

BULLETIN 4700

August 2006

# Twin City Fan & Blower

## *GRAVITY RELIEF/INTAKE VENTILATOR*

**TYPE GRV**

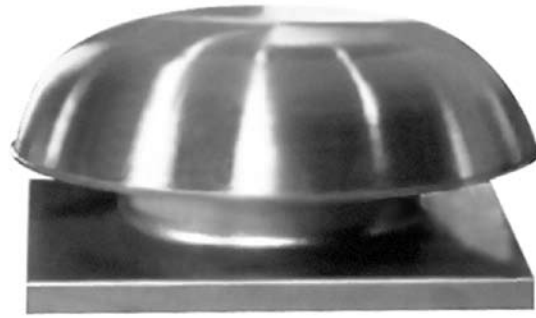


# Type GRV Gravity Relief/Intake Ventilator

## General Information

The GRV series relief ventilators are low silhouette spun aluminum units that match the appearance of the spun aluminum power roof ventilators.

The GRV provides for natural gravity ventilation and may also be used as an intake. For intake units, a minimum curb height of 12" is recommended.



## Sizes & Capacities

GRV relief ventilators are available in 12 sizes, models 090B through 480B. Performance capabilities include a broad capacity range from 250 to 25,100 CFM, with static pressure capabilities to  $\frac{3}{8}$  in. w.g.

## QuickShip Program

All GRV models and most optional accessories are available on the Twin City Fan & Blower QuickShip program. The QuickShip program provides rapid delivery of standard products so that tight project deadlines can be met and downtime on replacement work can be held to a minimum. Delivery options include shipments as quick as 48-hours. See Bulletin 4900 or contact your local sales representative for further information on the Twin City Fan & Blower QuickShip program.

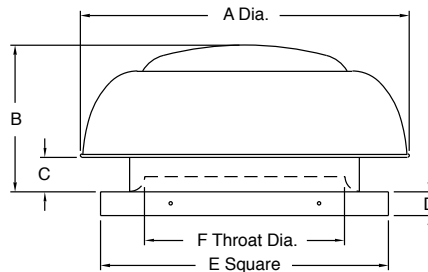
## Construction Features

- Spun aluminum cover
- Curb base constructed of aluminum
- $\frac{1}{2}$ " x  $\frac{1}{2}$ " galvanized mesh bird screen is standard on all units

## Options

- Backdraft damper (motorized and non-motorized)
- Roof curbs
- Curb hinge
- Special coatings
- Aluminum bird screen
- Aluminum insect screen

## Dimensional Data



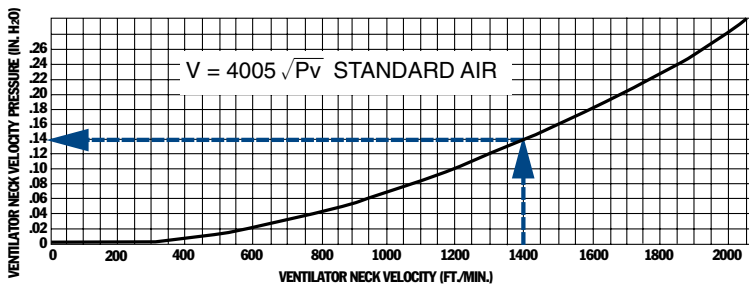
GRV SIZE	DIMENSIONS (INCHES)						DAMPER SIZE	CANTED CURB SIZE	NECK AREA (SQ. FT.)	AVERAGE SHIP WEIGHT (LB.)
	A	B	C	D	E INSIDE	F				
090B	22.50	8.25	1.50	2.00	16.50	9.00	10 x 10	15.0 x 15.0	0.44	17
120B	27.50	11.25	2.00		24.00	12.13	18 x 18	22.5 x 22.5	0.80	20
160B		12.25	3.00		16.25	1.44			25	
180B	32.25	12.25	4.00		29.50	18.25	24 x 24	28.0 x 28.0	1.82	30
210B		12.75	4.50		21.25	2.46			47	
240B	40.50	16.00	5.00		35.50	24.25	30 x 30	34.0 x 34.0	3.21	55
270B		16.50	5.50		27.38	4.09			67	
300B	50.00	19.00	6.00		42.50	30.38	36 x 36	41.0 x 41.0	5.03	75
320B		19.50				32.38			5.72	107
360B		6.00				36.38			7.22	135
420B	60.00	21.50	6.50	3.00	52.00	42.38	46 x 46	50.5 x 50.5	9.79	187
480B	74.00	27.25			58.00	48.38	50 x 50	56.5 x 56.5	12.76	225

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# Performance Data

NECK VELOCITY (FPM)			575	810	980	1140	1390	1610	1800	1970								
			525	740	905	1045	1290	1480	1650	1810								
GRV SIZE	THROAT DIA. (IN.)	NECK AREA (FT <sup>2</sup> )	PRESSURE DROP (IN. W.G.)															
			.031		.062		.093		.125		.187		.250		.312		.375	
			RELIEF CFM	INTAKE CFM	RELIEF CFM	INTAKE CFM	RELIEF CFM	INTAKE CFM	RELIEF CFM	INTAKE CFM	RELIEF CFM	INTAKE CFM	RELIEF CFM	INTAKE CFM	RELIEF CFM	INTAKE CFM		
090B	9.00	0.44	255	355	430	500	610	710	790	865	230	325	400	460	570	650	725	795
120B	12.10	0.80	460	650	785	910	1110	1290	1440	1575	420	590	725	835	1030	1185	1320	1450
160B	16.25	1.44	830	1165	1410	1640	2000	2320	2590	2835	755	1065	1305	1505	1860	2130	2375	2605
180B	18.25	1.82	1045	1475	1785	2075	2530	2930	3275	3585	955	1345	1645	1900	2350	2695	3005	3295
210B	21.25	2.46	1415	1995	2410	2805	3420	3960	4430	4845	1290	1820	2225	2570	3175	3640	4060	4455
240B	24.25	3.21	1845	2600	3145	3660	4460	5170	5780	6325	1685	2375	2905	3355	4140	4750	5295	5810
270B	27.38	4.09	2350	3315	4010	4665	5685	6585	7360	8055	2145	3025	3700	4275	5275	6055	6750	7405
300B	30.38	5.03	2890	4075	4930	5735	6990	8100	9055	9910	2640	3720	4550	5255	6490	7445	8300	9105
320B	32.38	5.72	3290	4635	5605	6520	7950	9210	10295	11270	3005	4235	5175	5975	7380	8465	9440	10355
360B	36.38	7.22	4150	5850	7075	8230	10035	11625	12995	14225	3790	5345	6535	7545	9315	10685	11915	13070
420B	42.38	9.79	5630	7930	9595	11160	13610	15760	17620	19285	5140	7245	8860	10230	12630	14490	16155	17720
480B	48.38	12.76	7335	10335	12505	14545	17735	20545	22970	25135	6700	9440	11550	13335	16460	18885	21055	23095

## Static Resistance of GRV Relief and/or Intake Ventilators



1. Divide CFM by ventilator neck area to find neck velocity.
2. Locate this neck velocity at bottom of chart. Read vertically upward to intersection of curve, then horizontally to left-hand margin. Read neck velocity pressure at this point.
3. To find system resistance, multiply neck velocity pressure by appropriate resistance factor of unit. (Resistance factor shown below.)

APPLICATION	RESISTANCE FACTOR
RELIEF	1.55
INTAKE	1.83

## Typical Specifications

Gravity relief and/or intake ventilators shall be of the spun aluminum type, Model GRV as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota. Units shall be constructed of aluminum for durability and appearance. Unit top covers shall have a rolled bead edge for rigidity. Units shall have a deep venturi inlet to prevent against snow and rain entry into the building.

Units shall contain a galvanized bird screen to prevent birds from nesting inside the unit.

# Unlimited Options...

## Commercial Fans

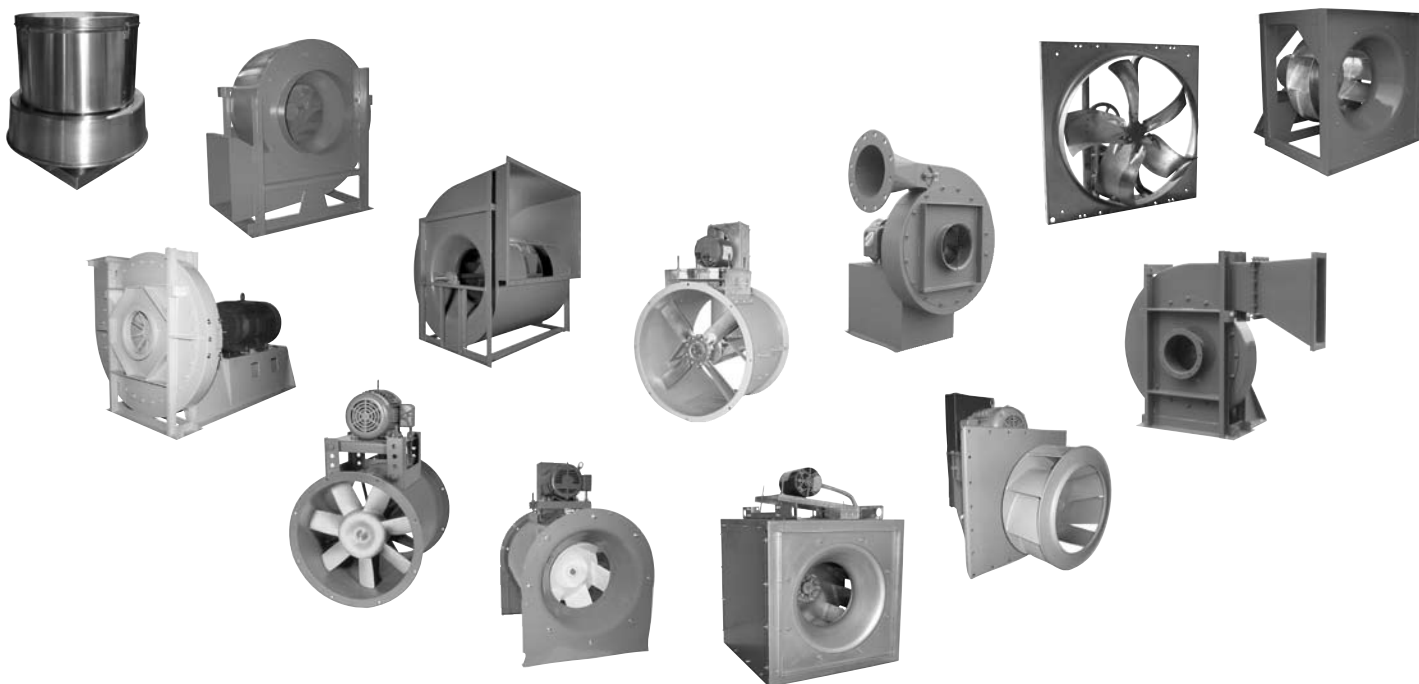
Centrifugal Fans • Utility Sets • Inline Centrifugal Fans • Plenum Fans  
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