

NKVD - PF

TWIN FLAP ROOF VENTILATOR FLAT PROFILE

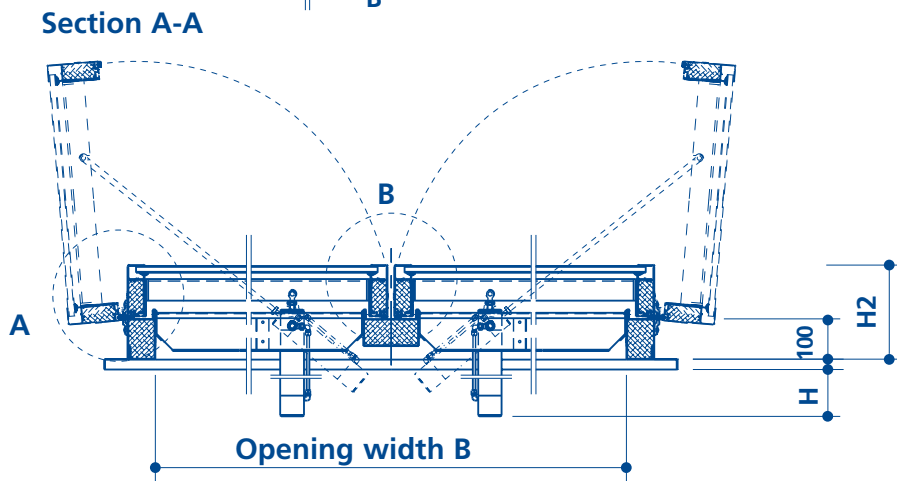
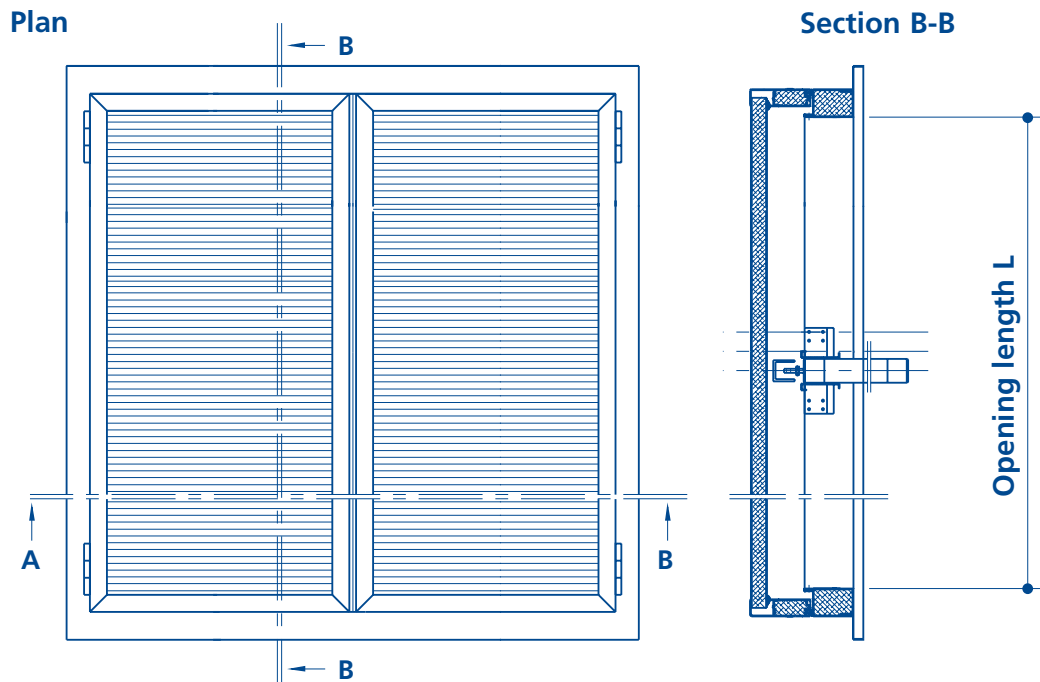
- Natural ventilation
- Smoke ventilation
smoke and heat exhaust
- Superior condensation protection
- Superior protection against air losses
- Superior acoustic attenuation



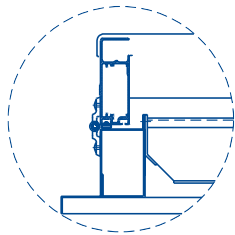
Bovema 
Konstrukties B.V.

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

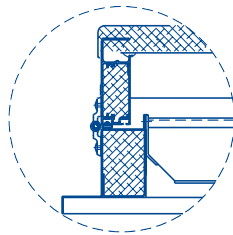
TECHNICAL INFORMATION



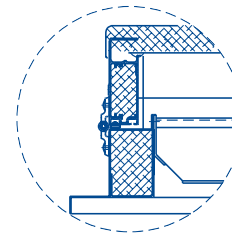
Detail A



Single skin Aluminium

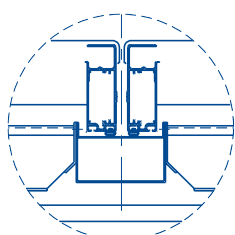


Thermally insulated

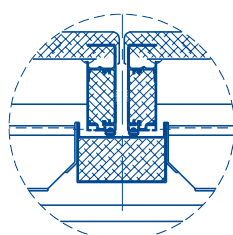


Thermally insulated and broken

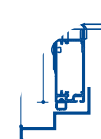
Detail B



Single skin Aluminium



Thermally insulated



Thermally insulated and broken



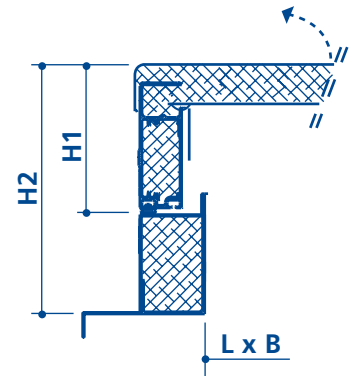
TYPE NKVD- PF TWIN FLAP VENTILATOR flat profile

Type NKVD-PF

Geometric area (m²) / sizes in mm.

| Type | L | B | A geom | Cyl. Stroke | H |
|-----------|------|------|--------|-------------|------|
| 1000/1000 | 1000 | 1000 | 1.00 | 360 | 500 |
| 1000/1500 | 1000 | 1500 | 1.50 | 360 | 500 |
| 1000/2000 | 1000 | 2000 | 2.00 | 360 | 500 |
| 1000/2500 | 1000 | 2500 | 2.50 | 360 | 500 |
| 1500/1000 | 1500 | 1000 | 1.50 | 570 | 710 |
| 1500/1500 | 1500 | 1500 | 2.25 | 570 | 710 |
| 1500/2000 | 1500 | 2000 | 3.00 | 570 | 710 |
| 1500/2500 | 1500 | 2500 | 3.75 | 570 | 710 |
| 2000/1000 | 2000 | 1000 | 2.00 | 735 | 920 |
| 2000/1500 | 2000 | 1500 | 3.00 | 735 | 920 |
| 2000/2000 | 2000 | 2000 | 4.00 | 735 | 920 |
| 2000/2500 | 2000 | 2500 | 5.00 | 735 | 920 |
| 2500/1000 | 2500 | 1000 | 2.50 | 900 | 1130 |
| 2500/1500 | 2500 | 1500 | 3.75 | 900 | 1130 |
| 2500/2000 | 2500 | 2000 | 5.00 | 900 | 1130 |
| 2500/2500 | 2500 | 2500 | 6.25 | 900 | 1130 |

Detail
Operable flap with
thermally insulated
flap and base.



Thickness of operable flaps in mm

| Thermal insulation K Value in W/m ² .K (U value) | 1.5 | 6.0 | 10 | 16 | 16k* | 20 | 24 | 25k* | 30 | 60 | 60+ | Spec. |
|--|-----------------------|-----|-----|-----|------|-----|-----|------|-----|-----|-----|-------|
| | Single skin aluminium | 5.6 | | | | | | | | | | |
| Georgian wired, toughened or laminated glass | | | 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 | | | |
| Type HR double glazed glass | | | | | | 2.0 | 1.8 | 1.7 | 1.6 | | | |
| Double skin aluminium panel, thermally insulated | | | | | | 1.9 | 1.9 | 1.8 | 1.6 | 1.5 | 1.3 | 0.45 |
| Sound level Rw- Value in dB per spec. ISO 717 | | | | | | | | | | | | |
| Single skin aluminium | 6.0 | | | | | | | | | | | |
| Georgian wired, toughened or laminated glass | | | | | | | | | | | | |
| Translucent Polycarbonate | | | 17 | 21 | 21 | 21 | | 22 | | | | |
| Standard double glazed glass | | | | | | 32 | 35 | 36 | 37 | | | |
| Type HR double glazed glass | | | | | | 32 | 35 | 36 | 37 | | | |
| Double skin aluminium panel, thermally insulated | | | | | | | | 22 | 24 | 25 | 28 | |
| H1 | 98 | 98 | 98 | 98 | 98 | 102 | 106 | 106 | 112 | 142 | 142 | 142 |
| H2 | 198 | 198 | 198 | 198 | 198 | 202 | 206 | 206 | 212 | 242 | 242 | 242 |

*k= 3 walled polycarbonate



General information

DESCRIPTION

The **Bovema** NKVD-PF 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-PF 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-PF is a flat, very low profile unit and is supplied for flat roof installation with solid blades. To prevent staining, polycarbonate or glass bladed units should only be specified where the roof slope is 10 Deg or more from the horizontal. The low profile makes the NKVD-PF ideal for installations where Architectural requirements require a rigid but unobtrusive ventilator. The NKVD-PF 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-PF ventilator is manufactured from high quality, corrosion resistant aluminium to ensure low maintenance requirements. The NKVD - PF ventilator is of a versatile design, allowing a wide range of specifications, 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 offer high levels of sound reduction for theatres and 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-PF natural ventilator utilises this principle to provide high levels of ventilation. Each ventilator has two large flaps, 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. The flaps are hinged on the outside of the frame, which allows them to open fully to 90 degrees. 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. 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 – 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.

Please note glazed units are only suitable for roofs with 10 Deg minimum slope

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 - PF 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 supplied to any available 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 bases and fixing flanges are of fully welded construction and the versatile base design allows installation onto most building types. Standard flange sizes are 100 mm 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.

