

SMOKE DAMPER

MSD-F EN 12101-8

The damper MSD-F has been tested by an independent laboratory and is complied with EN 12101-8 (CE marking).

The MSD-F damper complies with the European requirements for single-compartment smoke exhaust applications.

It is equipped with an electrical actuator and a thermal jacket.



CODIFICATION

- M** —> **Range M** - Industrial
- X** —> **S** - Airtightness Class 3
- Y** —> **D-F** - Smoke exhaust application single-compartment according to EN 12101-8


CONSTRUCTION

		MSD-F
Lateral seals		Stainless steel Width 100 mm
Upsteam/downstream airtightness		Class 3 according to EN 1751
Frame	Material	Galvanized or stainless steel 304 L or 316 L
	Thickness	2 mm <i>In option : 3 mm</i>
	Width	300 mm <i>In option : 185 mm</i>
	Drilling	In each corner and to a pitch of 165 mm <i>In option : special flange drilling with a maximum 300 mm pitch</i>
Blades	Material	Galvanized or stainless steel 304 L or 316 L
	Thickness	0.8 mm <i>In option : 1.5 mm</i>
	Pitch	165 mm
	Axis	Ø12 mm <i>In option : Ø15 mm</i> Zinc-plated steel <i>In option : stainless steel 304 L or 316 L</i>
Bearings		Bronze
Linkage		Zinc-plated steel or stainless steel 304 L or 316 L Opposed or parallel blade operation
Control		Motorized by Bernard Controls On/Off actuator 100 Nm (AQ model) or Belimo On/Off 40 Nm (BE230 or BE24 model)
Actuator fireproof protection		Polyurethane coated fiber glass fabric with needled web thickness 50 mm

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CERTIFICATION

The MSD-F damper has been tested by Effectis laboratory (France),  It complies with EN 12101-8 : *Smoke and heat control systems. Part 8 : smoke extraction damper*

The damper meets the requirements of :

- Test standard EN 1366-10: *fire resistance testing of technical installations. Part 10 : smoke extraction damper*
- Classification standard EN 13501-4: *fire rating of products and buildings components. Part 4 : Classification using data from fire resistance tests on components of smoke control systems.*

It then meets the requirements of a CE marking



Certification CE n° 1812-CPR-1180

E₆₀₀ 120 (v_{ew} h_{ow} i ↔ o) S 500C₁₀₀₀₀ MA single

Criterion	
E ₆₀₀	Fire resistance <math><360\text{m}^3\cdot\text{h}^{-1}\cdot\text{m}^{-2}</math> à 600°C
S	leakage rate <math><200\text{m}^3\cdot\text{h}^{-1}\cdot\text{m}^{-2}</math>
120	Tests duration (in min)
V _{ew} H _{ow}	Use in vertical or horizontal position on concrete structure
i o	Fire resistance smoke direction : on the fire and/or side opposite to the fire
500	Use from -500 Pa to +500 Pa
C _{10 000}	Use in safety mode, control and ventilation management -> Actuator On/Off (10 000 cycles)
MA	Manual safety release up to 25 min after the start of the fire
Single	Single compartment

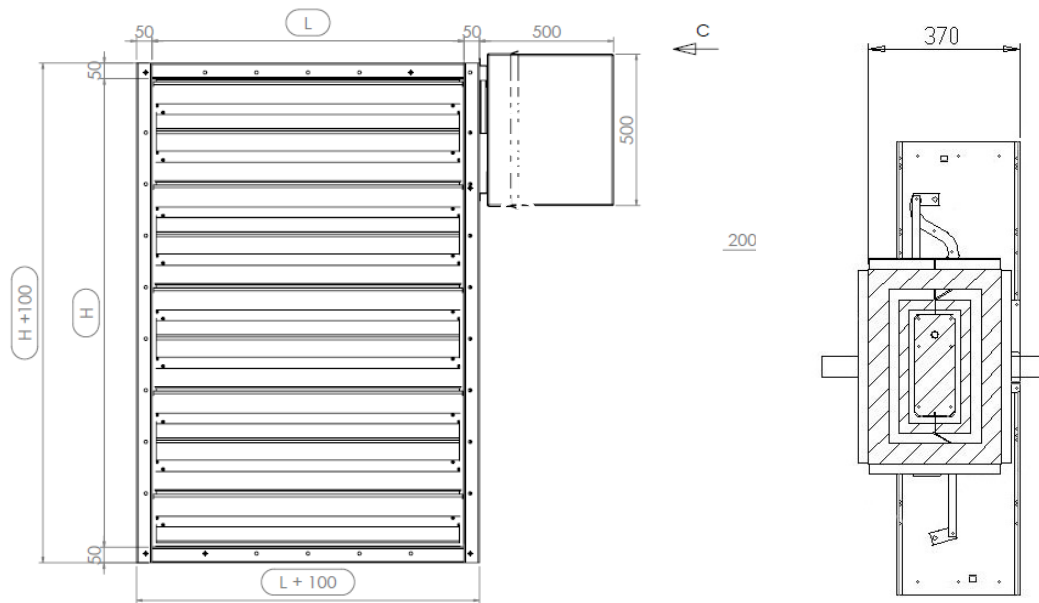
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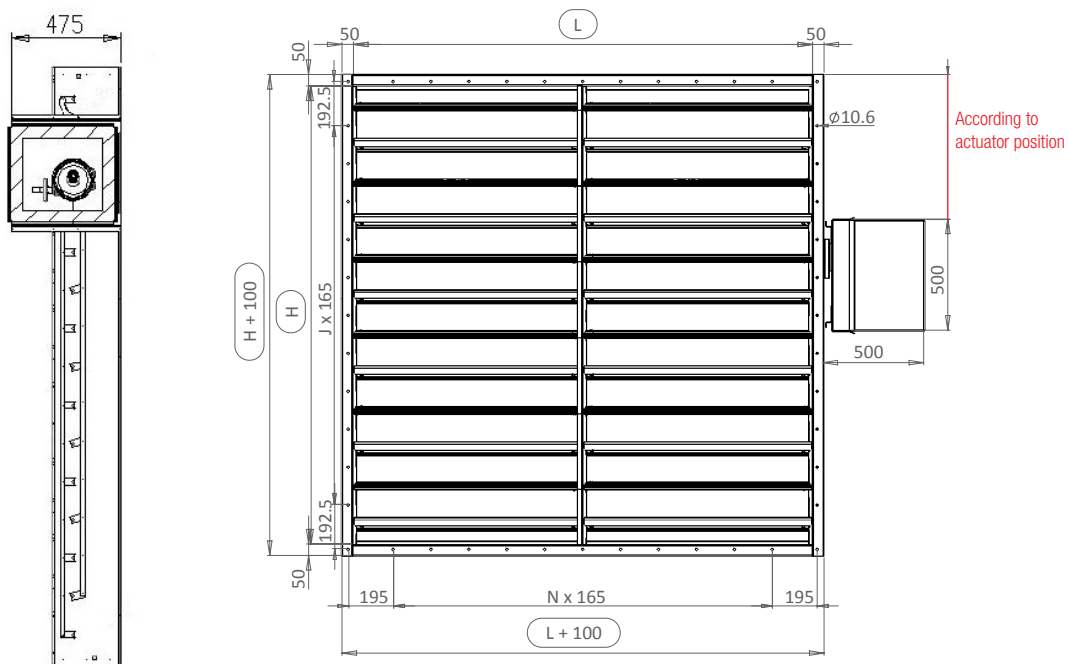
DIMENSIONS

- Height H from 180 to 1995 mm with a pitch of 165 mm 165 mm
- Length L from 200 to 2000 mm

Construction for a length $L < 1000$ mm



Construction for a length $L > 1000$ mm (Vertical reinforcement add)



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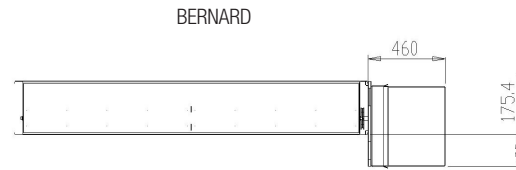
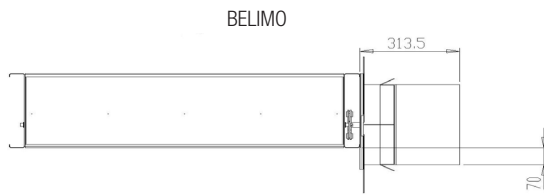
Technical characteristics MSD-F damper :

The smoke exhaust damper MSD-F is made up of :

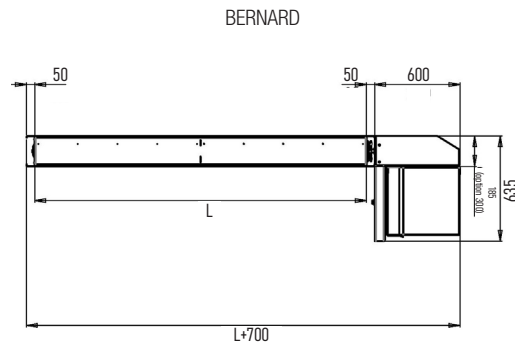
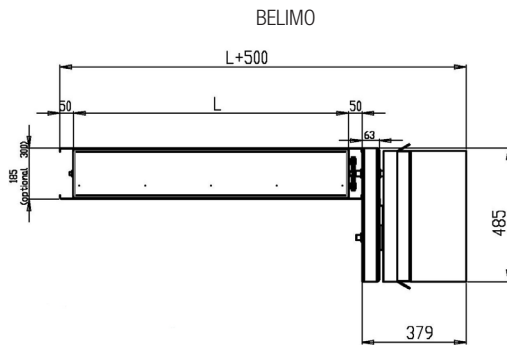
- A set of flaps or blades interconnected by a metal frame
- An actuator allowing the operation of the blades and the positioning of safety
- A thermal protection on the actuator to guarantee the performances at high temperature up to 25 min after start of fire.

POSSIBLE ACTUATOR CONFIGURATIONS

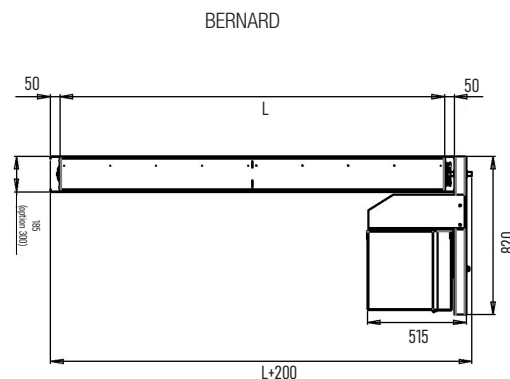
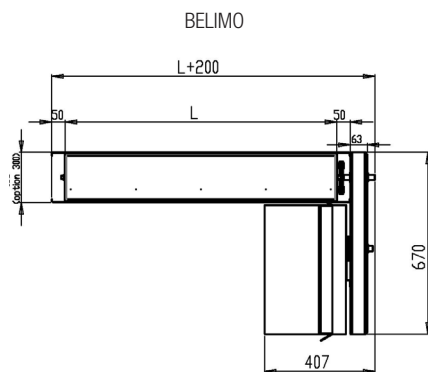
Actuator directly on frame



Forward position of the actuator outside the airflow

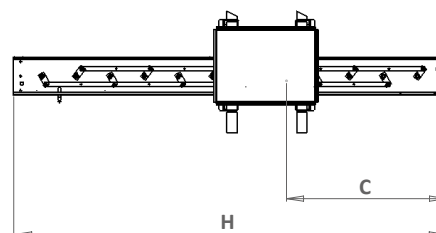


Forward position of the actuator inside the airflow



Actuator's position

C = position of the actuator part



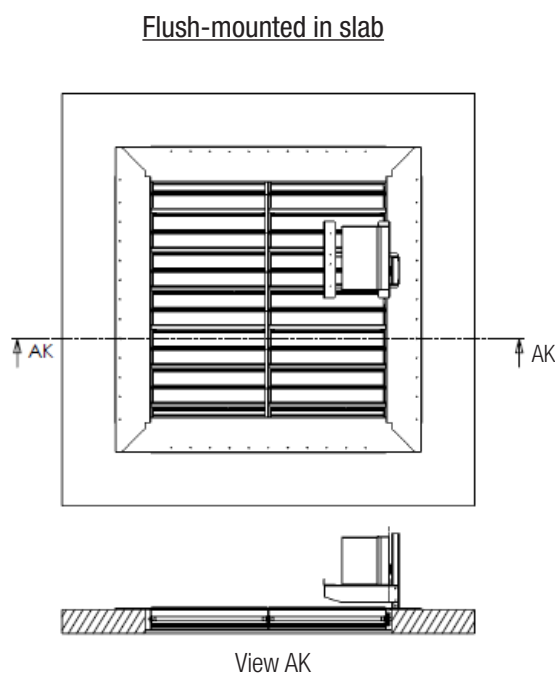
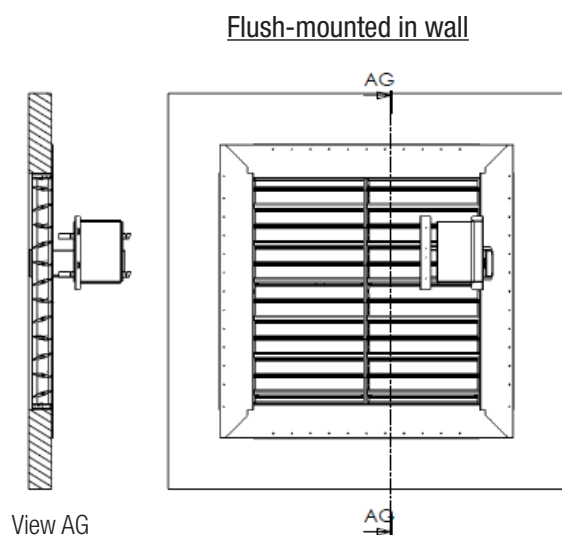
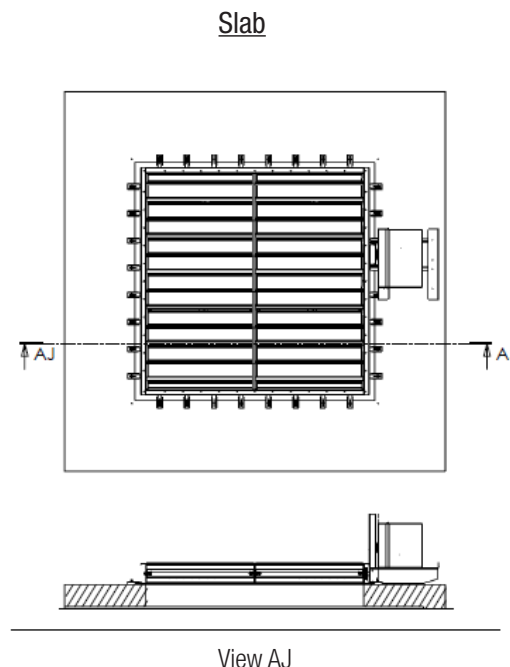
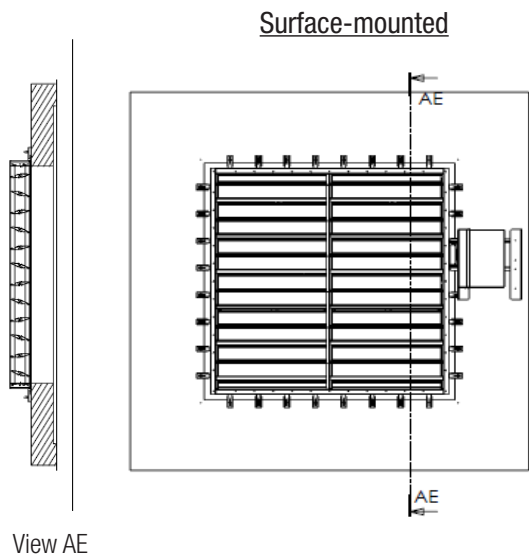
Opposed linkage: control only on the uneven blades : 1 - 3 - 5 - 7 - 9 - 11

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AVAILABLE INSTALLATION CONFIGURATIONS

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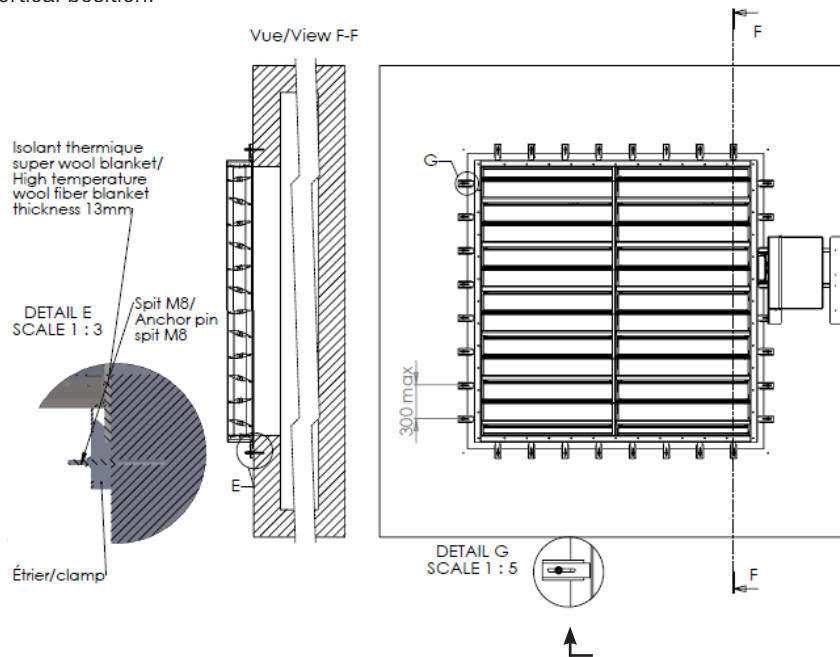
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FIXINGS

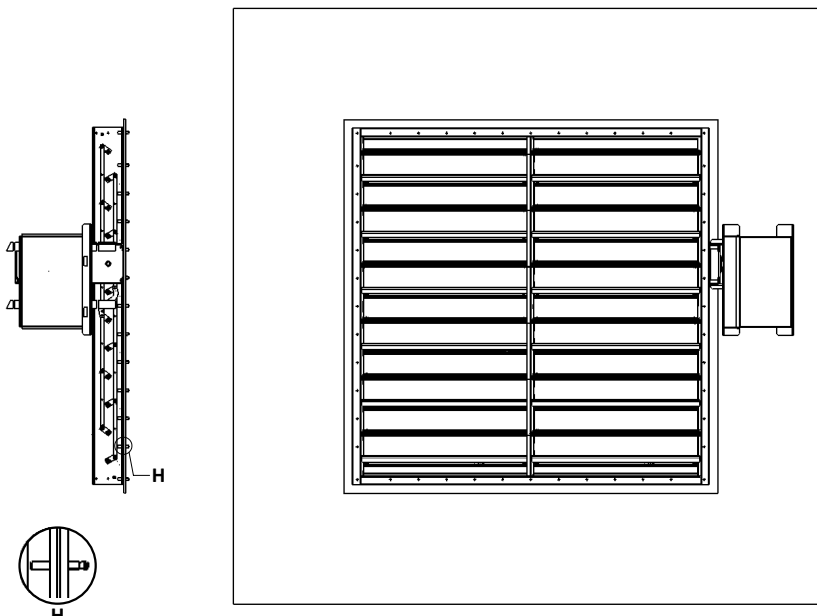
Damper fixed to a concrete slab using fixing stirrups :

- Anchor M8 x 110 mm.
- Super wool blanket high-temperature thermal insulation (minimum 13 mm thick).
- In maximum increments of 300 mm.
- Horizontal or vertical position.



Damper fixed directly via the holes drilled in the frame :

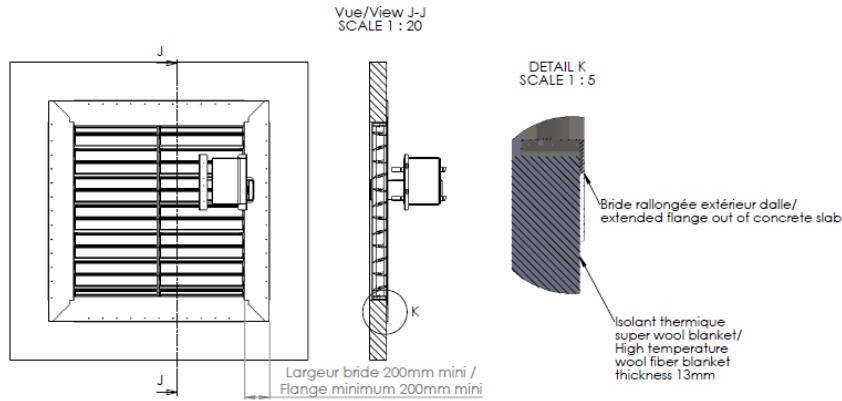
- Anchor M8 x 110 mm.
- Super wool blanket high-temperature thermal insulation (minimum 13 mm thick).
- With a maximum pitch of 300 mm.
- Horizontal or vertical position.



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Damper flush-mounted in the concrete slab :



WEIGHT (Kg)

The weights below are given for an MSD-F damper with the following characteristics :

- Galvanized steel damper
- Frame thick : 2 mm
- Blades thick : 0.8 mm
- Motorised with On-Off actuator 100 Nm made by Bernard Controls or 40 Nm (made by Belimo) with F2A thermal protection thermique
- Vertical reinforcement for a length $L > 1000$ mm 1000 mm

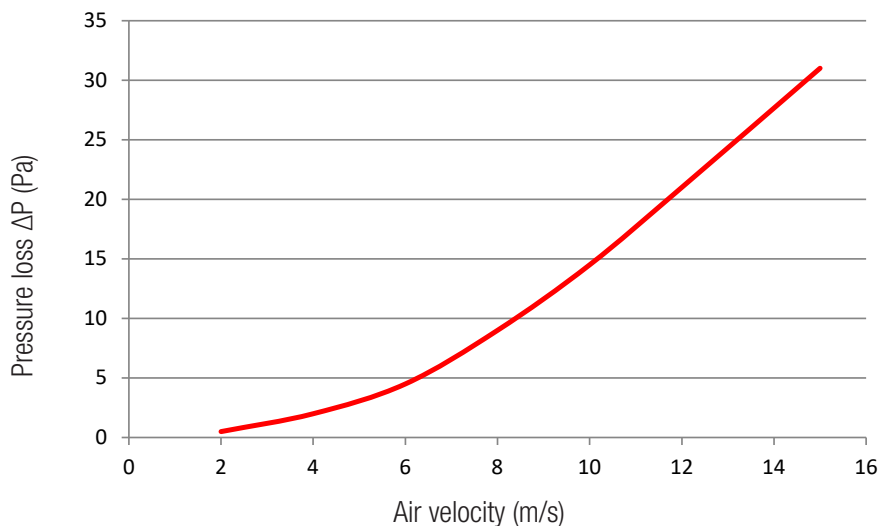
L \ H	200	400	600	800	1000	1200	1400	1600	1800	2000
180	27	30	33	36	39	42	45	47	50	53
345	31	35	39	42	46	50	54	57	61	64
510	36	41	45	49	53	59	63	67	71	75
675	41	46	51	55	60	68	73	77	82	86
840	46	52	57	62	68	77	82	87	92	97
1005	51	57	63	69	74	85	91	97	103	108
1170	56	63	69	75	82	94	101	106	113	119
1335	61	68	75	82	89	103	110	116	123	131
1500	66	74	81	89	97	111	119	126	134	142
1665	71	79	87	95	104	120	128	136	144	153
1830	76	85	93	102	111	129	138	146	155	164
1995	81	90	99	109	118	138	147	156	165	175

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PRESSURE LOSSES

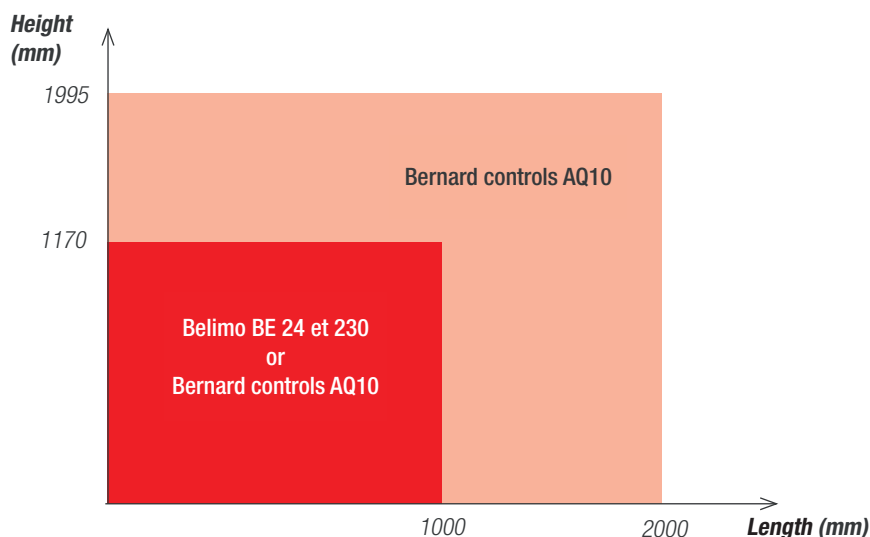
Pressure losses (Pa) are given according to the frontal air velocity (in m/s) for an MSD-F damper that is fully open (blade opening angle = 0°).



ACTUATORS

Supplier	Range	Motor torques	Operating mode	Supply	Maximum power	Maximum current	Manœuvring time
Bernard Controls	AQ 10	100 N.m	On/Off	380/400 V AC	0.03 kW	0.3 A	< 40 s
Bernard Controls	AQ 10	100 N.m	On/Off	24 V AC/DC	0.03 kW	0.6 A	< 40 s
Bernard Controls	AQ 10	100 N.m	On/Off	220 V AC	0.03 kW	2.5 A	< 40 s
Belimo	BE230	40 N.m	On/Off	230 V AC	8 W	7.9 A	< 60 s
Belimo	BE24	40 N.m	On/Off	24 V AC/DC	12 W	8.2 A	< 60 s

For more information, please see the actuator datasheet



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BLANKET OPTION

The blanket provide thermal properties improvement and the handleability is also improved. It is needed from both sides and possess high strength before and after heating. It do not contains binder or lubricant and do not emits any fumes or smell during the first firing.

		High Temperature blanket
Width		100 mm
Thickness		3 mm
Length		to define
Classification Temperature		1300 °C
Color		White
Density		128 kg/m ³
Thermal Conductivity, ASTM C-201	200° C	0.04 W/m K
	400° C	0.08 W/m K
	600° C	0.14 W/m K
	800° C	0.23 W/m K
	1000° C	0.34 W/m K
	1200° C	0.48 W/m K
Tensile strength, EN 1094-1		75 kPa
Chemical Analysis	SiO ₂	70-80 %
	CaO + MgO	18-25 %
	Autres oxydes	< 3 %