

# Backdraft Dampers



**CVS**   
DAMPER SERIES

Reference:

Client:

Project:

Consultant:

Location:

Contractor:

Date:

Submitted by:



Your Reliable HVAC Partner

Model CB-600 Series  
Backdraft/Pressure Relief Dampers

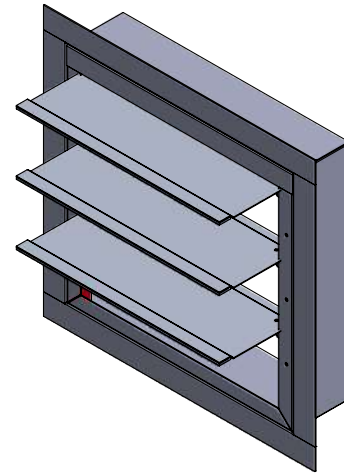
### Application:

The CVS Backdraft Dampers (also called gravity dampers) CB-600 Series allow airflow in one direction and prevent reverse airflow for use in exhaust or intake HVAC systems suitable for wall mounted applications.

Backdraft dampers can either be operated by gravity (where pressure or velocity opens and gravitational force closes the damper). These models can be provided with counter balance weights in order to assist or retard the opening of the damper.

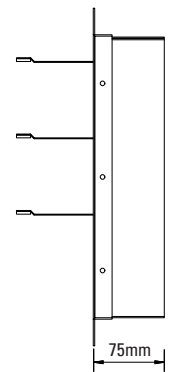
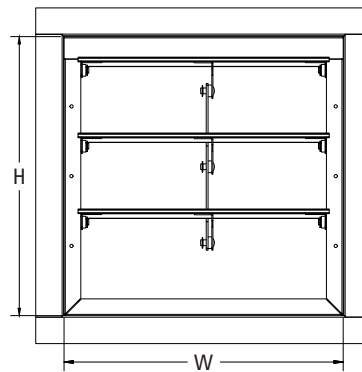
### Standard Construction:

	Standard	Optional
<b>Frame Material</b>	20 gauge galvanized steel	Galvanized steel and aluminum with different thicknesses
<b>Frame Depth</b>	75mm	-----
<b>Flange</b>	30mm	Consult factory for other sizes
<b>Blade Material and Type</b>	24 gauge galvanized steel	Galvanized steel and aluminum with different thicknesses
<b>Blade Seal</b>	Rubber Foam	Neoprene
<b>Dimensions</b>	Actual - 6mm	Actual
<b>Axle Material</b>	Plated steel	-----
<b>Axle Bearings</b>	Synthetic	-----
<b>Finishes</b>	Mill Finish	Powder Coated
<b>Counter Weight</b>	None (Backdraft)	Counter Weight (PRD)



Front View

Side View



### Minimum & Maximum Sizes:

Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
<b>CB-600 Series</b>	6" x 6" (152 x 152)	40" x 40" (1016 x 1016)	Unlimited Size (Please consult factory)

All dimensions shown in inches, parentheses ( ) indicate millimeters.

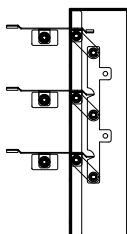
### Optional Construction:

Insect Mesh

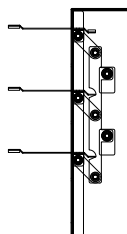
Bird Mesh

Counter Weight Options for Pressure Relief Dampers:

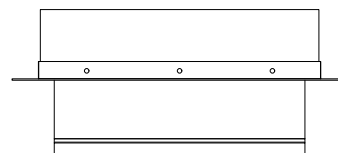
Counter Weight at Blade's Front Side



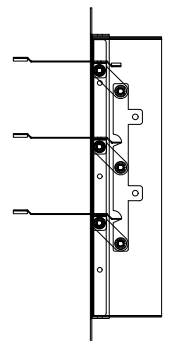
Counter Weight at Blade's Back Side



Top View



Section View



As part of our continuous improvement program, we reserve the right to make further improvements without notice.

Submittal

Reference:

Client:

Project:

Consultant:

Location:

Contractor:

Date:

Submitted by:



Your Reliable HVAC Partner

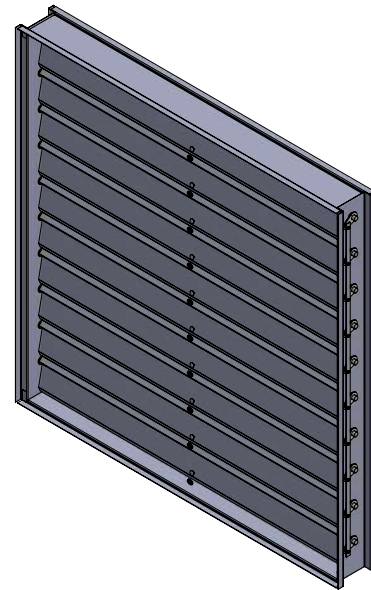
Model CB-601 Series  
Backdraft/Pressure Relief Dampers

**Application:**

The CVS Backdraft Dampers (also called gravity dampers) CB-601 Series allow airflow in one direction and prevent reverse airflow for use in exhaust or intake HVAC systems suitable for duct mounted applications. Backdraft dampers can either be operated by gravity (where pressure or velocity opens and gravitational force closes the damper). These models can be provided with counter balance weights in order to assist or retard the opening of the damper.

**Standard Construction:**

	Standard	Optional
<b>Frame Material</b>	20 gauge galvanized steel	Galvanized steel and aluminum with different thickness and flange sizes
<b>Frame Depth</b>	127mm	-----
<b>Blade Material and Type</b>	24 gauge galvanized steel	Galvanized steel and aluminum with different thicknesses
<b>Blade Seal</b>	Rubber Foam	Neoprene
<b>Dimensions</b>	Actual - 6mm	Actual
<b>Axle Material</b>	Plated steel	-----
<b>Axle Bearings</b>	Nylon	Brass
<b>Finishes</b>	Mill Finish	Powder Coated
<b>Counter Weight</b>	None (Backdraft)	Counter Weight (PRD)



**Minimum & Maximum Sizes:**

Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
<b>CB-601 Series</b>	6" x 6" (152 x 152)	40" x 40" (1016 x 1016)	Unlimited Size (Please consult factory)

All dimensions shown in inches, parentheses ( ) indicate millimeters.

**Optional Construction:**

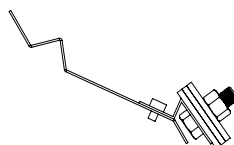
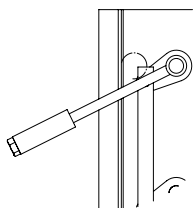
Insect Mesh

Bird Mesh

Counter Weight Options for Pressure Relief Dampers:

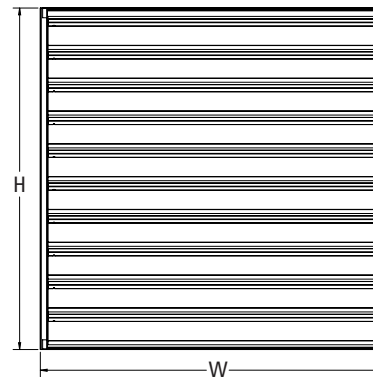
Counter Balancing - Externally

Counter Balancing - Internally



Front View

Side View



Top View



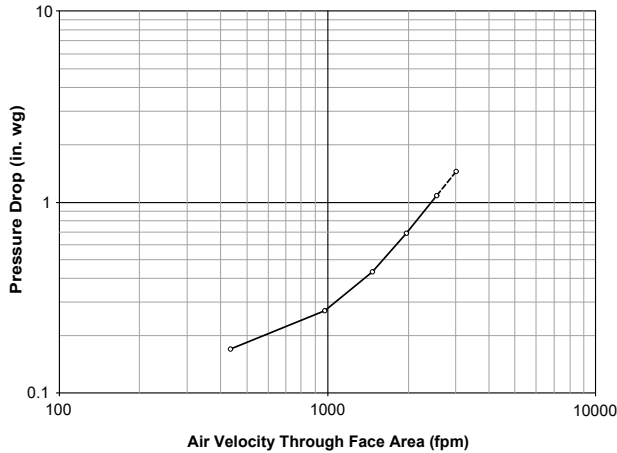
As part of our continuous improvement program, we reserve the right to make further improvements without notice.

Submittal

## PERFORMANCE DATA

Air Performance testing has been performed in accordance with Test Method as per latest version of ANSI/AMCA Standard 500-D, Figure 5.4 for Air Leakage and Figure 5.5 for Pressure Drop. Air leakage is based on operation between 0°C- 49°C(32°F - 120°F).

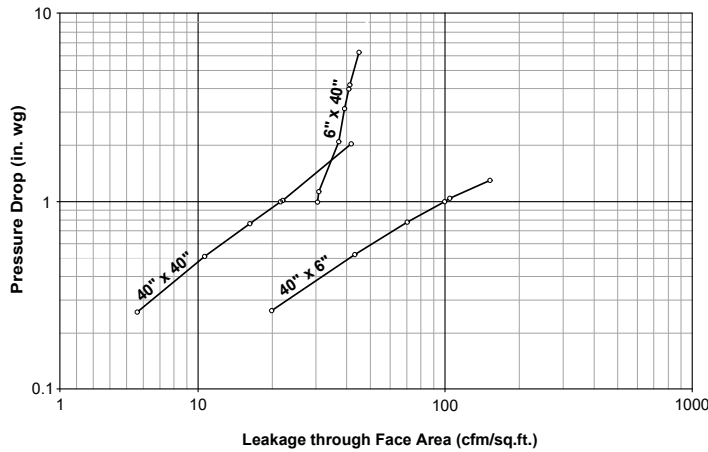
**PRESSURE DROP GRAPH - 24" x 24"**



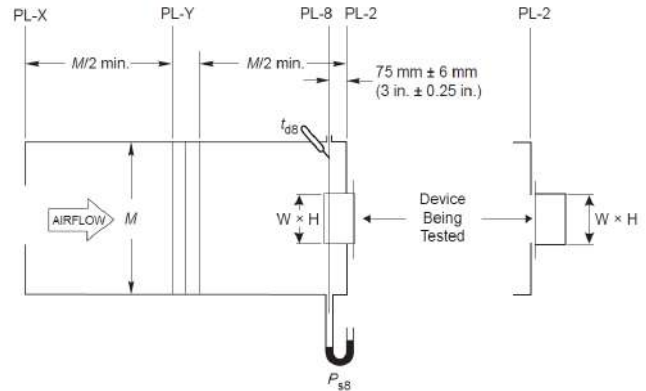
**PRESSURE DROP OF DAMPER**

24" x 24" - (610 x 610)	
Intake	
Velocity	Pressure Drop
(fpm)	(in. w.g.)
2557	1.082
1965	0.683
1472	0.432
979	0.27
434	0.17

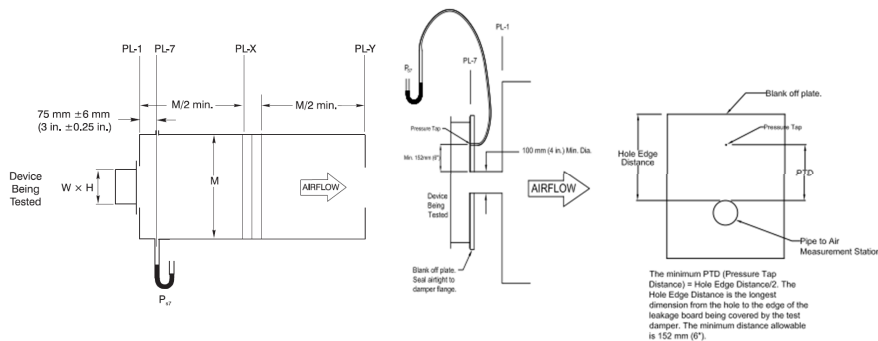
**AIR LEAKAGE GRAPH**



**Test Figure 5.5 - Test Damper Setup with Inlet Chamber**



**Test Figure 5.4 - Test Damper Setup with Outlet Chamber**



**CVSA**  
DAMPER SERIES



**SUGGESTED SPECIFICATION:**

Central Ventilation Systems certifies that the Backdraft Damper Models CB Series as shown herein are 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 and air leakage ratings only.

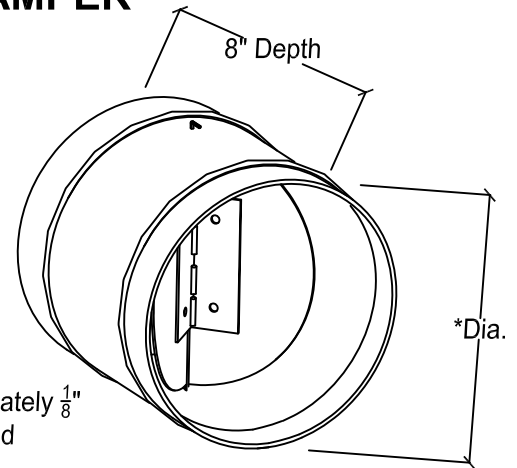
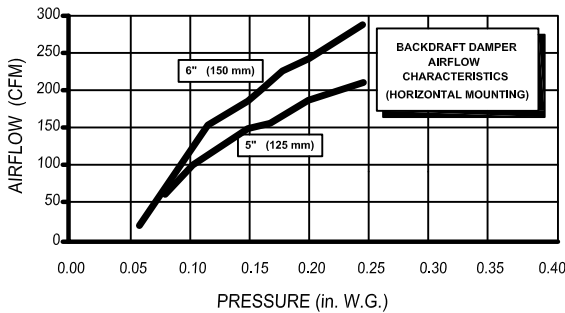
Cat ID: CB Series	Rev. No.: 00	Date: June 2023	Page: 4/5
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**BACKDRAFT DAMPERS**

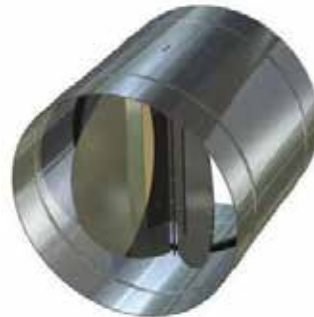
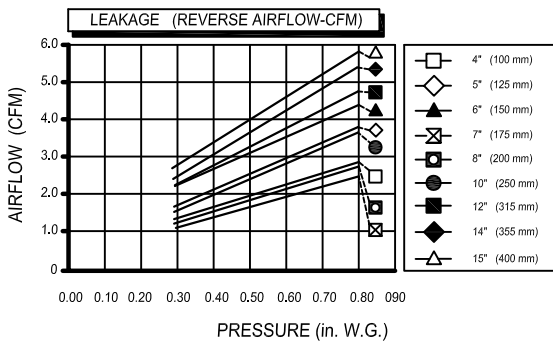
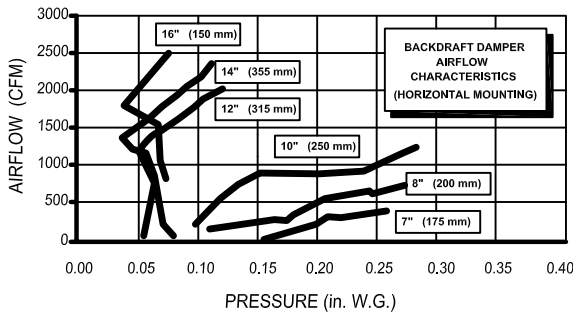
**BUTTERFLY BACKDRAFT DAMPER**

The Model BF was designed for small round dampers up to 16"Ø for pressure through .30" w.c.



**MODEL BF**

Dimensions		Maximum Velocity (FPM)
Diameter	Length	
4-10"	8"	2200
12-18"	8"	1900



**STANDARD FEATURES:**

- EDPM Rubber Gasket in Closed Position for Minimum Leakage
- Aluminum Spring Loaded Butterfly Damper (.025" alum. blades)
- 24 Gauge Galvanized Steel Housing
- Requires .04 to .08 inches w.c. to begin to open.
- May be Installed in Any Position

**SIZES AVAILABLE:**

4", 5", 6", 7", 8", 9", 10", 12", 14", 16", & 18"

Job Name:	<input type="checkbox"/> <b>MODEL BF</b>
Location:	
Architect:	
Engineer:	
Contractor:	



**BACKDRAFT DAMPERS**

**COUNTERBALANCED DAMPER**

**MODEL CD:**

The Counterbalanced Damper has been developed due to a response from contractors requiring an easy to balance damper. There are many applications: Heat Pump Relief, By Pass, etc. The CD can be adjusted by moving the weights up or down or rotating the extension arm.

**STANDARD CONSTRUCTION:**

**Frame:** Galvanized Steel, see chart for gauge

**Blade:** Light Weight Galvanized Steel

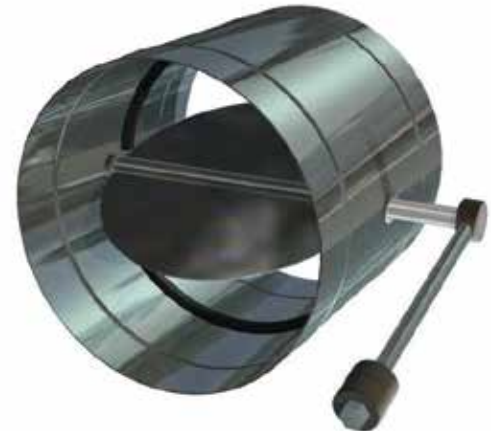
**Bearing:** Nylon 6/6

**Axle:** Aluminum Shaft 1/2" Dia.

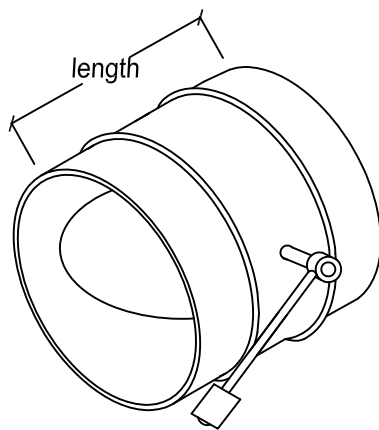
**Seal:** Volera gaskets in closed position for minimal leakage.

**OPTIONS:**

- 304 Stainless Steel Construction
- 316 Stainless Steel Construction
- Additional Weights



DIAMETER	LENGTH	FRAME & BLADE THICKNESS
4 - 10"	8"	24 GA GALVANIZED
12" - 18"	8"	20 GA GALVANIZED
20" - 32"	8"	18 GA GALVANIZED



**MODEL CD**

o.d. undersized approx. 1/8"

**PERFORMANCE**

DIAMETER	CFM	DIAMETER	CFM
6"	250	18"	3000
7"	300	20"	3700
8"	400	22"	4400
9"	600	24"	5300
10"	750	26"	6200
12"	1200	28"	7200
14"	1800	30"	8300
16"	2400	32"	9400

**Sizes Available:**

4", 5", 6", 7", 8", 9", 10", 12", 14", 16", 18", 20", 22", 24", 26", 28", 30", 32"

Job Name:

Location:

Architect:

Engineer:

Contractor:

**MODEL CD**



**BACKDRAFT DAMPERS**

**STATIC PRESSURE RELIEF DAMPER**

**Application and Design**

The Static Pressure Relief Damper, Model RCD, is a single blade steel damper with counterbalanced weighted arm. The RCD is used as a relief damper to by-pass excess air when various zone dampers close down. The RCD can be adjusted by moving the weight up and down the damper arm and also by off-setting the arm to the damper blade. The RCD is recommended for use on systems with less than 0.3" static pressure.

Additional weights can be ordered for optimum control of the damper.



MODEL RCD

**Construction:**

**Frame:** .081" Extruded Aluminum

**Blade:** .090" Aluminum

**SIZES AVAILABLE:**

12 x 8	1000 cfm	20 x 8	1600 cfm
12 x 10	1200 cfm	20 x 10	2000 cfm
12 x 12	1400 cfm	20 x 12	3000 cfm

CONSULT FACTORY FOR OTHER SIZES

Job Name:

Location:

Architect:

Engineer:

Contractor:

**MODEL RCD**



**HEAVY DUTY  
 BACKDRAFT DAMPER**

**Application and Design**

The **HCB-700** Series is a vertically or horizontally mounted backdraft damper that is designed to allow vertical or horizontal airflow and prevent reverse airflow.

**Ratings:**

- Pressure:** 4 in. w.g. - differential pressure
- Velocity:** 4000 fpm
- Temperature:** 180° F

**Standard Construction:**

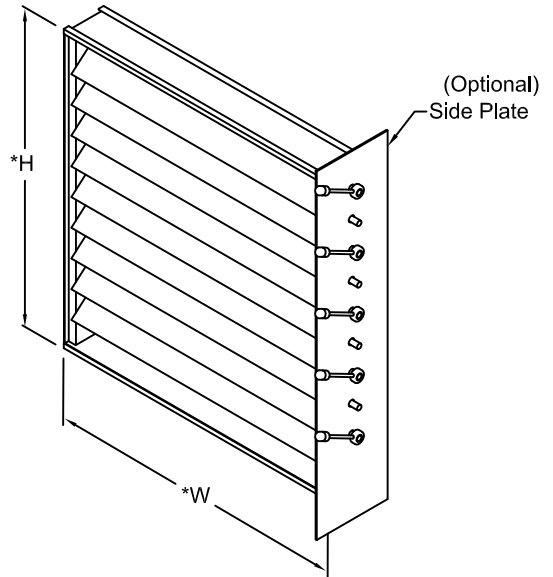
- Frame:** .081 Extruded Aluminum 4-1/2" deep
- Blade:** 6060T5 Extruded Aluminum .125 thickness
- Linkage:** Zinc plated concealed
- Axles:** 1/2" diameter cast zinc & steel
- Blade Seals:** PVC (180°F)
- Bearings:** Bronze Oilite

**Size Limitations:**

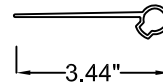
- Minimum Size:** 6" w x 6" h
- Maximum Single Section:** 48" w x 48" h
- Maximum Double Section:** 96" w x 96" h

**Options and Accessories:**

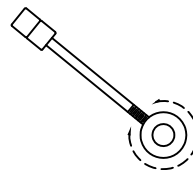
- .125 Extruded Aluminum Frame (box frame)
- 1-1/2" flanged frame- .081" extruded aluminum (no side plate)
- In airstream counterbalanced weights (no side plate)
- Epoxy coated (powder coated @ 415°F)
- 450°F Silicone blade seals
- Side Plate (20ga. galvanized steel)



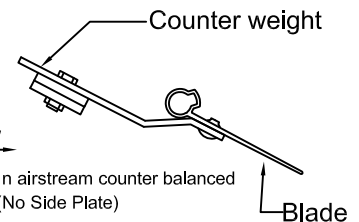
\*W & H dimensions furnished approximately 1/4" undersize.



Blade Detail



Precision Counter Balanced; both by rotation in hub or slide weight up or down the rod in addition to removal or adding weights.



AIR FLOW

Optional: In airstream counter balanced (No Side Plate)

Vertical mount with horizontal airflow shown



Optional: In airstream counter balanced (No Side Plate)

Quantity	Size		Other Options
	'W' Width	'H' Height	

Job Name:

Location:

Architect:

Engineer:

Contractor:

**MODEL HCB-700 (4000 FPM)**



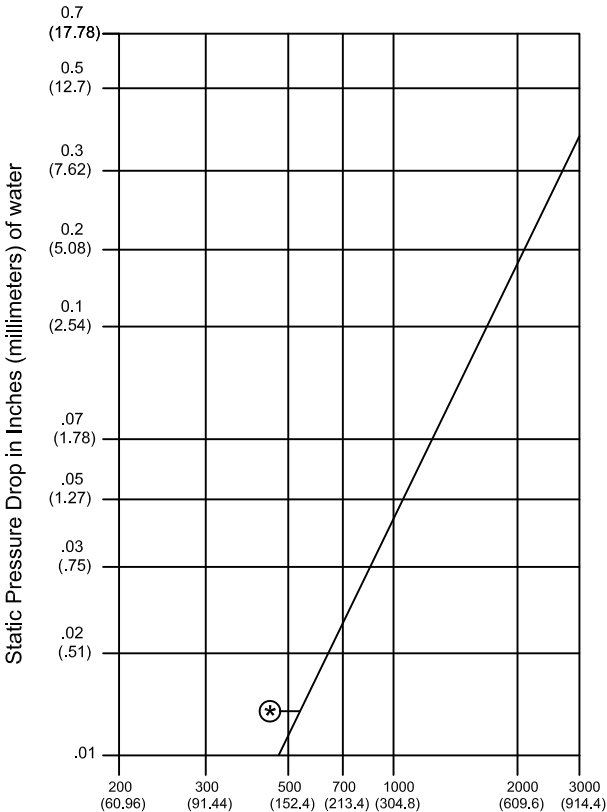
DAMPER PERFORMANCE

DAMPER WIDTH	MAXIMUM BACK PRESSURE	MAXIMUM SYSTEM VELOCITY	LEAKAGE*		BLADES START TO OPEN	BLADES FULLY OPEN
			Percent of Max. Flow	CFM/ Sq. Ft.		
48" (1219)	4.0" w.g.	4000 FPM	.61	15		
36" (914)	8.0" w.g.	4000 FPM	.6	15	** .01" w.g.	** .05" w.g.
24" (610)	12.0" w.g.	4000 FPM	.72	18		
12" (305)	16.0" w.g.	4000 FPM	1	24		

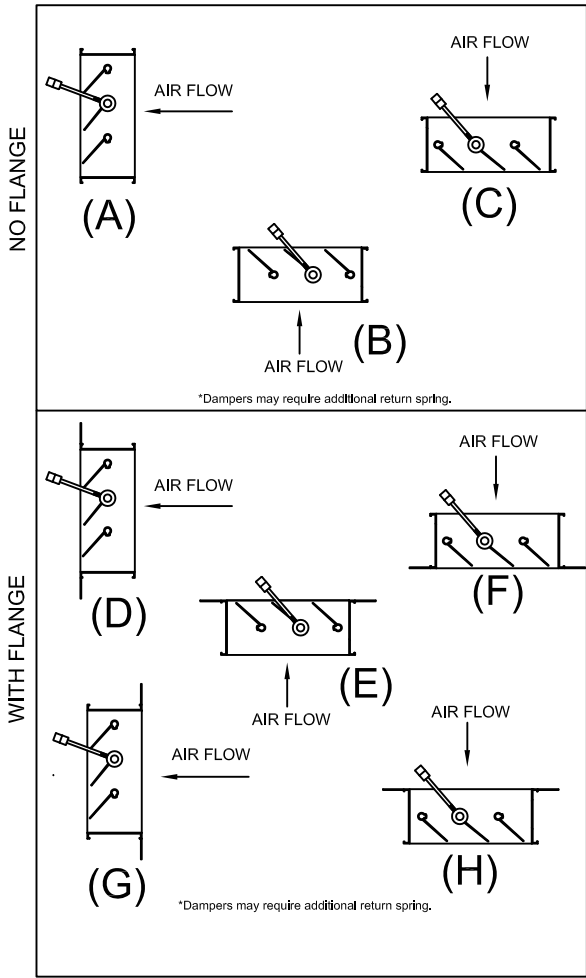
\*Leakage information based on pressure differential of 1" w.g. tested per AMCA Std. 500.

\*\*set at least resistant to open

DAMPER PRESSURE DROP  
(24" X 24")



HCB-700 AIR FLOW ARRANGEMENTS  
Standard weights at jamb  
(assist to CLOSE)





**HEAVY DUTY  
 BACKDRAFT DAMPER**

**Application and Design**

The **HCB-750** Series is a vertically or horizontally mounted backdraft damper that is designed to allow vertical or horizontal airflow and prevent reverse airflow.

**Ratings:**

- Pressure:** 4 in. w.g. - differential pressure
- Velocity:** 4000 fpm
- Temperature:** 180° F

**Standard Construction:**

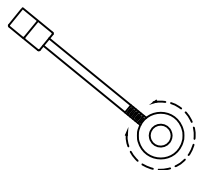
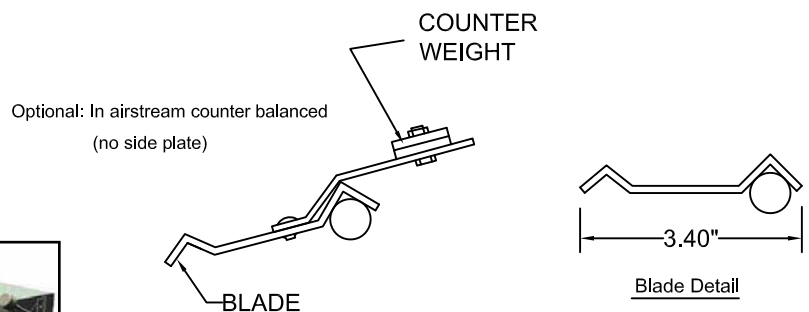
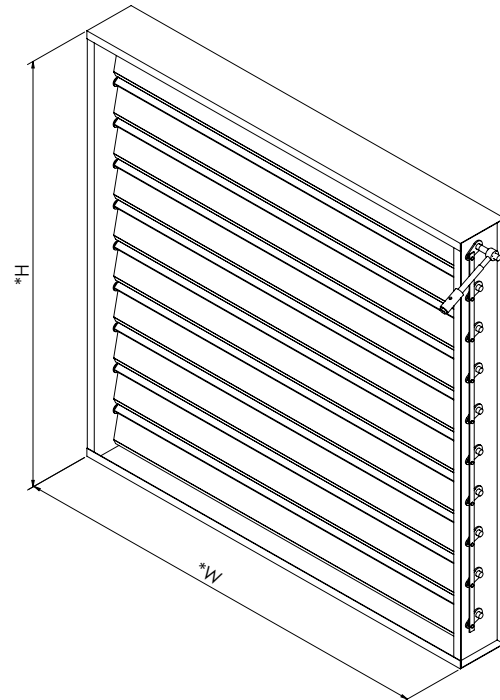
- Frame:** 16ga. Galvanized Steel
- Blade:** 16ga. Galvanized Steel V-Blade
- Linkage:** Zinc plated concealed
- Axles:** 1/2" diameter cast zinc & steel
- Bearings:** Bronze Oilite
- Blade Seals:** PVC (180° F)

**Size Limitations:**

- Minimum Size:** 6" w x 6" h
- Maximum Single Section:** 48" w x 48" h
- Maximum Double Section:** 96" w x 96" h

**Options and Accessories:**

- Heavier gauge Steel construction
- Custom flange
- Side Plate (20ga. galvanized steel)
- All #304 Stainless Steel construction
- All #316 Stainless Steel construction
- In airstream counterbalanced weights
- Epoxy coated (powder coated @ 415°F)
- 450°F silicone blade seals



Precision Counter Balanced; both by rotation in hub or slide weight up or down the rod in addition to removal or adding weights.



Quantity	Size		Other Options
	'W' Width	'H' Height	

Job Name:

Location:

Architect:

Engineer:

Contractor:

**MODEL HCB-750 (4000 FPM)**

DAMPER PERFORMANCE

DAMPER WIDTH	MAXIMUM BACK PRESSURE	MAXIMUM SYSTEM VELOCITY	LEAKAGE*		BLADES START TO OPEN	BLADES FULLY OPEN
			Percent of Max. Flow	CFM/ Sq. Ft.		
48" (1219)	4.0" w.g.	4000 FPM	.61	15		
36" (914)	8.0" w.g.	4000 FPM	.6	15	** .01" w.g.	** .05" w.g.
24" (610)	12.0" w.g.	4000 FPM	.72	18		
12" (305)	16.0" w.g.	4000 FPM	1	24		

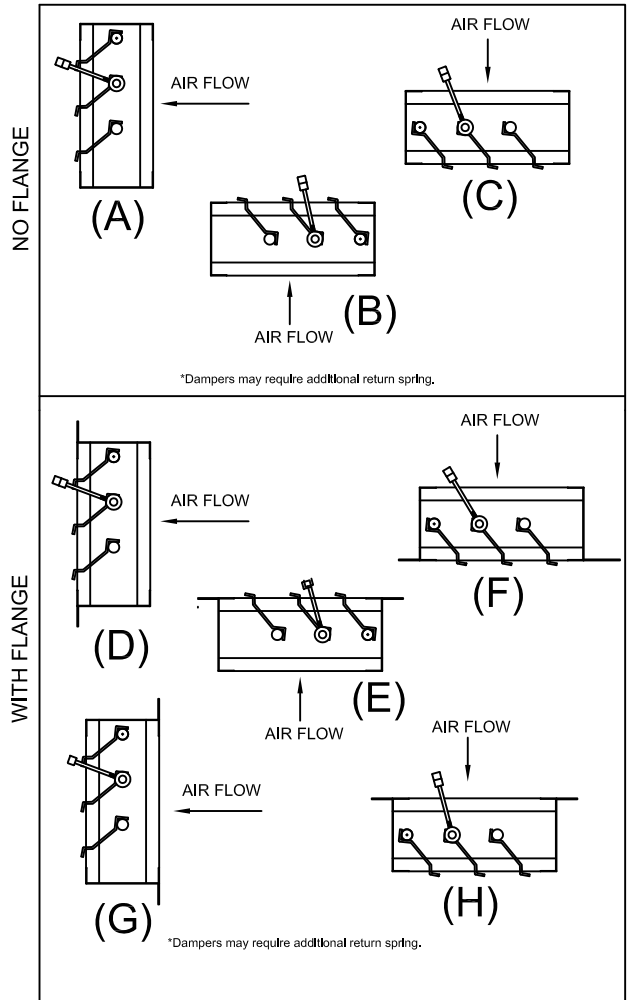
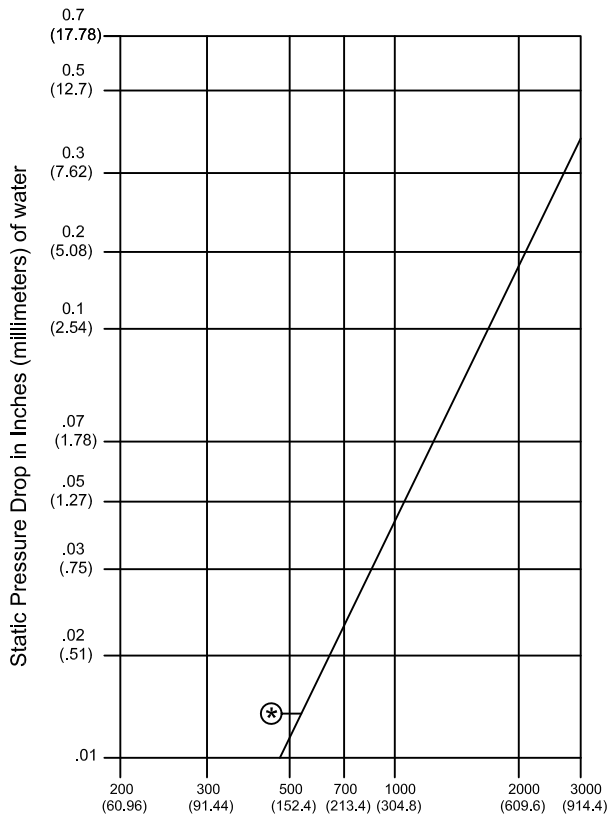
\*Leakage information based on pressure differential of 1" w.g. tested per AMCA Std. 500.

\*\*set at least resistant to open

HCB-750 AIR FLOW ARRANGEMENTS

Standard counter weights at jamb  
(assist to CLOSE)

DAMPER PRESSURE DROP  
(24" X 24")



# Product Range

- ▶ Fire-Resisting Ductwork (BS & EN)
- ▶ Fire-rated Insulation (ASTM & UL)
- ▶ Sound Attenuators (ASTM & BS)
- ▶ VAV Boxes (AHRI)
- ▶ Life Safety Dampers (UL)
- ▶ Control Dampers (AMCA & BS)
- ▶ Access Doors (BS & EN)
- ▶ Louvers (AMCA)
- ▶ Smoke Exhaust, Building, Car Park & Tunnel Ventilation Fans (AMCA & EN)
- ▶ Domestic and Industrial Ventilation Fans
- ▶ AHU, FAHU, FCU, RTU, ERV & Ecology Units (Eurovent, TUV & AHRI)
- ▶ Electrostatic Precipitators (ESPs) & UL Listed Air Filters (UL)

## Our Brands



Non-Coated Fire-Resisting Ductwork & Life Safety Dampers



Smoke Exhaust, Car Park & Tunnel Ventilation



Control Dampers, Louvers, Sound Attenuators & VAV Boxes



Coated Fire-Resisting Ductwork



General Ventilation



Fire-rated Insulation

**Central Ventilation System  
Co. L.L.C**

Al Wasit Street,  
Industrial Area 2,  
Sharjah, U.A.E

**Jamil Ali Nasser  
Al-Zadjali  
Factory for Industry**

2nd Industrial City,  
Dammam 31952,  
K.S.A

**Badr and Asfour  
Company For Engineering  
and Metal Industries**

Al Minya Industrial Zone,  
Al Minya Governorate  
2427606, Egypt

**Central Ventilation Systems  
Co. W.L.L.**

Street 9,  
Industrial Area  
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