BACKDRAUGHT DAMPER

HIGH PRESSURE - AR / AE

Backdraught damper AR / AE is designed for a one-way air flow direction. The blades prevent reverse flow in the ventilation ductworks.

- AR : Reinforced backdraught damper to withstand up to 1000 Pa
- AE : Airtight backdraught damper equipped with gaskets on the blades

CODIFICATION

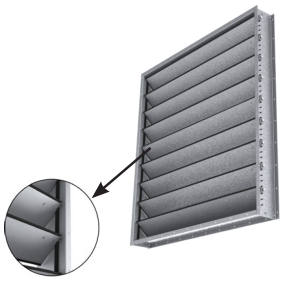
A **X**

Backdraught damper

R Reinforced – Commercial or Industrial application

E Airtight – Commercial or Industrial application

BACKDRAUGHT DAMPER AR



BACKDRAUGHT DAMPER AE

		Characteristics AR	Characteristics AE	Options
Construction	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 FT. 2.4.5.1) or special drilling
	Blades	Aluminium 2 x 1 mm + 2 mm	Galvanized steel 2 x 0,8 mm + 2 mm	Stainless steel 304L or 316L Galvanized or painted steel
	Bearings	Nylon		Teflon, bronze
	Shafts	Zinc coated steel - Ø12 mm		
	Linkage	Linkage in zlnc-coated steel		Stainless steel 304L or 316L
Gaskets			EPDM	Silicone on AE type only
Leakage rate			75 m^3/h under 1000 Pa (see example p.4)	Frame's airtightness class C according to EN 1751
Acceptable pressure		1000 Pa for a length of 1 m	1800 Pa for a length of 1 m	
Operating temperature		From -20° to +80°C		From -30° to + 200°C
Recommended air velocity		From 5 to 15 m/s		
Miscalleneous				Upward air flow (horizontal position possible)

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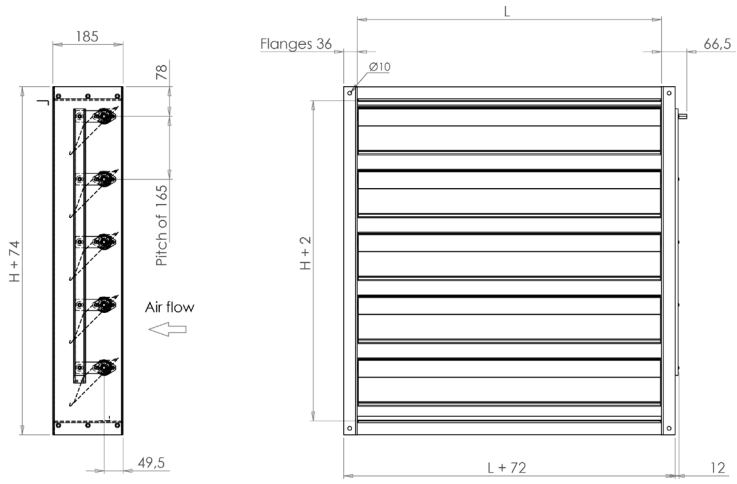
BACKDRAUGHT DAMPER
HIGH PRESSURE - AR/AE

DIMENSIONS

- Height : from 180 mm to 1500 mm with a pitch of 165 mm
- Length : from 200 mm to 1500 mm with a pitch of 100 mm



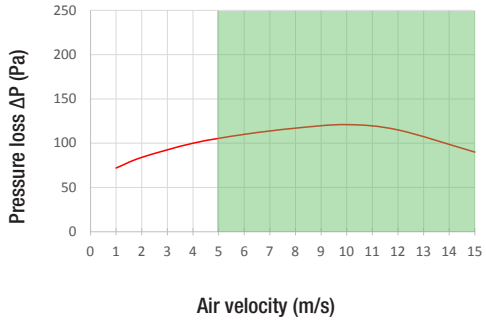
WEIGHT (kg)

Weights are given for an AR backdraught damper. A coefficient of 1.3 must be applied to the mentionned data for an AE backdraught damper equipped with aluminium blades.

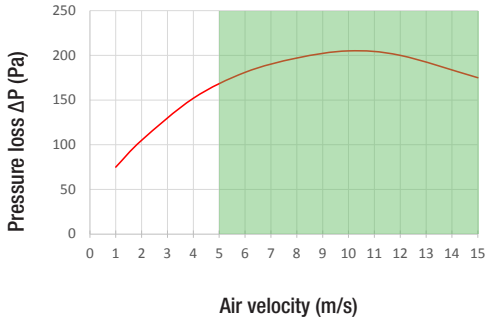
H \ L	200	400	600	800	1000	1200	1400	1500
180	7	9	11	13	16	18	20	21
510	13	16	19	22	25	28	31	33
675	16	19	23	26	29	33	36	38
840	18	22	26	30	34	38	42	44
1170	24	29	34	38	43	48	53	55
1500	30	35	41	47	52	58	63	66

PRESSURE LOSS

Backdraught damper AR



Airthight backdraught damper AE



Recommended air velocity

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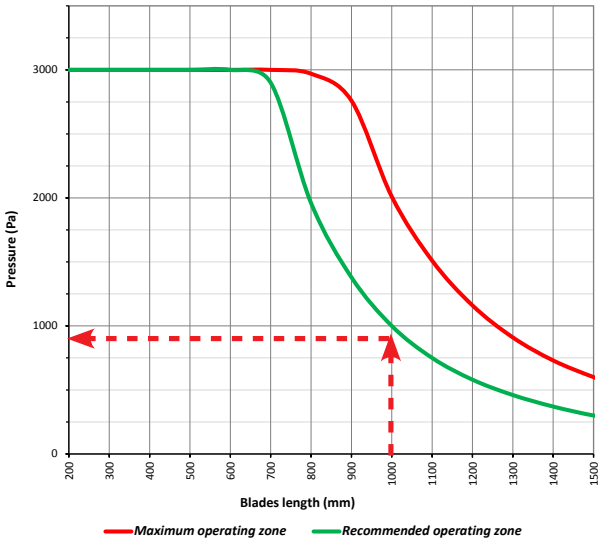
USE LIMITS

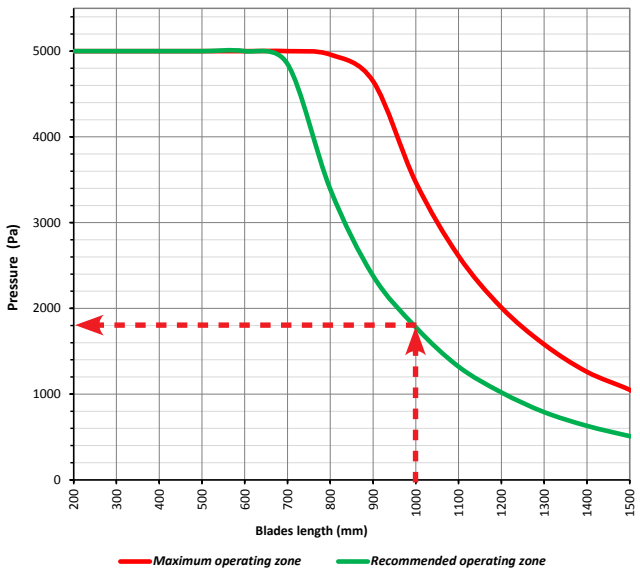
They correspond to the maximal counter-pressure that AR/AE backdraught dampers can withstand in closed position (reverse airflow). Use limits are given according to the blades length.

Backdraught damper AR



Damper AR : We recommend that the counter-pressure does not exceed 1000Pa for a 1000-mm long AR damper

Backdraught damper AE



Damper AE : We recommend that the counter-pressure does not exceed 1800Pa for a 1000mm long AE damper.

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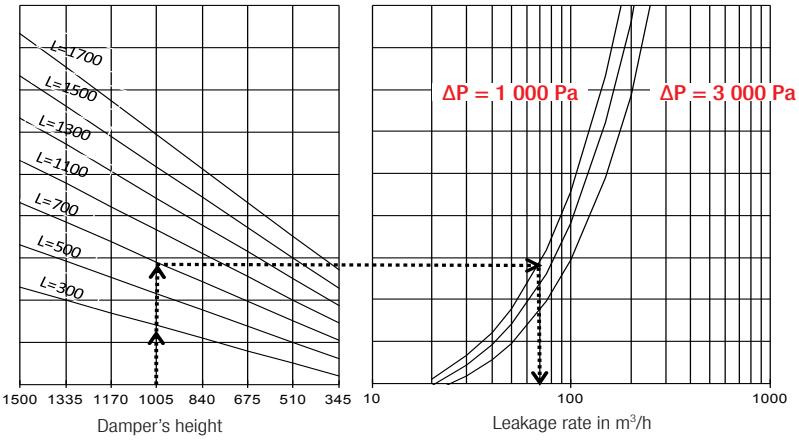
BLADES' LEAKAGE

Leakage rate below is given for an AE 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.



Example :
ΔP = 1000 Pa
Backdraught damper H = 1005 x L = 700
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.

Air flow noise Lw in dB

- AR damper

Air velocity (m/s)	Frequency (Hz)								
	63	125	250	500	1000	2000	4000	8000	Overall
2	53.7	51.8	52.9	58.7	56.2	51.4	43.3	34.8	62.8
4	54.2	54.3	54.3	59.8	58.7	55	49	40.1	64.6
6	57.8	56.4	55	59.8	59.5	56.6	51.8	43.2	65.9
8	59.8	58.2	55.9	60.6	60.9	58.6	54.7	46.2	67.4
10	59	59.3	57.1	61.6	61.7	59.8	56.4	48.5	68.1
12	60.8	59.8	56.4	61.3	61.7	60.2	56.4	49	68.5
15	67.1	61.2	57.7	61.4	61.9	60.1	56.4	49.7	70.6

- AE damper

Air velocity (m/s)	Frequency (Hz)								
	63	125	250	500	1000	2000	4000	8000	Overall
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 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 AR 840 x 800 mm (HxL)

- 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**:

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

57.8 : 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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