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PRODUCTS CATALOGUE

PRODUCT BULLETIN

8

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**BETA**  
i n d u s t r i a l

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Note: AMCA certified products are available at AMCA directory of listed products at <http://www.amca.org/certified-listed/listedproducts.php>





## VOLUME CONTROL DAMPER - 3VCD SERIES 3V-SHAPED STEEL BLADES

### STANDARD CONSTRUCTION

**Frame:** 1.2mm thick galvanized steel sheet.

**Blades:** 3 V-shaped 1.2mm thick roll-formed galvanized steel.

**Axles:** 1/2" square galvanized steel rod.

**Linkage:** made of galvanized steel.  
Concealed in frame.

**Bushing:** Self lubricating plastic bushes.

**Quadrant:** Plated steel with wing nut to lock the blades position. Marked to show the position of the blades.

**Fixing to duct:** Flanged frame.

**Single section minimum size:**

100X100mm for Flanged/Box/Slip & clip types.

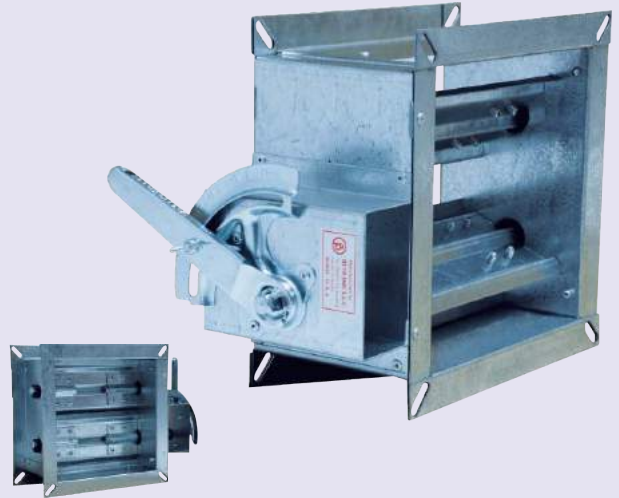
100X150mm for Hat-shaped type.

**Single section maximum size:**

1200X1200mm for Hat-shaped/Flanged types.

1000X1000mm for Slip & clip/Box types.

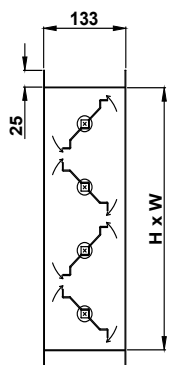
*Model 3VCDG2PLF*



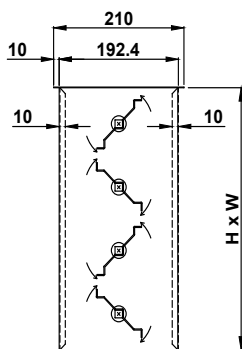
*Model 3VCDG2PLH*



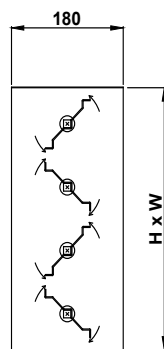
### DIMENSIONS



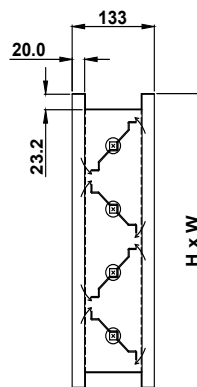
3VCD-Flange type



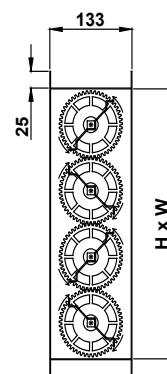
3VCD-Slip & Clip type



3VCD-Box type



3VCD-Hat type



3VCD with gear mechanism



*Plastic Bushes*

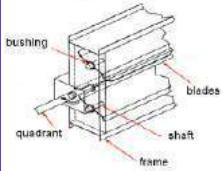




# VOLUME CONTROL DAMPER - 3VCD SERIES

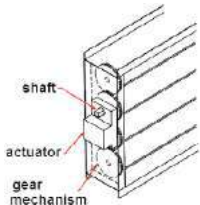
## 3V-SHAPED STEEL BLADES

### OPTIONS



FEATURE	MODEL	MANUAL QUADRANT MODELS															
		3VCDG2PLH	3VCDG2BLH	3VCDG2PLF	3VCDG2BLF	3VCDG2PLS	3VCDG2BLS	3VCDG2PLB	3VCDG2BLB	3VCDG2PGH	3VCDG2BGH	3VCDG2PGF	3VCDG2BGF	3VCDG2PGS	3VCDG2BGS	3VCDG2PGB	3VCDG2BGB
DRIVE	MANUAL QUADRANT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	ELECTRIC ACTUATOR																
BLADE TYPE	G.I. 3V-SHAPED	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	ALUMINUM AEROFOIL																
BLADE MOVEMENT	OPPOSED	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PARALLEL	ABOVE MODELS (EXCEPT THE ONES WITH GEAR MECHANISM) CAN BE WITH PARALLEL BLADES, PLS. WRITE "PARALLEL" ON YOUR ORDER															
USE	CONTROL (AIR BALANCING)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	LOW LEAKAGE (AIR TIGHT SHUT OFF)																
CONSTRUCTION	GALVANIZED STEEL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	STAINLESS STEEL 304																✓
BUSHING/ BEARING TYPE	PLASTIC BUSHES	✓		✓		✓		✓		✓		✓		✓			
	BRASS BUSHES		✓		✓		✓		✓		✓		✓		✓		✓
	S.S. BEARING														✓	✓	✓
MECHANISM	G.I. LINKAGE	✓	✓	✓	✓	✓	✓	✓	✓	✓						✓	✓
	PLASTIC GEARS										✓	✓	✓	✓	✓	✓	✓
FIXING TO DUCT	HAT-SHAPED	✓	✓						✓	✓					✓		✓
	FLANGE			✓	✓						✓	✓			✓		
	SLIP & CLIP					✓	✓							✓		✓	
	BOX TYPE (INSERTED INSIDE DUCT)							✓	✓					✓	✓		✓

\*\*Other options of S.S. bushes "X" and S.S. bearing "S" are shown at the ordering key.



FEATURE	MODEL	MOTORIZED MODELS															
		M3VCDG2PLH	M3VCDG2BLH	M3VCDG2PLF	M3VCDG2BLF	M3VCDG2PLS	M3VCDG2BLS	M3VCDG2PLB	M3VCDG2BLB	M3VCDG2PGH	M3VCDG2BGH	M3VCDG2PGF	M3VCDG2BGF	M3VCDG2PGS	M3VCDG2BGS	M3VCDG2PGB	M3VCDG2BGB
DRIVE	MANUAL QUADRANT																
	ELECTRIC ACTUATOR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BLADE TYPE	G.I. 3V-SHAPED	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	ALUMINUM AEROFOIL																
BLADE MOVEMENT	OPPOSED	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PARALLEL	ABOVE MODELS (EXCEPT THE ONES WITH GEAR MECHANISM) CAN BE WITH PARALLEL BLADES, PLS. WRITE "PARALLEL" ON YOUR ORDER															
USE	CONTROL (AIR BALANCING)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	LOW LEAKAGE (AIR TIGHT SHUT OFF)																
CONSTRUCTION	GALVANIZED STEEL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	STAINLESS STEEL 304																✓
BUSHING/ BEARING TYPE	PLASTIC BUSHES	✓		✓		✓		✓		✓		✓		✓			
	BRASS BUSHES		✓		✓		✓		✓		✓		✓		✓		✓
	S.S. BEARING														✓	✓	✓
MECHANISM	G.I. LINKAGE	✓	✓	✓	✓	✓	✓	✓	✓	✓					✓	✓	✓
	PLASTIC GEARS										✓	✓	✓	✓	✓	✓	✓
FIXING TO DUCT	HAT-SHAPED	✓	✓						✓	✓					✓		✓
	FLANGE			✓	✓							✓			✓		
	SLIP & CLIP					✓	✓							✓		✓	
	BOX TYPE (INSERTED INSIDE DUCT)							✓	✓					✓	✓		✓

\*\*Other options of S.S. bushes "X" and S.S. bearing "S" are shown at the ordering key.





# VOLUME CONTROL DAMPER - 3VCD SERIES

## 3V-SHAPED STEEL BLADES

### PERFORMANCE DATA

Beta Industrial LLC certifies that the 3VCD shown hereon is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program.

The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance ratings only.

#### Test Information

- \* Air leakage is based on operation between 32 °F and 120 °F
- \* Tested for air leakage at standard air density in accordance with ANSI/AMCA Standard 500-D, Figure 5.4
- \* Tested for air performance at standard air density in accordance with ANSI/AMCA 500-D, Figure 5.3
- \* Data are based on a torque of 21 in-lb/ft<sup>2</sup> applied to close and seat the damper during the test.



#### PRESSURE DROP DATA

Size 12" x 12"		Size 24" x 24"		Size 36" x 36"		Size 12" x 48"		Size 48" x 12"	
Air Velocity (fpm)	Pressure Drop (IWG)	Air Velocity (fpm)	Pressure Drop (IWG)	Air Velocity (fpm)	Pressure Drop (IWG)	Air Velocity (fpm)	Pressure Drop (IWG)	Air Velocity (fpm)	Pressure Drop (IWG)
297	0.002	347	0.003	318	0.002	346	0.003	346	0.003
730	0.009	749	0.01	747	0.009	756	0.01	754	0.01
976	0.02	999	0.02	995	0.015	1003	0.02	1001	0.02
1466	0.04	1514	0.05	1494	0.034	1520	0.04	1515	0.04
1958	0.08	2008	0.08	1991	0.061	2014	0.07	2007	0.08

#### AIR LEAKAGE DATA

Size 12" x 48"		Size 24" x 36"		Size 36" x 36"		Size 48" x 36"	
Leakage through face area cfm/ft <sup>2</sup>	Pressure Drop (IWG)	Leakage through face area cfm/ft <sup>2</sup>	Pressure Drop (IWG)	Leakage through face area cfm/ft <sup>2</sup>	Pressure Drop (IWG)	Leakage through face area cfm/ft <sup>2</sup>	Pressure Drop (IWG)
6.1	0.098	10.3	0.109			4.6	0.105
14.9	0.509	22.6	0.510			10.6	0.514
21.3	1.025	32.7	1.025			14.8	1.031
30.2	2.052	46.5	2.063			20.6	2.070
43.6	4.104	66.4	4.137			26.4	4.137

Maximum Allowable Leakage, cfm/ft <sup>2</sup>			
Pressure Class	1.0" W.G	4" W.G	8" W.G
1A	3	N/A	N/A
1	4	8	11
2	10	20	28
3	40	80	112

	Width	Height
Minimum	4"	4" *
Maximum	48"	48"

\* Minimum height for Hat-shaped type is 6"(150mm)





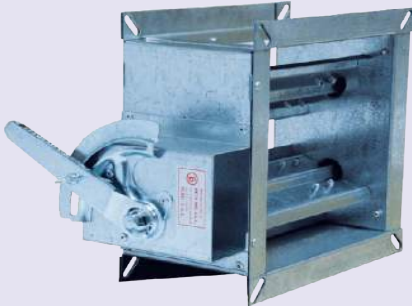


# VOLUME CONTROL DAMPER - 3VCD SERIES

## 3V-SHAPED STEEL BLADES

### PERFORMANCE DATA

FLANGED TYPE



HAT-SHAPED TYPE



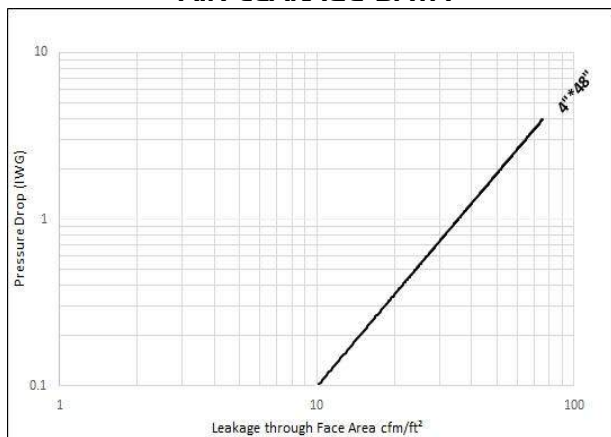
SLIP &amp; CLIP TYPE



BOX TYPE



AIR LEAKAGE DATA



PRESSURE DROP DATA

Size 4" x 48"	
Air Velocity (fpm)	Pressure Drop (IWG)
516	0.034
992	0.130
1482	0.291
1985	0.524
2480	0.819

Tested at AMCA 500-D lab  
Arlington Heights, USA



### Ordering Key:

M	3	VCD	G2	P	L	F	SIZE
--- : QUADRANT DRIVED M: MOTORIZED  3: 3V-SHAPED G.I. BLADES VCD: VOLUME CONTROL DAMPER G1: 0.9MM G.I.CONSTRUCTION G2: 1.2MM G.I.CONSTRUCTION G3: 1.5MM G.I.CONSTRUCTION G4: 1.7MM G.I.CONSTRUCTION S1: 1.0MM S.S. 304 CONSTRUCTION S2: 1.2MM S.S. 304 CONSTRUCTION S3: 1.5MM S.S. 304 CONSTRUCTION S4: 1.7MM S.S. 304 CONSTRUCTION  P: PLASTIC BUSHES B: BRASS BUSHES X: S.S. BUSHES S: S.S. BEARINGS  L: G.I. LINKAGE MECHANISM G: PLASTIC GEARS MECHANISM  H: HAT-SHAPED FRAME F: FLANGED TO DUCT S: SLIP & CLIP WITH DUCT B: BOX TYPE (INSERTED INSIDE DUCT) SIZE: WIDTH X HEIGHT Single section minimum size: 100X100mm for Flanged/Box/Slip & clip types. 100X150mm for Hat-shaped types.							
				Single section maximum size: 1200X1200mm for Hat-shaped/Flanged types. 1000X1000mm for Slip & clip/Box types.			







## VOLUME CONTROL DAMPER - AVCD SERIES AEROFOIL BLADES

### STANDARD CONSTRUCTION

**Frame:** 1.2mm thick galvanized steel sheet.

**Blades:** Aerofoil 1.0mm double skin extruded Aluminum profiles/ GI Sheet.

**Axles:** 1/2" square galvanized steel rod.

**Linkage:** Made of galvanized steel. Concealed in frame.

**Bushing:** Self lubricating plastic bushes.

**Quadrant:** Plated steel with wing nut to lock the blades position. Marked to show the position of the blades.

**Fixing to duct:** Flanged frame.

**Single section minimum size:**

100X100mm for Flanged/Box/Slip & clip types.

100X150mm for Hat-shaped type.

**Single section maximum size:**

1200X1200mm for Hat-shaped/Flanged types.

1000X1000mm for Slip & clip/Box types.

*Model A..VCDG2PLF*



*Model MA..VCDG2PLF*



**BOX TYPE**



**S&C TYPE**

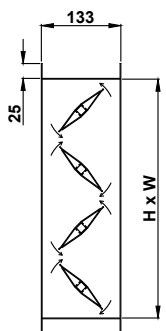


**FLANGED TYPE**

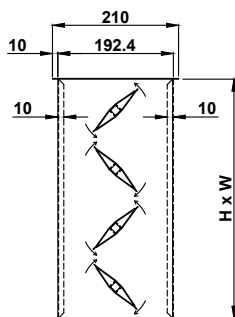


**HAT-SHAPE TYPE**

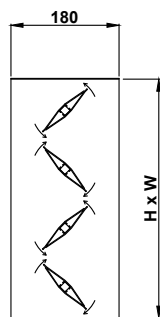
### DIMENSIONS



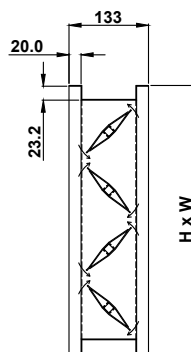
AVCD-Flange type



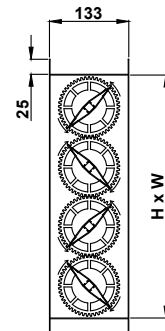
AVCD-Slip & Clip type



AVCD-Box type



AVCD-Hat type



AVCD with gear mechanism



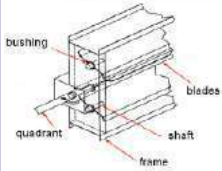
**Plastic Bushes**





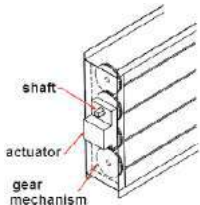
# VOLUME CONTROL DAMPER - AVCD SERIES AEROFOIL BLADES

## ALUMINIUM BLADES OPTIONS



FEATURE	MODEL	MANUAL QUADRANT MODELS																			
		AUUCDG2PLH	AUUCDG2BLH	AUUCDG2PLF	AUUCDG2BLF	AUUCDG2PLS	AUUCDG2BLS	AUUCDG2PLB	AUUCDG2BLB	AUUCDG2PGH	AUUCDG2BGH	AUUCDG2PGF	AUUCDG2BGF	AUUCDG2PGS	AUUCDG2BGS	AUUCDG2PGB	AUUCDG2BGB	AUUCDS2SLH	AUUCDS2SLF	AUUCDS2SLS	AUUCDS2BLB
DRIVE	MANUAL QUADRANT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	ELECTRIC ACTUATOR																				
BLADE TYPE	G.I. AEROFOIL BLADES																				
	ALUMINUM AEROFOIL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BLADE MOVEMENT	OPPOSED	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PARALLEL	ABOVE MODELS (EXCEPT THE ONES WITH GEAR MECHANISM) CAN BE WITH PARALLEL BLADES, PLS. WRITE "PARALLEL" ON YOUR ORDER																			
USE	CONTROL (AIR BALANCING)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	LOW LEAKAGE (AIR TIGHT SHUT OFF)																				
FRAME CONSTRUCTION	GALVANIZED STEEL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	STAINLESS STEEL 304																✓	✓	✓	✓	✓
BUSHING/ BEARING TYPE	PLASTIC BUSHES	✓		✓		✓		✓			✓		✓		✓						
	BRASS BUSHES		✓		✓		✓		✓		✓		✓		✓						✓
	S.S. BEARING																✓	✓	✓	✓	✓
MECHANISM	G.I. LINKAGE	✓	✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓
	PLASTIC GEARS											✓	✓	✓	✓	✓				✓	✓
FIXING TO DUCT	HAT-SHAPED	✓	✓						✓	✓							✓				✓
	FLANGE			✓	✓						✓	✓					✓				
	SLIP & CLIP					✓	✓						✓	✓						✓	
	BOX TYPE (INSERTED INSIDE DUCT)							✓	✓							✓	✓				✓

\*\*Other options of S.S. bushes "X" and S.S. bearing "S" are shown at the ordering key.



FEATURE	MODEL	MOTORIZED MODELS																			
		MAUUCDG2PL	MAUUCDG2BLH	MAUUCDG2PLF	MAUUCDG2BLF	MAUUCDG2PLS	MAUUCDG2BLS	MAUUCDG2PLB	MAUUCDG2BLB	MAUUCDG2PGH	MAUUCDG2BGH	MAUUCDG2PGF	MAUUCDG2BGF	MAUUCDG2PGS	MAUUCDG2BGS	MAUUCDG2PGB	MAUUCDG2BGB	MAUUCDS2SLH	MAUUCDS2SLF	MAUUCDS2SLS	MAUUCDS2BLB
DRIVE	MANUAL QUADRANT																				
	ELECTRIC ACTUATOR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BLADE TYPE	G.I. AEROFOIL BLADES																				
	ALUMINUM AEROFOIL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BLADE MOVEMENT	OPPOSED	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PARALLEL	ABOVE MODELS (EXCEPT THE ONES WITH GEAR MECHANISM) CAN BE WITH PARALLEL BLADES, PLS. WRITE "PARALLEL" ON YOUR ORDER																			
USE	CONTROL (AIR BALANCING)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	LOW LEAKAGE (AIR TIGHT SHUT OFF)																				
FRAME CONSTRUCTION	GALVANIZED STEEL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	STAINLESS STEEL 304																✓	✓	✓	✓	✓
BUSHING/ BEARING TYPE	PLASTIC BUSHES	✓		✓		✓		✓		✓		✓		✓		✓					
	BRASS BUSHES		✓		✓		✓		✓		✓		✓		✓						✓
	S.S. BEARING																✓	✓	✓	✓	✓
MECHANISM	G.I. LINKAGE	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓
	PLASTIC GEARS											✓	✓	✓	✓	✓				✓	✓
FIXING TO DUCT	HAT-SHAPED	✓	✓						✓								✓				✓
	FLANGE			✓	✓							✓	✓				✓				
	SLIP & CLIP					✓	✓						✓	✓						✓	
	BOX TYPE (INSERTED INSIDE DUCT)							✓	✓							✓	✓				✓

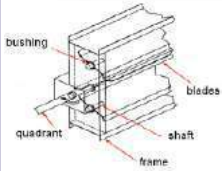
\*\*Other options of S.S. bushes "X" and S.S. bearing "S" are shown at the ordering key.





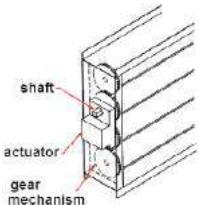
# VOLUME CONTROL DAMPER - AVCD SERIES AEROFOIL BLADES

## STEEL BLADES OPTIONS



FEATURE	MODEL	MANUAL QUADRANT MODELS																			
		AGVCDG2PLH	AGVCDG2BLH	AGVCDG2PLF	AGVCDG2BLF	AGVCDG2PLS	AGVCDG2BLS	AGVCDG2PLB	AGVCDG2BLB	AGVCDG2PGH	AGVCDG2BGH	AGVCDG2PGF	AGVCDG2BGF	AGVCDG2PGS	AGVCDG2BGS	AGVCDG2PGB	AGVCDG2BGB	AGVCDG2SLH	AGVCDG2SLF	AGVCDG2SLS	AGVCDG2BLB
DRIVE	MANUAL QUADRANT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	ELECTRIC ACTUATOR																				
BLADE TYPE	G.I. AEROFOIL BLADES	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	STAINLESS STEEL AEROFOIL																✓	✓	✓	✓	✓
BLADE MOVEMENT	OPPOSED	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PARALLEL	ABOVE MODELS (EXCEPT THE ONES WITH GEAR MECHANISM) CAN BE WITH PARALLEL BLADES, PLS. WRITE "PARALLEL" ON YOUR ORDER																			
USE	CONTROL (AIR BALANCING)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	LOW LEAKAGE (AIR TIGHT SHUT OFF)																				
FRAME CONSTRUCTION	GALVANIZED STEEL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	STAINLESS STEEL 304																✓	✓	✓	✓	✓
BUSHING/ BEARING TYPE	PLASTIC BUSHES	✓		✓		✓		✓		✓		✓		✓		✓					
	BRASS BUSHES		✓		✓		✓		✓		✓		✓		✓						
	S.S. BEARING																✓	✓	✓	✓	✓
MECHANISM	STEEL LINKAGE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PLASTIC GEARS											✓	✓	✓	✓	✓	✓			✓	✓
FIXING TO DUCT	HAT-SHAPED	✓	✓							✓	✓						✓				✓
	FLANGE			✓	✓							✓	✓				✓				✓
	SLIP & CLIP					✓	✓							✓	✓					✓	
	BOX TYPE (INSERTED INSIDE DUCT)							✓	✓							✓	✓				✓

\*\*Other options of S.S. bushes "X" and S.S. bearing "S" are shown at the ordering key.



FEATURE	MODEL	MOTORIZED MODELS																			
		MAGVCDG2PLH	MAGVCDG2BLH	MAGVCDG2PLF	MAGVCDG2BLF	MAGVCDG2PLS	MAGVCDG2BLS	MAGVCDG2PLB	MAGVCDG2BLB	MAGVCDG2PGH	MAGVCDG2BGH	MAGVCDG2PGF	MAGVCDG2BGF	MAGVCDG2PGS	MAGVCDG2BGS	MAGVCDG2PGB	MAGVCDG2BGB	MAGVCDG2SLH	MAGVCDG2SLF	MAGVCDG2SLS	MAGVCDG2BLB
DRIVE	MANUAL QUADRANT																				
	ELECTRIC ACTUATOR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BLADE TYPE	G.I. AEROFOIL BLADES	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	STAINLESS STEEL AEROFOIL																✓	✓	✓	✓	✓
BLADE MOVEMENT	OPPOSED	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PARALLEL	ABOVE MODELS (EXCEPT THE ONES WITH GEAR MECHANISM) CAN BE WITH PARALLEL BLADES, PLS. WRITE "PARALLEL" ON YOUR ORDER																			
USE	CONTROL (AIR BALANCING)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	LOW LEAKAGE (AIR TIGHT SHUT OFF)																				
FRAME CONSTRUCTION	GALVANIZED STEEL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	STAINLESS STEEL 304																✓	✓	✓	✓	✓
BUSHING/ BEARING TYPE	PLASTIC BUSHES	✓		✓		✓		✓		✓		✓		✓		✓					
	BRASS BUSHES		✓		✓		✓		✓		✓		✓		✓						
	S.S. BEARING																✓	✓	✓	✓	✓
MECHANISM	STEEL LINKAGE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PLASTIC GEARS											✓	✓	✓	✓	✓	✓			✓	✓
FIXING TO DUCT	HAT-SHAPED	✓	✓							✓	✓						✓				✓
	FLANGE			✓	✓							✓	✓				✓				✓
	SLIP & CLIP					✓	✓							✓	✓					✓	
	BOX TYPE (INSERTED INSIDE DUCT)							✓	✓							✓	✓				✓

\*\*Other options of S.S. bushes "X" and S.S. bearing "S" are shown at the ordering key.

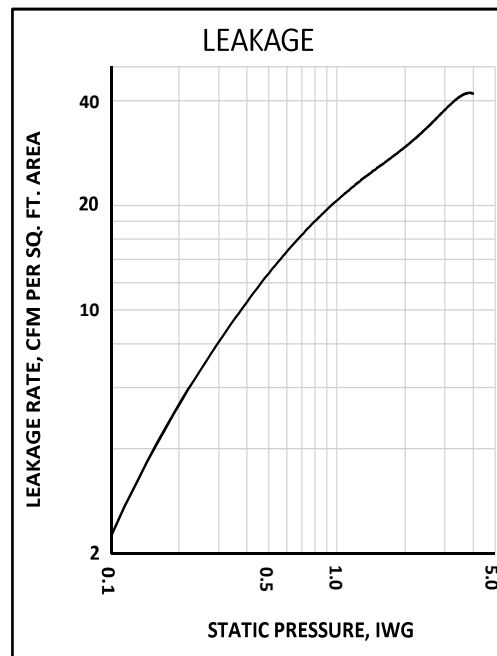
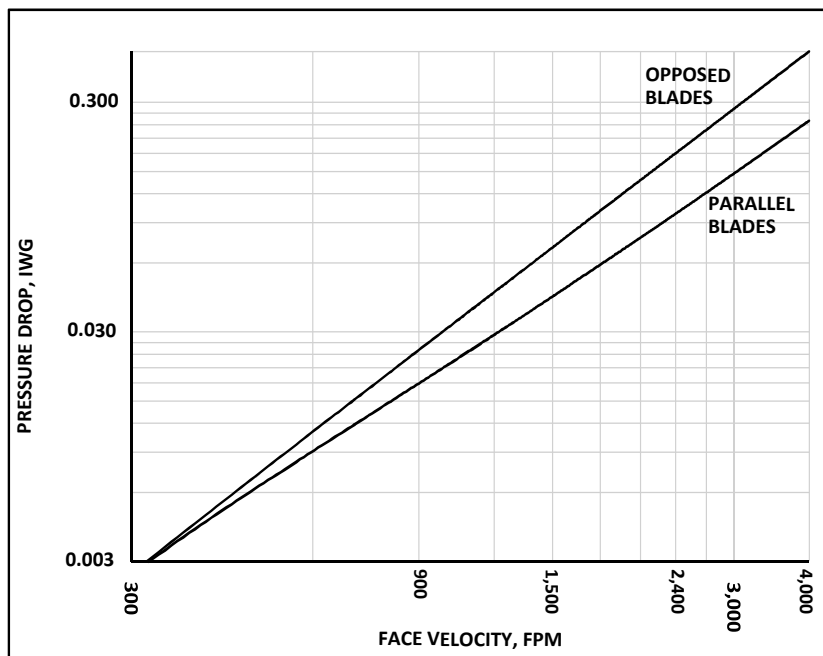




# VOLUME CONTROL DAMPER - AVCD SERIES

## AEROFOIL BLADES

### PERFORMANCE DATA



### Ordering Key:

M	AU	VCD	G2	P	L	F	SIZE
....: QUADRANT DRIVEN M: MOTORIZED AU: AEROFOIL ALUMINUM BLADES AG: AEROFOIL STEEL BLADES VCD: VOLUME CONTROL DAMPER G1: 0.9MM G.I.CONSTRUCTION G2: 1.2MM G.I.CONSTRUCTION (STANDARD) G3: 1.5MM G.I.CONSTRUCTION G4: 1.7MM G.I.CONSTRUCTION S1: 1.0MM S.S. 304 CONSTRUCTION S2: 1.2MM S.S. 304 CONSTRUCTION S3: 1.5MM S.S. 304 CONSTRUCTION S4: 1.7MM S.S. 304 CONSTRUCTION P: PLASTIC BUSHES (STANDARD) B: BRASS BUSHES X: S.S. BUSHES S: S.S. BEARINGS L: STEEL LINKAGE MECHANISM (STANDARD) G: PLASTIC GEARS MECHANISM H: HAT-SHAPED FRAME F: FLANGED TO DUCT (STANDARD) S: SLIP & CLIP WITH DUCT B: BOX TYPE (INSERTED INSIDE DUCT) SIZE: WIDTH X HEIGHT Single section minimum size: 100X100mm for Flanged/Box/Slip & clip types. 100X150mm for Hat-shaped types.							
Single section maximum size: 1200X1200mm for Hat-shaped/Flanged types. 1000X1000mm for Slip & Clip/ Box types.							





## LOW-LEAKAGE VOLUME CONTROL DAMPER - LVCD SERIES 3V-SHAPED STEEL BLADES

### STANDARD CONSTRUCTION

**Frame:** 133mm Roll formed hat-shaped made of 1.2mm thick galvanized steel with reinforced corners, having integral bracing and 90° perpendicular overlap at a corner.

**Blades:** Roll formed 3 V-shaped made of 1.2mm thick galvanized steel.

**Bushes:** Brass bushes.

**Axes:** 1/2" Square axles made of galvanized steel.

**Linkage:** Mechanical and concealed in frame.

**Jamb Seals:** Stainless steel jamb seals.

**Blades Seal:** Silicone blades edges seal/gasket.

**Leakage:** Class I

**Air Flow Rating:** 2000 FPM / 4 IWG.

**Single section minimum size:**

150X150mm for Hat-shaped/Flanged types.

**Single section maximum size:**

1200X1200mm for Hat-shaped/Flanged types.

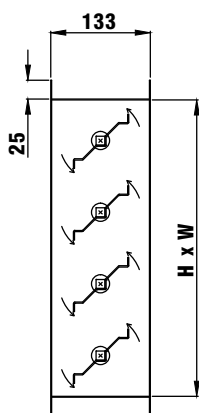
*Model LVCDG2BLH*



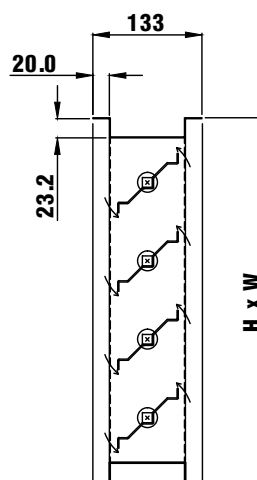
*Model MLVCDG2BLH*



### DIMENSIONS



LVCD-Flange type



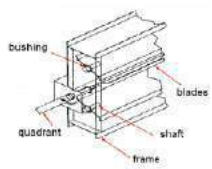
LVCD-Hat type



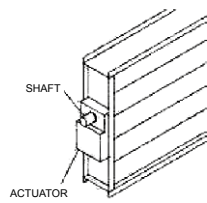


## LOW-LEAKAGE VOLUME CONTROL DAMPER - LVCD SERIES 3V-SHAPED STEEL BLADES

### OPTIONS



FEATURE	MODEL	MANUAL QUADRANT MODELS							
		LVCDG2BLH	LVCDG2XLH	LVCDG2BLF	LVCDG2XLF	LVCDG2SLH	LVCDG2SLF	LVCDG2-SCM	LVCDG2-SMC
DRIVE	MANUAL QUADRANT	✓	✓	✓	✓	✓	✓	✓	✓
	ELECTRIC ACTUATOR								
BLADE TYPE	G.I. 3V-SHAPED	✓	✓	✓	✓	✓	✓	✓	✓
	ALUMINUM AEROFOIL								
BLADE MOVEMENT	OPPOSED								
	PARALLEL	✓	✓	✓	✓	✓	✓	✓	✓
USE	CONTROL (AIR BALANCING)	✓	✓	✓	✓	✓	✓	✓	✓
	LOW LEAKAGE APPLICATIONS	✓	✓	✓	✓	✓	✓	✓	✓
CONSTRUCTION	GALVANIZED STEEL	✓	✓	✓	✓			✓	
	STAINLESS STEEL 304					✓	✓		✓
BUSHING/ BEARING TYPE	PLASTIC BUSHES								
	BRASS BUSHES	✓		✓				✓	
	S.S. BEARING		✓		✓				
	S.S. BEARING					✓	✓		✓
MECHANISM	G.I. LINKAGE	✓	✓	✓	✓	✓	✓	✓	✓
	PLASTIC GEARS								
FIXING TO DUCT	HAT-SHAPED	✓	✓			✓		✓	✓
	FLANGE			✓	✓		✓		
	SLIP & CLIP								
	BOX TYPE (INSERTED INSIDE DUCT)								



FEATURE	MODEL	MOTORISED MODELS							
		MLVCDG2BLH	MLVCDG2XLH	MLVCDG2BLF	MLVCDG2XLF	MLVCDG2SLH	MLVCDG2SLF	MLVCDG2-SMC	MLVCDG2-SMC
DRIVE	MANUAL QUADRANT	✓	✓	✓	✓	✓	✓	✓	✓
	ELECTRIC ACTUATOR								
BLADE TYPE	G.I. 3V-SHAPED	✓	✓	✓	✓	✓	✓	✓	✓
	ALUMINUM AEROFOIL								
BLADE MOVEMENT	OPPOSED								
	PARALLEL	✓	✓	✓	✓	✓	✓	✓	✓
USE	CONTROL (AIR BALANCING)	✓	✓	✓	✓	✓	✓	✓	✓
	LOW LEAKAGE APPLICATIONS	✓	✓	✓	✓	✓	✓	✓	✓
CONSTRUCTION	GALVANIZED STEEL	✓	✓	✓	✓			✓	
	STAINLESS STEEL 304					✓	✓		✓
BUSHING/ BEARING TYPE	PLASTIC BUSHES								
	BRASS BUSHES	✓		✓				✓	
	S.S. BUSHES		✓		✓				
	S.S. BEARING					✓	✓		✓
MECHANISM	G.I. LINKAGE	✓	✓	✓	✓	✓	✓	✓	✓
	PLASTIC GEARS								
FIXING TO DUCT	HAT-SHAPED	✓	✓			✓		✓	✓
	FLANGE			✓	✓		✓		
	SLIP & CLIP								
	BOX TYPE (INSERTED INSIDE DUCT)								

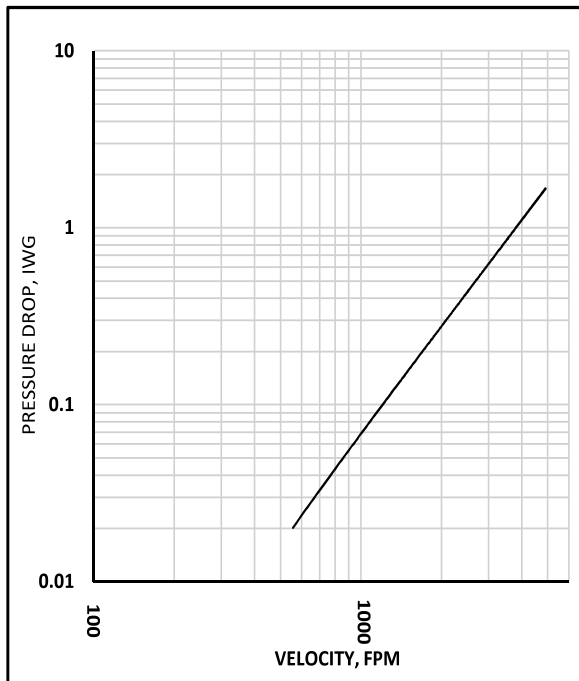






# LOW-LEAKAGE VOLUME CONTROL DAMPER - LVCD SERIES 3V-SHAPED STEEL BLADES

## PERFORMANCE DATA



Note:

Pressure drop test was done at an independent laboratory in accordance with the AMCA 500-D standard on 36"X36" sample.

Maximum Leakage, cfm/ft<sup>2</sup>

Pressure Class	1.0" W.G	4" W.G	8" W.G
1	4	8	11



### Ordering Key:

M	L	VCD	G2	B	L	H	SIZE
—: QUADRANT-DRIVEN M: MOTORIZED L: 3V-SHAPED G.I. BLADES LOW-LEAKAGE TYPE VCD: CONTROL DAMPER G1: 0.9MM G.I. CONSTRUCTION G2: 1.2MM G.I. CONSTRUCTION (STANDARD) G3: 1.5MM G.I. CONSTRUCTION G4: 1.7MM G.I. CONSTRUCTION S1: 1.0MM S.S. 304 CONSTRUCTION S2: 1.2MM S.S. 304 CONSTRUCTION S3: 1.5MM S.S. 304 CONSTRUCTION S4: 1.7MM S.S. 304 CONSTRUCTION B: BRASS BUSHES (STANDARD) X: S.S. BUSHES S: S.S. BEARINGS L: G.I. LINKAGE MECHANISM (STANDARD) H: HAT-SHAPED FRAME (STANDARD) F: FLANGED TO DUCT SIZE: WIDTH X HEIGHT Single section minimum size: 150X150mm for Hat-shaped/Flanged types.							
							Single section maximum size: 1200X1200mm for Hat-shaped/Flanged types.





## ROUND VOLUME CONTROL DAMPER - VDR MODEL STEEL BLADE

### STANDARD CONSTRUCTION

**Frame:** 0.9mm thick galvanized steel sheet.

**Blades:** 0.9mm thick galvanized steel sheet.

**Axles:** 1/2" square hollow Aluminum extruded profile.

**Bushing:** Self lubricating plastic bushes.

**Quadrant:** Plated steel with wing nut to lock the blades position.  
Marked to show the position of the blades.

**Seal:** Foam gasket.

**Sizes:** 4, 5, 6, 8, 10, 12 inch diameter (AMCA certified).

Diameters 14 inch and above are available up on request.

#### Model VDRG2P

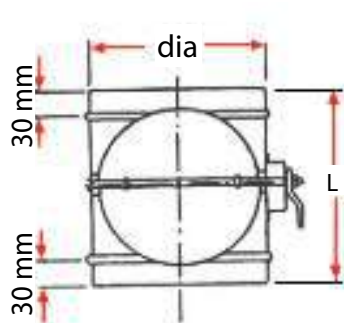


#### Model MVDRG2P

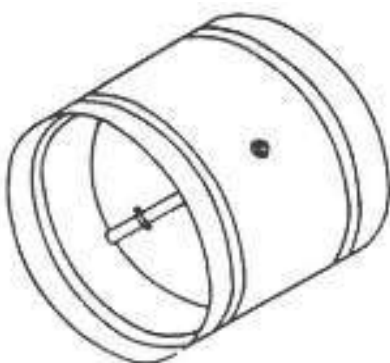


*Plastic Bushes*

### DIMENSIONS



$$L = \text{dia.} + 60\text{mm}$$





# ROUND VOLUME CONTROL DAMPER - VDR MODEL STEEL BLADE

## OPTIONS

FEATURE	MODEL	MANUAL QUADRANT MODELS								MOTORIZED MODELS							
		VDRG2P	VDRG2B	VDRG2X	VDRG2S	VDRS2X	VDRS2S	VDRG2-SMC	VDRS2-SMC	MVDRG2P	MVDRG2B	MVDRG2X	MVDRG2S	MVDRS2X	MVDRS2S	MVDRG2-SMC	MVDRS2-SMC
DRIVE	MANUAL QUADRANT	✓	✓	✓	✓	✓	✓	✓	✓								
	ELECTRIC ACTUATOR									✓	✓	✓	✓	✓	✓	✓	✓
BLADE TYPE	SINGLE SKIN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
USE	CONTROL (AIR BALANCING)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	LOW LEAKAGE (AIR TIGHT SHUTT OFF)																
CONSTRUCTION	GALVANIZED STEEL	✓	✓	✓	✓			✓		✓	✓	✓	✓			✓	
	STAINLESS STEEL 304					✓	✓		✓					✓	✓		✓
BUSHING/ BEARING TYPE	PLASTIC BUSHES	✓								✓							
	BRASS BUSHES		✓					✓	✓		✓					✓	✓
	S.S. BUSHES			✓		✓						✓		✓			
	S.S. BEARING				✓		✓						✓		✓		

\*\*Other options of S.S. bushes "X" and S.S. bearing "S" are shown at the ordering key.



### Ordering Key:

M	V	DR	G2	P	SIZE
---: QUADRANT-DRIVED M: MOTORIZED V: SINGLE SKIN BLADE DR: CONTROL DAMPER ROUND TYPE G1: 0.7MM G.I. CONSTRUCTION G2: 0.9MM G.I. CONSTRUCTION (STANDARD) G3: 1.2MM G.I. CONSTRUCTION G4: 1.5MM G.I. CONSTRUCTION S1: 0.8MM S.S. 304 CONSTRUCTION S2: 1.0MM S.S. 304 CONSTRUCTION S3: 1.2MM S.S. 304 CONSTRUCTION P: PLASTIC BUSHES (STANDARD) B: BRASS BUSHES X: S.S. BUSHES S: S.S. BEARINGS SIZE: DIAMETER OF 4, 5, 6, 8, 10, 12, 14, 16, 18, 20, 22 or 24					





# ROUND VOLUME CONTROL DAMPER - VDR MODEL STEEL BLADE

## PERFORMANCE DATA

Beta Industrial LLC certifies that the VDR shown hereon is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program.

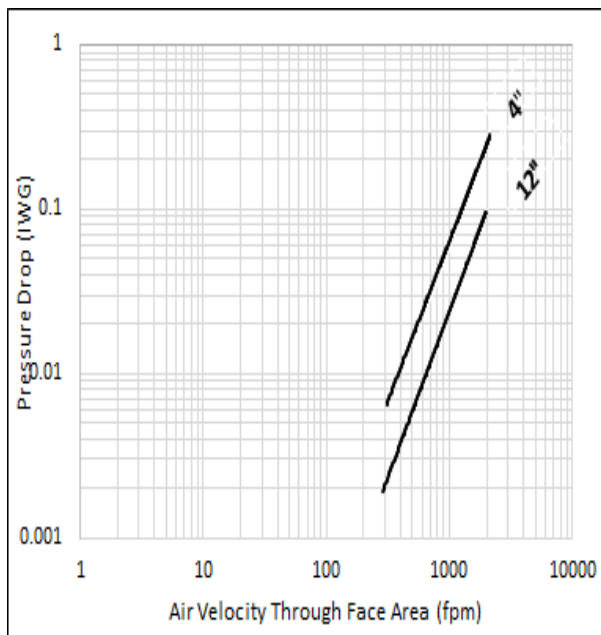
The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance ratings.

### Test Information

- \* Air leakage is based on operation between 32 °F and 120 °F
- \* Tested for air leakage at standard air density in accordance with ANSI/AMCA Standard 500-D, Figure 5.4
- \* Tested for air performance at standard air density in accordance with ANSI/AMCA 500-D, Figure 5.3
- \* Data are based on a torque of 49 in-lb/ft<sup>2</sup> applied to close and seat the damper during the test.



### AIR PERFORMANCE DATA



### AIR LEAKAGE DATA

Damper Dia	Leakage Class			
	0.5 in.wg	1 in.wg	2 in.wg	4 in.wg
4"	1	1A	1	1
12"	1	1A	1	1

Maximum Allowable Leakage, cfm/ft <sup>2</sup>			
Pressure Class	1.0" W.G	4" W.G	8" W.G
1A	3	N/A	N/A
1	4	8	11
2	10	20	28
3	40	80	112





## NON-RETURN DAMPER - MODEL NRD

### STANDARD CONSTRUCTION

**Frame:** 0.9mm thick galvanized steel.

**Blades:** 1.0mm thick extruded Aluminum profiles.

**Bushing:** Brass bushes.

**Axles:** Round extruded Aluminum profiles.

**Seal:** Foam blades seals.

**Size:** Single section up to 600 X 600mm.

### OPTIONS

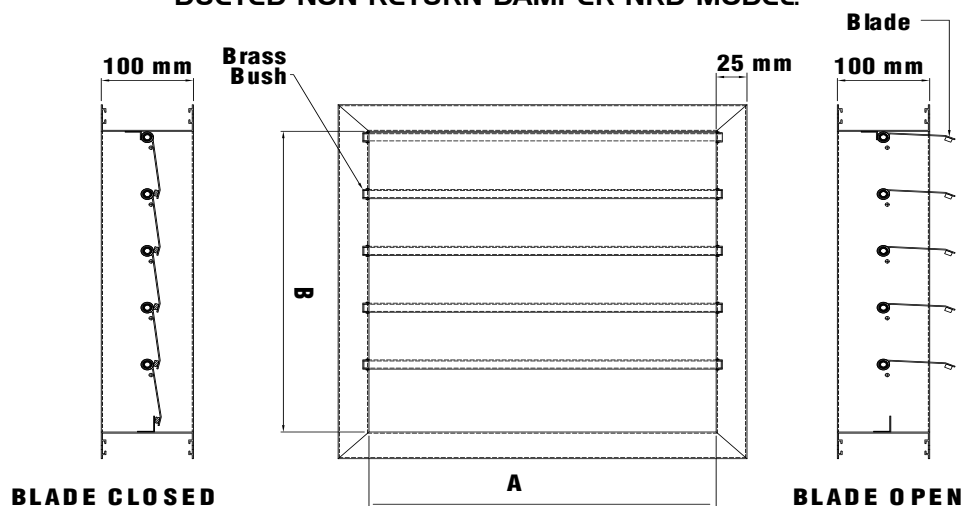
FEATURE	MODEL				
		NRD	NRD-CR	NRDE	NRDE-CR
BRASS BUSHES	YES	✓	✓		
	NO			✓	✓
CONNECTING ROD	YES		✓		✓
	NO	✓		✓	
COUNTERWEIGHT	NO	✓	✓	✓	✓
FLANGES	2 SIDES	✓	✓	✓	✓
FINISH	MILL FINISH	✓	✓	✓	✓
INSTALLATION	2-SIDES DUCTED	✓	✓	✓	✓
APPLICATION	DISCHARGE & INTAKE	✓	✓	✓	✓

### Model NRD-CR



### DIMENSIONS

#### DUCTED NON RETURN DAMPER NRD MODEL:





# NON-RETURN DAMPER - MODEL NRD

## PERFORMANCE DATA

Beta Industrial LLC certifies that the NRD-CR shown hereon is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program.

The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance ratings.

### Test Information

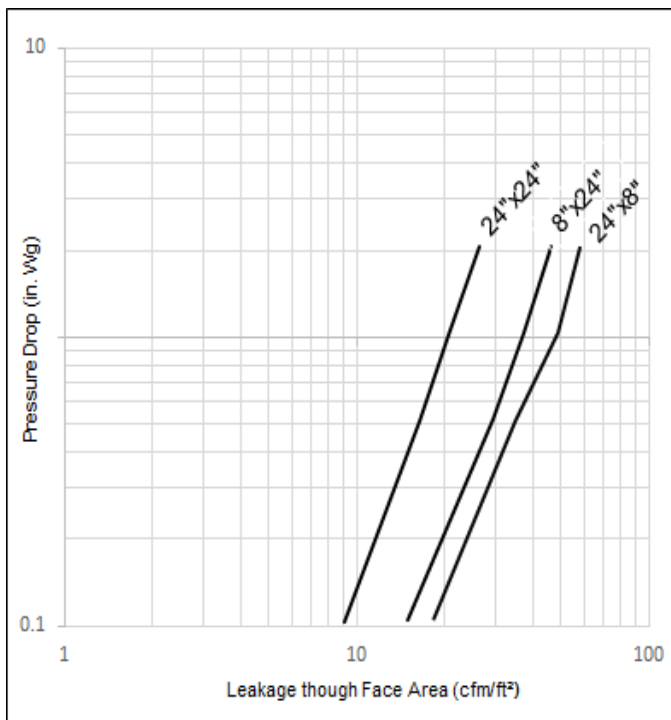
Air leakage is based on operation between 32 °F and 120 °F

Tests were conducted at standard air density in accordance with ANSI/AMCA Standard 500-D, Figure 5.4 for Air Leakage & Fig 5.5 for Pressure drop, on a 24 in. x 24 in. sample.

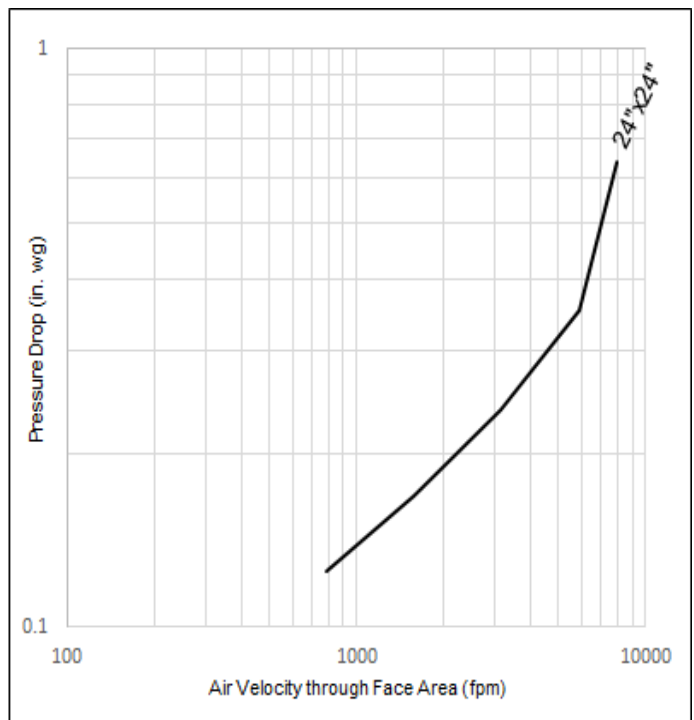
Air Performance testing conducted in accordance with ANSI/AMCA Standard 500-D, Figure 5.4 for Air Leakage & Fig 5.5 for Pressure drop.



### AIR LEAKAGE DATA



### AIR PERFORMANCE DATA



### Ordering Key:



N	R	D	E	CR	W	X	H
NRD: NON-RETURN DAMPER WITH BRASS BUSHES							
NRD-CR: NON-RETURN DAMPER WITH BRASS BUSHES & CONNECTING ROD							
NRDE: NON-RETURN DAMPER WITHOUT BRASS BUSHES							
NRDE-CR: NON-RETURN DAMPER WITHOUT BRASS BUSHES WITH CONNECTING ROD							
SIZE: WIDTH X HEIGHT							







# PRESSURE RELIEF DAMPER - MODEL PRD

## STANDARD CONSTRUCTION

### PRD:

Frame: 0.9mm thick galvanized steel.  
 Blades: 1.0mm thick extruded Aluminum profiles with adjustable counterweight for fine-tune operation.  
 Axles: Round extruded Aluminum profiles.  
 Bushing: Brass bushes.  
 Seal: Foam blades seals.  
 Size: Single section up to 1200 X 1200mm.

### DPRD & IPRD:

Frame: 1.2mm thick extruded Aluminum profiles.  
 Blades: 1.0mm thick extruded Aluminum profiles with adjustable counterweight for fine-tune operation.  
 Axles: Round extruded Aluminum profiles.  
 Bushing: Brass bushes.  
 Seal: Foam blades seals.  
 Size: Single section up to 1200 X 1200mm.

*Model PRD*



## OPTIONS

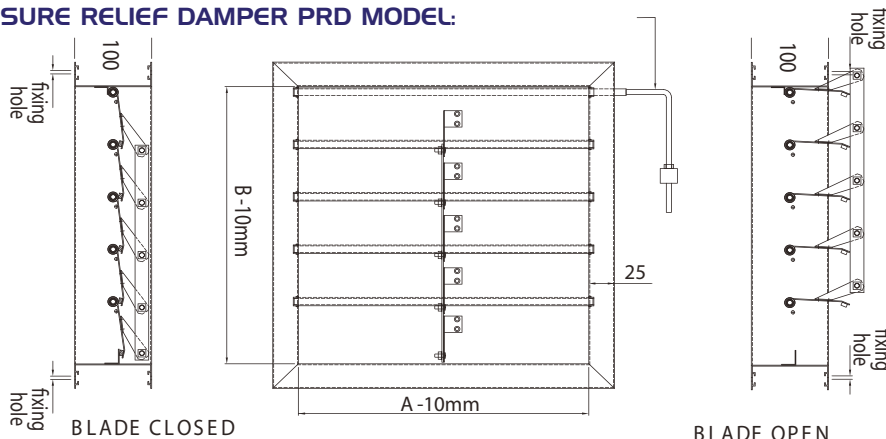
FEATURE	MODEL			
		PRD	DPRD	IPRD
BRASS BUSHES	YES	✓	✓	✓
BLADES CONNECTING	YES	✓	✓	✓
COUNTERWEIGHT	YES	✓	✓	✓
FLANGES	1 SIDE		✓	✓
	2 SIDES	✓		
FINISH	MILL FINISH	✓		
	POWDER COATED TORAL9010/9016		✓	✓
INSTALLATION	2-SIDES DUCTED	✓		
	WALL-MOUNTED		✓	✓
APPLICATION	DISCHARGE		✓	
	INTAKE			✓

*Model DPRD*



## DIMENSIONS

### DUCTED PRESSURE RELIEF DAMPER PRD MODEL:



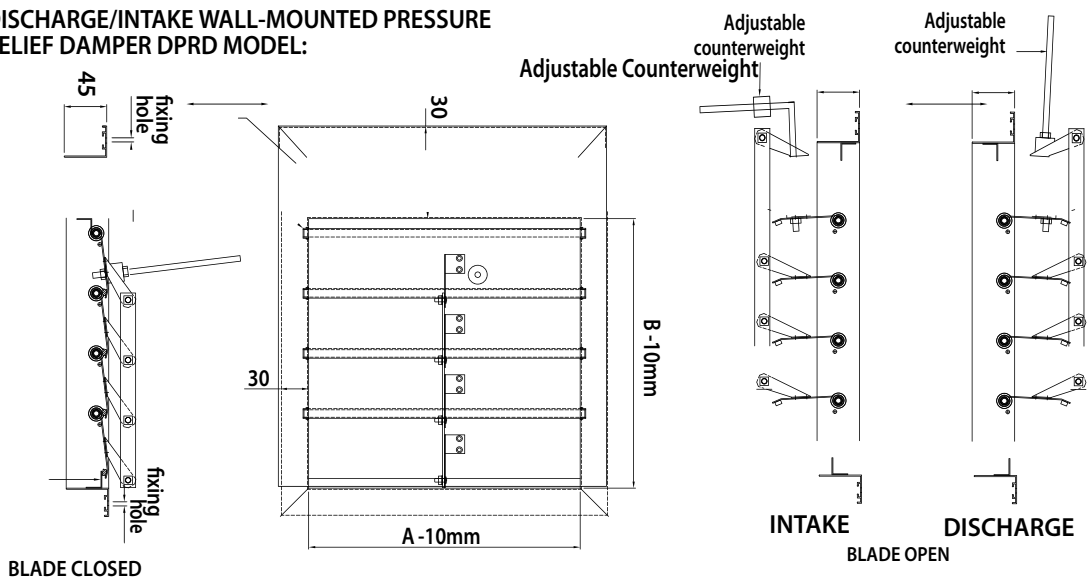
**OPTION: PRD MODELS CAN BE MADE OF 1.2MM THICK ALUMINUM FRAME INSTEAD OF STEEL FRAME. OTHER COMPONENTS REMAIN AS STANDARD CONSTRUCTION.**



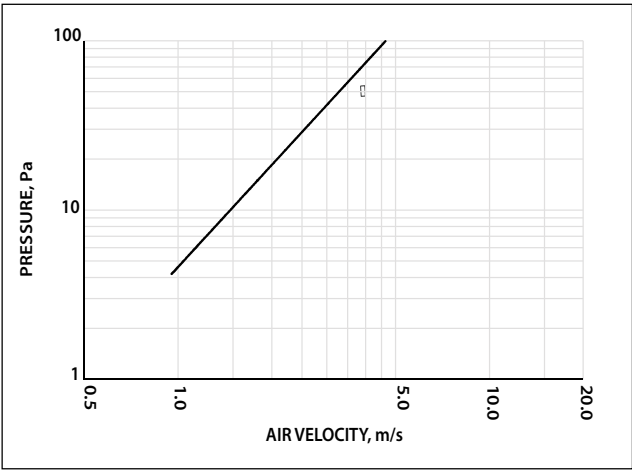


DIMENSIONS

DISCHARGE/INTAKE WALL-MOUNTED PRESSURE RELIEF DAMPER DPRD MODEL:



FOR PRD MODELS:



Ordering Key:



P	R	D	W	X	H
PRD: DUCTED PRESSURE RELIEF DAMPER					
DPRD: DISCHARGE WALL-MOUNTED PRESSURE RELIEF DAMPER					
IPRD: INTAKE WALL-MOUNTED PRESSURE RELIEF DAMPER					
SIZE: WIDTH X HEIGHT					





ACCG2I12L



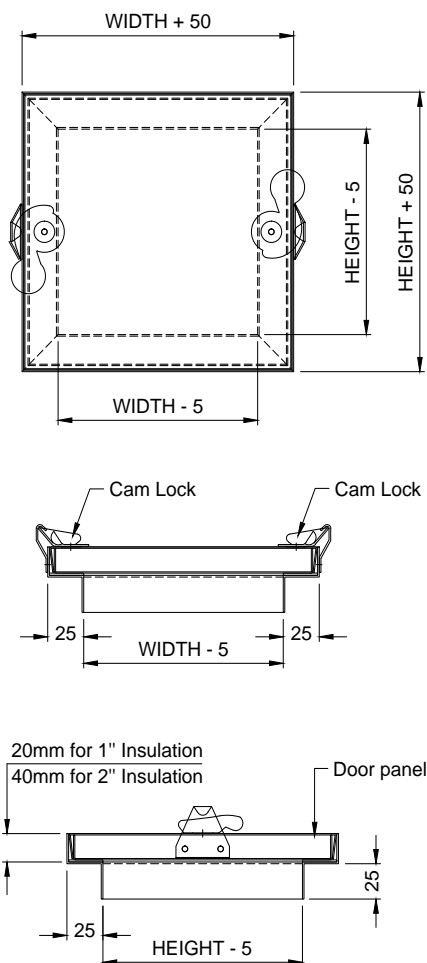
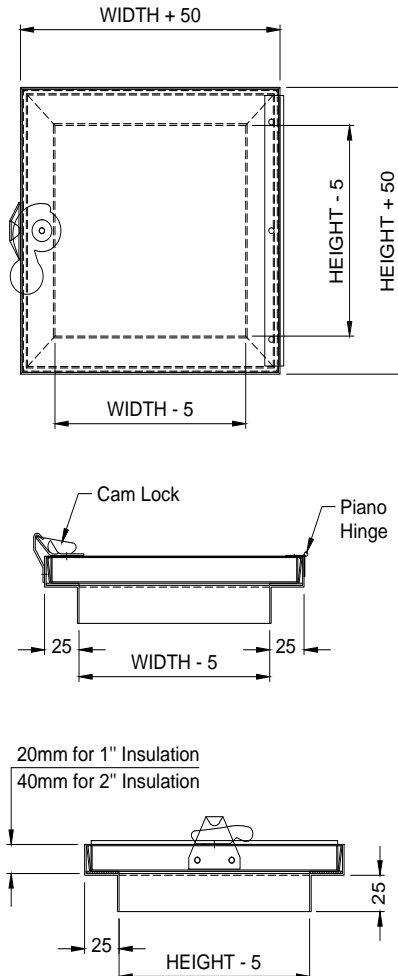
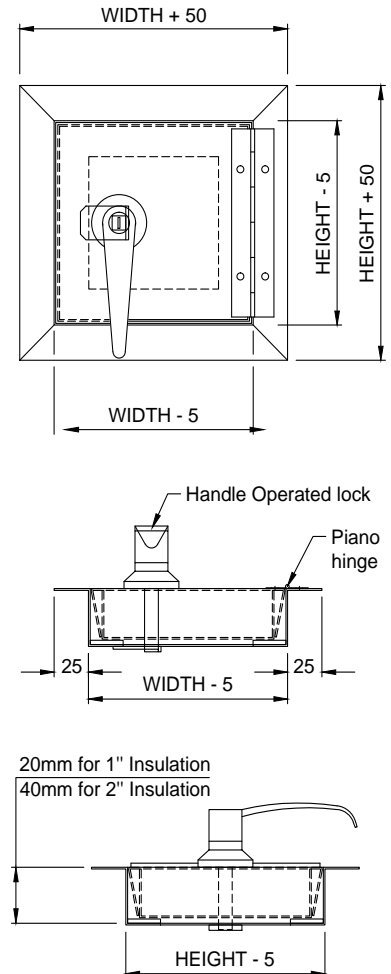
ACCG2I1PH



ACCG2I1PHLK

**Description:**

- Made of 1.2mm thick galvanized steel.
- Contain 1" thick glass fiber insulation of  $24\text{kg/m}^3$  (2" optional).
- Provided with gasket between door & frame.
- For closure, equipped with one of the following alternatives.
  - 2 cam locks (standard)
  - 1 cam lock & Piano-hinge.
  - Piano-hinge & handle operated lock with key.

**Dimensions :****ACCESS DOOR WITH 2 CAM LOCKS****ACCESS DOOR WITH A CAM LOCK & PIANO HINGE****ACCESS DOOR WITH A HANDLE OPERATED LOCK & PIANO HINGE**



## DAMPERS

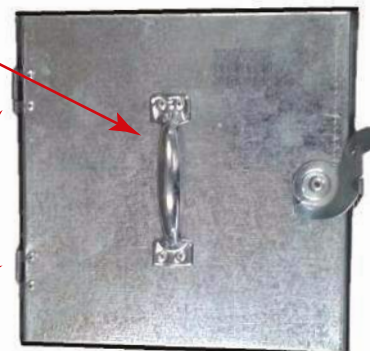
## OPTIONS

DRAWER-TYPE  
HANDLE

CAM LOCK

SEPARATE  
BUTT HINGES

ACCG2I12LD



ACCG2I1SHD

HANDLE  
OPERATED  
LOCK WITH  
KEYPIANO  
HINGE

ACCG2I1PHLK



## Ordering Key:

A	C	C	G2	I1	P	H	L	K	W	X	H
ACCESS DOOR											
G0: 0.7MM G.I. CONSTRUCTION											
G1: 0.9MM G.I. CONSTRUCTION											
G2: 1.2MM G.I. CONSTRUCTION (STANDARD)											
G3: 1.5MM G.I. CONSTRUCTION											
I1: 1" INSULATION THICKNESS (STANDARD)											
I2: 2" INSULATION THICKNESS (OPTIONAL)											
2L: WITH 2 CAM LOCKS (STANDARD)											
2LD: WITH 2 CAM LOCKS & DRAWER - TYPE HANDLE											
PH: WITH PIANO HINGE AND A CAM LOCK											
PHD: WITH PIANO HINGE, A CAM LOCK & DRAWER - TYPE HANDLE											
SH: WITH SEPARATE HINGES & A CAM LOCK											
SHD: WITH SEPARATE HINGES, A CAM LOCK & DRAWER - TYPE HANDLE											
PHLK: WITH PIANO HINGES & HANDLE OPERATED LOCK WITH A KEY											
SHLK: WITH SEPARATE BUTT HINGES & HANDLE OPERATED LOCK / KEY											
SIZE: WIDTH X HEIGHT											



**NOTES :**

Handwriting practice area with 20 sets of horizontal dashed lines for notes.





NOTES :

Area with horizontal dashed lines for notes.





**NOTES :**

Handwriting practice area with 20 sets of horizontal dashed lines for notes.





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