



**air master**  
ISO 9001 CERTIFIED COMPANY

25 YEARS OF  
EXCELLENCE



# VOLUME CONTROL DAMPERS



[www.airmasteremirates.com](http://www.airmasteremirates.com)





# INDEX

SECTION	TOPIC	PAGE
16.1	<b>Volume Control Damper AVCD</b>	3
16.2	<b>Motorized Volume Control damper AVCD-M</b>	5
16.3	<b>Slip &amp; Clip Volume Control damper AVCD-SC</b>	6
16.4	<b>Stainless Steel Volume Control damper AVCD-SS</b>	7
16.5	<b>Low Leakage Volume Control damper AVCD-ZL</b>	8
16.6	<b>GI Volume Control Damper AVCD-GI</b>	9
16.7	<b>Heavy Duty Volume Control Damper AVCD-HD</b>	10
16.8	<b>Pre-Insulated Volume Control damper AVCD-PI</b>	11
16.9	<b>Circular Volume Control Damper AVCD-C</b>	12
16.10	<b>Product Summary</b>	12

**Cover Page Photo** Tornado Tower, Qatar.

## VOLUME CONTROL DAMPER

model: **AVCD**

### CONSTRUCTION:

**Frame:** High quality Galvanized Steel sheet of thickness 1.2mm as standard.

**Frame size:** 125mm depth and standard flange height of 25mm.

**Blades:** Double skinned high quality extruded Aluminium aerofoil profiles.

**Drive shaft:** Electro-plated square rod of size 12.7mm x 12.7mm.

**Bushings:** Self-lubricating nylon bushings.

**Blade linkage:** Nylon gear.

**Handle:** Galvanized Steel locking hand quadrant.

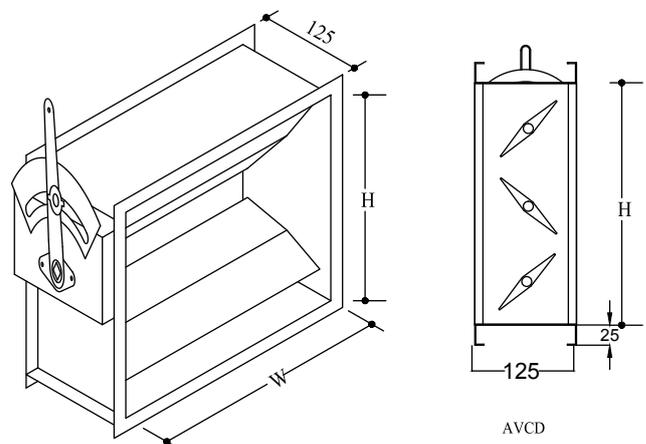
**Blade stopper:** G.I angle of thickness 0.7mm.

### Description:

- Designed for use in heating, ventilating and air conditioning systems.
- Joints are welded and protected by aluminium spray coating to prevent rusting.
- Blades are coupled by toothed nylon gears which provides opposed blade operation.
- Hand locking quadrant is provided with clear open/close indication and three intermediate open positions (1/4 – 1/2 - 3/4).
- Foam gasket is sealed across the blade edges to minimize air leakage between the blades.
- Flanged edges are supplied un-drilled as standard.
- Dampers without flanges available as option for duct insertion purpose.

### Optional Accessories:

- **Frame:** Thickness upto 2mm on request. Aluminium frame available for light weight applications.
- **Handle:** Cast Aluminium.
- **Bush:** Brass bush, S.S. Ball Bearing.
- **Gear Wheel:** Aluminium Alloy.
- **Blade:** Low leakage: S.S Jamb seal, Nylon blade end caps

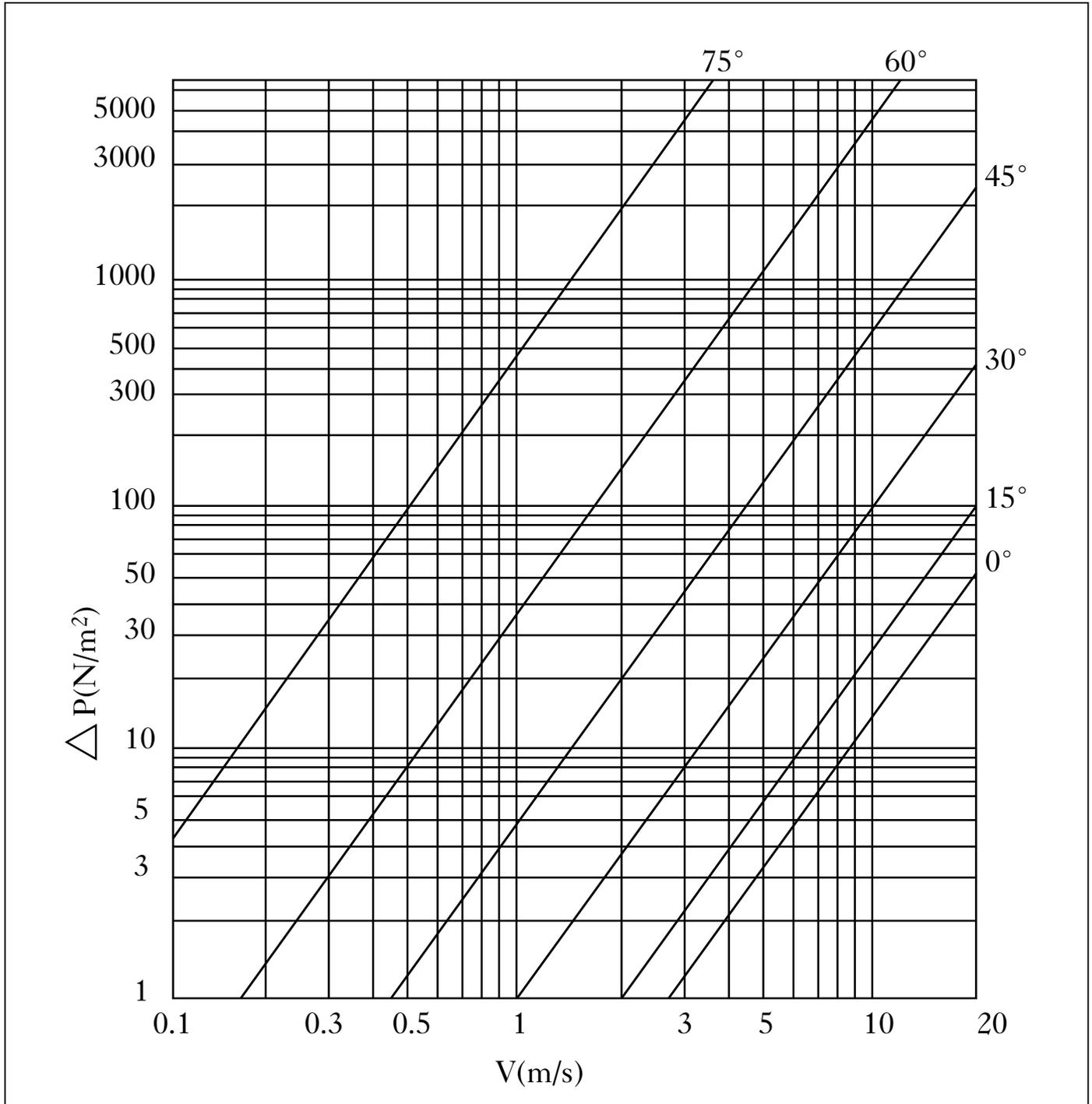


# PERFORMANCE CHART VOLUME CONTROL DAMPER



## Performance chart:

Model: AVCD



Pressure drop - Rectangular VCD aerofoil type blades

## CONSTRUCTION:

**Frame:** High quality Galvanized Steel sheet of thickness 1.2mm as standard.

**Frame Size:** 125mm depth and standard flange height of 35mm.

**Blades:** Double skinned high quality extruded Aluminium aerofoil profiles.

**Drive Shaft:** Electro plated square rod of size 12.7mm x 12.7mm.

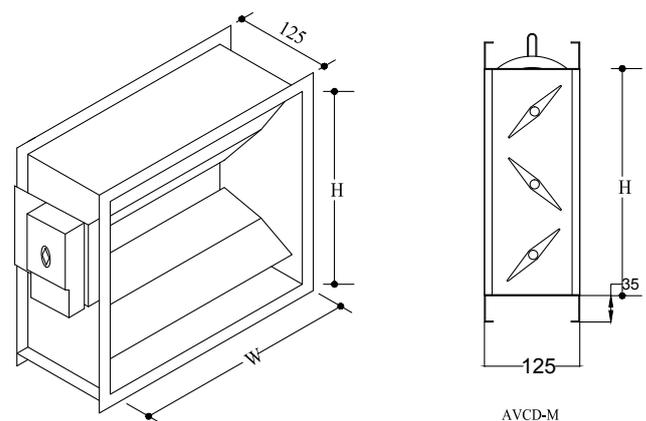
**Bushings:** Self-lubricating S.S Ball bearing.

**Blade linkage:** Nylon gear.

**Blade stopper:** G.I angle of thickness 0.7mm.

## Description:

- Designed for use in heating, ventilating and air conditioning systems.
- Joints are welded and protected by aluminium spray coating to prevent rusting.
- Blades are coupled by toothed nylon gears which provides opposed blade operation.
- Foam gasket is sealed across the blade edges to minimize air leakage between the blades.
- Flanged edges are supplied un-drilled as standard.
- Dampers without flanges available as option for duct insertion purpose.
- Actuators of client's choice will be supplied separately.
- Dampers will be provided with extended spindle to fix actuator on-site.
- Bigger sizes will be provided with mechanical linkage for stability and hassle-free operation.



## Optional Accessories:

- **Frame:** Thickness up to 2mm upon request. Aluminium frame available for off-shore or light weight applications.
- **Handle:** Cast Aluminium
- **Bush:** Brass bush, S.S. Ball Bearing.
- **Gear Wheel:** Aluminium Alloy.
- **Low Leakage:** S.S. Jamb seal, nylon blade end caps

# SLIP & CLIP TYPE VOLUME CONTROL DAMPER

## CONSTRUCTION:

**Frame:** High quality Galvanized Steel sheet of thickness 0.9mm as standard.

**Frame size:** 200mm depth.

**Blades:** Double skinned high quality extruded aluminium aerofoil profiles.

**Drive Shaft:** Electro-plated square rod of size 12.7mm x 12.7mm

**Blade linkage:** Nylon gear.

**Bushings:** Self-lubricating nylon bushings.

**Blade stopper:** G.I. angle of thickness 0.7mm..

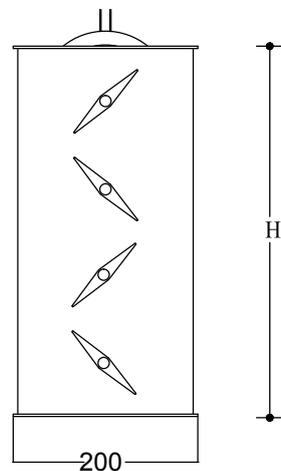
**Handle:** Galvanized Steel locking hand quadrant

## Description:

- Designed for use in heating, ventilating and air conditioning systems.
- Joints are welded and protected by aluminium spray coating to prevent rusting.
- Blades are coupled by toothed nylon gears which provides opposed blade operation.
- Hand locking quadrant is provided with clear open/close indication and three intermediate open positions (1/4 – 1/2 - 3/4).
- Foam gasket is sealed across the blade edges to minimize air leakage between the blades.

## Options:

- **Handle:** Cast Aluminium
- **Bush:** Brass bush, S.S. Ball Bearing.
- **Gear Wheel:** Aluminium Alloy.
- **Low Leakage:** S.S Jamb seal, Nylon blade end caps.



AVCD-SC

## CONSTRUCTION:

**Frame:** High quality Stainless Steel sheet (Grade 304/316L) of thickness 1.2mm depending on the size.

**Frame Size:** 125mm depth and standard flange height of 25mm.

**Blades:** Single skin ridge shaped blade constructed out of 1.2mm thick S.S sheet as standard.

**Drive Shaft:** S.S square rod of size 12.7mm x 12.7mm.

**Bushings:** Self-lubricating S.S or brass bushings.

**Blade linkage:** Nylon gear.

**Blade stopper:** S.S angle of thickness 0.7mm.

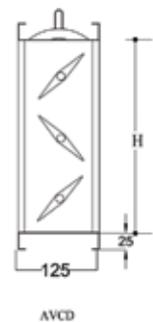
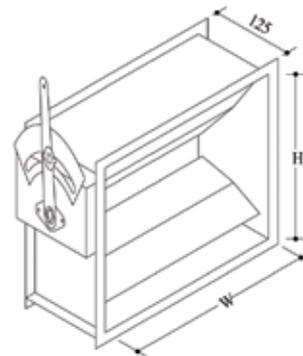
**Handle:** S.S locking hand quadrant.

## Description:

- Designed for offshore applications in heating, ventilating and air-conditioning systems.
- Can also be used in chemical industries and kitchen ventilation.
- Joints are welded and protected by chemical cleaning process.
- Blades are coupled by toothed nylon gears which provides opposed blade operation.
- Hand locking quadrant is provided with clear open/close indication and three intermediate open positions (1/4 – 1/2 - 3/4).
- Foam gasket is sealed across the blade edges to minimize air leakage between the blades.
- Flanged edges are supplied un-drilled as standard.
- Dampers without flanges available as option for duct insertion purpose.

## Options:

- **Frame:** Thickness up to 1.6mm upon request.
- **Gear Wheel:** Aluminium Alloy.
- **Low Leakage:** S.S Jamb seal.



# LOW LEAKAGE VOLUME CONTROL DAMPER

## CONSTRUCTION:

**Frame:** High quality Galvanized Steel sheet of thickness 1.2mm as standard.

**Frame size:** 125mm depth and standard flange height of 25mm.

**Blades:** Double skinned heavy duty extruded Aluminium profiles.

**Drive shaft:** Electro plated square rod of

size 12.7mm x 12.7mm.

**Bushings:** Self-lubricating nylon bushings.

**Blade linkage:** Nylon gear.

**Blade stopper:** G.I angle of thickness 0.7mm.

**Handle:** Galvanized Steel locking hand quadrant.

## Description:

- Designed for use in heating, ventilating and air conditioning systems for low-leakage applications.
- Joints are welded and protected by aluminium spray coating to prevent rusting.
- Blades are coupled by toothed nylon gears which provides opposed blade operation.
- Hand locking quadrant is provided with clear open/close indication and three intermediate open positions (1/4 – 1/2 - 3/4).
- Foam gasket is sealed across the blade edges to minimize air leakage between the blades.
- Flanged edges are supplied un-drilled as standard.
- Dampers without flanges available as option for duct insertion purpose.
- Air leakage from 0.18% to 1.33% only based on tests conducted in accordance with AMCA standard 500-D-98.

## Options:

- **Frame:** G.I sheet of thickness up to 2mm available upon request. Aluminium frame is also available for light weight / offshore / exposed area applications.



- **Handle:** Cast Aluminium.
- **Bush:** Brass bush, S.S. Ball Bearing.
- **Gear Wheel:** Aluminium Alloy.
- **Low Leakage:** S.S Jamb seal.

## CONSTRUCTION:

**Frame:** High quality Galvanized Steel of thickness 1.2mm as standard .

**Frame Size:** 125mm depth and standard flange height of 25mm.

**Blades:** Single skinned 3-V type G.I blade of 1.5mm thickness.

**Drive Shaft:** Electro plated square rod of size 12.7mm x 12.7mm.

**Bushings:** Self-lubricating nylon bushings.

**Blade linkage:** Nylon gear/mechanical linkage

**Blade stopper:** G.I angle of thickness 0.7mm.

**Handle:** Galvanized Steel locking hand quadrant.

## Description:

- Designed for use in heating, ventilating and air conditioning systems.
- Joints are welded and protected by aluminium spray coating to prevent rusting.
- Blades are coupled by toothed nylon gears which provides opposed blade operation.
- Hand locking quadrant is provided with clear open/close indication and three intermediate open positions (1/4 – 1/2 - 3/4).
- Foam gasket is sealed across the blade edges to minimize air leakage between the blades.
- Flanged edges are supplied un-drilled as standard.
- Dampers without flanges available as option for duct insertion purpose.

## Options:

- **Frame:** Thickness up to 2mm upon request.
- **Blade:** Double skin aerofoil type G.I blade of thickness 0.7mm.
- **Handle:** Cast Aluminium.
- **Bush:** Brass bush, S.S. Ball Bearing.
- **Gear Wheel:** Aluminium Alloy.
- **Low Leakage:** S.S Jamb seal.



*Double skin - aerofoil*



*Single skin - 3V*

# HEAVY DUTY VOLUME CONTROL DAMPER

## CONSTRUCTION:

**Frame:** High quality Galvanized Steel sheet of thickness 1.2mm.

**Frame size:** 180mm depth and 30mm flange height.

**Blades:** Double skinned aerofoil blades made from galvanized steel with 165mm blade spacing.

**Drive shaft:** Electro plated rod of size 14mmØ.

**Bushings:** Sintered, self-lubricating bronze bearing.

**Blade linkage:** Galvanized steel flat bars of 3mm thick.

**Blade stopper:** 1.2mm G.I angle.

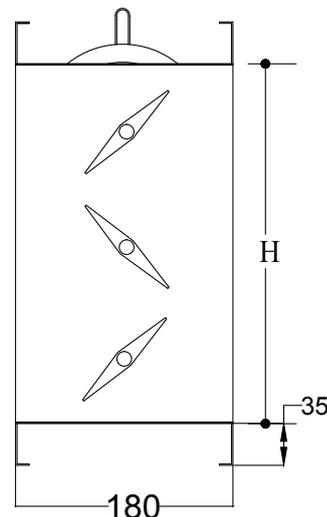
**Handle:** Heavy duty G.I quadrant.

## Description:

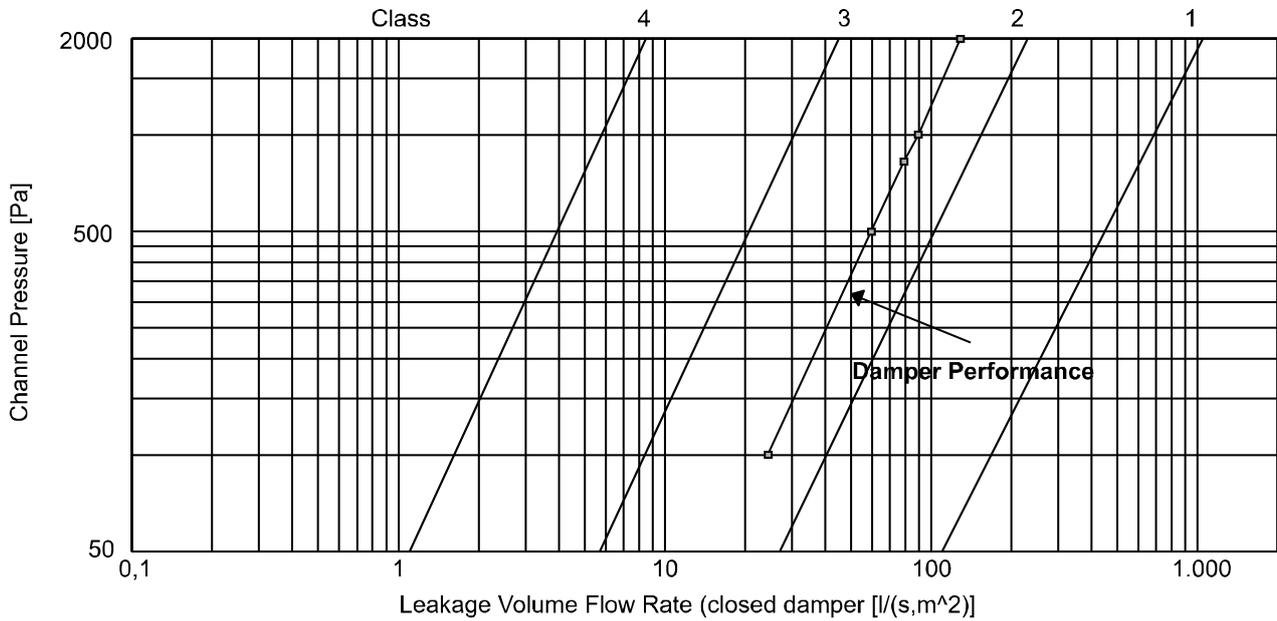
- Designed for heavy duty applications in heating, ventilating and air-conditioning systems.
- Also applicable for explosive areas.
- Frame is constructed from galvanized steel sheet and joined using corner-keys.
- Blades are of robust construction, roll formed G.I having 1.2mm thickness designed to withstand high pressure without clattering.
- Service temperature ranges from  $-40^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .
- Hand locking quadrant is provided with clear open and close indication.
- Rubber edge seal is provided across blade edges to minimize air leakage between the blades.
- Standard model available with corner borehole.

## Options:

- **Silicon Edge Seal:** For use in service temperature of  $-40^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$ .
- **Jamb Seal:** Between blade and frame, includes slide film and special foam plastic.



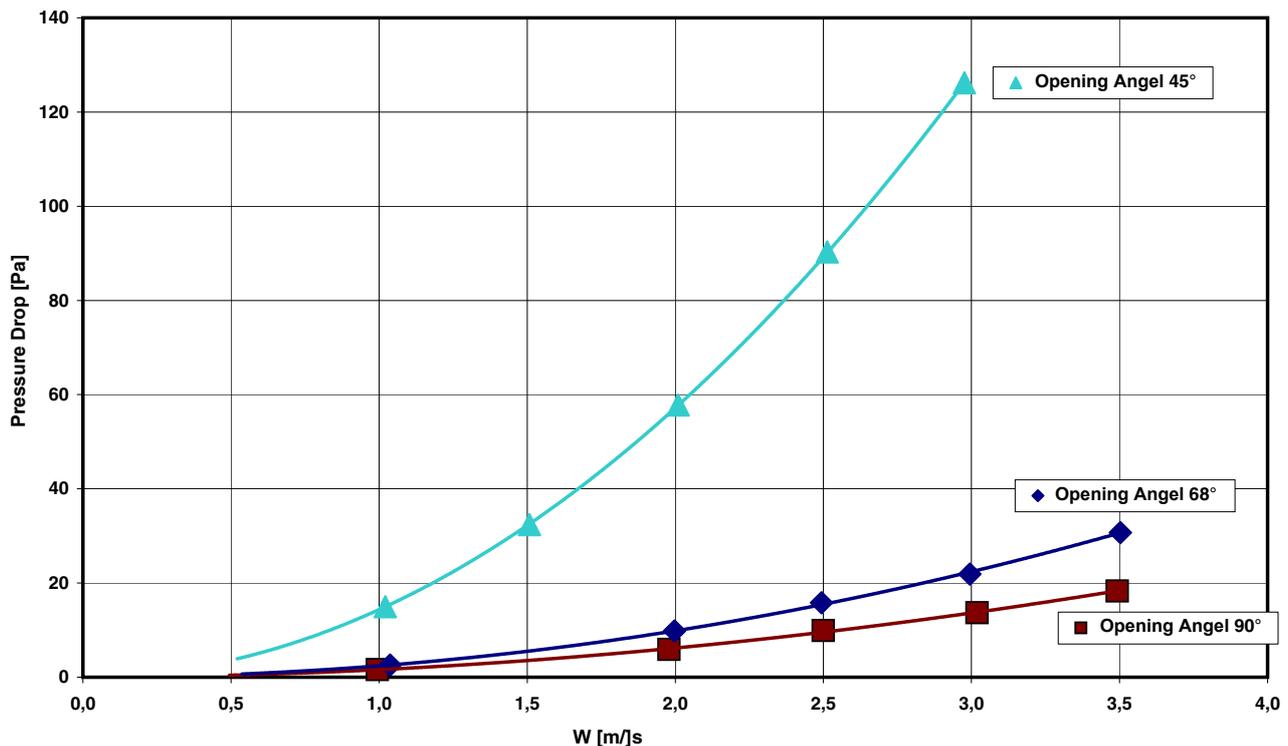
## Air Leakage Performance - AVCD-HD



Damper size: 1000 mm x 1005 mm 6 blades, blade width 165 mm

## Pressure Drop: AVCD-HD

Pressure Drop Curve (open damper)



# PRE-INSULATED VOLUME CONTROL DAMPER

## CONSTRUCTION:

**Frame:** 20mm thick polyurethane material with 2-sides Aluminium foil facing.

**Frame Size:** 200mm depth with flanges for side-fixing.

**Blades:** Double skinned high quality extruded Aluminium aerofoil profiles.

**Drive Shaft:** Electro plated square rod of size 12.7mm x 12.7mm.

**Bushings:** Self-lubricating nylon bushings.

**Blade linkage:** Nylon Gear.

**Blade stopper:** G.I angle of thickness 0.7mm.

**Handle:** Galvanized Steel locking hand quadrant.

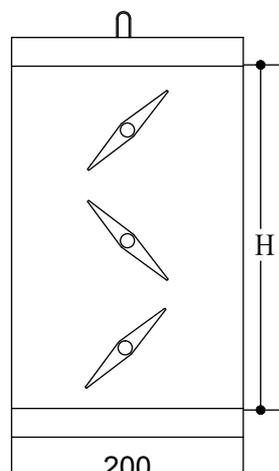
## Description:

- Designed for use in heating, ventilating and air conditioning systems in open/limited access areas and light weight applications.
- The edges are joined using special glue and silicon.
- Blades are coupled by toothed nylon gears which provides opposed blade operationn.
- Hand locking quadrant is provided with clear open/close indication and three intermediate open positions (1/4 – 1/2 - 3/4).
- Foam gasket is sealed across the blade edges to minimize air leakage between the blades.



## Options:

- **Frame:** Thickness up to 25mm available upon request.
- **Handle:** Cast Aluminium.
- **Bush:** Brass bush.
- **Gear Wheel:** Aluminium Alloy.



AVCD-PI

## CONSTRUCTION:

**Frame & Blade:** High quality Galvanized Steel.

**Bearing pins:** Electro plated steel rod of 10mmØ with square transition of size 12.7mm x 12.7mm

**Bushings:** Self-lubricating nylon bushings.

**Handle:** Galvanized Steel locking hand quadrant.

## Description:

- Joints are welded and protected by aluminium spray coating to prevent rusting.
- Damper blades are fixed to the bearing pin (which is coupled with hand locking quadrant) and can be fully opened or closed.
- Hand locking quadrant is provided with clear open/close indication and three intermediate open positions (1/4 – 1/2 - 3/4).
- Foam gasket is provided on the inner frame surface.

## Options:

- **Handle:** Cast Aluminium
- **Bush:** Brass bush
- **Actuator:** Of clients choice for motorized applications

## Dimensions:

D = Diameter	L = Length	Sheet Thickness
100 to 150 mm	L = D+ 50 mm	0.7 mm
200 to 500 mm	L = D	0.9 mm
550 to 1000 mm	L = D+ 50 mm	1.2 mm
1000 mm&above	L = D+ 100 mm	1.5 mm

## Standard sizes:

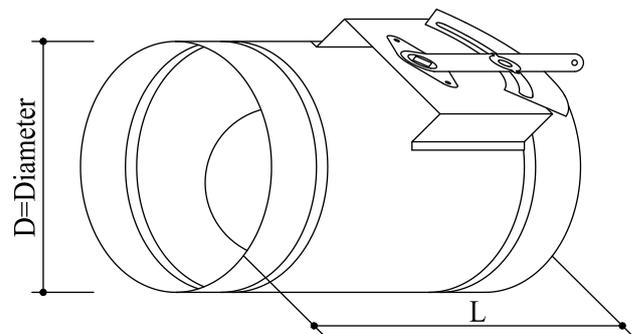
D = Duct opening in mm dia					
100	200	300	400	500	600
700	800	900	1000	1100	1200

## Fixing details:

- Fixing by using Jubilee clip to flexible duct.



**Round VCD with flange. Model AVCD-CF**

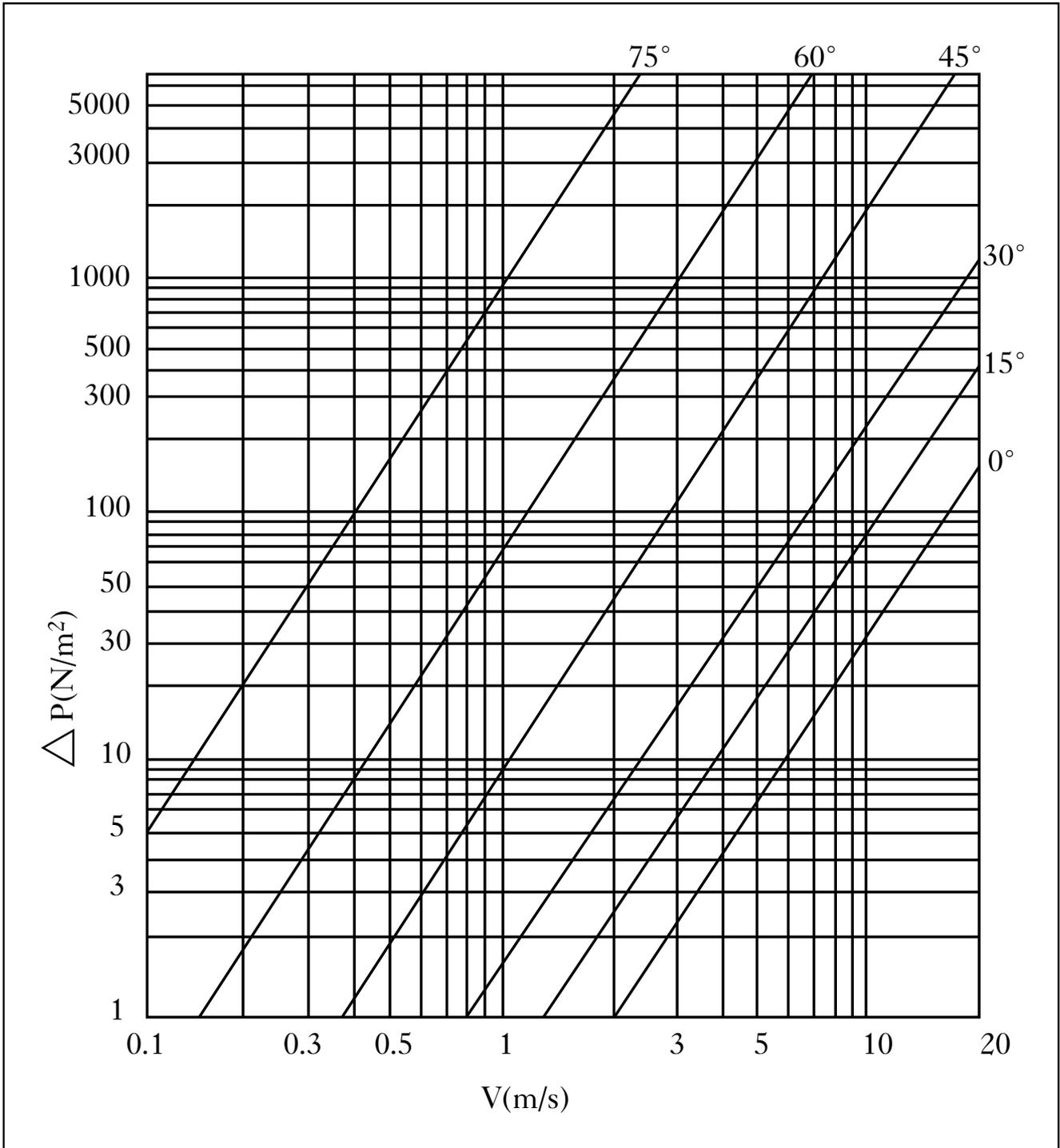


AVCD-C

# PERFORMANCE CHART VOLUME CONTROL DAMPER



## Performance chart: Model: AVCD-C



Pressure drop - Circular VCD

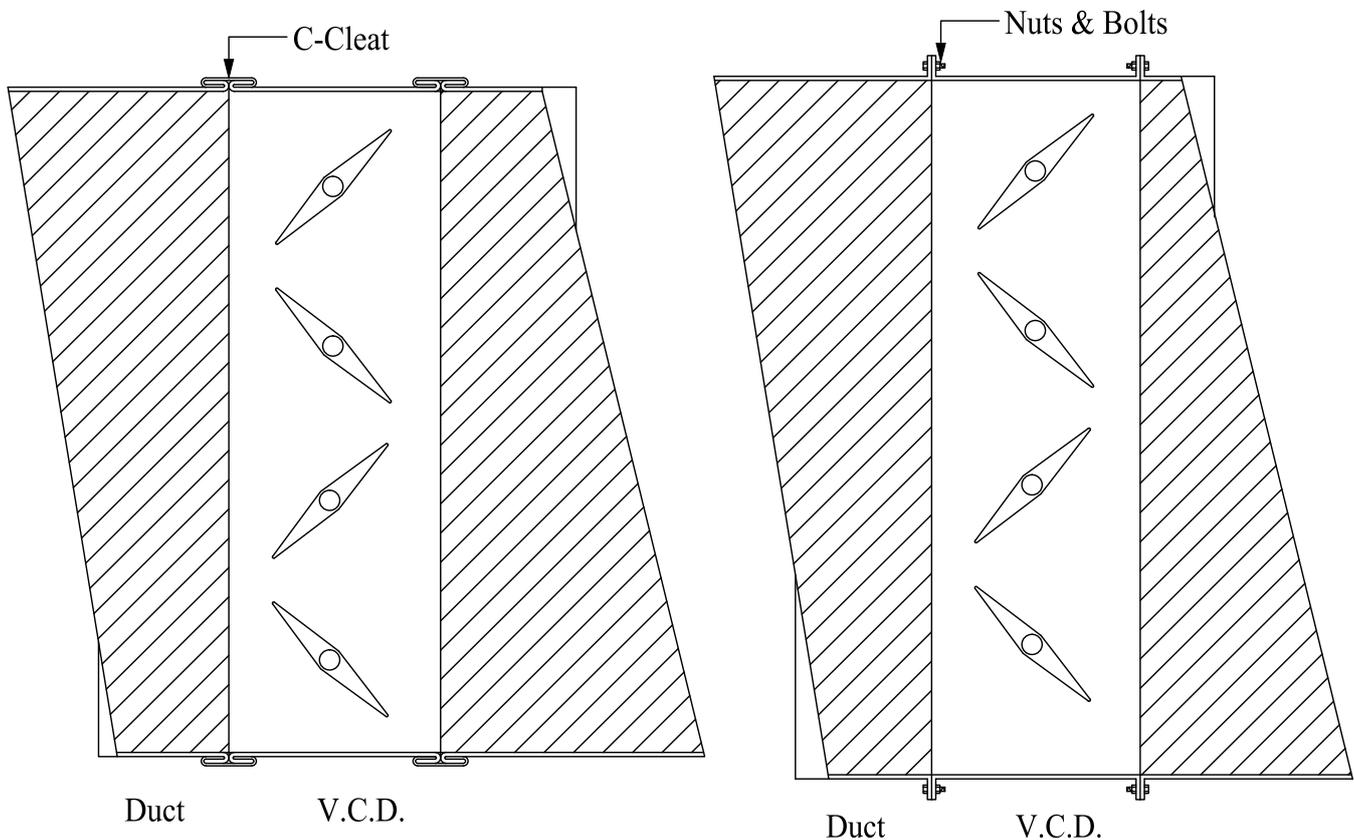
## Product Summary:

Model	Product Description	Remarks
<b>AVCD</b>	GI Frame with double skin Al.Blades	Manual Quadrant
<b>AVCD-M</b>	GI Frame with double skin Al.Blades	With actuator
<b>AVCD-SC</b>	Slip & Clip type	
<b>AVCD-SS</b>	SS Frame with double skin SS blade	Option: Single skin SS blade
<b>AVCD-ZL</b>	GI Frame with double skin Al.Blades	With Jamb seal for Low leakage
<b>AVCD-GI</b>	GI Frame with double skin GI blade	Option: Single skin GI blade
<b>AVCD-HD</b>	Heavy Duty VCD	
<b>AVCD-PI</b>	Pre-Insulated VCD	
<b>AVCD-C</b>	Round/Circular VCD	Manual Quadrant

## Product Order check list:

- Model
- Size in Length x Width
- Quantity
- Refer options available for each product

## Product Installation:





**air master**  
ISO 9001 CERTIFIED COMPANY

**AIR MASTER EQUIPMENTS EMIRATES LLC.**

Post Box - 3180, Ajman, U.A.E.

Tel: +971 6 7436900, 7439600 Fax: +971 6 7436700

E-mail: [airmastr@eim.ae](mailto:airmastr@eim.ae), [sales@airmaster.ae](mailto:sales@airmaster.ae)