arrangement 10, SWSI
- **Applications** – Developed to perform in compatible corrosive environments where it is advantageous to have fiberglass materials and have the motor out of the airstream.
- **Performance** – 700 CFM to 10,300 CFM at static pressures to 6" W.G.
- **Temperature Limitations** – Suitable for temperatures up to 220°F. Note: Temperature correction factors must be applied when operating at other than ambient conditions (70°F). See Maximum Safe Speed Correction Factors chart on page 30.
- **Rotation and Discharge** – Available in clockwise or counterclockwise rotation in all eight discharge positions. Rotatable housing.
- **Fan Inlets and Outlets** – Straight inlet and outlet connections are provided for easy "slip-fit" connection to ducting.

For performance data, please visit [www.hartzellflow.com](http://www.hartzellflow.com) or contact your local sales representative.



Type FA Wheel

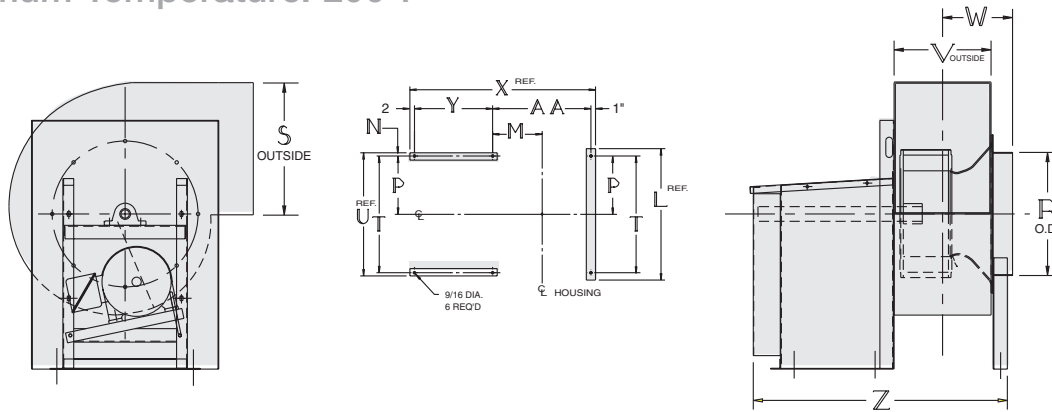


Hartzell Air Movement certifies that the Series 42, Fiberglass Pressure Blower, shown herein is licensed to bear the AMCA seal for air performance. Ratings are based on tests and procedures performed in accordance with AMCA Standard 211 and comply with the requirements of the AMCA Certified Ratings Program. For performance data, please visit [www.hartzellflow.com](http://www.hartzellflow.com) or contact your local sales representative.



# Arrangement 10 Dimensions

Series 41U, Type FA – Sizes 12" to 24" – Rotatable Housing  
 Maximum Temperature: 200°F



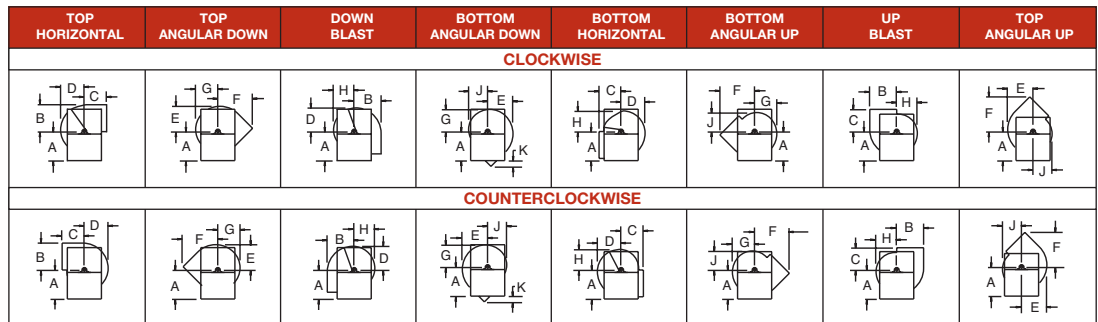
## Principal Dimensions (inches) – Series 41U – Sizes 12" – 24"

Fan Size	A	B	C	D	E	F	G	H	J	K	L	M	N
12	18 <sup>1</sup> / <sub>16</sub>	13 <sup>3</sup> / <sub>8</sub>	13	11 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>4</sub>	18 <sup>1</sup> / <sub>2</sub>	10 <sup>3</sup> / <sub>4</sub>	10	9 <sup>1</sup> / <sub>4</sub>	5 <sup>5</sup> / <sub>16</sub>	21 <sup>1</sup> / <sub>2</sub>	7 <sup>7</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>
18	23	19 <sup>3</sup> / <sub>4</sub>	19	17 <sup>1</sup> / <sub>4</sub>	18 <sup>1</sup> / <sub>16</sub>	27 <sup>7</sup> / <sub>16</sub>	16 <sup>1</sup> / <sub>16</sub>	15 <sup>1</sup> / <sub>16</sub>	13 <sup>15</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>4</sub>	27 <sup>3</sup> / <sub>4</sub>	9 <sup>9</sup> / <sub>8</sub>	1
24	29	26 <sup>5</sup> / <sub>8</sub>	23	22 <sup>15</sup> / <sub>16</sub>	24 <sup>1</sup> / <sub>16</sub>	34 <sup>3</sup> / <sub>4</sub>	21 <sup>1</sup> / <sub>2</sub>	20	18 <sup>1</sup> / <sub>2</sub>	5 <sup>5</sup> / <sub>8</sub>	30	12 <sup>3</sup> / <sub>16</sub>	1

Fan Size	P	R	S	T	U	V	W	X	Y	Z	AA	Max. Motor Frame
12	9 <sup>5</sup> / <sub>8</sub>	12 <sup>1</sup> / <sub>4</sub>	13 <sup>3</sup> / <sub>8</sub>	19 <sup>3</sup> / <sub>4</sub>	21 <sup>1</sup> / <sub>4</sub>	9 <sup>9</sup> / <sub>16</sub>	8	28 <sup>5</sup> / <sub>8</sub>	12	32 <sup>3</sup> / <sub>8</sub>	13 <sup>3</sup> / <sub>16</sub>	182T
18	10 <sup>5</sup> / <sub>8</sub>	18 <sup>1</sup> / <sub>4</sub>	19 <sup>1</sup> / <sub>16</sub>	20 <sup>1</sup> / <sub>4</sub>	22 <sup>1</sup> / <sub>4</sub>	14 <sup>5</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>8</sub>	33 <sup>5</sup> / <sub>8</sub>	12	37 <sup>3</sup> / <sub>8</sub>	18 <sup>1</sup> / <sub>2</sub>	184T
24	10 <sup>5</sup> / <sub>8</sub>	24 <sup>1</sup> / <sub>4</sub>	26 <sup>5</sup> / <sub>8</sub>	20 <sup>1</sup> / <sub>4</sub>	22 <sup>1</sup> / <sub>4</sub>	19	12 <sup>3</sup> / <sub>4</sub>	12 <sup>1</sup> / <sub>2</sub>	12	52 <sup>3</sup> / <sub>16</sub>	23 <sup>3</sup> / <sub>16</sub>	213T

## Fan Discharges

For angular and/or down blast discharges, please contact the factory when discharge flanges are required.



Call and speak to your local Hartzell Air Movement sales representative about one of our FRP centrifugal fans today!

# Series 42

## Fiberglass Pressure Blower, Direct or Belt Drive, SWSI

### Blowers available in SWSI only

The Series 42 Fiberglass Pressure Blower is particularly suited for lab hood installations. It is available in direct or belt drive in SWSI (single width single inlet) only. The direct drive pressure blower moves air at static pressures up to 12".

### Features

- **Sizes** – 10" – 14"
- **Performance** – 100 CFM to 2,000 CFM and S.P. to 12".
- **Arrangements** – Available in Arrangements 4 or 10.
- **Temperature** – Suitable for temperatures up to 220° F. Note: Temperature correction factors must be applied when operating at other than ambient conditions (70°F). See Maximum Safe Speed Correction Factors chart on page 30.
- **Rotation** – Clockwise rotation is standard. Counterclockwise rotation is available.
- **Discharges** – Available discharges are shown on the next page. Rotatable in field.
- **Flanges** – Flanged outlets are standard. Inlet flanges are optional. Drilling of flanges is optional. Inlet is slip-fit as standard.

For performance data, please visit [www.hartzellflow.com](http://www.hartzellflow.com) or contact your local sales representative.

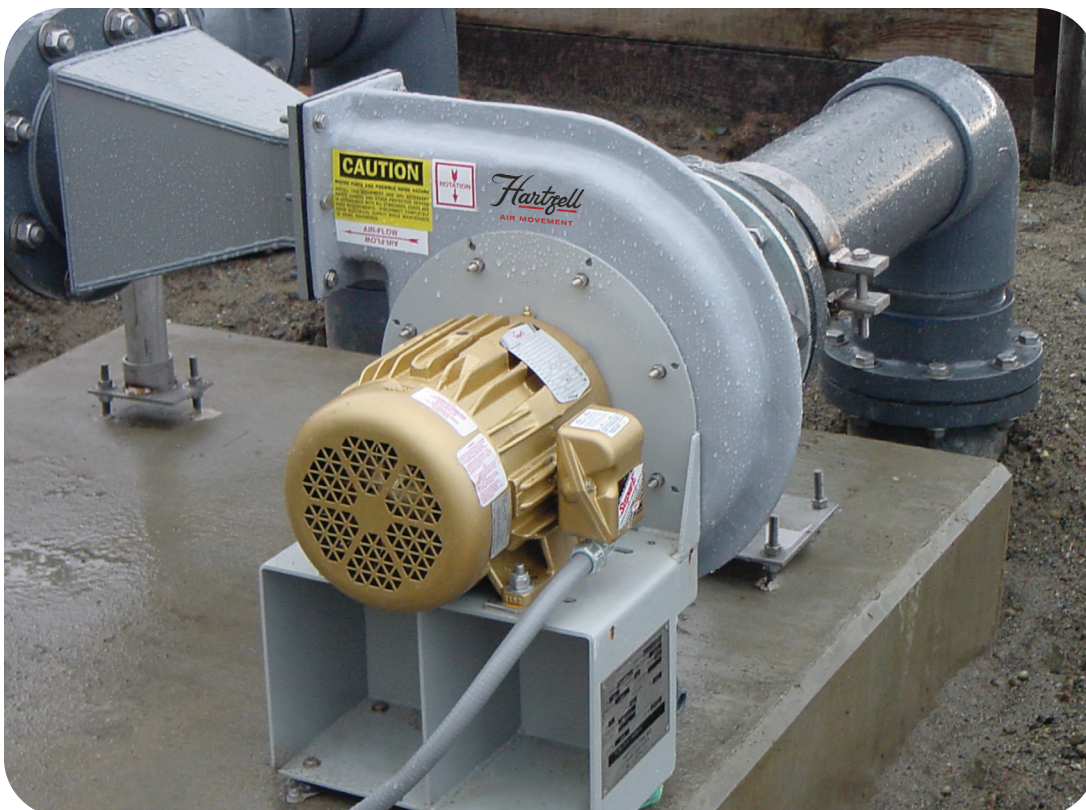


Arrangement 4

Type F Wheel



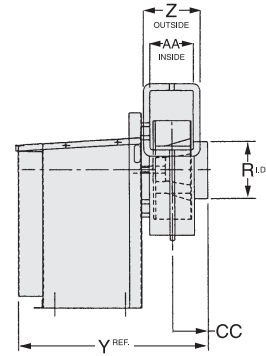
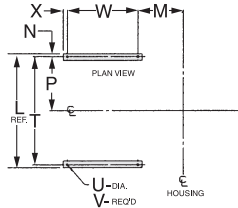
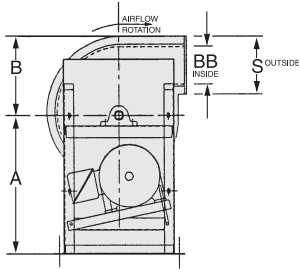
Hartzell Air Movement certifies that the Series 42, Fiberglass Pressure Blower, shown herein is licensed to bear the AMCA seal for air performance. Ratings are based on tests and procedures performed in accordance with AMCA Standard 211 and comply with the requirements of the AMCA Certified Ratings Program. For performance data, please visit [www.hartzellflow.com](http://www.hartzellflow.com) or contact your local sales representative.



Series 42 Fiberglass Pressure Blower at a Wastewater Treatment Plant

# Arrangement 10 Dimensions

Series 42, Type F – Sizes 10" to 14" – Rotatable Housing



## Principal Dimensions (inches) – Series 42 – Sizes 10" - 14"

Fan Size	A	B	C	D	E	F	G	H	J	L	M	N	P	R
10	18 <sup>1</sup> / <sub>16</sub>	10%	9	9 <sup>9</sup> / <sub>16</sub>	10 <sup>1</sup> / <sub>16</sub>	13 <sup>3</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>16</sub>	21 <sup>1</sup> / <sub>4</sub>	6 <sup>15</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>16</sub>	6
12	18 <sup>1</sup> / <sub>16</sub>	11%	10	10 <sup>1</sup> / <sub>16</sub>	11 <sup>1</sup> / <sub>16</sub>	15 <sup>1</sup> / <sub>16</sub>	10 <sup>1</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>16</sub>	21 <sup>1</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>16</sub>	7
14	18 <sup>1</sup> / <sub>16</sub>	12%	11	11 <sup>1</sup> / <sub>16</sub>	12 <sup>1</sup> / <sub>16</sub>	16 <sup>1</sup> / <sub>16</sub>	11 <sup>1</sup> / <sub>16</sub>	10 <sup>1</sup> / <sub>16</sub>	10 <sup>1</sup> / <sub>16</sub>	21 <sup>1</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>16</sub>	8

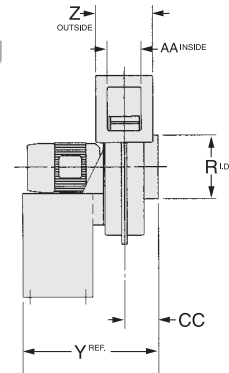
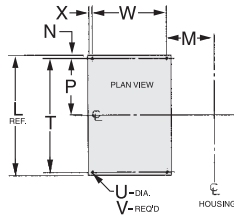
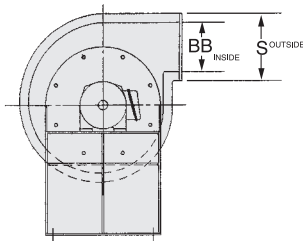
Fan Size	S	T	U	V	W	X	Y	Z	AA	BB	CC	Max. Motor Frame*	Max. Fan Weight**
10	7 <sup>1</sup> / <sub>16</sub>	19%	9 <sup>1</sup> / <sub>16</sub>	4	12	2	30 <sup>1</sup> / <sub>16</sub>	7	3 <sup>1</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>16</sub>	182T	85
12	8 <sup>1</sup> / <sub>16</sub>	19%	9 <sup>1</sup> / <sub>16</sub>	4	12	2	30 <sup>1</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>16</sub>	5	4 <sup>1</sup> / <sub>16</sub>	182T	90
14	9 <sup>1</sup> / <sub>16</sub>	19%	9 <sup>1</sup> / <sub>16</sub>	4	12	2	31 <sup>1</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>16</sub>	5	6	4 <sup>1</sup> / <sub>16</sub>	182T	100

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

\*For motor frame sizes larger than standard 182T, contact factory. \*\*Weight without motor and accessories.

# Arrangement 4 Dimensions

Series 42, Type F – Sizes 10" to 14" – Rotatable Housing



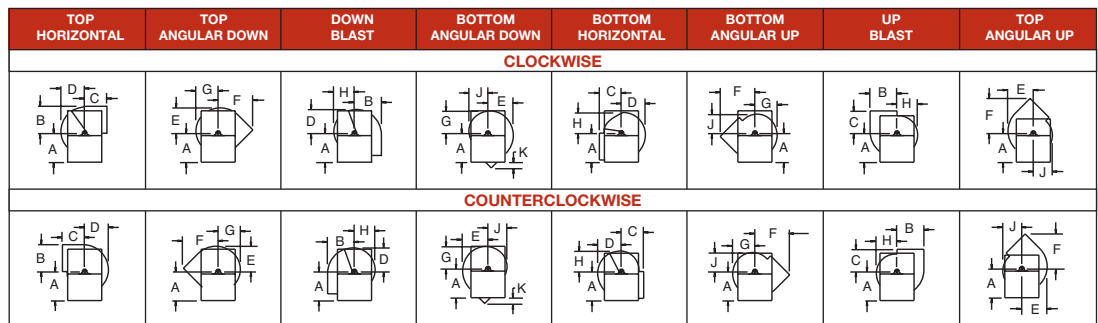
## Principal Dimensions (inches) – Series 42 – Sizes 10" - 14"

Fan Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R
10	12 <sup>1</sup> / <sub>16</sub>	10%	9	9 <sup>9</sup> / <sub>16</sub>	10 <sup>1</sup> / <sub>16</sub>	13 <sup>3</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>	13	5 <sup>1</sup> / <sub>16</sub>	1	5 <sup>1</sup> / <sub>16</sub>	6
12	14 <sup>1</sup> / <sub>16</sub>	11%	10	10 <sup>1</sup> / <sub>16</sub>	11 <sup>1</sup> / <sub>16</sub>	15 <sup>1</sup> / <sub>16</sub>	10 <sup>1</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>	14 <sup>1</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>16</sub>	1	6 <sup>1</sup> / <sub>16</sub>	7
14	16 <sup>1</sup> / <sub>16</sub>	12%	11	11 <sup>1</sup> / <sub>16</sub>	12 <sup>1</sup> / <sub>16</sub>	16 <sup>1</sup> / <sub>16</sub>	11 <sup>1</sup> / <sub>16</sub>	10 <sup>1</sup> / <sub>16</sub>	10 <sup>1</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>16</sub>	15 <sup>1</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>16</sub>	1	6 <sup>1</sup> / <sub>16</sub>	8

Fan Size	S	T	U	V	W	X	Y	Z	AA	BB	CC	Min. Motor Frame	Max. Motor Frame	Max. Fan Weight*
10	7 <sup>1</sup> / <sub>16</sub>	11	7 <sup>1</sup> / <sub>16</sub>	4	4 <sup>1</sup> / <sub>16</sub>	1"	15 <sup>1</sup> / <sub>16</sub>	7	3 <sup>1</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>16</sub>	56	143T	63
12	8 <sup>1</sup> / <sub>16</sub>	12 <sup>1</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>16</sub>	4	5 <sup>1</sup> / <sub>16</sub>	1"	16 <sup>15</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>16</sub>	41/2	5	4 <sup>1</sup> / <sub>16</sub>	56	184T	78
14	9 <sup>1</sup> / <sub>16</sub>	13 <sup>1</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>16</sub>	4	7 <sup>1</sup> / <sub>16</sub>	1"	19 <sup>3</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>16</sub>	5	6	4 <sup>1</sup> / <sub>16</sub>	145T	213T	97

NOTE: Dimensions and specifications are subject to change. Certified prints are available. \*Weight without motor and accessories.

## Fan Discharges





# Series 43

## Fiberglass Radial Blower, Belt Drive, SWSI

### Blowers available in SWSI only

The Series 43 Fiberglass Radial Blower is a versatile blower designed to move air at static pressures up to 16". It is a belt drive unit available in SWSI (single width single inlet) only.

### Features

- **Sizes** – 16" – 33"
- **Performance** – 220 to 18,000 CFM and S.P. to 18".
- **Arrangements** – Available in Arrangements 1, 9 or 10.
- **Temperature** – Suitable for temperatures up to 220° F  
Note: Temperature correction factors must be applied when operating at other than ambient conditions (70°F). See Maximum Safe Speed Correction Factors chart on page 30.
- **Rotation** – Clockwise rotation is standard. Counterclockwise rotation is available.
- **Discharges** – Available discharges are shown on the next page. Rotatable in field.
- **Flanges** – Flanged outlets are standard. Inlet flanges are optional. Drilling of flanges is optional. Inlet is slip-fit as standard.

For performance data, please visit [www.hartzellflow.com](http://www.hartzellflow.com) or contact your local sales representative.



Type F Wheel



Hartzell Air Movement certifies that the Series 43, Fiberglass Radial Blower, shown herein is licensed to bear the AMCA seal for air performance. Ratings are based on tests and procedures performed in accordance with AMCA Standard 211 and comply with the requirements of the AMCA Certified Ratings Program. For performance data, please visit [www.hartzellflow.com](http://www.hartzellflow.com) or contact your local sales representative.

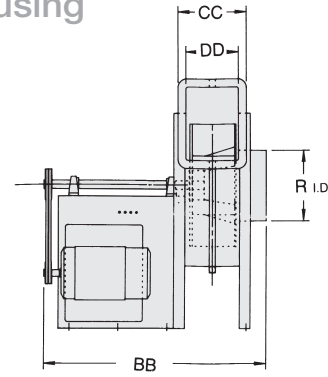
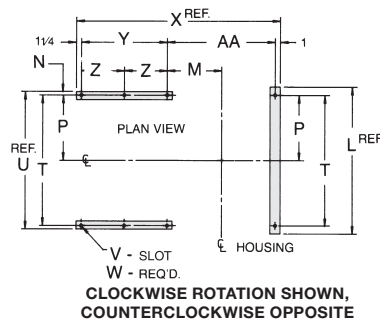
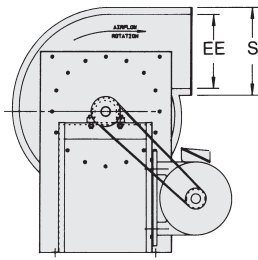


Series 43 Fiberglass Radial Blower at a Pump Station



# Arrangements 1, 9 or 10 Dimensions

Series 43, Type F – Sizes 16" to 26" – Rotatable Housing



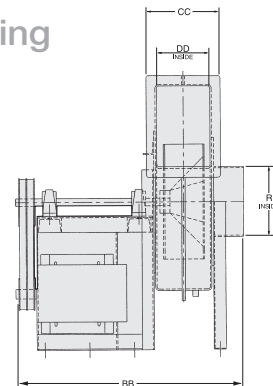
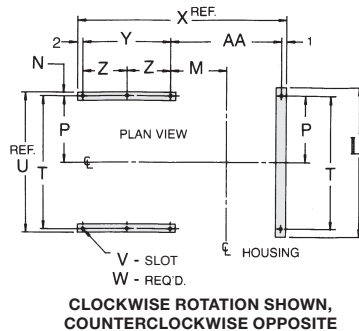
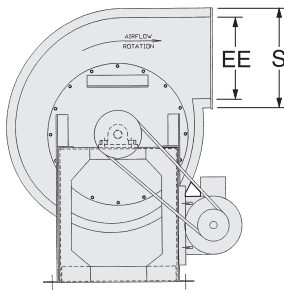
## Principal Dimensions (inches) – Series 43 – Sizes 16" - 26"

Fan Size	A	B	C	D	E	F	G	H	J	L	M	N	P	R	S	T
16	21½	14¼	12¼	13 <sup>11</sup> / <sub>16</sub>	14¼	19 <sup>1</sup> / <sub>16</sub>	13 <sup>13</sup> / <sub>16</sub>	12½	11¼	20¼	6¼	1	9¼	9	12 <sup>1</sup> / <sub>16</sub>	18¼
19	24¼	18	15	16½	17¼	23¾	15¼	15	14¼	27¼	8 <sup>11</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>	12 <sup>11</sup> / <sub>16</sub>	11	14	25¾
23	30	20¾	18¼	19¾	20	27 <sup>11</sup> / <sub>16</sub>	18¼	17¾	16½	28¾	7 <sup>15</sup> / <sub>16</sub>	1	12 <sup>11</sup> / <sub>16</sub>	13	16	25¾
26	30	23 <sup>13</sup> / <sub>16</sub>	20¼	21 <sup>13</sup> / <sub>16</sub>	22 <sup>13</sup> / <sub>16</sub>	31½	20 <sup>13</sup> / <sub>16</sub>	19 <sup>13</sup> / <sub>16</sub>	18 <sup>13</sup> / <sub>16</sub>	28¾	8 <sup>13</sup> / <sub>16</sub>	1	12 <sup>11</sup> / <sub>16</sub>	15	18	25¾

Fan Size	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	Max. Motor Frame	Max. Fan Weight*
16	20¼	1 <sup>11</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>16</sub>	6	29½	15¾	–	11½	34¾	10½	7¼	8 <sup>3</sup> / <sub>16</sub>	215T	315
19	27¼	1 <sup>11</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>16</sub>	8	35¾	18¾	9¾	14¾	41½	12¾	8¼	10¾	256T	394
23	27¾	1 <sup>13</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>16</sub>	8	37¾	20¼	10¾	15¾	45	13¾	10½	12¾	286T	485
26	27¾	1 <sup>11</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>16</sub>	8	39 <sup>13</sup> / <sub>16</sub>	20¼	10¾	16 <sup>13</sup> / <sub>16</sub>	47 <sup>13</sup> / <sub>16</sub>	15¾	12¾	14¾	286T	560

NOTE: Dimensions and specifications are subject to change. Certified prints are available. \*Weight without motor and accessories.

## Series 43, Type F – Sizes 30" and 33" – Rotatable Housing



## Principal Dimensions (inches) – Series 43 – Sizes 30" and 33"

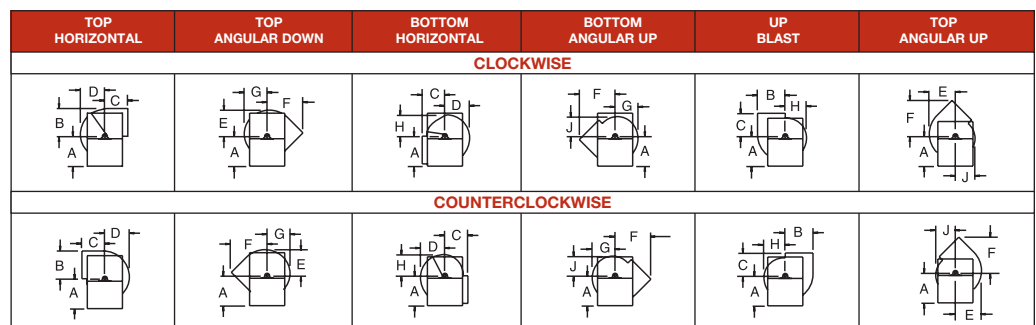
Fan Size	A	B	C	D	E	F	G	H	J	L	M	N	P	R	S	T
30	37	26¾	22¾	24 <sup>1</sup> / <sub>16</sub>	25¼	35 <sup>1</sup> / <sub>16</sub>	23 <sup>1</sup> / <sub>16</sub>	22 <sup>1</sup> / <sub>16</sub>	21 <sup>1</sup> / <sub>16</sub>	35¼	12 <sup>1</sup> / <sub>16</sub>	2½	16¾	17	20	33¾
33	37	29 <sup>9</sup> / <sub>16</sub>	25½	27 <sup>1</sup> / <sub>16</sub>	28 <sup>5</sup> / <sub>16</sub>	39	25¾	24 <sup>1</sup> / <sub>16</sub>	23 <sup>1</sup> / <sub>16</sub>	35¼	13¾	2½	16¾	19	21¾	33¾

Fan Size	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	Max. Motor Frame	Max. Fan Weight*
30	38	1 <sup>13</sup> / <sub>16</sub> x 1¼	8	47 <sup>1</sup> / <sub>16</sub>	22¼	11¾	21 <sup>1</sup> / <sub>16</sub>	56	17	13¾	16¾	286T	646
33	38	1 <sup>13</sup> / <sub>16</sub> x 1¼	8	49 <sup>15</sup> / <sub>16</sub>	22¼	11¾	23 <sup>1</sup> / <sub>16</sub>	58¾	18 <sup>9</sup> / <sub>16</sub>	15 <sup>5</sup> / <sub>16</sub>	18¾	286T	710

NOTE: Dimensions and specifications are subject to change. Certified prints are available. \*Weight without motor and accessories.

## Fan Discharges

For angular and/or down blast discharges, please contact the factory when discharge flanges are required.





# Temperature/Altitude Correction

Performance tables 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. For an application where the fan operates at other than standard conditions (temperature, altitude, or both), correction factors must be applied to the selection of the fan. In addition, the standard construction of the fan must be modified.

**Table 1** shows temperature and altitude correction factors. When a fan operates at other than standard conditions, correction factors are required to correct static pressure and horsepower.

**Table 2** shows the maximum safe operating speeds for each size propeller. At high temperatures, these maximum safe operating speeds should be derated.

**Table 3** shows maximum safe speed correction factors by temperature and material construction.

**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	1.31	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

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

## Reading the Chart

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.

**Table 2: Maximum Safe Speeds @ 70°F**

Series 40		
Fan Size	100% Width	66% Width
12	4,520	5,320
15	3,600	4,340
22	2,440	2,950
27	2,000	2,410
33	1,670	2,020
40	1,370	1,660
49	1,130	1,360
60	920	1,110

Series 41, 41P, 41U			
Fan Size	100% Width	66% Width	33% Width
12	4,520	5,320	
15	3,600	4,570	
18	2,990	3,790	
22	2,440	3,100	3,765
24	2,240	2,850	3,605
27	2,000	2,540	3,300
30	1,840	2,340	3,050
33	1,670	2,120	2,755
36	1,530	1,950	2,725
40	1,370	1,740	2,250
44	1,240	1,570	2,055
49	1,130	1,430	1,865
54	1,020	1,290	1,685
60	920	1,170	1,520

Series 42	
Fan Size	Max. Speed
10	4,000
12	4,000
14	3,600

Max. Operating Temperature:  
200°F (Arrangement 4)  
220°F (Arrangement 10)

Series 43	
Fan Size	Max. Speed
16	3,667
19	2,995
23	2,532
26	2,193
30	1,934
33	1,736

**Table 3: Max. Safe Speed Correction Factors\***

Temp. (°F)	0	70	100	150	175	200	225	250
FRP	1.00	1.00	1.00	0.98	0.95	0.91	0.82	0.70

\* To correct maximum safe operating speeds (Table 2) for high temperatures, multiply those speeds by correction factors from Table 3.

## Use of Correction Factors and Tables

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

- Table 1 gives us an altitude/temperature correction factor of 1.34.
- .75" S.P. x 1.34 = 1.00 S.P. for 70°F at sea level.
- A 36" Series 29 Direct Drive Duct Axial® Fan selected from the performance tables (see [www.hartzellflow.com](http://www.hartzellflow.com)) for the new conditions shows 16,511 CFM, 1.00 S.P. at 1160 RPM with 4.36 BHP.
- Correct the horsepower and pressure in Step 3 to non-standard performance by dividing by the correction factor:  
1.00" SP ÷ 1.34 = .75" S.P.  
4.36 BHP ÷ 1.34 = 3.25 BHP
- 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.

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