

# Commercial Control Dampers

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Rectangular Dampers | Round Dampers | Backdraft Dampers  
Pressure Relief Dampers



**CVSA**   
DAMPER SERIES

# Commercial Control Dampers

Flange Type



**CVSA**  
DAMPER SERIES

Reference:

Client:

Project:

Consultant:

Location:

Contractor:

Date:

Submitted by:



Your Reliable HVAC Partner

### Model CDF-100 Series

Commercial Control Dampers

Airfoil Blade

Manual Quadrant/Motorised

#### Application:

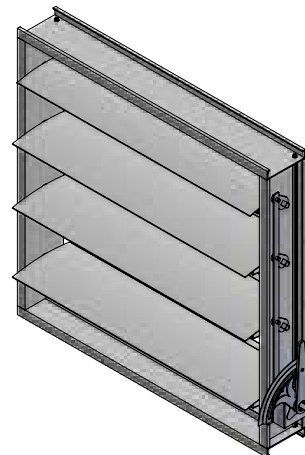
The CVS commercial control damper models CDF-100-AF-Q and CDF-100-AF-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.

The model CDF-100-AF-Q (manual quadrant) is a general purpose commercial control damper for use in manual balancing control applications where tight sealing is not of primary importance.

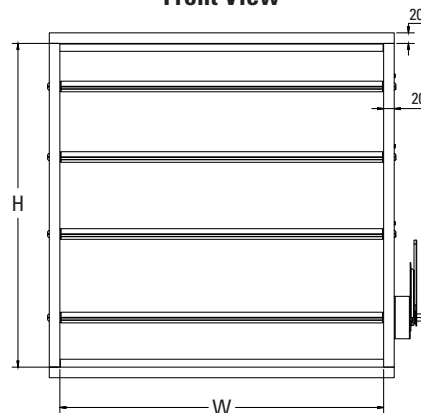
The model CDF-100-AF-M (motorised) is a general purpose commercial control damper for use in automatic balancing control or shut off applications where tight sealing is a primary requirement.

#### Standard Construction:

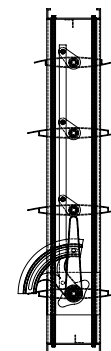
	Standard	Optional
<b>Frame Material</b>	2.3mm thick extruded aluminium 6063-T6 flanged frame	Multiple gauges galvanized steel or stainless steel flange frame and other flange sizes (only for roll formed frames)
<b>Frame Depth</b>	100mm	Other depths available (only for roll formed frames)
<b>Blade Material and Type</b>	1.4 mm thick extruded aluminum 6063-T6 airfoil shaped (Type 1)	16 gauge galvanized steel or stainless steel roll formed airfoil shape double skin profile (Type 2)
<b>Blade Seal</b>	Q - None M - Foam Type	Q - Foam Type, Neoprene, EPDM, Silicon Rubber M - Neoprene, EPDM, Silicon Rubber
<b>Blade Operator</b>	Q - Manual Quadrant M - Electric Actuator (On/Off Type)	M - Electric Actuator (Modulating type)
<b>Dimensions</b>	Actual	----
<b>Axle Material</b>	Zinc plated steel	Stainless steel
<b>Axle Bearings</b>	Nylon	Brass, Bronze, Stainless steel, Acetal Copolymer, Polycarbonate
<b>Type of Blade Operation</b>	Parallel	Opposed
<b>Jamb Seal</b>	Q - None M - SS301	Q - SS301



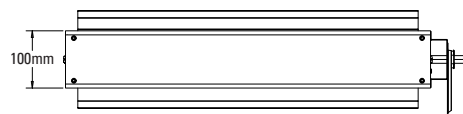
Front View



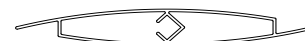
Section View



Top View



Airfoil Blade - Type 1



Airfoil Blade - Type 2



#### Minimum & Maximum Sizes:

Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
<b>CDF-100-AF-Q</b> (Manual quadrant)	5" x 6" (127 x 152)	36" x 48" (914 x 1219)	Unlimited Size (Please consult factory)
<b>CDF-100-AF-M</b> (Motorised)			

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

#### Optional Construction:

Operators: Manual Quadrant

Actuators: 24V 230V

Spring Return Non-Spring Return

On/Off Modulating

Airfoil Blade Construction: Type 2

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:



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### Model CDF-100 Series

Commercial Control Dampers

3V Blade

Manual Quadrant/Motorised

#### Application:

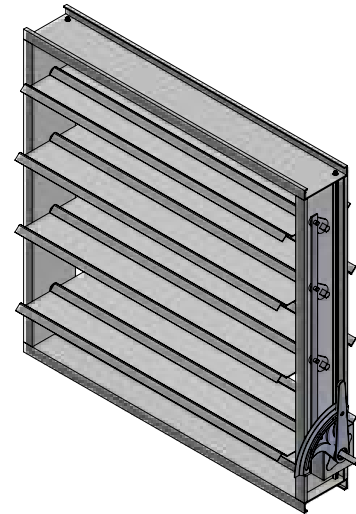
The CVS commercial control damper models CDF-100-3V-Q and CDF-100-3V-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.

The model CDF-100-3V-Q (manual quadrant) is a general purpose commercial control damper for use in manual balancing control applications where tight sealing is not of primary importance.

The model CDF-100-3V-M (motorised) is a general purpose commercial control damper for use in automatic balancing control or shut off applications where tight sealing is a primary requirement.

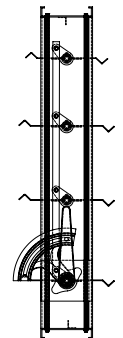
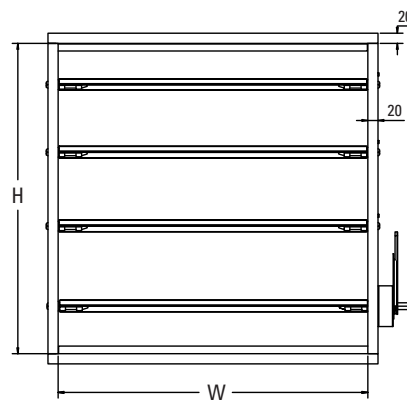
#### Standard Construction:

	Standard	Optional
<b>Frame Material</b>	2.3mm thick extruded aluminium 6063-T6 flanged frame	Multiple gauges galvanized steel or stainless steel flange frame and other flange sizes (only for roll formed frames)
<b>Frame Depth</b>	100mm	Other depths available (only for roll formed frames)
<b>Blade Material and Type</b>	16 gauge galvanized steel roll formed 3V shape profile	Multiple gauges of galvanized steel & stainless steel roll formed 3V shape profile
<b>Blade Seal</b>	Q - None M - Foam Type	Q - Foam Type, Neoprene, EPDM, Silicon Rubber M - Neoprene, EPDM, Silicon Rubber
<b>Blade Operator</b>	Q - Manual Quadrant M - Electric Actuator (On/Off Type)	M - Electric Actuator (Modulating type)
<b>Dimensions</b>	Actual	-----
<b>Axle Material</b>	Zinc plated steel	Stainless steel
<b>Axle Bearings</b>	Nylon	Brass, Bronze, Stainless steel
<b>Type of Blade Operation</b>	Parallel	Opposed
<b>Jamb Seal</b>	Q - None M - SS301	Q - SS301

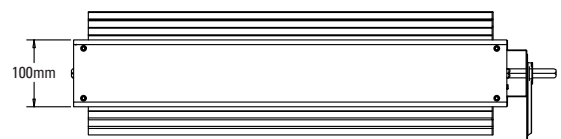


Front View

Section View



Top View



#### Minimum & Maximum Sizes:

Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
<b>CDF-100-3V-Q</b> (Manual quadrant)	4" x 4" (101 x 101)	36" x 48" (914 x 1219)	Unlimited Size (Please consult factory)
<b>CDF-100-3V-M</b> (Motorised)			

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

#### Optional Construction:

Operators:

Actuators: 24V 230V  
Spring Return Non-Spring Return  
On/Off Modulating

Manual Quadrant

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:



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### Model CDF-165 Series

Commercial Control Dampers

Airfoil Blade

Manual Quadrant/Motorised

#### Application:

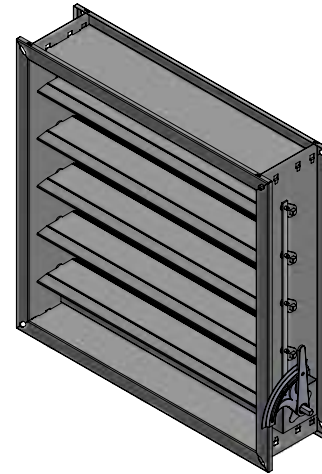
The CVS commercial control damper models CDF-165-AF-Q and CDF-165-AF-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.

The model CDF-165-AF-Q (manual quadrant) is a general purpose commercial control damper for use in manual balancing control applications where tight sealing is not of primary importance.

The model CDF-165-AF-M (motorised) is a general purpose commercial control damper for use in automatic balancing control or shut off applications where tight sealing is a primary requirement.

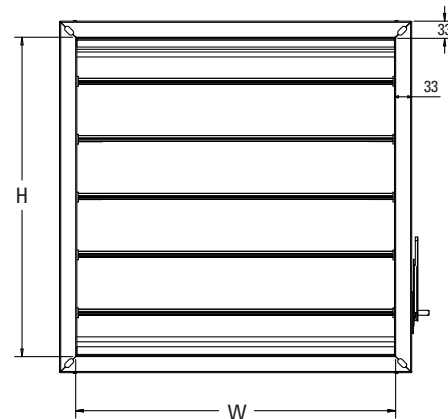
#### Standard Construction:

	Standard	Optional
<b>Frame Material</b>	20 gauge thick roll formed galvanized steel flanged frame	Multiple gauges galvanized steel or stainless steel flange frame and other flange sizes (only for roll formed frames)
<b>Frame Depth</b>	165mm	Other depths available (only for roll formed frames)
<b>Blade Material and Type</b>	16 gauge galvanized steel roll formed airfoil shape double skin profile (Type 2)	1.4 mm thick extruded aluminum 6063-T6 airfoil shape (Type 1)
<b>Blade Seal</b>	Q - None M - Foam Type	Q - Foam Type, Neoprene, EPDM, Silicon Rubber M - Neoprene, EPDM, Silicon Rubber
<b>Blade Operator</b>	Q - Manual Quadrant M - Electric Actuator (On/Off Type)	M - Electric Actuator (Modulating type)
<b>Dimensions</b>	Actual	-----
<b>Axle Material</b>	Zinc plated steel	Stainless steel
<b>Axle Bearings</b>	Nylon	Brass, Bronze, Stainless steel, Acetal Copolymer, Polycarbonate
<b>Type of Blade Operation</b>	Parallel	Opposed
<b>Jamb Seal</b>	Q - None M - SS301	Q - SS301

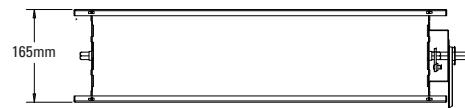


Front View

Section View



Top View



Airfoil Blade - Type 1



Airfoil Blade - Type 2



#### Minimum & Maximum Sizes:

Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
<b>CDF-165-AF-Q (Manual quadrant)</b>	5" x 6" (127 x 152)	36" x 48" (914 x 1219)	Unlimited Size (Please consult factory)
<b>CDF-165-AF-M (Motorised)</b>			

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

#### Optional Construction:

Operators: Manual Quadrant

Actuators: 24V 230V

Spring Return Non-Spring Return

On/Off Modulating

Airfoil Blade Construction: Type 1

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:



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### Model CDF-165 Series

Commercial Control Dampers

3V Blade

Manual Quadrant/Motorised

#### Application:

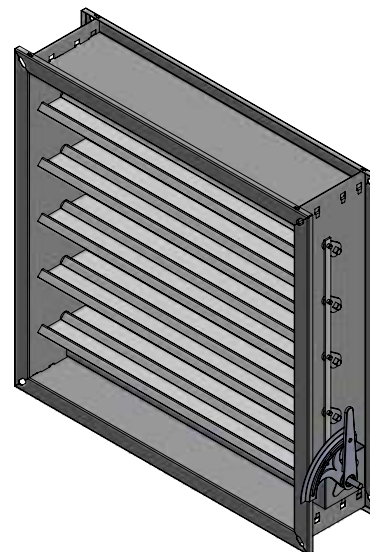
The CVS commercial control damper models CDF-165-3V-Q and CDF-165-3V-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.

The model CDF-165-3V-Q (manual quadrant) is a general purpose commercial control damper for use in manual balancing control applications where tight sealing is not of primary importance.

The model CDF-165-3V-M (motorised) is a general purpose commercial control damper for use in automatic balancing control or shut off applications where tight sealing is a primary requirement.

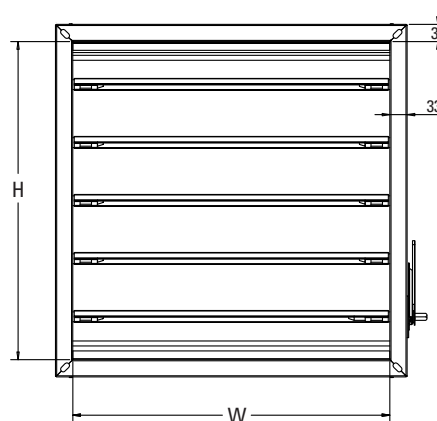
#### Standard Construction:

	Standard	Optional
<b>Frame Material</b>	20 gauge thick roll formed galvanized steel flanged frame	Multiple gauges galvanized steel or stainless steel flange frame and other flange sizes (only for roll formed frames)
<b>Frame Depth</b>	165mm	Other depths available (only for roll formed frames)
<b>Blade Material and Type</b>	16 gauge galvanized steel roll formed 3V shape profile	Multiple gauges of galvanized steel & stainless steel roll formed 3V shape profile
<b>Blade Seal</b>	Q - None M - Foam Type	Q - Foam Type, Neoprene, EPDM, Silicon Rubber M - Neoprene, EPDM, Silicon Rubber
<b>Blade Operator</b>	Q - Manual Quadrant M - Electric Actuator (On/Off Type)	M - Electric Actuator (Modulating type)
<b>Dimensions</b>	Actual	
<b>Axle Material</b>	Zinc plated steel	Stainless steel
<b>Axle Bearings</b>	Nylon	Brass, Bronze, Stainless steel
<b>Type of Blade Operation</b>	Parallel	Opposed
<b>Jamb Seal</b>	Q - None M - SS301	Q - SS301

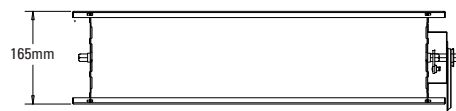


Front View

Section View



Top View



#### Minimum & Maximum Sizes:

Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
<b>CDF-165-3V-Q (Manual quadrant)</b>	4" x 4" (101 x 101)	36" x 48" (914 x 1219)	Unlimited Size (Please consult factory)
<b>CDF-165-3V-M (Motorised)</b>			

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

#### Optional Construction:

Operators:

Actuators: 24V 230V  
Spring Return Non-Spring Return  
On/Off Modulating

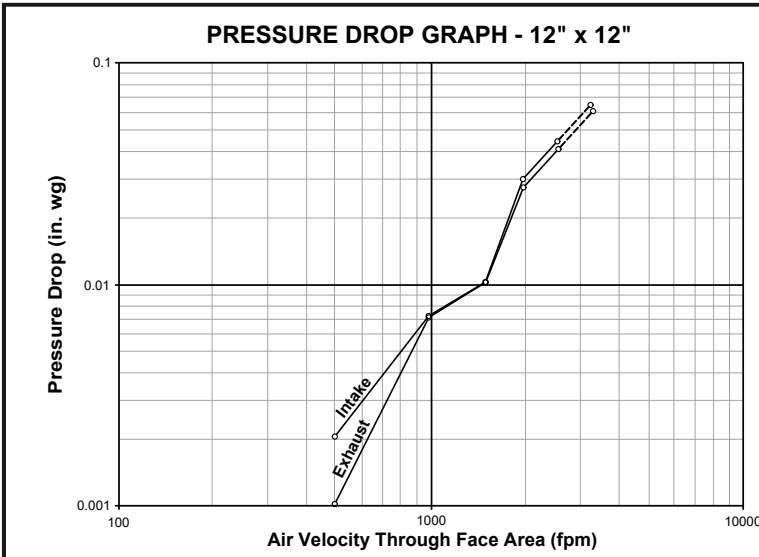
Manual Quadrant

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

Submittal

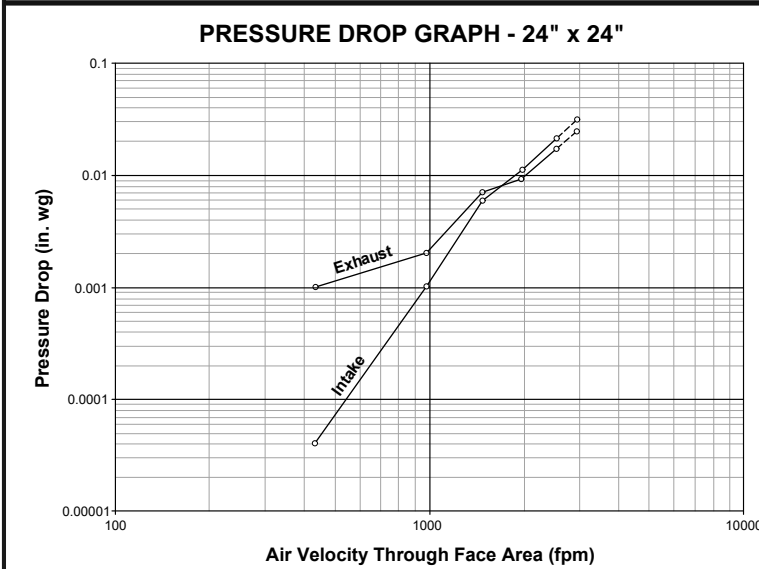
## PRESSURE DROP - INTAKE AND EXHAUST:

Air Performance testing has been performed in accordance with Test Method as per latest version of ANSI/AMCA Standard 500-D, Figure 5.3 (Duct Upstream and Downstream).



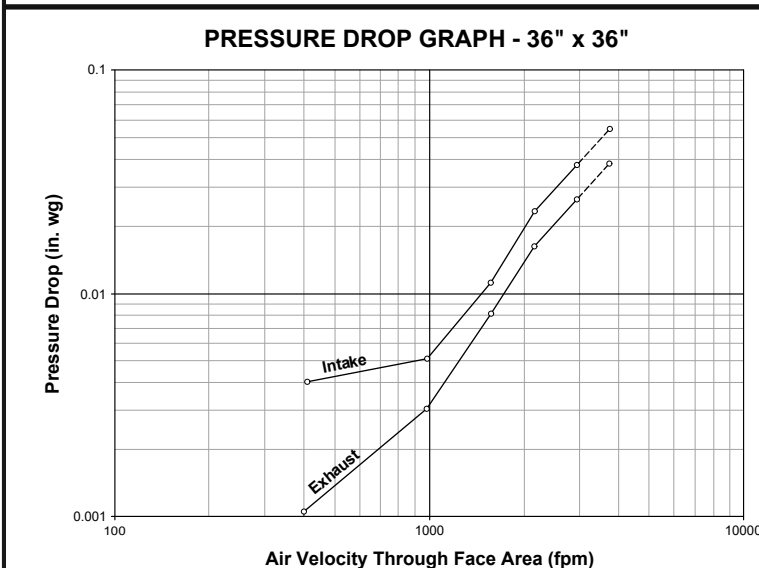
**PRESSURE DROP OF DAMPER**

12" x 12" - (305 x 305)			
Intake		Exhaust	
Velocity	Pressure Drop	Velocity	Pressure Drop
(fpm)	(in. w.g.)	(fpm)	(in. w.g.)
2468	0.044	2471	0.041
1964	0.03	1965	0.028
1472	0.01	1472	0.01
982	0.007	984	0.007
502	0.002	502	0.001



**PRESSURE DROP OF DAMPER**

24" x 24" - (610 x 610)			
Intake		Exhaust	
Velocity	Pressure Drop	Velocity	Pressure Drop
(fpm)	(in. w.g.)	(fpm)	(in. w.g.)
2530	0.021	2531	0.017
1966	0.011	1964	0.009
1473	0.006	1473	0.007
976	0.001	976	0.002
431	0.000	434	0.001



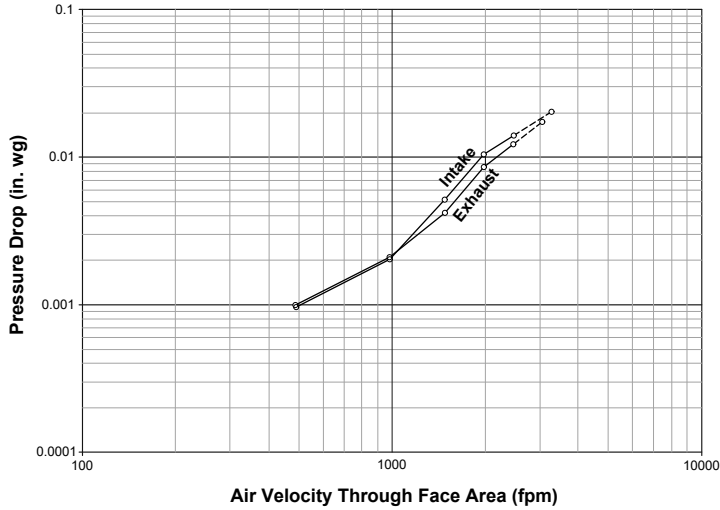
**PRESSURE DROP OF DAMPER**

36" x 36" - (914 x 914)			
Intake		Exhaust	
Velocity	Pressure Drop	Velocity	Pressure Drop
(fpm)	(in. w.g.)	(fpm)	(in. w.g.)
2948	0.038	2950	0.026
2160	0.023	2161	0.016
1570	0.011	1571	0.008
981	0.005	982	0.003
409	0.004	399	0.001

## PRESSURE DROP - INTAKE AND EXHAUST:

Air Performance testing has been performed in accordance with Test Method as per latest version of ANSI/AMCA Standard 500-D, Figure 5.3 (Duct Upstream and Downstream).

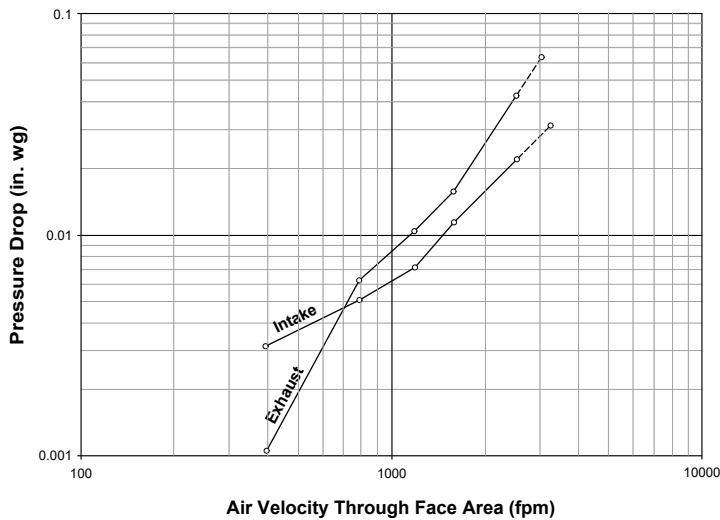
**PRESSURE DROP GRAPH - 12" x 48"**



**PRESSURE DROP OF DAMPER**

12" x 48" - (305 x 1219)			
Intake		Exhaust	
Velocity	Pressure Drop	Velocity	Pressure Drop
(fpm)	(in. w.g.)	(fpm)	(in. w.g.)
2473	0.014	2470	0.012
1978	0.01	1976	0.009
1482	0.005	1481	0.004
984	0.002	982	0.002
490	0.001	488	0.001

**PRESSURE DROP GRAPH - 48" x 12"**



**PRESSURE DROP OF DAMPER**

48" x 12" - (1219 x 305)			
Intake		Exhaust	
Velocity	Pressure Drop	Velocity	Pressure Drop
(fpm)	(in. w.g.)	(fpm)	(in. w.g.)
2531	0.022	2534	0.043
1587	0.011	1589	0.016
1189	0.007	1188	0.01
791	0.005	790	0.006
394	0.003	397	0.001

**CVSA**  
DAMPER SERIES



**SUGGESTED SPECIFICATION:**

Central Ventilation Systems certifies that the Flange Type VCD Models CDF 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.

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## AIR LEAKAGE

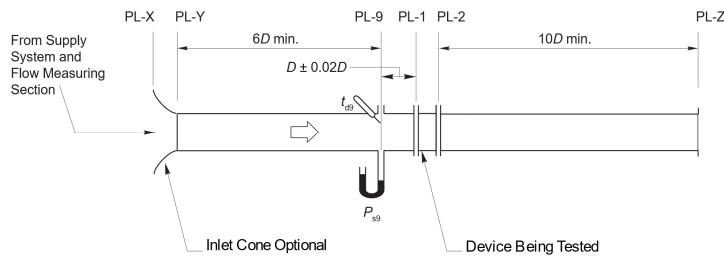
Tested for air leakage at standard air density in accordance with latest version of ANSI/AMCA Standard 500-D, Figure 5.4.

Data are based on a torque of 44in.-lbs./ft<sup>2</sup> applied to close and seal the damper during the test. Air leakage is based on operation between 0°C-49°C (32°F-120°F).

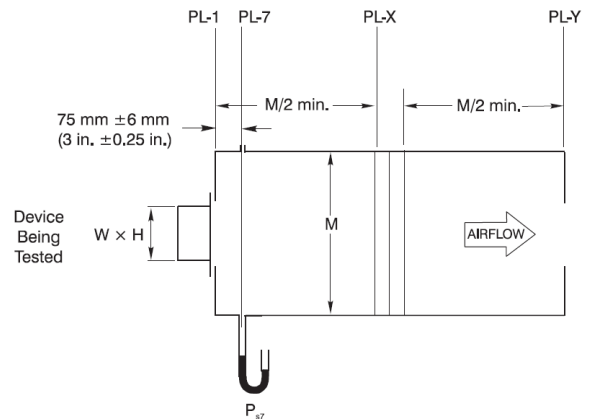
Maximum Allowable Leakage, cfm/ft <sup>2</sup>					
Class	1 in. w.g.	2 in. w.g.	3 in. w.g.	4 in. w.g.	6 in. w.g.
1A	3	N/A	N/A	N/A	N/A
1	4	6	7	8	10
2	10	14	17	20	25

AMCA Leakage Class					
Damper Size	1 in. w.g.	2 in. w.g.	3 in. w.g.	4 in. w.g.	6 in. w.g.
12 inch. x 48 inch. (305 mm x 1219 mm)	Class 1A	Class 1	Class 1	Class 1	Class 1
36 inch. x 36 inch. (914 mm x 914 mm)	Class 1A	Class 1	Class 1	Class 1	Class 1
48 inch. x 36 inch. (1219 mm x 914 mm)	Class 1A	Class 1	Class 1	Class 1	Class 1

**Test Figure 5.3 - Test Damper Setup with Inlet and Outlet Ducts**



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



**CVSA**  
DAMPER SERIES



**SUGGESTED SPECIFICATION:**

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The AMCA Certified Ratings Seal applies to air performance and air leakage ratings only.

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# Commercial Control Dampers

Hat Shape



**CVSA**   
DAMPER SERIES

Reference:

Client:

Project:

Consultant:

Location:

Contractor:

Date:

Submitted by:



Manufacturing Excellence

### Model CDH-125 Series

Control Dampers

3V Blade

Manual Quadrant/Motorised

#### Application:

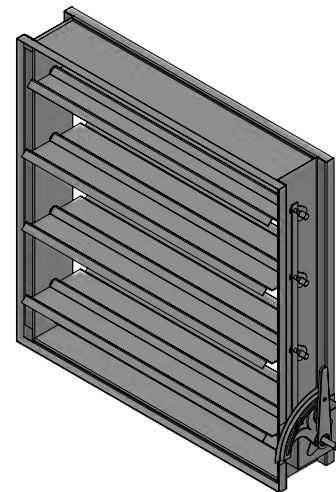
The CVS control damper models CDH-125-3V-Q and CDH-125-3V-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.

The model CDH-125-3V-Q (manual quadrant) is a general purpose commercial control damper for use in manual balancing control applications where tight sealing is not of primary importance.

The model CDH-125-3V-M (motorised) is a general purpose commercial control damper for use in automatic balancing control applications where tight sealing is a primary requirement.

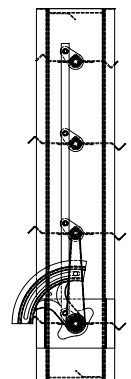
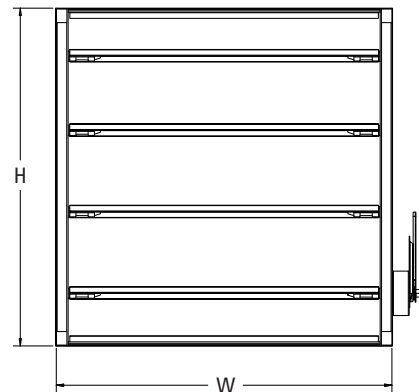
#### Standard Construction:

	Standard	Optional
<b>Frame Material</b>	20 gauge thick roll formed galvanized steel hat shape frame	Multiple gauges galvanized steel or stainless steel flanged frame (only for roll formed frame)
<b>Frame Depth</b>	127mm	Other depths available (only for roll formed frames)
<b>Blade Material and Type</b>	16 gauge galvanized steel roll formed 3V shape profile	Multiple gauges of galvanized steel & stainless steel roll formed 3V shape profile
<b>Blade Seal</b>	Q - None M - Foam Type	Q - Foam Type, Neoprene, EPDM, Silicon Rubber M - Neoprene, EPDM, Silicon Rubber
<b>Blade Operator</b>	Q - Manual Quadrant M - Electric Actuator (On/Off Type)	M - Electric Actuator (Modulating type)
<b>Dimensions</b>	Actual - 6mm	Actual
<b>Axle Material</b>	Zinc plated steel	Stainless steel
<b>Axle Bearings</b>	Nylon	Brass, Bronze, Stainless steel
<b>Type of Blade Operation</b>	Parallel	Opposed
<b>Jamb Seal</b>	Q - None M - SS301	Q - SS301

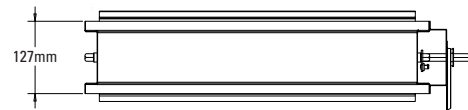


Front View

Section View



Top View



#### Minimum & Maximum Sizes:

Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
<b>CDF-125-3V-Q</b> (Manual quadrant)	4" x 4" (101 x 101)	36" x 48" (914 x 1219)	Unlimited Size (Please consult factory)
<b>CDF-125-3V-M</b> (Motorised)			

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

#### Optional Construction:

Operators:

- Actuators: 24V 230V
- Spring Return Non-Spring Return
- On/Off Modulating
- Manual Quadrant

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:



Manufacturing Excellence

### Model CDH-125 Series

Control Dampers

Airfoil Blade

Manual Quadrant/Motorised

#### Application:

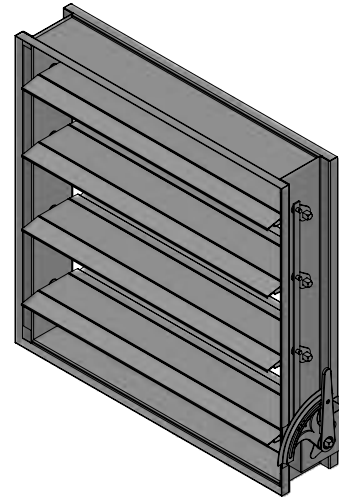
The CVS control damper models CDH-125-AF-Q and CDH-125-AF-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.

The model CDH-125-AF-Q (manual quadrant) is a general purpose commercial control damper for use in manual balancing control applications where tight sealing is not of primary importance.

The model CDH-125-AF-M (motorised) is a general purpose commercial control damper for use in automatic balancing control applications where tight sealing is a primary requirement.

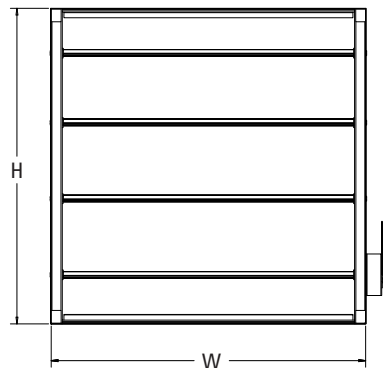
#### Standard Construction:

	Standard	Optional
<b>Frame Material</b>	20 gauge thick roll formed galvanized steel hat shape frame	Multiple gauges galvanized steel or stainless steel hat shape frame (only for roll formed frames)
<b>Frame Depth</b>	127mm	Other depths available (only for roll formed frames)
<b>Blade Material and Type</b>	16 gauge galvanized steel roll formed airfoil shape double skin profile (Type 2)	1.4 mm thick extruded aluminum 6063-T6 airfoil shape (Type 1)
<b>Blade Seal</b>	Q - None M - Foam Type	Q - Foam Type, Neoprene, EPDM, Silicon Rubber M - Neoprene, EPDM, Silicon Rubber
<b>Blade Operator</b>	Q - Manual Quadrant M - Electric Actuator (On/Off Type)	M - Electric Actuator (Modulating type)
<b>Dimensions</b>	Actual - 6mm	Actual
<b>Axle Material</b>	Zinc plated steel	Stainless steel
<b>Axle Bearings</b>	Nylon	Brass, Bronze, Stainless steel,
<b>Type of Blade Operation</b>	Parallel	Opposed
<b>Jamb Seal</b>	Q - None M - SS301	Q - SS301

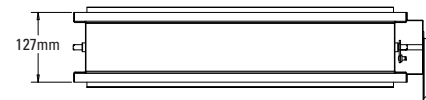


Front View

Section View



Top View



#### Minimum & Maximum Sizes:

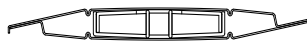
Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
<b>CDH-125-AF-Q (Manual quadrant)</b>	4" x 6" (101 x 152)	36" x 48" (914 x 1219)	Unlimited Size (Please consult factory)
<b>CDH-125-AF-M (Motorised)</b>			

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

#### Airfoil Blade - Type 1



#### Airfoil Blade - Type 2



#### Optional Construction:

Operators:

Actuators: 24V 230V  
Spring Return Non-Spring Return  
On/Off Modulating

Manual Quadrant

Airfoil Blade Construction: Type 1

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:



Manufacturing Excellence

### Model CDH-150 Series

Control Dampers

3V Blade

Manual Quadrant/Motorised

#### Application:

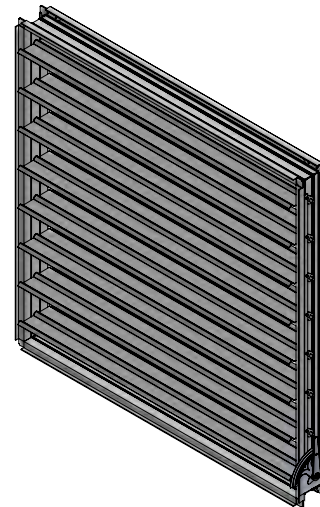
The CVS control damper models CDH-150-3V-Q and CDH-150-3V-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.

The model CDH-150-3V-Q (manual quadrant) is a general purpose commercial control damper for use in manual balancing control applications where tight sealing is not of primary importance.

The model CDH-150-3V-M (motorised) is a general purpose commercial control damper for use in automatic balancing control applications where tight sealing is a primary requirement.

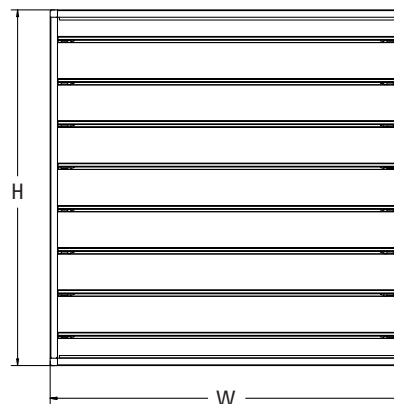
#### Standard Construction:

	Standard	Optional
<b>Frame Material</b>	3.2 mm thick extrude aluminum 6063-T6, hat shape frame	Multiple gauges galvanized steel or stainless steel flanged frame (only for roll formed frame)
<b>Frame Depth</b>	127mm	Other depths available (only for roll formed frames)
<b>Blade Material and Type</b>	16 gauge galvanized steel roll formed 3V shape profile	Multiple gauges of galvanized steel & stainless steel roll formed 3V shape profile
<b>Blade Seal</b>	Q - None M - Foam Type	Q - Foam Type, Neoprene, EPDM, Silicon Rubber M - Neoprene, EPDM, Silicon Rubber
<b>Blade Operator</b>	Q - Manual Quadrant M - Electric Actuator (On/Off Type)	M - Electric Actuator (Modulating type)
<b>Dimensions</b>	Actual - 6mm	Actual
<b>Axle Material</b>	Zinc plated steel	Stainless steel
<b>Axle Bearings</b>	Nylon	Brass, Bronze, Stainless steel
<b>Type of Blade Operation</b>	Parallel	Opposed
<b>Jamb Seal</b>	Q - None M - SS301	Q - SS301



Front View

Section View



Top View



#### Minimum & Maximum Sizes:

Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
<b>CDH-150-3V-Q</b> (Manual quadrant)	4" x 4" (101 x 101)	36" x 48" (914 x 1219)	Unlimited Size (Please consult factory)
<b>CDH-150-3V-M</b> (Motorised)			

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

#### Optional Construction:

Operators:

Actuators: 24V 230V  
Spring Return Non-Spring Return  
On/Off Modulating

Manual Quadrant

3V Blade Construction

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:



Manufacturing Excellence

### Model CDH-150 Series

Control Dampers

Airfoil Blade

Manual Quadrant/Motorised

### Application:

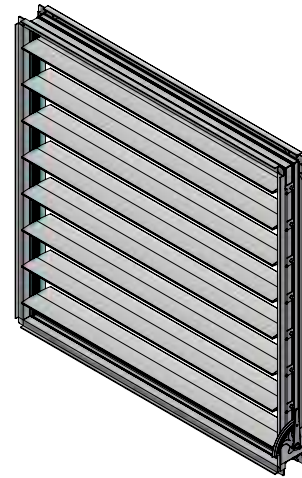
The CVS control damper models CDH-150-AF-Q and CDH-150-AF-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.

The model CDH-150-AF-Q (manual quadrant) is a general purpose commercial control damper for use in manual balancing control applications where tight sealing is not of primary importance.

The model CDH-150-AF-M (motorised) is a general purpose commercial control damper for use in automatic balancing control applications where tight sealing is a primary requirement.

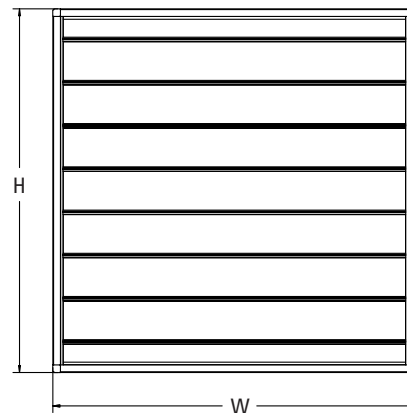
### Standard Construction:

	Standard	Optional
<b>Frame Material</b>	3.2 mm thick extrud aluminum 6063-T6, hat shape frame	Multiple gauges galvanized steel or stainless steel hat shape frame (only for roll formed frames)
<b>Frame Depth</b>	127mm	Other depths available (only for roll formed frames)
<b>Blade Material and Type</b>	1.85 mm thick extrude aluminum 6063-T6 airfoil shape	-----
<b>Blade Seal</b>	Q - None M - EPDM	Q - EPDM
<b>Blade Operator</b>	Q - Manual Quadrant M - Electric Actuator (On/Off Type)	M - Electric Actuator (Modulating type)
<b>Dimensions</b>	Actual - 6mm	Actual
<b>Axle Material</b>	Zinc plated steel	Stainless steel
<b>Axle Bearings</b>	Acetal Copolymer, Polycarbonate	Nylon
<b>Type of Blade Operation</b>	Parallel	Opposed
<b>Jamb Seal</b>	Q - None M - SS301	Q - SS301



Front View

Section View



Top View



### Minimum & Maximum Sizes:

Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
<b>CDH-150-AF-Q</b> (Manual quadrant)	4" x 6" (101 x 152)	36" x 48" (914 x 1219)	Unlimited Size (Please consult factory)
<b>CDH-150-AF-M</b> (Motorised)			

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

### Optional Construction:

Operators:

Actuators: 24V 230V  
 Spring Return Non-Spring Return  
 On/Off Modulating

Manual Quadrant

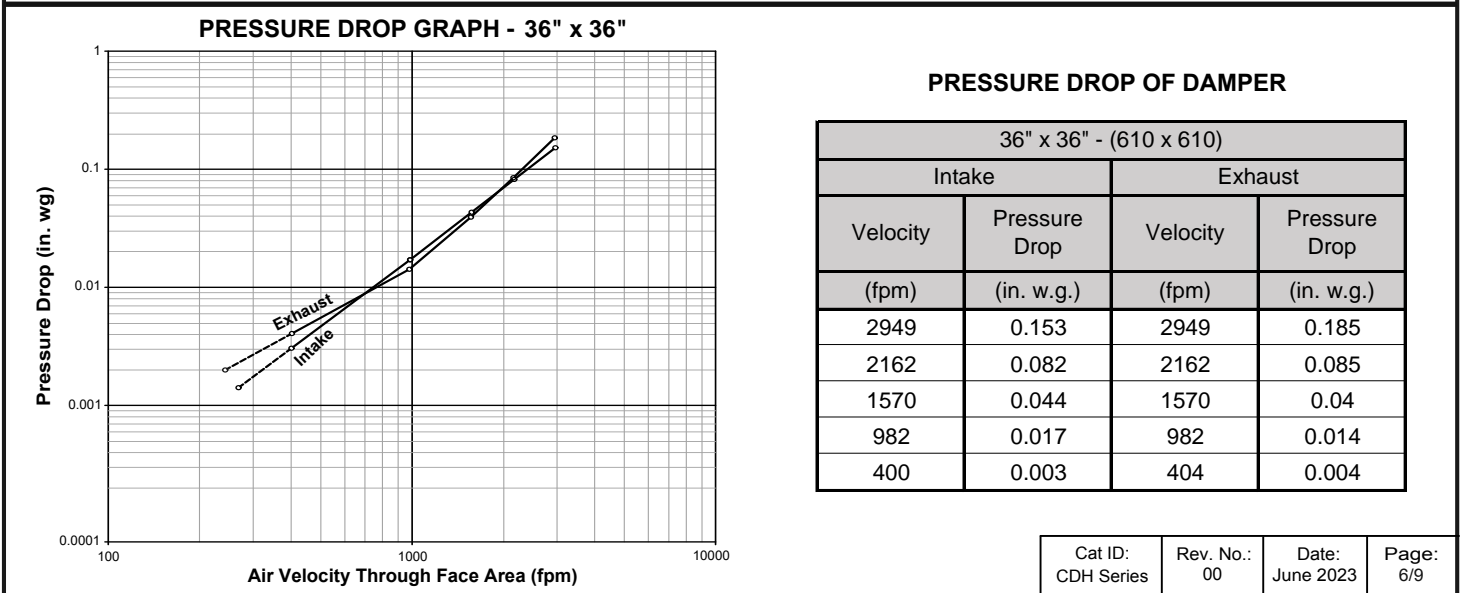
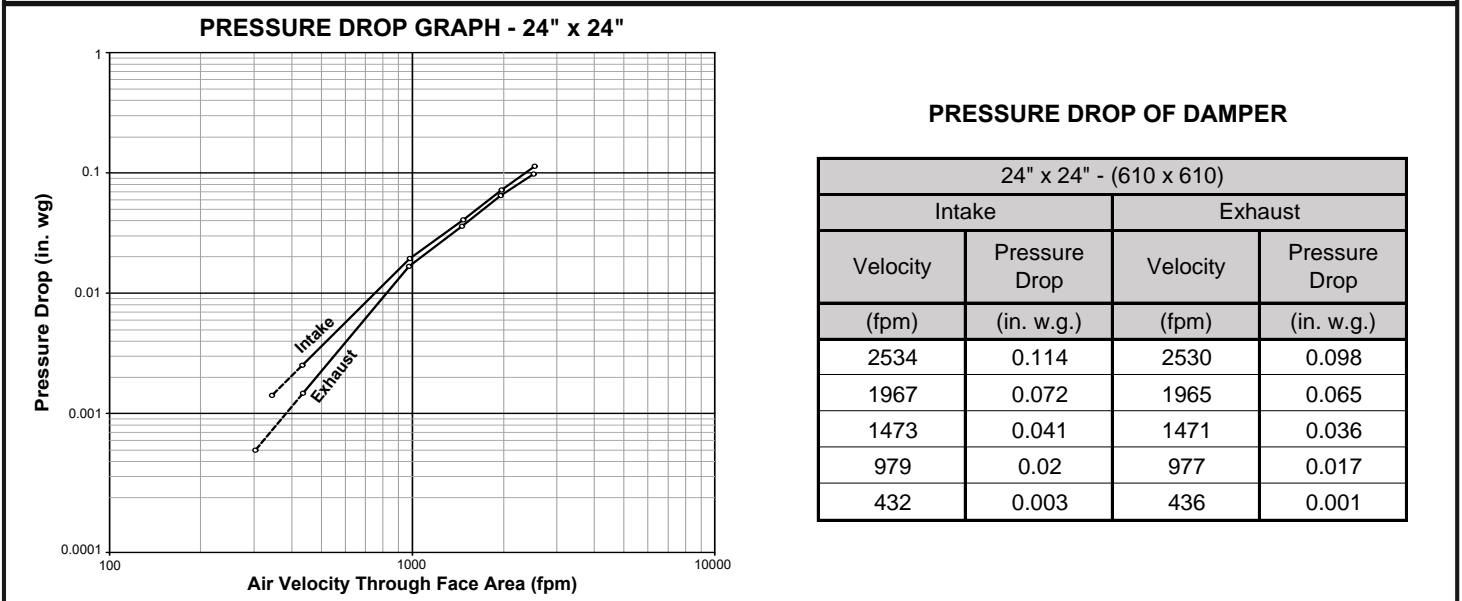
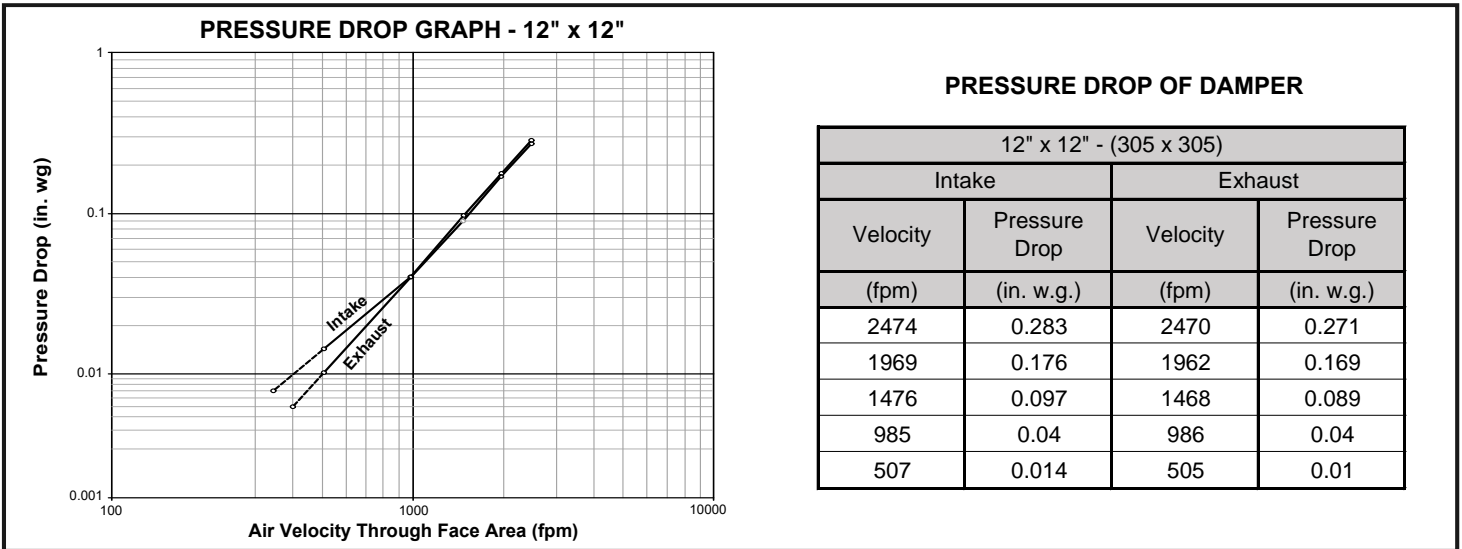
3V Blade Construction

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

Submittal

## PRESSURE DROP - INTAKE AND EXHAUST:

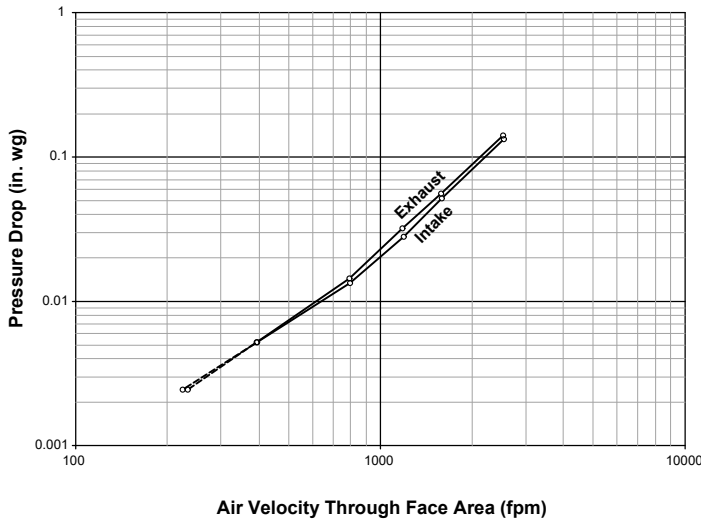
Air Performance testing has been performed in accordance with Test Method as per latest version of ANSI/AMCA Standard 500-D, Figure 5.3 (Duct Upstream and Downstream).



## PRESSURE DROP - INTAKE AND EXHAUST:

Air Performance testing has been performed in accordance with Test Method as per latest version of ANSI/AMCA Standard 500-D, Figure 5.3 (Duct Upstream and Downstream).

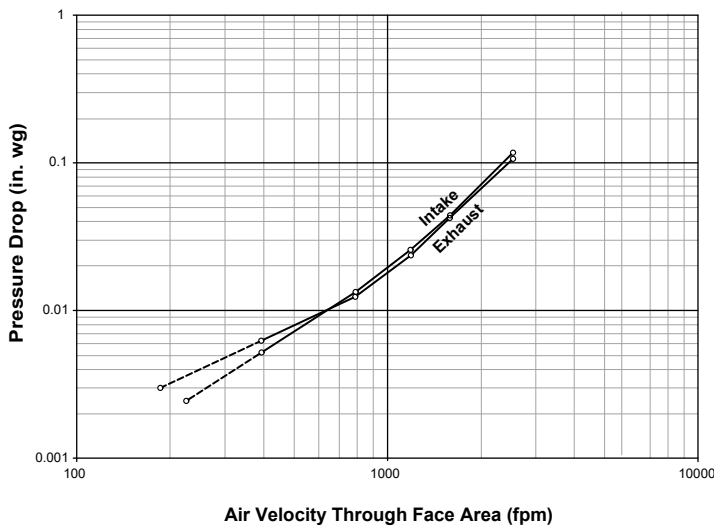
**PRESSURE DROP GRAPH - 12" x 48"**



**PRESSURE DROP OF DAMPER**

12" x 48" - (305 x 1219)			
Intake		Exhaust	
Velocity	Pressure Drop	Velocity	Pressure Drop
(fpm)	(in. w.g.)	(fpm)	(in. w.g.)
2534	0.133	2533	0.142
1589	0.052	1588	0.056
1188	0.028	1187	0.032
792	0.013	791	0.014
394	0.005	394	0.005

**PRESSURE DROP GRAPH - 48" x 12"**



**PRESSURE DROP OF DAMPER**

48" x 12" - (1219 x 305)			
Intake		Exhaust	
Velocity	Pressure Drop	Velocity	Pressure Drop
(fpm)	(in. w.g.)	(fpm)	(in. w.g.)
2532	0.107	2531	0.118
1587	0.043	1587	0.045
1189	0.024	1187	0.026
789	0.012	789	0.013
394	0.006	394	0.005

**CVSA**  
DAMPER SERIES



**SUGGESTED SPECIFICATION:**

Central Ventilation Systems certifies that the Hat Shape VCD Models CDH 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: CDH Series	Rev. No.: 00	Date: June 2023	Page: 7/9
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## AIR LEAKAGE

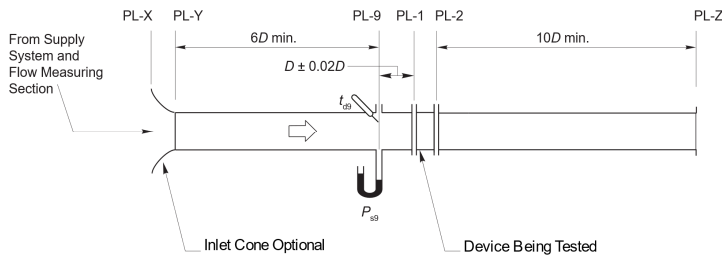
Tested for air leakage at standard air density in accordance with latest version of ANSI/AMCA Standard 500-D, Figure 5.4.

Data are based on a torque of 44in.-lbs./ft<sup>2</sup> applied to close and seal the damper during the test. Air leakage is based on operation between 0°C-49°C (32°F-120°F).

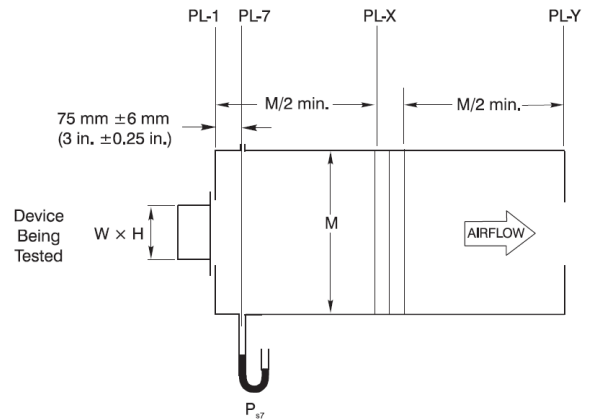
Maximum Allowable Leakage, cfm/ft <sup>2</sup>					
Class	1 in. w.g.	2 in. w.g.	3 in. w.g.	4 in. w.g.	6 in. w.g.
1A	3	N/A	N/A	N/A	N/A
1	4	6	7	8	10
2	10	14	17	20	25

AMCA Leakage Class					
Damper Size	1 in. w.g.	2 in. w.g.	3 in. w.g.	4 in. w.g.	6 in. w.g.
36 inch. x 36 inch. (914 mm x 914 mm)	Class 1A	Class 1	Class 1	Class 1	Class 1

**Test Figure 5.3 - Test Damper Setup with Inlet and Outlet Ducts**



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



**CVSA**  
DAMPER SERIES



**SUGGESTED SPECIFICATION:**

Central Ventilation Systems certifies that the Hat Shape VCD Models CDH 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: CDH Series	Rev. No.: 00	Date: June 2023	Page: 8/9
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# Round Dampers



**CVS**   
DAMPER SERIES



## MANUAL DAMPERS

The Model ED-I is an ideal manual balancing damper, with the added ability of complete shut off for control. For use in up to 12" round.



MODEL ED-I

### STANDARD CONSTRUCTION:

#### FRAME:

24 ga. thru 10"  
20 ga. thru 12"

#### BLADE:

24 ga. thru 10"  
20 ga. thru 12"

#### GASKET:

Foam

#### HAND QUADRANT:

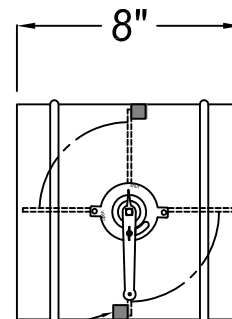
1/4" square axle

#### FINISH:

Galvanized

#### MAXIMUM VELOCITY:

1400 FPM



Foam Gasket

approx. 1/8" o.d. undersized

Job Name:

Location:

Architect:

Engineer:

Contractor:

**MODEL ED-I**



## MANUAL DAMPERS

The Model ED is an ideal manual balancing damper for duct up to 20" round.

### STANDARD CONSTRUCTION:

#### FRAME:

24 ga. thru 12"  
20 ga. thru 20"

#### BLADE:

20 ga. thru 14"  
18 ga. thru 20"

#### HAND QUADRANT:

1/4" square axle-Steel

#### Options:

- 1/4" Continuous Shaft; Steel
- Nylon Bushings
- Stand Off Bracket
- Paint Grip

#### FINISH:

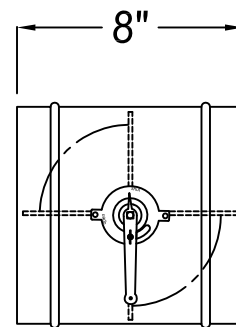
Galvanized

#### MAXIMUM VELOCITY:

1400 FPM



MODEL ED



approx. 1/8" o.d. undersized

Job Name:

Location:

Architect:

Engineer:

Contractor:

**MODEL ED**



**MANUAL DAMPERS**

The Model RD is a G-90 galvanized steel damper with factory mounted with heavy duty locking hand quadrant designed especially for manual balancing applications. It is easy to install, seal, and becomes part of the duct work.



**MODEL RD**

approx. 1/8" o.d. undersized

DIAMETER	LENGTH	BODY & BLADE
4 - 10"	8"	20 ga.
12 - 18"	8"	20 ga.
20 - 30"	8"	20 ga.
32 - 40"	8"	18 ga.

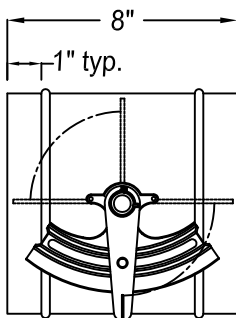
**SHAFT:**

1/2" round solid aluminum (thru 30")  
3/4" round solid steel (32" thru 40")

**BEARING:**

Molded synthetic  
Nylon 6/6

MAXIMUM VELOCITY		
DIAMETER	FPM	Max. Pressure Differential
4 - 8"	2600	3"
10 - 12"	2400	2.5"
14 - 18"	2300	2"
20 - 24"	2300	1.5"
26 - 30"	2200	1.25"
32 - 40"	2000	0.75"



**VARIATIONS:**

- Stainless steel body, blade, shaft and quadrant
- All aluminum construction w/ steel plated quadrant
- Extended quadrant 2"

Job Name:

Location:

Architect:

Engineer:

Contractor:

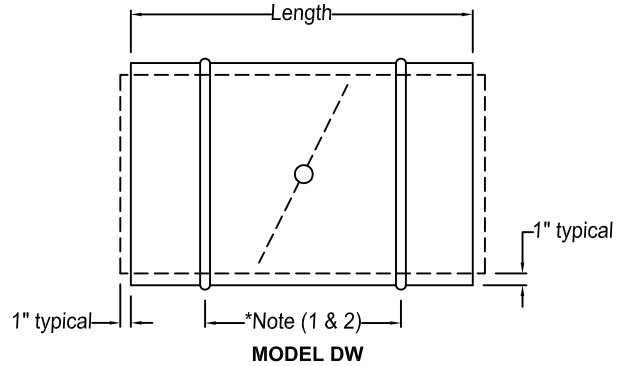
**MODEL RD**



**DUAL WALL DAMPERS  
For Spiral Duct**

The MODEL DW is an insulated galvanized steel balancing damper for spiral duct. It is easy to install, seal, and becomes part of the duct work.

I.D. Diameter	Body Length	Exterior Body	Interior Body (solid)	Blade	Shaft
4-10"	8"	18 ga.	18 ga.	18 ga.	1/2"Ø
12-24"	8"	18 ga.	18 ga.	16 ga.	1/2"Ø
25-34"	8"	16 ga.	18 ga.	16 ga.	1/2"Ø
35-42"	8"	*14 ga.	18 ga.	16 ga.	3/4"Ø
43-52"	8"	*12 ga.	16 ga.	14 ga.	3/4"Ø
53-66"	8"	*10 ga.	16 ga.	12 ga.	3/4"Ø



Approximately 1/8" O.D. & I.D. undersize

Note: Both damper bodies fit inside of spiral duct (male connection)

\*Note (1) 5-7/16" - 4" Thru 10"  
7-7/16" - 12" Thru 66"

\*Note (2) Seal Bead Not Available above 35".

**BEARING:** Interior and Exterior Body: Bronze oilite

**INSULATION:** Fiberglass

**VARIATIONS:**



- Heavier Gauge Construction
- Stainless Steel Body, Blade, Shaft, and Bearing
- All Aluminum Construction w/ Bronze Oilite Bearing
- Hand Quadrant
- Actuator
- Low leakage Blade Gasket

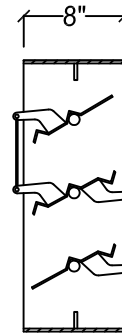
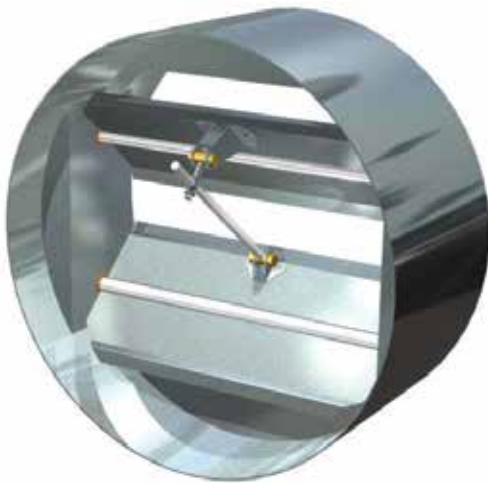
Job Name:
Location:
Architect:
Engineer:
Contractor:

**MODEL DW**

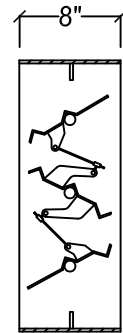


**ROUND MULTI-BLADE DAMPER**

The Model R-PB & R-OB was developed to maintain a more even airflow through the duct system.



**MODEL R-PB**  
(parallel blade)



**MODEL R-OB**  
(opposed blade)

approx. 1/4" o.d. undersized

**STANDARD FEATURES:**

- FRAME:** 16 ga galvanized steel, 8" deep
- BLADES:** 16 ga galvanized steel
- BEARINGS:** 1/2" dia. self lubricating porous bronze
- BEARING PINS:** 1/2" x 2" long plated steel rods
- HARDWARE:** Plated brackets, brass pivots, 1/4" dia. steel rods
- CONTROL ROD:** 1/2" x 9" long plated steel
- FINISH:** galvanized
- MAX. TEMP.:** 200°F
- MAX. VELOCITY:** 2000 FPM
- MIN. SIZE:** 12" Ø
- MAX. SIZE:** 44" Ø

**OPTIONS:**

- Blade seals (EPDM) 180°F
- #304 stainless steel (including linkage)
- Actuators
- Powder coated (epoxy)
- Powder coated (polyester)

Job Name:

Location:

Architect:

Engineer:

Contractor:

**MODEL R-PB, R-OB**



**CONTROL DAMPER**

**APPLICATION AND DESIGN:**

The Model RI was developed in response to automation controls companies need for a damper with the flexibility to mount various manufacturers actuators and controls.

**SHAFT:**

- 1/2" round solid aluminum (thru 30")
- 3/4" round solid steel (32" thru 46")

**BEARING:**

Bronze oilite (175°)

**BLADE SEALS:**

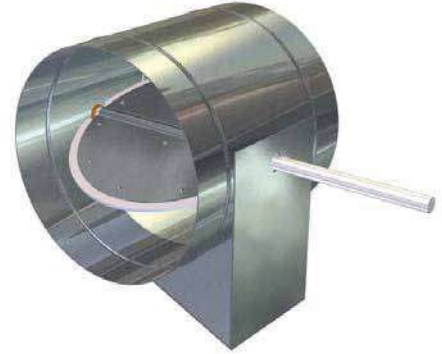
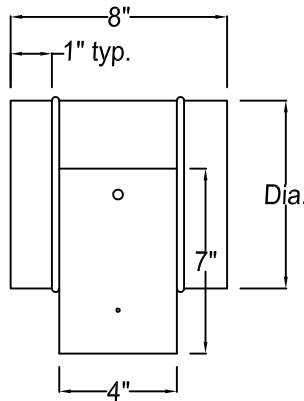
Crosslinked closed cell ( 200° F)

**MOUNTING PLATE:**

20 ga. galvanized steel

**OPTIONS:**

- Stainless steel body, blade, shaft and quadrant
  - Silicone Blade Seal (400° F)
  - All aluminum construction w/ steel plated quadrant
  - Nylon 6/6 bushing (for aluminum construction)
  - Extended quadrant 2"
  - Factory furnished and mounted actuator
  - Motor and/or control enclosure
  - Stainless steel bearings (700° F)
  - Silica Seals (800° F)
- Heavier Gauges:
- 16 ga
  - 14 ga



**MODEL RI**

approx. 1/8" o.d. undersized

MAXIMUM VELOCITY		
DIAMETER	FPM	MAX. PRESSURE DIFFERENTIAL
4 - 8"	2600	6"
10 - 12"	2400	5"
14 - 18"	2300	4"
20 - 24"	2300	3"
26 - 30"	2200	2-1/2"
32 - 46"	2000	1-3/4"

DIAMETER	LENGTH	BODY & BLADE
4 - 10"	8"	24 ga.
12 - 18"	8"	20 ga.
20 - 30"	8"	20 ga.
32 - 46"	8"	18 ga.

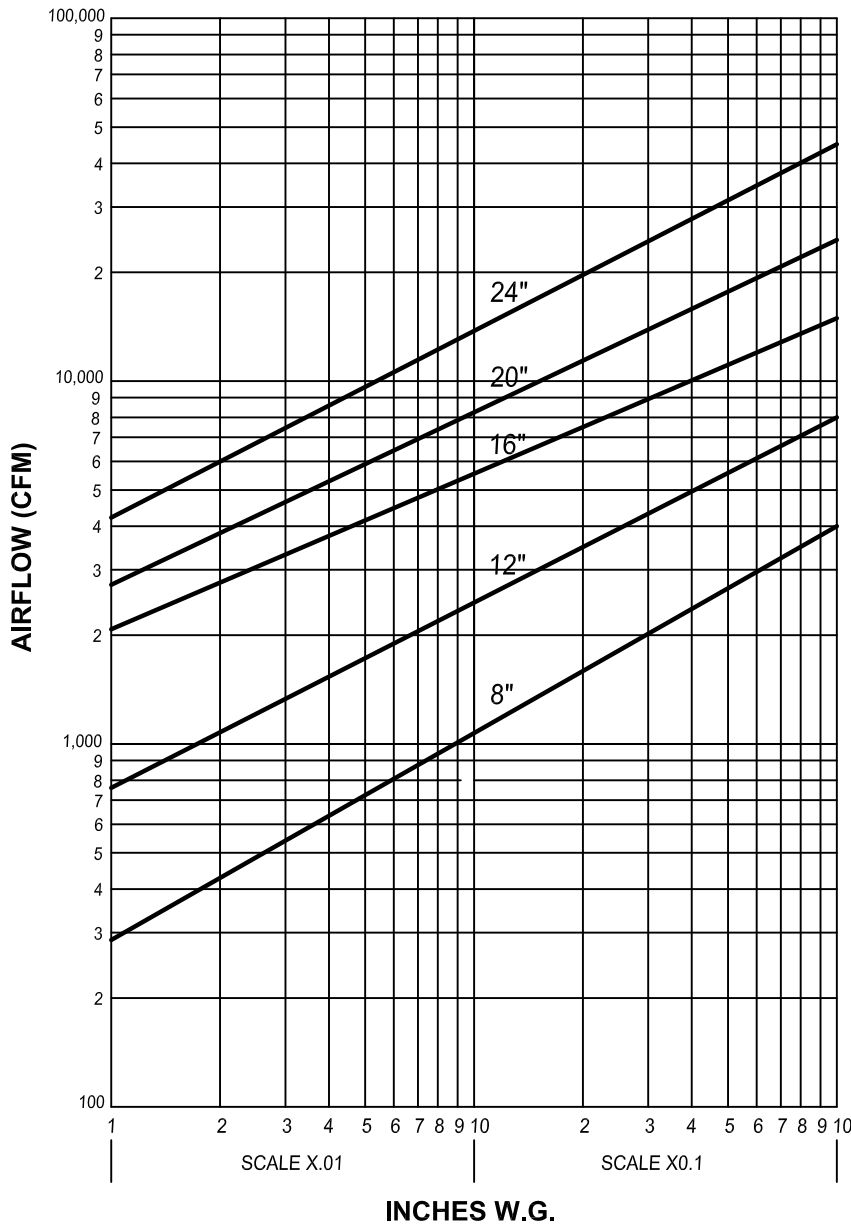
Job Name:	<input type="checkbox"/> <b>MODEL RI</b>
Location:	
Architect:	
Engineer:	
Contractor:	





## ROUND DAMPERS

### STATIC PRESSURE DROP



#### Determining Static Pressure Drop (Round)

To determine static pressure drop through an open damper, start on the left side of the damper pressure drop chart. Given the CFM of air flow through the damper, follow the CFM line to the diagonal line of the damper size required, then down to the static pressure drop of the unit.

#### Example:

The pressure drop of an 8" damper with 700 CFM flow is .051 inches w.g.

Job Name:

Location:

Architect:

Engineer:

Contractor:

**Performance Data**

# Backdraft Dampers

CB Series



**CVSA**   
DAMPER SERIES

Reference:

Client:

Project:

Consultant:

Location:

Contractor:

Date:

Submitted by:



Your Reliable HVAC Partner

### Model CB-600 Series

Backdraft/Pressure Relief Dampers

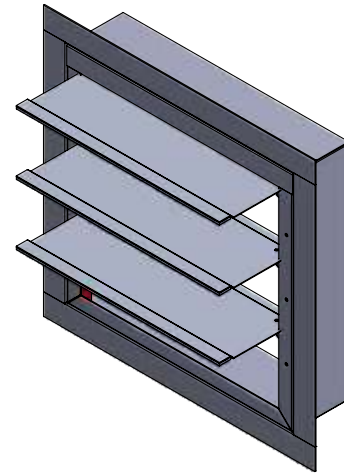
### Application:

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.

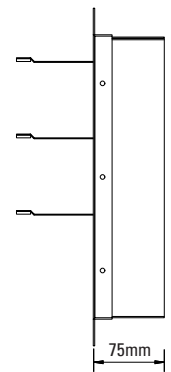
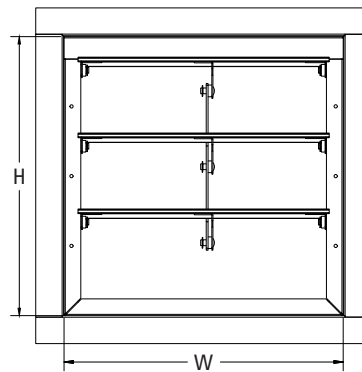
### Standard Construction:

	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:

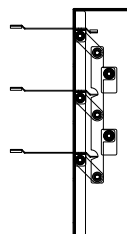
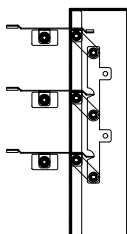
Insect Mesh

Bird Mesh

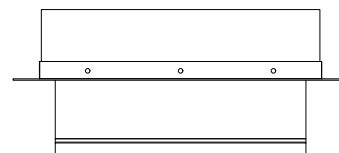
Counter Weight Options for Pressure Relief Dampers:

Counter Weight at Blade's Front Side

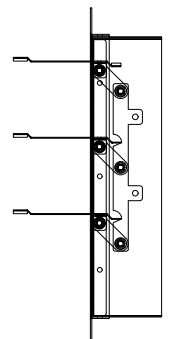
Counter Weight at Blade's Back Side



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

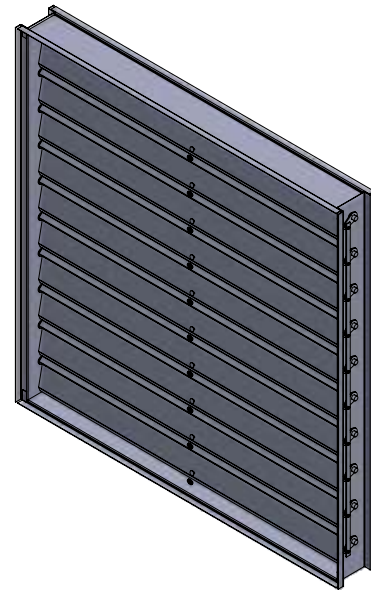
Model CB-601 Series  
Backdraft/Pressure Relief Dampers

**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:**

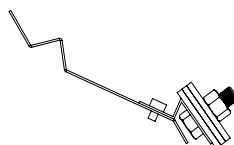
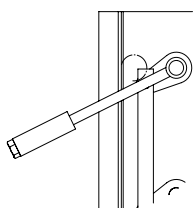
Insect Mesh

Bird Mesh

Counter Weight Options for Pressure Relief Dampers:

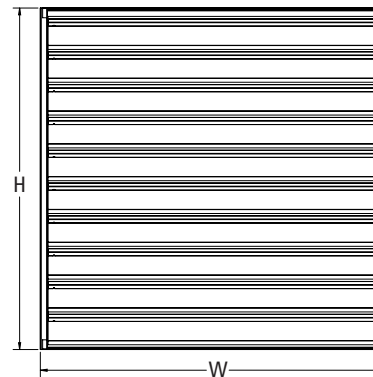
Counter Balancing - Externally

Counter Balancing - Internally



Front View

Side View



Top View



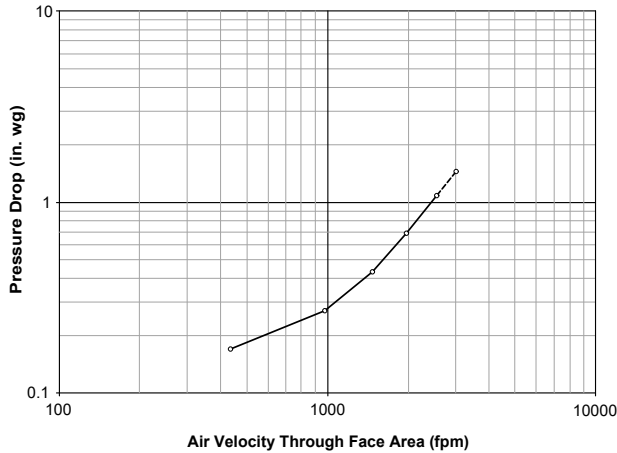
As part of our continuous improvement program, we reserve the right to make further improvements without notice.

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).

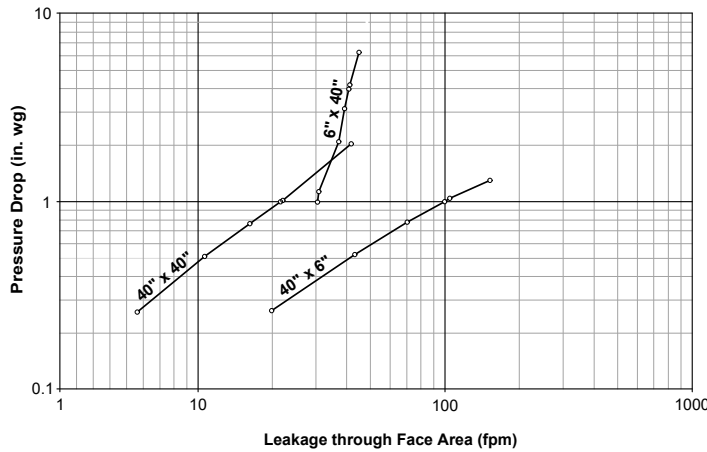
**PRESSURE DROP GRAPH - 24" x 24"**



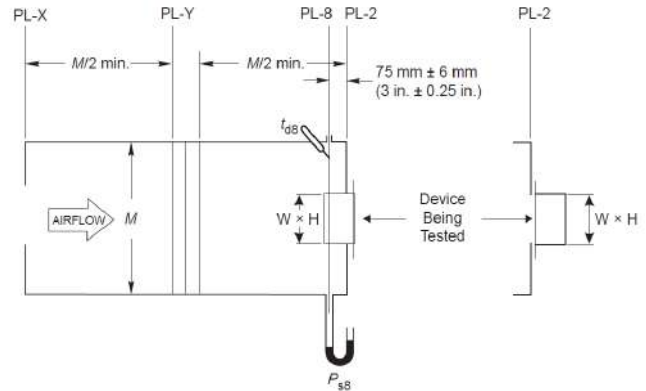
**PRESSURE DROP OF DAMPER**

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

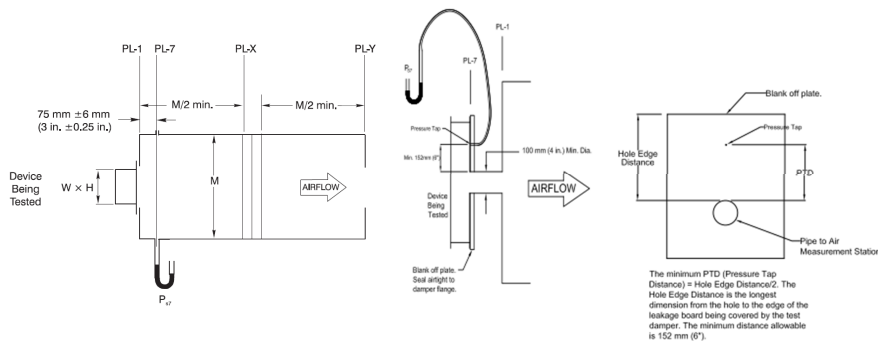
**AIR LEAKAGE GRAPH**



**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.

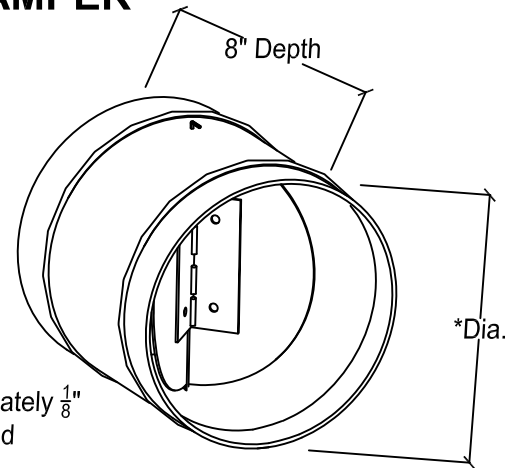
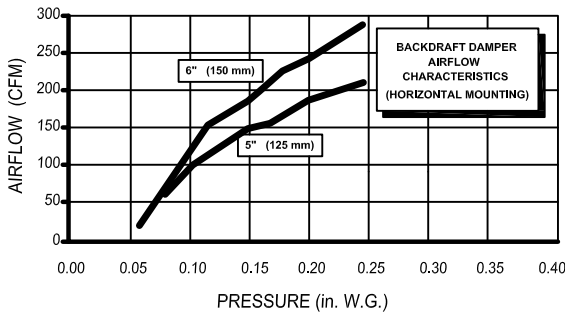
Cat ID: CB Series	Rev. No.: 00	Date: June 2023	Page: 4/5
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**BACKDRAFT DAMPERS**

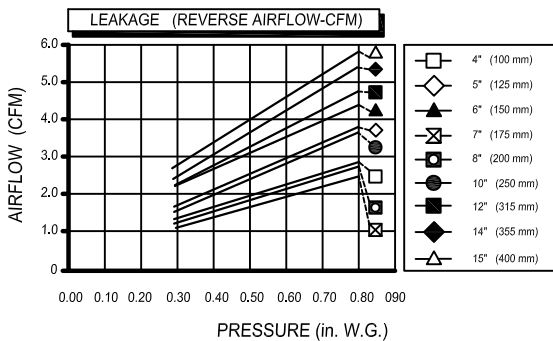
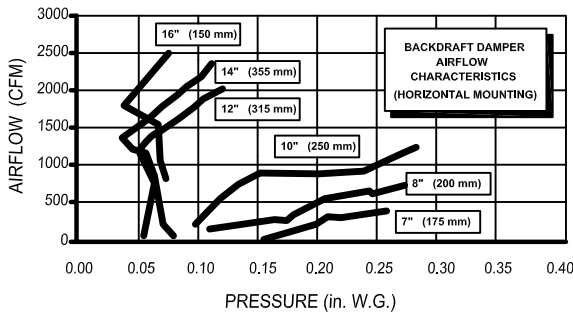
**BUTTERFLY BACKDRAFT DAMPER**

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

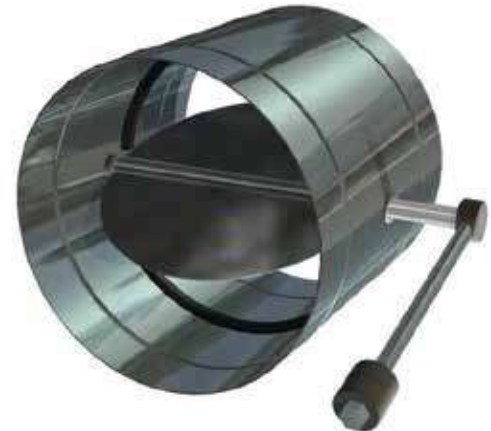
**Bearing:** Nylon 6/6

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

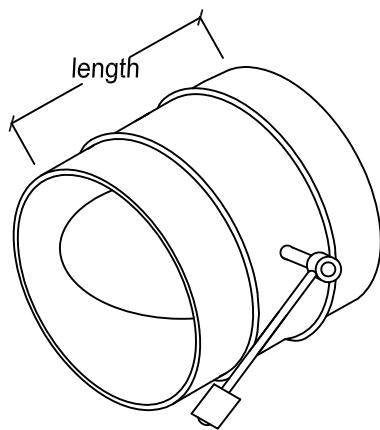
**Seal:** Volera gaskets in closed position for minimal leakage.

**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:**

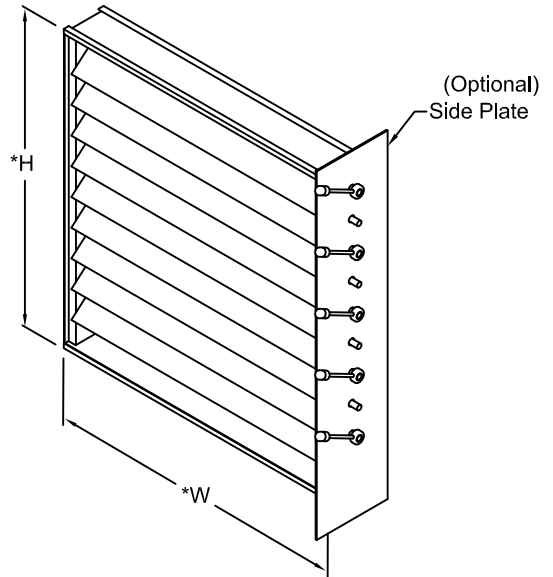
- Frame:** .081 Extruded Aluminum 4-1/2" deep
- Blade:** 6060T5 Extruded Aluminum .125 thickness
- Linkage:** Zinc plated concealed
- Axles:** 1/2" diameter cast zinc & steel
- Blade Seals:** PVC (180°F)
- Bearings:** Bronze Oilite

**Size Limitations:**

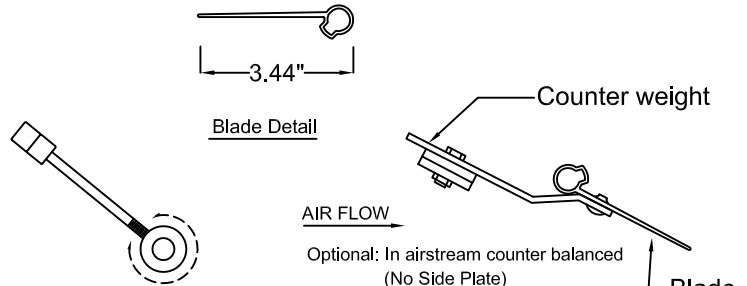
- Minimum Size:** 6" w x 6" h
- Maximum Single Section:** 48" w x 48" h
- Maximum Double Section:** 96" w x 96" h

**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.



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

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)**

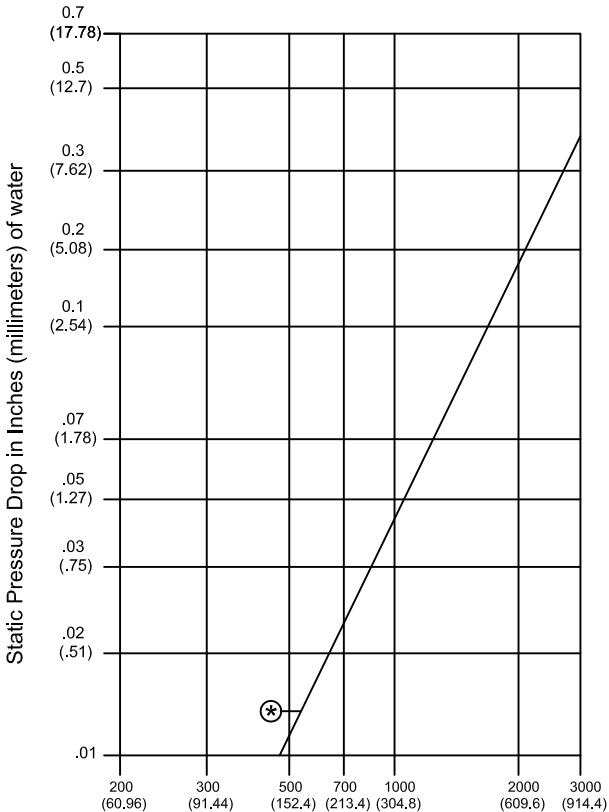
DAMPER PERFORMANCE

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		

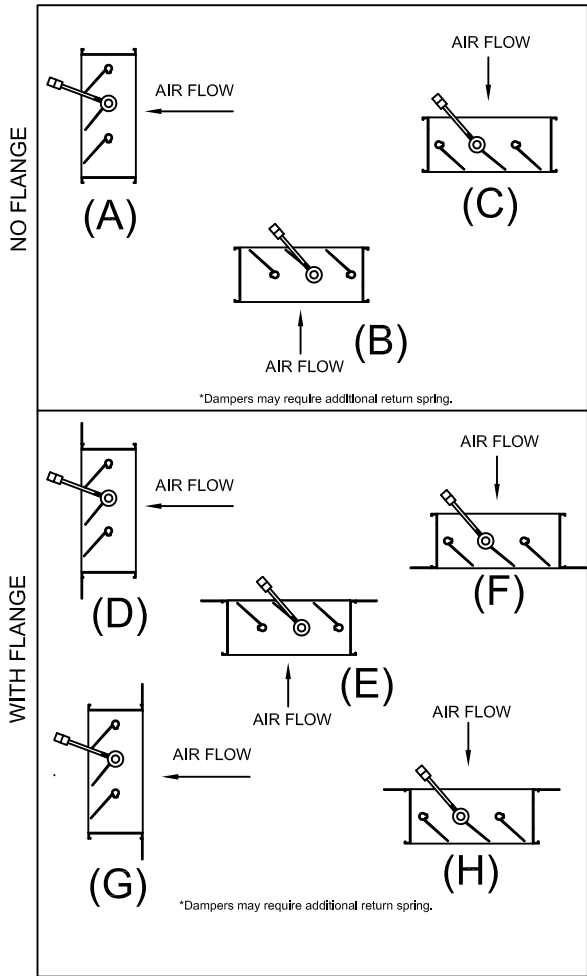
\*Leakage information based on pressure differential of 1" w.g. tested per AMCA Std. 500.

\*\*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:**

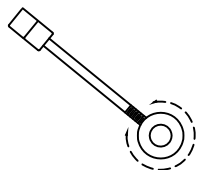
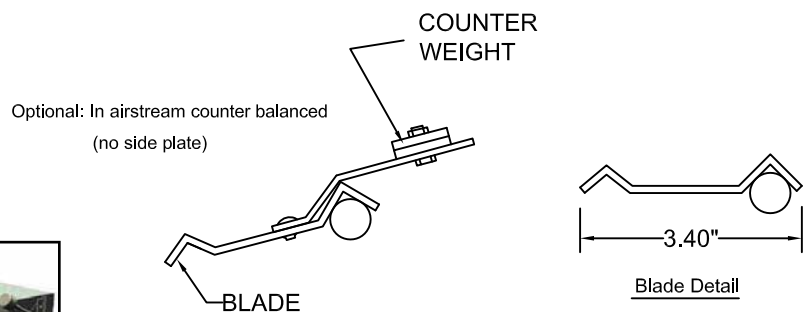
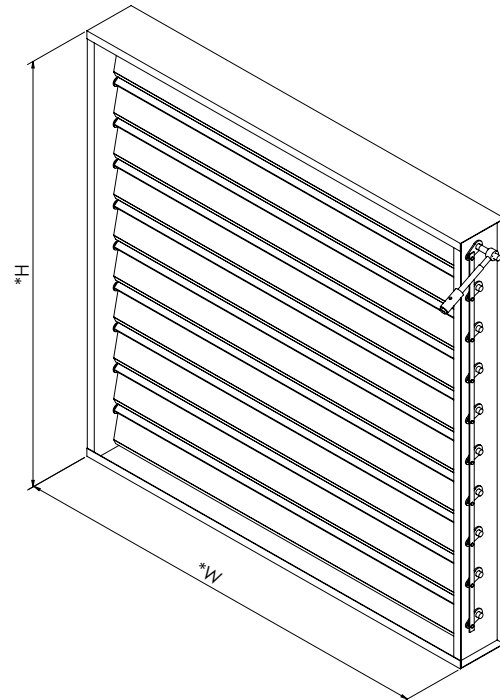
- Frame:** 16ga. Galvanized Steel
- Blade:** 16ga. Galvanized Steel V-Blade
- Linkage:** Zinc plated concealed
- Axles:** 1/2" diameter cast zinc & steel
- Bearings:** Bronze Oilite
- Blade Seals:** PVC (180° F)

**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		

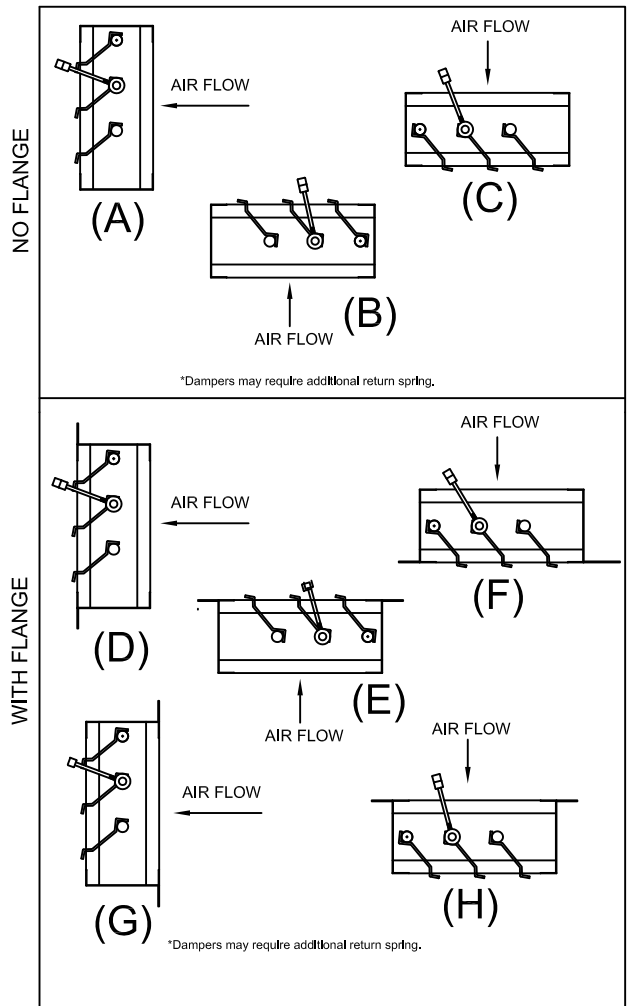
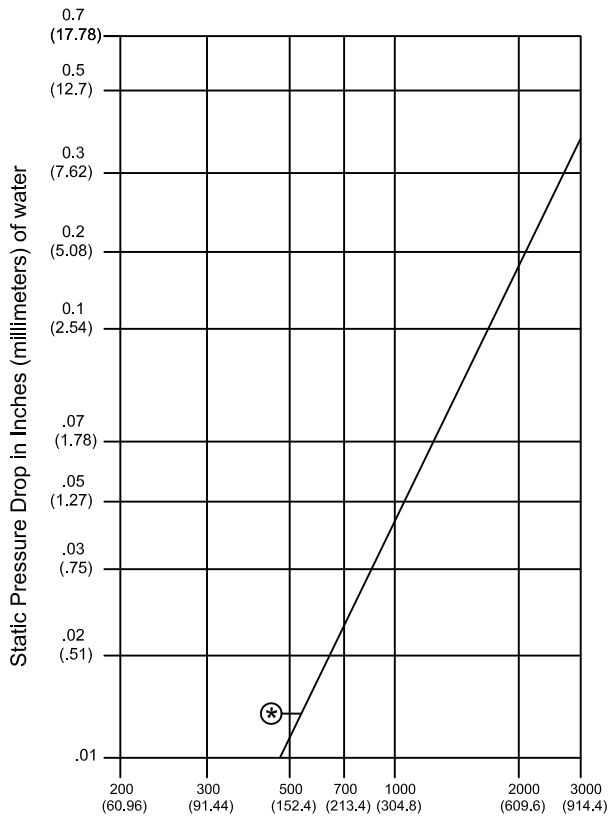
\*Leakage information based on pressure differential of 1" w.g. tested per AMCA Std. 500.

\*\*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")



# Pressure Relief 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

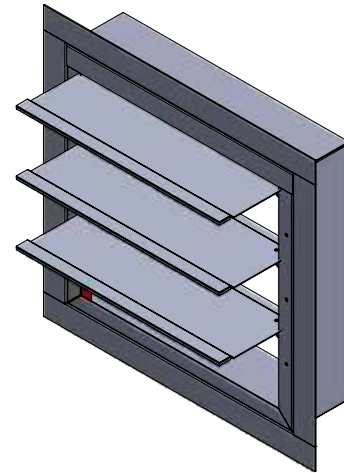
### Application:

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.

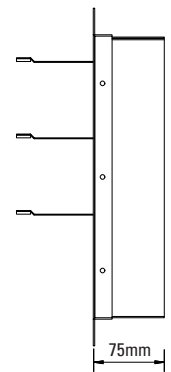
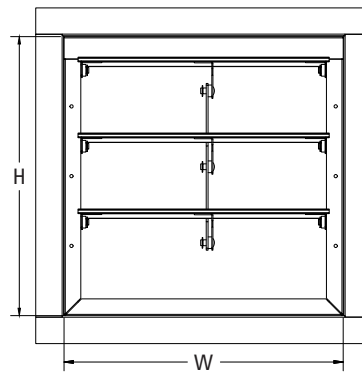
### Standard Construction:

	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.

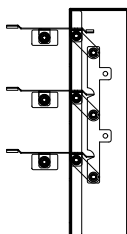
### Optional Construction:

Insect Mesh

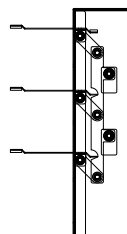
Bird Mesh

Counter Weight Options for Pressure Relief Dampers:

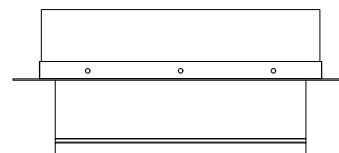
Counter Weight at Blade's Front Side



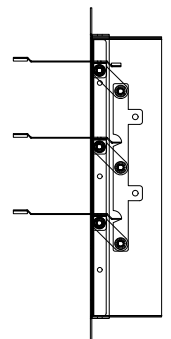
Counter Weight at Blade's Back Side



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

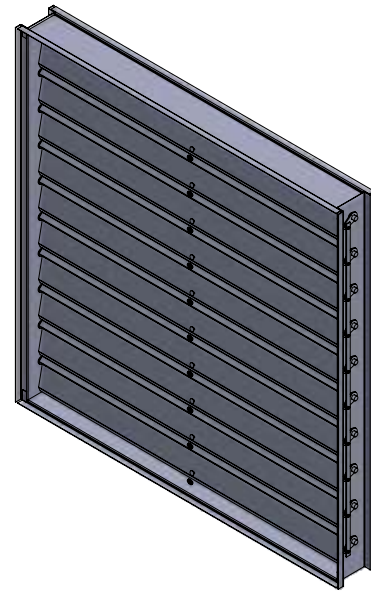
#### Application:

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:

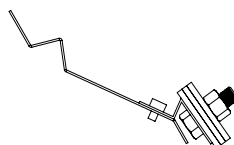
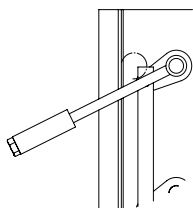
Insect Mesh

Bird Mesh

Counter Weight Options for Pressure Relief Dampers:

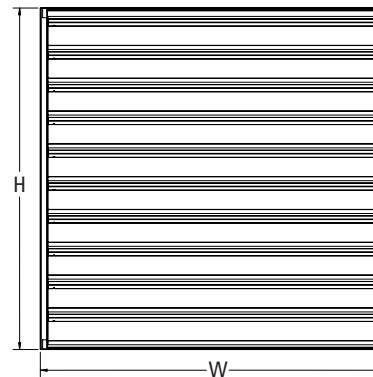
Counter Balancing - Externally

Counter Balancing - Internally



Front View

Side View



Top View



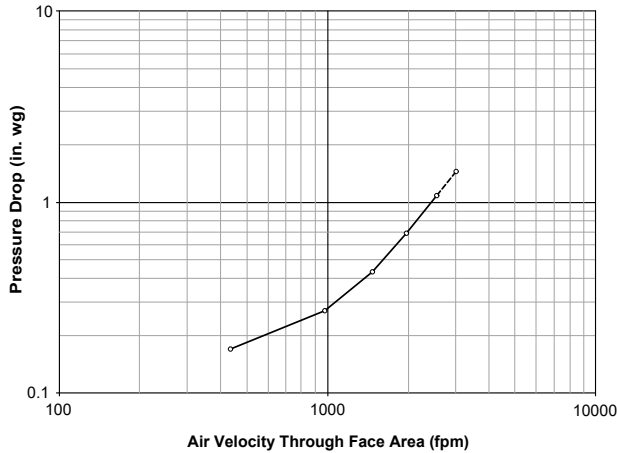
As part of our continuous improvement program, we reserve the right to make further improvements without notice.

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).

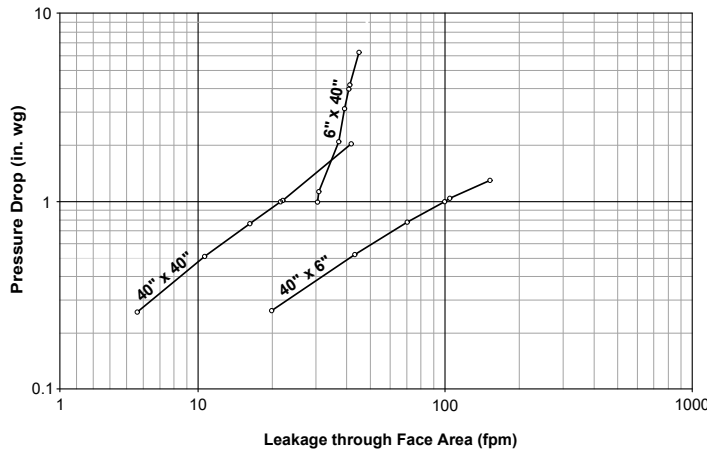
**PRESSURE DROP GRAPH - 24" x 24"**



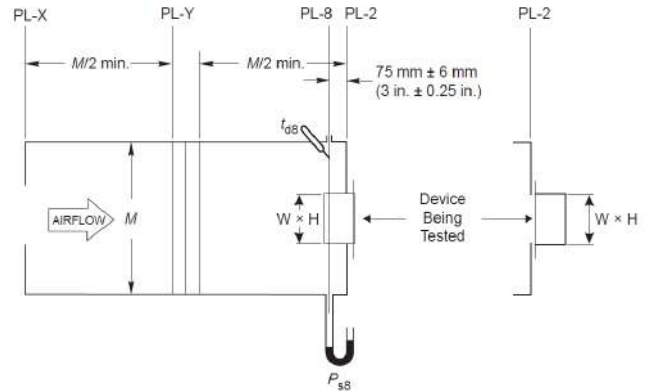
**PRESSURE DROP OF DAMPER**

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

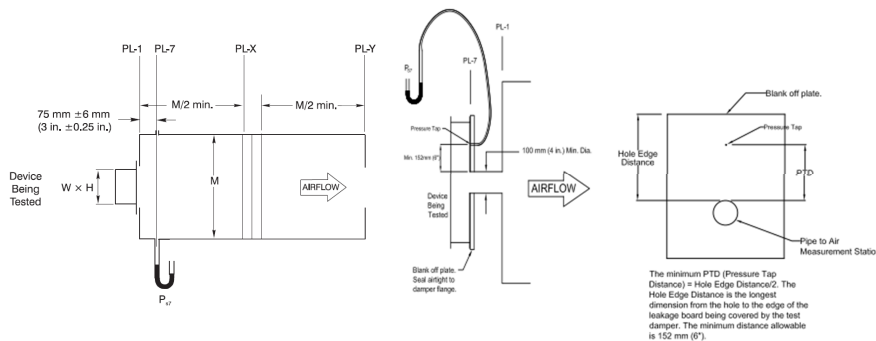
**AIR LEAKAGE GRAPH**



**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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**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:**

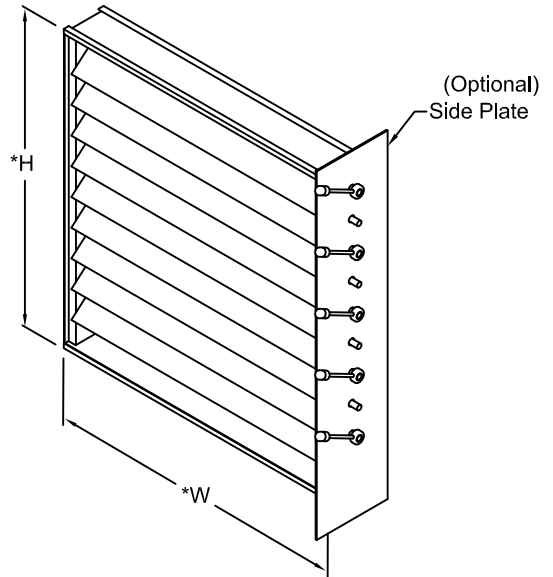
- Frame:** .081 Extruded Aluminum 4-1/2" deep
- Blade:** 6060T5 Extruded Aluminum .125 thickness
- Linkage:** Zinc plated concealed
- Axles:** 1/2" diameter cast zinc & steel
- Blade Seals:** PVC (180°F)
- Bearings:** Bronze Oilite

**Size Limitations:**

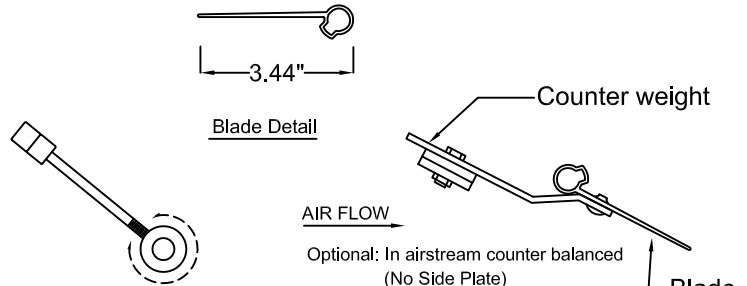
- Minimum Size:** 6" w x 6" h
- Maximum Single Section:** 48" w x 48" h
- Maximum Double Section:** 96" w x 96" h

**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.



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

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)**

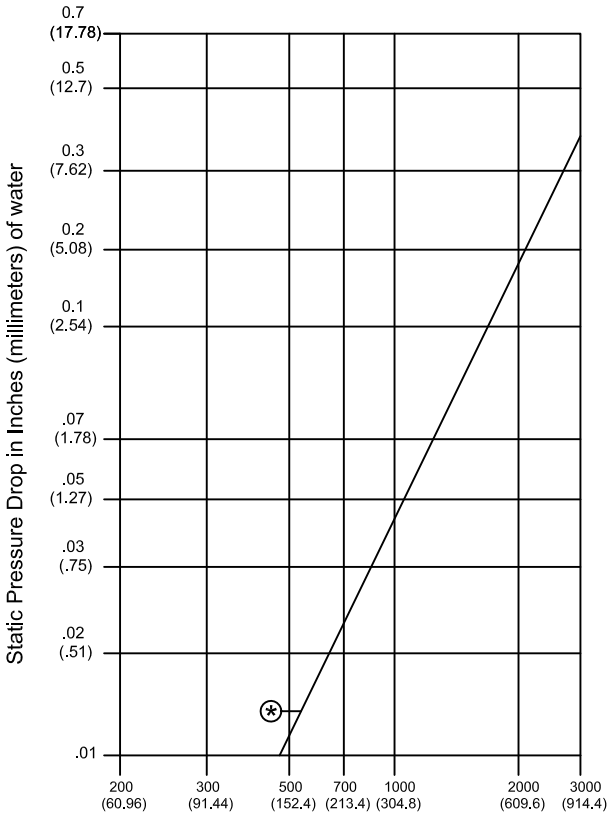
DAMPER PERFORMANCE

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.

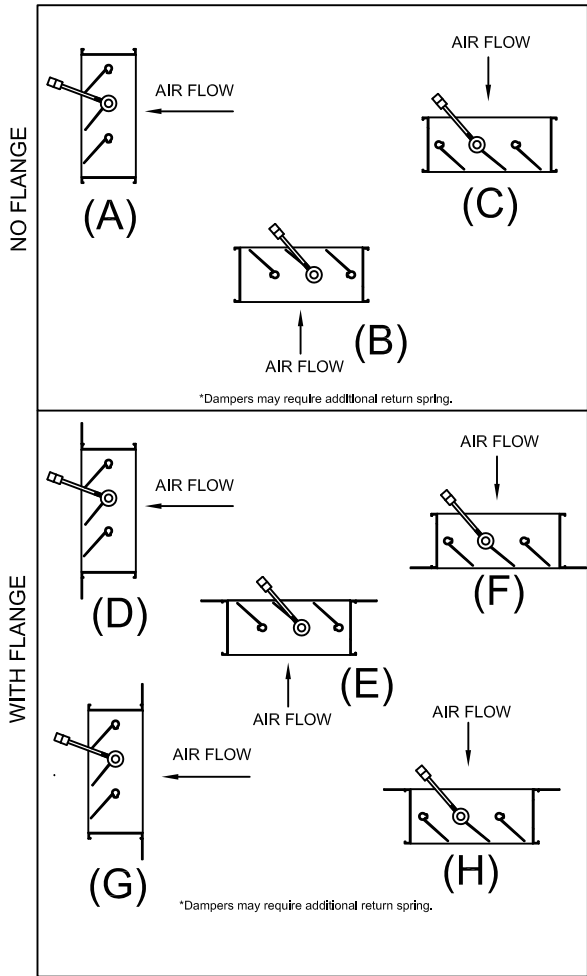
\*\*set at least resistant to open

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:**

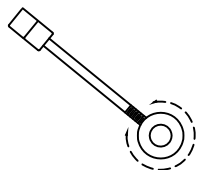
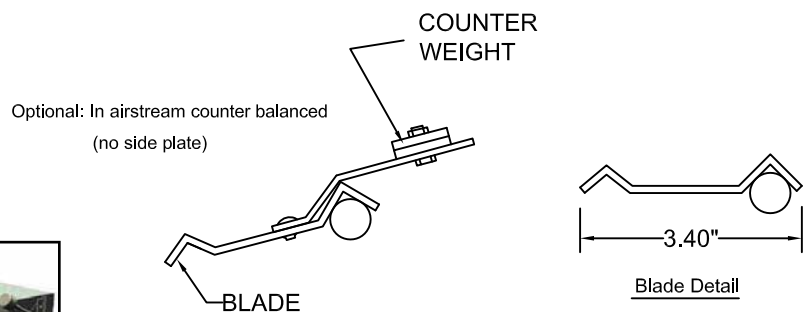
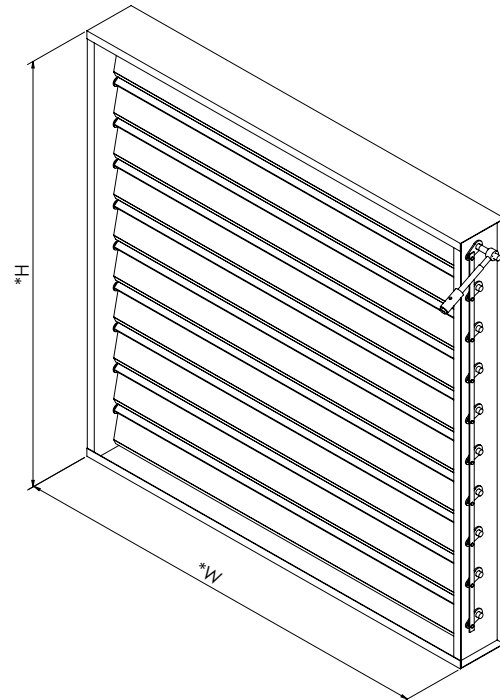
- Frame:** 16ga. Galvanized Steel
- Blade:** 16ga. Galvanized Steel V-Blade
- Linkage:** Zinc plated concealed
- Axles:** 1/2" diameter cast zinc & steel
- Bearings:** Bronze Oilite
- Blade Seals:** PVC (180° F)

**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		

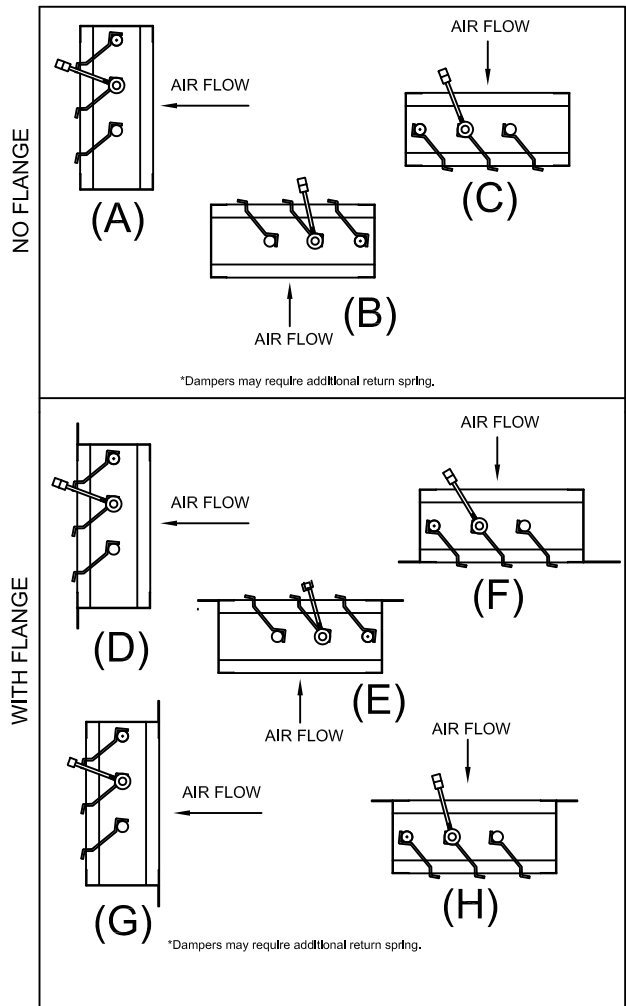
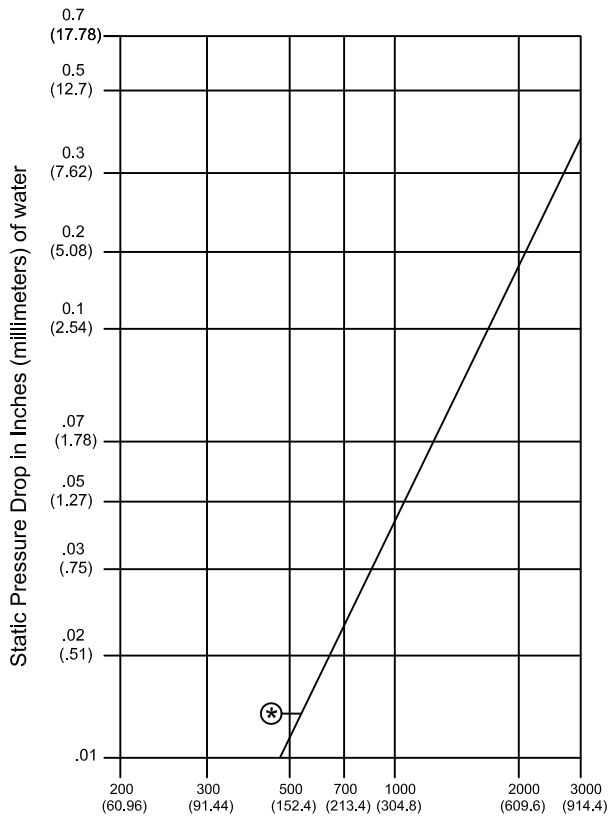
\*Leakage information based on pressure differential of 1" w.g. tested per AMCA Std. 500.

\*\*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")





**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**

# 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.**

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