# SHEV (AOV) SYSTEMS

For the essential flow of smoke and hot air out of a building in the event of fire – certified to EN12101-2

## COXDOME SHEV (AOV) SYSTEMS

In the event of a fire, the greatest immediate danger to the occupants of a building, comes from smoke, not heat. Even a small fire can fill a large building with smoke very rapidly, hindering vision, blocking escape routes and causing smoke inhalation.

Automatic Smoke Heat Exhaust Ventilation (SHEV) is the recognised solution.

SHEV (AOV) systems are an essential component of any building's fire protection design concept. In case of fire, SHEV (AOV) systems create and maintain a smoke-free layer above the floor by removing smoke. Simultaneously, they exhaust hot gases released by a fire in the developing stages.

Can be installed on a roof pitch between 0° and 15°.

Their value in assisting with the following, is firmly established:

• Evacuation of people from buildings
• Reduction of fire damage and financial loss by preventing smoke damage
• Facilitation of firefighting, by improving visibility, reducing roof temperatures and retarding spread

## The principal of smoke ventilation using shev systems

High-level outlet vents and low-level inlet vents open automatically in the event of a fire, allowing cool air into the building and allowing smoke and hot air to flow out.

In the absence of ventilation, smoke fills the room, being drawn back down from the ceiling by convection as temperatures rise.
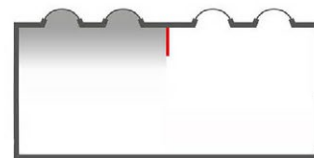
This leads to potential - and highly dangerous - 'flashover'.
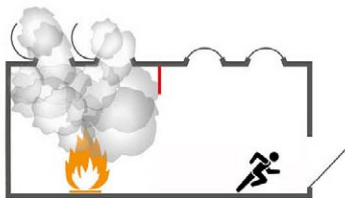


1. SHEV opens immediately and aids evacuation
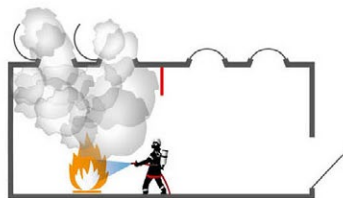
2. Safer and easier to fight fire

3. Damage is avoided or contained

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Coxdome SHEV (AOV) systems provide a smoke and heat exhaust ventilation solution for all commercial and residential applications.

Supplied factory assembled and factory tested, all products are certified to EN12101-2. SHEV (AOV) systems not only help to provide smoke extraction in the event of a fire but they also provide day-to-day controllable ventilation.

Available in a wide range of sizes, the Coxdome SHEV (AOV) range complies with the latest Building Regulations on Fire Safety and can be integrated into any Building Management System.

Linked to a central control panel, complete with battery backup in case of mains failure, the control panel can be triggered from either manual override switches local to the ventilator and the ground floor by dedicated smoke detectors, or by interfacing with a third party smoke detection/fire alarm system.

Available with CLEAR or OBSCURE polycarbonate glazing to enhance the building's natural daylight, or with a fully insulated ALUMINIUM solid cover.
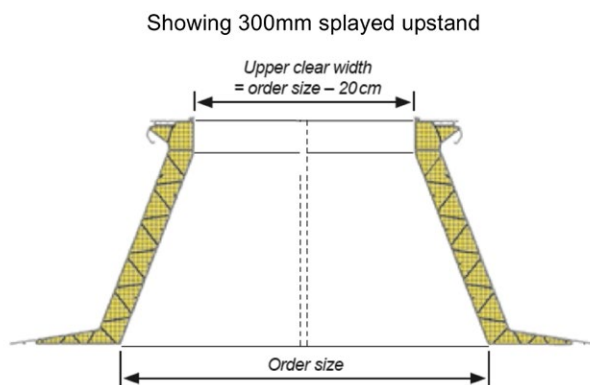
## Specification option:

• 160mm vertical kerb in PVC-u fitted on top of a timber ground to maintain the 300mm high requirement above the finished roof level



Showing 300mm splayed upstand

Upper clear width = order size – 20 cm

Order size

## Automatic opening vents

Opening to 140º, the system offers maximum ventilation. The actuators operate from a 24V DC supply and polarity can be reversed to allow the open and close facility.

| Opening angle α = 140° without wind deflector | | | | | |
|---|---|---|---|---|---|
| PVC 16/00 M30-60/00 | C x C' | B x B' | $A_v$ | $C_v$ | $A_a$ |
| cm x cm | mm x mm | mm x mm | m² | – | m² |
| 70 x 70 | 700 x 700 | 700 x 700 | 0,49 | 0,40* | 0,20 |
| 70 x 100 | 700 x 1000 | 700 x 1000 | 0,70 | 0,40* | 0,28 |
| 70 x 130 | 700 x 1300 | 700 x 1300 | 0,91 | 0,40* | 0,36 |
| 70 x 150 | 700 x 1500 | 700 x 1500 | 1,05 | 0,40* | 0,42 |
| 75 x 105 | 750 x 1050 | 750 x 1050 | 0,79 | 0,40* | 0,32 |
| 75 x 125 | 750 x 1250 | 750 x 1250 | 0,94 | 0,40* | 0,38 |
| 75 x 150 | 750 x 1500 | 750 x 1500 | 1,13 | 0,40* | 0,45 |
| 75 x 175 | 750 x 1750 | 750 x 1750 | 1,31 | 0,40* | 0,52 |
| 75 x 225 | 750 x 2250 | 750 x 2250 | 1,69 | 0,40* | 0,68 |
| 80 x 80 | 800 x 800 | 800 x 800 | 0,64 | 0,40* | 0,26 |
| 80 x 110 | 800 x 1100 | 800 x 1100 | 0,88 | 0,40* | 0,35 |
| 80 x 130 | 800 x 1300 | 800 x 1300 | 1,04 | 0,40* | 0,42 |
| 80 x 140 | 800 x 1400 | 800 x 1400 | 1,12 | 0,40* | 0,45 |
| 80 x 160 | 800 x 1600 | 800 x 1600 | 1,28 | 0,40* | 0,51 |
| 90 x 60 | 900 x 600 | 900 x 600 | 0,54 | 0,40* | 0,22 |
| 90 x 90 | 900 x 900 | 900 x 900 | 0,81 | 0,40* | 0,32 |
| 90 x 120 | 900 x 1200 | 900 x 1200 | 1,08 | 0,40* | 0,43 |
| 90 x 150 | 900 x 1500 | 900 x 1500 | 1,35 | 0,40* | 0,54 |
| 100 x 100 | 1000 x 1000 | 1000 x 1000 | 1,00 | 0,40* | 0,40 |
| 100 x 120 | 1000 x 1200 | 1000 x 1200 | 1,20 | 0,40* | 0,48 |
| 100 x 130 | 1000 x 1300 | 1000 x 1300 | 1,30 | 0,40* | 0,52 |
| 100 x 150 | 1000 x 1500 | 1000 x 1500 | 1,50 | 0,40* | 0,60 |
| 105 x 105 | 1050 x 1050 | 1050 x 1050 | 1,10 | 0,40* | 0,44 |
| 120 x 120 | 1200 x 1200 | 1200 x 1200 | 1,44 | 0,40* | 0,58 |

*$C_v$ = 0,40 (according to EN 12101-2:2003, Annex B, B.1)
*The aspect ratio of the geometric area may not exceed 5:1
*Upstand height (above roof) = minimum 300 mm



## Technical specification:

• EN12101-2 certified
• Available from 700mm to 1200mm and 700mm to 2250mm
• Opens to 140º
• Galvanised steel mechanism
• Glazed polycarbonate or solid aluminium cover
• Optional day-to-day ventilation position with no additional motor
• Extremely low noise level
• Compact 24V motor unit
• Aerodynamic free area up to Aa0.68m2
• Snow load up to 600N/m²
• Wind load up to 1500N/m²
• Low ambient temperature T(-15°)
• Heat exposure B300
• Reaction to Fire Class E
• Opening speed <60 secs

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# SHEV (AOV) SYSTEMS ACCESSORIES

For use with Coxdome SHEV (AOV) systems

## COXDOME SHEV (AOV) ACCESSORIES

- 24V / 48V control panel with battery backup
- Emergency break glass push button
- Wind and rain sensor
- Smoke detector
- Open/close operation for ventilation

## 48V vs 24V system

The Coxdome SHEV (AOV) range can also be specified as a 48V system. This option can provide many additional benefits to multi-unit applications:

## Improved performance

- Less voltage drop between multiple units
- Increased power in the event of heavy snow loads

## Cost reductions

- Each 48V control panel will operate double the number of SHEV (AOV) units
- Reduction in cable cross-sectional size
- Significant reduction in installation

## Control panels

| Item No. | Fixed |
|----------|-------|
| 216119 | SVM 24V-5A BASIC |
| 216219 | SVM 24V-5A COMFORT |
| 216317 | SVM 24V-5A FIRE |
| 216417 | SVM 24V-5A COMFORT & FIRE |
| 217119 | SVM 24V-8A BASIC |
| 217219 | SVM 24V-8A COMFORT |
| 217317 | SVM 24V-8A FIRE |
| 217417 | SVM 24V-8A COMFORT & FIRE |
| 218219 | SV24V-24A-DS |
| 218269 | SV24V-30A-DS |
| 218319 | SV24V-32A-DS |
| 218419 | SV48V-8A-DS |
| 218519 | SV48V-24A-DS |
| 218569 | SV48V-30A-DS |
| 218619 | SV48V-32A-DS |

## Accessories

| Item No. | Fixed |
|----------|-------|
| 111729 | Firemans Priority Switch |
| 111790 | Breakglass |
| 111724 | Breakglass (Outdoor use) |
| 111730 | Wind & Rain Sensor 24V |
| 111740 | Smoke Detector |
| 111735 | Heat Detector |
| 111778 | Room Thermostat |
| 111760 | Weekly Timer |
| 111753 | Comfort Switch (open/close) |

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