

# Utility and Centrifugal

## Greenheck's tiered centrifugal product offering

Greenheck's tiered model approach gives you flexibility in size, performance and construction, matching the appropriate model to your application. Our centrifugal product line offers a variety of options in construction features, materials and performance by model.



## Quick Build Performance

Model Size	Maximum Capacities CFM	Static Pressure in. wg	Drive		Frame		Scroll Materials		
			Belt	Direct	Bolted	Welded	Galvanized	Coated Steel	Aluminum
SFD	2,600	2.5		3	3		3		
SFB	25,250	3.25	3			3		3	
SWD	4,730	2.5		3	3		3	3	3
SWB	11,000	3.5	3			3			
USF-200	10,000	5.5	3		3		3		
USF-300	53,000	5.5	3		3			3	
USF-400	66,000	9	3			3		3	
CSW-BI (7-49)	66,000	9	3	3		3		3	
CSW-AF (18-49)	70,000	9	3	3		3		3	
BIDW (12-49)	130,000	9	3				3	3	
AFDW (18-49)	135,000	9	3				3	3	

## Vari-Green® Motor - SWD and SFD

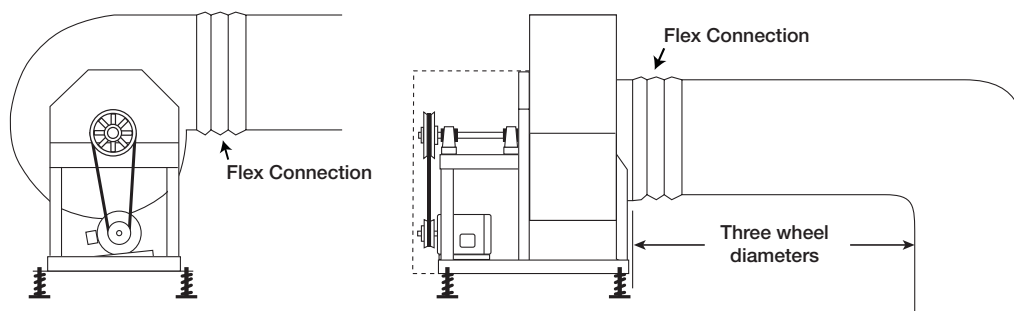
Greenheck's electronically commutated (EC) Vari-Green (VG) motor combines motor technology, controllability and energy-efficiency into one single low maintenance unit and is the industry's first fully controllable motor. When combined with Greenheck's SWD/SFD fans, most of the CFM and static pressure ranges of a belt drive can be attained with the benefits of a direct drive.



## Utility Fans Typical Installations

### General Clean Air or Fume Hood (Non-Grease)

The SFD, SFB, SWD, SWB, USF and CSW models are designed for applications ranging from clean air to contaminated air. Installations must include a means for inspecting, cleaning and servicing the exhaust fan.



### Commercial Kitchen (Grease)

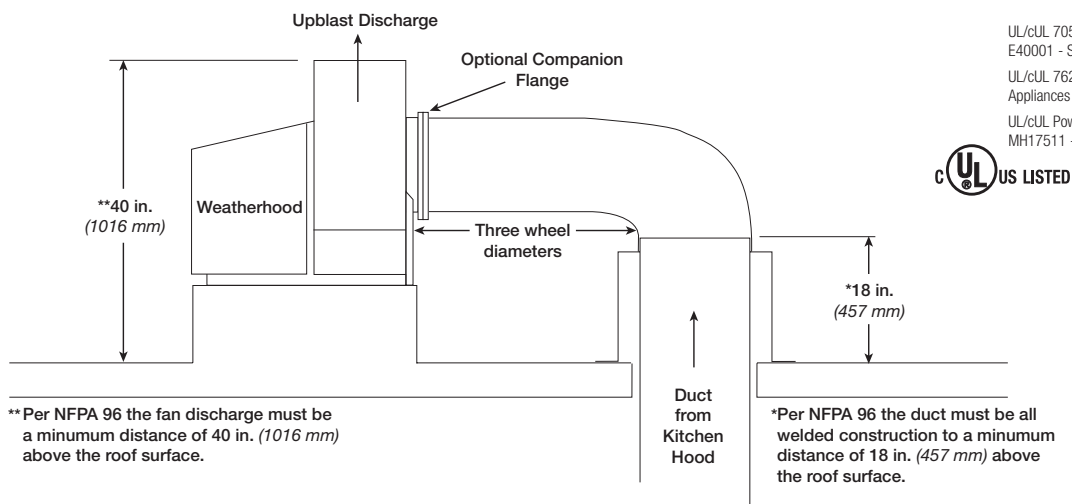
The USF-300, USF-400 and CSW are designed to meet restaurant and foodservice applications. These fans are UL/cUL Listed for grease removal and have been tested under elevated temperature conditions.

Due to high temperatures and grease-laden airstreams in commercial kitchen ventilation, system designers must be aware of governing codes and guidelines. The National Fire Protection Association (NFPA) is the primary source used by many local codes for commercial kitchen ventilation systems. Local code authorities should be consulted before proceeding with any kitchen ventilation project.

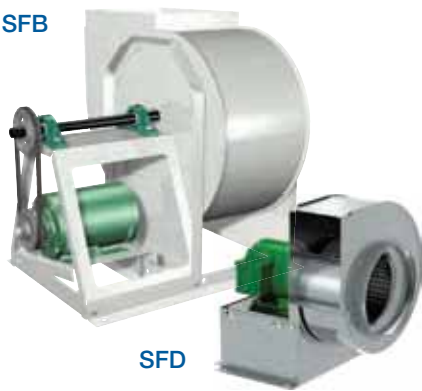
Installation must include a means for inspecting, cleaning and servicing the exhaust fan.

Fans selected for grease removal must include a weatherhood, access door and 1-inch (25 mm) drain connection. For grease applications where the fan is mounted indoors, the welded scroll option must be selected. An outlet guard is strongly recommended when the fan discharge is accessible. When an outlet guard is not ordered with the fan, it must be provided by the installer. An upblast discharge is recommended. No dampers are to be used in the system.

The fan discharge must be a minimum of 40 inches (1016 mm) above the roof line and the exhaust duct must be fully welded to a minimum distance of 18 inches (457 mm) above the roof surface.



SFB



SFD



Model SFD and SFB are AMCA Licensed for Air Performance

**Best Available Program**  
5 Days



VARI-GREEN Motor

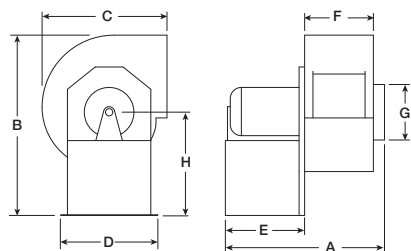
Select sizes and models with the Vari-Green® motor are available. (SFD only)

## Model SFD Direct Drive and SFB Belt Drive

Centrifugal forward-curved utility fans are designed for applications requiring low to medium air volumes and pressures.

Standard Construction	SFD	SFB
Housing - heavy-gauge steel, lock-seam	■	■
Wheel - aluminum	■	
Wheel - steel, aluminum		■
Corrosion-resistant fasteners	■	■
Ball bearing motor - 1/4 hp and larger	■	■
Adjustable motor plate		■
Adjustable motor pulley		■
Permatector™ protective powder coating		■
Options and Accessories	SFD	SFB
Vari-Green® motor - 80% turndown, 85% efficient <i>Available as standard on select sizes</i>	■	
Damper	■	■
Speed control	■	
Isolators - base	■	■
Weatherhood	■	■
Multiple discharge positions - eight	■	■
Belt guard		■
Shaft seal with aluminum rub ring	■	■
Guards - inlet, outlet	■	■
Flanges - inlet, outlet		■
Lube lines		■
Drain connection	■	■
Access door - bolted, hinged	■	■
Dual drives		■
Relubricatable bearings		■
Decorative or protective powder coating	■	■
Certified for high wind and seismic applications	■	■
UL/cUL Listed Power Ventilators	■	■

SFD

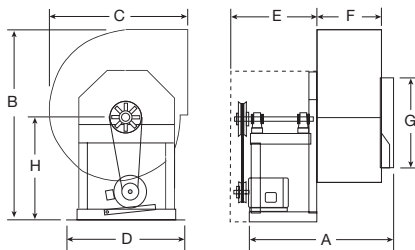


### Dimensions for SFD

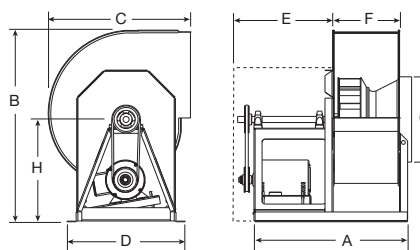
Model Size	A	B	C	D	E	F	G	H
6	14 <sup>11</sup> / <sub>16</sub>	16	11 <sup>1</sup> / <sub>4</sub>	11	8 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	6	9 <sup>1</sup> / <sub>16</sub>
7.5	14 <sup>9</sup> / <sub>16</sub>	18 <sup>1</sup> / <sub>16</sub>	13 <sup>1</sup> / <sub>16</sub>	12 <sup>1</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	8	9 <sup>5</sup> / <sub>16</sub>
9	17 <sup>7</sup> / <sub>8</sub>	20 <sup>5</sup> / <sub>16</sub>	15 <sup>1</sup> / <sub>16</sub>	13 <sup>3</sup> / <sub>4</sub>	10 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	10	10 <sup>3</sup> / <sub>4</sub>
10	19 <sup>5</sup> / <sub>8</sub>	24 <sup>5</sup> / <sub>16</sub>	18 <sup>5</sup> / <sub>8</sub>	16 <sup>1</sup> / <sub>4</sub>	11 <sup>5</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	12	12 <sup>3</sup> / <sub>4</sub>

All dimensions are in inches.

SFB 9



SFB 10 through 30



### Dimensions for SFB

Model Size	A	B	C	D	E	F	G	H
9	20	24	16 <sup>7</sup> / <sub>8</sub>	14 <sup>1</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>2</sub>	6 <sup>5</sup> / <sub>8</sub>	10	13 <sup>3</sup> / <sub>4</sub>
10	26	26 <sup>5</sup> / <sub>8</sub>	19 <sup>3</sup> / <sub>8</sub>	16 <sup>7</sup> / <sub>8</sub>	15 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub>	11	15 <sup>5</sup> / <sub>8</sub>
12	26 <sup>1</sup> / <sub>2</sub>	28 <sup>3</sup> / <sub>8</sub>	21 <sup>3</sup> / <sub>8</sub>	16 <sup>7</sup> / <sub>8</sub>	15 <sup>1</sup> / <sub>2</sub>	9	13	15 <sup>5</sup> / <sub>8</sub>
15	32 <sup>5</sup> / <sub>8</sub>	31 <sup>1</sup> / <sub>4</sub>	23 <sup>3</sup> / <sub>8</sub>	18 <sup>7</sup> / <sub>8</sub>	21 <sup>1</sup> / <sub>4</sub>	12 <sup>1</sup> / <sub>4</sub>	15 <sup>5</sup> / <sub>8</sub>	16 <sup>5</sup> / <sub>8</sub>
18	36 <sup>5</sup> / <sub>8</sub>	42	30 <sup>5</sup> / <sub>8</sub>	25 <sup>5</sup> / <sub>8</sub>	22	17 <sup>1</sup> / <sub>4</sub>	19 <sup>1</sup> / <sub>4</sub>	22 <sup>5</sup> / <sub>8</sub>
20	37	46	33 <sup>5</sup> / <sub>8</sub>	27 <sup>5</sup> / <sub>8</sub>	23 <sup>3</sup> / <sub>4</sub>	15 <sup>5</sup> / <sub>8</sub>	21 <sup>5</sup> / <sub>8</sub>	24 <sup>1</sup> / <sub>2</sub>
22	39 <sup>5</sup> / <sub>8</sub>	52 <sup>1</sup> / <sub>2</sub>	36 <sup>3</sup> / <sub>4</sub>	30 <sup>3</sup> / <sub>4</sub>	24	17 <sup>1</sup> / <sub>2</sub>	23	28 <sup>3</sup> / <sub>4</sub>
25	41 <sup>1</sup> / <sub>2</sub>	57 <sup>3</sup> / <sub>4</sub>	40 <sup>5</sup> / <sub>8</sub>	33 <sup>5</sup> / <sub>8</sub>	25	19 <sup>1</sup> / <sub>2</sub>	25 <sup>5</sup> / <sub>8</sub>	31 <sup>1</sup> / <sub>2</sub>
27	46	61 <sup>5</sup> / <sub>8</sub>	44	37 <sup>5</sup> / <sub>8</sub>	27	21 <sup>5</sup> / <sub>8</sub>	28 <sup>1</sup> / <sub>2</sub>	33
30	48 <sup>1</sup> / <sub>4</sub>	68	48 <sup>3</sup> / <sub>4</sub>	41 <sup>5</sup> / <sub>8</sub>	27	23 <sup>5</sup> / <sub>8</sub>	31 <sup>3</sup> / <sub>4</sub>	36 <sup>5</sup> / <sub>8</sub>

All dimensions are in inches.



UL/cUL 705 Power Ventilators  
E40001 - SWD



Model SWD is AMCA Licensed for Air Performance

**Best Available Program**  
10 Days



**VARI-GREEN**  
Motor

All sizes feature the Vari-Green® motor as standard.

## Model SWD Direct Drive

Centrifugal backward-inclined utility fans are designed for applications requiring medium to high air volumes and pressures. The wheel design provides the ability to build pressure without overloading.

- Scroll is galvanized non-painted construction
- Offered exclusively with Vari-Green® electronically commutated motors for energy efficiency and ease of control.

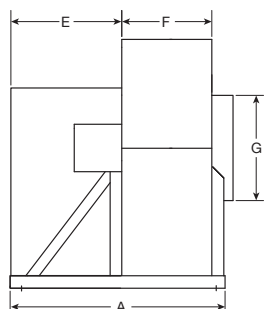
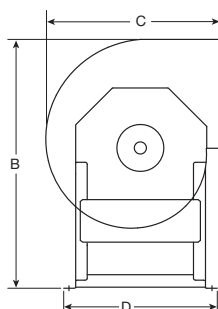
### Standard Construction

Housing - heavy-gauge steel, lock-seam
Vari-Green® motor - 80% turndown, 85% efficient
Wheel - aluminum
Corrosion-resistant fasteners
Weatherhood

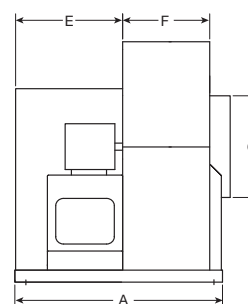
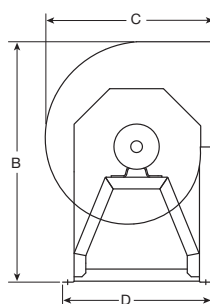
### Options and Accessories

Options and Accessories	Stock
Welded scroll construction	
Aluminum construction	
Wheel rotation - clockwise or counterclockwise	
Damper	✓
Isolators - base	✓
Multiple discharge positions - eight	
Inlet vane damper	
Shaft seal with aluminum rub ring	
Guards - inlet, outlet	
Drain connection	
Access door - bolted, hinged	
Flanges - inlet, outlet, companion	
Decorative or protective powder coating	
UL/cUL Listed Power Ventilators	

### SWD 7 through 10



### SWD 13 through 18



### Dimensions for SWD

Model Size	A	B	C	D	E	F	G
7	22 <sup>7</sup> / <sub>8</sub>	26 <sup>7</sup> / <sub>8</sub>	18 <sup>3</sup> / <sub>4</sub>	16 <sup>7</sup> / <sub>8</sub>	12 <sup>1</sup> / <sub>2</sub>	9 <sup>3</sup> / <sub>4</sub>	11
8	22 <sup>7</sup> / <sub>8</sub>	26 <sup>7</sup> / <sub>8</sub>	18 <sup>3</sup> / <sub>4</sub>	16 <sup>7</sup> / <sub>8</sub>	12 <sup>1</sup> / <sub>2</sub>	9 <sup>3</sup> / <sub>4</sub>	11
10	22 <sup>7</sup> / <sub>8</sub>	26 <sup>7</sup> / <sub>8</sub>	18 <sup>3</sup> / <sub>4</sub>	16 <sup>7</sup> / <sub>8</sub>	12 <sup>1</sup> / <sub>2</sub>	9 <sup>3</sup> / <sub>4</sub>	11
13	25 <sup>5</sup> / <sub>8</sub>	31 <sup>1</sup> / <sub>4</sub>	23 <sup>3</sup> / <sub>8</sub>	19 <sup>3</sup> / <sub>8</sub>	13 <sup>3</sup> / <sub>4</sub>	10 <sup>5</sup> / <sub>8</sub>	14
15	26 <sup>3</sup> / <sub>8</sub>	34 <sup>3</sup> / <sub>4</sub>	25 <sup>3</sup> / <sub>4</sub>	21 <sup>1</sup> / <sub>2</sub>	13 <sup>3</sup> / <sub>4</sub>	11 <sup>5</sup> / <sub>8</sub>	15 <sup>5</sup> / <sub>8</sub>
16	27 <sup>1</sup> / <sub>2</sub>	38 <sup>1</sup> / <sub>8</sub>	28	22 <sup>7</sup> / <sub>8</sub>	13 <sup>3</sup> / <sub>4</sub>	12 <sup>3</sup> / <sub>4</sub>	17 <sup>1</sup> / <sub>2</sub>
18	28 <sup>7</sup> / <sub>8</sub>	42	30 <sup>7</sup> / <sub>8</sub>	25	13 <sup>3</sup> / <sub>4</sub>	14 <sup>1</sup> / <sub>2</sub>	19 <sup>1</sup> / <sub>4</sub>

All dimensions are in inches.



UL/cUL 705 Power Ventilators  
E40001  
UL/cUL 762 Power Ventilators for Restaurant Exhaust  
Appliances - MH11745



Model SWB Series 100 is AMCA Licensed for Air Performance

**Best Available Program**  
5 Days

## Model SWB Belt Drive • Series 100

Centrifugal backward-inclined utility fans are designed for applications requiring medium to high air volumes and pressures. The wheel design provides the ability to build pressure without overloading.

### Series 100

- Scroll is galvanized non-painted construction
- Drive frame has Permator™ protective powder coating

### Standard Construction

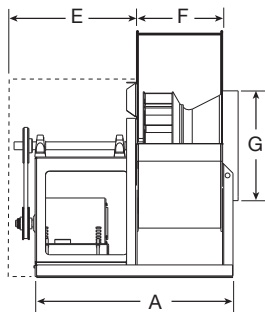
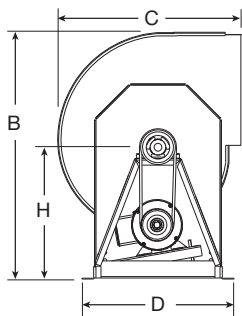
- Housing - heavy-gauge steel, lock-seam
- Wheel - aluminum
- Corrosion-resistant fasteners
- Ball bearing motor - 1/4 hp and larger
- Adjustable motor plate
- Adjustable motor pulley

### Options and Accessories

- Wheel rotation - clockwise or counterclockwise
- Damper
- Isolators - base
- Multiple discharge positions - eight
- Weatherhood
- Shaft seal with aluminum rub ring
- Guards - inlet, outlet
- Heat slinger
- Lube lines
- Drain connection
- Access door - bolted
- Flanges - inlet, outlet, companion
- Dual drives
- Relubricatable bearings
- Performance baffle
- Stainless steel shaft
- Certified for high wind and seismic applications
- UL/cUL Listed Power Ventilators
- UL/cUL Listed Power Ventilators for Restaurant Exhaust Appliances

Stock

✓  
✓



### Dimensions for SWB • Series 100

Model Size	A	B	C	D	E	F	G	H
106, 107, 108, 110	26 <sup>3</sup> / <sub>8</sub>	26 <sup>3</sup> / <sub>8</sub>	18 <sup>3</sup> / <sub>8</sub>	16 <sup>7</sup> / <sub>8</sub>	15 <sup>1</sup> / <sub>2</sub>	9 <sup>3</sup> / <sub>4</sub>	11	15 <sup>1</sup> / <sub>8</sub>
113	30 <sup>1</sup> / <sub>8</sub>	31 <sup>1</sup> / <sub>4</sub>	23 <sup>3</sup> / <sub>8</sub>	18 <sup>7</sup> / <sub>8</sub>	21 <sup>1</sup> / <sub>4</sub>	10 <sup>5</sup> / <sub>8</sub>	14	16 <sup>3</sup> / <sub>8</sub>
115	31 <sup>1</sup> / <sub>4</sub>	34 <sup>3</sup> / <sub>4</sub>	25 <sup>3</sup> / <sub>4</sub>	21 <sup>1</sup> / <sub>8</sub>	21 <sup>1</sup> / <sub>2</sub>	11 <sup>5</sup> / <sub>8</sub>	15 <sup>7</sup> / <sub>8</sub>	18 <sup>1</sup> / <sub>2</sub>
116	32 <sup>3</sup> / <sub>8</sub>	38 <sup>1</sup> / <sub>8</sub>	28	22 <sup>7</sup> / <sub>8</sub>	21 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>4</sub>	17 <sup>1</sup> / <sub>2</sub>	20 <sup>3</sup> / <sub>8</sub>
118	34	42	30 <sup>3</sup> / <sub>8</sub>	25	22	14 <sup>5</sup> / <sub>8</sub>	19 <sup>1</sup> / <sub>4</sub>	22 <sup>3</sup> / <sub>8</sub>
120	37	46	33 <sup>3</sup> / <sub>8</sub>	27 <sup>3</sup> / <sub>8</sub>	23 <sup>3</sup> / <sub>4</sub>	15 <sup>5</sup> / <sub>8</sub>	21 <sup>1</sup> / <sub>8</sub>	24 <sup>1</sup> / <sub>2</sub>
124	41 <sup>1</sup> / <sub>2</sub>	57 <sup>3</sup> / <sub>4</sub>	40 <sup>3</sup> / <sub>8</sub>	33 <sup>3</sup> / <sub>8</sub>	25	19	25 <sup>5</sup> / <sub>8</sub>	31 <sup>1</sup> / <sub>2</sub>

All dimensions are in inches.



USF-200



USF-300



USF-400

UL/cUL 705 Power Ventilators  
E40001 - USF-200  
USF-300  
USF-400

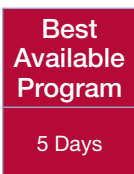
UL/cUL 762 Power Ventilators for Restaurant Exhaust  
Appliances - MH11745 - USF-300  
USF-400

UL/cUL Power Ventilators for Smoke Control Systems  
MH17511 - USF-300  
USF-400



Model USF-207 thru 210, USF-307 thru 310, USF-327 thru 349 are AMCA Licensed for Air Performance

Model USF-212 thru 222, USF-312 thru 324, USF-400-BI thru USF449-BI and USF-418-AF thru USF-449-AF are AMCA Licensed for Sound and Air Performance



## Model USF Belt Drive

The USF tiered models 200, 300 and 400 offer multiple levels of construction for the best value to match the intended application and performance.

### USF-200

- Bolted construction using all galvanized material
- Used for inexpensive, clean air applications

### USF-300

- Bolted construction, utilizing all painted steel material
- Used for grease, smoke and clean air applications

### USF-400

- Welded construction, utilizing all painted steel material
- Used for grease, smoke and clean air applications
- Heavier construction and capable of higher performances than USF-300

Standard Construction	200	300	400
Housing - Permalock™ scroll	■	■	■
Wheel - USF-200 and 300, sizes 6-10, aluminum	■	■	
Wheel - USF-200, sizes 12-22, coated steel USF-300, sizes 12-49, coated steel USF-400, all sizes, coated steel	■	■	■
Corrosion-resistant fasteners	■	■	■
Ball bearing motor - 1/4 hp and larger	■	■	■
Motor pulley - constant or adjustable	■	■	■
Permatector™ protective powder coating		■	■
Options and Accessories	200	300	400
Welded scroll construction		■	■
Wheel rotation - clockwise or counterclockwise	■	■	■
Spark resistance - B or C		■	■
NEMA 3R disconnect	■	■	■
Isolators	■	■	■
Weatherhood	■	■	■
Shaft seal with aluminum rub ring		■	■
Guards - inlet, outlet	■	■	■
Heat slinger		■	■
Extended lube lines	■	■	■
Drain connection	■	■	■
Access door, bolted	■	■	■
Access door, hinged		■	■
Flanges - inlet, outlet, companion	■	■	■
Sheaves, multiple groove	■	■	■
Equipment supports	■	■	■
Decorative or protective powder coating		■	■
Certified for high wind applications		■	
Certified for seismic applications	■	■	
UL/cUL Listed Power Ventilators	■	■	■
UL/cUL Listed Power Ventilators for Restaurant Exhaust Appliances		■	■
UL/cUL Listed Power Ventilators for Smoke Control Systems		■	■



UL/cUL 705 - E40001 - CSW  
 UL/cUL 762 Power Ventilators for Restaurant Exhaust Appliances - MH11745 - CSW-BI  
 UL/cUL Power Ventilators for Smoke Control Systems MH17511 - CSW-BI



Model CSW is AMCA Licensed for Sound and Air Performance

Model	Best Available Program
CSW Sizes 7 through 49	5 Days

## Model CSW Single-Width, Direct Drive and Belt Drive

Centrifugal fans are designed for clean or contaminated ventilation applications up to 250°F. Units can be mounted (both indoor or outdoor) in ducted inlet and/or ducted outlet installations such as exhaust air, supply air, filtration, comfort conditioning, light industrial processes, fume exhaust, fluid bed pressurization and combustion air.

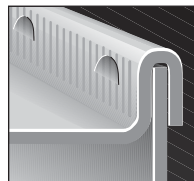
### Standard Construction

- Housing - heavy-gauge steel
  - Series 21 - PermaLock™
  - Series 41 - welded
- Direct drive, arrangement 4
- Belt drive, arrangement 9, 10
- Wheel, flat blade centrifugal, CSW-BI
- Wheel, airfoil centrifugal, CSW-AF
- Rotatable housing (sizes 7 through 30)
- Final assembly vibration analysis
- Minimum bearing life of L<sub>10</sub> 80,000 hours (Average life - L<sub>50</sub> 400,000 hours)
- Permatector™ protective powder coating

### Options and Accessories

- Guards - inlet, outlet
- Motor cover (Arrangement 4)
- Flanges - inlet, outlet, companion
- Weatherhood (Arrangement 10)
- Drain connection
- Isolators - rubber, free standing and restrained
- Isolation base
- Spark B resistant construction (Arrangements 9, 10)
- Spark C resistant construction (Arrangements 9, 10)
- Shaft seal (Arrangements 9, 10)
- Extended lube lines
- Extended life bearings L<sub>10</sub> 200,000 hours
- UL/cUL Listed Power Ventilators
- UL/cUL Listed Power Ventilators for Restaurant Exhaust Appliances (Arrangements 9, 10)
- UL/cUL Listed Power Ventilators for Smoke Control Systems (Arrangements 9, 10)

### Housing Construction



#### Series 21 PermaLock™ Housing

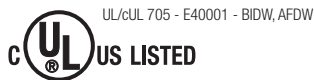
Features Greenheck's exclusive airtight PermaLock™ seam. This seam provides a structural bond between the side panels and scroll wrap.



#### Series 41 Welded Housing

Features a fully welded housing.





Model BIDW and AFDW are AMCA Licensed for Sound and Air Performance

Model	Best Available Program
Through size 49 Up to Class II	10 Days

## Model BIDW, AFDW Double-Width, Belt Drive

An excellent choice for exhaust air, supply air, filtration, heating, air conditioning, fluid bed pressurization, and make-up air handlers. Double width centrifugal wheel provides increased air volume capacity. Installed indoors without ducting to the inlets. Used in applications not requiring spark resistance or elevated temperatures.

### Standard Construction

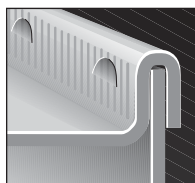
Housing - heavy-gauge steel <ul style="list-style-type: none"> <li>• Series 21 - PermaLock™</li> <li>• Series 41 - welded</li> </ul>
Wheel, flat blade centrifugal, BIDW Wheel, airfoil centrifugal, AFDW
Rotatable housing (sizes 7 through 30)
Final assembly vibration analysis
Minimum bearing life of L <sub>10</sub> 80,000 hours (Average life - L <sub>50</sub> 400,000 hours)
Permatector™ protective powder coating

### Options and Accessories

Guards - inlet, outlet, shaft
Flanges - outlet, companion
Totally enclosed belt guard (with Greenheck supplied motor and drives)
Drain connection
Isolators
Isolation base with motor slide base
Access door - bolted, hinged
Extended lube lines
Extended life bearings L <sub>10</sub> 200,000 hours
UL/cUL Listed Power Ventilators

\*Arrangements 3 must be mounted on an Isolation Base. See Greenheck's Isolation Base information on page 95 for additional details or visit [www.greenheck.com](http://www.greenheck.com)

### Housing Construction



#### Series 21 PermaLock™ Housing

Features Greenheck's exclusive airtight PermaLock™ seam. This seam provides a structural bond between the side panels and scroll wrap.



#### Series 41 Welded Housing

Features a fully welded housing.



# Centrifugal Fans - Selection Guide

## Fan Width

### Single-Width (SW) Single-Inlet, Single-Outlet

- Used in a wide range of applications
- Contaminated air, elevated temperatures, moisture content, kitchen exhaust, fume exhaust
- Typically used in ducted-in / ducted-out applications, but can be unducted at either end as needed

### Double-Width (DW) Double-Inlet, Single-Outlet

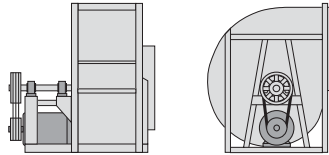
- Generally used for high volume applications or air handlers
- Clean air applications only due to bearings being located in the airstream
- Typically applied indoors or in air handler as free inlet - ducted outlet

## Spark Resistant Construction

- **Spark C** - Includes aluminum inlet cone and rub ring
- **Spark B** - Includes aluminum wheel and rub ring

### ARRANGEMENT 10

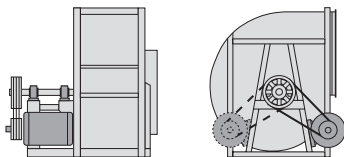
**SINGLE-WIDTH**  
*Backward-Inclined or Airfoil Wheel*



Arrangement 10 is the most common fan arrangement. Motor is mounted on the fan under the bearing pedestal and can be enclosed with a motor cover, limited motor frame sizes, smallest overall package size. No mounting base required.

### ARRANGEMENT 9

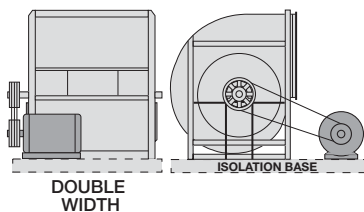
**SINGLE-WIDTH**  
*Backward-Inclined or Airfoil Wheel*



Motor is mounted on the side of the bearing pedestal with increased limit over arrangement 10. Isolation base required (by factory).

### ARRANGEMENT 3

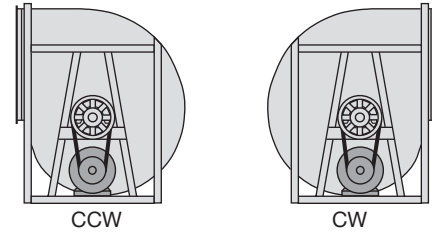
**DOUBLE-WIDTH**  
*Backward-Inclined or Airfoil Wheel*



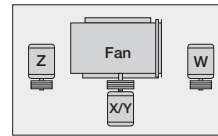
Double-width (when compared to single-width) can supply an equal amount of air with a smaller wheel diameter resulting in lower overall unit size. Bearing located in the airstream limits temperatures and does not permit spark resistant construction. Requires an isolation base (by factory) or structural pad to mount the fan and motor. See page 95 more details.

## Rotation

Choice between clockwise (CW) and counterclockwise (CCW) as determined from the drive side. Rotation changes discharge location as illustrated below.



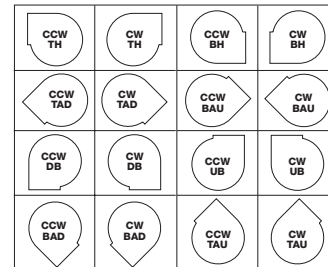
## Motor Positions (Arrangement 3)



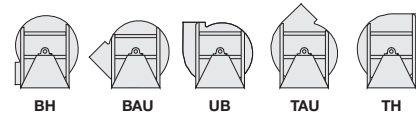
Motor position determined from the drive side. Letter assignment is independent of discharge position and fan rotation.

## Discharge Positions

**Utility Fans** - determined from the drive side. Some models and sizes allow for field rotation.



**Centrifugal Fans** - graphic shows discharge positions available on Quick Build centrifugal fans. Determined from the drive side. Some models and sizes allow for field rotation.



## Wheel Types



### Backward-Inclined Wheel

Centrifugal, non-overloading style with single-thickness flat blades. Most versatile wheel. Excellent for clean, high-temperature, or contaminated air.



### Airfoil Wheel

Centrifugal, non-overloading style with airfoil shaped blades. Higher operating efficiencies. Used for clean air applications.