Commercial Control Dampers

Rectangular Dampers | Round Dampers | Backdraft Dampers
Pressure Rellief Dampers

CVS
DAMPER SERIES

Commercial Control Dampers

Flange Type

CVS

DAMPER SERIES

Reference:	**Client:**
Project:	**Consultant:**
Location:	**Contractor:**
Date:	**Submitted by:**

CVS
Your Reliable HVAC Partner

Model CDF-100 Series

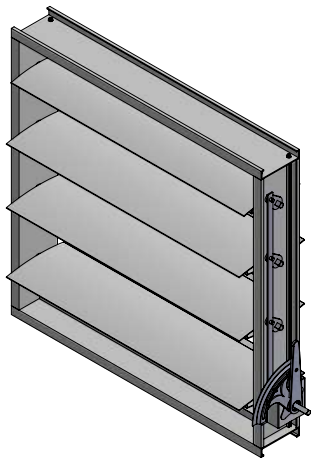
Commercial Control Dampers
Airfoil Blade
Manual Quadrant/Motorised

Application:

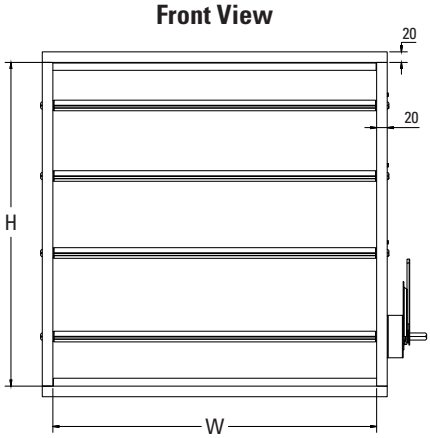
The CVS commercial control damper models CDF-100-AF-Q and CDF-100-AF-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.
The model CDF-100-AF-Q (manual quadrant) is a general purpose commercial control damper for use in manual 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:

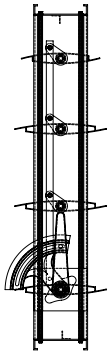
	Standard	Optional
Frame Material	2.3mm thick extruded aluminium 6063-T6 flanged frame	Multiple gauges galvanized steel or stainless steel flange frame and other flange sizes (only for roll formed frames)
Frame Depth	100mm	Other depths available (only for roll formed frames)
Blade Material and Type	1.4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



Front View



Section View

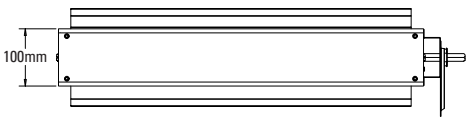


Minimum & Maximum Sizes:

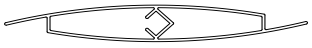
Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
CDF-100-AF-Q (Manual quadrant)	5" x 6" (127 x 152)	36" x 48" (914 x 1219)	Unlimited Size (Please consult factory)
CDF-100-AF-M (Motorised)			

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

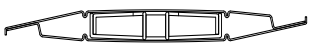
Top View



Airfoil Blade - Type 1



Airfoil Blade - Type 2



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:**

CVS
Your Reliable HVAC Partner

Model CDF-100 Series

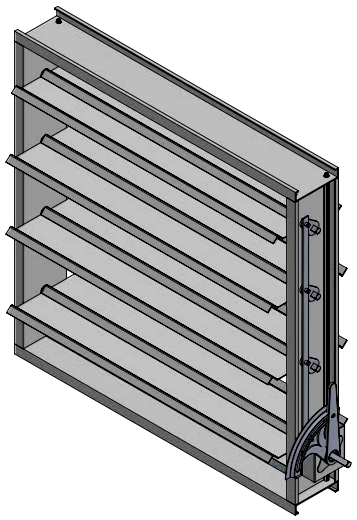
Commercial Control Dampers
3V Blade
Manual Quadrant/Motorised

Application:

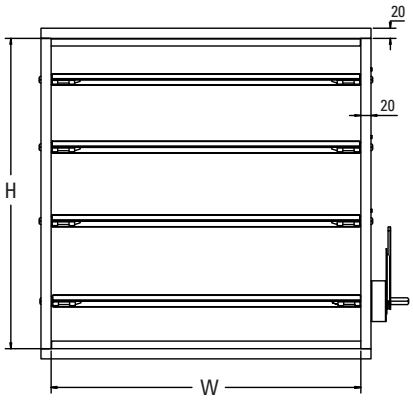
The CVS commercial control damper models CDF-100-3V-Q and CDF-100-3V-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.
The model CDF-100-3V-Q (manual quadrant) is a general purpose commercial control damper for use in manual 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:

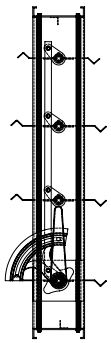
	Standard	Optional
Frame Material	2.3mm thick extruded aluminium 6063-T6 flanged frame	Multiple gauges galvanized steel or stainless steel flange frame and other flange sizes (only for roll formed frames)
Frame Depth	100mm	Other depths available (only for roll formed frames)
Blade Material and Type	16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



Front View



Section View



Minimum & Maximum Sizes:

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

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

Top View

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.

Reference:	**Client:**
Project:	**Consultant:**
Location:	**Contractor:**
Date:	**Submitted by:**

CVS
Your Reliable HVAC Partner

Model CDF-165 Series

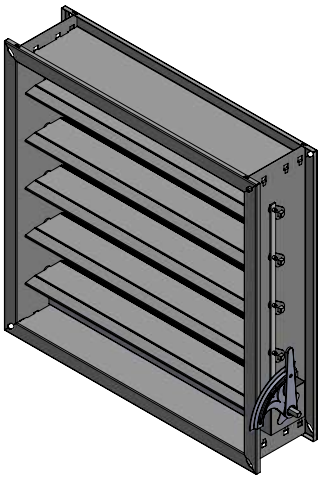
Commercial Control Dampers
Airfoil Blade
Manual Quadrant/Motorised

Application:

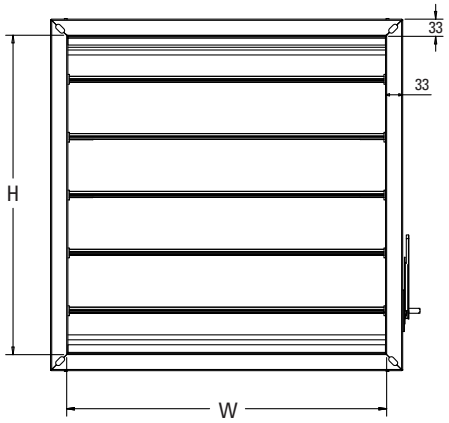
The CVS commercial control damper models CDF-165-AF-Q and CDF-165-AF-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.
The model CDF-165-AF-Q (manual quadrant) is a general purpose commercial control damper for use in manual 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:

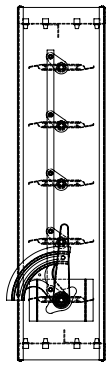
	Standard	Optional
Frame Material	20 gauge thick roll formed galvanized steel flanged frame	Multiple gauges galvanized steel or stainless steel flange frame and other flange sizes (only for roll formed frames)
Frame Depth	165mm	Other depths available (only for roll formed frames)
Blade Material and Type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



Front View



Section View



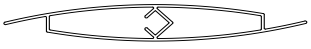
Minimum & Maximum Sizes:

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

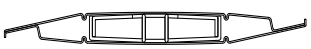
All dimensions shown in inches, parentheses () indicate millimeters.

Top View

Airfoil Blade - Type 1



Airfoil Blade - Type 2



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:**

Your Reliable HVAC Partner

Model CDF-165 Series

Commercial Control Dampers

3V Blade

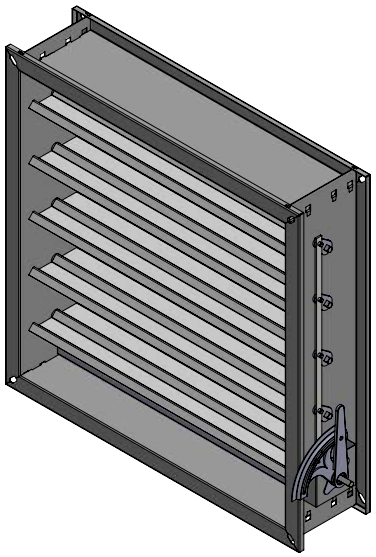
Manual Quadrant/Motorised

Application:

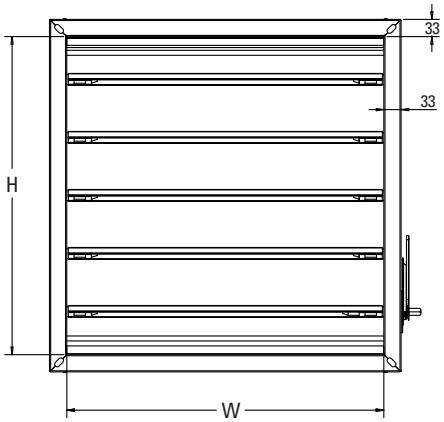
The CVS commercial control damper models CDF-165-3V-Q and CDF-165-3V-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.
The model CDF-165-3V-Q (manual quadrant) is a general purpose commercial control damper for use in manual 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:

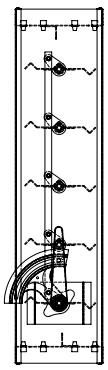
	Standard	Optional
Frame Material	20 gauge thick roll formed galvanized steel flanged frame	Multiple gauges galvanized steel or stainless steel flange frame and other flange sizes (only for roll formed frames)
Frame Depth	165mm	Other depths available (only for roll formed frames)
Blade Material and Type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



Front View



Section View

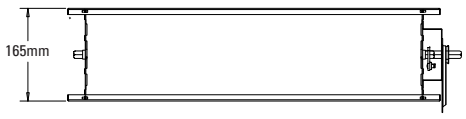


Minimum & Maximum Sizes:

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

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

Top View



Optional Construction:

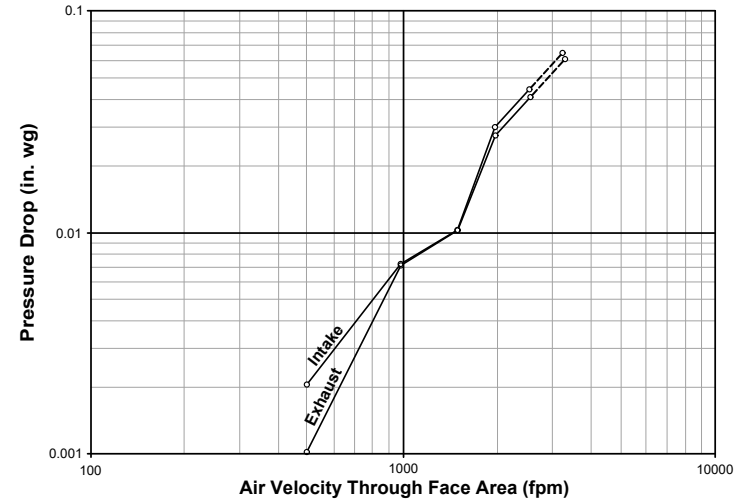
☐ Operators:
- ☐ Actuators: ☐ 24V ☐ 230V
  - ☐ Spring Return ☐ Non-Spring Return
  - ☐ On/Off ☐ Modulating
- ☐ Manual Quadrant

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

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).

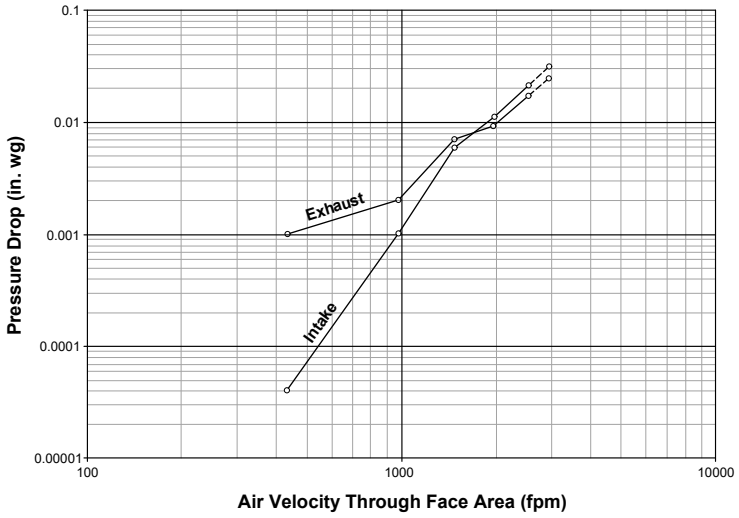
PRESSURE DROP GRAPH - 12" x 12"



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

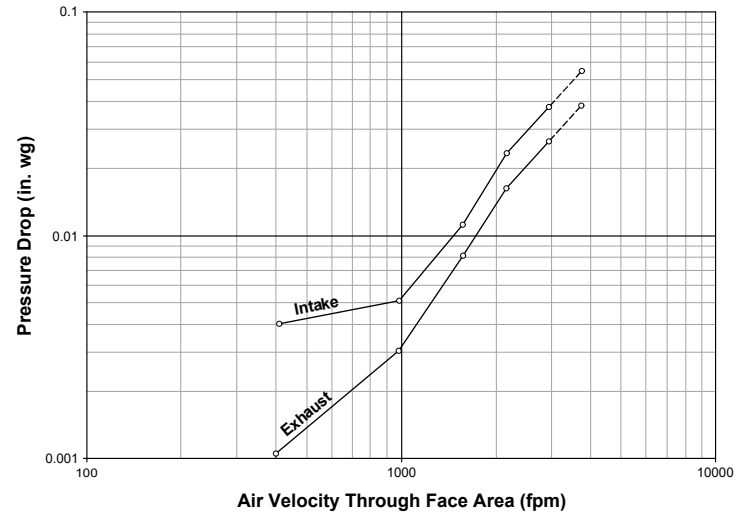
PRESSURE DROP GRAPH - 24" x 24"



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 GRAPH - 36" x 36"



PRESSURE DROP OF DAMPER

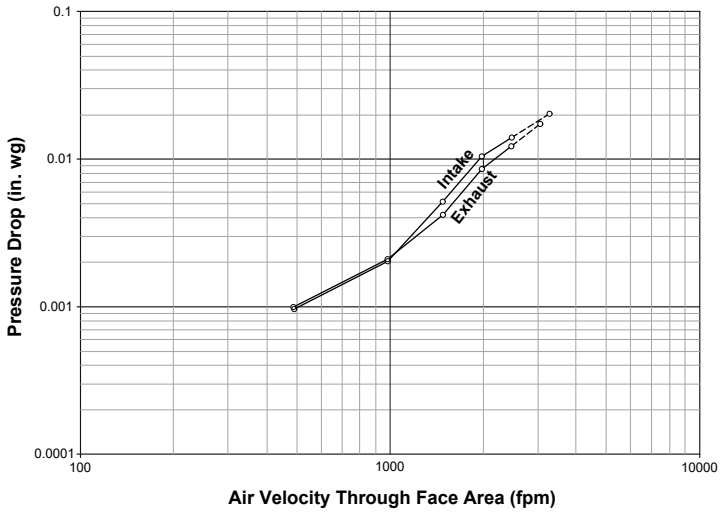
36" x 36" - (914 x 914)			
Intake		Exhaust	
Velocity	Pressure Drop	Velocity	Pressure Drop
(fpm)	(in. w.g.)	(fpm)	(in. w.g.)
2948	0.038	2950	0.026
2160	0.023	2161	0.016
1570	0.011	1571	0.008
981	0.005	982	0.003
409	0.004	399	0.001

The information published is true and to the best knowledge. CVS reserves all rights to make any changes without any notice

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).

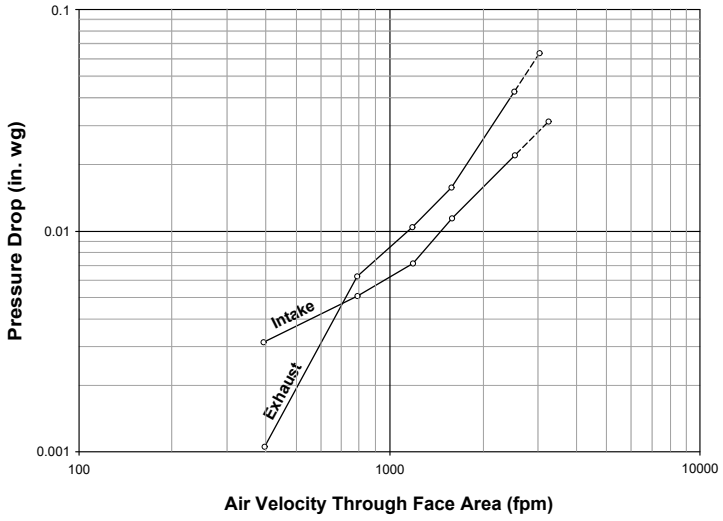
PRESSURE DROP GRAPH - 12" x 48"



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

CVS 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.

The information published is true and to the best knowledge. CVS reserves all rights to make any changes without any notice

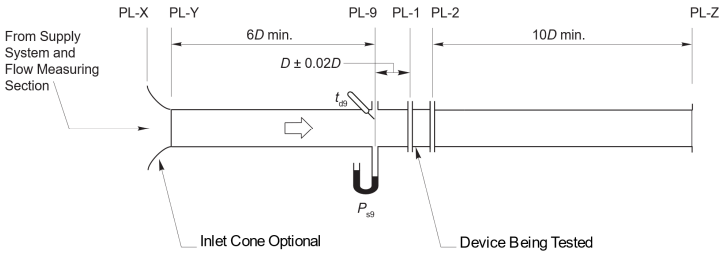
AIR LEAKAGE

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^2 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).

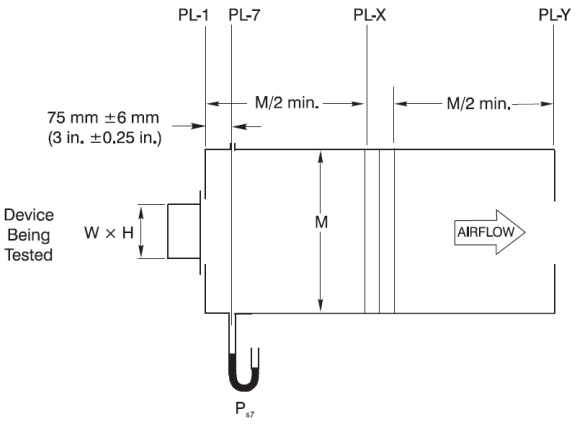
Maximum Alowable Leakage, cfm/ft^2					
Class	**1 in. w.g.**	**2 in. w.g.**	**3 in. w.g.**	**4 in. w.g.**	**6 in. w.g.**
1A	3	N/A	N/A	N/A	N/A
1	4	6	7	8	10
2	10	14	17	20	25

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



CVS 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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Commercial Control Dampers

Hat Shape

CVS
DAMPER SERIES

Reference:	**Client:**
Project:	**Consultant:**
Location:	**Contractor:**
Date:	**Submitted by:**

CVS
Manufacturing Excellence

Model CDH-125 Series

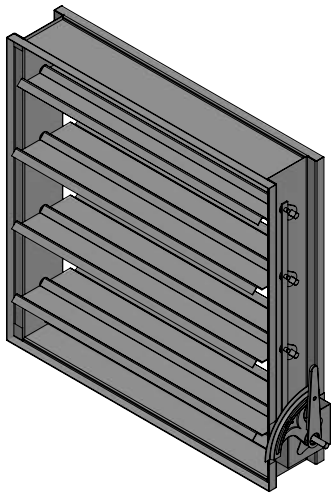
Control Dampers
3V Blade
Manual Quadrant/Motorised

Application:

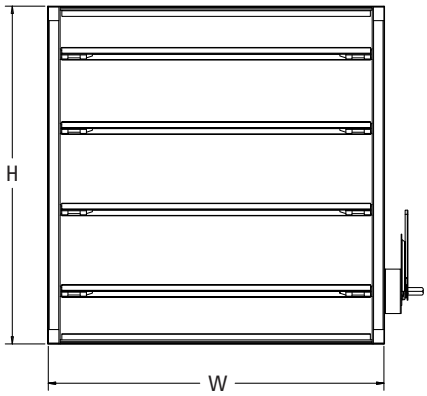
The CVS control damper models CDH-125-3V-Q and CDH-125-3V-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.
The model CDH-125-3V-Q (manual quadrant) is a general purpose commercial control damper for use in manual balancing 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:

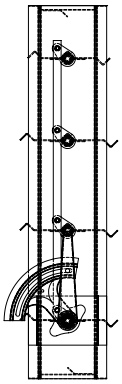
	Standard	Optional
Frame Material	20 gauge thick roll formed galvanized steel hat shape frame	Multiple gauges galvanized steel or stainless steel flanged frame (only for roll formed frame)
Frame Depth	127mm	Other depths available (only for roll formed frames)
Blade Material and Type	16 gauge galvanized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



Front View



Section View

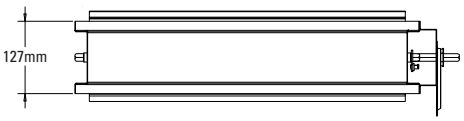


Minimum & Maximum Sizes:

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

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

Top View



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.

Reference:	**Client:**
Project:	**Consultant:**
Location:	**Contractor:**
Date:	**Submitted by:**

Manufacturing Excellence

Model CDH-125 Series

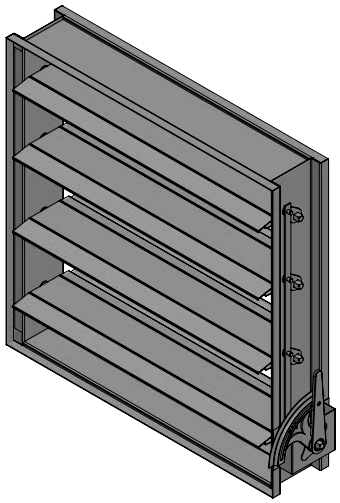
Control Dampers
Airfoil Blade
Manual Quadrant/Motorised

Application:

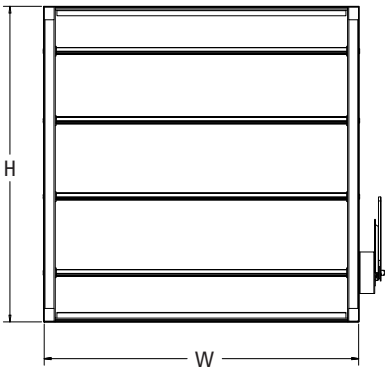
The CVS control damper models CDH-125-AF-Q and CDH-125-AF-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.
The model CDH-125-AF-Q (manual quadrant) is a general purpose commercial control damper for use in manual balancing 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:

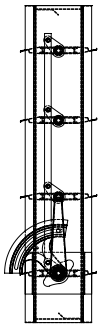
	Standard	Optional
Frame Material	20 gauge thick roll formed galvanized steel hat shape frame	Multiple gauges galvanized steel or stainless steel hat shape frame (only for roll formed frames)
Frame Depth	127mm	Other depths available (only for roll formed frames)
Blade Material and Type	16 gauge galvanized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



Front View



Section View

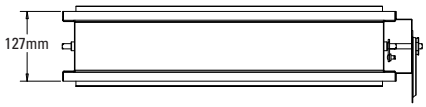


Minimum & Maximum Sizes:

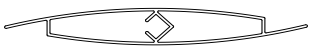
Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
CDF-125-AF-Q (Manual quadrant)	4" x 6" (101 x 152)	36" x 48" (914 x 1219)	Unlimited Size (Please consult factory)
CDF-125-AF-M (Motorised)			

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

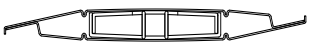
Top View



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

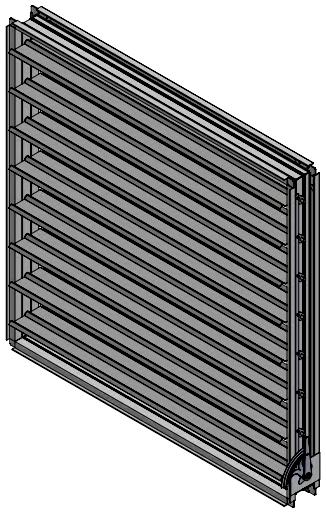
Control Dampers
3V Blade
Manual Quadrant/Motorised

Application:

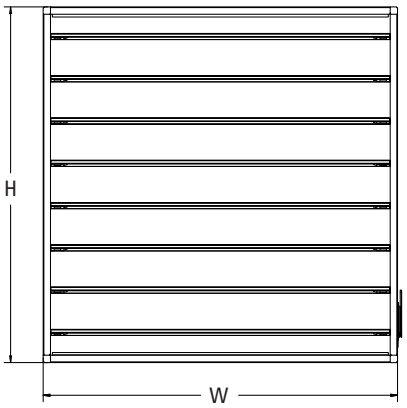
The CVS control damper models CDH-150-3V-Q and CDH-150-3V-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.
The model CDH-150-3V-Q (manual quadrant) is a general purpose commercial control damper for use in manual balancing 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:

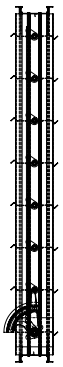
	Standard	Optional
Frame Material	3.2 mm thick extrude aluminum 6063-T6, hat shape frame	Multiple gauges galvanized steel or stainless steel flanged frame (only for roll formed frame)
Frame Depth	127mm	Other depths available (only for roll formed frames)
Blade Material and Type	16 gauge galvanized steel roll formed 3V shape profile	Multiple gauges of galvanized steel & stainless steel roll formed 3V shape profile
Blade Seal	Q - None M - Foam Type	Q - Foam Type, Neoprene, EPDM, Silicon Rubber M - Neoprene, EPDM, Silicon Rubber
Blade Operator	Q - Manual Quadrant M - Electric Actuator (On/Off Type)	M - Electric Actuator (Modulating type)
Dimensions	Actual - 6mm	Actual
Axle Material	Zinc plated steel	Stainless steel
Axle Bearings	Nylon	Brass, Bronze, Stainless steel
Type of Blade Operation	Parallel	Opposed
Jamb Seal	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
CDH-150-3V-Q (Manual quadrant)	4" x 4" (101 x 101)	36" x 48" (914 x 1219)	Unlimited Size (Please consult factory)
CDH-150-3V-M (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.

Reference:	**Client:**
Project:	**Consultant:**
Location:	**Contractor:**
Date:	**Submitted by:**

Manufacturing Excellence

Model CDH-150 Series

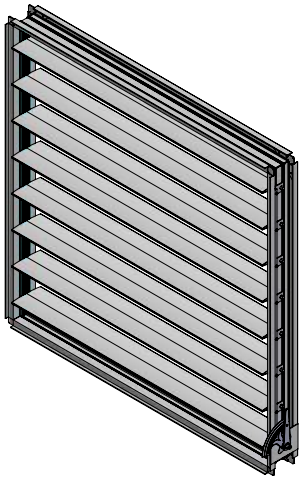
Control Dampers
Airfoil Blade
Manual Quadrant/Motorised

Application:

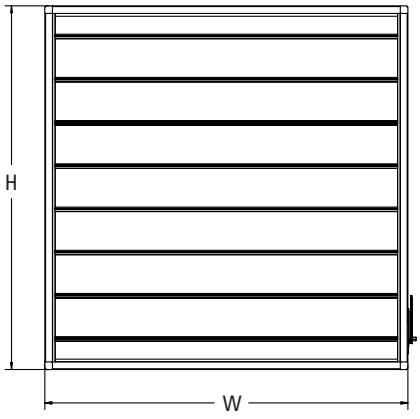
The CVS control damper models CDH-150-AF-Q and CDH-150-AF-M are intended for low to high pressure and velocity applications and can be provided in opposed or parallel blade orientations.
The model CDH-150-AF-Q (manual quadrant) is a general purpose commercial control damper for use in manual balancing 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:

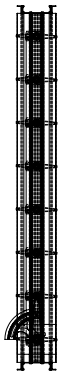
	Standard	Optional
Frame Material	3.2 mm thick extrud aluminum 6063-T6, hat shape frame	Multiple gauges galvanized steel or stainless steel hat shape frame (only for roll formed frames)
Frame Depth	127mm	Other depths available (only for roll formed frames)
Blade Material and Type	1.85 mm thick extrude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



Front View



Section View



Minimum & Maximum Sizes:

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

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

Top View

Optional Construction:

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

☐ 3V Blade Construction

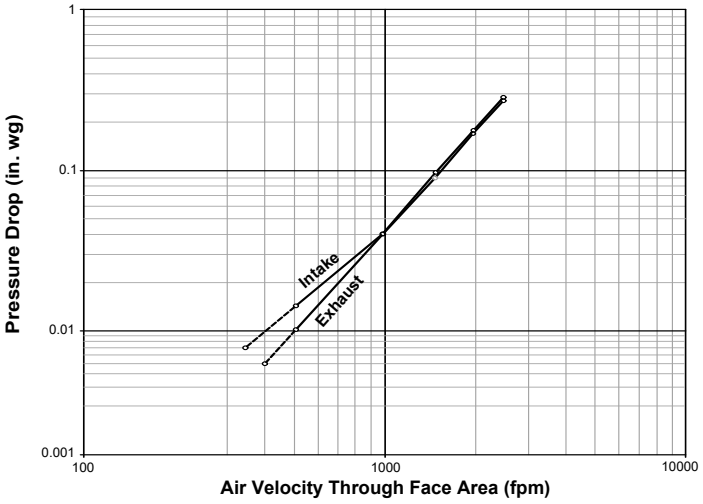
As part of our continuous improvement program, we reserve the right to make further improvements without notice.

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).

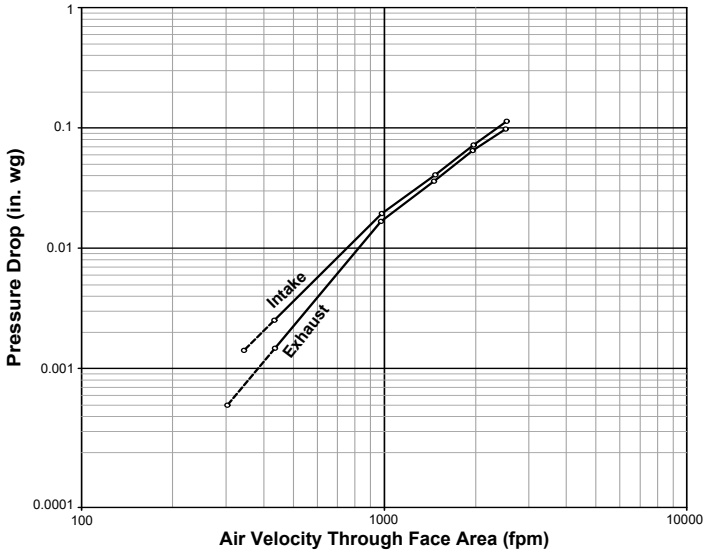
PRESSURE DROP GRAPH - 12" x 12"



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.)
2474	0.283	2470	0.271
1969	0.176	1962	0.169
1476	0.097	1468	0.089
985	0.04	986	0.04
507	0.014	505	0.01

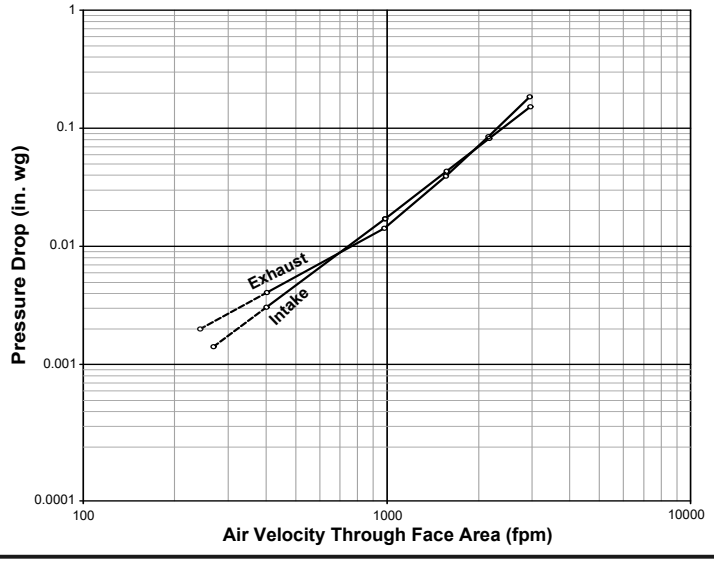
PRESSURE DROP GRAPH - 24" x 24"



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.)
2534	0.114	2530	0.098
1967	0.072	1965	0.065
1473	0.041	1471	0.036
979	0.02	977	0.017
432	0.003	436	0.001

PRESSURE DROP GRAPH - 36" x 36"



PRESSURE DROP OF DAMPER

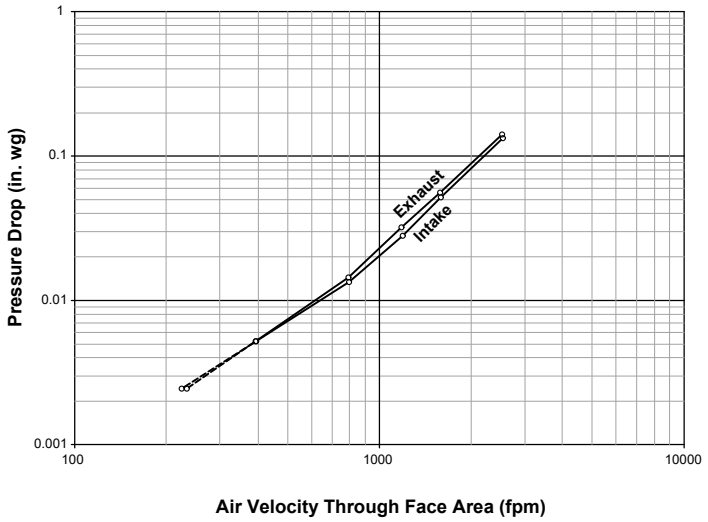
36" x 36" - (610 x 610)			
Intake		Exhaust	
Velocity	Pressure Drop	Velocity	Pressure Drop
(fpm)	(in. w.g.)	(fpm)	(in. w.g.)
2949	0.153	2949	0.185
2162	0.082	2162	0.085
1570	0.044	1570	0.04
982	0.017	982	0.014
400	0.003	404	0.004

The information published is true and to the best knowledge. CVS reserves all rights to make any changes without any notice

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).

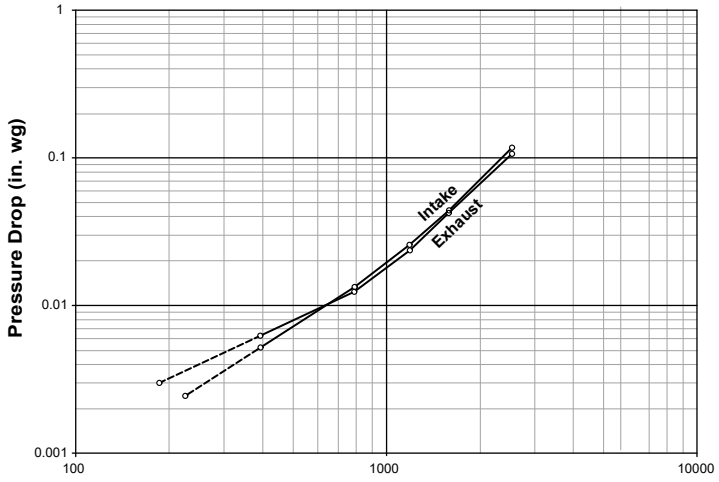
PRESSURE DROP GRAPH - 12" x 48"



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

CVS 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.

The information published is true and to the best knowledge. CVS reserves all rights to make any changes without any notice

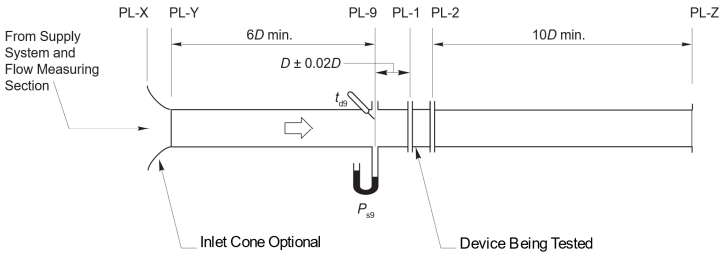
AIR LEAKAGE

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^2 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).

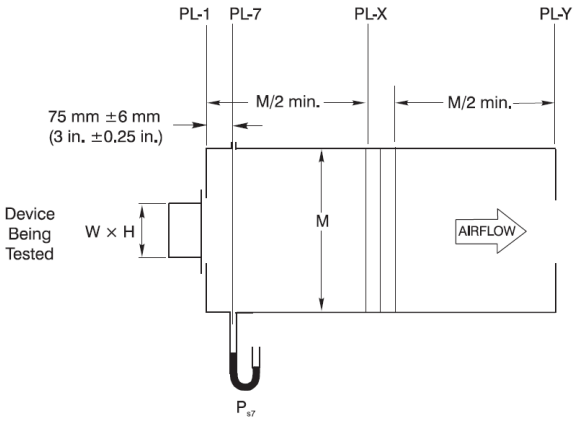
Maximum Alowable Leakage, cfm/ft^2					
Class	**1 in. w.g.**	**2 in. w.g.**	**3 in. w.g.**	**4 in. w.g.**	**6 in. w.g.**
1A	3	N/A	N/A	N/A	N/A
1	4	6	7	8	10
2	10	14	17	20	25

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



CVS 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.

The information published is true and to the best knowledge. CVS reserves all rights to make any changes without any notice

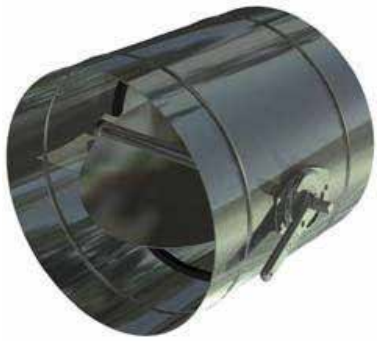
Round Dampers

CVS

DAMPER SERIES

MANUAL DAMPERS

TheModel 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:

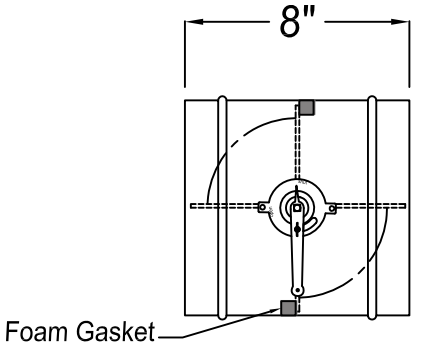
1/4" square axle

FINISH:

Galvanized

MAXIMUM VELOCITY:

1400 FPM



approx. 1/8" o.d. undersized

Job Name:	☐ MODEL ED-I
Location:	
Architect:	
Engineer:	
Contractor:	

MANUAL DAMPERS

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

MODEL ED

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:

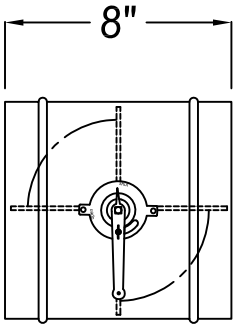
- ☐ 1/4" Continous Shaft; Steel
- ☐ Nylon Bushings
- ☐ Stand Off Bracket
- ☐ Paint Grip

FINISH:

Galvanized

MAXIMUM VELOCITY:

1400 FPM



approx. 1/8" o.d. undersized

Job Name:	☐ MODEL ED
Location:	
Architect:	
Engineer:	
Contractor:	

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.

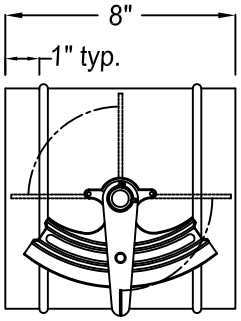
MAXIMUM VELOCITY		
DIAMETER	FPM	Max. Pressure Differential
4 - 8"	2600	3"
10 - 12"	2400	2.5"
14 - 18"	2300	2"
20 - 24"	2300	1.5"
26 - 30"	2200	1.25"
32 - 40"	2000	0.75"

SHAFT:

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

BEARING:

Molded synthetic
Nylon 6/6



VARIATIONS:

☐ Stainless steel body, blade, shaft and quadrant

☐ All aluminum construction w/ steel plated quadrant

☐ Extended quadrant 2"

Job Name:	☐ MODEL RD
Location:	
Architect:	
Engineer:	
Contractor:	

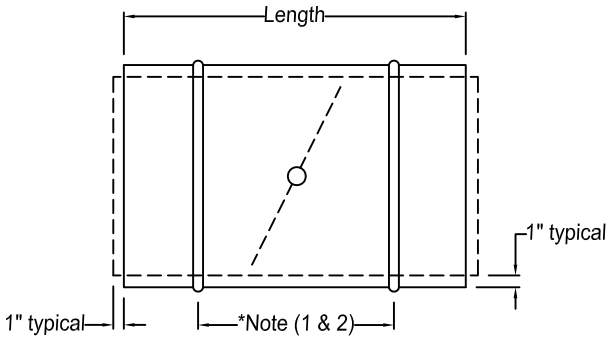
(ENGINEERS)

SUBMITTAL DATA

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



MODEL DW

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

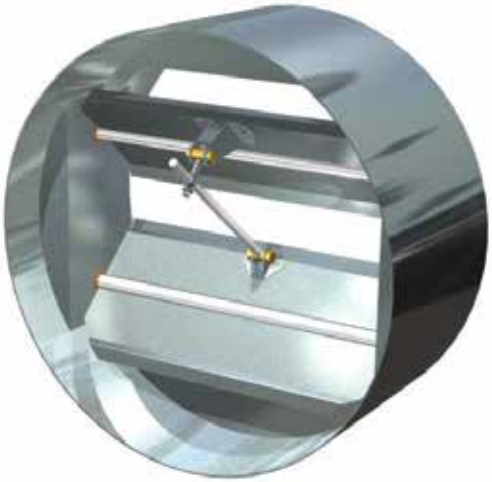
Job Name:	☐ **MODEL DW**
Location:	
Architect:	
Engineer:	
Contractor:	

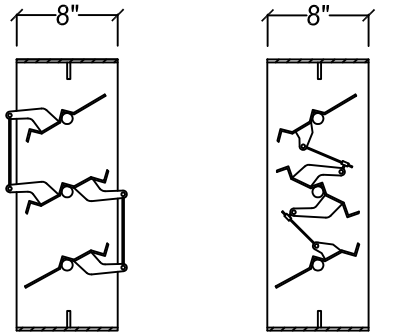
(ENGINEERS)

SUBMITTAL DATA

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:	☐ **MODEL R-PB, R-OB**
Location:	
Architect:	
Engineer:	
Contractor:	

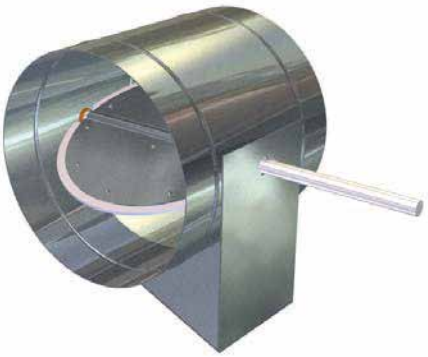
(ENGINEERS)

SUBMITTAL DATA

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.



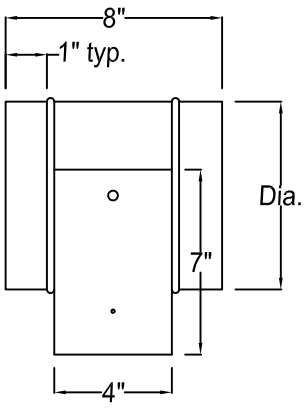
MODEL RI

approx. 1/8" o.d. undersized

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:

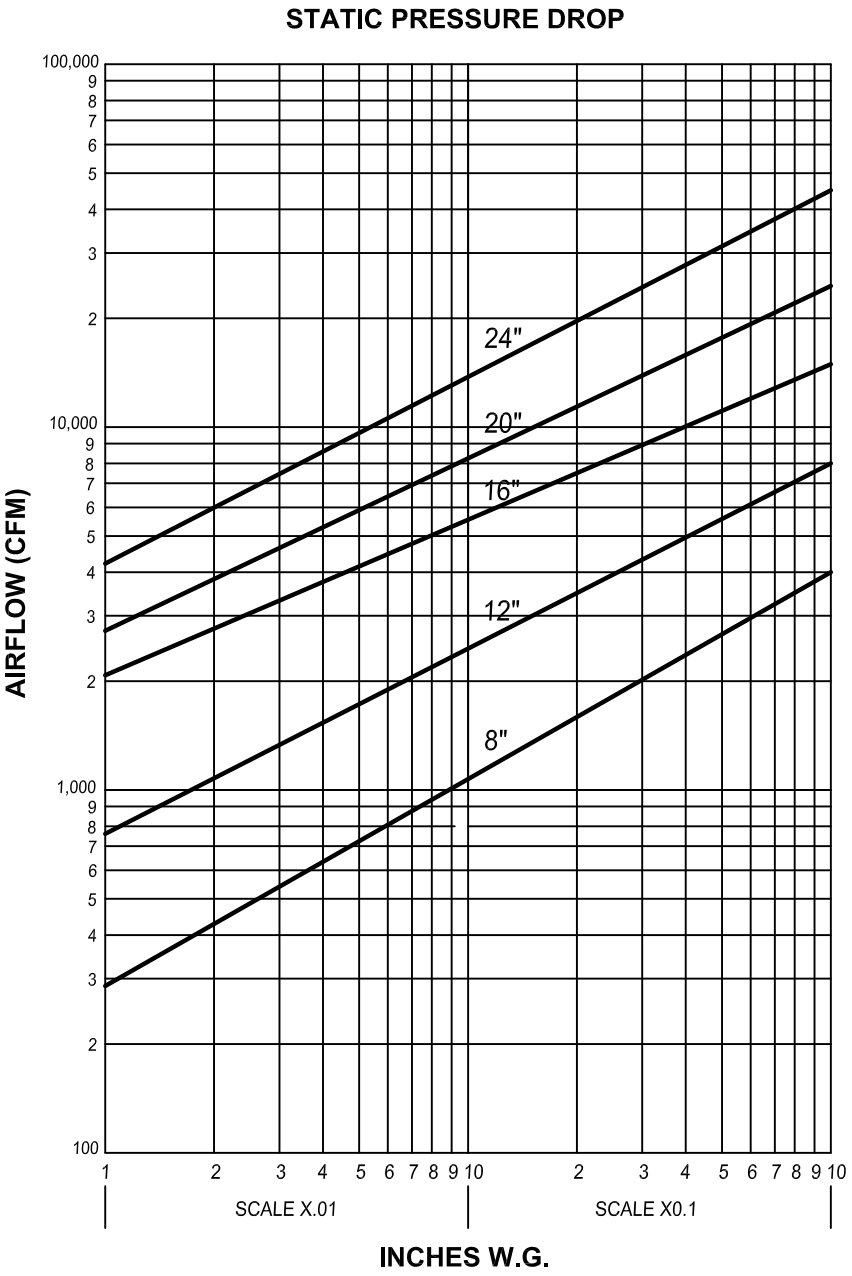
- ☐ 16 ga
- ☐ 14 ga

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:	☐ MODEL RI
Location:	
Architect:	
Engineer:	
Contractor:	

ROUND DAMPERS



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:	☐ Performance Data
Location:	
Architect:	
Engineer:	
Contractor:	

Backdraft Dampers

CVS

DAMPER SERIES

Reference:	**Client:**
Project:	**Consultant:**
Location:	**Contractor:**
Date:	**Submitted by:**

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Your Reliable HVAC Partner

Model CB-600 Series

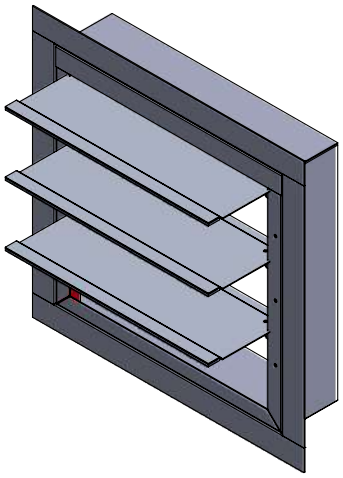
Backdraft/Pressure Relief Dampers

Application:

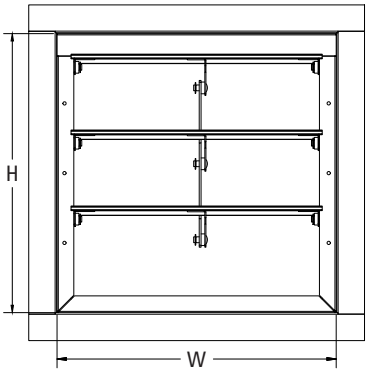
The CVS Backdraft Dampers (also called gravity dampers) CB-600 Series allow airflow in one direction and prevent reverse airflow for use in exhaust or intake HVAC systems suitable for wall mounted applications.
Backdraft dampers can either be operated by gravity (where pressure or velocity opens and 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:

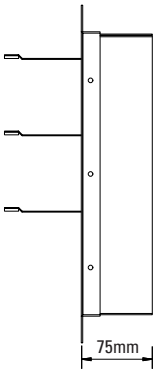
	Standard	Optional
Frame Material	20 gauge galvanized steel	Galvanized steel and aluminum with different thicknesses
Frame Depth	75mm	-----
Flange	30mm	Consult factory for other sizes
Blade Material and Type	24 gauge galvanized steel	Galvanized steel and aluminum with different thicknesses
Blade Seal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



Front View



Side View

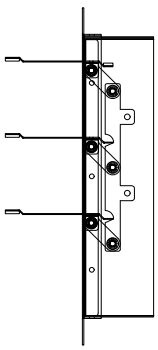


Minimum & Maximum Sizes:

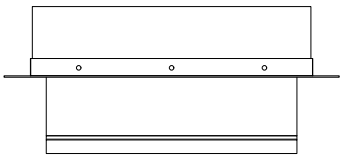
Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
CB-600 Series	6" x 6" (152 x 152)	40" x 40" (1016 x 1016)	Unlimited Size (Please consult factory)

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

Section View

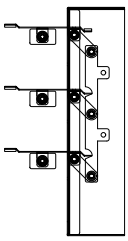


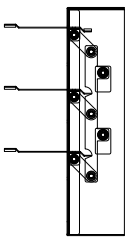
Top View



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





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

Reference:	**Client:**
Project:	**Consultant:**
Location:	**Contractor:**
Date:	**Submitted by:**

CVS
Your Reliable HVAC Partner

Model CB-601 Series

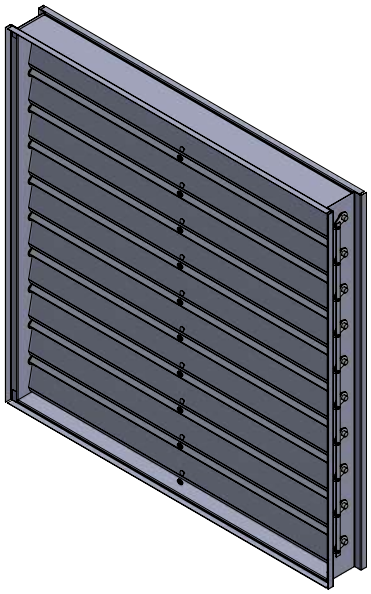
Backdraft/Pressure Relief Dampers

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

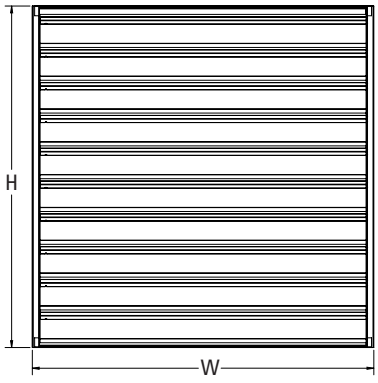


Minimum & Maximum Sizes:

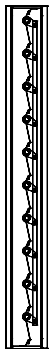
Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
CB-601 Series	6" x 6" (152 x 152)	40" x 40" (1016 x 1016)	Unlimited Size (Please consult factory)

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

Front View

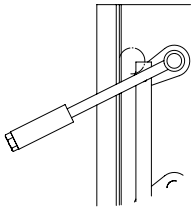


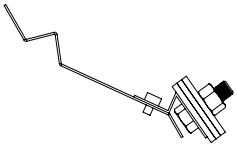
Side View



Optional Construction:

- ☐ Insect Mesh
- ☐ Bird Mesh
- ☐ Counter Weight Options for Pressure Relief Dampers:
  - ☐ Counter Balancing - Externally
  - ☐ Counter Balancing - Internally





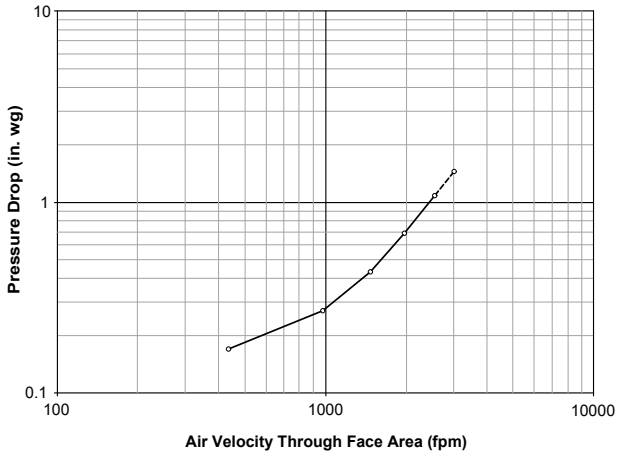
Top View

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

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).

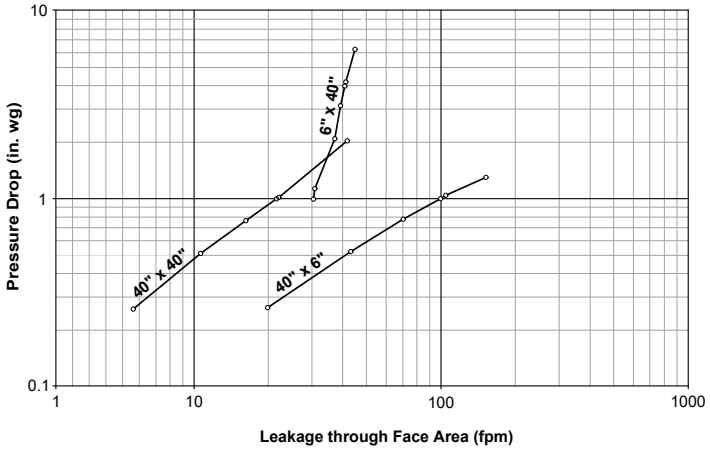
PRESSURE DROP GRAPH - 24" x 24"



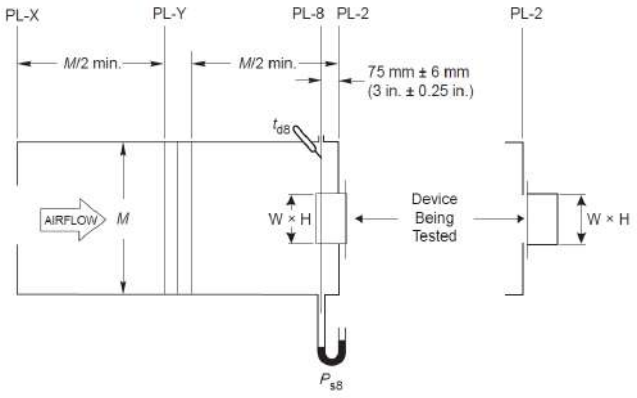
PRESSURE DROP OF DAMPER

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

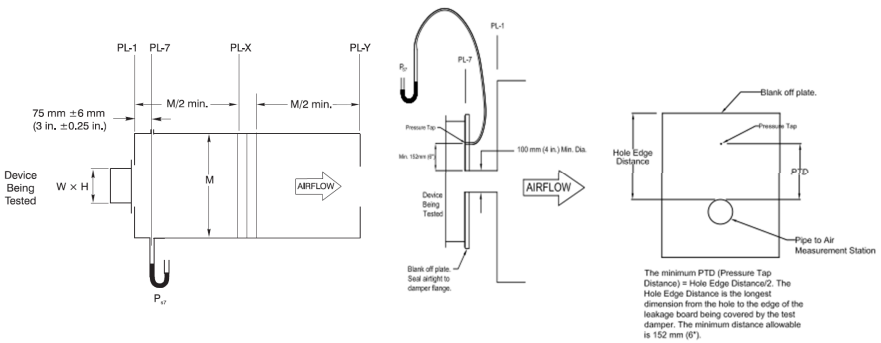
AIR LEAKAGE GRAPH



Test Figure 5.5 - Test Damper Setup with Inlet Chamber



Test Figure 5.4 - Test Damper Setup with Outlet Chamber



CVS 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.

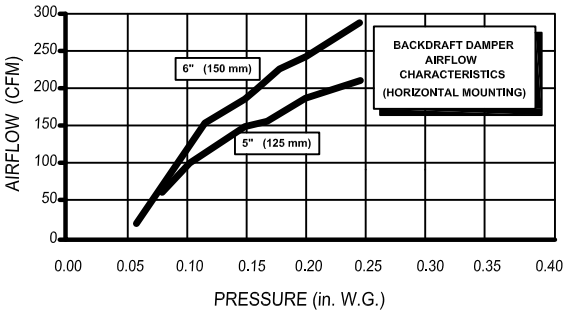
The AMCA Certified Ratings Seal applies to air performance and air leakage ratings only.

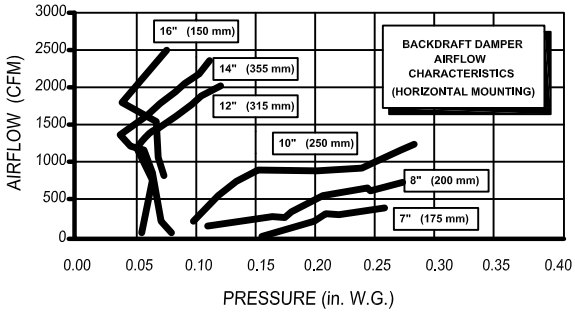
The information published is true and to the best knowledge. CVS reserves all rights to make any changes without any notice

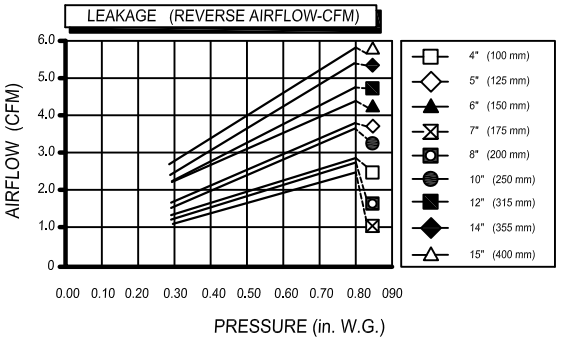
BACKDRAFT DAMPERS

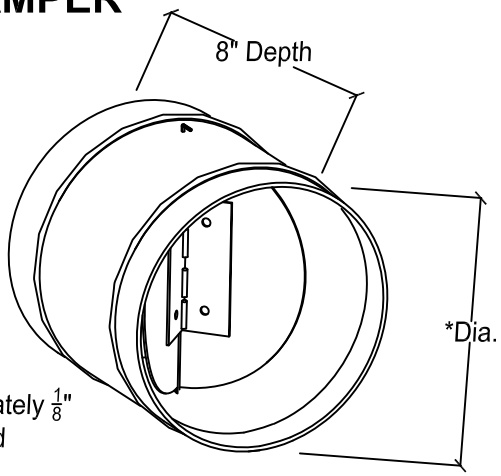
BUTTERFLY BACKDRAFT DAMPER

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"

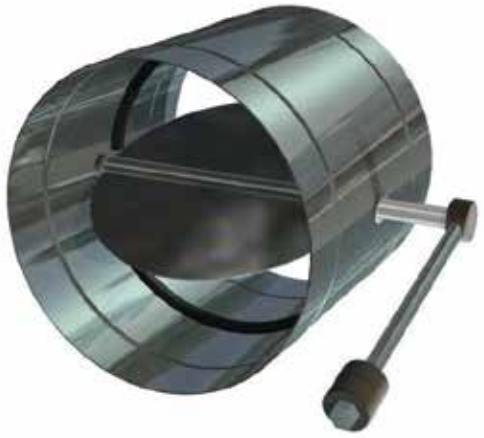
Job Name:	☐ MODEL BF
Location:	
Architect:	
Engineer:	
Contractor:	

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.

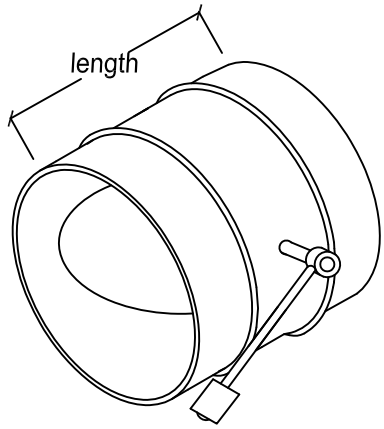
DIAMETER	LENGTH	FRAME & BLADE THICKNESS
4 - 10"	8"	24 GA GALVANIZED
12" - 18"	8"	20 GA GALVANIZED
20" - 32"	8"	18 GA GALVANIZED

OPTIONS:

☐ 304 Stainless Steel Construction

☐ 316 Stainless Steel Construction

☐ Additional Weights



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:	☐ MODEL CD
Location:	
Architect:	
Engineer:	
Contractor:	

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:	☐ **MODEL RCD**
Location:	
Architect:	
Engineer:	
Contractor:	

(ENGINEERS)

SUBMITTAL DATA

HEAVY DUTY BACKDRAFT DAMPER

Application and Design

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

Ratings:

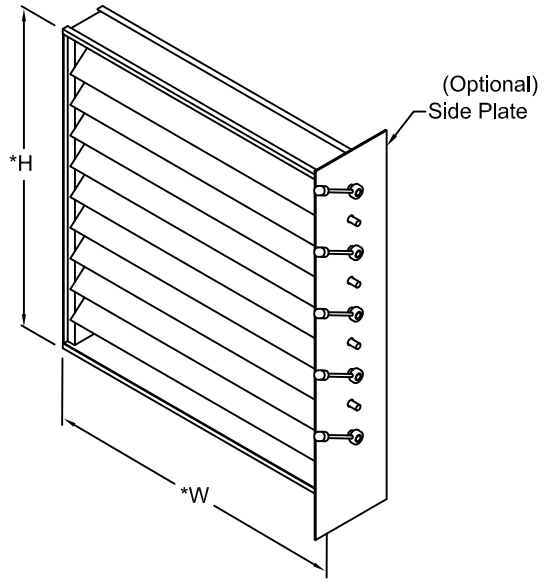
Pressure: 4 in. w.g. - differential pressure
Velocity: 4000 fpm
Temperature: 180° F

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

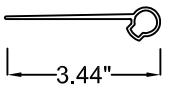


*W & H dimensions furnished approximately 1/4" undersize.

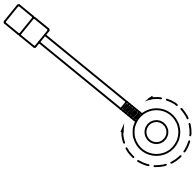
Options and Accessories:

- ☐ .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)

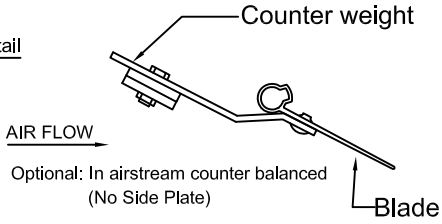
Optional: In airstream counter balanced
(No Side Plate)



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.



Optional: In airstream counter balanced
(No Side Plate)

Vertical mount with horizontal airflow shown

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

Job Name:	
Location:	
Architect:	
Engineer:	
Contractor:	

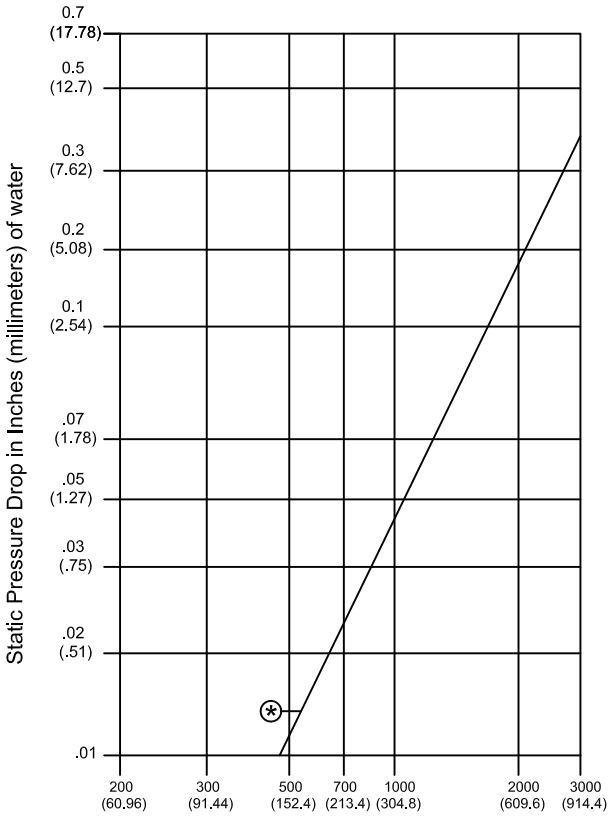
☐ **MODEL HCB-700 (4000 FPM)**

DAMPER PERFORMANCE

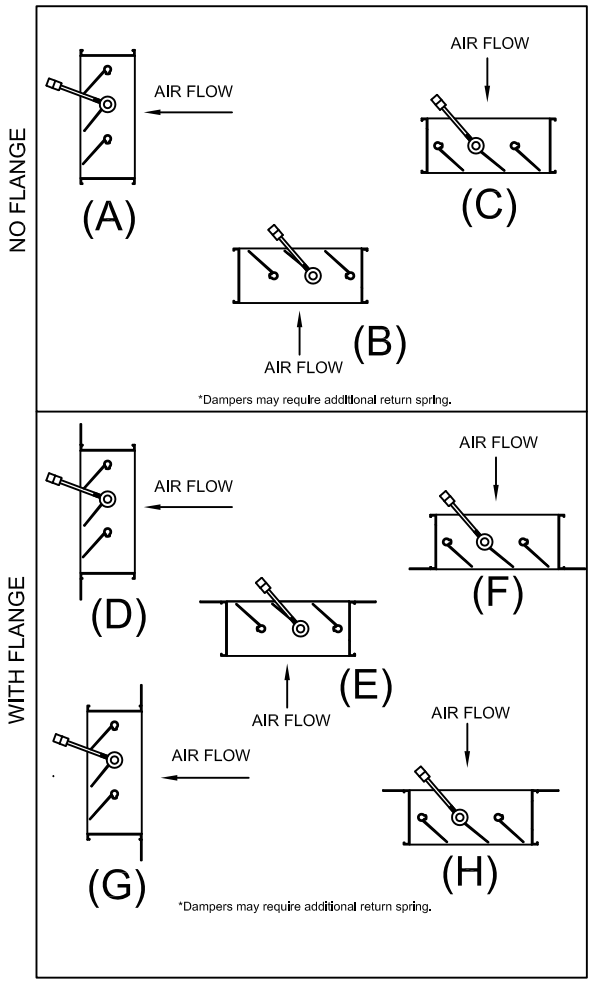
DAMPER WIDTH	MAXIMUM BACK PRESSURE	MAXIMUM SYSTEM VELOCITY	LEAKAGE*		BLADES START TO OPEN	BLADES FULLY OPEN
			Percent of Max. Flow	CFM/ Sq. Ft.		
48" (1219)	4.0" w.g.	4000 FPM	.61	15	**.01" w.g.	**.05" w.g.
36" (914)	8.0" w.g.	4000 FPM	.6	15		
24" (610)	12.0" w.g.	4000 FPM	.72	18		
12" (305)	16.0" w.g.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



(ENGINEERS)

SUBMITTAL DATA

HEAVY DUTY BACKDRAFT DAMPER

Application and Design

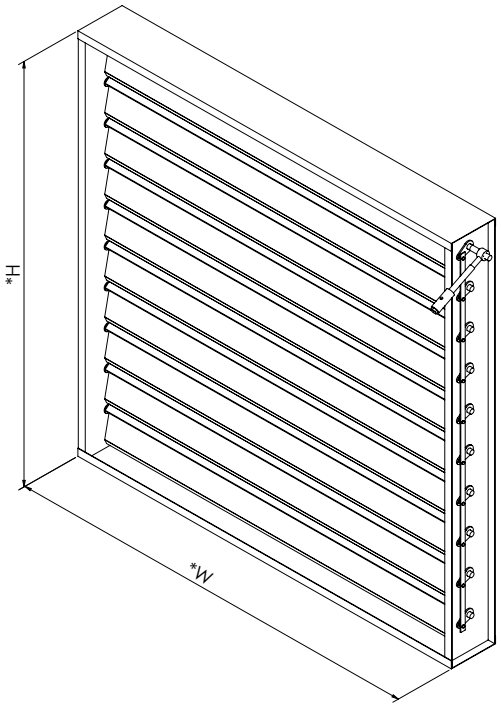
The **HCB-750** Series is a vertically or horizontally mounted backdraft damper that is designed to allow veritical or horizontal airflow and prevent reverse airflow.

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:

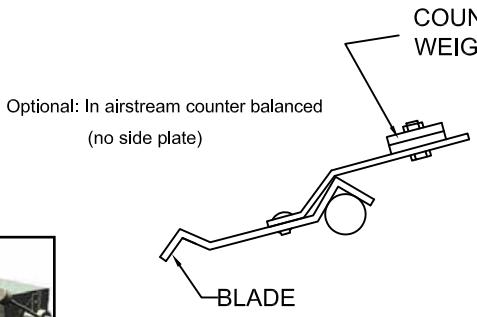
Minimum Size: 6" w x 6" h

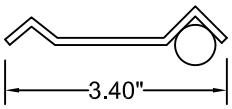
Maximum Single Section: 48" w x 48" h

Maximum Double Section: 96" w x 96" h

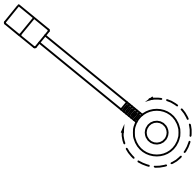
Options and Accessories:

- ☐ 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





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.

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

Job Name:	
Location:	
Architect:	
Engineer:	
Contractor:	

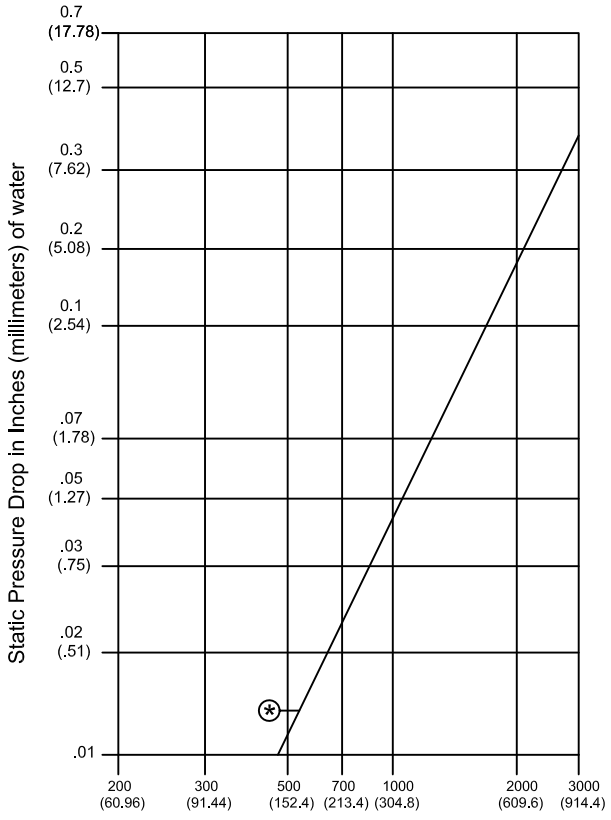
☐ **MODEL HCB-750** (4000 FPM)

DAMPER PERFORMANCE

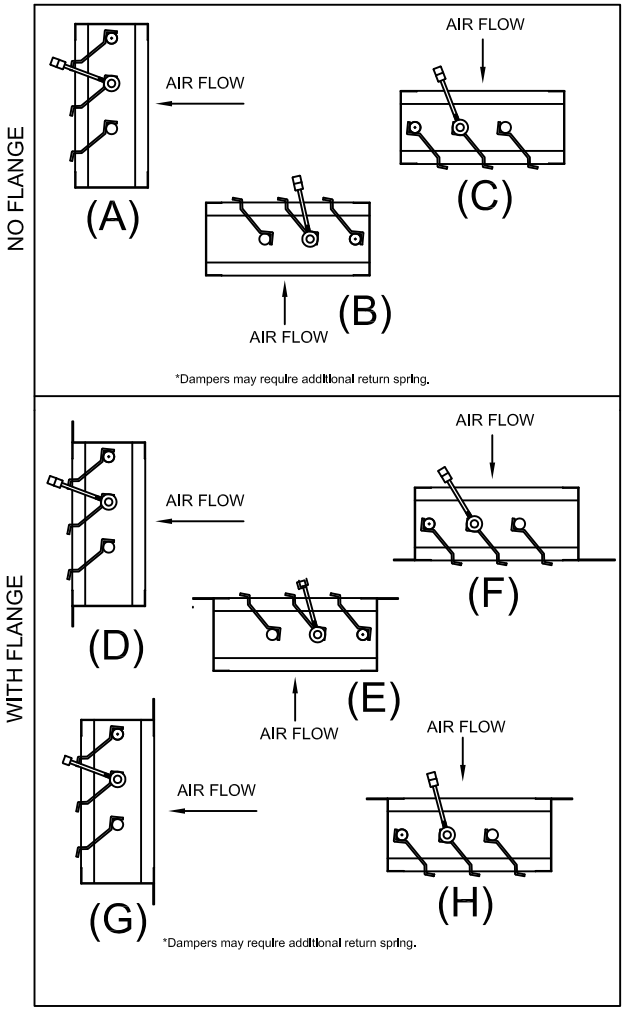
DAMPER WIDTH	MAXIMUM BACK PRESSURE	MAXIMUM SYSTEM VELOCITY	LEAKAGE*		BLADES START TO OPEN	BLADES FULLY OPEN
			Percent of Max. Flow	CFM/ Sq. Ft.		
48" (1219)	4.0" w.g.	4000 FPM	.61	15	**.01" w.g.	**.05" w.g.
36" (914)	8.0" w.g.	4000 FPM	.6	15		
24" (610)	12.0" w.g.	4000 FPM	.72	18		
12" (305)	16.0" w.g.	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-750 AIR FLOW ARRANGEMENTS
Standard counter weights at jamb
(assist to CLOSE)



Pressure Relief Dampers

CVS

DAMPER SERIES

Reference:	**Client:**
Project:	**Consultant:**
Location:	**Contractor:**
Date:	**Submitted by:**

CVS
Your Reliable HVAC Partner

Model CB-600 Series

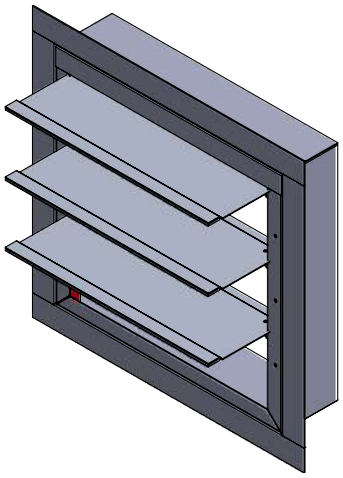
Backdraft/Pressure Relief Dampers

Application:

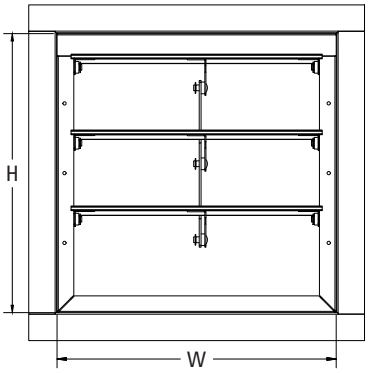
The CVS Backdraft Dampers (also called gravity dampers) CB-600 Series allow airflow in one direction and prevent reverse airflow for use in exhaust or intake HVAC systems suitable for wall mounted applications.
Backdraft dampers can either be operated by gravity (where pressure or velocity opens and 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:

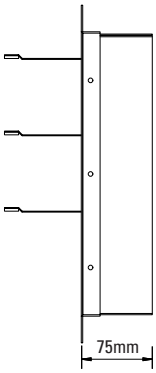
	Standard	Optional
Frame Material	20 gauge galvanized steel	Galvanized steel and aluminum with different thicknesses
Frame Depth	75mm	-----
Flange	30mm	Consult factory for other sizes
Blade Material and Type	24 gauge galvanized steel	Galvanized steel and aluminum with different thicknesses
Blade Seal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



Front View



Side View

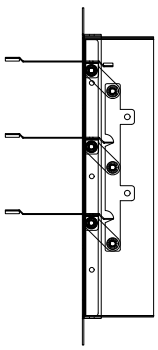


Minimum & Maximum Sizes:

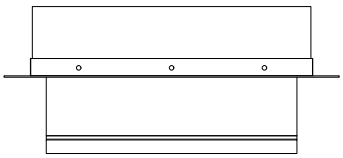
Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
CB-600 Series	6" x 6" (152 x 152)	40" x 40" (1016 x 1016)	Unlimited Size (Please consult factory)

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

Section View

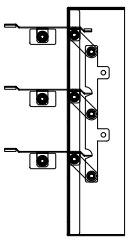


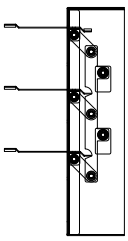
Top View



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





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

Reference:	**Client:**
Project:	**Consultant:**
Location:	**Contractor:**
Date:	**Submitted by:**

CVS
Your Reliable HVAC Partner

Model CB-601 Series

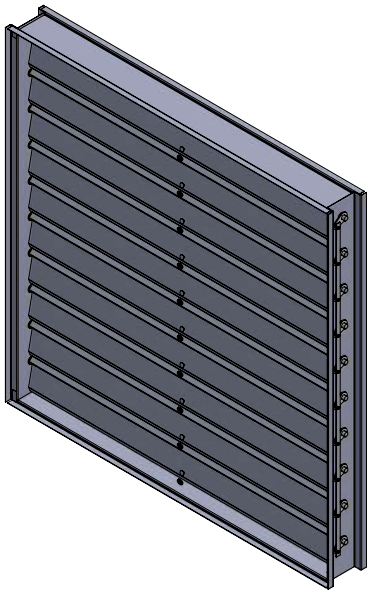
Backdraft/Pressure Relief Dampers

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

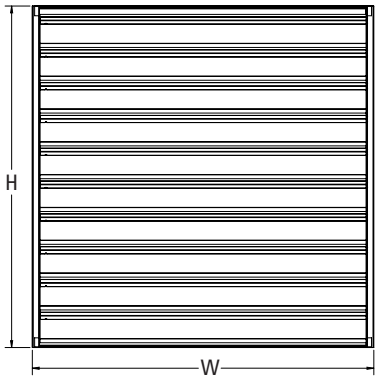


Minimum & Maximum Sizes:

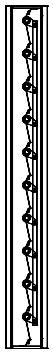
Model	Minimum Single Section	Maximum Single Section	Maximum Multi Section
CB-601 Series	6" x 6" (152 x 152)	40" x 40" (1016 x 1016)	Unlimited Size (Please consult factory)

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

Front View

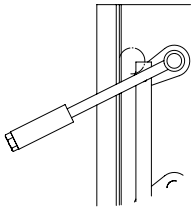


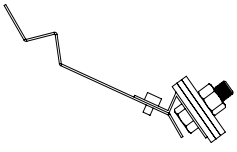
Side View



Optional Construction:

- ☐ Insect Mesh
- ☐ Bird Mesh
- ☐ Counter Weight Options for Pressure Relief Dampers:
  - ☐ Counter Balancing - Externally
  - ☐ Counter Balancing - Internally





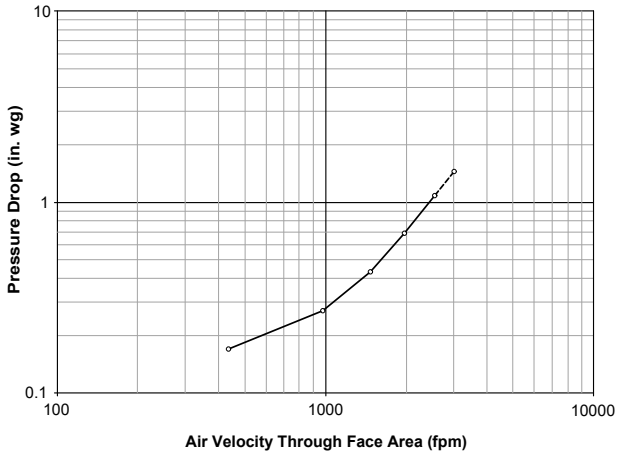
Top View

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

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).

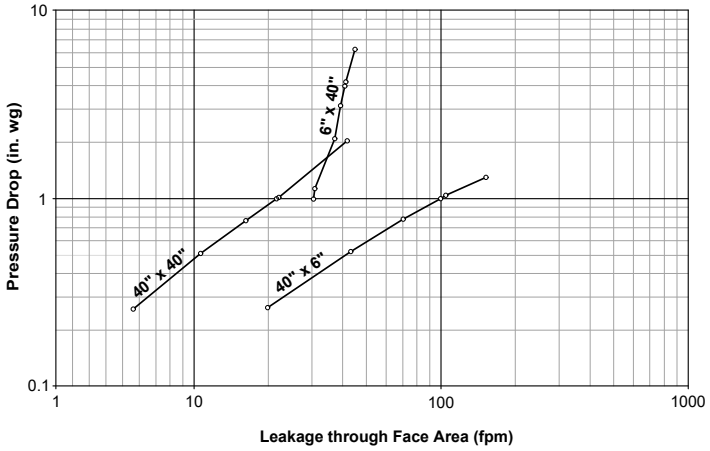
PRESSURE DROP GRAPH - 24" x 24"



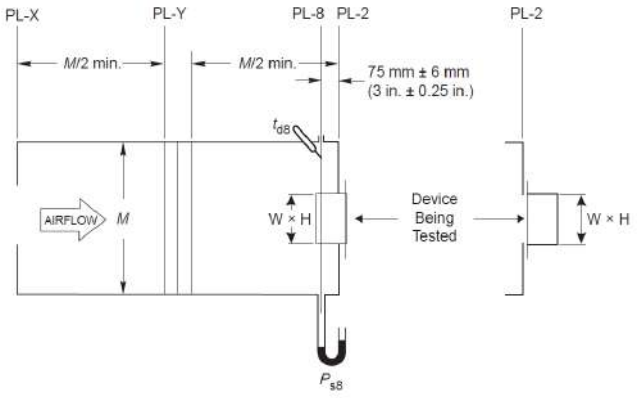
PRESSURE DROP OF DAMPER

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

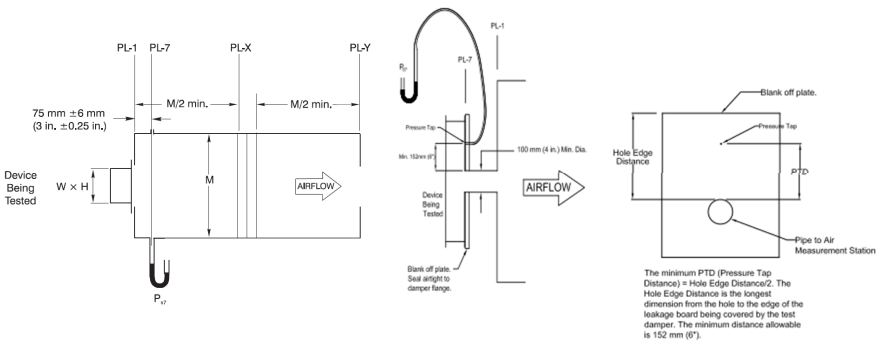
AIR LEAKAGE GRAPH



Test Figure 5.5 - Test Damper Setup with Inlet Chamber



Test Figure 5.4 - Test Damper Setup with Outlet Chamber



CVS 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.

The information published is true and to the best knowledge. CVS reserves all rights to make any changes without any notice

(ENGINEERS)

SUBMITTAL DATA

HEAVY DUTY BACKDRAFT DAMPER

Application and Design

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

Ratings:

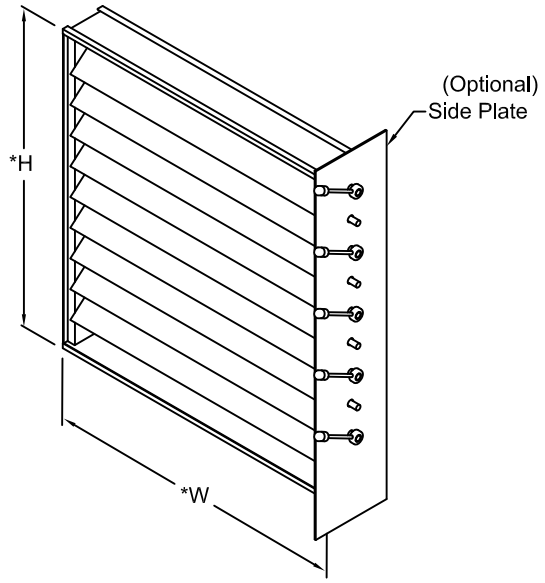
Pressure: 4 in. w.g. - differential pressure
Velocity: 4000 fpm
Temperature: 180° F

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

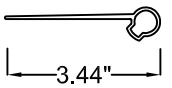


*W & H dimensions furnished approximately 1/4" undersize.

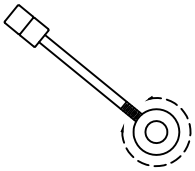
Options and Accessories:

- ☐ .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)

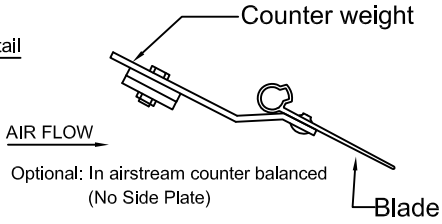
Optional: In airstream counter balanced
(No Side Plate)



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.



Optional: In airstream counter balanced
(No Side Plate)

Vertical mount with horizontal airflow shown

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

Job Name:	
Location:	
Architect:	
Engineer:	
Contractor:	

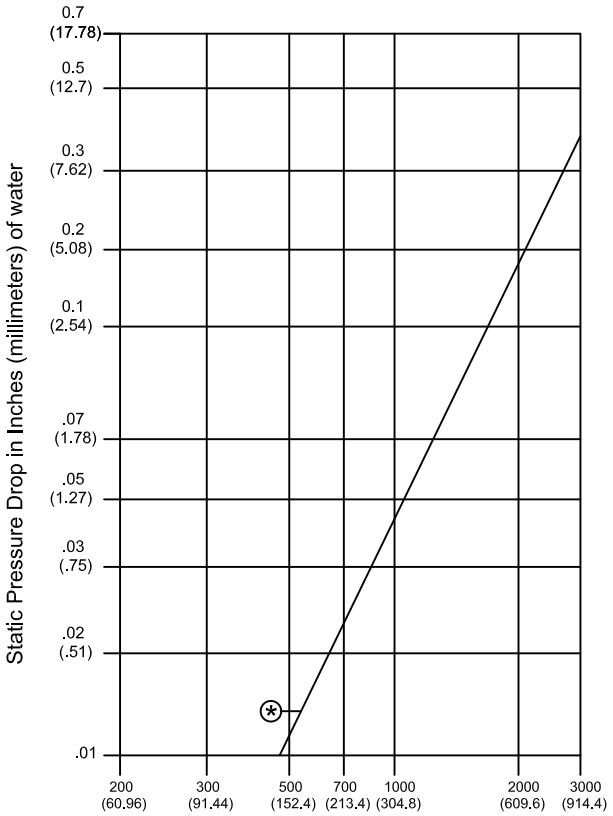
☐ **MODEL HCB-700 (4000 FPM)**

DAMPER PERFORMANCE

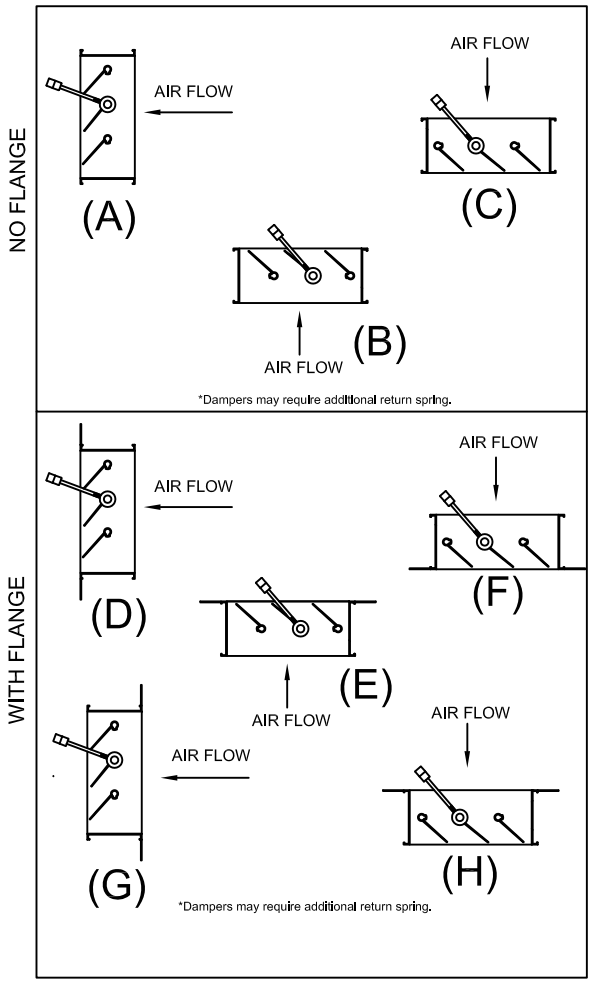
DAMPER WIDTH	MAXIMUM BACK PRESSURE	MAXIMUM SYSTEM VELOCITY	LEAKAGE*		BLADES START TO OPEN	BLADES FULLY OPEN
			Percent of Max. Flow	CFM/ Sq. Ft.		
48" (1219)	4.0" w.g.	4000 FPM	.61	15	**.01" w.g.	**.05" w.g.
36" (914)	8.0" w.g.	4000 FPM	.6	15		
24" (610)	12.0" w.g.	4000 FPM	.72	18		
12" (305)	16.0" w.g.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



(ENGINEERS)

SUBMITTAL DATA

HEAVY DUTY BACKDRAFT DAMPER

Application and Design

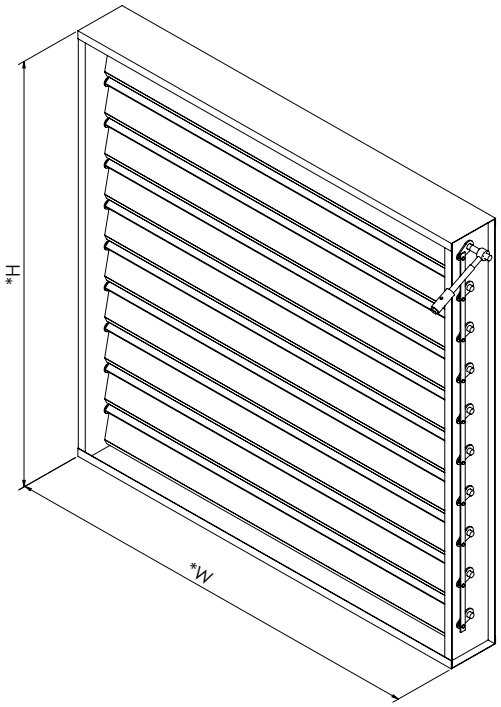
The **HCB-750** Series is a vertically or horizontally mounted backdraft damper that is designed to allow veritical or horizontal airflow and prevent reverse airflow.

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:

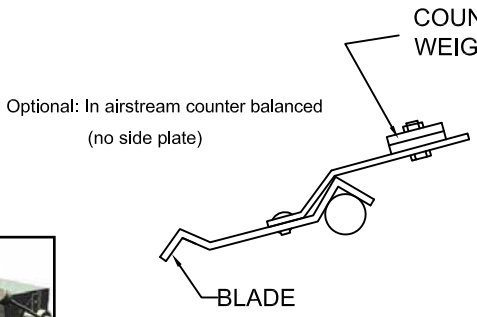
Minimum Size: 6" w x 6" h

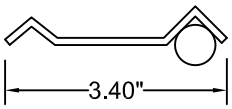
Maximum Single Section: 48" w x 48" h

Maximum Double Section: 96" w x 96" h

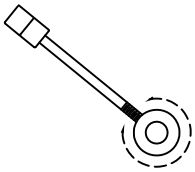
Options and Accessories:

- ☐ 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





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.

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

Job Name:	
Location:	
Architect:	
Engineer:	
Contractor:	

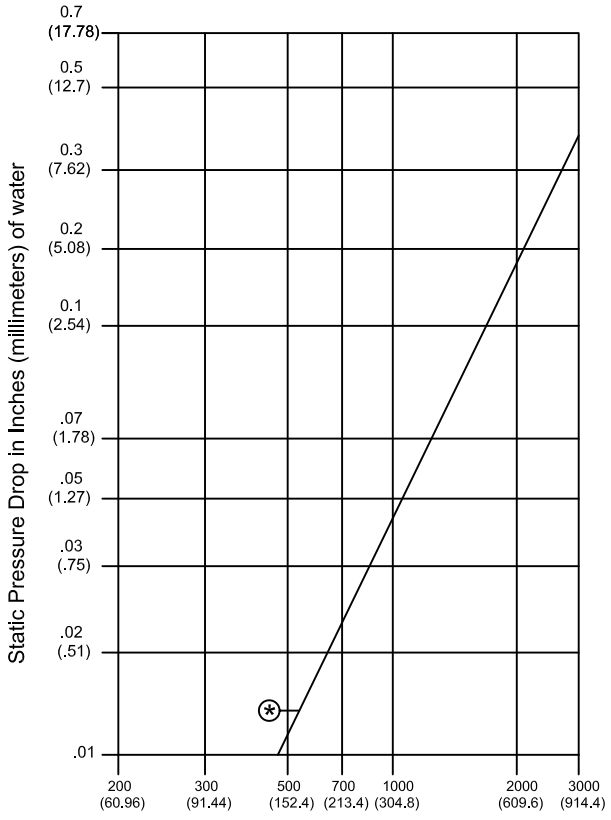
☐ **MODEL HCB-750** (4000 FPM)

DAMPER PERFORMANCE

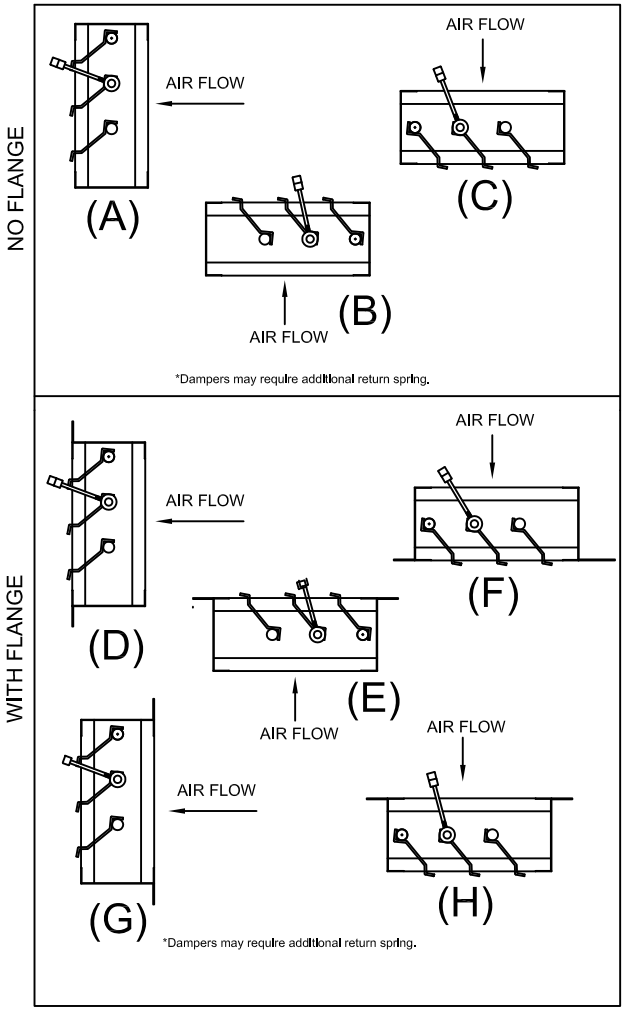
DAMPER WIDTH	MAXIMUM BACK PRESSURE	MAXIMUM SYSTEM VELOCITY	LEAKAGE*		BLADES START TO OPEN	BLADES FULLY OPEN
			Percent of Max. Flow	CFM/ Sq. Ft.		
48" (1219)	4.0" w.g.	4000 FPM	.61	15	**.01" w.g.	**.05" w.g.
36" (914)	8.0" w.g.	4000 FPM	.6	15		
24" (610)	12.0" w.g.	4000 FPM	.72	18		
12" (305)	16.0" w.g.	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-750 AIR FLOW ARRANGEMENTS
Standard counter weights at jamb
(assist to CLOSE)



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:	☐ **MODEL RCD**
Location:	
Architect:	
Engineer:	
Contractor:	

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

SAFE4

Non-Coated Fire-Resisting Ductwork & Life Safety Dampers

Building & Industry NOVENCO

Smoke Exhaust, Car Park & Tunnel Ventilation

CVS

Control Dampers, Louvers, Sound Attenuators & VAV Boxes

UNIFRAX

Fire-rated Insulation

FLAMEBAR

Coated Fire-Resisting Ductwork

NOVOVENT

General Ventilation

ACS CLIMACS

AHU, FCU, RTU, ERV & Ecology Units

U.A.E

Industrial Area 2,
Al Wasit Road,
Sharjah, UAE

K.S.A

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

Egypt

Al Minya Industrial Zone,
Al Minya Governorate
2427606, Egypt

Qatar

Street 9 Industrial Area,
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