BACKDRAUGHT DAMPER

ARE - ATEX

Backdraught damper **ARE ATEX** is designed for a one-way air flow direction. The blades prevent reverse flow in the ventilation ductworks.
ARE ATEX : airtight backdraught damper equipped with gaskets on the blades

CODIFICATION

A ⟶ Backdraught damper
X ⟶ **R** - Renforced
Y ⟶ **E** - Airtight class 3 (EN 1751) with a 900 Pa back-pressure

	ARE ATEX	Options
ATEX marking	II 2GD IIB T6 (from -20°C to +60°C) II 2GD IIB T5 (from -20°C to +90°C)	T4 --> T2 for other operating temperatures
Frame	Galvanized steel sheet, thickness 2.0 mm Width 185 mm Flanges 36 mm	Stainless steel 316L or 304L Aluminium Painted steel
Drilling	Ø10 mm in each angles	Standard F2A drilling (see p 102 F2A catalogue) or special drilling
Blades	Galvanized steel 2 x 0,8 mm + 2 mm	Stainless steel 304L or 316L Galvanized or painted steel
Bearings	Teflon	Bronze
Shaft	Zinc coated steel - Ø15 mm	
Linkage	Linkage in zlnc-coated steel	Zinc coated steel 316L or 304L
Seals	EPDM	Silicone
Leakage rate	Class 3* according to EN 1751 with a back pressure of 900 Pa	Frame's airtightness class C (EN 1751)
Acceptable pressure (for a length L=1000mm)	1800 Pa	
Operating temperature (for construction adapted to temperature)	From -20° to +90°C according to certification	From -20° to + 200°C according to the classification T4=>T2
Recommended air velocity	From 5 to 15 m/s	
Miscalleneous		Upward airflow (horizontal position possible)

* beyond L300 x H345 mm

ISO 9001 14001 Certified
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F2A Equipementier en traitement de l'air

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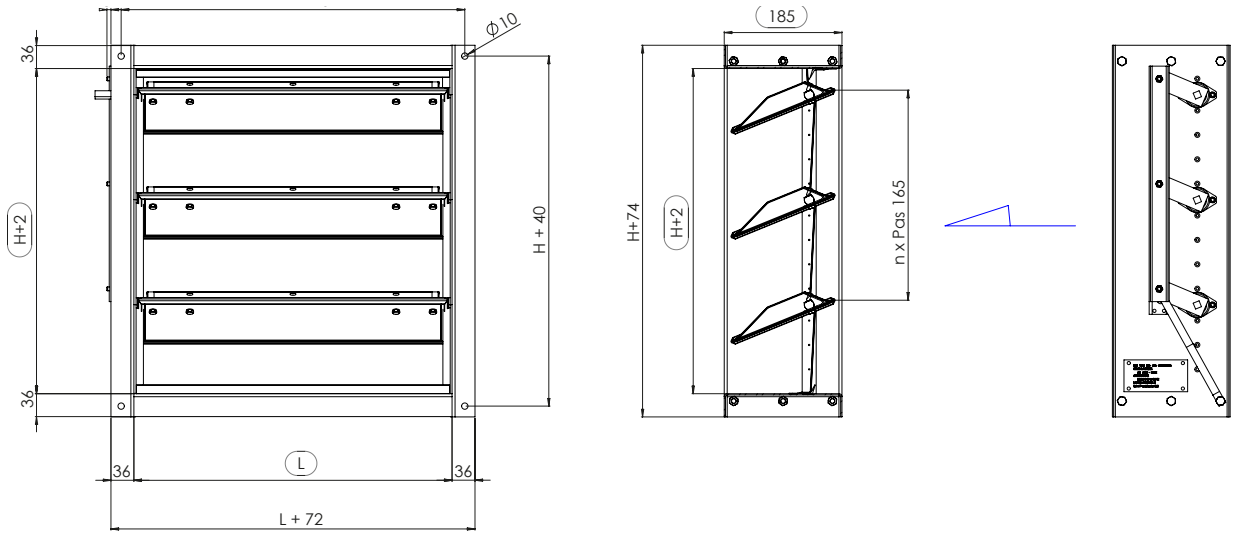
DIMENSIONS



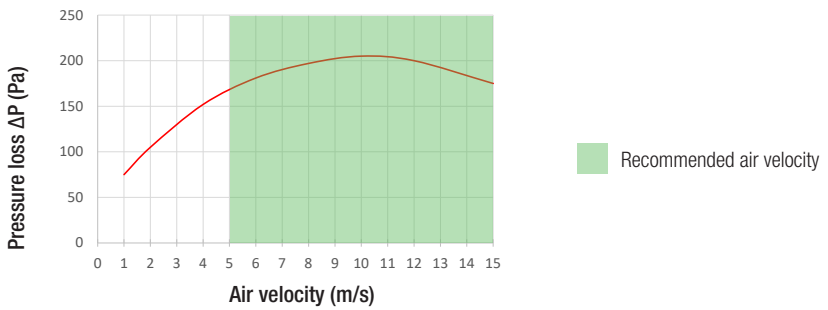
WEIGHT

Weights are given for a ARE ATEX backdraught damper equipped with blades in galvanized steel.

L / H	200	400	600	800	1000	1200	1400	1500
180	9	13	17	20	24	28	32	33
345	13	17	21	25	30	34	38	40
510	16	21	25	30	35	39	44	46
675	20	25	30	35	40	45	50	52
840	23	29	34	40	45	50	56	58
1005	27	33	38	44	50	56	62	65
1170	30	37	43	49	55	61	68	71
1345	34	40	47	54	60	67	74	77
1500	37	44	51	58	66	73	80	83

PRESSURE LOSSES

Backdraught damper pressure losses are given according to air velocity.



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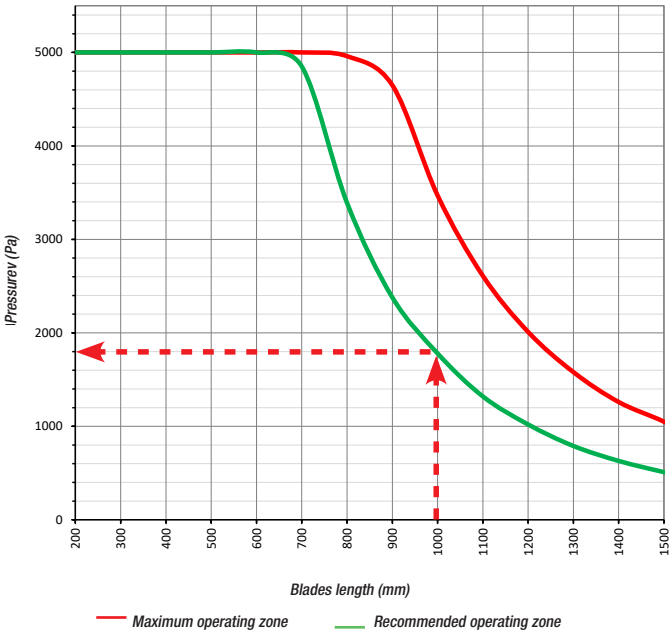
USE LIMITS

They correspond to the maximal counter-pressure that ARE ATEX backdraught dampers can withstand in closed position (reverse airflow). Use limits are given according to the blades length.

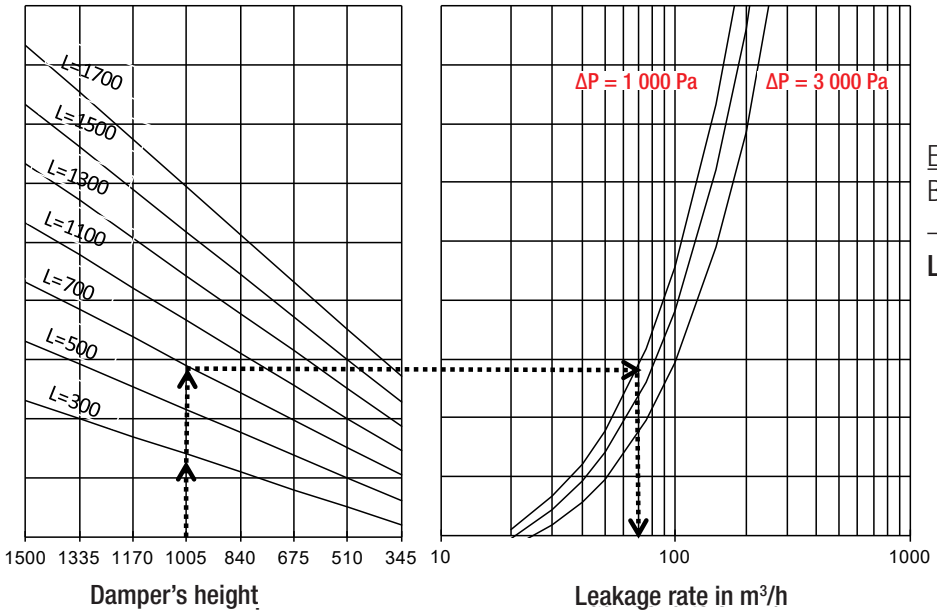


We recommend that the counter-pressure does not exceed 1800 Pa for a 1000 mm long **ARE ATEX backdraught damper**

BLADES' LEAKAGE

Leakage rate below is given for an ARE ATEX type backdraught damper. It depends on the damper section and the differential pressure (ΔP)
ΔP = differential pressure (upstream/downstream) with a backdraught damper in closed position.

Upstream/downstream airthightness is guaranteed for ARE ATEX backdraught damper, from a counter-pressure of 900 Pa



Example :
Backdraught damper H = 1005 x L = 700
– ΔP = 1000 Pa
Leakage rate < 70 m³/h

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REGENERATED NOISE

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

CTTM CENTRE DE TRANSFERT DE TECHNOLOGIE DU MANS

Air flow noise Lw in dB

Air velocity (m/s)	Frequency (Hz)								
	63	125	250	500	1000	2000	4000	8000	Global
2	58.2	57.5	54.7	55	55	49.6	47.1	40.3	63.6
4	60	63.7	59.3	59.8	60.3	56.4	54.9	49.1	68.5
6	63.1	66	61.3	61.7	62.4	59.6	59.7	55.4	71.1
8	64.1	67.4	62.3	63.5	64.2	61.7	62	58	72.6
10	64.2	68.2	63.9	66.7	66	63.3	63.3	58.5	74
12	63.6	68.5	63.3	65.4	65.9	63.4	65.1	59.1	74
15	61.8	65.6	62.3	67.2	65.5	63.4	61	56.3	72.9

Datas are given for a damper L 500 x H 510 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 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 ARO L800 x H 840 mm

- Damper section : S = 0.84 x 0.8 = **0.672 m^2**

Calculation of the regenerated noise at 63Hz for **an air velocity of 6 m/s** :

$$Lw_{63} = 57.8 + 10 \log \left(\frac{0.672}{0.25} \right) = 62.1 \text{ dB}$$

Value in the table at a frequency of 63Hz and for an air velocity of 6 m/s.

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

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