ALANDALOSIA

FOR AIR OUTLET

CATALOGUE NO 19

VOLUME DAMPER

Andalosia Air Outlet

WWW.ANDALOSIA.COM

OUR PRODUCTS

SELECTION GUIDE

1- SQUARE CEILING DIFFUSER
2- ROUND CEILING DIFFUSER
3- SWIRL DIFFUSER
4- PERFORATED CEILING DIFFUSER
5- LINEAR SLOT DIFFUSER
6- LINEAR CEILING DIFFUSER
7- LINEAR BAR GRILL
8- REGISTER
9- FLOOR & PERFPRATED FLOOR GRILL
10- TRANSFER GRILL
11- ACCESS PANEL
12- LOUVER
13- SAND TRAP LOUVER
14- JET NOZZLE
15- BALL JET NOZZLE
16- DRUM JET NOZZLE
17- DISC VALVE
18- NON RETURN DAMPER(SHUTTER)
19 - VOLUME DAMPER
20- FIRE DAMPER
21- SMOKE DAMPER
22- DUCT ACCESS DOOR

....

Air Outlet Andalosia

INTERTEK

APPLICATION

The Volume Control Damper has been specially designed to control air flow in HVAC system where high/medium/low pressure are experienced.
These dampers are designed to operate from one control point.
The damper's blade opening is controlled by hand locking quadrant or motor.

SPECIFICATIONS

MATERIAL

Extruded Aluminum or galvanized steel.

CASING

Extruded Aluminum or galvanized steel for upper and side frames with different case depth

BLADE

Aero foil blade made from Extruded Aluminum or 3-Groove bended blade for Galvanized steel construction.

QUADRANT HAND

Steel or plastic handle in different sizes to obtain the required momentum suitable for the volume size.

GEARS

Made from specific plastic temperature resistance 70°c to drive opposed blade mecanism.

FREE AREA : max 80%

FIXING SYSTEMS

The frame of the damper has been designedin order to be flanged connection in ducts or other flat surface .

FINISH

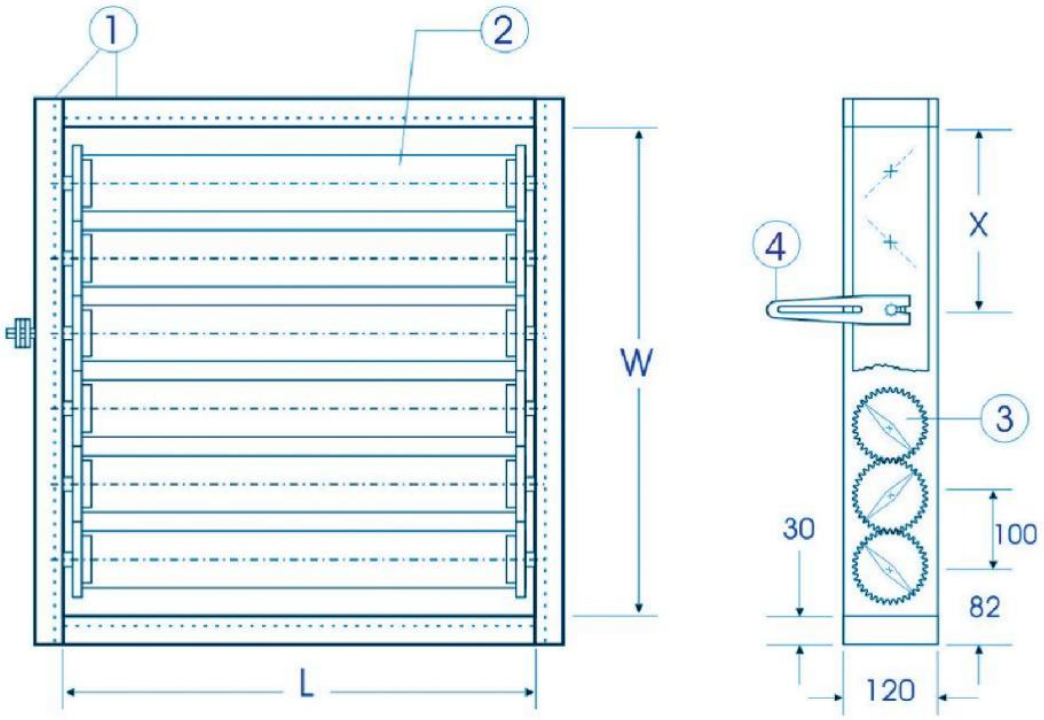
Standard mill finish or powder coated .

ALUMINUME TYPES

"AIROFOIL 102

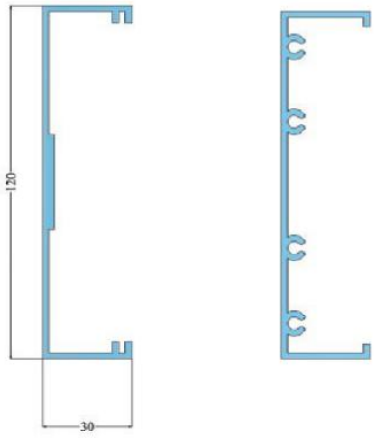
Aluminume volume damper

opposed blade damper gear operating involving air foil blade with the mentional dimensions .



1. Casing (UPPER &SIDE FRAMES)
2. Blade
3. plastic Gear
4. Drive Arm

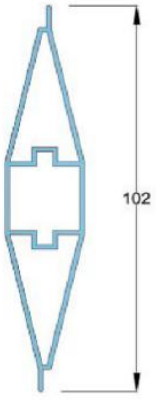
FRAME



Side frame wall thickness of ( )

Upper frame wall thickness of ( )

BLADE

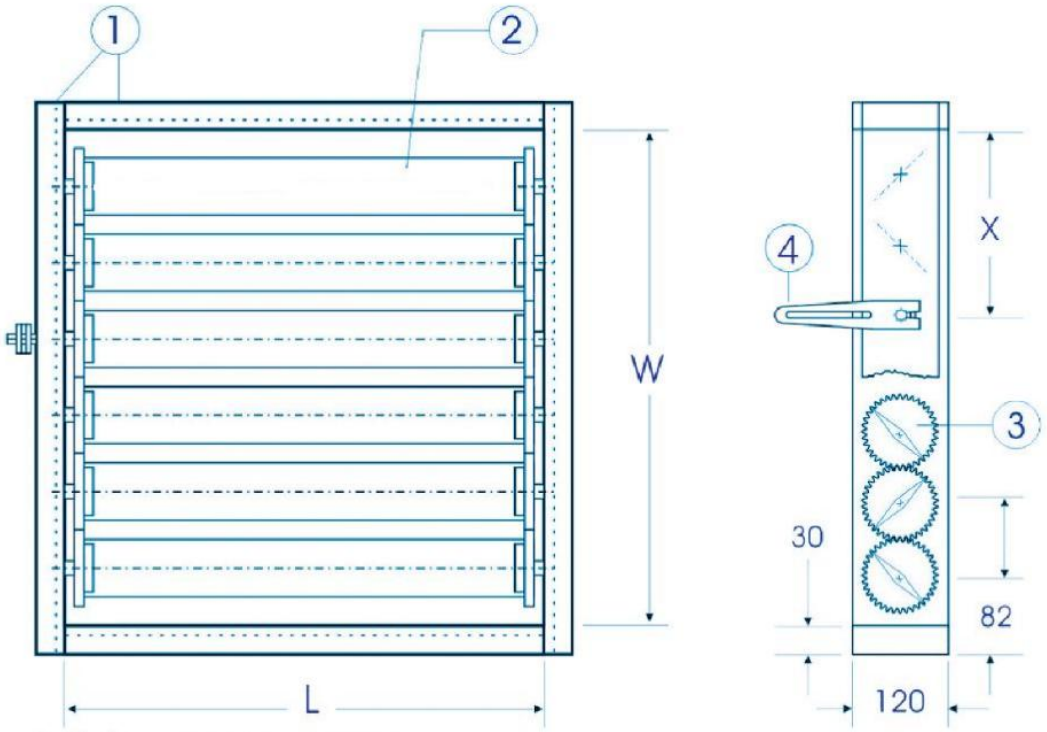


Airofoil blade wall thickness of ( )

"AIROFOIL 95

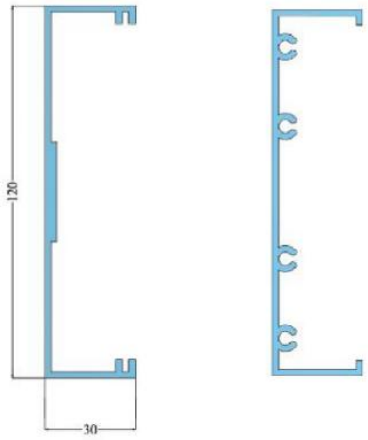
Aluminume volume damper

opposed blade damper gear operating involving air foil blade with the mentional dimensions and with rubber sealing in order to reduce leakage .



1. Casing (UPPER &SIDE FRAMES)
2. Blade
3. plastic Gear
4. Drive Arm

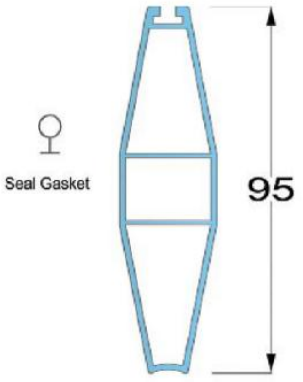
FRAME



Side frame wall thickness of ( )

Upper frame wall thickness of ( )

BLADE

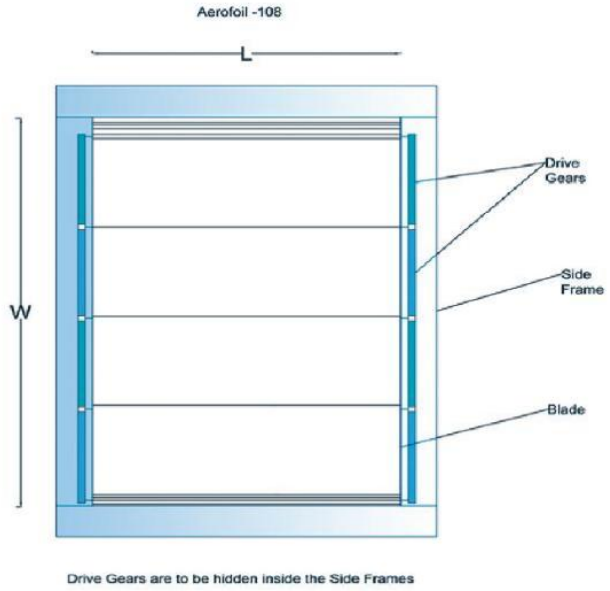


Airofoil blade wall thickness of ( )

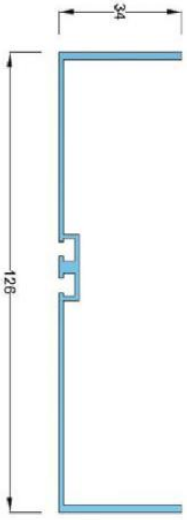
"AIROFOIL 108

Aluminume volume damper

opposed blade damper gear operating involving air foil blade with the mentional dimensions and with rubber sealing in order to reduce leakage put the differance between this type and the other types is that the drive gear mechanism is hide inside the frame which providing a maximum free area of 85% .



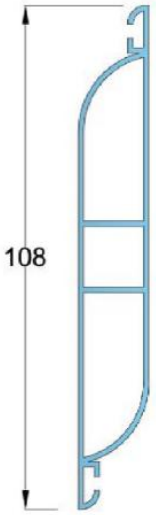
FRAME



Side frame wall thickness of ( )

Upper frame wall thickness of ( )

BLADE



Seal Gasket

Airofoil blade wall thickness of ( )

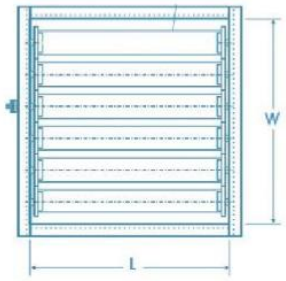
POSITION OF DRIVE ARM

L (mm)	W (mm)	No. of Blades	Position of Drive Arm X (mm)
200	204	2	52
300	304	3	252
400	404	4	
500	504	5	
600	604	6	
700	704	7	
800	804	8	452
900	904	9	
1000	1004	10	

SIZE

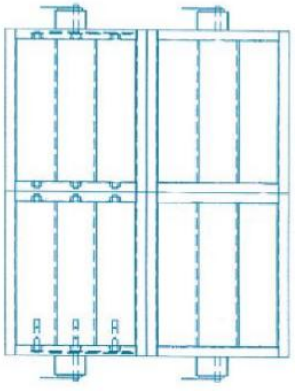
SINGLE SECTION

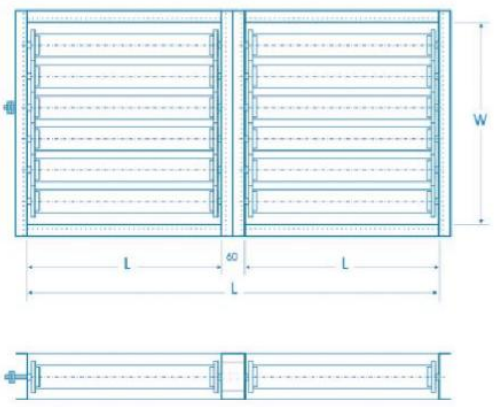
For dimensions (1000MM *1000MM)
Single Section is Applied.



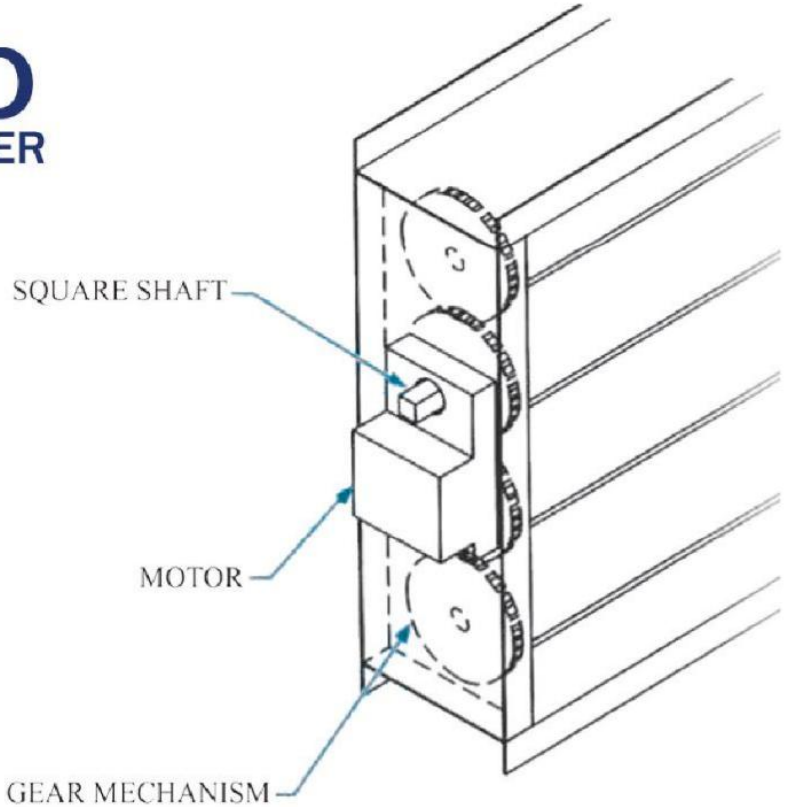
MULTIABLE SECTION

For dimensions more than (1000MM *1000MM)
a double or more sections is applied.





MOTORIZED
VOLUME CONTROL DAMPER



MOTORS

As a standard: Belimo models used with our product.

TYPES OF MOTORS

1) Open / Close type without spring return function.
2) Open / Close type with spring return funcion.
3) Modulating motor.

MOTOR MODELS

according to damper size as per following pages ...

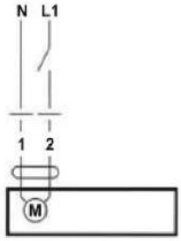
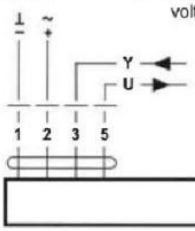
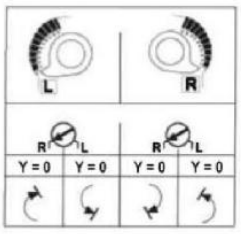
SPRING RETURN ACTUATORS

			TF	LF	AF
			2 Nm	4 Nm	15 Nm
					
		Air damper size up to approx.	0.4 m²	0.8 m²	3 m²
Open/ Close	AC / DC 24 V		TF24	LF24	AF24
	Auxiliary switch add-on 1 x SPDT, (AF24-S : 2 x SPDT)		TF24-S	LF24-S	AF24-S
	AC 230 V		TF230	LF230	AF230
	Auxiliary switch add-on 1 x SPDT, (AF230-S : 2 x SPDT)		TF230-S	LF230-S	AF230-S
Modulating	AC / DC 24 V Positioning signal Y: DC 2 ... 10 V, 100 kOhm Position feedback: DC 2 .. 10 V, max. 1 mA		TF24-SR	LF24-SR	AF24-SR
Multi-functional	Parameterisable 1)		TF24-MFT	LF24-MFT	AF24-MFT
	Damper shaft		6 ... 12mm	8 ... 16mm	10 ... 20mm
	Running time	- Motor - Spring return	<75 s 2) <25 s	40-75 s 2) <20 s	~150 s ~16s
	Manual override				Crank handle
	Connection		Cable 1 m		
	Direction of rotation		selected by mounting L/R		
	Angle of rotation		max. 95°		
	Angle of rotation limiting		yes	yes	yes
	Position indication		mechanical		
	Degree of protection		IP 42	IP 54	
	Sound power level	- Motor - Spring return	max. 50 db(A) = 62 db(A)		max. 45 db(A) = 62 db(A)
	EMC		CE according to 89/336/EEC		
	Ambient temperature range		-30 ... +50°C		
	Non-operating temperature		-40 ... +80°C		
	Ambient humidity range		95% r.H., non-condensating (to EN 60730-1)		

2) SR-typ 150s

Control, operating range, running time and further functions are parameterisable with PC-Tool or with the parameterising device MFT-H

Further versions ex. fast running or form-fi t types on request.

Electrical installation	..F24 ..F230	..F24-SR	..F24-MFT	..F24-SR
	Open/Close	modulating	multifunctional	Mounting direction
		Y = DC 0...10 V U = DC 2...10 V 	Y = Control signal U = Measuring voltage	

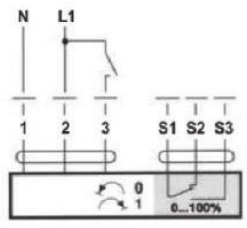
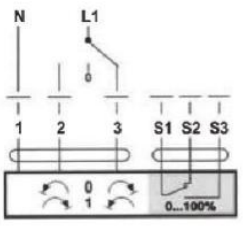
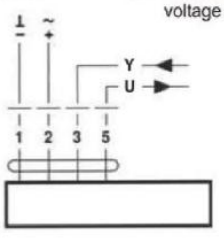
NON SPRING RETURN ACTUATORS

		TMC..A	LMC..A	LM..A	NM..A	SM..A	GM..A
		2 Nm	5 Nm	5 Nm	10 Nm	20 Nm	40 Nm
							
	Air damper size up to approx.	0.4 m²	1 m²	1 m²	2 m²	4 m²	8 m²
Open/ Close	AC / DC 24 V	**TMC24A**	**LMC24A**	**LM24A**	**NM24A**	**SM24A**	**GM24A**
	Auxiliary switch add-on 1 x SPDT, 1 mA...3 (0.5) A	**TMC24A-S**	**LMC24A-S**	**LM24A-S**	**NM24A-S**	**SM24A-S**	
	AC 230 V	**TMC230A**	**LMC230A**	**LM230A**	**NM230A**	**SM230A**	**GM230A**
	Auxiliary switch add-on 1 x SPDT, 1 mA...3 (0.5) A	**TMC230A-S**	**LMC230A-S**	**LM230A-S**	**NM230A-S**	**SM230A-S**	
Modulating	AC / DC 24 V	**TMC24A-SR**	**LMC24A-SR**	**LM24A-SR**	**NM24A-SR**	**SM24A-SR**	**GM24A-SR**
	AC 230 V			**LM230ASR**	**NM230ASR**	**SM230ASR**	
	Positioning signal Y: DC 2 ... 10 V, 100 kOhm Position feedback: DC 2 .. 10 V, max. 1 mA						
Multi-functional	Parameterisable 1)			**LM24A-MF**	**NM24A-MF**	**SM24A-MF**	**GM24A-MF**
	Damper shaft	6 ... 20 mm	6 ... 20 mm	6 ... 20 mm	8 ... 20 mm	10 ... 20 mm	14 ... 26 mm
	Running time	35 s		150 s			
	Manual override	Disengaging the gearing latch by means of pushbutton, self-resetting					
	Connection	Cable 1 m, 3 x 0,75 mm²					
	Direction of rotation	Can be selected with switch					
	Angle of rotation	max. 95°, can be limited at both ends with mechanical adjustable end stops					
	Degree of protection	IP 54 in all mounting positions					
	Position indication	Mechanical, plug-on					
	Sound power level	max. 35 dB(A)	max. 45 dB(A)	max. 35 dB(A)		max. 45 dB(A)	
	EMC	CE according to 89/336/EEC					
	Ambient temperature range	-30 ... +50°C					
	Non-operating temperature	-40 ... +80°C					
	Ambient humidity range	95% r.H., non-condensating (to EN 60730-1)					

1) Control, operating range, running time and further functions are parameterisable with PC-Tool or with the parameterising device MFT-H

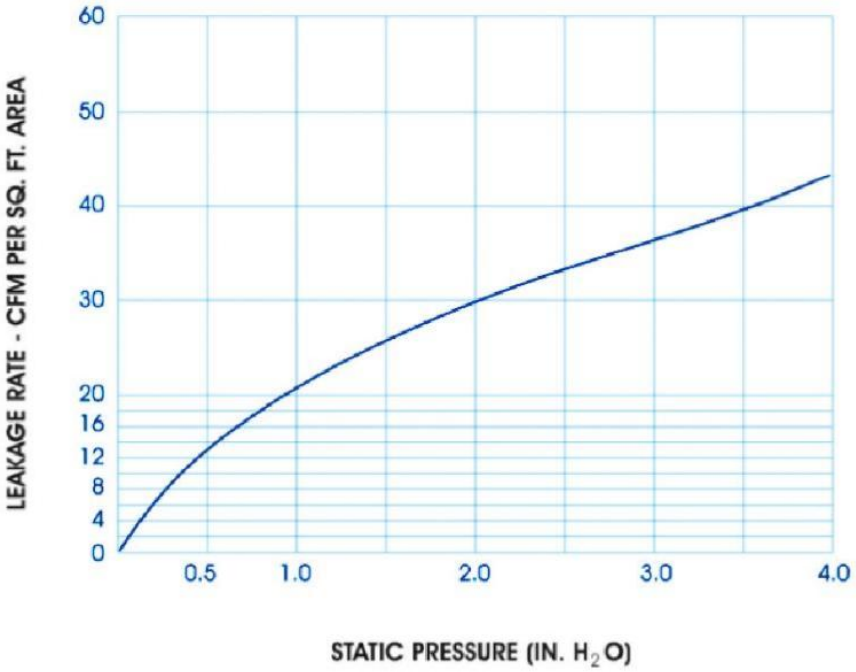
Further versions ex. fast running or form-fi t types on request.

1

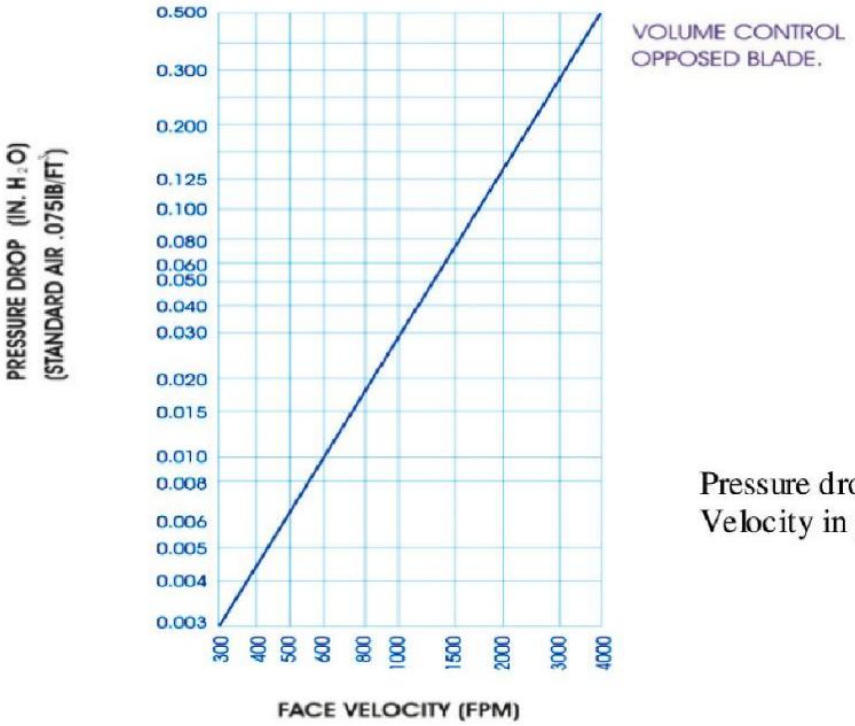
Electrical installation	**..M24A(-S) ..M230(-S)**		**..M24A-SR**	**..M24A-MF**
	Open/Close	3-point	modulating	multifunctional
			Y = DC 0...10 V U = DC 2...10 V	Y = Control signal U = Measuring voltage
				
Direction of rotation				

PERFORMANCE CHARTS

LEAKEGE CHART



PREASSURE DROP CHART



Pressure drop Vs. Face Velocity in position.

Air Outlet **Andalosia**

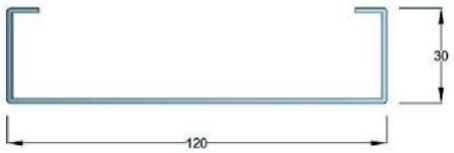
STEEL
VOLUME DAMPER

U-chanel frame type for dyct flange mounting or flat surface suitable for (high - medium - low) pressure application .

SPECIFICATIONS

MATERIAL
The Dampers are made from galvanized steel .

CASING
4 parts of formed galvanized sheet metal GA .16(1.5mm thickness) , welded together to optain rigid construction .

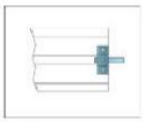


U- Channel Frame
Ga.16 (1.5mm)

BLADE
Galvanized sheet metal GA.16 (1.8 mm thickness) , formed with three grooves to strenthen the blade in order to resist pressure .


Grooved Blade

AXLE
1/2 " round galvanized steel bar bolted to the blede

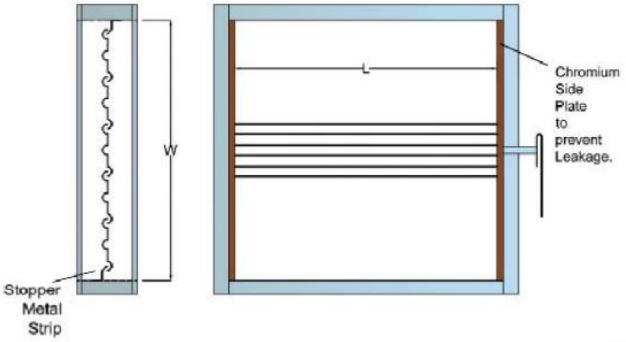

Axle


Sleeve

SLEEVE
Round brass.

HANDLE
Hand quadrant for manual operation.

FINISH
Standard finish galvanized or powder coated .



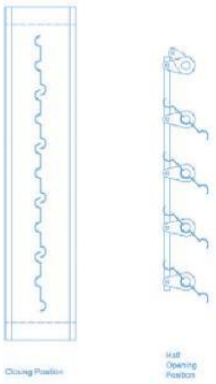
INTERTEK

OPERATION TYPE

It may be classified into two types according to operating mechanism :

PARALLEL BLADES

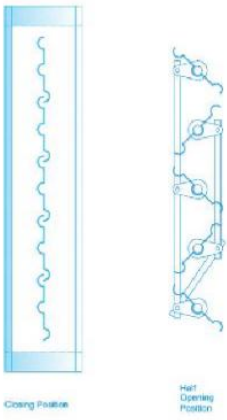
connected by side linkge of galvannized steel conceld in the u channel side frame .
Parallel blades offer rapid air response to blade movement
but divert air flow to one side of the duct .
Blades rotation is in the same direction and is best suited for on and off application
.



Parallel Sliding Linkage ,Concealed in the side Frame of the Casing

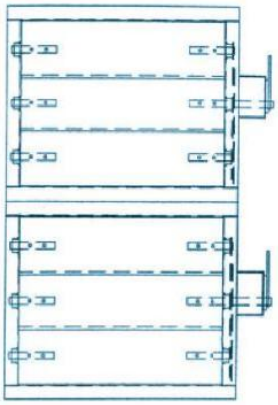
OPPESITE BLADES

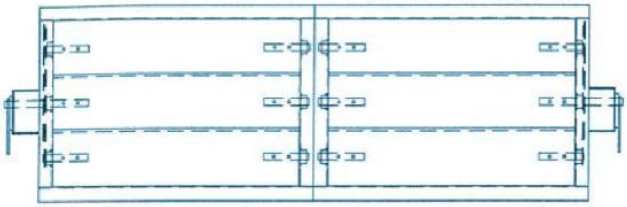
two sets of opposed blade connected by side linkge of galvannized steelconceld in the u channel side frame opposed blades provide non diverting air flow and reduce turbulance ,which is important when the damper is used in front of fans or coils . the opposed blade damper require a lower opening torqe .

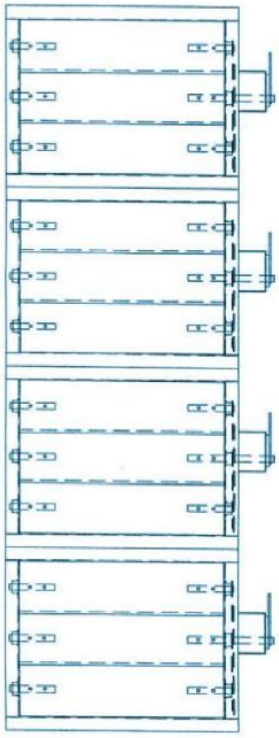


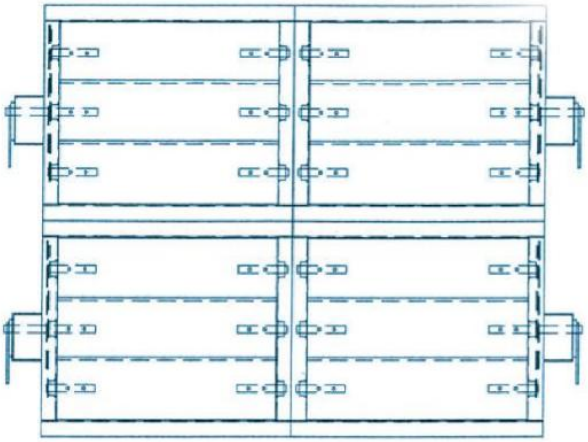
FOR LONG AND WIDE DAMPERS

For domensions more than (1200MM *1200MM)
A double or more sections are applied .









MOTORIZED
STEEL VOLUME CONTROL DAMPER

MOTORIZED STEEL VOLUME CONTROL DAMPER
The same construction but the blade mechanism deived by a motor .

MOTORS
As a standard: Belimo models used with our product.

TYPES OF MOTORS
1) Open / Close type without spring return function.
2) Open / Close type with spring return funcion.
3) Modulating motor.

MOTOR MODELS
according to damper size as per following pages ...

ROUND
VOLUME CONTROL DAMPER

INTRODUCTION

The round control damper with a full circumference blade seal for low leakage. It is designed to replace a section of the duct work where a damper is needed.
This construction to ship actuators installed on the damper. The damper can be constructed of stainless steel if required. The rolled duct stops make for ease of installation and sealing the duct work to the damper.
The damper is one of the lowest leak dampers in the industry .

APPLICATIONS

Generally used for applications in round ducts and pre-insulated ducts to control air flow rate.

SPECEFICATIONS

MATERIAL

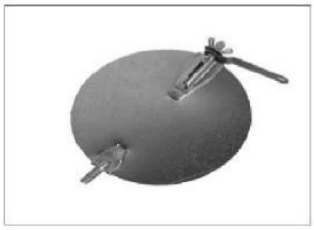
The Dampers are made from galvanized steel sheets or stainless steel as required

CASING

(.8 mm) Gage 22 roled galvanized steel sheets .

BLADE

(.8 mm) Gage 22 circluar blade galvanized steel full circumference neoprene blade seel .



QUADRANT HAND

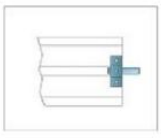
For manual operation made from galvanized steel .

AXLE

1/2 " round galvanized steel bar bolted to the blede

SIZES

80mm Diamitare up to 630 Dia. in single blade construction .



Axle

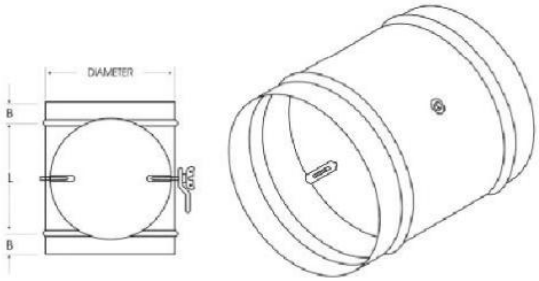
FINISH

Standard galvanized finish or powder coated

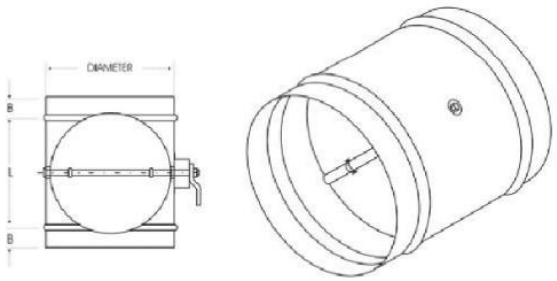
SIZE

ROUND VOLUME CONTROL DAMPER

To dimension up to 4oo mm diameter
Short two axles fixed at the ends of the blade



To dimension up to 4oo mm diameter
Axle :1/2" square bar 'U' bolted along the blade.



size	B	Total length
80 100 125 140 150		200
160	50	260
180		280
200		300
225		325
250		350
280		380
315		415
400		500
500		600
630		730

For size above 630 mm length is fixed 730 mm and diffrent gauge for for blade and casing are used according to size .

MOTORIZED ROUND
VOLUME CONTROL DAMPER

General construction as type 1 damperbut blades, shafts and blade to shaft drive by motor

MOTORS

As a standard: Belimo models used with our product.

TYPES OF MOTORS

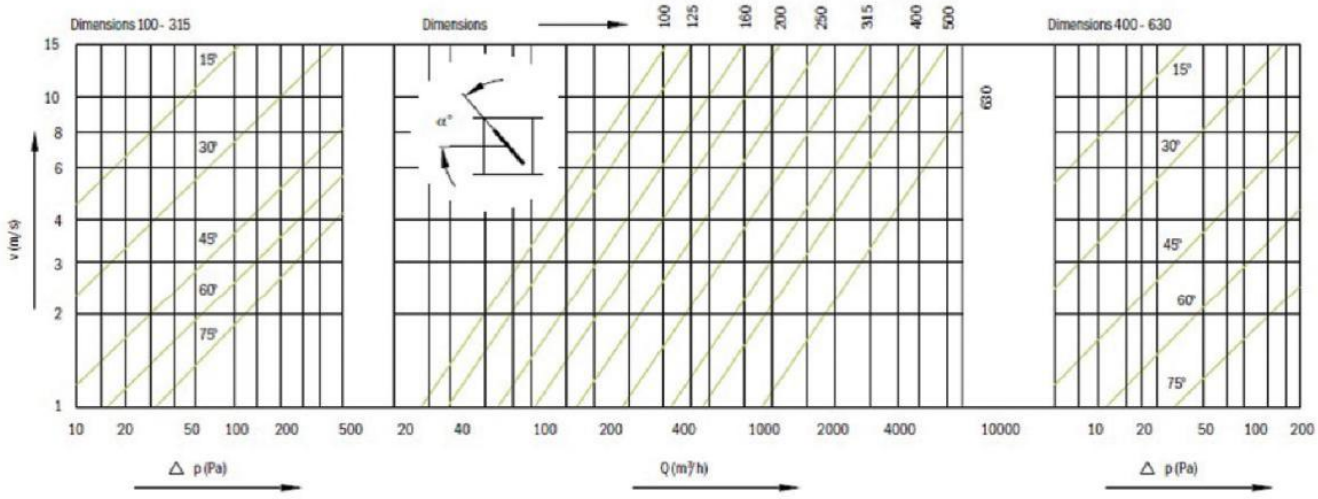
1) Open / Close type without spring return function.
2) Open / Close type with spring return funcion.
3) Modulating motor.

MOTOR MODELS

according to damper size , **Return to page 10 , 11**

SPECEFICATIONS

Pressure drop diagram



$L_{WA} = L_{NAZ} + L1 + L2$ (dB(A))

Diagram of L2

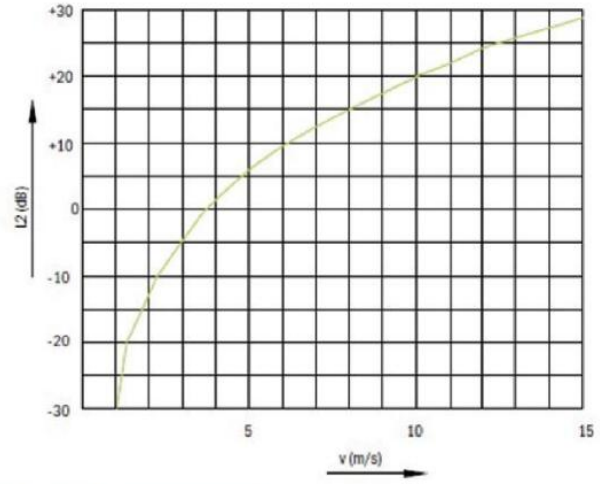


Table of L1

Size	100	125	160	200	250	315	400	500	630
L1 (dB)	-2	-1	0	+1	+2	+3	+4	+5	+6

Table of L_{NAZ}

Size	α°	Frequency (Hz)						
		125	250	500	1000	2000	4000	8000
100 ↓ 315	15	37	26	22	18	11	11	10
	30	43	32	28	24	19	19	18
	45	48	43	38	34	31	30	31
	60	54	51	48	46	45	43	42
	75	58	55	54	52	52	51	50
400 ↓ 630	15	39	29	24	20	14	14	12
	30	46	35	31	27	22	22	21
	45	52	47	42	38	35	34	34
	60	59	56	53	51	50	48	47
	75	64	62	61	59	59	59	58

Definition of symbols

Q (m³/h)	Air flow
v (m/s)	Air velocity in the duct
Δp_{cel} (Pa)	Pressure drop difference
L_{WA} (dB(A))	Sound power level

PHOTOGRAPH OF TEST SAMPLE

REMARKS

Ambient Temperature: 68 F
Relative Humidity: 21%
Barometric Pressure: 29.02 in. Hg

CONCLUSION

The test method employed for this test has no pass-fail criteria; therefore, the evaluation of the test results is left to the discretion of the client.

Date of Tests: April 30, 2012

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Attachments: None