Advanced Air

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2000 Series
Extruded Aluminium Blade, Low Leakage, High Performance

Description

The 2000 series damper is for use in high velocity Commercial and Industrial HVAC systems. The damper offers low leakage and pressure drop characteristics.

Standard Construction

Frame

Flange Width: 50mm Standard. 40mm, 25mm or sleeve optional

Frame Width: 130mm Standard. 160mm, 200mm or 188mm sleeve optional

Material: 1.6mm Galvanised Mild Steel – Standard
1.6mm grade 430 stainless steel – optional

Corners: Corner Plates "Button – Locked" to frame for strength and rigidity

Casing (Spigotted Units Only):

Casing Width: 200mm

Material: 1.2mm Galvanised mild steel – standard
1.2mm grade 430 Stainless Steel – Optional

Corners: Welded mitre corners finished with aluminium aerosol spray.

Blades: Extruded aluminium airfoil on 125 mm pitch within casing depth. Note Top and bottom blade may protrude from standard frame depending upon height. (see page 3).

Linkage: External, enclosed within the frame, out of the air stream. Zinc electroplated mild steel.

Bearings: 12.7mm dia.
Oil filled sintered bronze up to 200 deg C

Axles: Zinc electroplated mild steel.

Drive Shaft: 150mm x 12.7mm dia. drive shaft, right handed as standard.

Blade Seals: Integral Silicone mechanically locked into place. Suitable up to 176 deg. C

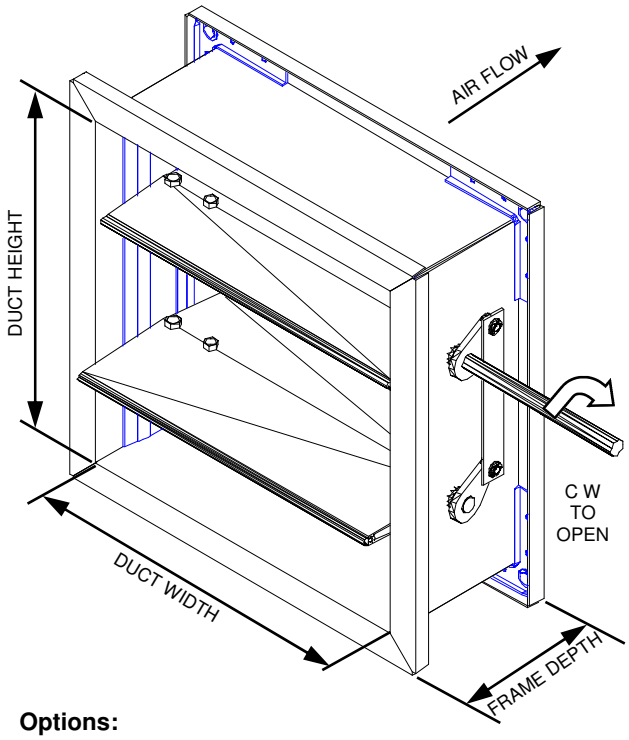
Jamb Seals: Cambered 430 stainless steel.

Minimum and Maximum Duct Sizes
Flanged:
100mm x 100mm min, 1200mm x 1800mm max.
Rectangular:
100mm x 100mm min, 1200mm x 1800mm max.
Circular:
100mm dia. min, 1150mm dia. max.
Flat Oval:
100mm x 100mm min, 1150mm x 1750mm max.

Sleeve:
150mm x 150mm, 1250 x 1850
Please note sleeve frame sizes are overall size

Temperature Range

From -45°C up to 82°C.



Options:

- Insulated Blade
- Hand Operated
- Jackshaft operation
- On/off 240v Electric Actuator
- On/off 24v Electric Actuator
- Modulating 24v Electric Actuator
- Spring Return 240v Electric Actuator
- Spring Return 24v Electric Actuator
- Pneumatic Actuator

Parallel Blade
203* Flanged Frame
201* Sleeve Frame
205* Wall Frame

Opposed Blade
204* Flanged Frame
202* Sleeve Frame
206* Wall Frame

Dynamic Limitations and Leakage Summary

Damper Width	Maximum System Pressure	Maximum System Velocity	Leakage 250 Pa % Of Max	Leakage 250 Pa L/s Per	Leakage 1000 Pa % OF Max	Leakage 1000 Pa L/s Per
mm	Pa	m/s	L/s	m^2	L/s	m^2
1500	1250	15	0.04	7.6	0.08	18.8
1200	2000	20	0.04	7.6	0.07	18.3
900	2500	22	0.04	8.1	0.07	18.8
600	3000	25	0.04	7.6	0.07	18.3
300	3500	30	0.03	10.2	0.06	24.3

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Air Leakage – Damper Closed

Total Leakage L/s @ 250 Pa						
		Damper Width				
	mm	305	610	914	1219	1524
Damper Height	305	0.9	1.4	2.4	2.8	3.8
	610	1.4	2.8	4.2	5.7	7.0
	914	2.4	4.2	6.6	8.5	10.8
	1219	2.8	5.7	8.5	11.3	14.2
	1524	3.8	7.0	10.8	14.2	17.9
	1829	4.2	8.5	12.7	17.0	21.2

Correction Factors

To calculate leakage values at greater than 250Pa static pressure, use the correction factors.

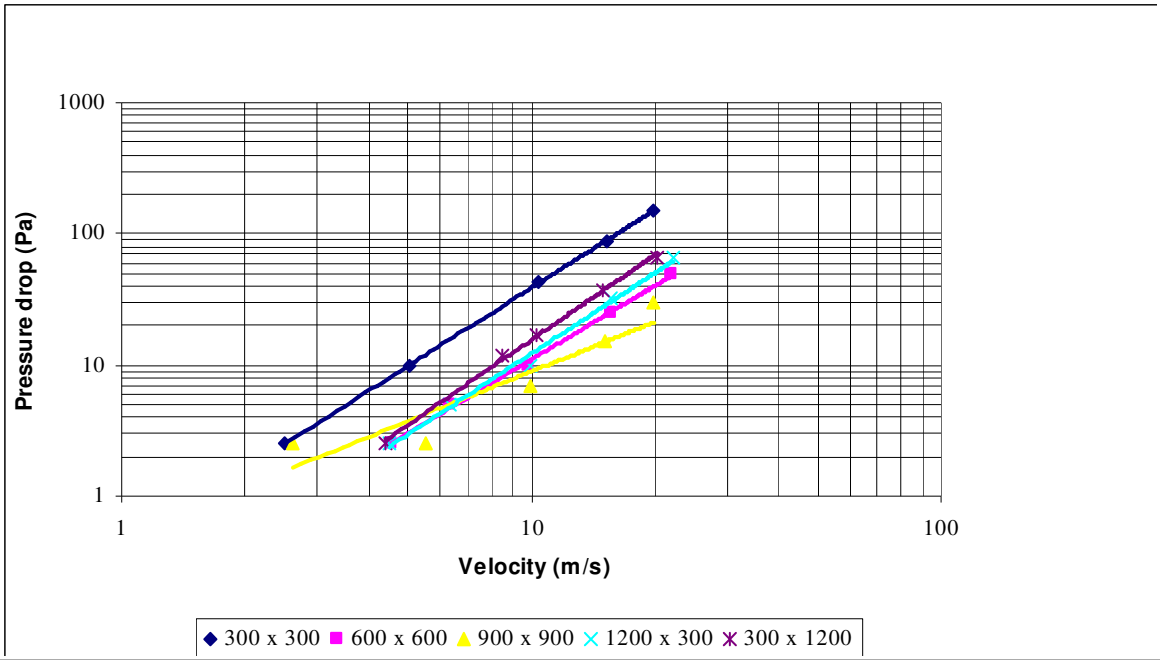
	Damper Width				
mm	305	610	914	1219	1524
System Pressure Pa 500	1.6	1.6	1.6	1.6	1.6
750	2.0	2.0	2.0	2.0	2.0
1000	2.4	2.4	2.4	2.4	2.4
1250	2.7	2.7	2.7	2.7	-
1500	2.8	2.8	2.8	-	-
1750	3.6	3.6	-	-	-
2000	4.3	-	-	-	-

Torque Chart (Nm) @ Standard Atmospheric

This chart shows the approximate closing torque. It also covers opening torque's but will vary with static pressure and velocity required.

	Damper Width					
mm	200	400	600	800	1000	1200
Damper Height 200	0.3	0.6	0.9	1.2	1.5	1.8
400	0.6	1.2	1.8	2.4	3.0	3.6
600	0.9	1.8	2.7	3.6	4.5	5.4
800	1.2	2.4	3.6	4.8	6.0	7.2
1000	1.5	3.0	4.5	6.0	7.5	9.0
1200	1.8	3.6	5.4	7.2	9.0	10.8
1400	2.1	4.2	6.3	8.4	10.5	12.6
1600	2.4	4.8	7.2	9.6	12.0	14.4
1800	2.7	5.4	8.1	10.8	13.5	16.2

Pressure Drop – Fully Open



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BLADE PROTRUSION FOR 2000 SERIES DAMPERS

Internal Damper Height	130mm Deep Frame - Standard				160mm Deep Frame - Option			
	Parallel Blades		Opposed Blades		Parallel Blades		Opposed Blades	
	Top Blade Upstream	Bottom Blade	Top Blade Upstream	Bottom Blade	Top Blade Upstream	Bottom Blade	Top Blade Upstream	Bottom Blade
	(I.e. Both Sides)		(I.e. One Side Only)		(I.e. One Side Only)		(I.e. One Side Only)	
mm								
150	22.5	-	22.5	-	-	-	-	-
175	22.5	-	22.5	-	7.5	-	7.5	-
275	10	10	10	10	-	-	-	-
300	22.5	22.5	22.5	22.5	7.5	7.5	7.5	7.5
400	10	10	10	10	-	-	-	-
425	22.5	22.5	22.5	22.5	7.5	7.5	7.5	7.5
525	10	10	10	10	-	-	-	-
550	22.5	22.5	22.5	22.5	7.5	7.5	7.5	7.5
650	10	10	10	10	-	-	-	-
675	22.5	22.5	22.5	22.5	7.5	7.5	7.5	7.5
775	10	10	10	10	-	-	-	-
800	22.5	22.5	22.5	22.5	7.5	7.5	7.5	7.5
900	10	10	10	10	-	-	-	-
925	22.5	22.5	22.5	22.5	7.5	7.5	7.5	7.5
1025	10	10	10	10	-	-	-	-
1050	22.5	22.5	22.5	22.5	7.5	7.5	7.5	7.5
1150	10	10	10	10	-	-	-	-
1175	22.5	22.5	22.5	22.5	7.5	7.5	7.5	7.5
1275	10	10	10	10	-	-	-	-
1300	22.5	22.5	22.5	22.5	7.5	7.5	7.5	7.5
1400	10	10	10	10	-	-	-	-
1425	22.5	22.5	22.5	22.5	7.5	7.5	7.5	7.5
1525	10	10	10	10	-	-	-	-
1550	22.5	22.5	22.5	22.5	7.5	7.5	7.5	7.5
1650	10	10	10	10	-	-	-	-
1675	22.5	22.5	22.5	22.5	7.5	7.5	7.5	7.5
1775	10	10	10	10	-	-	-	-
1800	22.5	22.5	22.5	22.5	7.5	7.5	7.5	7.5

Notes :

1. All dimensions in mm and are measured from frame edge to end of blade seal.
2. All other internal damper heights have no blade protrusion.
3. Frame depth option of 200mm has no blade protrusion.