

## Application

The VCD-20 is a control damper used in buildings to regulate the flow air in an HVAC system. They can be used in intake, exhaust, or mixed air application.

## Damper Ratings

### Velocity

Up to 3000 fpm (15.2 m/s)

### Pressure

Up to 5 in. wg (1.2 kPa) - pressure differential

### Temperature

-40°F to 250°F (-40°C to 121°C). Consult factory for higher temperatures.



\*W & H dimension furnished approximately 1/4 in. (6mm) undersize.

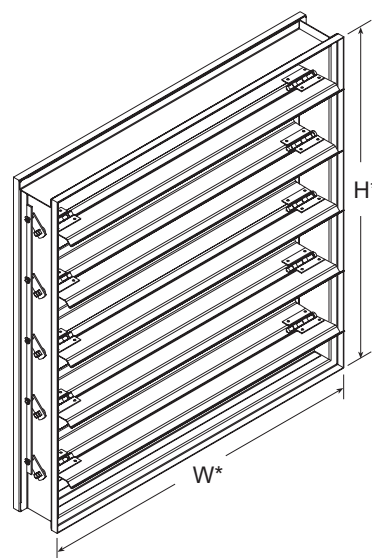
## Construction

	Standard	Optional
<b>Frame Material</b>	Galvanized Steel	304SS
<b>Frame Material Thickness</b>	16 ga. (1.5 mm)	12 ga. (2.7 mm)*
<b>Frame Type</b>	5 in. x 1 in. hat channel	Single flange, Reversed flange, Double flange
<b>Blade Material</b>	Galvanized steel	304SS
<b>Blade Thickness</b>	16 ga. (1.5mm)	-
<b>Blade Type</b>	3V	-
<b>Blade Action</b>	Opposed	Parallel
<b>Linkage</b>	Plated steel out of airstream, concealed in jamb	316SS
<b>Axle Bearings</b>	Synthetic	316SS
<b>Axle Material</b>	1/2 in. dia. Plated steel	316SS
<b>Paint Finishes</b>	Mill Finish	Baked Enamel, Hi Pro Polyester, Industrial Epoxy

\*When 12 ga. frame is selected and the damper height is less than 17 inches, low profile top and bottom frame members are utilized. These low profile frame members will be made from 16 ga. material.

## Size Limitations

W x H	Minimum Size	Maximum Size	
		Single Section	Multiple Section
<b>Inches</b>	6 x 6	48 x 74	Unlimited
<b>mm</b>	152 x 152	1219 x 1880	Unlimited



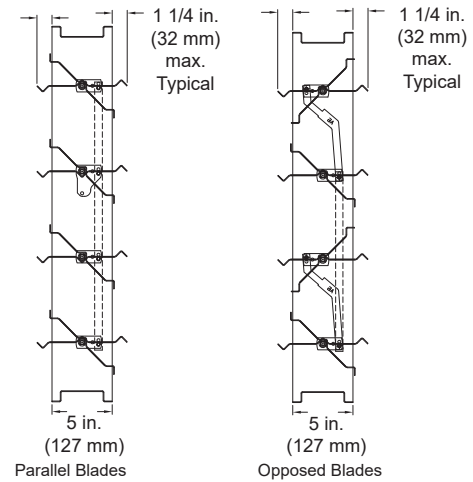
## Notes:

- Low profile head and sill are used on sizes less than 17 in. (432mm) high
- Linkage concealed in the frame
- Electric actuator and manual quadrant available. Factory supplied actuators are sized for 1500 fpm (7m/s) and fully closed differential pressure of 2 in. wg (.5 kPa). contact factory for actuator sizing on applications exceeding those limits.
- In applications where airflow could be uneven, such as a discharge fan, it is imperative to verify that at no point the maximum velocity exceeds the damper's cataloged velocity.
- Blades must be horizontal for either horizontal or vertical mount. If you need vertical blades, see VCD-23V model.

## Blade Operation

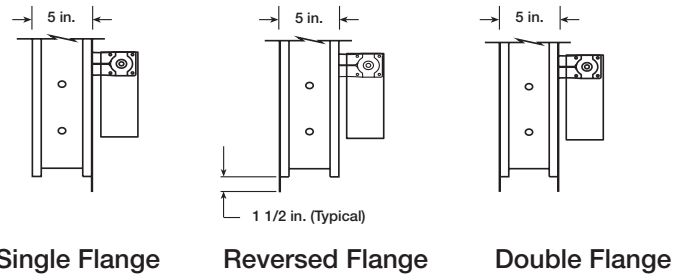
**Parallel blade operation** - this configuration requires the damper blades to rotate in the same direction, parallel to one another.

**Opposed blade operation** - adjacent damper blades rotate opposite one another.



## Options

- Actuators (24V, 120V, manual, pull chain)
- Actuator mounting (external, external kit (field assembly), internal)
- Flanges
- Multi-section fastening
- NEMA enclosures (3, 4, 4X, 7)
- [OCI \(open or closed indicator\)](#)
- R Transition
- [Retaining angles](#)
- [Security bars](#)
- Sleeves
- Transformers



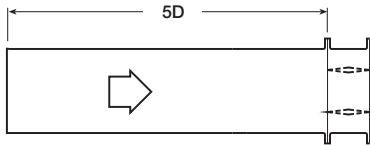
\* Shown with optional internally mounted actuator.

AMCA Certified Pressure Drop Data



Greenheck Fan Corporation certifies that the model VCD-20 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 Programs. The AMCA Certified Ratings Seal applies to Air Performance ratings.

AMCA 5.2



12 in. x 12 in. (305mm x 305mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.05
1500	0.11
2000	0.19
2500	0.29
3000	0.41
3500	0.55
4000	0.72

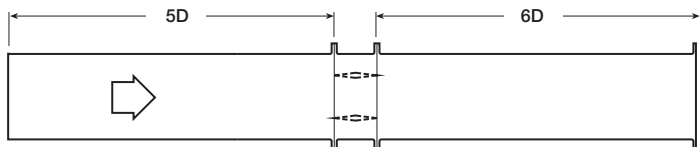
24 in. x 24 in. (610mm x 610mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.03
1500	0.06
2000	0.10
2500	0.16
3000	0.23
3500	0.30
4000	0.40

36 in. x 36 in. (914mm x 914mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.02
1500	0.05
2000	0.09
2500	0.14
3000	0.19
3500	0.27
4000	0.35

12 in. x 48 in. (305mm x 1219mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.04
1500	0.08
2000	0.15
2500	0.22
3000	0.32
3500	0.43
4000	0.56

48 in. x 12 in. (1219mm x 305mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.03
1500	0.07
2000	0.12
2500	0.18
3000	0.26
3500	0.36
4000	0.47

AMCA 5.3



12 in. x 12 in. (305mm x 305mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.03
1500	0.08
2000	0.13
2500	0.20
3000	0.29
3500	0.40
4000	0.51

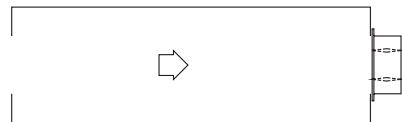
24 in. x 24 in. (610mm x 610mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.02
1500	0.04
2000	0.07
2500	0.11
3000	0.16
3500	0.21
4000	0.28

36 in. x 36 in. (914mm x 914mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.02
1500	0.03
2000	0.06
2500	0.09
3000	0.13
3500	0.19
4000	0.25

12 in. x 48 in. (305mm x 1219mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.03
1500	0.07
2000	0.12
2500	0.18
3000	0.26
3500	0.36
4000	0.46

48 in. x 12 in. (1219mm x 305mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.03
1500	0.06
2000	0.10
2500	0.16
3000	0.22
3500	0.30
4000	0.39

AMCA 5.5



12 in. x 12 in. (305mm x 305mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.13
1500	0.30
2000	0.53
2500	0.82
3000	1.19
3500	1.62
4000	2.10

24 in. x 24 in. (610mm x 610mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.12
1500	0.26
2000	0.47
2500	0.75
3000	1.04
3500	1.41
4000	1.90

36 in. x 36 in. (914mm x 914mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.02
1000	0.10
1500	0.22
2000	0.40
2500	0.62
3000	0.90
3500	1.23
4000	1.62

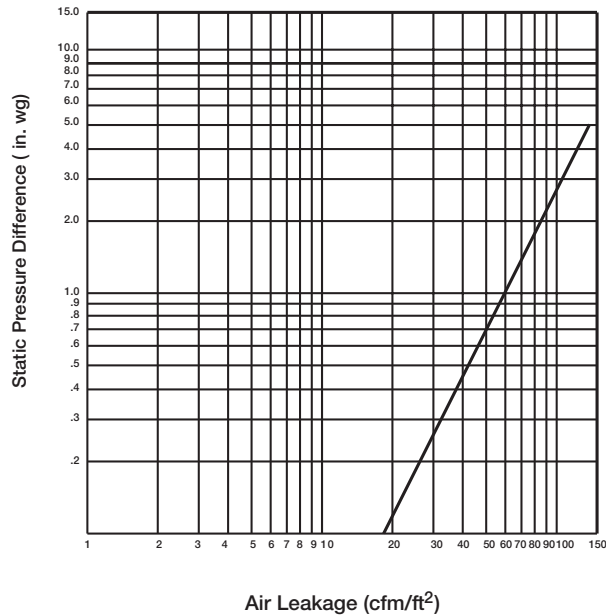
12 in. x 48 in. (305mm x 1219mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.14
1500	0.32
2000	0.57
2500	0.90
3000	1.29
3500	1.76
4000	2.30

48 in. x 12 in. (1219mm x 305mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.12
1500	0.28
2000	0.49
2500	0.77
3000	1.12
3500	1.53
4000	2.01

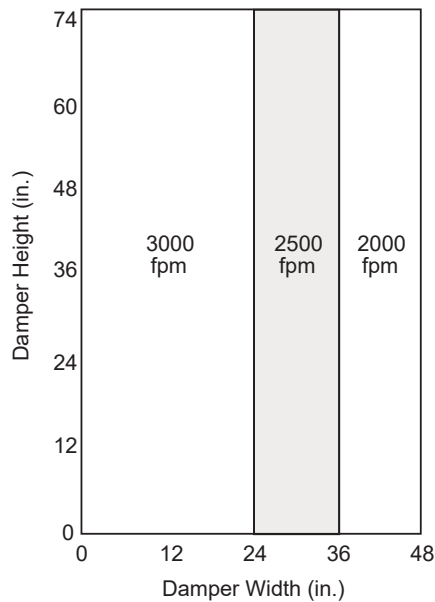
# Leakage Data

Leakage testing was conducted in accordance with AMCA Standard 500-D and is expressed as cfm/ft2 of damper face area. All data has been corrected to represent standard air at a density of 0.075 lb/ft³ (1.204 kg/m³).

## VCD-20

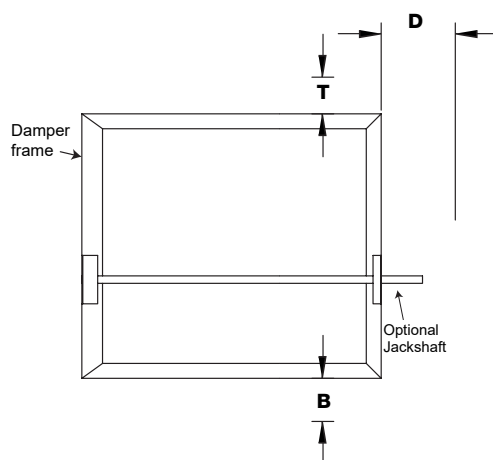


## Velocity Limitations



## Space Envelopes

On dampers less than 18 in. (457mm) high, actuators may also require clearances above and/or below the damper frame. **“B” and “T” dimensions are worst case clearance requirements for some dampers less than 18 in. (457mm) high.** All damper sizes under 18 in. (457mm) high do not require these worst case clearances. If space availability above or below the damper is limited, each damper size should be individually evaluated.



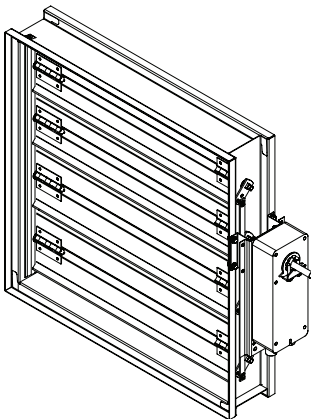
Actuator Type/Model	Height	T	B	D
	Inches	Inches		
AFBUP (-S) and FSNF Series, Belimo MSxx20 Series, Honeywell	≥6 to <10	0	12¾	6¼
	≥10 to <18	0	2	6¼
	≥18	0	0	6¼
FSLF, LF and TFB Series, Belimo	≥6 to <10	0	3½	6¼
	≥10	0	0	6¼
MSxx04 & MSxx09 Series, Honeywell	≥6 to <9	0	4¾	6¼
	≥9	0	0	6¼
MS75xx Series, Honeywell	≥6 to <10	0	12¾	6¼
	≥10 to <18	0	7	6¼
	≥18	0	0	6¼
GRD and GVD Series, Siemens	≥6 to <10	0	12¾	6¼
	≥10 to <18	0	2	6¼
	≥18	0	0	6¼
GJD Series, Siemens	≥6 to <10	0	3½	6¼
	≥10 to <18	0	0	6¼
	≥18	0	0	6¼

# Actuator Mounting

Actuators may be installed at the factory, shipped loose with the necessary linkage and brackets for mounting, or field supplied. For more detail information on actuator mounting, click on link below or scan QR code.



ACTUATOR MOUNTING

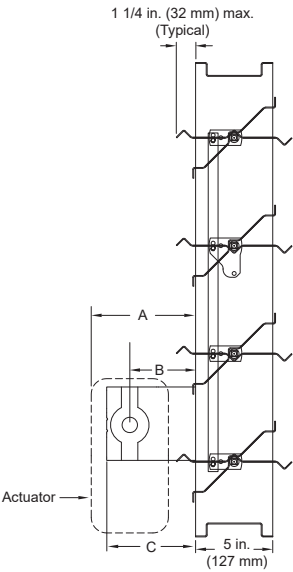


Non-jackshaft external right

# Clearance Requirements

This drawing depicts the worse case clearance requirements for an actuator with a jackshaft.

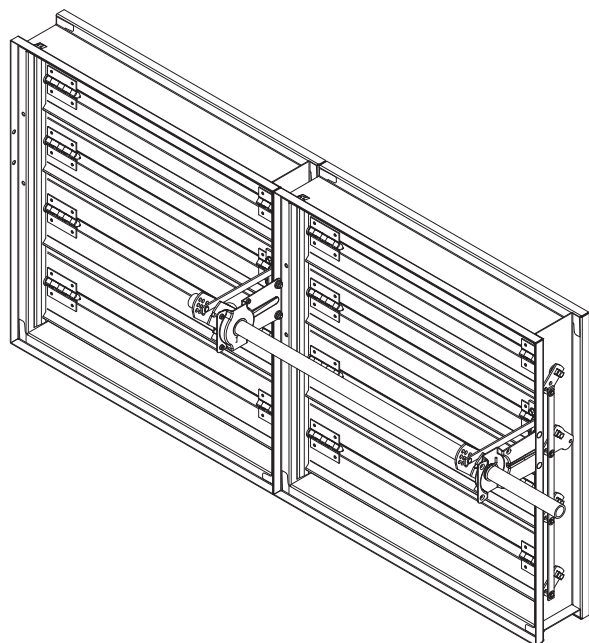
Internal mount only Actuator model	A	B	C
All except - EFB & EFCX Series	7 ¾ in (197 mm)	3 ¾ in (95 mm)	5 ⅜ in (136.5 mm)
EFB & EFCX Series	8 ½ in (216 mm)	6 in (152mm)	8 ½ in (216 mm)



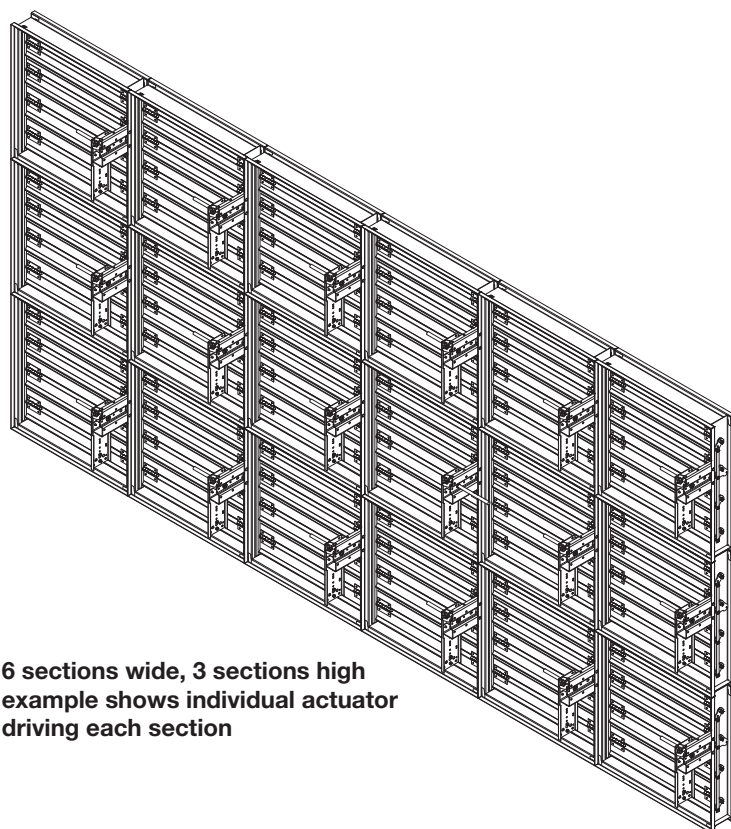
## Multi-Section Dampers

Dampers larger than the maximum single section size, will be made up of a multiple of equal size sections.

NOTE: Dampers larger than 48 in. x 74 in. (1219mm x 1880mm) are not intended to be structurally self supporting. Refer to IOM document 463384 for structural support requirements on multi-section assemblies.



2 section example shows single jackshaft driving multiple sections



6 sections wide, 3 sections high example shows individual actuator driving each section

## Document Links



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