

# Gravity Ventilators Model GRS

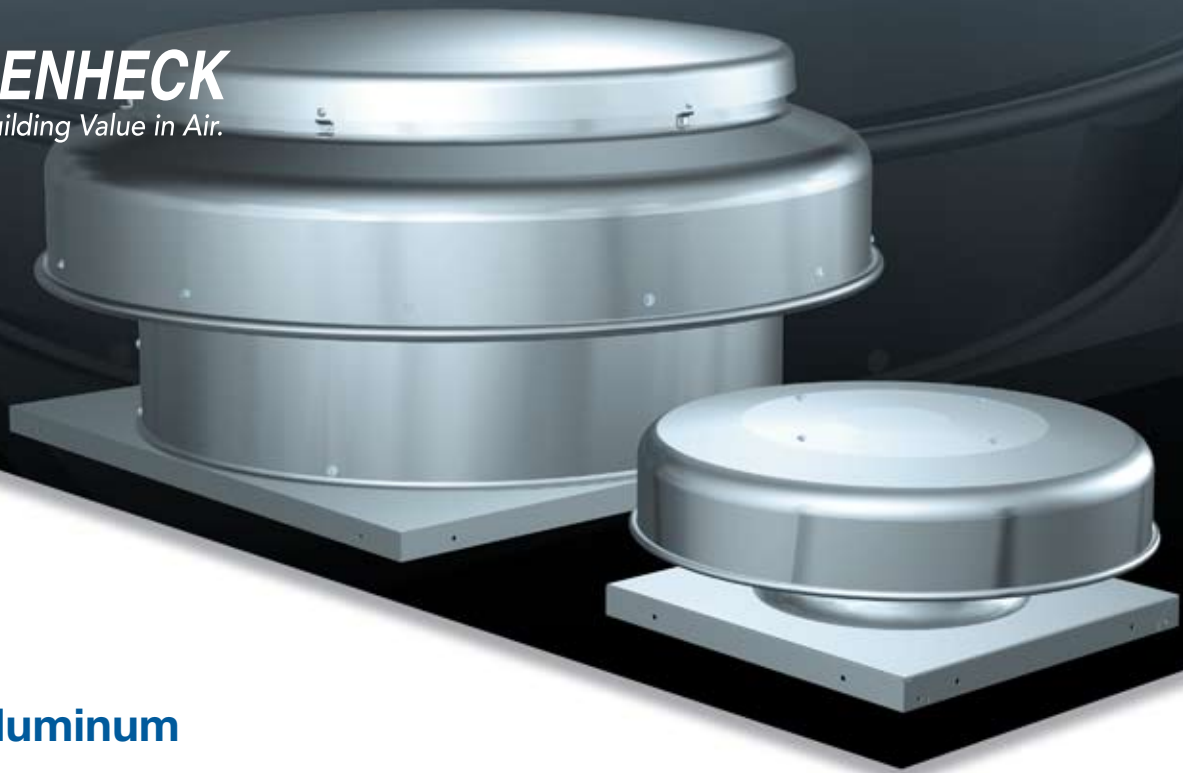
Intake & Relief



BUILDING VALUE IN AIR.

 **GREENHECK**  
Building Value in Air.

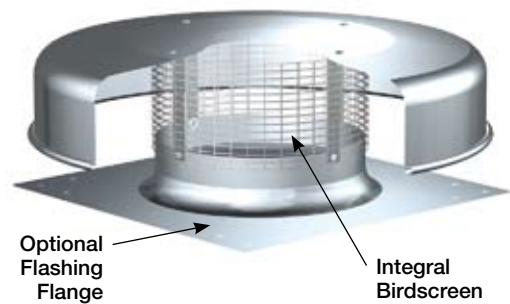
August  
2008



## Spun Aluminum Ventilator

When you buy a Greenheck model GRS, you receive a ventilator with the industry's best performance and durability for intake (model GRSI) or relief (model GRSR) on 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<sup>3</sup>/hr).
- Most advanced weather protection of any ventilator in its class.
- Greenheck subjects these products to extensive life testing, assuring the ventilator will provide years of reliable performance.
- All aluminum exterior for corrosion-resistant construction.
- Integral birdscreen to prevent entry of birds and/or small objects.
- Built-in curb cap with prepunched holes for easy attachment to roof curbs.
- Optional built-in flashing flange (model GRSF) with prepunched holes for quick and easy installations without a roof curb.



## Quick Delivery and Quick Build Programs



You can order from more than nine GRS configurations, hundreds of in-stock ventilation products and accessories that can ship to your jobsite in less than 24 hours from our strategically located warehouses throughout the world.

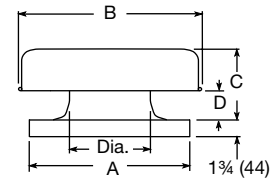
For other sizes and configurations where rapid response time is required, our Quick Build (QB) program can manufacture and ship your custom products in one, three or ten days.

# Dimensions

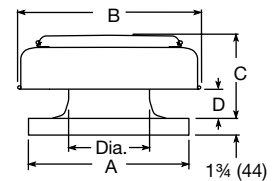
Model	A	B	C	D	E	Dia.	Damper Size	Curb Material	Shroud Material	Unit Weight
GRS-8 (483)	19 (521)	20½ (521)	7¼ (184)	1½ (38)	20¼ (514)	8¼ (210)	8 x 8 (203 x 203)	0.051 (1.3)	0.051 (1.3)	7 (3)
GRS-10 (483)	19 (521)	20½ (521)	7¾ (197)	2 (51)	20¼ (514)	10¼ (260)	10 x 10 (254 x 254)	0.051 (1.3)	0.051 (1.3)	8 (4)
GRS-12 (559)	22 (559)	29 (737)	10 (254)	3½ (89)	23¼ (591)	12¼ (311)	12 x 12 (305 305)	0.064 (1.6)	0.064 (1.6)	10 (5)
GRS-15 (559)	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)
GRS-16 (660)	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)
GRS-18 (762)	30 (762)	35½ (902)	9¾ (248)	1¼ (44)	31¼ (794)	20¼ (514)	18 x 18 (457 x 457)	0.064 (1.6)	0.064 (1.6)	19 (9)
GRS-20 (762)	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)
GRS-24 (864)	34 (864)	38¾ (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)
GRS-30 (1016)	40 (1016)	48 (1219)	18¾ (476)	5⅞ (138)	-	30½ (775)	30 x 30 (762 x 762)	0.064 (1.6)	0.064 (1.6)	35 (16)
GRS-36 (1168)	46 (1168)	56¾ (1441)	21¼ (540)	6 (152)	-	36½ (927)	36 x 36 (914 x 914)	0.064 (1.6)	0.080 (2.0)	45 (20)
GRS-42 (1321)	52 (1321)	63¾ (1607)	24¼ (616)	6¼ (159)	-	42½ (1089)	42 x 42 (1067 x 1067)	0.064 (1.6)	0.080 (2.0)	60 (27)
GRS-48 (1473)	58 (1473)	72 (1829)	26¼ (667)	6½ (165)	-	48½ (1232)	48 x 48 (1219 x 1219)	0.064 (1.6)	0.080 (2.0)	80 (36)

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

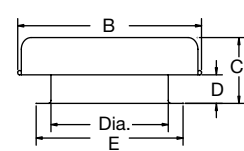
GRS - Sizes 8 thru 24



GRS - Sizes 30 thru 48



GRS with Optional Flashing Flange (Model GRSF) - Sizes 8 thru 24



# 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.

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

$$\text{Static Pressure} = \left[ \frac{\text{Total Pressure}}{\text{Pressure}} \right] - \left[ \frac{\text{Velocity}}{\text{Pressure}} \right] \left[ \frac{\text{Velocity}}{\text{Pressure}} \right] = \left[ \frac{\text{Throat Velocity}^2}{4002} \right]$$

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.

		Capacities (CFM)										Recommended Maximum Intake Capacities		
	Model	Throat Area (ft. <sup>2</sup> )	Total Pressure Drop in inches of wg										Intake Area (ft. <sup>2</sup> )	Max. CFM Intake
			0.04	0.06	0.08	0.1	0.15	0.2	0.25	0.3	0.35			
<b>Model GRSI</b> Intake Performance	GRSI-8	0.37	178	218	252	282	345	398	445	488	527	1.30	780	
	GRSI-10	0.57	279	342	395	442	541	624	698	765	826	1.72	1032	
	GRSI-12	0.82	400	490	566	633	775	895	1001	1097	1184	2.52	1512	
	GRSI-15	1.12	553	677	782	874	1071	1237	1383	1515	1636	2.57	1542	
	GRSI-16	1.45	742	908	1049	1173	1436	1658	1854	2031	2194	3.02	1812	
	GRSI-18	1.83	901	1104	1274	1425	1745	2015	2253	2468	2665	3.42	2256	
	GRSI-20	2.25	1096	1343	1550	1733	2123	2452	2741	3002	3243	4.43	2658	
	GRSI-24	3.24	1542	1888	2180	2438	2985	3447	3854	4222	4560	4.95	2970	
	GRSI-30	5.032	2013	2465	2847	3183	3898	4501	5032	5512	5954	7.493	4496	
	GRSI-36	7.291	2921	3577	4130	4618	5656	6531	7301	7998	8639	10.186	6111	
GRSI-42	9.765	3911	4791	5532	6185	7574	8746	9779	10712	11570	11.932	7159		
GRSI-48	12.830	5139	6294	7268	8126	9952	11491	12848	14074	15201	15.477	9286		
<b>Model GRSR</b> Relief Performance	GRSR-8	0.37	231	282	326	365	446	516	576	631	682	Table based on 600 fpm maximum intake velocity. Above these values, provisions should be made to contain incoming moisture.		
	GRSR-10	0.57	331	406	468	524	641	741	828	907	980			
	GRSR-12	0.82	468	573	662	740	907	1047	1171	1282	1385			
	GRSR-15	1.12	663	811	937	1048	1283	1481	1656	1814	1960			
	GRSR-16	1.45	870	1065	1230	1375	1685	1945	2175	2382	2573			
	GRSR-18	1.83	1060	1298	1499	1676	2052	2370	2649	2902	3135			
	GRSR-20	2.25	1284	1572	1815	2029	2486	2870	3209	3515	3797			
	GRSR-24	3.24	1879	2301	2657	2971	3638	4201	4697	5145	5558			
	GRSR-30	5.032	2281	2794	3226	3607	4418	5101	5703	6247	6748			
	GRSR-36	7.291	3279	4016	4637	5184	6349	7331	8197	8979	9699			
GRSR-42	9.765	4672	5722	6607	7387	9047	10447	11680	12795	13820				
GRSR-48	12.830	6211	7607	8783	9820	12027	13888	15527	17009	18372				

# Typical Specifications

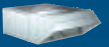
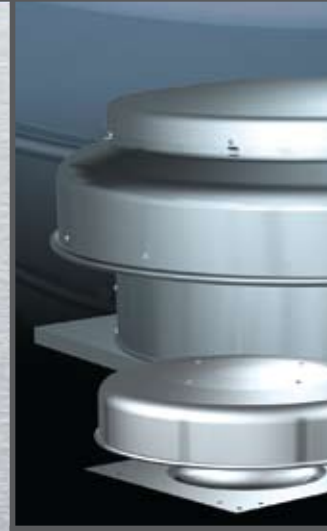
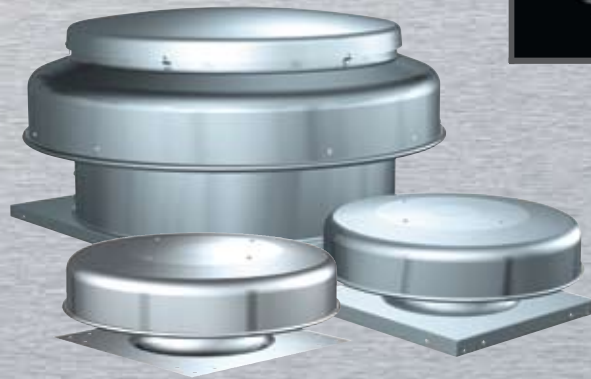
## Spun Aluminum Gravity Roof Ventilator shall be provided as follows:

- Exterior construction shall be heavy-gauge aluminum windband with a rolled bead.
- Curb cap shall be constructed of heavy-gauge aluminum and includes a one-piece spun venturi.
- Curb cap shall be prepunched for mounting.
- Internal components shall be constructed of rigid galvanized steel with birdscreen.

Ventilator shall be model GRS as manufactured by Greenheck Fan Corporation, Schofield, Wisconsin.

## The GRS can be used with the following accessories:

- Gravity or motorized dampers to assure weather tightness.
- Prefab curbs to reduce installation time.
- Protective coatings to extend the life of the unit or blend its color with other equipment.



## 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 Warranty

Greenheck warrants this equipment to be free from defects in material and workmanship for a period of one year from the purchase date. Any units or parts which prove defective during the warranty period will be replaced at our option when returned to our factory, transportation prepaid. Greenheck will not be responsible for any removal or installation costs.

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



Prepared to Support  
Green Building Efforts

