

Volume Control Damper - VCD ; Low Leakage Application

B - 20 Series

Type: Square and Rectangular

Model: VCD-GB-21B

Blade Type : 3V Single Skin ; Galvanized Construction

Blade Operation:A-Parallel,B-Opposed,C-Gear Opposed

BETEC CAD. B-21 Series volume control dampers are square and rectangular type with parallel or opposed blade operation having single skin blade design. These dampers are subjected to medium pressure applications to achieve low leakage efficient operation.

The square and rectangular type **VCD's** are designed for handling maximum air capacities at minimum pressure drop.

Damper Performance Ratings

Operating Pressure - 6" wg (1500 Pa.) Max.

Leakage - Class - I (Refer AMCA 500-D-12).

Velocity - 2000 fpm (10.1 m/s).

Standard Construction

Frame

6" x 1.18" x 18 gauge (150 x 30 x 1.2 mm) thick roll formed galvanized steel 'C' channel with Embossed type for low leakage application.

Blades

6" (152 mm) wide, 1.2 mm (18 gauge) thick galvanized steel 3V type roll formed.

Bushes

Nylon.

Mechanical Linkage

Galvanized steel linkages concealed in the frame.

Axles

12 mm square galvanized steel.

Quadrant

Heavy gauge galvanized steel with position indications

Shut, 1/4, 1/2, 3/4, **Open**.

Gasket

Neoprene / Foam / Silicone Rubber Gasket*

Jamb Seal

0.3 mm thick Stainless spring steel

Optional Fittings

Gear Wheel

Gear wheels are of heat resistant Nylon placed within the frame instead of mechanical linkage for rattle free smooth operation, operated with PVC knob / Quadrant.

Bushes

Brass / Bronze* /Stainless Steel.

Axles

12 mm diameter galvanized steel.

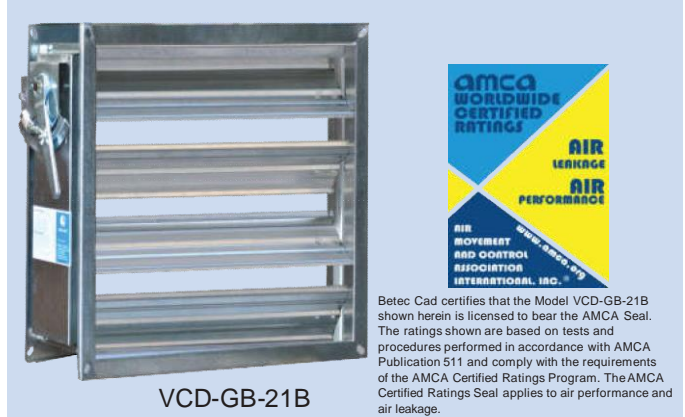
Transitions

Neck adaptor for round duct connections.

Note :

Please contact **BETEC CAD.** for customized design & additional information.

Selected Products of the company have been Classified / Listed / Tested by various international testing authorities.



B-20 Series Single Skin Blade Model details

Model	Material Construction				
	Frame		Blade		Quadrant
	Material	Thick	Material	Thick	
VCD-GB-21A/B*/C	GI	1.2 mm	GI	1.2 mm	GI
VCD-AB-21A/B/C	AL	1.2 mm	AL	1.2 mm	GI
VCD-GAB-21A/B/C	GI	1.2 mm	AL	1.2 mm	GI
VCD-GSB-21A/B/C	GI	1.2 mm	SS	1.2 mm	GI
VCD-SB-21A/B/C	SS	1.2 mm	SS	1.2 mm	SS

Alphabet indicates the type of blade operation

A - Parallel Blade

B - Opposed Blade

C - Gear Opposed Blade

Optional Construction

Frame : Thickness up to 1.5 mm

Frame Depth : 130 mm Optional

Blade : Thickness up to 1.5 mm

Blade Width : Up to 150 mm

Frame and Blade Material : Stainless Steel (304/316L)

: Aluminium

Any Combination of W x H											
VCD-GB-21A/B/C											
W- Inch	6"	8"	12"	16"	18"	20"	24"	28"	32"	36"	48"
H- Inch	6"	8"	12"	16"	18"	20"	24"	28"	32"	36"	48"

Note:

Increments of 2" (50 mm) possible with combination of 4" & 6" blade width.

Maximum single module size is 48"x48" (1200x1200 mm).

Damper, width W > 48" (1200 mm) or H > 48" (1200 mm), is provided with a center mullion partition.

Dampers of size W or H > 800 mm will have blade with stiffener

* Indicates Betec Cad Models Certified by AMCA.

Engineering And Performance Data - VCD

B - 10/20/30/40 Series

Pressure drop for Volume Control Dampers

Single Skin Blade : VCD B 11/21/31/41

Aerofoil Blade : VCD B 12/22/32/42

AIR PERFORMANCE

- Tested for air performance at standard air density in accordance with ANSI/AMCA 500-D, Figure 5.3
- Data are based on a torque of 24 in-lb/ft² applied to close and seat the damper during the test.

Volume Control Damper

Betec Cad certifies that the Models VCD-GAB-22B/ VCD-GB-22B/VCD-GB-21B shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance and air leakage.

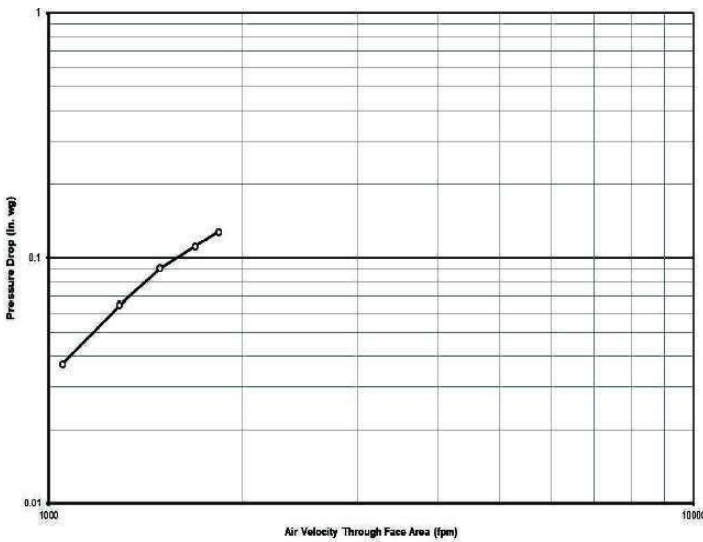
Pressure Loss Vs Face Velocity Pressure Drop For Models VCD - B10/20/30/40 Series.

SIZE 12" X 12"	
Air Velocity (fpm)	Pressure Drop (in. wg)
1100	0.04
1400	0.07
1600	0.09
1800	0.12
1900	0.14

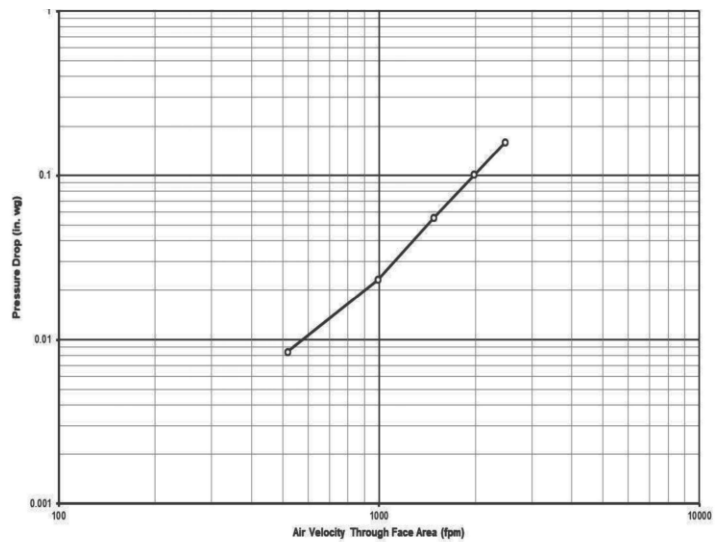
SIZE 24" X 24"	
Air Velocity (fpm)	Pressure Drop (in. wg)
520	0.008
1000	0.02
1600	0.06
2000	0.1
2600	0.18

SIZE 12" X 48"	
Air Velocity (fpm)	Pressure Drop (in. wg)
520	0.01
1000	0.04
1500	0.08
2000	0.14
2600	0.22

SIZE 48" X 12"	
Air Velocity (fpm)	Pressure Drop (in. wg)
520	0.007
1000	0.02
1600	0.05
2000	0.09
2600	0.14

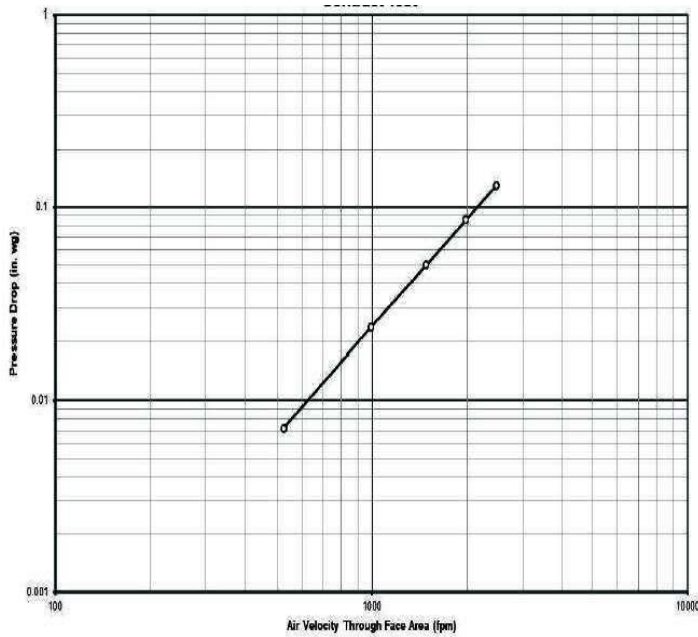


—○— Test Pressure Drop - Device Only
SIZE 12" X 12"

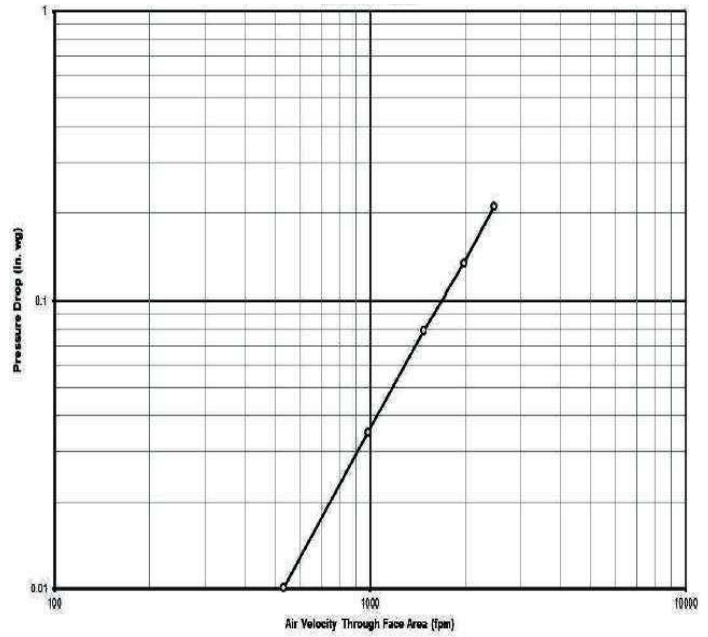


—○— Test Pressure Drop - Device Only
SIZE 24" X 24"

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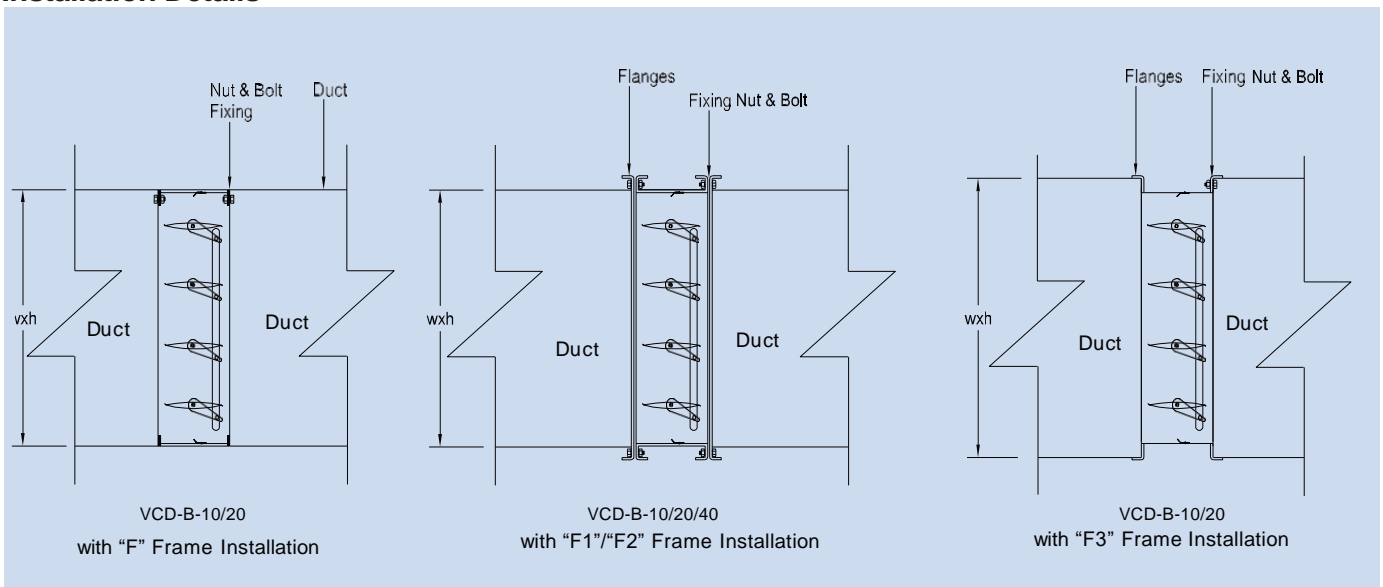


SIZE 48" X 12"



SIZE 12" X 48"

Installation Details



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Engineering And Performance Data - VCD

B 10/20/30/40 Series

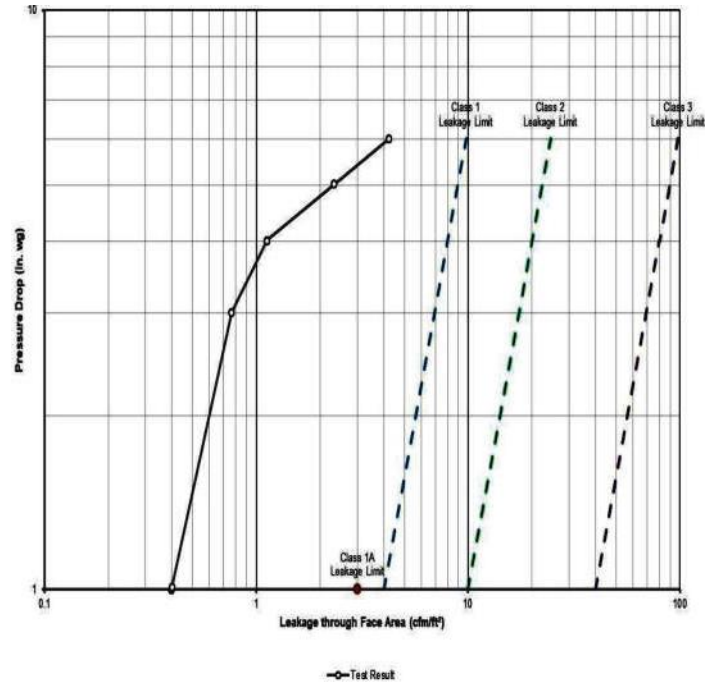
Leakage Characteristics for Volume Control Dampers

Models VCD - B 10/20/30/40 - Leakage Curve (Blades 100% Closed Position)

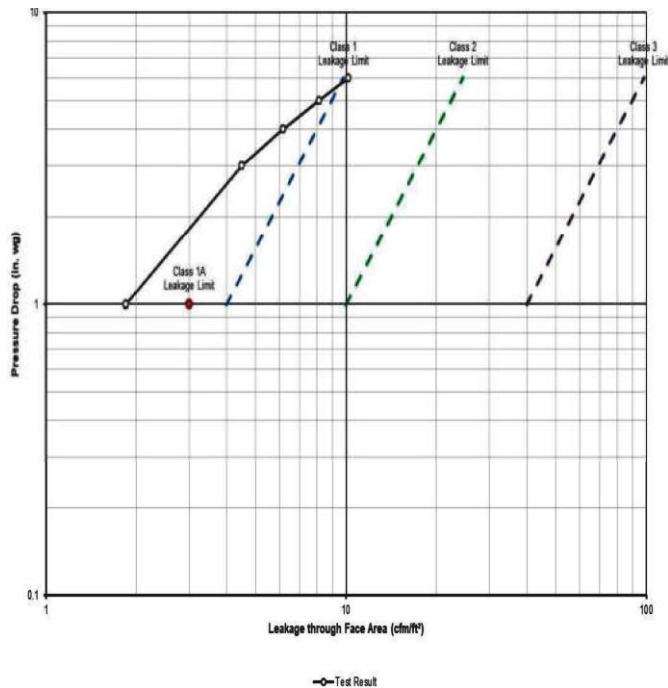
AIR LEAKAGE

- Air leakage is based on operation between 32 °F and 120 °F
- Tested for air leakage at standard air density in accordance with ANSI/AMCA Standard 500-D, Figure 5.4
- Data are based on a torque of 24 in-lb/ft² applied to close and seat the damper during the test.

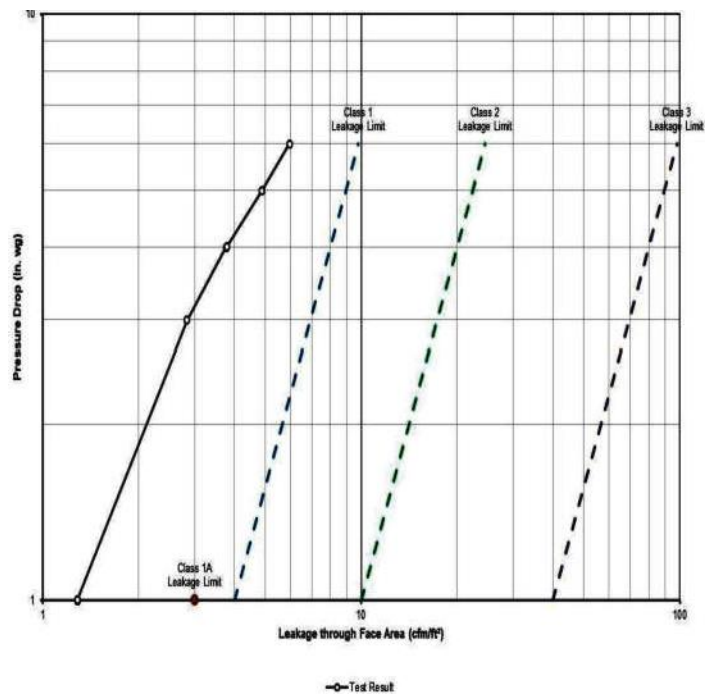
Maximum Allowable Leakage, cfm/ft ²				
Class	at 1 in.wg	at 4 in.wg	at 6 in.wg	at 8 in.wg
1A	3	N/A	N/A	N/A
1	4	8	10	11
2	10	20	24	28
3	40	80	98	112



VCD-GAB-22-B- 36 "X 40"



VCD-GB-21-B- 36 "X 40"



VCD-GB-22-B- 36 "X 40"

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