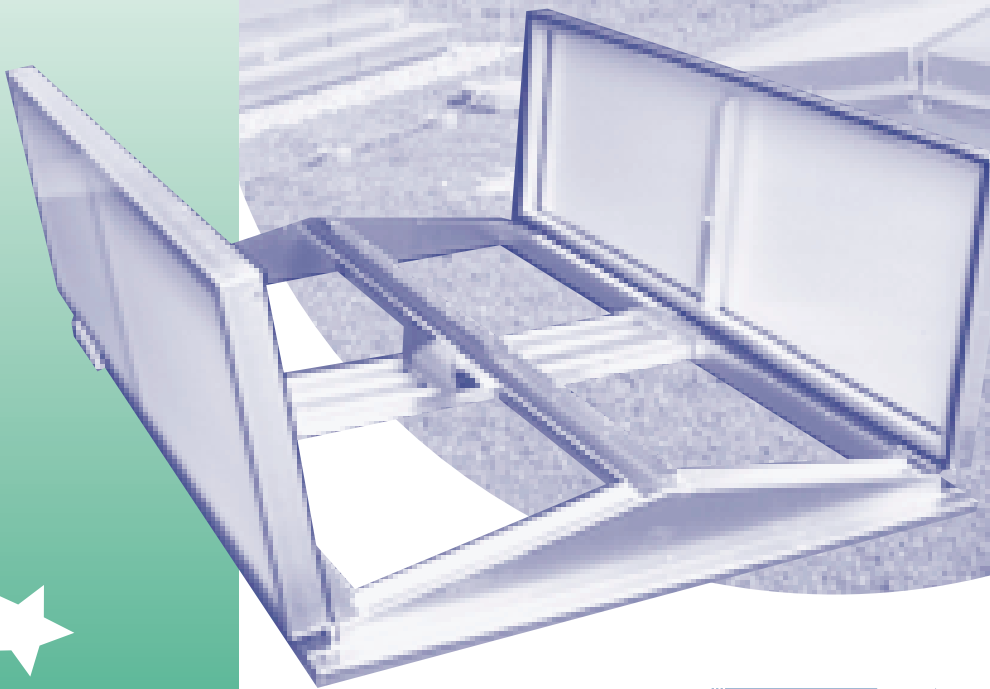


NKVD - PS

TWIN FLAP ROOF VENTILATOR SLOPING PROFILE

- Natural ventilation
- Smoke ventilation
(Smoke and heat exhaust)
- Superior condensation protection
- Superior protection against air losses
- Superior acoustic attenuation
- Superior water shedding
- Daylighting with double glazed units

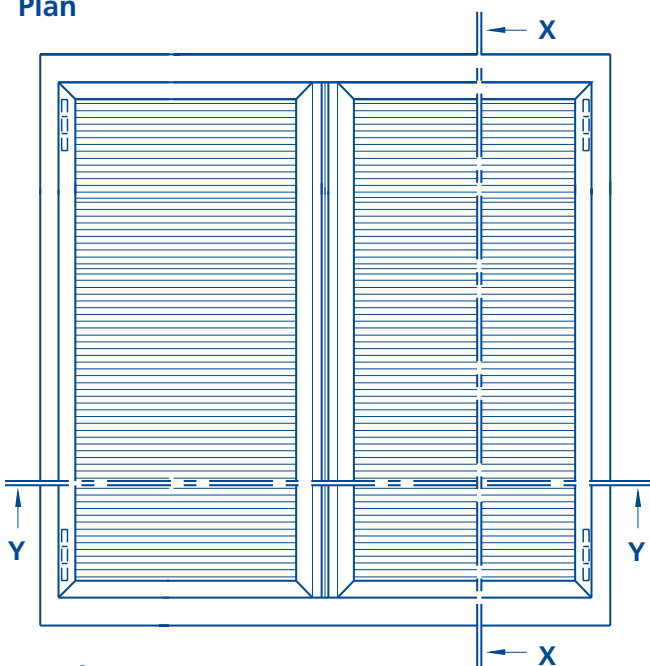


Bovema 
Konstrukties B.V.

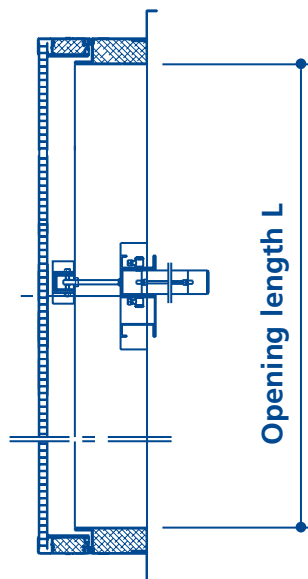
Bovema Konstrukties B.V. is a member of the international Bovema Beheer Group

TECHNICAL INFORMATION

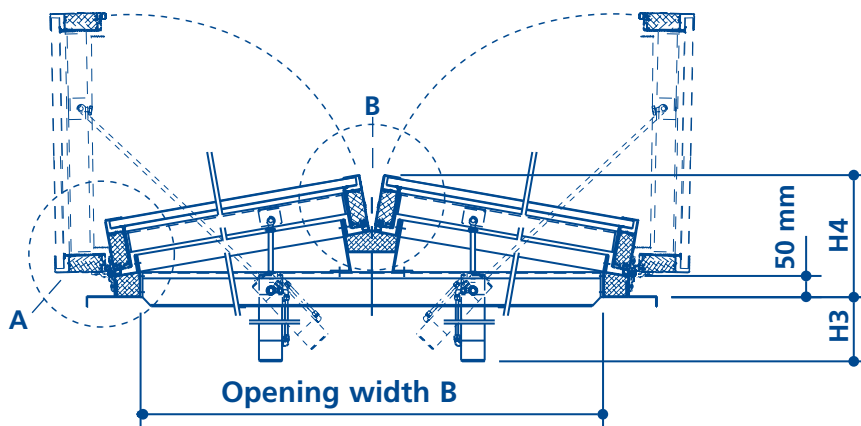
Plan



Section X-X



Section Y-Y



Detail A



single skin aluminium

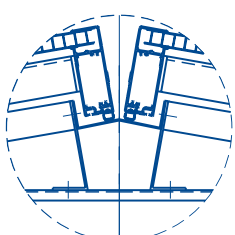


thermally insulated

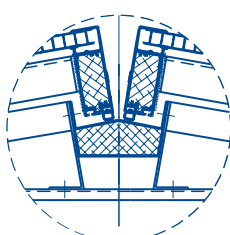


thermally insulated and broken

Detail B



single skin aluminium



thermally insulated



thermally insulated and broken



TYPE NKVD-PS

TWIN FLAP VENTILATOR SLOPING PROFILE

Type NKVD-PS

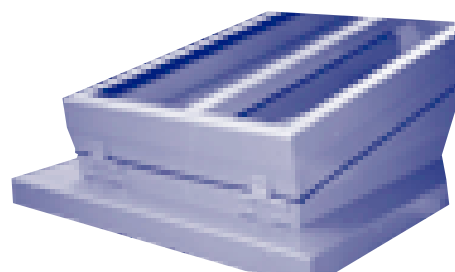
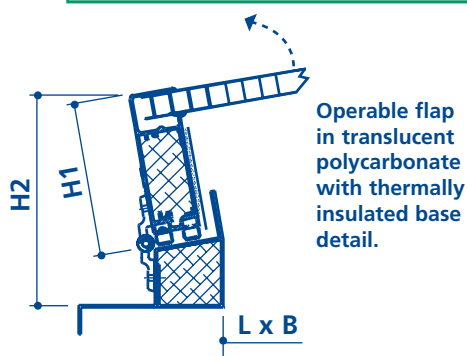
Geometric area (m²) / sizes in mm.

Type	L	B	a-geom.	cyl. stroke	H3	H4
1000/1000	1000	1000	1.00	360	467	276
1000/1500	1000	1500	1.50	360	467	276
1000/2000	1000	2000	2.00	360	467	276
1000/2500	1000	2500	2.50	360	467	276
1500/1000	1500	1000	1.50	570	677	320
1500/1500	1500	1500	2.25	570	677	320
1500/2000	1500	2000	3.00	570	677	320
1500/2500	1500	2500	3.75	570	677	320
2000/1000	2000	1000	2.00	735	842	364
2000/1500	2000	1500	3.00	735	842	364
2000/2000	2000	2000	4.00	735	842	364
2000/2500	2000	2500	5.00	735	842	364
2500/1000	2500	1000	2.50	900	1007	408
2500/1500	2500	1500	3.75	900	1007	408
2500/2000	2500	2000	5.00	900	1007	408
2500/2500	2500	2500	6.25	900	1007	408

Thickness of operable flaps in mm

	1.5	6.0	10	16	16k*	20	24	25k*	30	60	60+	spez
Thermal insulation K-Value in W/m ² .K (U value)												
Single skin Aluminium	5.6											
Georg. wired, tough./lam. gl.		5.1										
Translucent polycarbonate			3.1	2.3	2.0	1.8		1.7				
Standard double glazed glass						3.0	2.9	2.8	2.8			
HR double glazed glass						2.0	1.8	1.7	1.6			
Double skin al. panel, ther. ins.				1.9	1.9	1.8	1.6	1.5	1.3	0.45	0.40	0.40
Sound level reduction Rw Value in dB /spec. ISO 717												
Single skin Aluminium	6.0											
Georg. wired, tough./lam. glass												
Translucent polycarbonate			17	21	21	21		22				
Standard double glazed glass						32	35	36	37			
HR double glazed glass						32	35	36	37			
Double skin al. panel, ther. ins.						22	24	25	28		38	42
H1 in mm	98	98	98	98	98	102	106	107	112	142	142	142
H2 in mm	148	148	148	148	148	152	156	157	168	192	192	192

*k= 3 walled polycarbonate



General information

DESCRIPTION

The **Bovema** NKVD-PS twin flap ventilator provides an economical and energy efficient method of exhausting large quantities of warm air and / or smoke from a building. The NKVD-PS is particularly suitable for industrial and commercial buildings where the overall building design requires low rates of air leakage, good sound attenuation or good thermal insulation performance. The NKVD-PS is manufactured with a built in 10 Deg slope, which allows for the installation of a ventilator with glazed flaps on a completely flat roof, to prevent the staining of glazed units. The sloping flaps also aid the shedding of rain or snow in areas with severe winter climates. The NKVD-PS ventilator is manufactured to NEN-EN-ISO 9002 quality control standards and is designed and tested, to comply with various national standards for smoke ventilators, such as BS: 7346: Pt1: 1990 in the UK and DIN 18232 in Germany. The NKVD-PS ventilator is manufactured from high quality, corrosion resistant aluminium to ensure low maintenance requirements. The NKVD-PS ventilator is a versatile design, allowing a wide range of variations to be manufactured, from single skin to fully insulated and thermally broken units. With electric or pneumatic operating systems, as required to meet the project specification requirements. Specially designed units are available to provide for the very high levels of sound reduction in theatres or similar noise sensitive buildings.

OPERATING PRINCIPLES

Warm air is lighter than cold air and rises by convection. Using this natural ventilation principle, assisted as appropriate by wind action, large quantities of warm air or smoke can be evacuated from a building. The NKVD-PS natural ventilator utilises this principle to provide high levels of ventilation. Each ventilator has two large flaps, each of which close on single or double EDPM seals to provide an air and watertight seal around the full perimeter of the unit. A fully welded upstand and central gutter combine to drain water from the flaps directly onto the roof, without first entering the building and the sloping construction aids the drainage system in poor environmental conditions. The flaps themselves are hinged outside of the air-stream and this allows the ventilator flaps to open fully to 90 Deg. This maximises the free area available for ventilation. Operation to open and close is by pneumatic or electric actuators, which are operated via remote control panels, allowing interface connections to rain, wind detectors, BMS or fire Alarm systems.

APPLICATIONS

Industrial or commercial buildings with flat roofs, where smoke extract is required for fire protection. Where the removal of process or solar heat gains requires daily ventilation, without weather protection, including buildings where high levels of thermal or acoustic protection is essential. For buildings in heavier rain or snowfall areas or where high levels of thermal or acoustic protection are essential. For flat roofs, less than 10 Deg slope where glazed ventilators are required. Typical installations include: Theatres, Warehouses, Logistics or similar buildings where protection against water penetration is paramount, high quality public and private accommodation projects.

SPECIFICATIONS

Flaps:

- 1.5 and 2.0 mm thick, single skin aluminium
- 20, 30, 60 mm thick double skin aluminium with thermal insulation
- 20, 30, 60 mm thick double skin aluminium, thermally broken with full insulation
- 6 mm Georgian wired, toughened or laminated glass.
- 18 - 30 mm double-glazed insulated units (in various compositions)
- 16, 20, 25 mm translucent, insulated double skin polycarbonate.

Base construction:

- Single skin aluminium
- Double skin aluminium, with thermal insulation.
- Double skin aluminium, thermally broken, with full insulation.

CONTROLS

Pneumatic actuators, which lock in both the fully open and fully closed position, using a two pipe pneumatic system. With, when required, individual one-shot glass bulb / CO₂ emergency fail safe system actuation, operating at 68, 93, 110, or 140 Deg C as required to meet the project requirements. 230 V A/C or 24V D/C electric actuator operation to motor the flaps from fully open to fully closed. Both the electric and pneumatic systems can be provided with remote control panels, with fail safe battery or compressed air operation plus complete pipe work and wiring as required.

MATERIALS

Corrosion resistant aluminium with sheet material from AlMg3 alloy. Extruded Aluminium profiles from AlMgSi 0.5 alloy. All fixings in stainless steel. Hinges in aluminium and stainless steel. Weather resistant seals in EPDM.

GENERAL

The NKVD - PS twin flap ventilator is fully assembled and tested before despatch. The standard unit is supplied in natural mill finished aluminium, but a Polyester Powder Paint finish may be applied, to any RAL colour, selected from the standard Bovema range. Other optional items such as bird screens, sound attenuators, sprinkler shields and open / close location switches are also available. The ventilator base and fixing flanges are of fully welded construction and the versatile base design allows installation onto most building types. Standard flange sizes are 100mm but special sizes can be supplied to meet project requirements and ensure simple, weatherproof installation.

SERVICE

The **Bovema** group offers a comprehensive service covering the specification and installation of our products.

