SHUT-OFF DAMPER

CI

Shut-off damper CI is designed for ventilation networks with a high security constraints that requires a high degree of isolation in order to guarantee the protection of the workers or equipment.

It is designed to guarantee a leaking rate under 0.03 $m^3/h/m^2$ under a pressure of 2 000 Pa.

It can withstand up to 5 000 Pa in closed position.

In its standard version, the shut-off damper CI is delivered with a steering wheel manual controller.
In option, the damper can be equipped with a pneumatic or electrical actuator (on/off or spring-return functionning).

CONSTRUCTION

Control
Manual blocking control
Delivered with a steering wheel manual control *In option : electric or pneumatic actuator*
Control shaft adapted to the actuator

Frame
Galvanized steel *In option: stainless steel AISI 304L - 1.4307 or AISI 316L - 1.4404*
Folded and profiled metal sheet 2 mm thick Width: 350 mm
F2A standard drilling (see p.4) *In option : drilling Ø10.6 in each angle*
Flanges : 50 mm

Blades
Galvanized steel *In option: stainless steel AISI 304L - 1.4307 or AISI 316L - 1.4404*
Folded and profiled metal sheet 1.5 mm thick
Ø20 mm shaft
Pitch of 250 mm

	Characteristics
Seals	EPDM seals on the frame
Upstream/downstream airtightness	Below 0.03 m^3/h under a pressure of 2 000 Pa for a dimension of 1 000 x 1 000 mm
Frame's aritightness	Class C according to EN 1751
Acceptable pressure	5 000 Pa for a blade length of 1000 mm
Operating temperature	From -20°C to +70°C
Linkage	Located outside the airflow

ISO 9001 14001 Certified

F2A - 70 Impasse des Barmettes - Parc d'activités des 2B - F 01360 BELIGNEUX
Tel. +33 (0) 4 78 06 54 72 - Fax +33 (0) 4 78 06 53 45 - E-mail : export@f2a.fr

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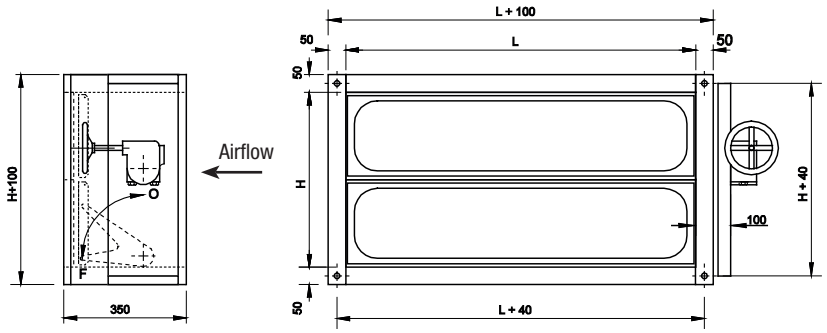
DIMENSIONS

Height (H) :
From 250 to 1000 mm
With a pitch of 250 mm

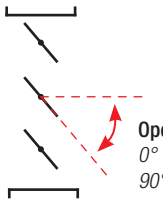
Length (L) :
From 400 to 1000 mm
With a pitch of 100 mm



PRESSURE LOSSES

The following pressure losses (Pa) are given according to the blades opening angle (in °) and air velocity (in m/s).
Damper type CI, parallel blade operation.

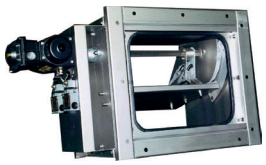
	Opening angle		
Air velocity (m/s)	0°	30°	60°
2	< 5	30	170
4	15	115	620
6	35	255	
8	60	455	
10	100		
12	140		
15	215		



Opening angle
0° = fully open damper
90° = closed damper

WEIGHT (kg)

		Length			
		400	600	800	1000
Height	250	33	39	46	52
	500	43	57	60	71
	750	65	74	78	90
	1000	82	91	95	108



Weights are given for a damper in galvanized steel.

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REGENERATED NOISE

The acoustic performances of our dampers have been tested in an independent laboratory (CTTM) according to ISO 7235:2009 standard.

Air flow noise Lw in dB *(blades opening angle 30°)*

- Damper type **CI**- blades actuation via linkage (parallel blade operation):

Air velocity (m/s)	Frequency (Hz)								
	63	125	250	500	1000	2000	4000	8000	Overall
2	48.0	45.9	45.5	44.5	42.3	36.7	35.2	38.8	53.0
4	65.1	69.4	57.5	62.7	59.8	57.3	54.5	46.2	72.1
6	72.5	79.5	68.5	70.0	71.4	68.4	65.0	59.2	81.7
8	73.2	87.2	81.9	76.5	79.3	77.0	73.0	67.1	89.6

Data are given for a damper 500 x 500 mm.

From these data, you can calculate the regenerated noise of a damper of different dimensions by applying the formula below for every frequency band:

$$Lw_{63} = x_{63} + 10 \log \left(\frac{S}{0.25} \right)$$

X_{63} = Air flow noise for a damper 500 x 500 mm at 63 Hz (in dB) for a given air velocity => read the data in the table
S = Damper section (in m^2).
Lw_{63} = Air flow noise required at 63 Hz (in dB) for a given air velocity.

Example – Calculation of regenerated noise for a damper CI 750 x 700 mm (HxL)

- Damper section : S = 0.75 x 0.7 = **0.525 m^2**

Calculation of the regenerated noise at 63Hz for an **air velocity of 4 m/s**:

$$Lw_{63} = 65.1 + 10 \log \left(\frac{0.525}{0.25} \right) = 68.3 \text{ dB}$$

Value in the table at a frequency of 63Hz and for an air velocity of 4 m/s.

Repeat this calculation rules to get the regenerated noise for all frequencies (63Hz - 8kHz).

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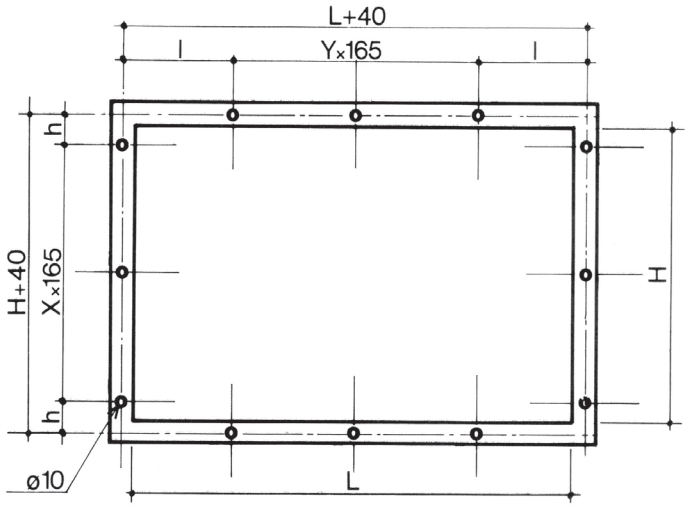
F2A STANDARD DRILLING



H	250	500	750	1000
h	62.5	22.5	65	25
X	1	3	4	6

L	400	500	600	700	800	900	1000
l	55	105	155	40	90	140	190
Y	2	2	2	4	4	4	4

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