Spun Aluminum Model GRSI/GRSR/GRSF

GREENHECK
Building Value in Air.

Construction Features

When you buy a Greenheck gravity ventilator, you receive a ventilator with the industry's best performance and durability for intake (model GRSI) or relief (model GRSR) for natural gravity or positive pressure systems. Exceptional low silhouette design and construction features make this unit a rugged, efficient, and economical air inlet or outlet.

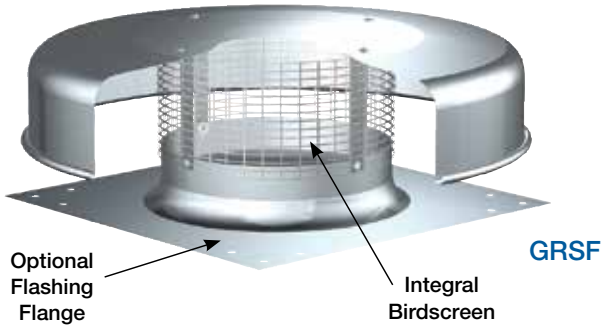
- Broadest performance in the industry, up to 18,400 cfm (31,300 m^3/hr)
- Most advanced weather protection of any ventilator in its class
- Greenheck subjects these products to extensive life testing, ensuring the ventilator will provide years of reliable performance
- All aluminum exterior for corrosion-resistant construction
- Integral birdscreen to prevent the entry of birds and/or small objects
- Built-in curb cap with pre-punched holes for easy attachment to roof curbs
- Optional built-in flashing flange (model GRSF) with pre-punched holes for quick and easy installations without a roof curb.

Use the GRS with the following accessories:

Gravity or motorized dampers to ensure weather tightness.

Prefab curbs to reduce installation time.

Protective coatings to extend the life of the unit or blend its color with other equipment.

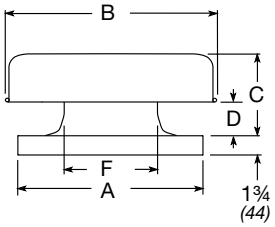


Dimensions

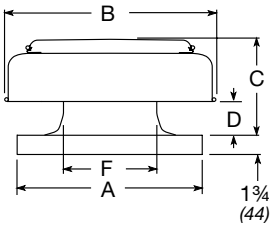
Model Size	A	B	C	D	E	F	Damper Size	Curb Thickness	Shroud Thickness	Unit Weight
8	19 *(483)*	20½ *(521)*	7¼ *(184)*	1½ *(38)*	20¼ *(514)*	8¼ *(210)*	8 x 8 *(203 x 203)*	0.051 *(1.3)*	0.051 *(1.3)*	7 *(3)*
10	19 *(483)*	20½ *(521)*	7¾ *(197)*	2 *(51)*	20¼ *(514)*	10¼ *(260)*	10 x 10 *(254 x 254)*	0.051 *(1.3)*	0.051 *(1.3)*	8 *(4)*
12	22 *(559)*	29 *(737)*	10 *(254)*	3½ *(89)*	23¼ *(591)*	12¼ *(311)*	12 x 12 *(305 x 305)*	0.064 *(1.6)*	0.064 *(1.6)*	10 *(5)*
15	22 *(559)*	29 *(737)*	10 *(254)*	3½ *(89)*	23¼ *(591)*	14¼ *(362)*	16 x 16 *(406 x 406)*	0.064 *(1.6)*	0.064 *(1.6)*	13 *(6)*
16	26 *(660)*	29 *(737)*	11 *(279)*	4¼ *(108)*	27¼ *(692)*	16¼ *(413)*	16 x 16 *(406 x 406)*	0.064 *(1.6)*	0.064 *(1.6)*	16 *(7)*
18	30 *(762)*	35½ *(902)*	9¾ *(248)*	1¾ *(44)*	31¼ *(794)*	20¼ *(514)*	18 x 18 *(457 x 457)*	0.064 *(1.6)*	0.064 *(1.6)*	19 *(9)*
20	30 *(762)*	35½ *(902)*	11¼ *(286)*	3¾ *(95)*	31¼ *(794)*	20¼ *(514)*	18 x 18 *(457 x 457)*	0.064 *(1.6)*	0.064 *(1.6)*	24 *(11)*
24	34 *(864)*	38¼ *(972)*	11 *(279)*	4 *(102)*	35¼ *(895)*	24½ *(622)*	24 x 24 *(610 x 610)*	0.064 *(1.6)*	0.064 *(1.6)*	29 *(13)*
30	40 *(1016)*	48 *(1219)*	18¾ *(476)*	5 7/16 *(138)*	-	30½ *(775)*	30 x 30 *(762 x 762)*	0.064 *(1.6)*	0.064 *(1.6)*	35 *(16)*
36	46 *(1168)*	56¾ *(1441)*	21¼ *(540)*	10 *(254)*	-	36½ *(927)*	36 x 36 *(914 x 914)*	0.064 *(1.6)*	0.080 *(2.0)*	45 *(20)*
42	52 *(1321)*	63¼ *(1607)*	24¼ *(616)*	11¼ *(286)*	-	42½ *(1089)*	42 x 42 *(1067 x 1067)*	0.064 *(1.6)*	0.080 *(2.0)*	60 *(27)*
48	58 *(1473)*	72 *(1829)*	26¼ *(667)*	11¼ *(286)*	-	48½ *(1232)*	48 x 48 *(1219 x 1219)*	0.064 *(1.6)*	0.080 *(2.0)*	80 *(36)*

All dimensions are in inches *(millimeters)* and the weight in pounds (kilograms). NOTE: Sizes GRS-8 through 24 have a one-piece cover and shroud. Access is gained through the removal of screws. Sizes GRS-30 through 48 have a removable cover, separate from the shroud, to facilitate maintenance and servicing of dampers.

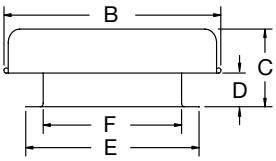
GRSI/GRSR Sizes 8 - 24



GRSI/GRSR - Sizes 30 - 48



GRSF - Sizes 8 - 24 with Optional Flashing Flange



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Performance

Performance data for these units was obtained through actual testing. The information is presented in capacity versus total pressure drop through the GRS. Total pressure drop includes the static and velocity pressure drops. To find the static drop alone, use the following equations.

$$\text{Throat Velocity} = \left[\frac{\text{CFM}}{\text{Throat Area}}\right]$$

$$\text{Static Pressure} = \left[\text{Total Pressure}\right] - \left[\text{Velocity Pressure}\right]$$

$$\text{Velocity Pressure (in. wg)*} = \left[\frac{\text{Throat Velocity}}{4008.6}\right]^2$$

*1 inch wg = *249 Pa*

The data is presented for both discharge and intake units. The intake velocity of the intake unit should not exceed 600 feet per minute. Above this velocity, airborne particles may be carried into the building. The table below displays the maximum recommended values for the respective intake units. In areas where snow depths may be a problem, 12 inch *(305 mm)* or higher curbs are recommended.

		Volume (CFM)											Recommended Maximum Intake Capacities	
	GRSI Size	Throat Area (ft^2)	Total Pressure Drop (in. wg)										Intake Area (ft^2)	Max. CFM Intake
			0.04	0.06	0.08	0.10	0.15	0.20	0.25	0.30	0.35			
Model GRSI Intake Performance	8	0.37	178	218	252	282	345	398	445	488	527		1.30	780
	10	0.57	279	342	395	442	541	624	698	765	826		1.72	1032
	12	0.82	400	490	566	633	775	895	1001	1097	1184		2.52	1512
	15	1.12	553	677	782	874	1071	1237	1383	1515	1636		2.57	1542
	16	1.45	742	908	1049	1173	1436	1658	1854	2031	2194		3.02	1812
	18	1.83	901	1104	1274	1425	1745	2015	2253	2468	2665		3.42	2052
	20	2.25	1096	1343	1550	1733	2123	2452	2741	3002	3243		4.43	2658
	24	3.24	1542	1888	2180	2438	2985	3447	3854	4222	4560		4.95	2970
	30	5.03	2013	2465	2847	3183	3898	4501	5032	5512	5954		7.49	4496
	36	7.29	2921	3577	4130	4618	5656	6531	7301	7998	8639		10.2	6111
	42	9.77	3911	4791	5532	6185	7574	8746	9779	10712	11570		12.0	7159
	48	12.8	5139	6294	7268	8126	9952	11491	12848	14074	15201		15.5	9286
	GRSR Size	Throat Area (ft^2)	Total Pressure Drop (in. wg)											
			0.04	0.06	0.08	0.10	0.15	0.20	0.25	0.30	0.35			
Model GRSR Relief Performance	8	0.37	231	282	326	365	446	516	576	631	682			
	10	0.57	331	406	468	524	641	741	828	907	980			
	12	0.82	468	573	662	740	907	1047	1171	1282	1385			
	15	1.12	663	811	937	1048	1283	1481	1656	1814	1960			
	16	1.45	870	1065	1230	1375	1685	1945	2175	2382	2573			
	18	1.83	1060	1298	1499	1676	2052	2370	2649	2902	3135			
	20	2.25	1284	1572	1815	2029	2486	2870	3209	3515	3797			
	24	3.24	1879	2301	2657	2971	3638	4201	4697	5145	5558			
	30	5.03	2281	2794	3226	3607	4418	5101	5703	6247	6748			
	36	7.29	3279	4016	4637	5184	6349	7331	8197	8979	9699			
	42	9.77	4672	5722	6607	7387	9047	10447	11680	12795	13820			
	48	12.8	6211	7607	8783	9820	12027	13888	15527	17009	18372			

Table is based on 600 ft/min. maximum intake velocity. Above these values (numbers in gray), provisions should be made to contain incoming moisture.