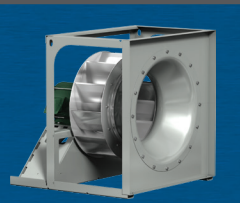
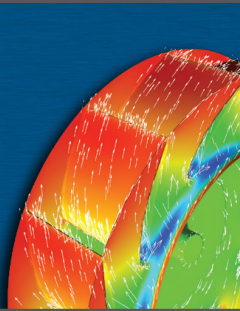
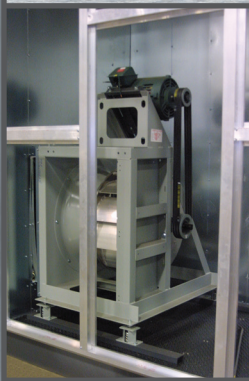
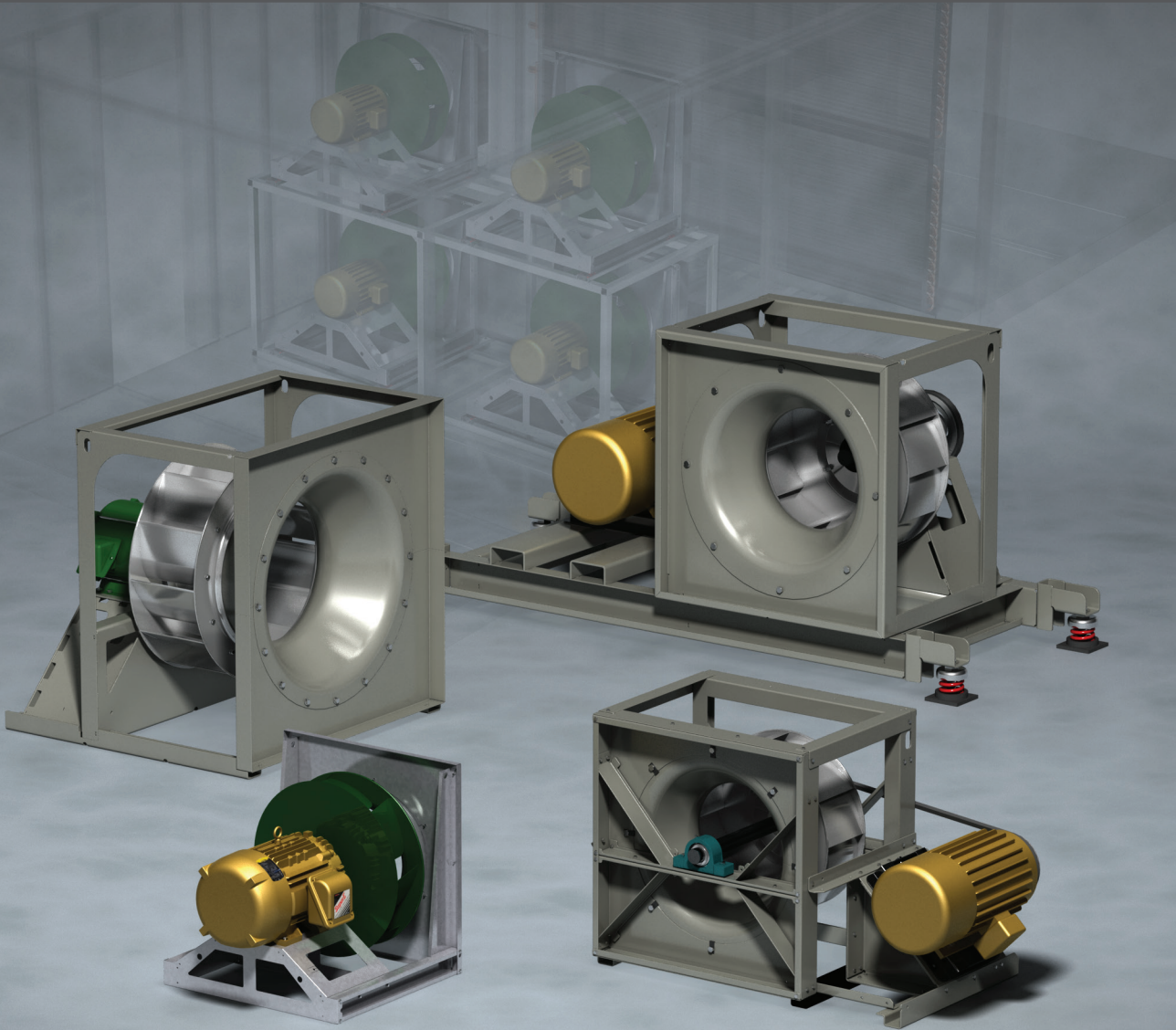


# Plenum Fans

## Models APD, APM, and APH

Belt and Direct Drive



April  
2023

# Quiet & Efficient Plenum Fans

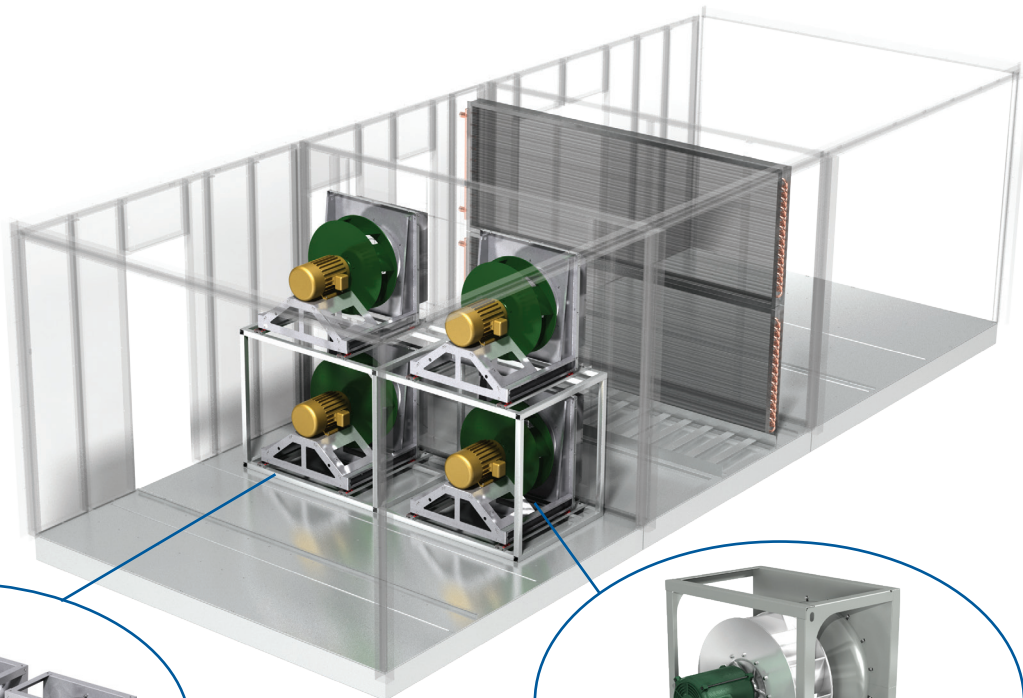
Plenum fans are designed and engineered to provide superior performance and reliability in commercial or industrial applications. Our products are manufactured with state-of-the-art laser, forming, spinning and welding equipment, and endure our quality control testing to ensure trouble-free start-up. They are designed for unhooded operation, resulting in a savings of the space normally occupied by the fan housing. Additional space savings are realized when multiple duct takeoffs are required. Ductwork is connected directly to the pressurized plenum without intermediate transitions.

## Typical applications include:

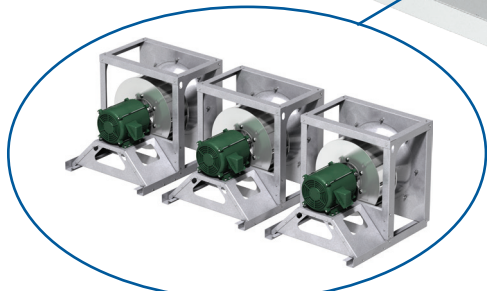
- Custom air handlers
- Built-up air handlers
- Packaged air handlers
- Parking garages
- General supply and return systems



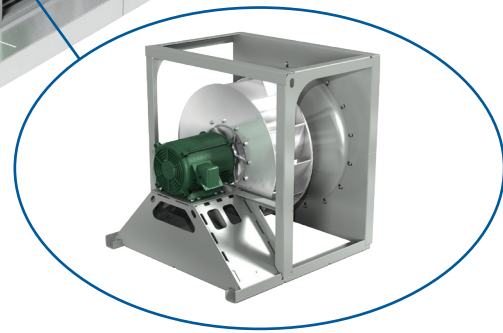
Certified data may be found in Greenheck's Computer Aided Product Selection program (CAPS®).



APD 2x2



APM 3x1



APH

## Manufactured in the USA

Greenheck plenum fans are designed and built in one of two manufacturing locations, Schofield, WI and Shelby, NC. Multiple manufacturing locations enable us to build fans and get them to you, our customer, faster.



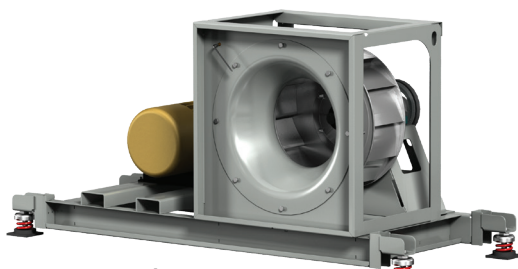
## Benefits of Greenheck's plenum fans

- Designed, engineered, and tested prior to shipment to provide years of smooth, vibration-free operation with minimal maintenance.
- Tiered model approach gives you flexibility in size, performance, and construction, matching the appropriate model to your application.
- 7- or 12-bladed wheel options allow you to select a model based on what is important to you. Plenum fans can be selected based on performance, efficiency or price point.
- Quick and easy selection options along with AutoCAD® and Revit® models available for download and integration into plan drawings, custom equipment schedules and specifications.
- CAPS® selection software leads the industry in providing selection details, options, accessories, and full submittal packages. Or use eCAPS®, an easy-to-use, cloud based, cross-model selection program. eCAPS quickly ranks the tiered models based on performance, providing detailed estimated first cost, operating costs, weights, and dimensions. All fans are selectable with N-1 redundancy.
- Easy installation with integral lifting points.

## Wheel Performance - 7 Blades vs. 12 Blades

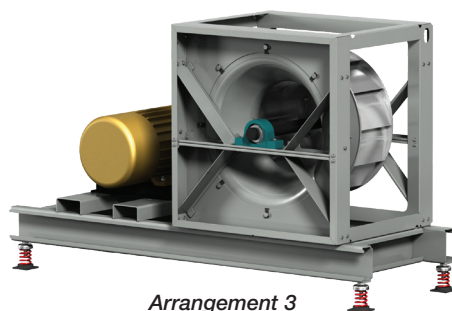
Performance Point: 5,000 cfm @ 5 in. wg						Sound Pressure dBA @ 5 ft.		Performance Point: 10,000 cfm @ 3 in. wg						Sound Pressure dBA @ 5 ft.	
Size	Blades on Wheel	rpm	bhp	Motor Size	Static Eff. (%)	Inlet	Outlet	Size	Blades on Wheel	rpm	bhp	Motor Size	Static Eff. (%)	Inlet	Outlet
APD-400 (15.8 in.)	7	3170	5.79	7.5	68	80	85	APD-630 (24.8 in.)	7	1539	6.82	7.5	69	77	86
APH-16	12	2875	5.79	7.5	68	77	82	APH-24	12	1542	6.77	7.5	70	76	81

### Motor on Base



Arrangement 1

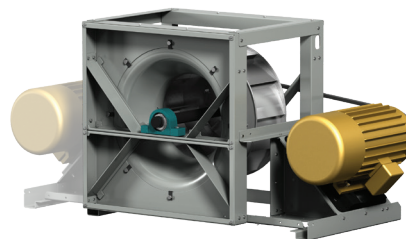
\*Available on base by Greenheck or by others



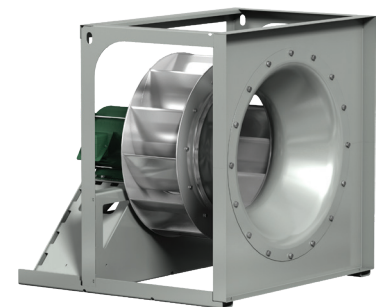
Arrangement 3

\*Available on base by Greenheck or by others

### Motor on Frame



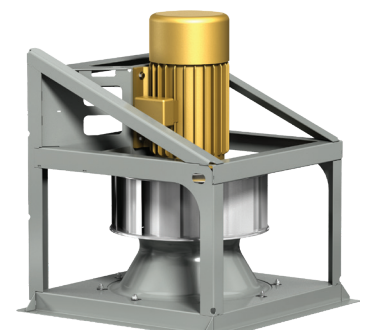
Arrangement 3, Motor on Side



Arrangement 4, Horizontal



Arrangement 3, Motor on Top

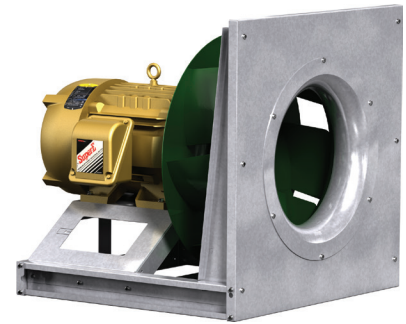


Arrangement 4, Vertical

## Multiple solutions for your plenum design needs.

The **APD** is a commercial grade plenum fan that incorporates performance and reliability into a lighter duty, economical design. The compact direct drive APD eliminates the cost, maintenance and complexity of belt drive plenum fans. When combined with a variable frequency drive (VFD), air volumes can easily be matched to changing building requirements or overcome increased pressures from dirty filters. APDs are an excellent option as a stand-alone single fan or in parallel fan array applications.

- 1,000 - 18,000 cfm, up to 10 in. wg
- Bolted galvanized frame
- 7-bladed backward curved wheel
- Ideal for light to medium duty applications
- Direct drive



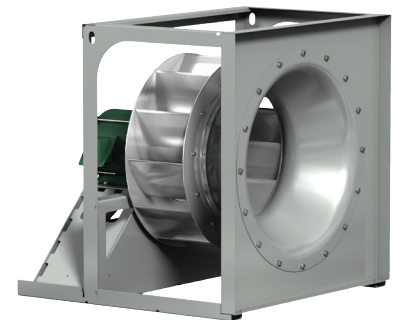
**APM** plenum fans are an ideal cost-effective solution for light duty to mid-range performances required in Class I and the majority of Class II ranges. Fans are available in both belt and direct drive designs having the motor mounted directly to the fan to reduce the fan's footprint. This is an excellent selection for retrofit and replacement applications and in variable air volume systems.

- 1,000 - 41,000 cfm, up to 8 in. wg
- Bolted galvanized or coated steel frame
- 12-bladed aluminum airfoil wheel
- Class I and most of Class II performance ranges
- Belt and direct drive

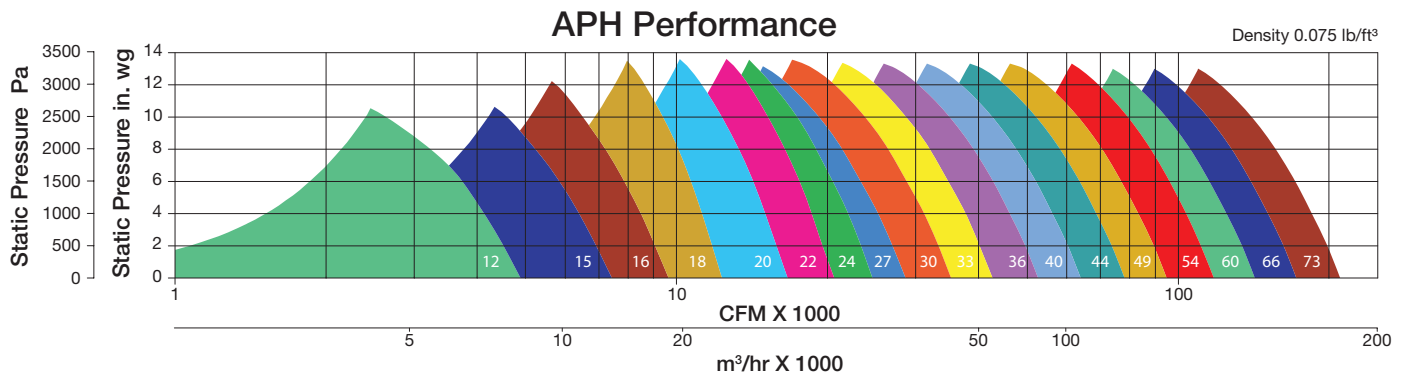
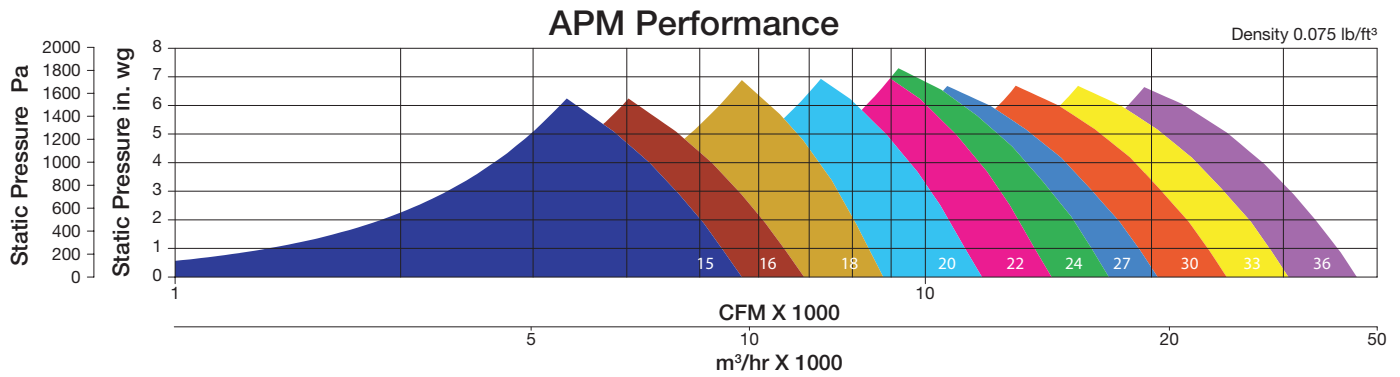
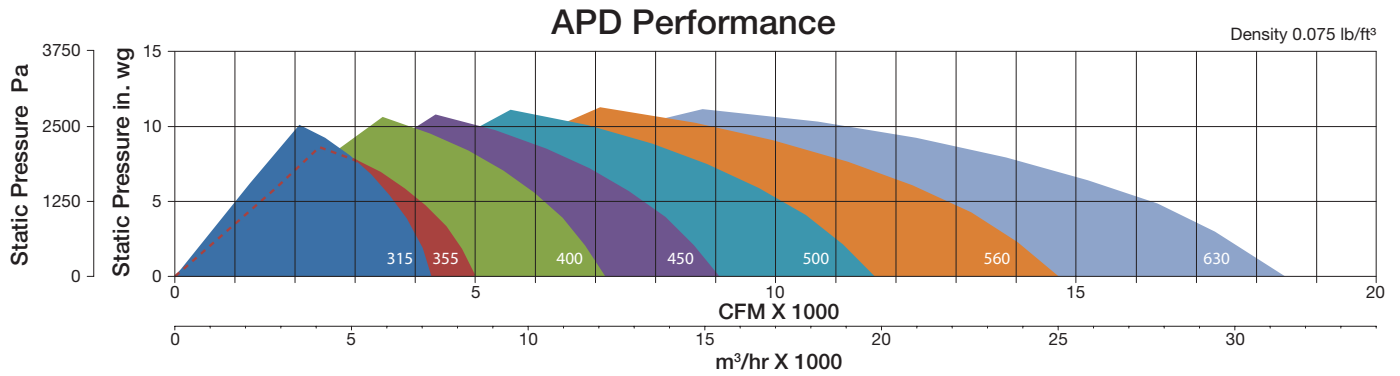


**APH** plenum fans are designed and engineered for superior performance and reliability. It is available in both belt and direct drive with an extensive accessory offering. Quiet and efficient operation is achieved through a 12-bladed, airfoil aluminum wheel. Model APH is ideal for industrial applications that require welded construction, coated framework. Available in multiple configurations and the highest performance capabilities.

- 1,000 - 209,000 cfm, up to 12.5 in. wg
- Welded and coated steel frame
- 12-bladed aluminum airfoil wheel
- Available up to Class III
- Belt and direct drive

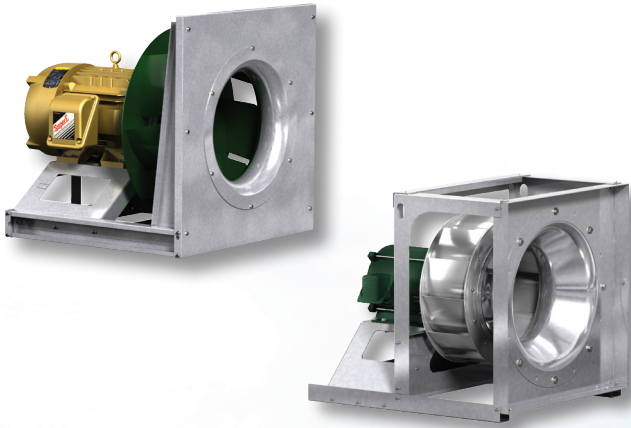


Charts show performance capabilities by model and size. For complete AMCA licensed performance, refer to Greenheck's CAPS® or eCAPS® selection programs.



## Construction - Galvanized (APD, APM)

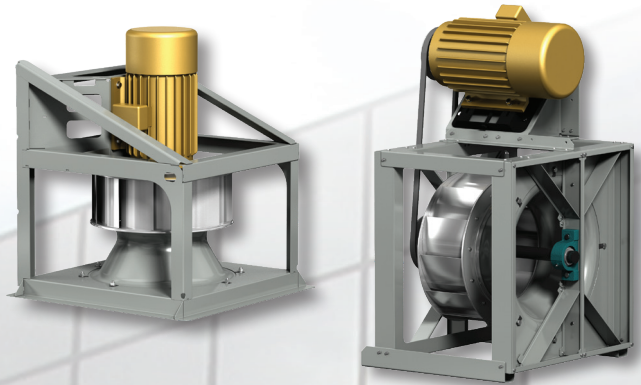
The fan assembly and sound attenuating housing are constructed of laser cut and die-formed heavy-gauge galvanized material.



## Drives

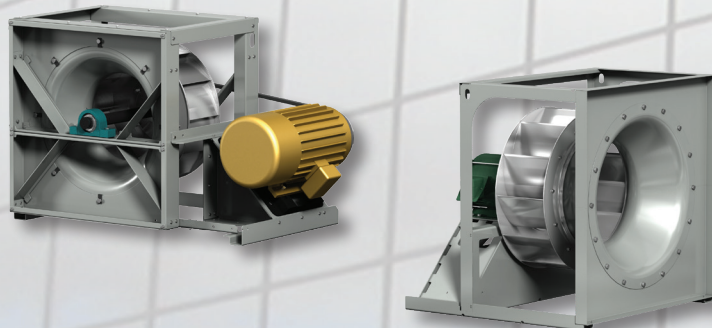
All plenums are available with a direct drive fan. There are no belts to tension, sheaves to replace, or fan bearings to lubricate. Lubricating the motor bearings is the only maintenance required.

APM and APH are available in belt drive configurations with cast iron sheaves and matched belts standard with a 1.5 drive service factor. Installed and aligned to provide reduced vibration levels and minimize installation costs.



## Construction - Coated Steel (APM, APH)

Fully welded design with Permatector™, an electrostatically applied polyester urethane powder coat finish.

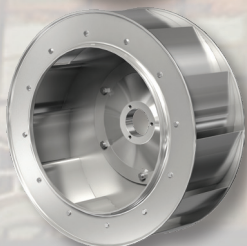


## Wheels



### 7-Bladed (APD)

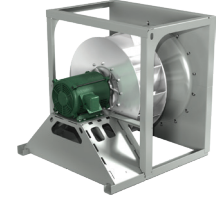
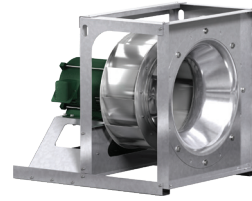
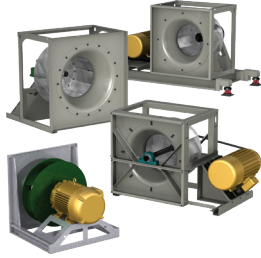
Backward curved centrifugal wheel with seven blades, carbon steel materials and powder coated. Wheel features high efficiency operation with welded construction.



### 12-Bladed (APM, APH)

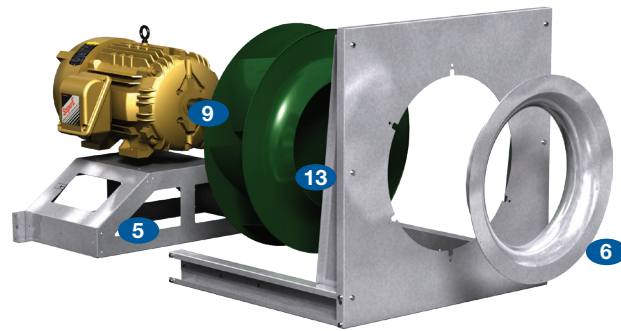
Backward inclined airfoil centrifugal wheel constructed from an aluminum material. The design saves energy and improves overall sound quality by reducing low frequency tones that are difficult to attenuate.

# Model Comparison

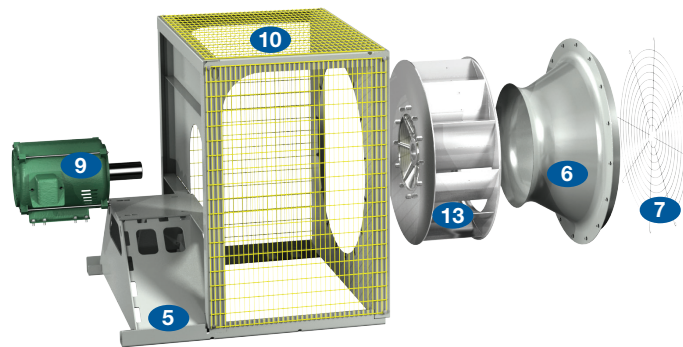


MODEL COMPARISON		APD	APM	APH
Performance	Volume (CFM max <i>(m<sup>3</sup>/hr)</i> )	18,000 (30,600)	41,000 (69,700)	209,000 (355,100)
	Static Pressure (Ps max)	10 in. wg (2,490 Pa)	8 in. wg (1,990 Pa)	12.5 in. wg (3,110 Pa)
	Sizes	315 - 630	15 - 36	12 - 73
	Class	-	I, II	I, II, III
Standard Construction	Arrangement, Configuration	4, Horizontal	4, Horizontal 3, Motor on Top 3 Motor on Side 4, Vertical	4, Horizontal 3, Motor on Top 3, Motor on Side 3, Motor on Base 1, Motor on Base 4, Vertical
	Drive Type	Direct	Belt / Direct	Belt / Direct
	Wheel	7 Blades	12 Blades	12 Blades
	Wheel Type	Backward Curved	Airfoil	Airfoil
	Wheel Material	Coated Steel	Aluminum	Aluminum
	Wheel Construction	Welded	Welded	Welded
	Frame Material	Galvanized	Galvanized / Coated Steel	Coated Steel
	Frame Construction	Bolted	Bolted	Welded
	Bearings	-	Set Screw	Concentric Locking
	Bearing Life	-	L <sub>10</sub> 40,000 Hours	L <sub>10</sub> 80,000 Hours
	Single Pressure Tap	Included	Included	Included
	Factory Vibration Test	Yes	Optional	Yes
		BV-4	BV-3	Belt: BV-3 Direct: BV-5
AMCA Certification	FEI, Sound and Air	FEI, Sound and Air	FEI, Sound and Air	
Accessories	Belt Guard	-	Yes	Yes
	Extended Life Bearings	-	L <sub>10</sub> 80,000 Hours	L <sub>10</sub> 200,000 Hours
	Extended Lube Lines Kit	-	Yes	-
	Fan Monitoring System	-	Yes	Yes
	Inlet Connection	-	-	Slip Fit
	Inlet Guard	Yes	Yes	Yes
	Isolation Base	-	-	Yes
	Painted Construction	-	Yes	Standard
	Protective Cage	-	Yes	Yes
	Shaft Guard	-	-	Arrangement 1 Only
	Inlet Damper	-	-	-
	Blank-off Panel	-	-	-
	Sure-Aire™ Airflow Measurement	Yes	Yes, with Electronics	Yes, with Electronics
Vibration Isolators	Yes	Yes	Yes	
Options	Warranty	1, 2 or 3 years	1, 2 or 3 years	1, 2 or 3 years
	Quick Build	5, 10, and 15 Day	5, 10, and 15 Day	5 and 10 Day

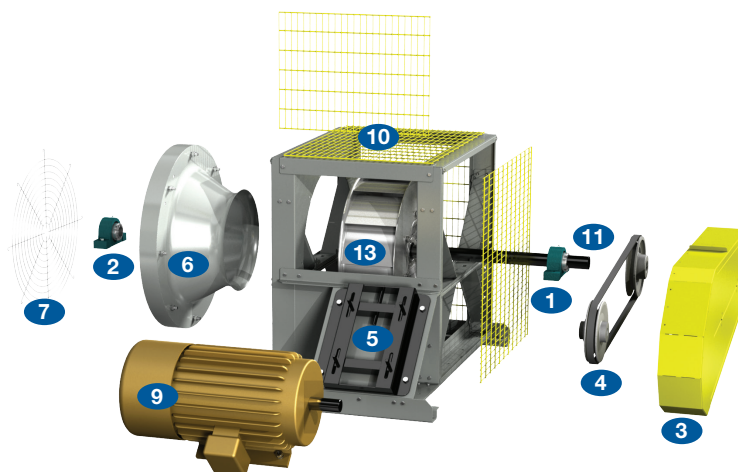
- |   |                       |                                      |
|---|-----------------------|--------------------------------------|
| 1. <i>Bearing, Drive Side</i>                 | 6. <i>Inlet Cone</i>  | 10. <i>Protective Cage (3 sided)</i> |
| 2. <i>Bearing, Opposite Drive Side</i>        | 7. <i>Inlet Guard</i> | 11. <i>Shaft</i>                     |
| 3. <i>Belt Guard</i>                          | 8. <i>Isolators</i>   | 12. <i>Thrust Isolators</i>          |
| 4. <i>Belt(s), Shaft Pulley, Motor Pulley</i> | 9. <i>Motor</i>       | 13. <i>Wheel</i>                     |
| 5. <i>Drive Frame</i>                         |                       |                                      |



**APD**



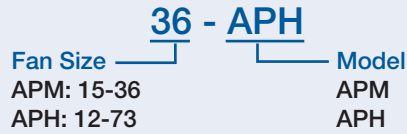
**APH**



**APM**



## Model Number Codes:



## Vibration Analysis

All plenum fans are tested at the design speed in the factory after final assembly. Fans are checked for amp draw and levels recorded. APD and APH (APM optional) are also subjected to a complete vibration analysis in three planes. The recorded filter-in vibration levels at the FRPM meet the requirements of AMCA/ANSI Standard 204-05 (Balance Quality and Vibration Levels for Fans). A permanent record of the test is kept on file at the factory for future reference. A copy of the test report is available upon request.

The following vibration limits apply to an assembled fan tested in Greenheck's factory.

Fan Category	Rigidly Mounted in./s	Flexibly Mounted in./s
BV-1	.50	.60
BV-2	.20	.30
BV-3	.15	.20
BV-4	.10	.15
BV-5	.08	.10

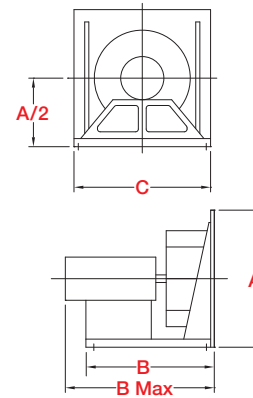


## APD Arrangement 4, Horizontal

Size	A	A/2	B*	B (max)	C	Motor Frame Size	Weight* (lbs)
						Max	
315	17.5	8.8	18.0	21.5	17.5	184	91
355	19.7	9.9	18.9	22.4	19.7	184	100
400	22.2	11.1	22.2	24.2	22.2	215	193
450	25.0	12.5	27.1	30.1	25.0	256	399
500	27.8	13.9	28.3	31.2	27.7	256	417
560	31.0	15.5	29.6	32.6	31.0	256	446
630	35.0	17.5	32.8	38.0	34.9	286	587

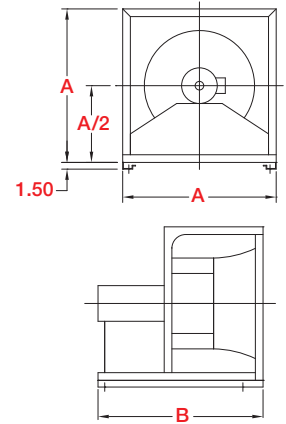
All dimensions are in inches.

\* Based on maximum motor frame size.



## APM Arrangement 4, Horizontal

Size	A	A/2	B*	Motor Frame Size			Weight* (lbs)		
				Min		Max	Class I	Class II	Class III
				Class I	Class II				
15	21.0	10.5	29.3	143	143	215	85	85	85
16	23.1	11.6	30.4	143	143	215	94	94	94
18	25.6	12.8	35.9	143	143	256	116	116	118
20	28.0	14.0	37.3	182	182	256	131	131	133
22	31.2	15.6	38.9	182	213	256	151	156	160
24	34.3	17.2	40.6	182	213	256	194	199	204
27	37.8	18.9	42.5	213	213	256	229	229	239
30	42.0	21.0	46.8	213	213	286	315	318	326
33	46.2	23.1	49.0	254	254	286	371	388	396
36	46.2	23.1	51.6	254	254	286	416	416	419

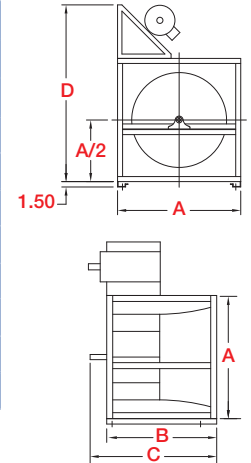


All dimensions are in inches.

\* Based on maximum motor frame size.

## APM Arrangement 3, Motor on Top

Size	A	A/2	B	C		D		Motor Frame Sizes				Weight* (lbs)	
				Class		Class		Min - Class		Max - Class		Class	
				I	II	I	II	I	II	I	II	I	II
18	25.6	12.8	23.9	27.3	27.9	36.9	36.9	56	145	184	184	165	176
20	28.0	14.0	25.3	28.6	29.3	41.0	41.0	56	182	215	215	199	206
22	31.2	15.6	28.9	32.3	32.9	44.1	44.1	56	182	215	215	238	252
24	34.3	17.2	30.6	34.0	35.3	49.2	49.2	56	184	254	254	334	348
27	37.8	18.9	32.5	35.9	37.1	52.7	52.7	56	213	256	256	378	390
30	42.0	21.0	34.8	38.8	39.4	56.9	58.3	56	213	256	286	498	533
33	46.2	23.1	38.5	42.5	43.8	62.5	62.5	56	215	284	286	621	653
36	46.2	23.1	41.1	45.1	46.4	62.5	64.6	143	215	284	326	666	726

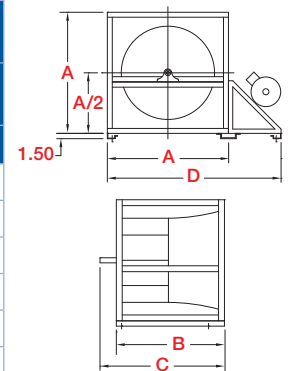


All dimensions are in inches.

\* Based on maximum motor frame size.

## APM Arrangement 3, Motor on Side

Size	A	A/2	B	C		D		Motor Frame Sizes				Weight* (lbs)	
				Class		Class		Min - Class		Max - Class		Class	
				I	II	I	II	I	II	I	II	I	II
18	25.6	12.8	23.9	27.3	27.9	36.9	36.9	56	145	184	184	168	179
20	28.0	14.0	25.3	28.6	29.3	41.0	41.0	56	182	215	215	202	209
22	31.2	15.6	28.9	32.3	32.9	44.1	44.1	56	182	215	215	242	257
24	34.3	17.2	30.6	34.0	35.3	49.2	49.2	56	184	254	254	339	354
27	37.8	18.9	32.5	35.9	37.1	52.7	52.7	56	213	256	256	384	396
30	42.0	21.0	34.8	38.8	39.4	56.9	58.3	56	213	256	286	507	542
33	46.2	23.1	38.5	42.5	43.8	62.5	62.5	56	215	284	286	632	663
36	46.2	23.1	41.1	45.1	46.4	62.5	64.6	143	215	284	326	677	737

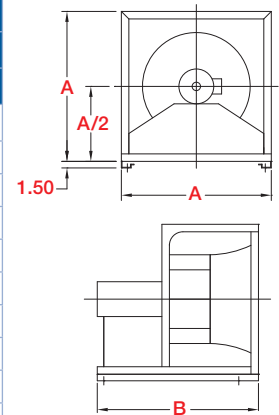


All dimensions are in inches.

\* Based on maximum motor frame size.

## APH Arrangement 4, Horizontal

Size	A	A/2	B*			Motor Frame Sizes						Weight* (lbs)*		
			Class			Min - Class			Max - Class			Class		
			I	II	III	I	II	III	I	II	III	I	II	III
15	21.0	10.5	29.3	29.3	33.0	143	143	143	215	215	256	82	82	87
16	23.1	11.6	34.1	34.1	34.1	143	143	143	256	256	256	96	96	96
18	25.6	12.8	35.9	35.9	37.4	143	143	143	256	256	286	117	117	139
20	28.0	14.0	37.3	37.3	40.3	182	182	182	256	256	326	131	131	184
22	31.2	15.6	38.9	40.4	41.9	182	213	213	256	286	326	152	183	216
24	34.3	17.2	40.6	42.1	43.6	182	213	213	256	286	326	178	212	248
27	37.8	18.9	42.5	44.0	45.5	213	213	213	256	286	326	267	306	351
30	42.0	21.0	46.8	48.3	49.1	213	213	213	286	326	365	382	432	437
33	46.2	23.1	50.5	51.4	51.4	254	254	254	326	365	365	507	521	529
36	46.2	23.1	54.0	54.0	56.3	254	254	254	365	365	405	549	549	556
40	51.1	25.6	56.8	56.8	62.7	284	284	284	365	365	445	711	711	757
44	56.4	28.2	62.3	62.3	65.9	284	284	284	405	405	445	857	868	905
49	62.3	31.2	69.8	69.8	69.8	324	324	324	445	445	445	1162	1181	1233
54	68.6	34.3	73.7	73.7	73.7	324	324	324	445	445	445	1340	1396	1406
60	76.0	38.0	78.5	78.5	78.5	364	364	364	445	445	445	1324	1683	1755

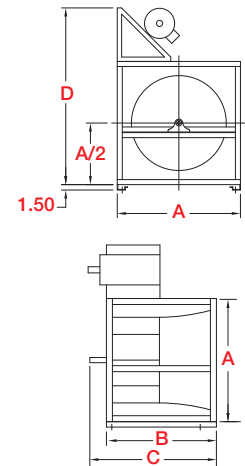


All dimensions are in inches.

\* Based on maximum motor frame size.

## APH Arrangement 3, Motor on Top

Size	A	A/2	B	C		D		Motor Frame Size				Weight (lbs)*	
				Class		Class		Min - Class		Max - Class		Class	
				I	II	I	II	I	II	I	II	I	II
18	25.6	12.8	23.9	27.3	27.9	36.9	36.9	143	145	184	184	141	152
20	28.0	14.0	25.3	28.6	29.3	41.0	41.0	143	182	215	215	168	175
22	31.2	15.6	28.9	32.3	32.9	44.1	44.1	143	182	215	215	205	219
24	34.3	17.2	30.6	34.0	35.3	49.2	49.2	143	184	254	254	281	295
27	37.8	18.9	32.5	35.9	37.1	52.7	52.7	143	213	256	256	324	336
30	42.0	21.0	34.8	38.8	39.4	56.9	58.3	143	213	256	286	449	475
33	46.2	23.1	38.5	42.5	43.8	62.5	62.5	143	215	284	286	564	596
36	46.2	23.1	41.1	45.1	46.4	62.5	64.6	143	215	284	326	607	654
40	51.1	25.6	43.9	48.6	49.2	67.4	69.5	145	254	286	326	844	886
44	56.4	28.2	49.4	54.0	55.3	74.8	74.8	145	256	324	326	1065	1115

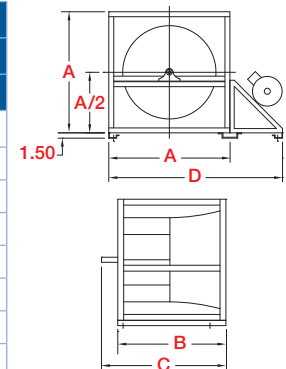


All dimensions are in inches.

\* Based on maximum motor frame size.

## APH Arrangement 3, Motor on Side

Size	A	A/2	B	C		D		Motor Frame Size				Weight (lbs)*	
				Class		Class		Min - Class		Max - Class		Class	
				I	II	I	II	I	II	I	II	I	II
18	25.6	12.8	23.9	27.3	27.9	36.9	36.9	143	145	184	184	147	158
20	28.0	14.0	25.3	28.6	29.3	41.0	41.0	143	182	215	215	175	182
22	31.2	15.6	28.9	32.3	32.9	44.1	44.1	143	182	215	215	212	227
24	34.3	17.2	30.6	34.0	35.3	49.2	49.2	143	184	254	254	293	308
27	37.8	18.9	32.5	35.9	37.1	52.7	52.7	143	213	256	256	337	348
30	42.0	21.0	34.8	38.8	39.4	56.9	58.3	143	213	256	286	467	493
33	46.2	23.1	38.5	42.5	43.8	62.5	62.5	143	215	284	286	584	616
36	46.2	23.1	41.1	45.1	46.4	62.5	64.6	143	215	284	326	628	675
40	51.1	25.6	43.9	48.6	49.2	67.4	69.5	145	254	286	326	873	915
44	56.4	28.2	49.4	54.0	55.3	74.8	74.8	145	256	324	326	1102	1152

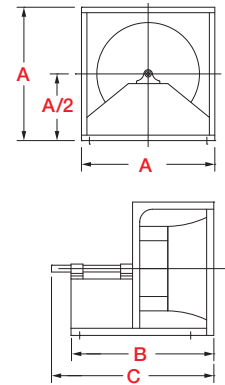


All dimensions are in inches.

\* Based on maximum motor frame size.

## APH Arrangement 1, Motor on Base

Size	A	A/2	B	C*			Weights (lbs)*		
				Class			Class		
				I	II	III	I	II	III
12	21.0	10.5	21.2	24.0	24.6	-	64	68	-
15	21.0	10.5	23.1	25.8	26.4	27.1	72	81	81
16	23.1	11.6	24.7	27.5	28.1	28.7	80	86	89
18	25.6	12.8	27.2	30.6	31.2	31.8	100	107	110
20	28.0	14.0	29.2	32.5	33.2	34.4	121	126	130
22	31.2	15.6	31.7	35.1	35.7	36.9	143	153	165
24	34.3	17.2	34.2	37.6	38.8	39.4	168	179	202
27	37.8	18.9	37.0	40.4	41.6	42.2	243	252	272
30	42.0	21.0	40.9	44.9	45.5	46.7	300	312	338
33	46.2	23.1	44.2	48.2	49.5	50.1	367	395	431
36	46.2	23.1	48.1	52.1	53.4	55.4	414	435	458
40	51.1	25.6	52.3	57.0	57.6	59.6	541	554	597
44	56.4	28.2	57.1	61.7	63.0	65.6	619	656	696
49	62.3	31.2	62.6	67.9	68.5	71.1	851	890	980
54	68.6	34.3	68.5	73.8	75.8	77.0	1134	1212	1235
60	76.0	38.0	75.5	80.7	84.0	84.0	1394	1475	1606
66	84.0	42.0	82.2	88.1	90.7	90.7	1741	1864	1877
73	92.4	46.2	90.0	95.9	98.5	98.5	1953	2075	2128

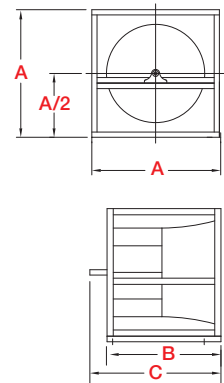


All dimensions are in inches.

\* Based on maximum motor frame size.

## APH Arrangement 3, Motor on Base

Size	A	A/2	B	C*			Weights (lbs)*		
				Class			Class		
				I	II	III	I	II	III
18	25.6	12.8	20.9	24.3	24.9	25.6	109	120	124
20	28.0	14.0	22.3	25.6	26.3	27.5	127	134	137
22	31.2	15.6	25.9	29.3	29.9	31.2	160	174	187
24	34.3	17.2	27.6	31.0	32.3	32.9	218	233	261
27	37.8	18.9	29.5	32.9	34.1	34.8	260	272	293
30	42.0	21.0	31.8	35.8	36.4	37.6	370	386	417
33	46.2	23.1	35.5	39.5	40.8	41.4	471	502	543
36	46.2	23.1	38.1	42.1	43.4	45.4	513	540	566
40	51.1	25.6	40.9	45.6	46.2	48.2	722	740	785
44	56.4	28.2	46.4	51.0	52.3	54.9	905	954	996
49	62.3	31.2	49.8	55.0	55.6	58.3	1069	1112	1221
54	68.6	34.3	53.7	58.9	60.9	62.2	1223	1311	1350
60	76.0	38.0	58.0	63.3	66.5	66.5	1446	1539	1682
66	84.0	42.0	62.5	68.4	71.0	71.0	1794	1863	1944
73	92.4	46.2	67.8	73.6	76.3	76.3	2112	2188	2318



All dimensions are in inches.

\* Based on maximum motor frame size.

# Plenum Fan Offering

**APD** - straightforward design that is compact, low maintenance and efficient. Utilizing a bolted framework that is galvanized, the APD features a 7-bladed, backward curved wheel. Model designed for light and medium duty applications.

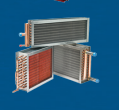
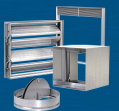
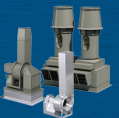
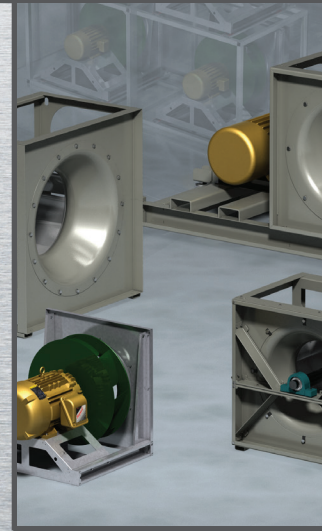
Maximum Volume	18,000 cfm
Maximum Pressure	10 in. wg
AMCA Sound and Air Performance	

**APM** - provides higher efficiency while maintaining a compact size. This is an excellent selection for retrofit and replacement applications and in variable air volume systems. Utilizing a bolted framework that is either galvanized or coated, the APM has a cost effective price point for light and medium duty applications. Quiet and efficient operation is achieved through a 12-bladed, airfoil aluminum wheel. This design saves energy and improves the overall sound quality by reducing low frequency tones that are difficult to attenuate. APM units are available in belt and direct drive with basic accessory options.

Maximum Volume	41,000 cfm
Maximum Pressure	8 in. wg
AMCA Sound and Air Performance	

**APH** - designed and engineered for superior performance and reliability. With welded construction, coated framework, multiple configurations and the highest performance capabilities, model APH is ideal for industrial applications. APH features the exact same high efficiency / low sound 12-bladed wheel as the APM plenum. The APH is available in both belt and direct drive with an extensive accessory offering.

Maximum Volume	209,000 cfm
Maximum Pressure	12.5 in. wg
AMCA Sound and Air Performance	



## Our Commitment

*As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.*

Product warranties can be found online at [Greenheck.com](http://Greenheck.com), either on the specific product page or in the literature section of the website at [Greenheck.com/Resources/Library/Literature](http://Greenheck.com/Resources/Library/Literature).

