

# Centrifugal Roof Supply Fans Models RSF and RSFP

Forward-Curved



BUILDING VALUE IN AIR.

 **GREENHECK**  
Building Value in Air.

March  
2016

**RSF** and **RSFP** Centrifugal Roof Supply Fans offer **high efficiency** and **low sound** and are suitable for non-tempered kitchen, make-up air or building supply air. Choose from straight-sided hood or architectural **louvered** penthouse type construction.

### Typical Installations

- Office Buildings
- Educational Facilities
- Warehouses
- Health Facilities

### Models Benefits

- AMCA Certified Air Performance
- Certified for High Wind/Seismic Applications
- Excellent Weather Protection
- Designed to blend with Architecture

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# Models RSF and RSFP

## Centrifugal Roof Supply Fans



### Model Comparison

Model	Location		Mounting					Airflow				Application						Drive Type		Impeller Type			Performance	
	Outdoor	Indoor	Roof Curb	Base/Floor	Hanging	Wall	Exhaust	Supply	Reversible	Recirculate	General/Clean Air	Contaminated Air	Spark Resistant	Grease (UL 762)	Smoke Control (UL)	High Wind	Continuous High Temp (above 200°F)	Belt	Direct	Centrifugal	Propeller/Axial	Mixed Flow	Maximum Volume (cfm)	Maximum Static Pressure (in. wg)
RSF	✓		✓					✓			✓				✓		✓		✓				14,300	2
RSFP	✓		✓					✓			✓				✓		✓		✓				14,300	2



When you buy a Greenheck model RSF or RSFP, you receive a fan with the industry’s best performance and durability for filtered roof supply applications.

- Double-width forward-curved centrifugal wheel results in high efficiency and low sound levels.
- Performance up to 2 in. wg (498 Pa) and up to 14,300 cfm (24,300 m<sup>3</sup>/hr). Stable performance down to 700 cfm (1189 m<sup>3</sup>/hr).
- Permanent washable aluminum filters result in many years of reliable clean use.
- Performance as cataloged is assured. All fan sizes have been tested in our AMCA Accredited Laboratory and are licensed to bear the AMCA air performance seal.
- These products are subjected to extensive life testing, assuring you the fans will provide many years of reliable performance.

#### Model RSF, Roof Supply Fan

- Designed to provide unrestricted airflow and maximum weather protection.
- Housing style is a straight-sided hood constructed of heavy gauge galvanized steel.
- Features a double-width forward-curved wheel for high efficiency and low sound.

#### Model RSFP, Roof Supply Fan

- Designed to blend perfectly with modern architecture.
- Housing is a louvered penthouse style constructed of heavy gauge extruded aluminum louvers.
- Mitered corners for a clean, finished appearance and minimum resistance to airflow.
- Features a double-width forward-curved wheel for high efficiency and low sound.



Greenheck Fan Corporation certifies that the RSF and RSFP models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.

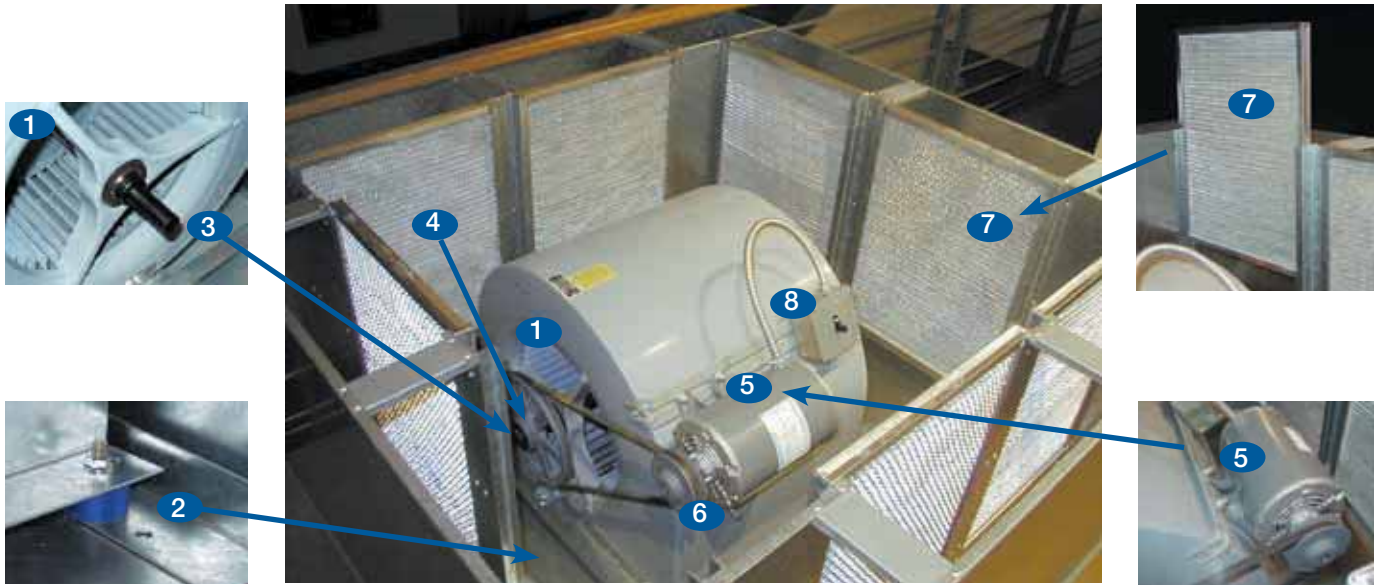


RSF and RSFP model are Listed for electrical (UL/cUL 705) File No. E40001.

UL is optional and must be specified.



# Construction Features



- 1 **Steel Wheel** - Double-width forward-curved centrifugal steel wheel is utilized to generate high efficiency and minimal sound.
- 2 **Vibration Isolation** - Double studded true vibration isolators support the drive assembly and wheel for long life and quiet operation.
- 3 **Fan Shaft** - Precisely sized, ground and polished so the first critical speed is at least 25 percent over the maximum operating speed.
- 4 **Bearings** - 100 percent factory tested and designed specifically for air handling applications with a minimum L<sub>50</sub> life in excess of 200,000 hrs.
- 5 **Motor** - Carefully matched to the fan load and is mounted out of airstream. **Drive Frame** - A screw adjustment allows the mount to pivot for ease of maintaining proper belt tension.
- 6 **Drive Assembly** - Belts, pulleys and keys are oversized 150 percent of driven horsepower. Machined cast pulleys are adjustable for final system balancing. Belts are static free and oil resistant.
- 7 **Filters** - Permanent, washable aluminum one-inch filters are standard. Two-inch filters are available.
- 8 **Disconnect Switch** - NEMA-1 switch is factory mounted and wiring is provided from the motor to the disconnect enclosure as standard. All wiring and electrical components comply with the National Electrical Codes (NEC) and are UL Listed or Recognized.

## THE ITEMS BELOW ARE NOT PICTURED.

**Hood Cover** - Easily removed for access to motor compartment and drive assembly; constructed of galvanized steel (RSF) or aluminum (RSFP).

**Curb Cap with Mounting Holes** - Curb cap has prepunched mounting holes to ensure correct attachment to the roof.

**Nameplate** - Permanent stamped aluminum plate for exact model and serial number identification.

**Louvers** - (RSFP) Heavy gauge extruded aluminum louvers with mitered corners for a clean look with minimal resistance to airflow.

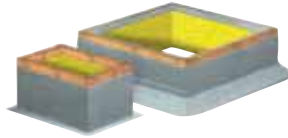
**Galvanized Sides** - (RSF) Heavy gauge galvanized steel sides.

**Latches** - Both models have quick release hood cover latches. Model RSF allows hood to be removed. Model RSFP has hinged hood cover.

# Options and Accessories



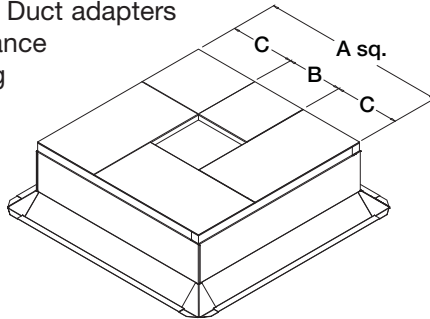
**ROOF CURBS** - Prefabricated roof curbs reduce installation time and costs by ensuring compatibility between the fan, the curb, and the roof opening. All curbs are insulated with fiberglass. A wide variety of roof curbs are available, including: flanged, pitched, and sound-absorbing.



**CURB EXTENSION** - Extensions raise the fan discharge above the roofline and provide an accessible mounting location for dampers. Insect screen bases are constructed with a removable fine mesh and recommended for applications where insect entry must be prevented.



**DUCT ADAPTERS** - Duct adapters fit over the roof curb and support the top of the duct allowing ductwork to be completed before the fan is set in place. Duct adapters also limit performance losses by directing airflow into the duct.



Fan Size	A	B	C
90	24½ (622)	12¼ (311)	6⅞ (156)
100	28½ (724)	14¼ (362)	7⅞ (181)
120	32½ (826)	18¼ (464)	7⅞ (181)
150	38½ (978)	20¼ (514)	9⅞ (232)
180	44½ (1130)	26¼ (667)	9⅞ (232)
200	50½ (1283)	30¼ (768)	10⅞ (257)

All dimensions are shown in inches (millimeters).

**DAMPERS** - Designed to prevent outside air from entering back into the building when fan is off. Flangeless intake dampers are designed for horizontal mounting inside ductwork. Options include either gravity or motorized dampers. Damper sizes are shown on each performance data page.



**FILTERS** - Permanent, washable two-inch aluminum filters are available in lieu of the standard one-inch filters.

## DISCONNECT SWITCHES

A wide selection of NEMA rated switches are available for positive electrical shutoff and safety, including: general, dust-tight, rainproof, and corrosion-resistant. Switches may be internally or externally mounted.



## MOTOR STARTERS

The fundamental function of a motor starter is to protect the motor from damage that can occur from overcurrent. With a Greenheck motor starter, you will be provided with the best motor protection available.



Specific model components may include: Real-time current monitoring technology, physical interface, overload protection, disconnect, magnetic contactor, NEMA-1 or NEMA-3R steel enclosures and pre-engineered easy system integration. For complete information on specific Greenheck motor starter models refer to [greenheck.com](http://greenheck.com), Products, Motor Starter page.

**COATINGS** - Wide variety of coatings and colors are available:

**Decorative coatings** are available in a variety of colors.

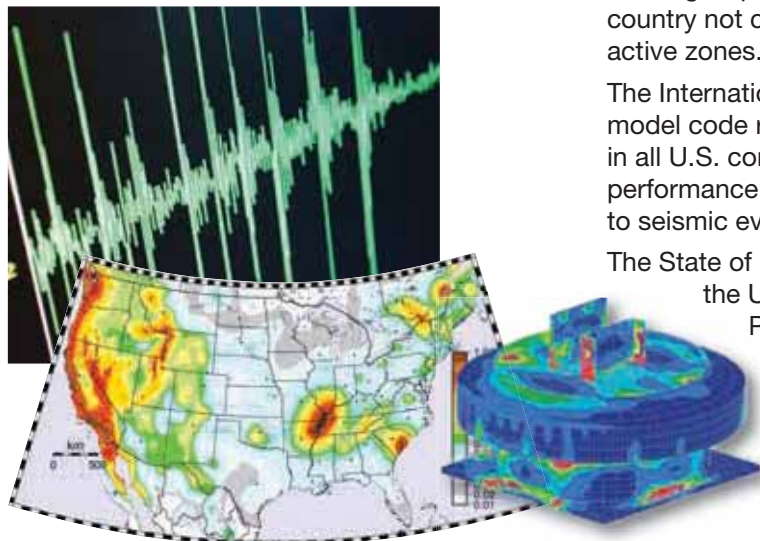
**Protective coatings** are available in a choice of five electrostatically applied powders providing an available selection for most environments.



For more information, refer to Greenheck's catalog, Performance Coatings for Commercial & Industrial Fans, available on [www.greenheck.com](http://www.greenheck.com).



## Seismic - RSF and RSFP



With changes in building codes and standards, more equipment is being required to be seismically certified in areas of the country not commonly thought of as being in seismically active zones.

The International Building Code (IBC) is designed to provide model code regulations that safeguard public health and safety in all U.S. communities. This code is intended to improve the performance and design of non-structural systems subject to seismic events.

The State of California, one of the most active seismic areas in the United States, has the Office of Statewide Health Planning and Development (OSHPD) to regulate the design and construction of healthcare facilities to ensure they are safe and capable of providing services to the public after a seismic event. OSHPD developed their own unique certification process to incorporate the IBC and ASCE testing standards to ensure equipment remains operable after a seismic event.

### Protocols designed for seismic standards:

#### Seismic Testing Criteria

All Greenheck seismically certified models have been tested using the most severe seismic event that is found on the Spectral Response Map per IBC Figures 1613.5 (1-2). Our testing is performed under the worst-case scenario using the highest mapped seismic load, highest level occupancy category, worst-case site class, and highest code mandated importance factor, thereby allowing Greenheck's seismically certified fans to be used anywhere in the United States under any conditions.

#### California OSHPD Test Protocols

The California Office of Statewide Health Planning and Development (OSHPD) requires all certified models be shake table tested in accordance with ICC ES AC-156, in which the fans are physically subjected to the same or greater forces than they will see during a seismic event. Subjecting Greenheck model RSF and RSFP fans to this type of testing ensures the fans will operate without problems after a seismic event.

#### OSHPD Certification No. 0113-10

The OSHPD certification numbers and supporting documents can be viewed on OSHPD's website ensuring that the fan has been subjected to and passed rigorous testing standards.

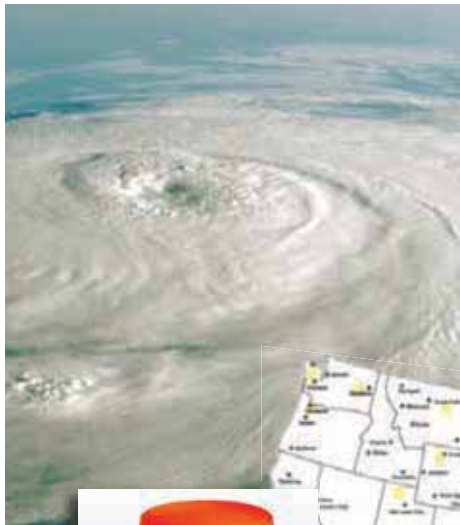
#### State Licensed P.E. Calculations

When using the fans in applications which are not covered by California OSHPD standards, Greenheck models RSF and RSFP have been certified by a third party engineering firm to IBC 2009, 2012 and ASCE 7-05 standards. These engineers hold professional engineering (P.E.) licenses in all 50 states, so no matter where your job is located, you are backed by a P.E. signature for your state.

#### Certified Independent Third-Party Testing

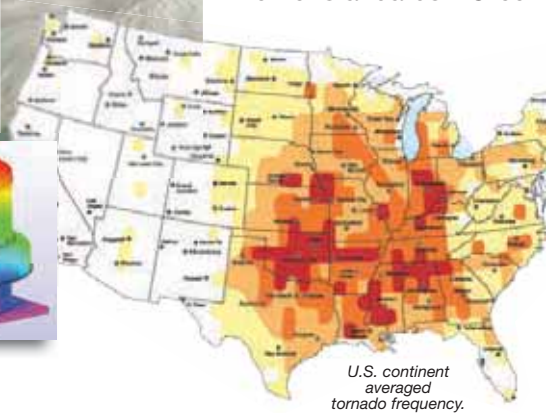
All Greenheck seismically certified fan models have gone through extensive testing procedures. Greenheck models RSF and RSFP have been certified to IBC 2009, 2012, ASCE 7-05 and California OSHPD standards through both engineering calculations and shake table testing of all models by independent third party engineering firms.





## High Wind and Hurricane - RSF & RSFP

Greenheck is leading the High Wind Standard for roof top fans and ventilators. Forceful winds and wind-borne debris are the cause of most hurricane damage. Hurricane winds start at 75 mph and can exert a force of 75 pounds per square foot of pressure—or over 900 pounds on a fan and curb. Forceful winds are not the only problem, wind-borne debris can also cause detrimental effects to objects and structures. High winds and extreme forces are the cause of most storm damage. By analyzing calculations, computer simulations, actual testing, and other standards—Greenheck developed the High Wind Standard.



### Protocols designed to protect against wind borne debris and severe wind loads:

<b>Structural Performance Load</b>	A static load that is 1.5 times the design load (91.5 pounds per square foot of pressure) is applied both positively and negatively to simulate wind force loads in each direction. Structural Performance per Dade County Protocol TAS-202 (ASTM-E330).
<b>Miami-Dade County Test Protocols</b>	Greenheck worked with Miami-Dade County to outline a High Velocity Hurricane Zone standard for rooftop fans. Models RSF and RSFP have been certified by an independent third party to the ASTM E-330 Static Pressure Difference Standard, Florida Building Code Test Protocol TAS-201 (large missile impact), 202 (static pressure difference) and 203 (cyclic pressure) Static Pressure Difference.
<b>Miami-Dade NOA Numbers</b>	The certifications can be viewed on the Miami-Dade County website under the NOA numbers listed: Miami-Dade NOA 14-1030.15 for model RSF and NOA 14-0514.07 for model RSFP.
<b>Florida Product Approval</b>	Florida Product Approval ensures that products which have been approved can be used anywhere in the State of Florida which are not governed by the Miami-Dade County high wind regulations. More information can be found on the Florida Building Code website. Florida Product Approval FL13225.2 for model RSF and Florida product Approval FL17264.1 for model RSFP.
<b>State Licensed P.E. Calculations</b>	Structural calculations performed by a licensed Professional Engineer (P.E.) on models RSF and RSFP include Finite Element Analysis (FEA) and a stamped P.E. report of the fans compliance to ASCE 7-05 Minimum Design Loads for Buildings and Other Structures Standard and the Florida Building Code. The ASCE 7-05 Standard meets the IBC, Florida and Miami-Dade codes. The models have been proven to withstand wind loads in excess of plus or minus 100 psf.
<b>Computational Fluid Dynamics (CFD)</b>	All Greenheck high wind models have been analyzed using Computational Fluid Dynamics (CFD). CFD is computer software designed to simulate the flow of high speed winds over the surface of objects. The software records the force profile exerted on the fan so it can be utilized in Finite Element Analysis (FEA).
<b>Finite Element Analysis (FEA)</b>	Utilizing the results from CFD analysis, Greenheck can accurately predict the stress, strain, and deflection resulting from high wind loads. Greenheck high wind units have been proven to withstand wind loads in excess of 100 psf through Finite Element Analysis utilizing CFD results.

# Typical Installation



*Note: In cases where extreme snow depths may be encountered, an extended base may be required to raise unit or condensation pans may be required in ductwork.*

Prepunched mounting holes and 2½ inch skirt to aid in installation.

Ductwork (by others)

Duct adapter (optional) allows ductwork to be completed prior to setting unit on curb.

Roof curb

Roof opening dimensions can be found with the dimensional data on the performance pages.

## Service

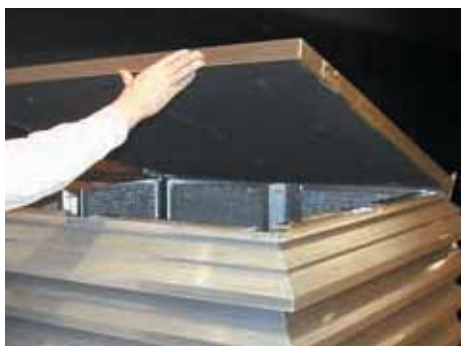
Filtered supply fans require regular inspection and cleaning (or replacement) of filters to ensure high efficiency and performance. Both models RSF and RSFP are designed to permit easy access to filters and other components through the hood cover. Covers also offer complete accessibility of all fan components which can be reached for inspection, cleaning, and service.



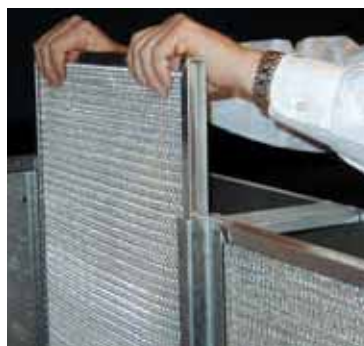
**Model RSF Removable Hood Cover** allows the hood cover to be completely removed.



**Quick Release Latch**  
Both models feature quick release hood cover latches.



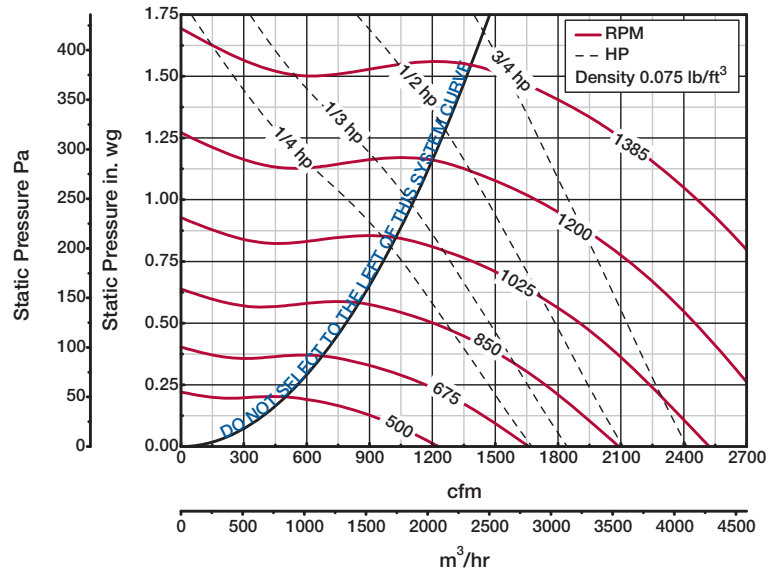
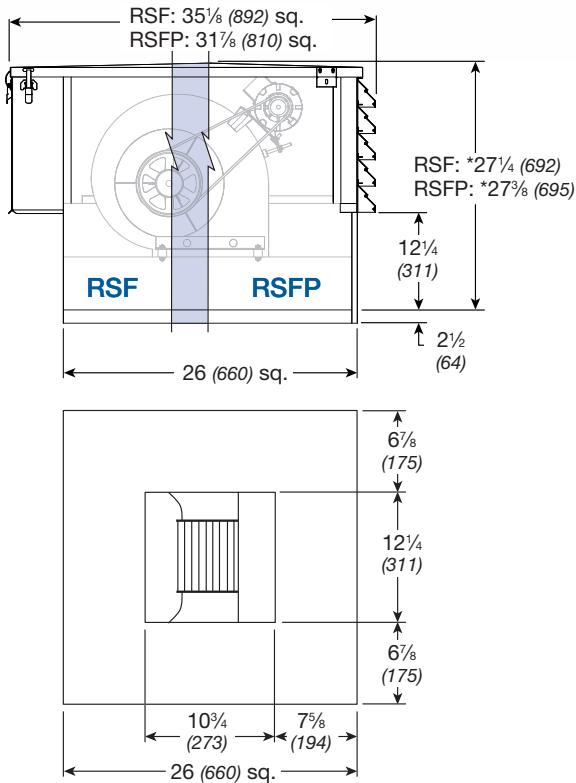
**Model RSFP Hinged Hood Cover** is attached and lifts open allowing easy access to internal components.



**Vertical Filter Removal**  
Filter racks are designed to allow filters to slide out vertically for easy removal.



# RSF-90



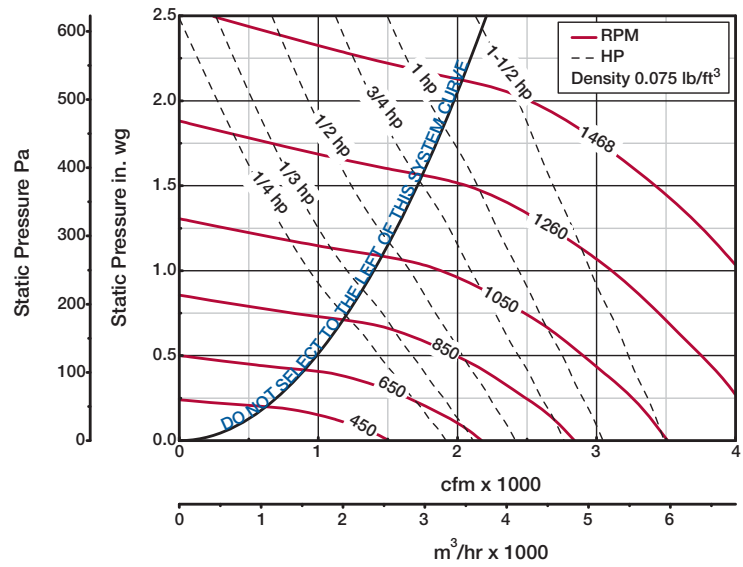
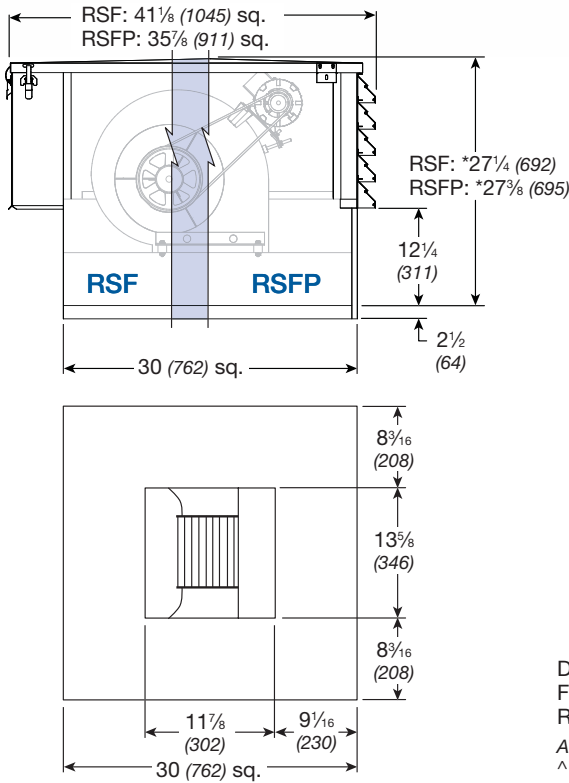
Damper Size = 12 x 12 (305 x 305)      Roof Opening = 15 x 15 (381 x 381)  
 Filter Size = 12 x 20 (305 x 508)      Filter Quantity = 4  
 RSF Unit Weight^ = 145 lbs. (66 kg)      RSFP Unit Weight^ = 126 lbs. (57 kg)

All dimensions shown in inches (millimeters). \*Dimension may be greater depending on motor.  
 ^Weight shown is largest cataloged Open Drip Proof motor.

Model Number	Fan CFM		Static Pressure in Inches wg																					
			0.125	0.25	0.375	0.5	0.625	0.75	0.875	1.0	1.25	1.5												
RSF-90	700	RPM	447	575	683																			
		BHP	0.04	0.06	0.08																			
		Sones	2.4	5.6	7.7																			
	860	RPM	488	603	704	796																		
		BHP	0.06	0.08	0.11	0.14																		
		Sones	3.2	6.9	7.9	7.6																		
	1020	RPM	533	639	732	818	897	971																
		BHP	0.08	0.11	0.14	0.17	0.21	0.24																
		Sones	4.5	8.5	8.1	7.9	7.9	8.2																
	1180	RPM	586	679	766	846	921	991	1058	1121														
		BHP	0.12	0.15	0.19	0.22	0.26	0.29	0.33	0.37														
		Sones	6.6	8.7	8.4	8.3	8.3	8.9	10.0	11.2														
	1340	RPM	640	724	804	880	949	1017	1080	1142	1256													
		BHP	0.17	0.20	0.24	0.28	0.32	0.36	0.40	0.44	0.53													
		Sones	9.2	9.1	8.9	8.8	8.8	9.7	10.7	12.0	14.9													
	1500	RPM	696	773	847	917	984	1046	1108	1166	1277	1380												
		BHP	0.22	0.26	0.31	0.35	0.39	0.43	0.48	0.52	0.62	0.72												
		Sones	9.7	9.6	9.5	9.5	9.7	10.5	11.6	12.8	15.6	19.3												
	1660	RPM	754	826	892	958	1021	1082	1139	1194	1301													
		BHP	0.29	0.34	0.38	0.43	0.48	0.52	0.57	0.62	0.72													
		Sones	10.4	10.4	10.3	10.3	10.9	11.6	12.5	13.7	16.6													
	1820	RPM	813	880	941	1003	1062	1119	1175	1227														
		BHP	0.37	0.43	0.47	0.52	0.57	0.63	0.68	0.73														
		Sones	11.2	11.2	11.2	11.6	12.1	12.9	13.7	14.7														
1980	RPM	873	935	994	1048	1106	1159																	
	BHP	0.47	0.53	0.58	0.63	0.69	0.74																	
	Sones	12.3	12.2	12.4	12.8	13.4	14.2																	
2140	RPM	934	991	1047	1099																			
	BHP	0.59	0.64	0.70	0.76																			
	Sones	13.3	13.4	13.7	14.2																			
2300	RPM	995	1048																					
	BHP	0.72	0.78																					
	Sones	14.5	14.7																					

Performance shown is for installation Type B: Free inlet, Ducted outlet. Power rating (Bhp/kW) does not include transmission losses. Performance ratings include the effects of filters in the airstream. The AMCA Certified Ratings Seal applies to air performance ratings only.

# RSF-100



Damper Size = 14 x 14 (356 x 356)      Roof Opening = 17 x 17 (432 x 432)  
 Filter Size = 14 x 25 (356 x 635)      Filter Quantity = 4  
 RSF Unit Weight<sup>^</sup> = 173 lbs. (78 kg)      RSFP Unit Weight<sup>^</sup> = 146 lbs. (66 kg)

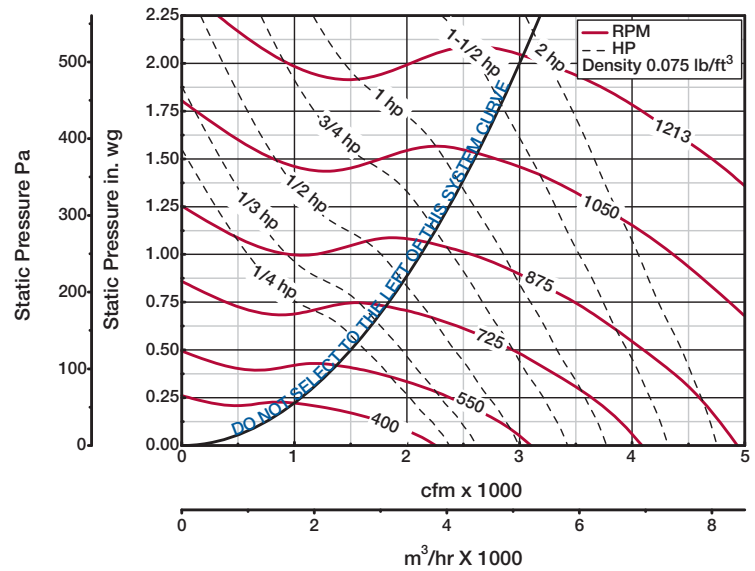
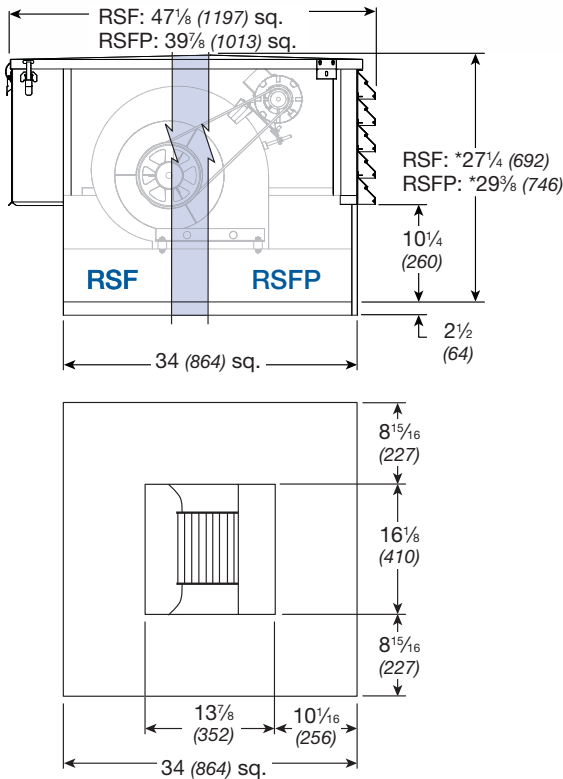
All dimensions shown in inches (millimeters). \*Dimension may be greater depending on motor.  
<sup>^</sup>Weight shown is largest cataloged Open Drip Proof motor.

Model Number	Fan CFM		Static Pressure in Inches wg																					
			0.125	0.25	0.375	0.5	0.75	1.0	1.25	1.5	1.75	2.0												
RSF-100	700	RPM	377	504																				
		BHP	0.03	0.05																				
		Sones	2.0	4.2																				
	970	RPM	421	530	626																			
		BHP	0.06	0.08	0.11																			
		Sones	2.7	5.0	7.8																			
	1240	RPM	476	572	656	733	875																	
		BHP	0.10	0.13	0.16	0.19	0.27																	
		Sones	3.8	6.3	9.3	11.2	10.2																	
	1510	RPM	539	622	699	768	897	1016																
		BHP	0.16	0.20	0.24	0.27	0.35	0.44																
		Sones	5.6	8.2	11.8	11.4	10.8	10.9																
	1780	RPM	605	679	748	813	931	1040	1143	1239														
		BHP	0.24	0.29	0.33	0.38	0.47	0.56	0.66	0.77														
		Sones	8.1	11.3	12.3	11.9	11.4	11.9	11.9	13.9	16.3													
	2050	RPM	676	742	803	862	973	1074	1170	1259	1348	1431												
		BHP	0.35	0.40	0.46	0.51	0.61	0.72	0.83	0.93	1.06	1.19												
		Sones	11.7	13.1	12.9	12.6	12.2	13.1	15.0	17.3	20	23												
	2320	RPM	747	807	864	917	1020	1116	1204	1291	1371	1450												
		BHP	0.49	0.55	0.61	0.67	0.78	0.91	1.03	1.15	1.27	1.40												
		Sones	14.0	13.9	13.7	13.6	13.5	14.6	16.3	18.5	21	24												
	2590	RPM	821	875	927	977	1072	1162	1247	1326	1405													
		BHP	0.67	0.74	0.80	0.87	1.00	1.13	1.27	1.40	1.54													
		Sones	15.1	15.0	14.8	14.7	15.3	16.5	18.0	19.9	23													
2860	RPM	898	945	993	1040	1127	1212	1293																
	BHP	0.89	0.96	1.03	1.10	1.25	1.40	1.54																
	Sones	16.4	16.4	16.3	16.4	17.2	18.4	19.9																
3130	RPM	975	1016	1061	1105	1187																		
	BHP	1.15	1.23	1.31	1.38	1.54																		
	Sones	18.0	17.9	18.1	18.3	19.2																		
3400	RPM	1053	1089																					
	BHP	1.47	1.54																					
	Sones	19.7	19.8																					

MAXIMUM RPM - 1468  
 MAXIMUM MOTOR FRAME SIZE - 145T AVERAGE  
 OUTLET VELOCITY (ft/min.) - cfm/1.13

Performance shown is for installation Type B: Free inlet, Ducted outlet. Power rating (Bhp/kW) does not include transmission losses. Performance ratings include the effects of filters in the airstream. The AMCA Certified Ratings Seal applies to air performance ratings only.

# RSF-120



Damper Size = 18 x 18 (457 x 457)      Roof Opening = 21 x 21 (533 x 533)  
 Filter Size = 16 x 25 (406 x 635)      Filter Quantity = 4  
 RSF Unit Weight<sup>^</sup> = 225 lbs. (102 kg)      RSFP Unit Weight<sup>^</sup> = 180 lbs. (82 kg)

All dimensions shown in inches (millimeters). \*Dimension may be greater depending on motor.  
<sup>^</sup>Weight shown is largest cataloged Open Drip Proof motor.

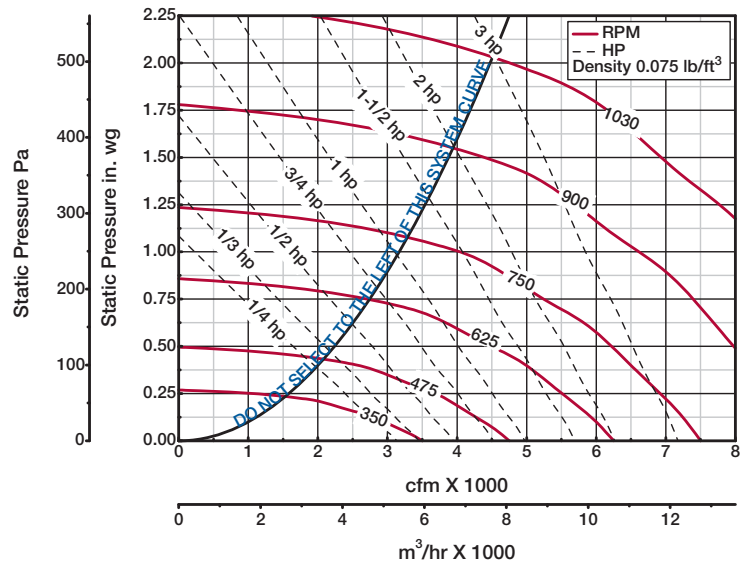
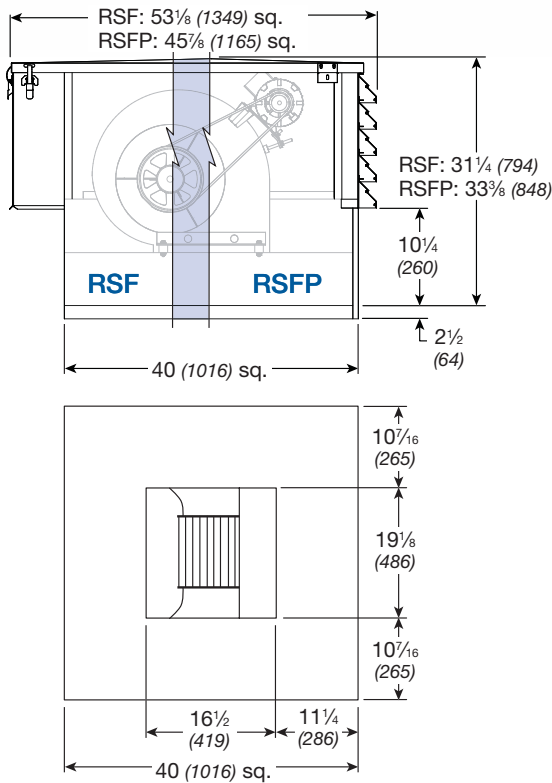
Model Number	Fan CFM		Static Pressure in Inches wg																						
			0.125	0.25	0.375	0.5	0.75	1.0	1.25	1.375	1.5	1.75													
RSF-120	1150	RPM	330	430																					
		BHP	0.06	0.09																					
		Sones	3.0	5.0																					
	1495	RPM	366	454	532																				
		BHP	0.10	0.14	0.18																				
		Sones	4.4	6.6	9.4																				
	1840	RPM	409	487	557	622	737																		
		BHP	0.16	0.20	0.25	0.30	0.41																		
		Sones	6.1	8.5	10.0	10.5	11.3																		
	2185	RPM	456	526	590	649	757	853																	
		BHP	0.24	0.30	0.35	0.41	0.53	0.66																	
		Sones	8.1	10.4	10.9	11.3	12.1	13.1																	
	2530	RPM	506	569	627	682	781	874	958	999															
		BHP	0.35	0.42	0.48	0.55	0.68	0.82	0.96	1.04															
		Sones	10.7	11.7	12.2	12.5	13.0	14.0	15.2	15.9															
	2875	RPM	559	616	669	718	813	898	981	1019	1056	1128													
		BHP	0.50	0.57	0.64	0.71	0.87	1.01	1.18	1.26	1.34	1.51													
		Sones	12.3	13.1	13.7	14.0	14.3	14.8	16.0	16.6	17.3	18.8													
	3220	RPM	615	664	713	760	847	930	1005	1042	1079	1148													
		BHP	0.68	0.75	0.84	0.92	1.08	1.26	1.42	1.51	1.61	1.79													
		Sones	14.1	14.9	15.6	15.9	15.6	15.8	16.8	17.4	18.0	19.4													
	3565	RPM	671	714	760	803	885	963	1036	1071	1104														
		BHP	0.91	0.99	1.08	1.17	1.35	1.53	1.72	1.82	1.90														
		Sones	16.2	16.9	17.6	17.5	16.9	17.0	17.6	18.1	18.7														
3910	RPM	728	766	808	849	927	997	1069																	
	BHP	1.18	1.27	1.36	1.46	1.67	1.85	2.06																	
	Sones	18.6	19.2	18.9	18.5	17.9	18.0	18.6																	
4255	RPM	786	821	858	897	969																			
	BHP	1.51	1.60	1.70	1.80	2.03																			
	Sones	21	20	19.6	19.2	18.9																			
4600	RPM	845	877	910																					
	BHP	1.89	1.99	2.09																					
	Sones	21	21	20																					

MAXIMUM RPM - 1213  
 MAXIMUM MOTOR FRAME SIZE - 145T AVERAGE  
 OUTLET VELOCITY (ft/min.) - cfm/1.56

Performance shown is for installation Type B: Free inlet, Ducted outlet. Power rating (Bhp/kW) does not include transmission losses. Performance ratings include the effects of filters in the airstream. The AMCA Certified Ratings Seal applies to air performance ratings only.



# RSF-150



Damper Size = 20 x 20 (508 x 508)      Roof Opening = 23 x 23 (584 x 584)  
 Filter Size = 16 x 20 (406 x 508)      Filter Quantity = 8  
 RSF Unit Weight<sup>^</sup> = 336 lbs. (152 kg)      RSFP Unit Weight<sup>^</sup> = 250 lbs. (113 kg)

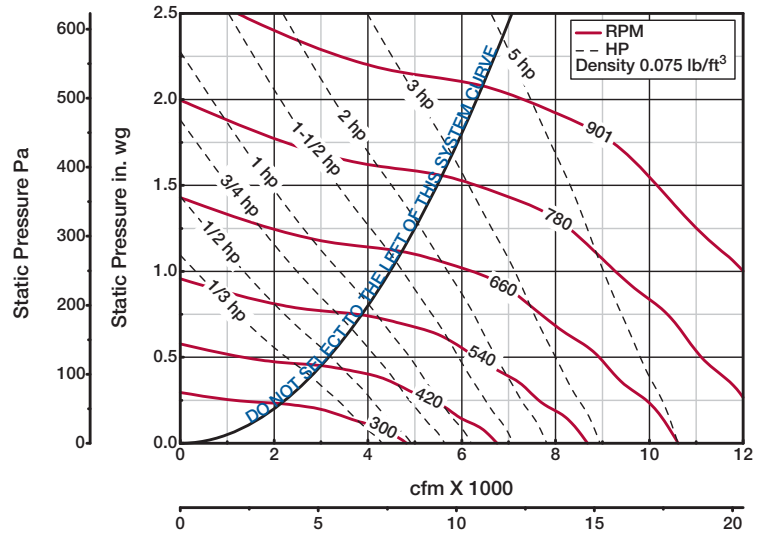
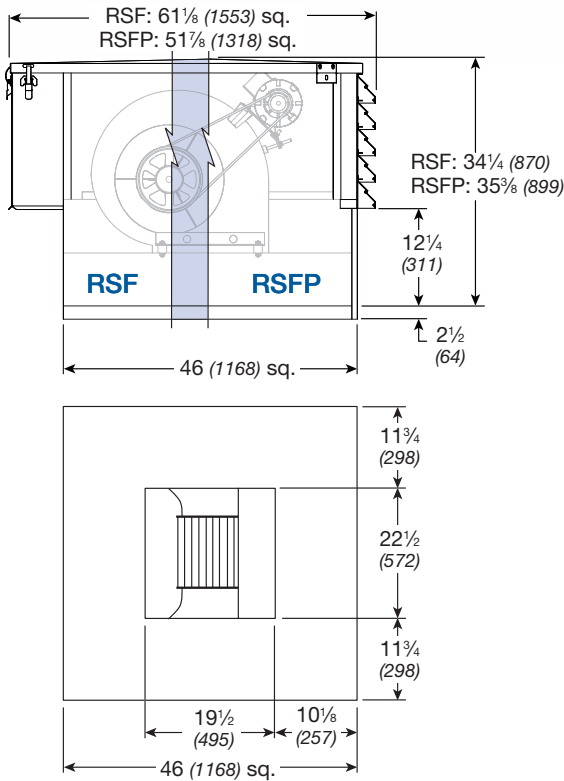
All dimensions shown in inches (millimeters).  
<sup>^</sup>Weight shown is largest cataloged Open Drip Proof motor.

Model Number	Fan CFM		Static Pressure in Inches wg																						
			0.125	0.25	0.375	0.5	0.75	1.0	1.25	1.375	1.5	1.75													
RSF-150	1625	RPM	274	362																					
		BHP	0.08	0.13																					
		Sones	6.6	7.6																					
	2145	RPM	306	381	449																				
		BHP	0.14	0.21	0.27																				
		Sones	7.6	8.4	9.5																				
	2665	RPM	340	410	468	524																			
		BHP	0.23	0.31	0.39	0.47																			
		Sones	9.0	9.7	10.3	11.2																			
	3185	RPM	382	443	498	545	639	723																	
		BHP	0.35	0.45	0.54	0.63	0.83	1.04																	
		Sones	10.6	11.5	11.7	12.2	14.9	16.3																	
	3705	RPM	425	477	530	576	659	739	813																
		BHP	0.52	0.62	0.74	0.85	1.06	1.29	1.54																
		Sones	12.4	13.1	13.3	14.0	16.6	17.3	18.0																
	4225	RPM	471	517	564	609	687	759	830	863	896	957													
		BHP	0.73	0.85	0.98	1.11	1.36	1.60	1.86	1.99	2.14	2.42													
		Sones	13.9	14.6	15.3	16.2	17.9	18.4	19.2	19.5	19.8	20													
	4745	RPM	517	560	598	642	719	785	850	882	913	972													
		BHP	1.00	1.14	1.27	1.42	1.71	1.98	2.26	2.41	2.55	2.84													
		Sones	15.8	16.7	17.6	18.6	19.4	19.7	20	21	21	22													
	5265	RPM	564	604	640	676	751	817	875	903	933														
		BHP	1.33	1.49	1.64	1.78	2.11	2.43	2.72	2.86	3.03														
		Sones	18.1	19.2	20	21	21	21	22	22	22														
5785	RPM	612	649	683	715	785	849																		
	BHP	1.72	1.90	2.07	2.23	2.59	2.94																		
	Sones	21	22	22	22	23	23																		
6305	RPM	661	695	727	758	819																			
	BHP	2.19	2.39	2.58	2.76	3.12																			
	Sones	24	24	24	24	24																			
6800	RPM	708	739	770																					
	BHP	2.72	2.93	3.14																					
	Sones	26	26	26																					

MAXIMUM RPM - 1030  
 MAXIMUM MOTOR FRAME SIZE - 184T AVERAGE  
 OUTLET VELOCITY (ft/min.) - cfm/2.19

Performance shown is for installation Type B: Free inlet, Ducted outlet. Power rating (Bhp/kW) does not include transmission losses. Performance ratings include the effects of filters in the airstream. The AMCA Certified Ratings Seal applies to air performance ratings only.

# RSF-180



Damper Size = 26 x 26 (660 x 660)  
 Filter Size = 16 x 20 (406 x 508)  
 20 x 20 (508 x 508)

m<sup>3</sup>/hr X 1000  
 Roof Opening = 29 x 29 (737 x 737)  
 Filter Quantity = 4  
 RSFP Unit Weight<sup>^</sup> = 285 lbs. (129 kg)

RSF Unit Weight<sup>^</sup> = 400 lbs. (181 kg)

All dimensions shown in inches (millimeters).

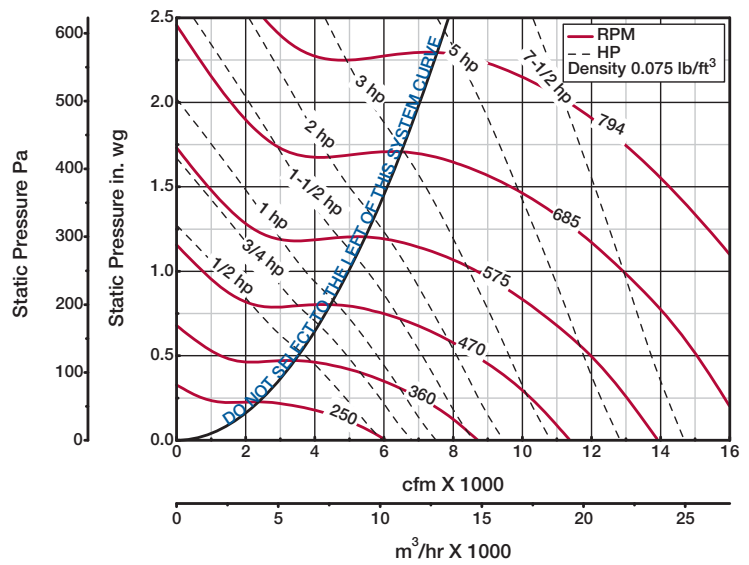
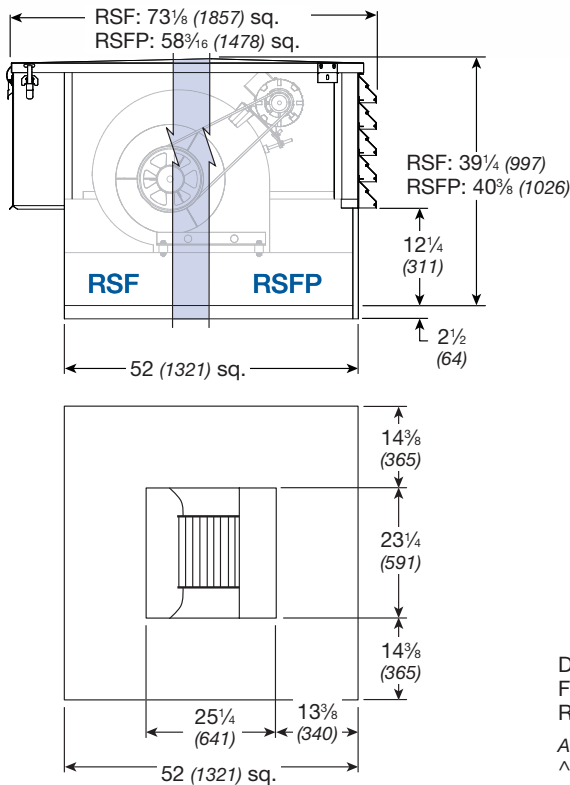
<sup>^</sup>Weight shown is largest cataloged Open Drip Proof motor.

Model Number	Fan CFM		Static Pressure in Inches wg																					
			0.125	0.25	0.375	0.5	0.75	1.0	1.25	1.5	1.75	2.0												
RSF-180	2450	RPM	241	317																				
		BHP	0.13	0.20																				
		Sones	3.4	4.7																				
	3245	RPM	274	334	393	444																		
		BHP	0.23	0.32	0.41	0.51																		
		Sones	4.7	5.6	6.9	8.0																		
	4040	RPM	310	363	411	459	544																	
		BHP	0.38	0.49	0.60	0.71	0.96																	
		Sones	6.5	7.5	8.1	9.1	11.8																	
	4835	RPM	350	398	440	480	560	632																
		BHP	0.60	0.73	0.86	0.98	1.26	1.56																
		Sones	8.8	9.6	10.0	10.7	13.3	15.0																
	5630	RPM	394	434	475	510	579	647	711	768														
		BHP	0.90	1.05	1.20	1.34	1.64	1.97	2.32	2.64														
		Sones	11.3	11.8	12.3	13.1	15.2	16.2	17.0	17.8														
	6425	RPM	436	473	511	545	605	667	727	784	837	886												
		BHP	1.27	1.45	1.63	1.80	2.12	2.48	2.85	3.25	3.63	4.00												
		Sones	13.6	14.1	15.0	15.8	17.2	17.5	18.3	19.2	20	21												
	7220	RPM	478	516	547	581	639	691	747	799	852													
		BHP	1.74	1.96	2.16	2.35	2.72	3.08	3.49	3.89	4.35													
		Sones	16.3	17.0	17.8	19.0	19.1	19.3	19.8	21	22													
	8015	RPM	523	560	587	617	674	724	770	821	869													
		BHP	2.33	2.58	2.80	3.02	3.44	3.85	4.24	4.70	5.15													
		Sones	19.3	20	21	21	21	21	22	22	23													
8810	RPM	570	601	630	654	710	758	803																
	BHP	3.05	3.31	3.57	3.80	4.28	4.74	5.19																
	Sones	23	23	23	23	23	23	24																
9605	RPM	618	644	674	697																			
	BHP	3.92	4.18	4.47	4.74																			
	Sones	25	25	25	25																			
10400	RPM	666	687																					
	BHP	4.94	5.19																					
	Sones	27	27																					

MAXIMUM RPM - 901  
 MAXIMUM MOTOR FRAME SIZE - 184T AVERAGE  
 OUTLET VELOCITY (ft/min.) - cfm/3.03

Performance shown is for installation Type B: Free inlet, Ducted outlet. Power rating (Bhp/kW) does not include transmission losses. Performance ratings include the effects of filters in the airstream. The AMCA Certified Ratings Seal applies to air performance ratings only.

# RSF-200



Damper Size = 30 x 30 (762 x 762)      Roof Opening = 33 x 33 (838 x 838)  
 Filter Size = 20 x 25 (508 x 635)      Filter Quantity = 8  
 RSF Unit Weight<sup>^</sup> = 620 lbs. (281 kg)      RSFP Unit Weight<sup>^</sup> = 431 lbs. (195 kg)

All dimensions shown in inches (millimeters).  
<sup>^</sup>Weight shown is largest cataloged Open Drip Proof motor.

Model Number	Fan CFM	Static Pressure in Inches wg											
		0.125	0.25	0.5	0.75	1.0	1.25	1.375	1.5	1.75	2.0		
RSF-200	2900	RPM	200	266									
		BHP	0.13	0.20									
		Sones	2.8	3.9									
	4040	RPM	227	282	374								
		BHP	0.25	0.34	0.56								
		Sones	4.0	4.7	7.3								
	5180	RPM	261	307	389	462	525						
		BHP	0.45	0.57	0.82	1.10	1.40						
		Sones	5.6	6.3	8.5	10.5	12.7						
	6320	RPM	299	339	411	476	536	592	618	643			
		BHP	0.75	0.89	1.18	1.50	1.83	2.20	2.38	2.56			
		Sones	7.5	8.4	10.3	11.9	14.0	16.7	17.3	17.4			
7460	RPM	341	374	438	497	553	603	629	654	700	744		
	BHP	1.17	1.34	1.66	2.02	2.40	2.76	2.97	3.20	3.63	4.06		
	Sones	10.1	11.2	12.6	13.7	15.8	18.2	18.4	18.6	19.0	19.5		
8600	RPM	384	412	469	523	574	622	646	668	711	755		
	BHP	1.72	1.93	2.31	2.70	3.10	3.53	3.75	3.96	4.39	4.91		
	Sones	13.5	14.3	15.1	16.4	18.1	19.6	19.8	20	20	21		
9740	RPM	428	452	503	553	600	644	665	687	729	768		
	BHP	2.44	2.67	3.10	3.54	3.99	4.45	4.66	4.92	5.42	5.90		
	Sones	16.7	17.0	18.0	19.4	21	21	21	22	22	22		
10880	RPM	473	494	540	585	628	670	691	710	748	787		
	BHP	3.33	3.60	4.10	4.57	5.05	5.57	5.83	6.08	6.58	7.15		
	Sones	19.6	20	21	23	23	23	23	23	24	24		
12020	RPM	518	538	578	619	660	698	717	737				
	BHP	4.42	4.72	5.29	5.80	6.35	6.87	7.14	7.44				
	Sones	23	24	25	26	25	25	25	26				
13160	RPM	563	582	617	656	692							
	BHP	5.74	6.07	6.70	7.29	7.84							
	Sones	27	28	28	28	28							
14300	RPM	609	626										
	BHP	7.30	7.66										
	Sones	31	31										

MAXIMUM RPM - 794  
 MAXIMUM MOTOR FRAME SIZE - 215T AVERAGE  
 OUTLET VELOCITY (ft/min.) - cfm/4.08

Performance shown is for installation Type B: Free inlet, Ducted outlet. Power rating (Bhp/kW) does not include transmission losses. Performance ratings include the effects of filters in the airstream. The AMCA Certified Ratings Seal applies to air performance ratings only.



# Specifications

## Model RSF and RSFP



### Typical Specifications

Roof mounted, non-tempered, filtered, make-up air units shall be of the belt-driven, double width/double inlet, forward-curved, centrifugal blower type.

**Model RSF only** - the hood shall be constructed of heavy gauge galvanized steel and adequately sized to prevent rain and snow from entering the building. The cover shall be constructed of heavy gauge galvanized steel, removable for service and insulated to prevent condensation.

**Model RSFP only** - hood construction shall be of heavy gauge extruded aluminum louvers with mitered and welded corners. Hoods shall include an insulated aluminum cover hinged for access.

### Model RSF and RSFP

Hood bases shall have prepunched mounting holes. Permanent washable one-inch aluminum filters shall be provided.

Fan wheels shall be of the forward-curved type, constructed of heavy gauge steel, and statically and dynamically balanced to ensure smooth, vibration free operation.

Motors shall be permanently lubricated, heavy duty, ball bearing type, carefully matched to the fan load and furnished at the specified voltage, phase and enclosure.

The fan shaft shall be ground and polished steel mounted in heavy duty, sealed ball bearings. Bearings shall be selected for a minimum  $L_{50}$  life in excess of 200,000 hours at maximum cataloged operating speeds. Pulleys shall be of the fully machined cast iron type, keyed and securely attached to the wheel and motor shafts. Motor sheaves shall be adjustable for final system balancing. Drives shall be sized for a minimum of 150% of driven horsepower. The entire fan and motor assembly shall be mounted on vibration isolators to prevent noise transmission.

Fans shall bear the AMCA Certified Ratings Seal for Air Performance.

Fans shall be model RSF or RSFP as manufactured by Greenheck Fan Corporation in Schofield, Wisconsin, USA.

### RSF and RSFP High Wind Specifications

Fans shall meet all Greenheck wind load standards and shall contain the following third-party certifications: Miami-Dade NOA 14-1030.15 or Miami-Dade NOA 14-0514.07.

- Licensed P.E. calculations shall be available for fan per ASCE 7-05 Minimum Design Loads for Buildings and Other Structures for exposure Class C, 60 foot building height, and a type II building.
- Fan shall be tested in accordance with ASTM E-330-02 Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference and Florida Building Code Test Protocol TAS-201, 202 and 203 at the ASCE 7-05 calculated design pressure.
- Licensed P.E. calculations for attachment of fan to curb shall be available for ASCE 7-05 determined design pressure.
- All calculations and testing shall be done by a state licensed P.E., and a certified test lab.

Fans shall be Greenheck model RSF or RSFP, as specified on page 7, with high wind-resistant construction option and manufactured by Greenheck Fan Corporation in Schofield, Wisconsin, USA.

### RSF and RSFP Seismic Specifications

Fans shall meet International Building Code (IBC) 2009, 2012 and the California Office of Statewide Health Planning and Development (OSHPD) requirements for seismic certifications as listed.

- All Greenheck seismically certified models shall be tested to the most severe seismic event on the Spectral Response Map per IBC Figures 1613.5 (1-2). Testing shall be performed under the worst-case scenario, using the highest mapped seismic load, highest level occupancy category, worst-case site class, and highest code mandated importance factor.
- Fans shall be shake table tested in accordance with ICC ES AC-156, in which the fans are physically subjected to the same or greater forces as experienced during a seismic event.
- For applications which are not covered by California OSHPD standards, Greenheck seismic model RSF or RSFP shall be certified by a third party engineering firm to IBC 2009, 2012 and ASCE7-05 standards.
- Greenheck seismic model RSF or RSFP has been certified to IBC 2009, 2012, ASCE 7-05 and California OSHPD standards through engineering calculations and shake table testing of all models by independent third party engineering firms.

Fans shall be Greenheck model RSF or RSFP, as specified on page 6, with seismic rated construction option and manufactured by Greenheck Fan Corporation in Schofield, Wisconsin, USA.

# Other Centrifugal Roof Supply Fans

## Model SAF - Supply Air Fan

Greenheck's Model SAF is a roof mounted supply air fan designed to provide non-tempered, filtered make-up air. These belt drive fans are available in five sizes.



- Double-width forward-curved centrifugal wheel results in high efficiency and low sound levels.
- Performance ranging from 820 cfm (1,393 m<sup>3</sup>/hr) to 14,000 cfm (23,786 m<sup>3</sup>/hr) with up to 3.5 in. wg (869 Pa) of static pressure.
- Permanent washable aluminum filters result in many years of reliable use.
- Performance as cataloged is assured. All fan sizes have been tested in an AMCA accredited laboratory and are licensed to bear the AMCA Sound and Air Performance Seal.
- Fan components are subjected to extensive life testing, assuring you the fans will provide many years of reliable performance.



### Enjoy Greenheck's extraordinary service, before, during and after the sale.

Greenheck offers added value to our wide selection of top performing, energy-efficient products by providing several unique Greenheck service programs.

- Our Quick Delivery Program ensures shipment of our in-stock products within 24 hours of placing your order. Our Quick Build made-to-order products can be produced in 1-3-5-10-15 or 25-day production cycles, depending upon their complexity.
- Greenheck's free Computer Aided Product Selection program (CAPS), rated by many as the best in the industry, helps you conveniently and efficiently select the right products for the challenge at hand.
- Greenheck has been Green for a long time! Our energy-saving products and ongoing corporate commitment to sustainability can help you qualify for LEED credits.
- Our 3D service allows you to download, at no charge, easy-to-use AutoDesk™ Revit™ 3D drawings for many of our ventilation products.

Find out more about these special Greenheck services at [greenheck.com](http://greenheck.com)

## Building Value in Air

Greenheck delivers value to mechanical engineers by helping them solve virtually any air quality challenges their clients face with a comprehensive selection of

top quality, innovative air-related equipment. We offer extra value to contractors by providing easy-to-install, competitively priced, reliable products that arrive on time.

And building owners and occupants value the energy efficiency, low maintenance and quiet dependable operation they experience long after the construction project ends.

## Our Commitment

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

Specific Greenheck product warranties are located on [greenheck.com](http://greenheck.com) within the product area tabs and in the Library under Warranties.



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