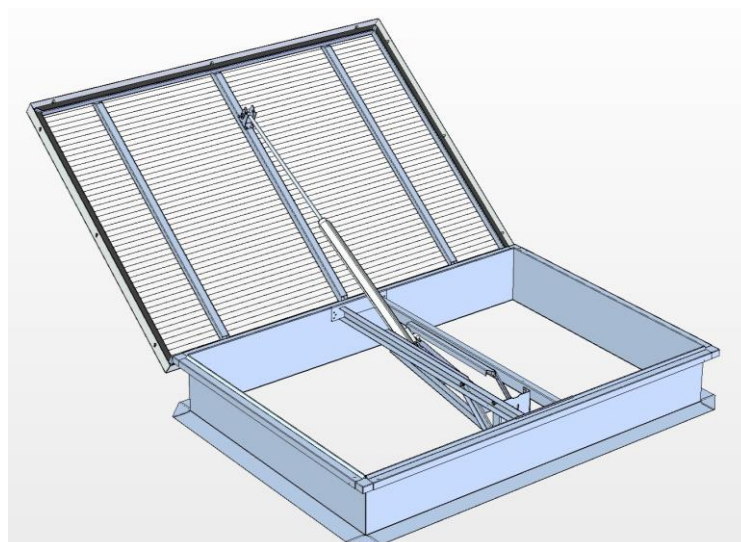


## OPERATION AND MAINTENANCE MANUAL

### Spot type smoke vents mcr-PROLIGHT type C, E, NG-A



- type C
- type E
- type NG-A

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## NOTE

**For safety reasons, vents with pneumatic control are shipped with the thermal trigger unarmed.**

**A vent with unarmed thermal trigger is NOT ready for operation. The thermal trigger must be armed, and a CO<sub>2</sub> cartridge installed (point 8.1).**

## 1. INTRODUCTION

This operation and maintenance manual (OMM) allows the user to learn the purpose, design, principle of operation and correct installation of mcr-PROLIGHT spot smoke vents and smoke & ventilation vents type C, E and NG-A. The documentation also covers additional information on the conditions for use, maintenance and terms of the product's warranty.

Observing the guidelines contained herein will ensure the proper functioning of systems in terms of their smoke exhausting and/or ventilation function, and the safety of system operators.

### **NOTE**

**Any works related with installation, operation, maintenance and servicing of the vents and skylights may only be performed in compliance with SHE requirements, and with use of personal protective equipment appropriate to the type of work at hand - including fall arresting devices. Any works necessitating working at height in order to make electrical connections, etc. may only be performed by duly licensed persons.**

## 2. PURPOSE OF DEVICE

mcr-PROLIGHT smoke vents are automatic smoke venting devices. The principal function of mcr-PROLIGHT smoke vents is the removal of heat energy, fire gases, and smoke from enclosed spaces (production floors, storage rooms, public amenity buildings, etc.) outside the building, contributing to the protection of life and property, through:

- maintaining escape routes in a state of moderate smoke intensity,
- facilitating fire fighting and rescue operations by providing a bottom corridor with moderate smoking intensity,
- ensuring protection for the building structure and its equipment,
- limiting fire damage caused by smoke, hot burning fumes and thermal decomposition byproducts

The smoke vents may also serve the purpose of ventilation vents, smoke & ventilation vents, or roof skylights.

The use of smoke vents provides the following opportunities to the Investor:

- lowering the building's fire resistance grade
- extending permissible fire zones,
- elongating evacuation routes

mcr-PROLIGHT smoke vents are part of a smoke control system that comprises other MERCOR SA products, including, among others: mcr-PROLIGHT smoke vents in continuous skylights and single skylights, mcr-PROSMOKE smoke curtains, mcr 9705 and mcr 0204 control units, and others.

**mcr-PROLIGHT smoke vents have a Certificate of Conformity WE 1488-CPD-0151/W, issued by the Institute for Building Technologies in Warsaw, certifying the conformance of the vents design with the requirements of PN-EN12101-2:2005, and Certificate of Conformity 1396-CPD-0040 issued by Fires s.r.o., NB 1396, Slovakia, certifying the conformance of the vents design with the requirements of EN 12101-2:2003.**

## 3. DEVICE DESIGN AND PRINCIPLE OF OPERATION

Depending on the customer's individual requirements, MERCOR offers smoke vents on straight or slanted bases, with a broad range of clear openings and base heights.

All steel elements are protected with a zinc coat, applied using hot-dip or galvanic method.

In standard, the bases are supplied with thermal insulation of thickness 20 mm. Custom thickness and thermal insulation type is possible.

The glazing options for the opening leaf are as follows:

- multi-chamber polycarbonate of thickness from 10 to 25 mm, with different opacities and different heat transfer coefficients,
- double and triple acrylic domes,
- double and triple polycarbonate domes,
- ALU laminate layers (e.g. aluminium - thermal insulation - aluminium).

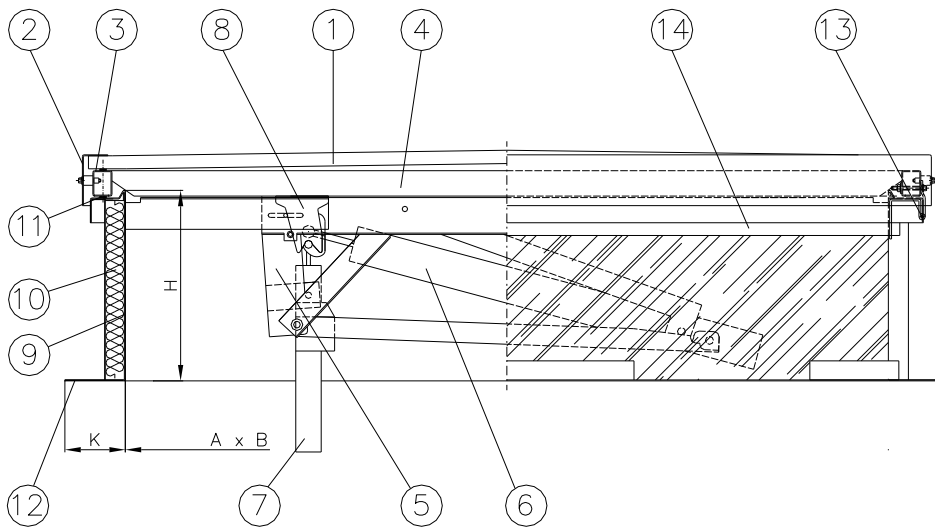
mcr-PROLIGHT type C, E, NG-A vents are offered with the following control systems:

- pneumatic control,
- electric control,
- mechanical control.

The triggering of smoke vents and smoke & ventilation vents may be performed both manually - by the user, as well as automatically - through thermal switches, type mcr smoke exhausting control units, or fire signalling units.

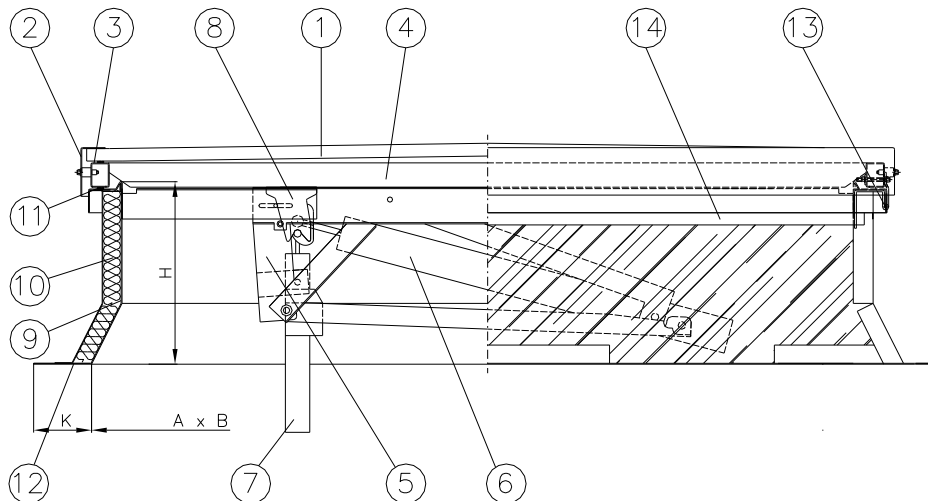
mcr-PROLIGHT type C, E, NG-A smoke vents and smoke & ventilation vents comprise of a fixed part - the base, and a moving part - the leaf with glazing.

a/ type C, E



1. glazing
2. pressing frame
3. supporting frame
4. leaf cross-bar
5. actuators holder
6. actuator for smoke exhausting
7. actuator for ventilation (optional)
8. hook console
9. base
10. base thermal insulation
11. leaf gasket
12. base flange
13. hinge
14. external sheathing - galvanized steel sheet

b/ type NG-A



1. glazing
2. pressing frame
3. supporting frame
4. leaf cross-bar
5. actuators holder
6. actuator for smoke exhausting
7. actuator for ventilation (optional)
8. hook console
9. base
10. base thermal insulation
11. leaf gasket
12. base flange
13. hinge
14. external sheathing - galvanized steel sheet

c/ with mechanical control (type C/E shown)

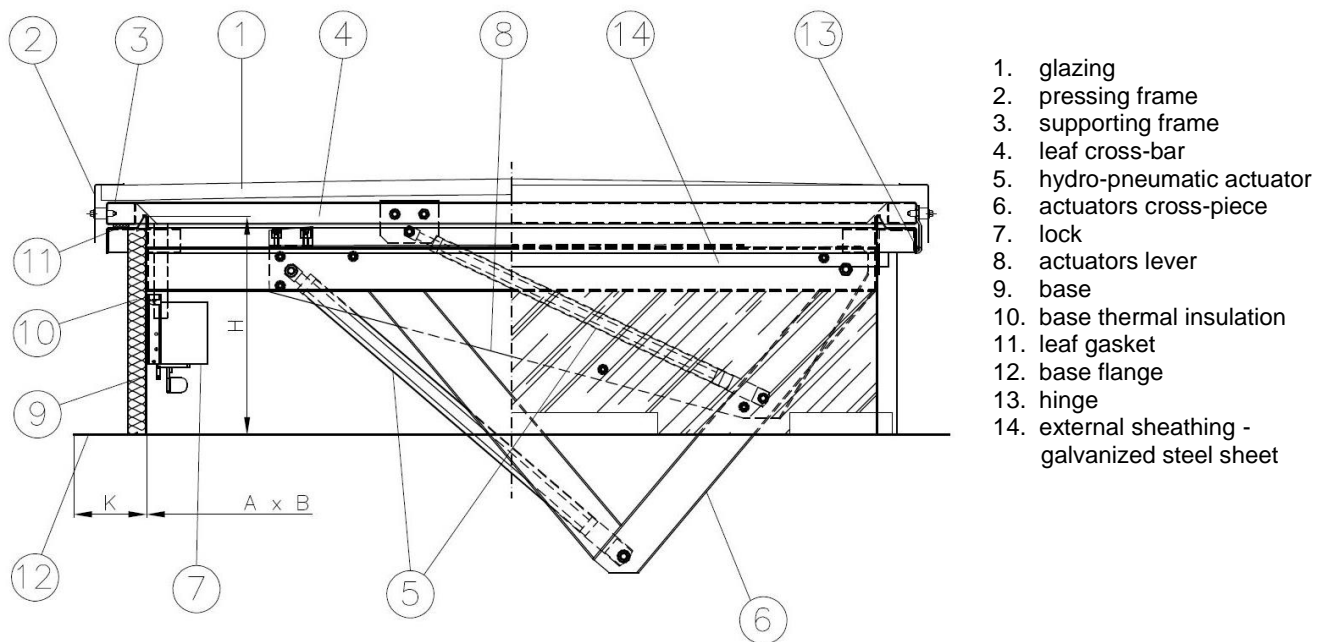
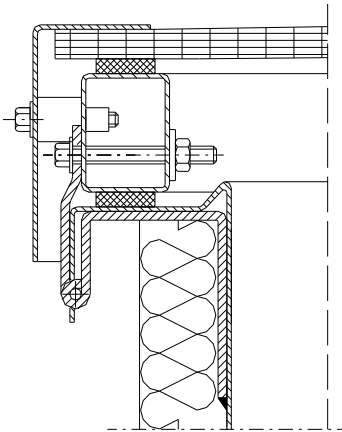
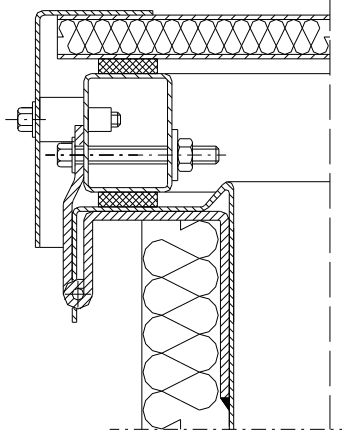


Fig. 1 mcr-PROLIGHT vents cross-section

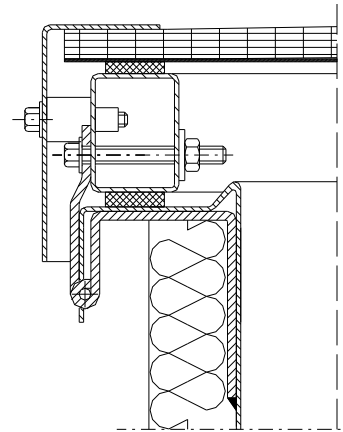
a) polycarbonate panel



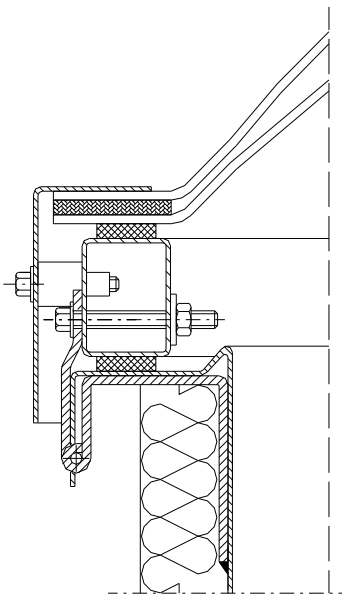
b) ALU laminated panel



c) polycarbonate and polyester panel (Broof(t1) class)



d) double acrylic dome



d) triple acrylic dome

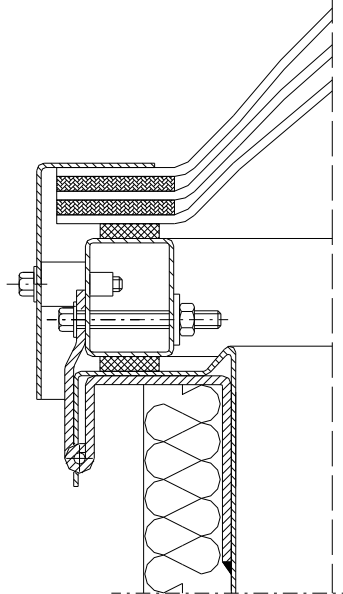


Fig. 2 Typical glazings of mcr-PROLIGHT smoke vents

## 4. TRANSPORT AND DELIVERY

mcr-PROLIGHT type C, E, NG-A vents are delivered assembled, but in specific cases (additional external processing, low base heights, etc.) they may be delivered as assemblies and subassemblies. Air deflectors are always delivered separately. This is due to the necessity of protecting individual vent elements from transport damage, and ensuring safety in road traffic. Unloading should be performed under the supervision of a person authorized by the manufacturer, using generally accessible handling equipment, or manually, observing all applicable SHE principles.

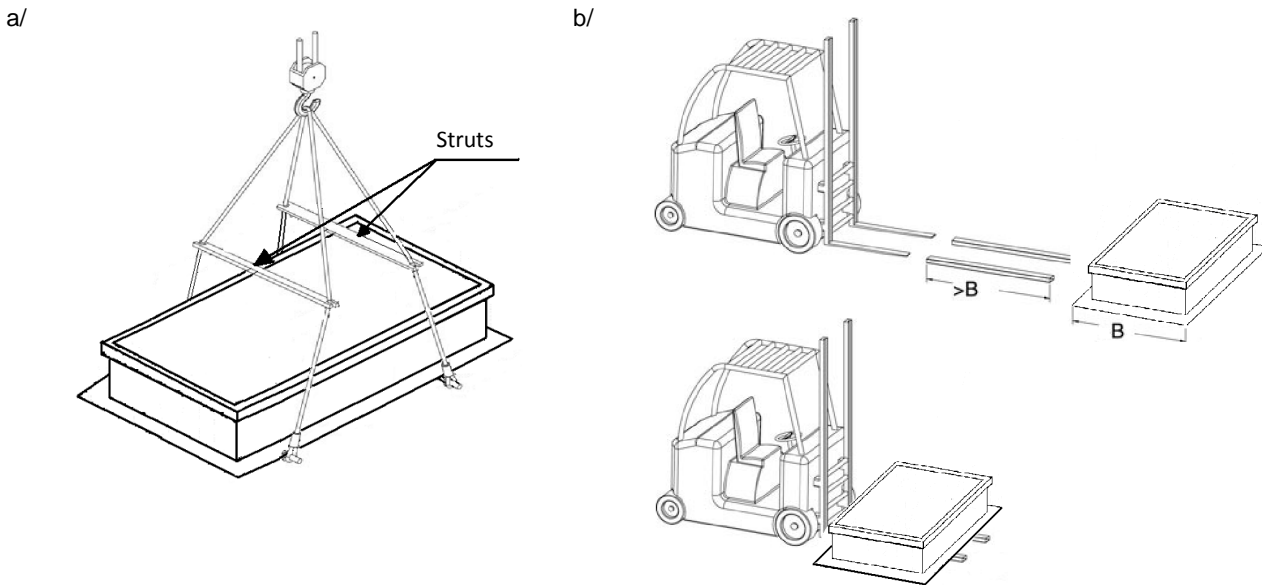


Fig. 3 Handling using crane (A) and forklift (B)

## 5. DEVICE INSTALLATION

The device must be installed in observance of all the applicable SHE principles, particularly those related with working at height, using adequate personal protective equipment.

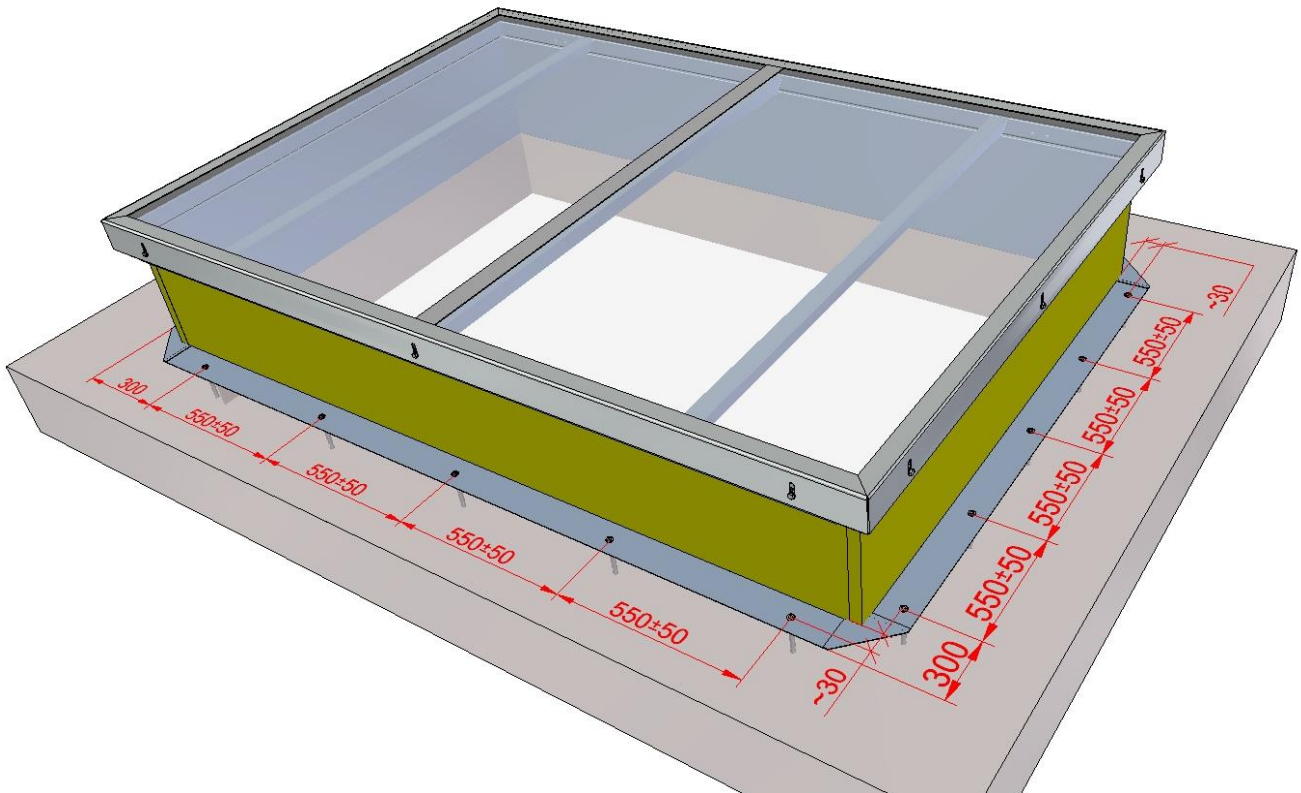
The vents must rest on the roof's structural elements such as: purlin, trimmers, structural sheet, reinforced concrete plinth. Any elements causing collision with the vent leaf at full opening range should be removed.

The vents may be installed on roofs of steel, concrete or wooden structure. The device base has a protrusion (shelf) in its lower part, allowing to rest and fix the vent to the supporting structure.

Fixture elements should be selected depending on the supporting structure's making, according to the below table. Fixtures should be installed at 50-60 cm spacing.

supporting structure type	minimum fixture diameter
steel	min. Ø4.8 mm
concrete	min. Ø6 mm
wood	min. Ø6 mm





**Fig. 4 Method of mcr-PROLIGHT positioning on the roof - fixtures spacing**

The vent bases are ready for flashing works with roofing paper, PVC membrane or steel sheet, The vent base, in its upper part, features a galvanized steel sheet strip at its full circumference, which is used for fixing flashings/coverings using screws. For roofs covered with roof membrane, an optional PVC-coated sheet strip may be used to facilitate installation.

Roof membrane is to be welded or glued in accordance with best industrial practice to the PVC-coated steel sheet strip at the base's full circumference. Roofing paper is to be welded to the galvanized steel sheet strip at the base's full circumference, and then fixed mechanically. All flashing elements **MUST** be installed under the base eaves; do not twist them over the eaves.

**NOTE**

1. If roofing paper is to be welded to the above mentioned sheet strip, **IT IS ABSOLUTELY REQUIRED** to use a cover for protecting the vent glazing and spacer sleeves from the effect of fire/hot air.
2. After installing the vent, protective foil must be removed from all external aluminium elements of the vent (pressing frames, pressing strip) and from the vent glazing (PCA, laminate panels, acrylic domes). Leaving foil on the device may cause permanent discolorations of elements, and become hard to remove.
3. If the vent is not supplied to the construction site preassembled, maintain special caution when installing polycarbonate panels. Damaging the tape protecting the edges of polycarbonate panels will cause contamination to penetrate into the PCA chambers, which is not covered by warranty.

### 5.1. Methods of vents placement

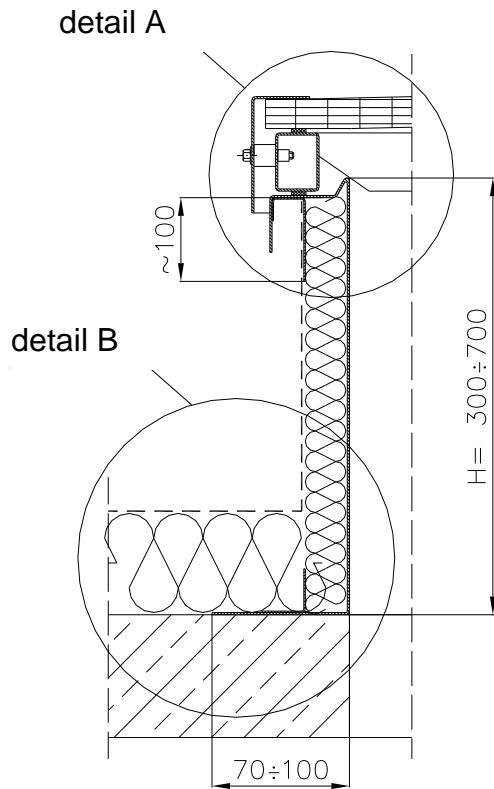
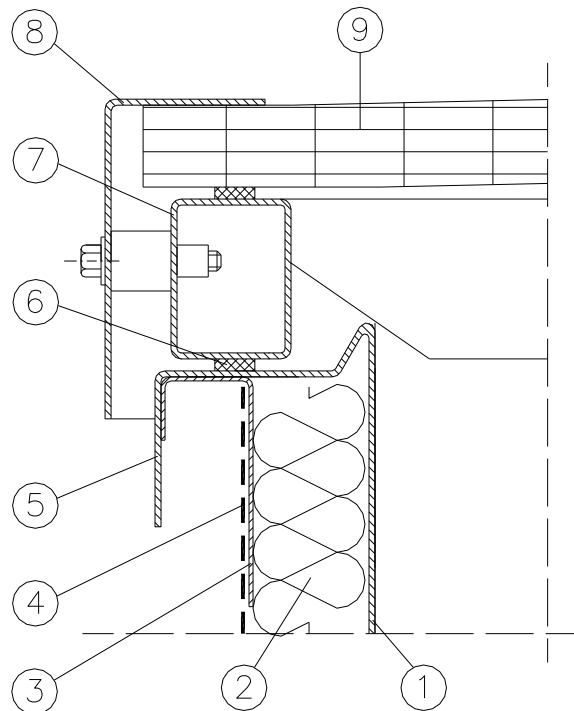


Fig. 5 Placement of steel base on roof (DETAIL B) and method of sealing with roof membrane or roofing paper (DETAIL A)

#### Detail A



1. Steel base
2. Thermal insulation of base
3. Sheet strip for installing roof membrane or roofing paper
4. Roofing membrane or roofing paper
5. Base eaves
6. Leaf gasket
7. Carrying frame
8. Clamping frame
9. Leaf glazing

Fig. 6 Method of sealing with roof membrane or roofing paper (detail A)

Detail B

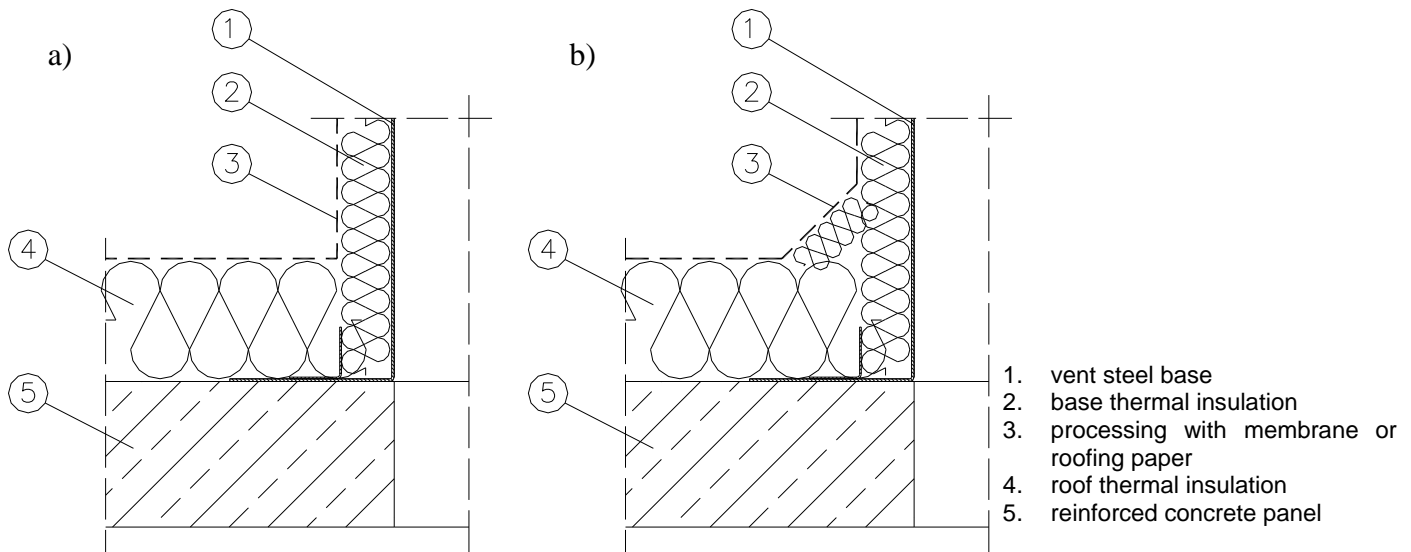


Fig. 7 Steel base on a reinforced concrete panel (a - membrane flashing, b - roofing paper flashing)

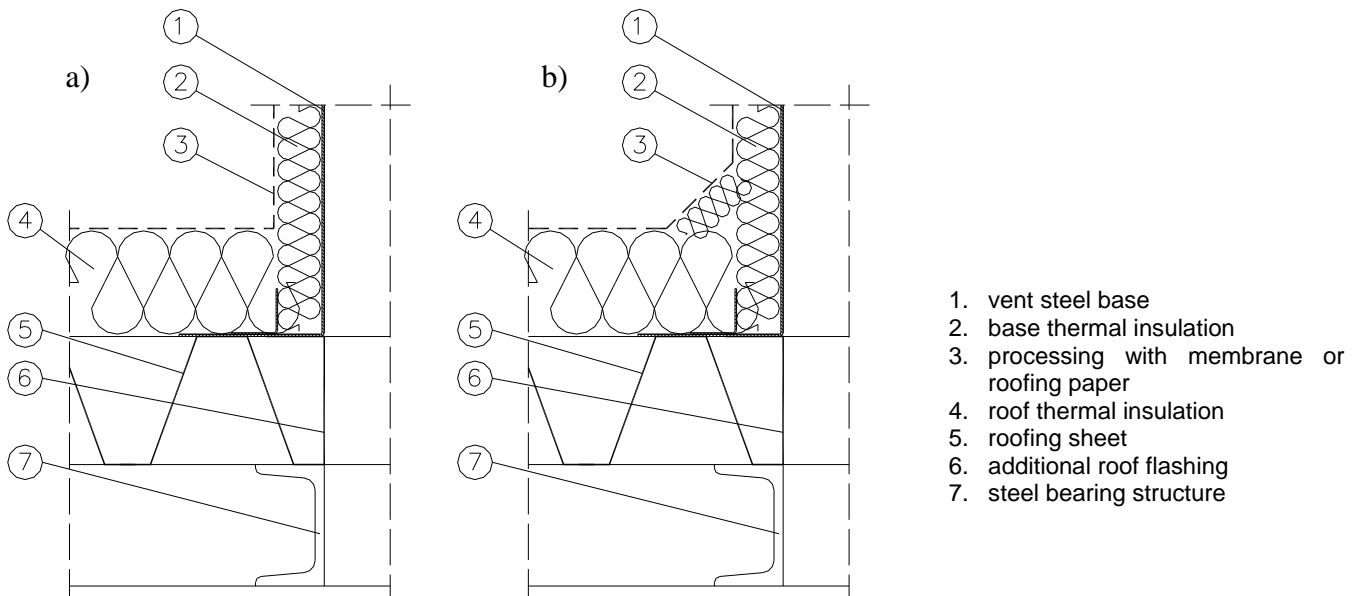


Fig. 8 Steel base on steel structure (a - membrane flashing, b - roofing paper flashing)

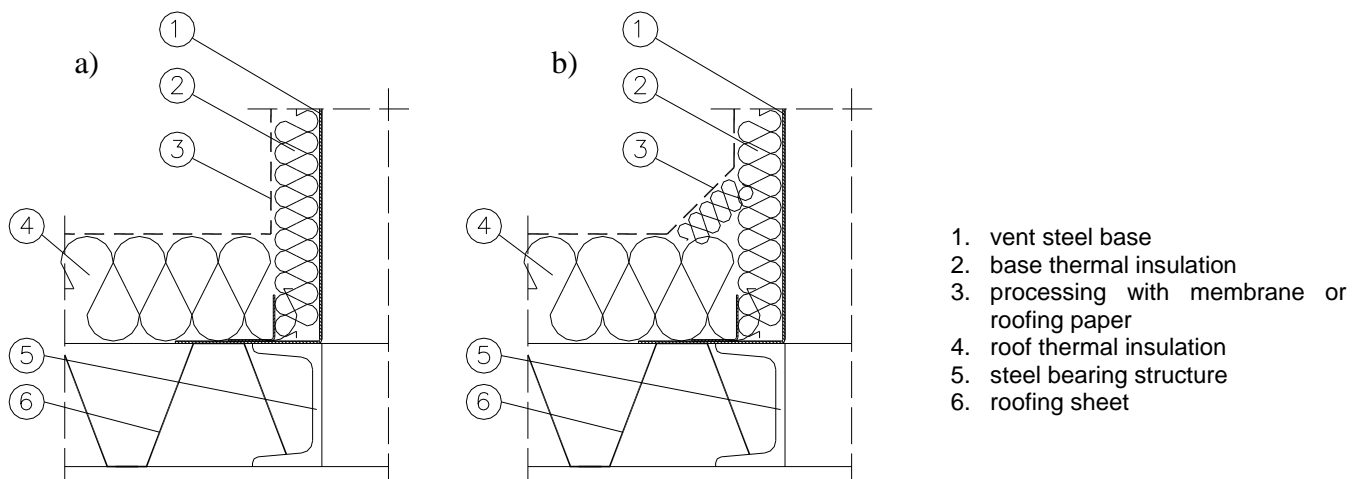
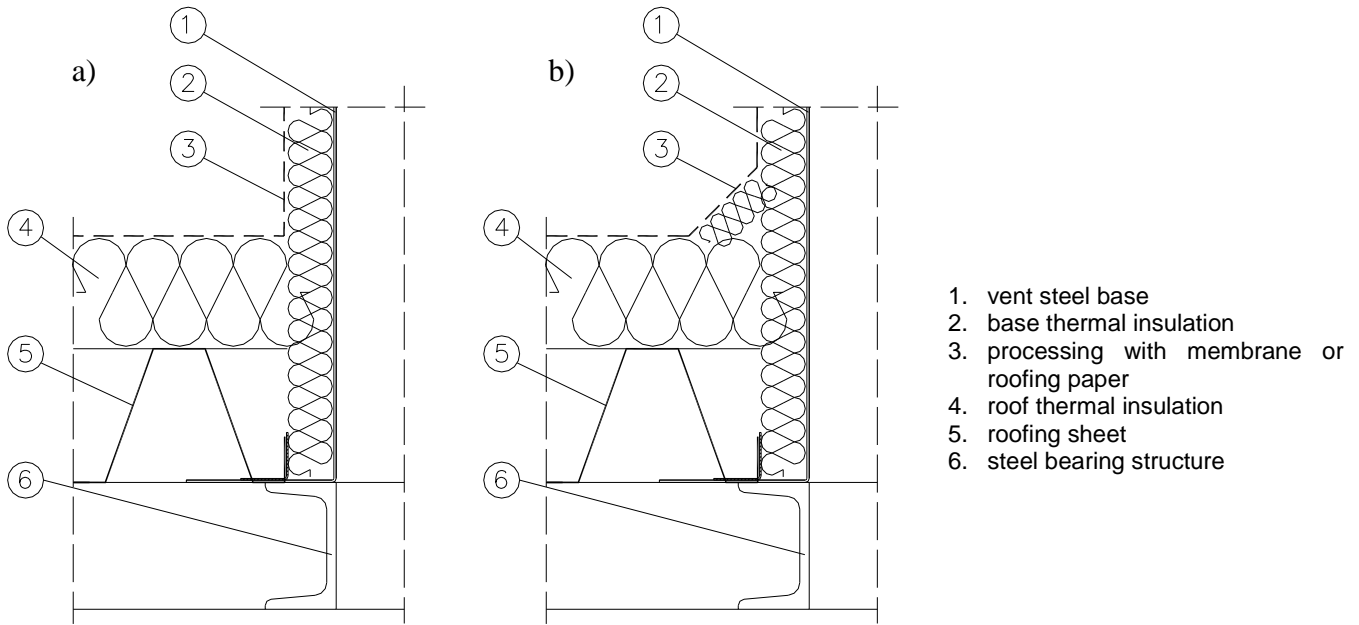
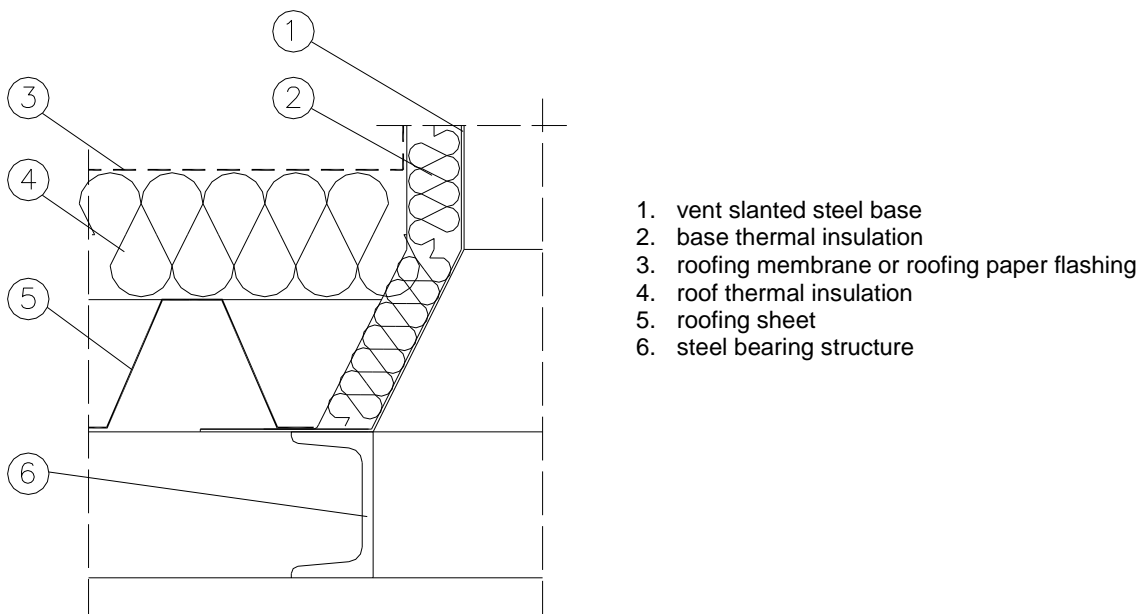


Fig. 9 Steel base on steel structure (a - membrane flashing, b - roofing paper flashing)



**Fig. 10 Steel base on steel structure (a - membrane flashing, b - roofing paper flashing)**



**Fig. 11 Slanted steel base on steel structure**

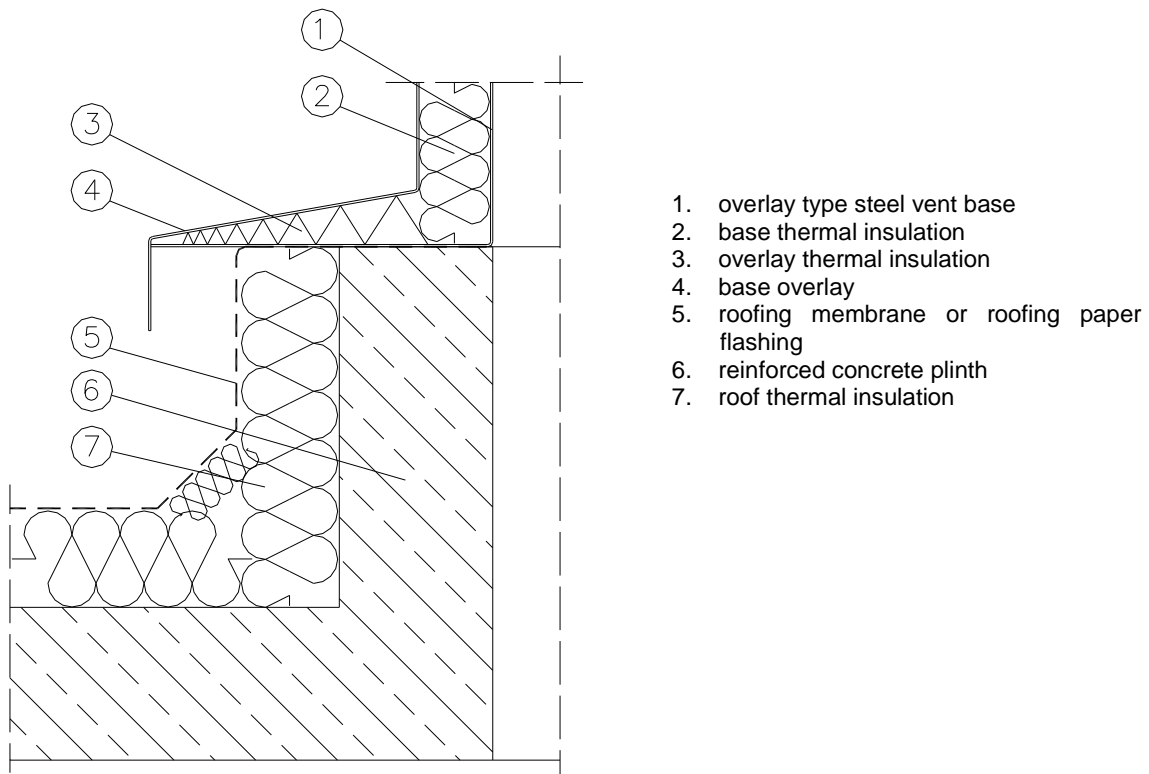


Fig. 12 Steel base on steel, wooden or reinforced concrete plinth

For mcr-PROLIGHT vent installation on slanted roofs, the base must be positioned in such way that the vent hinges are located on a lower point of the roof.

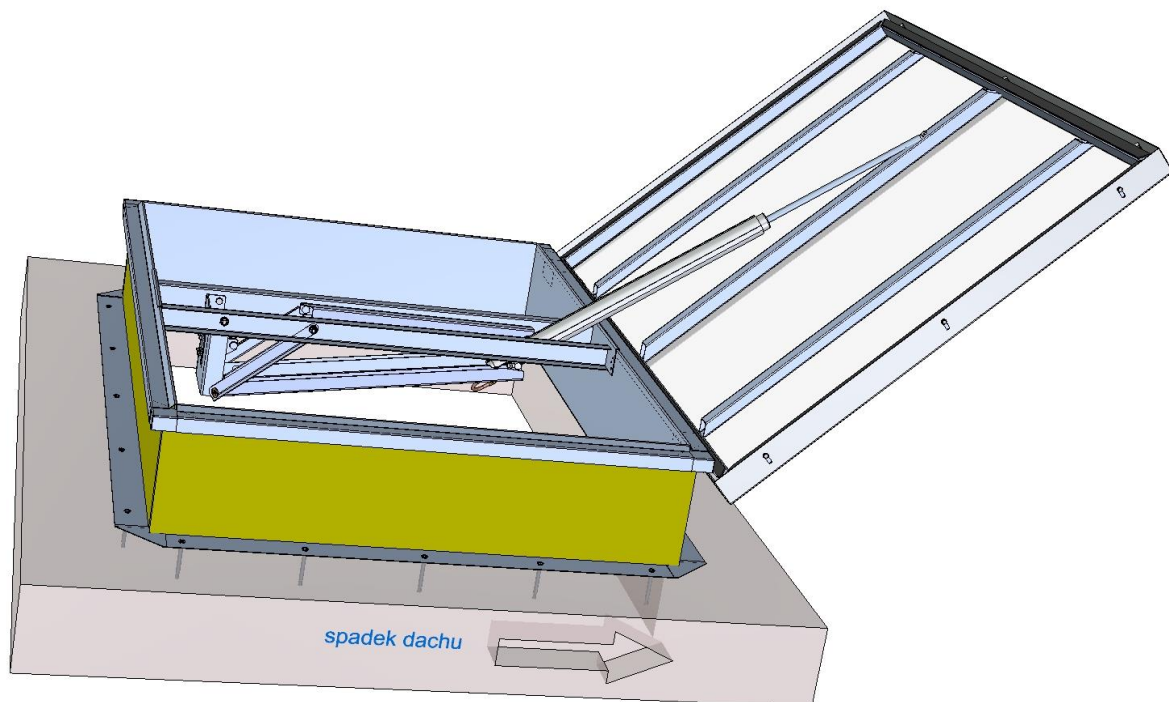


Fig. 13 Vent installation on slanted roofs

## 6. WIND/INLET DEFLECTORS

### 6.1. Wind deflectors

Deflectors are used to increase the active smoke exhausting area of smoke vents. In standard, they are made of aluminium sheet.

The deflectors are supplied to the construction site in the form of pre-bent elements or for manual bending (with technological cut-outs at bending points). The vents are delivered with deflector holders fixed to the vent base.

The deflectors may additionally feature bracing ribs. The ribs are fixed to the deflectors at production stage.

Ø4.8x8 mm aluminium/steel rivets must be used for installing the deflectors, 2 pcs per each installation holder.

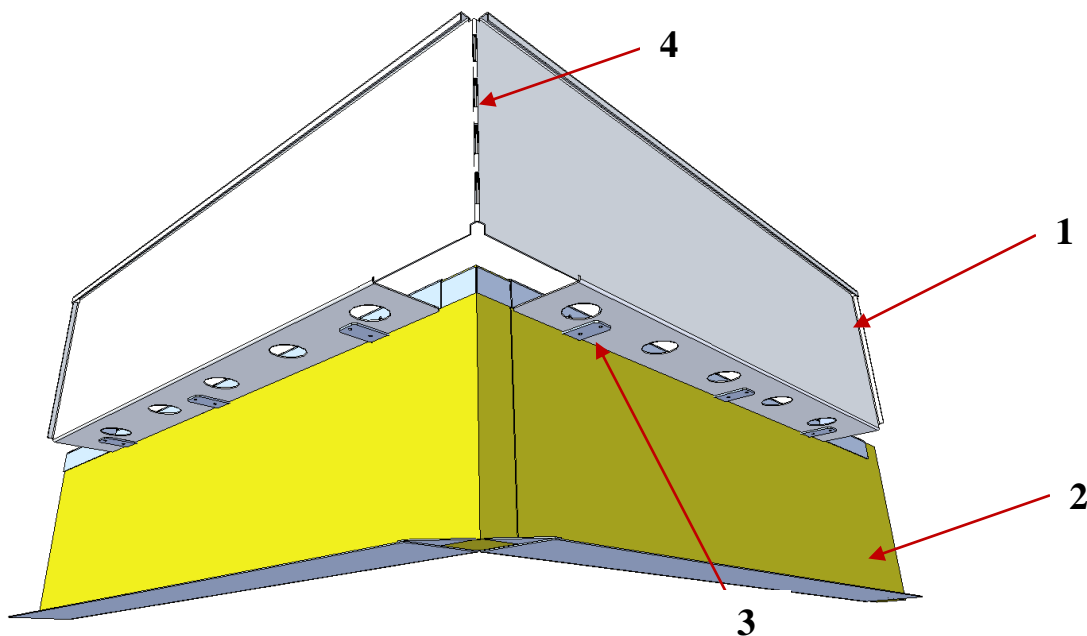
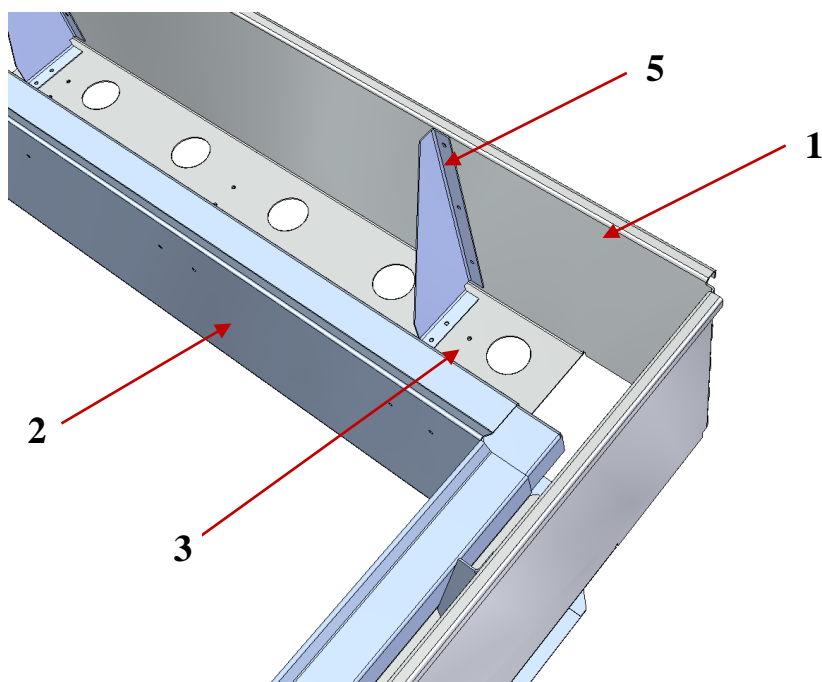


Fig. 14 Fixing of deflector to vent base - view from the outside of vent



1. Deflector
2. Vent base filled with mineral wool
3. Installation holder - deflectors riveting area
4. The technological cut-outs facilitate the manual bending of deflector
5. Bracing rib (in selected dimensions)

Fig. 15 Fixing deflector to vent base - view from the inside of vent

## 6.2. Inlet deflector

The purpose of inlet deflector is to improve the effective aerodynamic efficiency of C and E type vents, i.e. the smoke exhausting area. The inlet deflector is installed at the bottom of the vent base. It is made of galvanized steel sheet, optionally: aluminium sheet; it may be painted to any RAL colour. The inlet deflector is pre-fixed to the vent in transporting position. After installing the vent, the deflector should be fixed in working position:

- loosen the screws in fixture holders on side A of the deflector (in place of the prepared bean holes)
- undo the screws in fixture holders on side B of the deflector (in place of the prepared  $\text{\O}6.5$  mm holes)
- lower the deflector to operating position - according to the prepared holes
- tighten the fixing screws (use only nuts with protection)

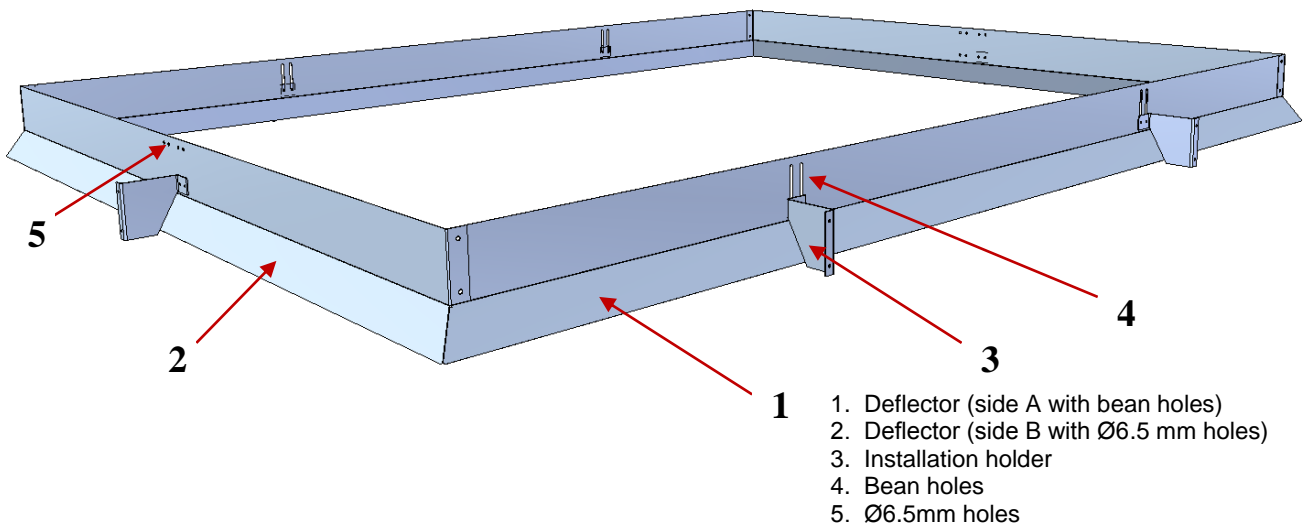


Fig. 16 Inlet deflector (installation holders installed in transporting position)

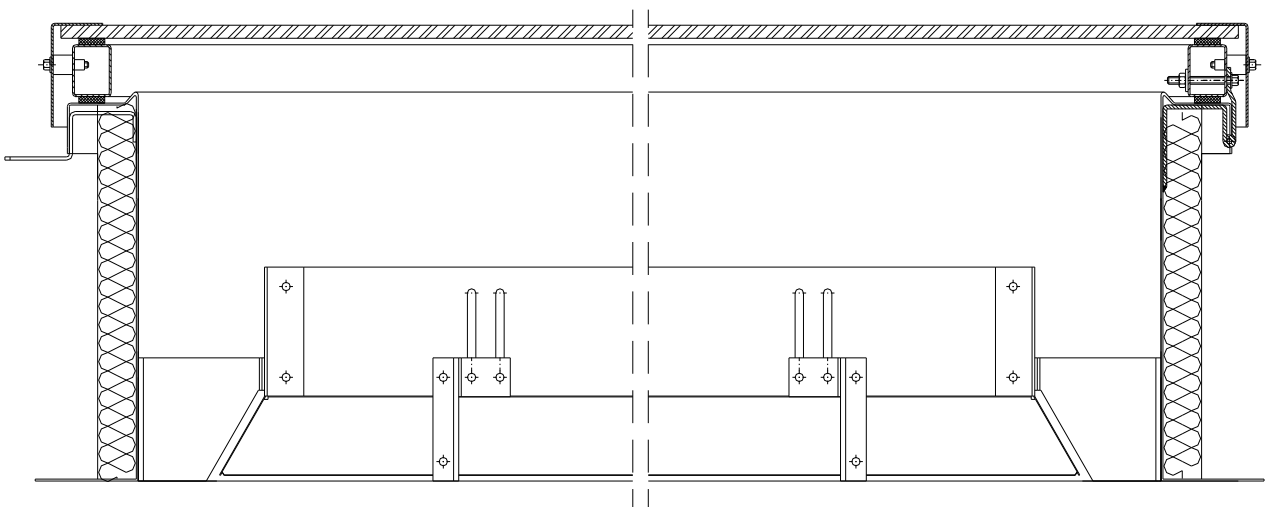


Fig. 17 Inlet deflector in transporting position (hidden in the vent)



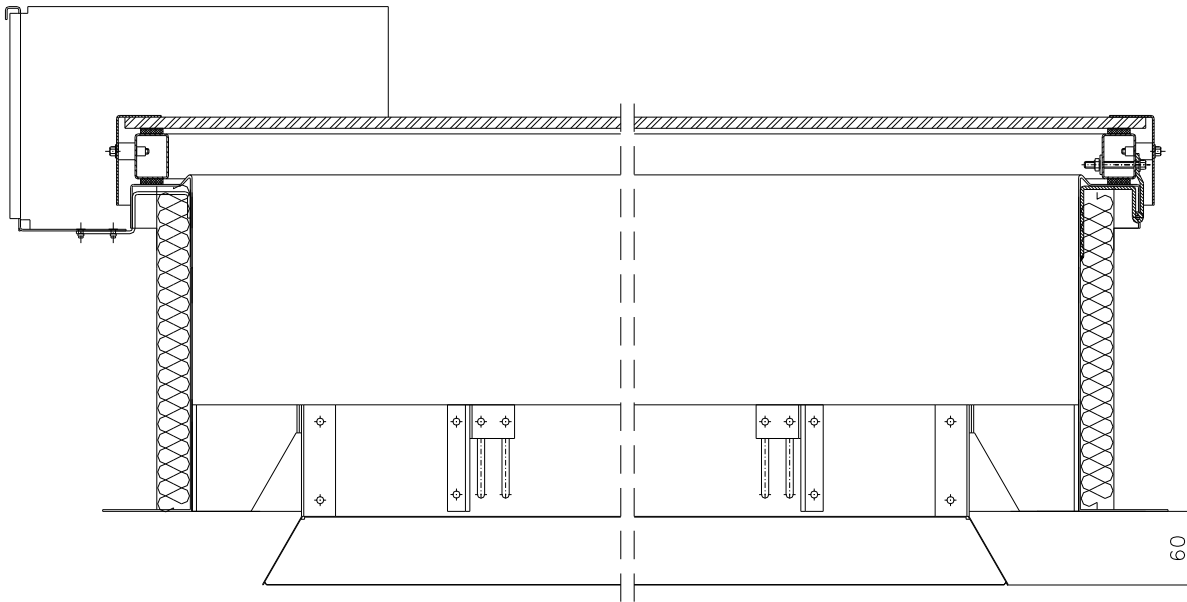


Fig. 18 Inlet deflector in operating position

## 7. VENT LEAF ADJUSTMENT

### (HOOK CONSOLE, EYE BOLTS AND 'T' BOLTS)

The vent leaf is joined with the actuator through a hook console. The hook console is locked on a T bolt. Spindle-type pneumatic and electric actuators are joined with the hook console using an eye bolt, which is screwed into the actuator's spindle/rod. The vent leaf play should be eliminated by tightening the eye bolt or adjusting T bolt. The eye bolt or T bolt should be secured from loosening with a counter nut. When using auxiliary 230V~ electrical actuator for ventilation in systems with pneumatic actuator, the "T" bolt is tightened into a toothed strip or spindle of the 230 V~ electrical actuator.

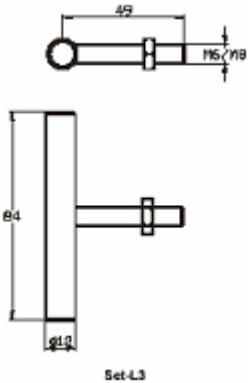


Fig. 19 'T' bolt

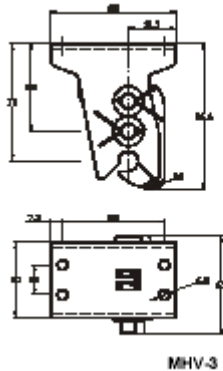


Fig. 20. Hook console

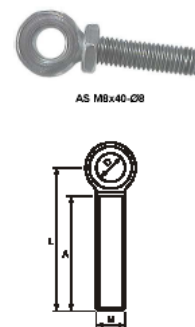


Fig. 21. Eye bolt



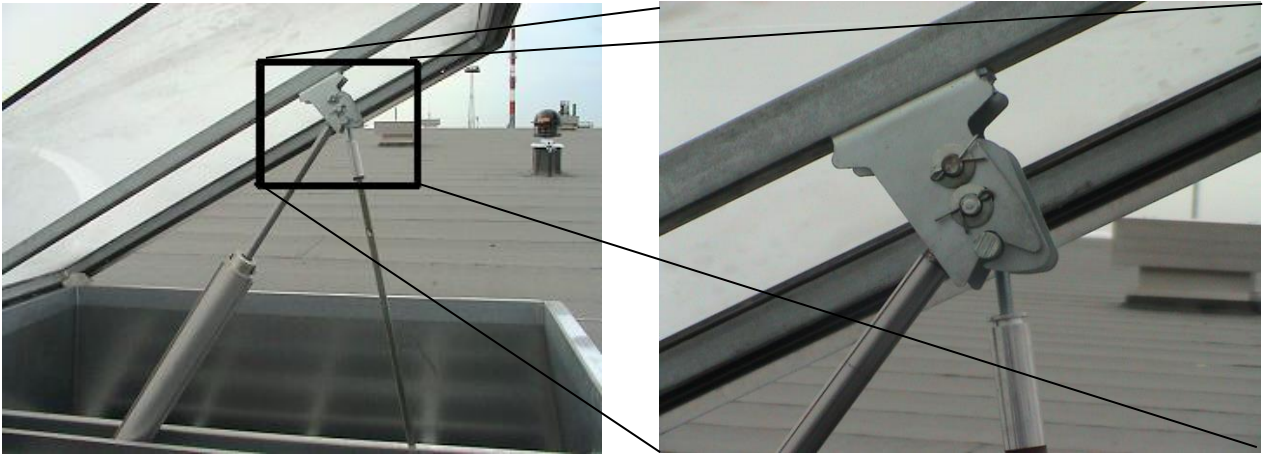


Fig. 22 Actuator - hook console joint

## 8. CONTROL

The functioning of smoke exhaust and smoke & ventilation vents is based on devices used for controlling their opening and shutting. A set of such devices forms together a system for smoke exhaust control or smoke exhaust and ventilation control. Depending on the equipment used in it, the smoke exhausting control system may be offered in the following variants:

- pneumatic system,
- electrical system,
- mechanical system.

Depending on the control method, mcr-PROLIGHT vents feature pneumatic actuators with thermal triggers or electrical actuators, and - additionally - pneumatic and electrical actuators for controlling natural ventilation.

In the event of failure of the control that prevents the vent shutting, contact the service department immediately (see point 12).

If the vent must be shut immediately, proceed with the following before the service technicians arrive: disconnect the immobilized actuator from the leaf (e.g. by disconnecting the eye bolt from the hook console, or undoing the eye bolt from the actuator, or disconnecting the E actuator from the fixing console), then shut the leaf and protect it from opening.

### 8.1. Pneumatic control

Depending on the system's configuration, it may be necessary to connect additional pneumatic piping to the vent (e.g. copper/steel tube from the alarm box containing cartridges).

Threaded joints of pipe unions with valves, actuators, etc. must be sealed using appropriate chemical agents, e.g. Loctite 243 (recommended) or Teflon tape, by winding it around the thread. Apply several (2-3) drops of Loctite 243 per sealed thread. After screwing the threaded joint together, Loctite 243 cures and seals the joint, securing it from uncontrolled loosening (which is important for actuator connections). The loosening of a pipe joint secured in such way is possible only using hand tools.

Vents with pneumatic control are equipped with cords limiting the vent leaf movement. The cords are to be released before operating the vent for the first time (they should sag freely).

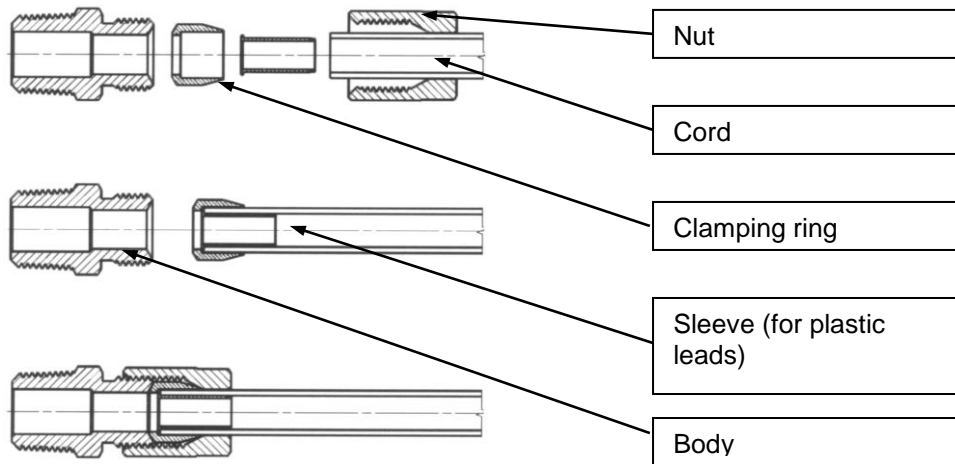


Fig. 23 Method of installation of flexible hoses of pneumatic system

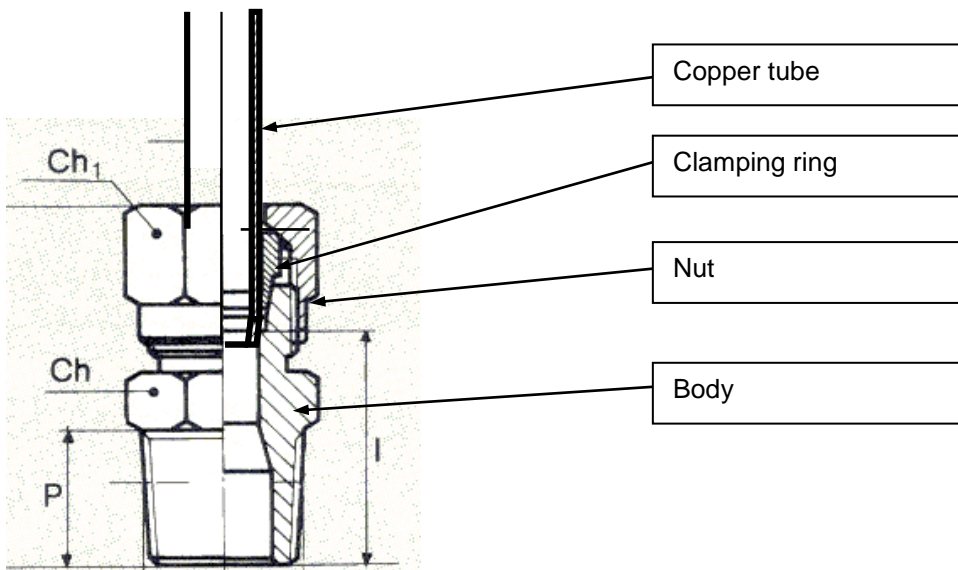


Fig. 24 Pipe joint connection with copper/steel tube

**NOTE**

For safety reasons, the vent's thermal trigger is disarmed for shipping. After installing the vent along with the roof flashing, eliminate any possible play on the vent leaf and arm the thermal trigger.

Thermal trigger arming:

- make sure that the screw tensioning the **striker spring (1)** is loose; otherwise, loosen it manually until stop,
- install an **alcohol vial (2)** in the gas flow regulator socket; with the sharpened tip pointing towards the body, tighten the vial screw by hand
- insert the **valve slide (4)**,
- tighten the striker spring using screw (1) home - by hand,
- make sure the cartridge striker is fully inserted (hidden), and make sure a gasket is present in the cartridge socket,
- screw a **CO<sub>2</sub> cartridge (3)** by hand (3).

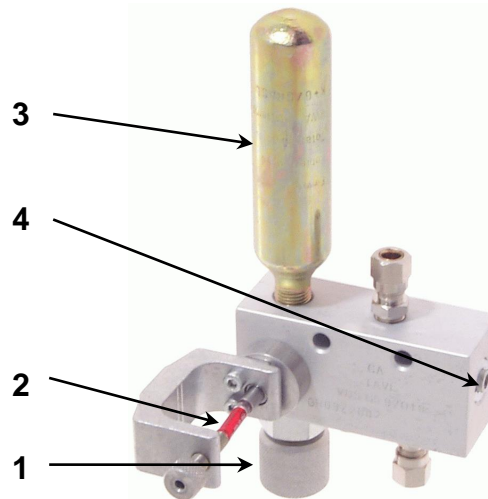


Fig. 25 Thermal trigger

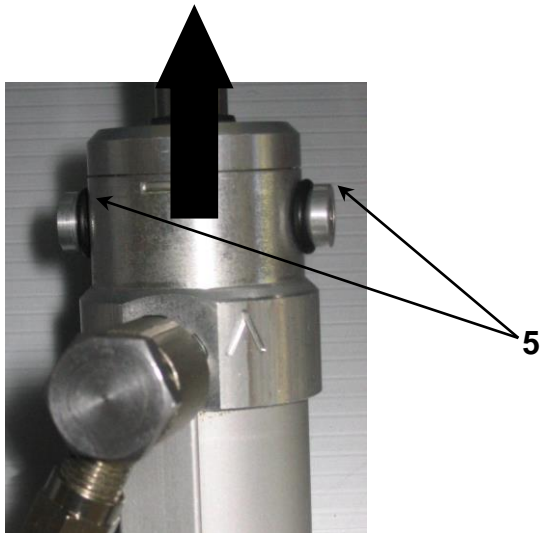


Fig. 26 PUAV pneumatic actuator - lock releasing direction

For smoke exhausting purpose, the pneumatic actuators have an internal lock that prevents the closing of a fully open vent leaf.

Method of closing the vent leaf after emergency opening for systems without remote shutting function:

1. Release CO<sub>2</sub> from the system by screwing the cartridge out of the thermal trigger or alarm box (**note: the system contains high pressure - undo slowly, note: the cartridge may cause frostbite**).
2. Release the **actuator locks (5)** by raising them towards the working movement of the actuator (as shown on the arrow on fig. 25).
3. Lower the vent leaf.
4. Check the leaf closure state.
5. Insert a new CO<sub>2</sub> cartridge in the thermal trigger or alarm box.
6. Replace the thermal fuse (alcohol vial (2)) if required.

## 8.2. Electric control

Leaf opening control system employing 24V= electrical actuator for smoke exhausting is delivered preassembled in the vent. Preparing it for operation consists in connecting the eye bolt of the electrical actuator with the pin of the hook console, and adjusting it properly so that the console securely latches on the T bolt, and the electric actuator is disabled after the vent shutting by the limit switch, and not the overload switch.

Method of connection of mcr-W / mcr-WSG actuator (cables polarity):

brown cable +	} spindle engages	brown cable -	} spindle disengages
blue cable -		blue cable +	

mcr9705, mcr0204 smoke exhausting and ventilation control units and mcrR0424 and/or mcrR0448 expansion modules must be used for controlling and supplying mcrPROLIGHT mcr-W/mcr-WSG vents.

It is recommended that the vent leaf deflection effected by 24V actuator up to ventilation function does not exceed 30°, which is equivalent to opening time of about 20 s.

## 8.3. Ventilation function

Ventilation function may be achieved using 2 basic methods:

- by employing pneumatic actuators with appropriate installation,
- by using an additional electrical actuator powered by 230V~ voltage (drawing below).

For transport reasons, the electrical actuator for ventilation function usually does not come pre-installed. It must be installed in the opening system console using ST12-1/8 screws (For Exxx-230 actuator) or using threaded bolts (JMB actuators) supplied with the actuator. It is recommended to secure the ST12 screws from loosening using Loctite 243, or similar agent.

The actuator has a T-shaped bolt that should be installed in place of the eye bolt. The hook console should be latched onto the T bolt. It is recommended to integrate into the system a weather automatics system for controlling ventilation, e.g. mcrP054; its purpose is to shut any open vents in case of strong wind or rainfall, protect user property and vent structure from damage.



Fig. 27 Ventilation control actuator (type Exxx-230)

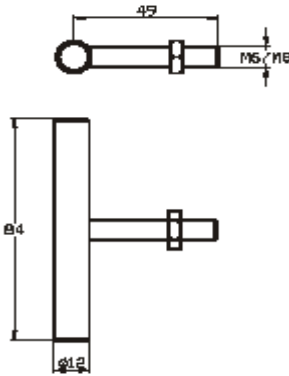


Fig.28. T bolt

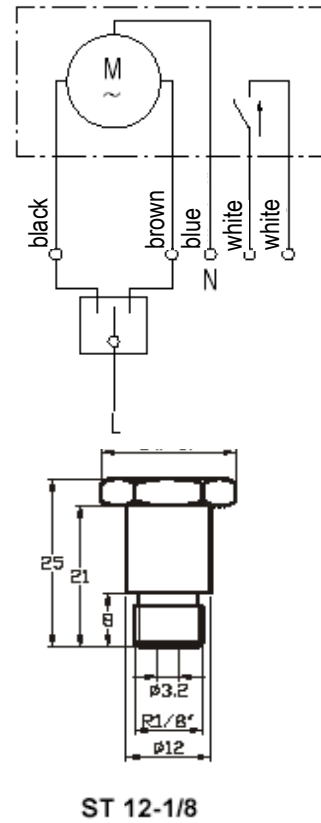


Fig.29. ST12 1/8 bolt

Connection diagram for 230 VAC electrical actuator for ventilation function

a/ Actuator type E xxx - 230 V has two circuits:

- working circuit – movement direction control (black/brown - blue cables),
- signalling circuit (cables: 2 x white; actuator opening signalling – voltage-free contact).

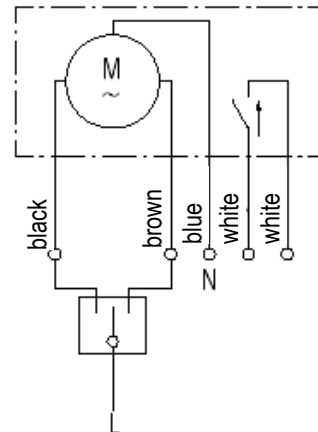


Fig. 30. Actuator type Exx-230

b/ Actuator type JMBB-500-300-LA has two circuits:

- working circuit – movement direction control (cables: brown/black1 - blue),
- signalling (cables: black2/black3; actuator opening signalling - voltage-free contact).

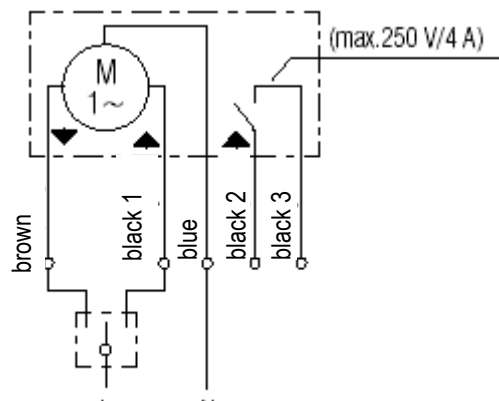


Fig. 31. Actuator JMBB-500-300-LA

## 8.4. Mechanical control

The mechanical control system comprises of a lock and hydraulic-pneumatic actuators (gas springs) joined by a lever with a cross piece in the base, and with the leaf. There are 3 lock types available:

- 1) Standard (without an electromagnet)
- 2) With an electromagnet triggered by electrical impulse (current flow)
- 3) With an electromagnet triggered upon power decay

Fig. 32 presents the standard lock variant (A) and the variant with electromagnet (b), accordingly.

a) Standard lock

b) Lock with electromagnet

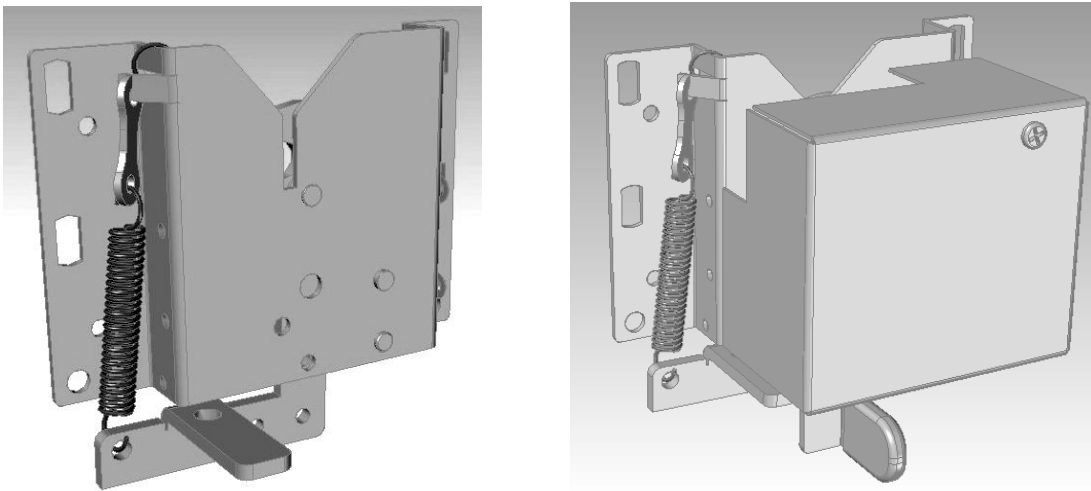


Fig. 32 Lock types for mechanical control

The easiest way to distinguish between the standard lock and lock with electromagnet is to check if it does (for lock with electromagnet) or does not (for standard lock) have an enclosure. The type of lock with electromagnet can be further identified based on the electromagnet power rating:

- 1) 3.5 W power - electromagnet triggered by electrical impulse (current flow)
- 2) 1.6 W power - electromagnet triggered by power decay

Electromagnet rating can be read from the identification label.

### 8.4.1. Lock opening methods

Mechanically controlled vents may be opened in three different ways, depending on the option purchased:

- 1) Automatically, after the melting of a fuse element
- 2) Through the opening of an electromagnet
- 3) Manually, using a cord

The opening methods above are presented on fig. 33.



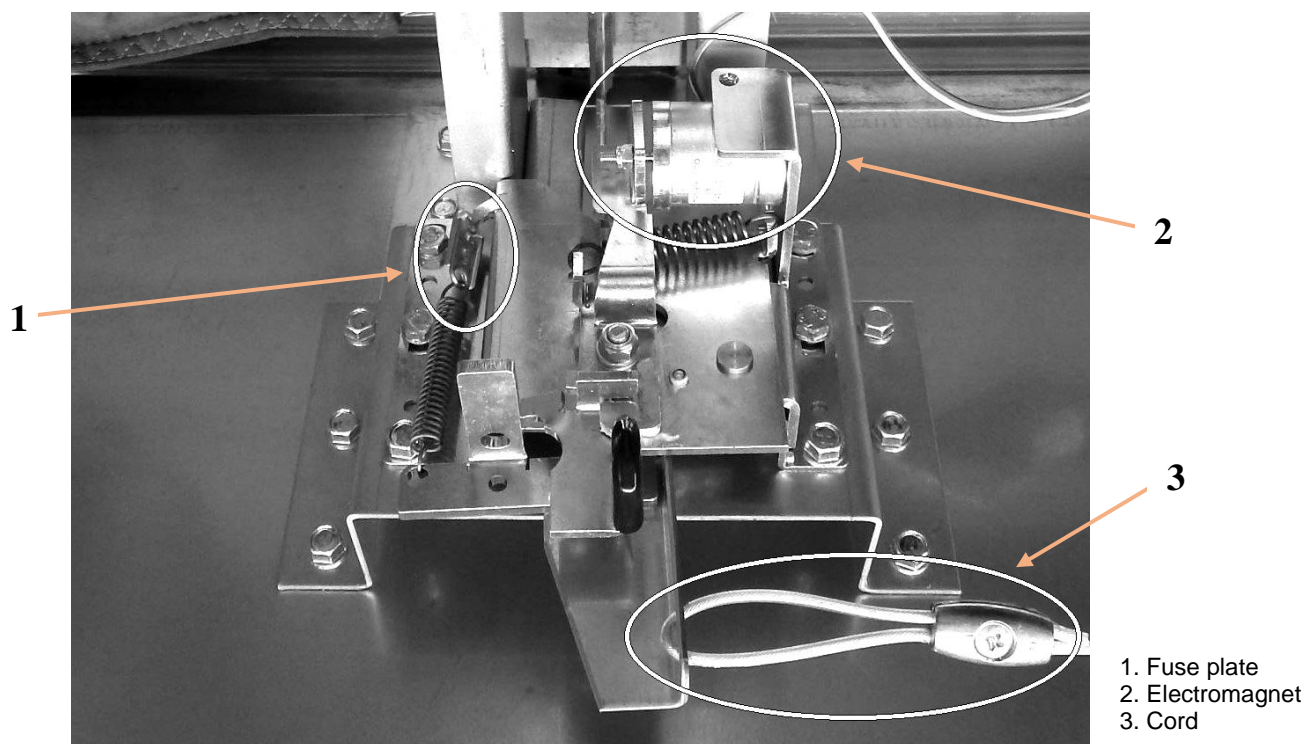


Fig. 33 Lock opening methods

### 8.4.2. Preparing lock for operation

The vent is delivered to the client with the lock secured with a cable strap (for locks with electromagnet only). The protection method and location is presented on fig. 34.

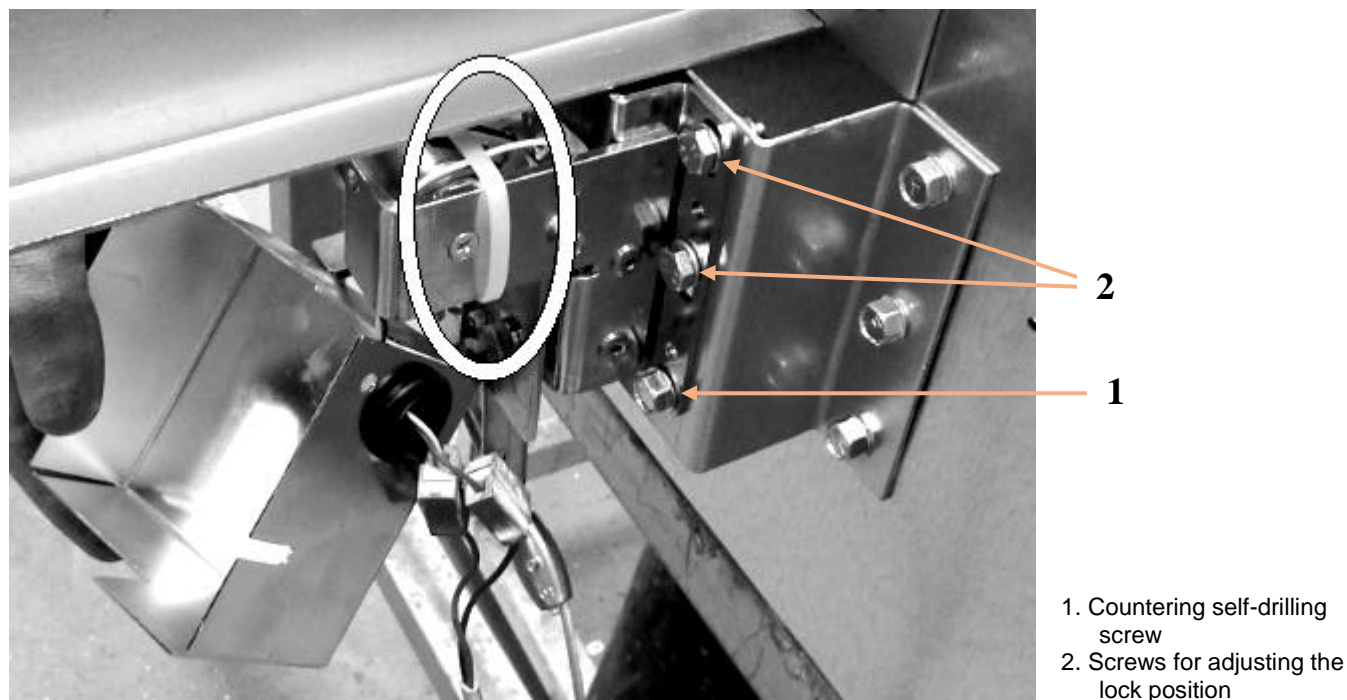
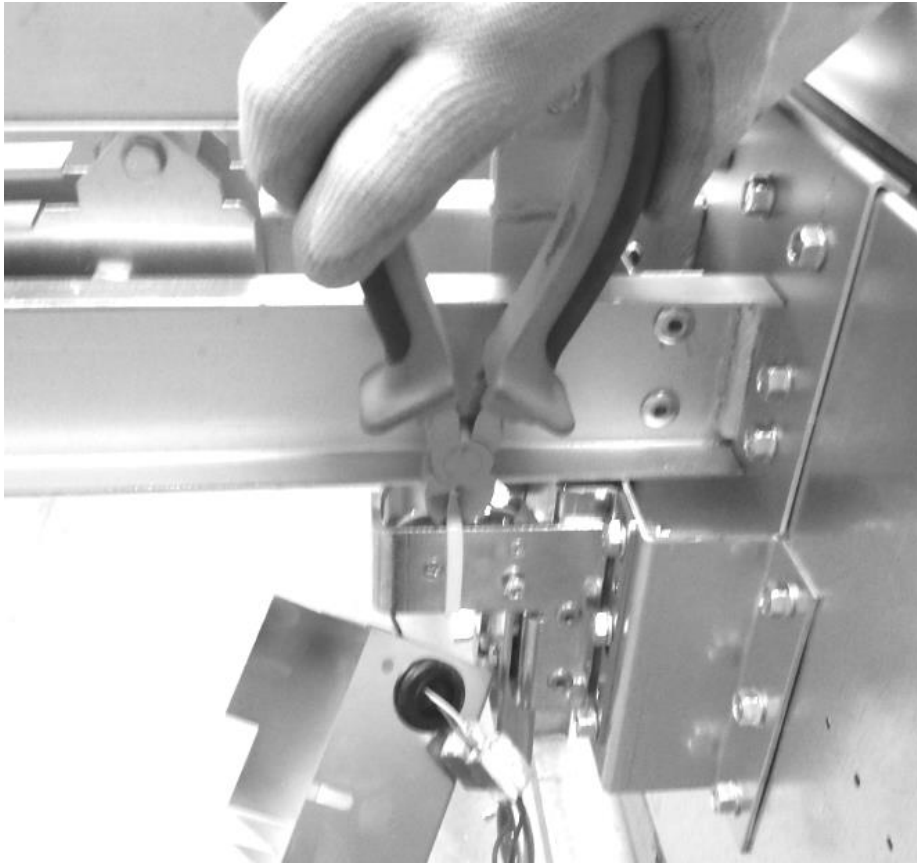


Fig. 34 Lock secured using cable strap

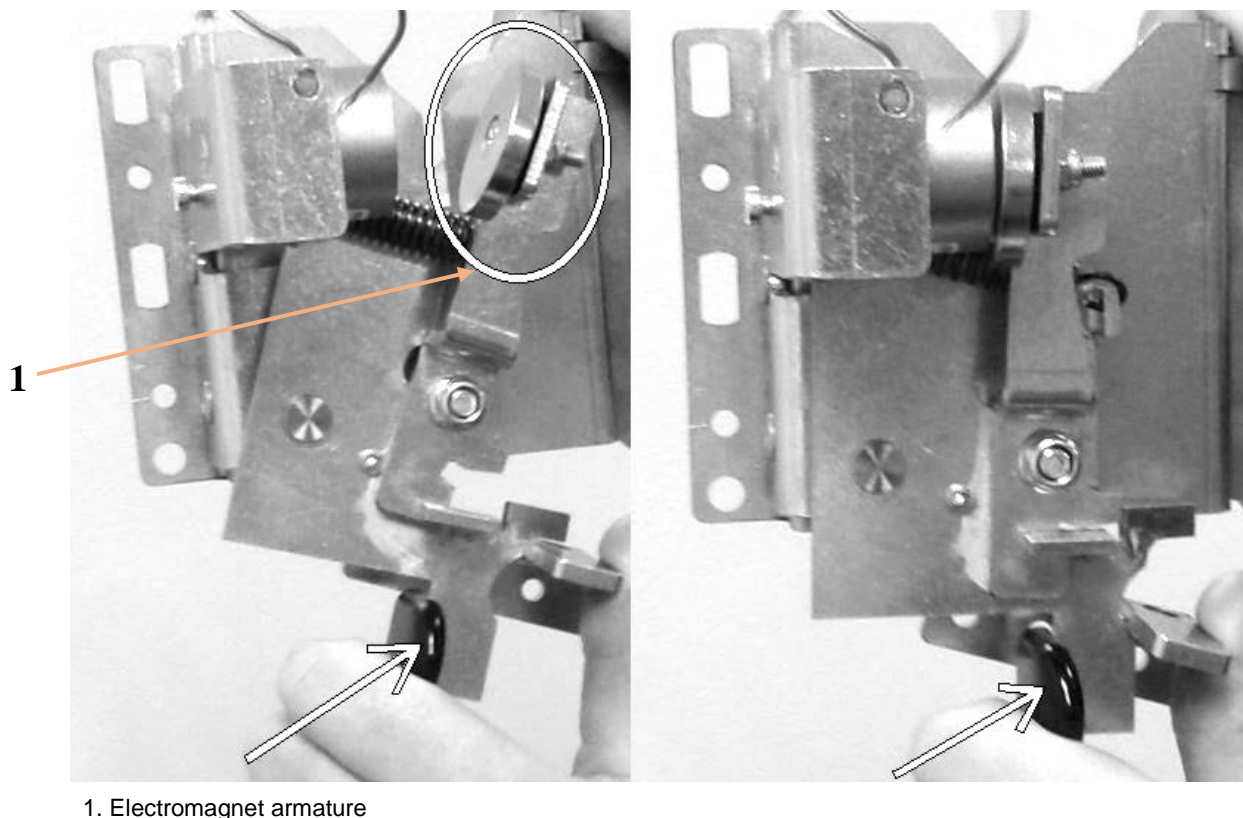
After installing the vent in its final location, and before commissioning it, the lock safety must be removed. To this end, first remove the lock casing by undoing the screws fixing the casing. To do so, cut the strap and remove it. The strap cutting operation is presented in fig. 35. After completing the above, install the lock casing back and tighten the screws fixing the casing.



**Fig. 35 Cable strap cutting operation for removing the lock protection**

For locks equipped with electromagnet - connect the lock and prepare it for operation. Observe the following points:

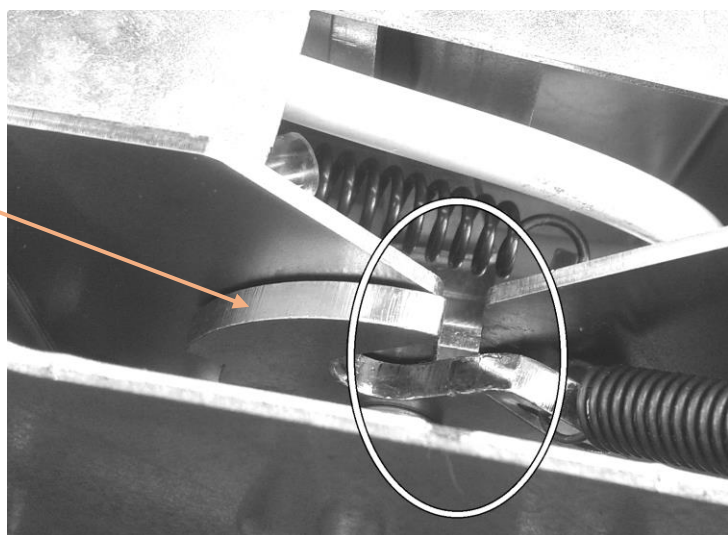
- 1) After connecting the electromagnet to power supply cables, lay them in such way that they do not collide with the moving parts of the lock - the full range of the mechanisms movement must be taken into consideration.
- 2) For electromagnets triggered by power decay - first, turn power supply on and only then close the armature; the closing method is presented on fig. 36 - the armature is shown as item "1".
- 3) For electromagnets triggered by electric impulse (current flow) - after completing point 1, close the armature as shown on fig. 36.
- 4) Close the vent leaf. Make sure that the lock follower (rounded element) is open as shown on fig. 37a - the follower is shown as item 2. When shutting the vent, a characteristic "latching" sound should be heard from the lock. If the shutting process has been completed correctly, the lock follower should be shut as shown on fig. 37b.



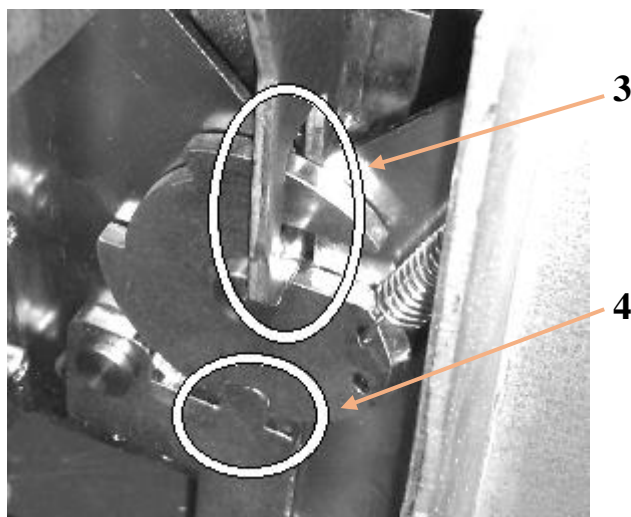
1. Electromagnet armature

**Fig. 36 Closing the lock armature**

a) Lock follower closed



b) Lock follower shut



c. Lock follower

3. Latch closed  
4. Lock lever in shut position

**Fig. 37 Lock before and after shutting**



### 8.4.3. Lock adjustment

Lock adjustment consists in determining the height on which it must be installed. The screws fixing the lock and also serving the purpose of adjustment are presented on fig. 34 - they are labelled as item "2". Adjustment may be performed within a range of about 5 mm. After correcting the height (if necessary), tighten the screws and protect the lock from unintended moving using a counter self-drilling screw - labelled as item "1" on figure 34.

Another optional lock adjustment is adjusting the electromagnet armature fixture. After closing the armature, it should contact the electromagnet at its full area. If a situation shown on fig. 38 occurs when the armature does not shut completely, adjust it so that the electromagnet surfaces and the armatures lie parallel towards each other after shutting.

If the lock does not operate correctly, the reason may be its wrong adjustment. The above adjustment actions must then be carried out.

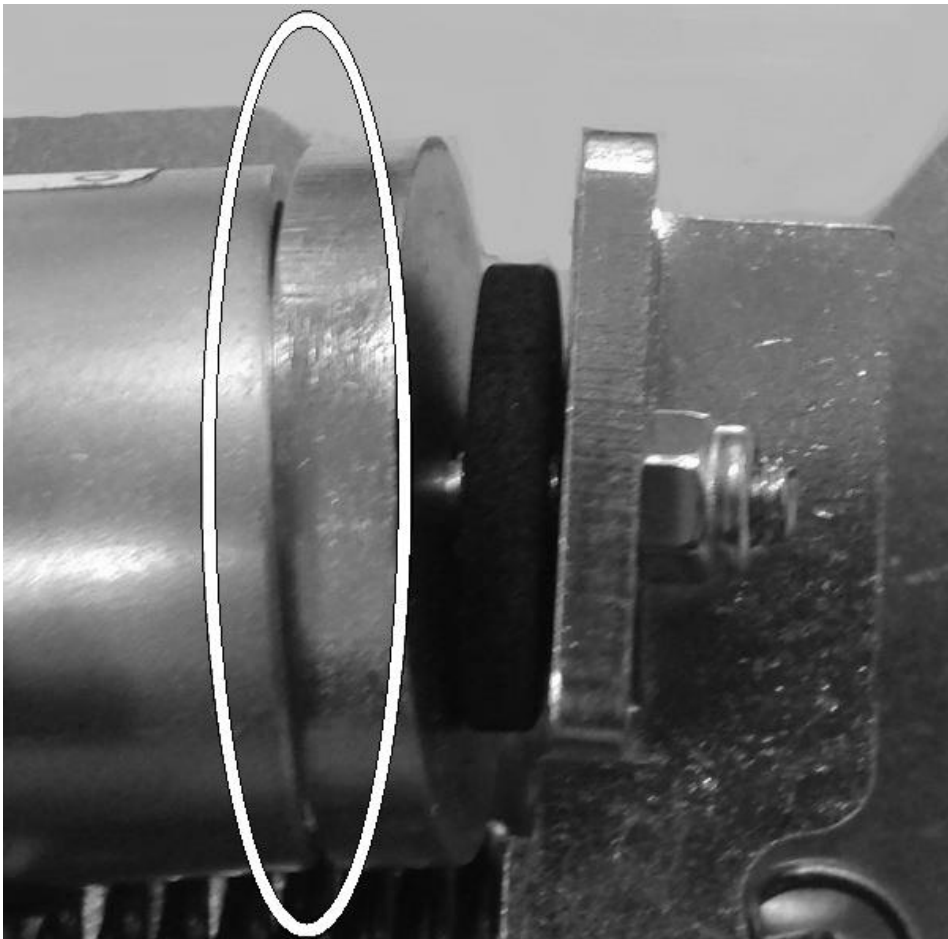
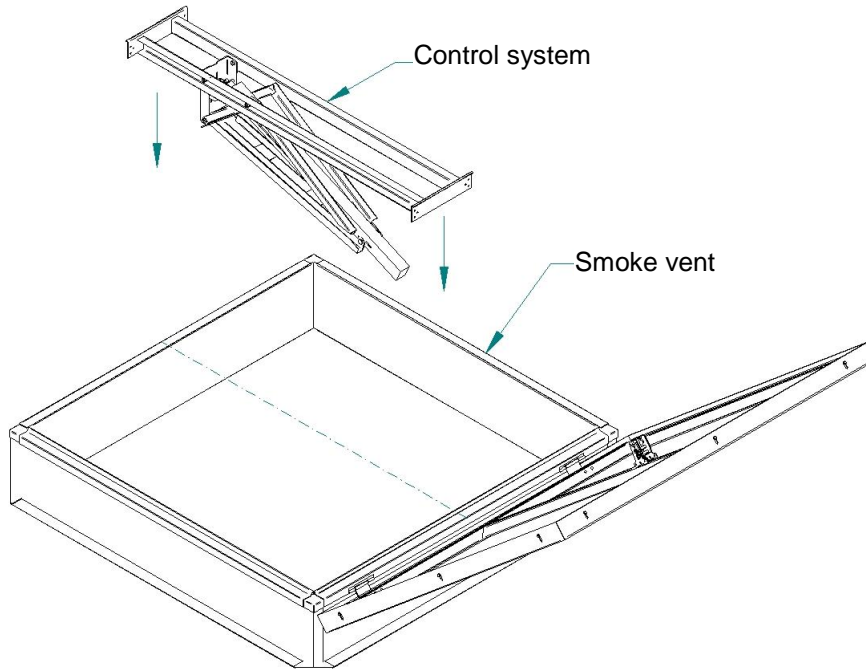


Fig. 38 Incorrectly adjusted electromagnet armature

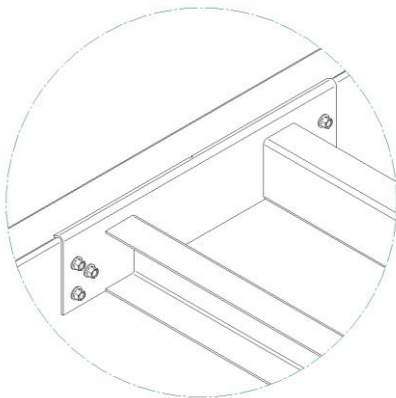
## 9. INSTALLATION OF CONTROL DELIVERED SEPARATELY

If the control system is delivered separately, perform the installation as shown below.

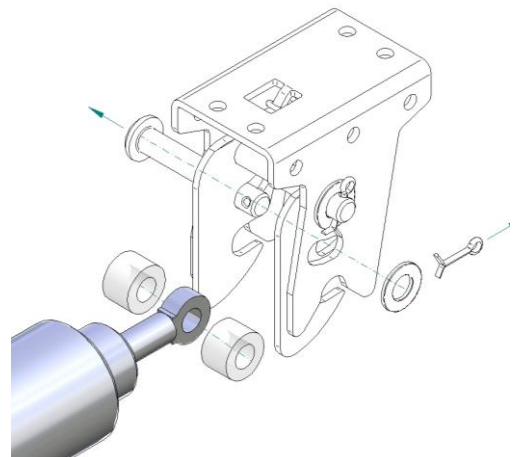
A. Place the control system in the axis of the smoke vent.



B. Fix the control system to the vent base using 12x steel screws dia. 6.3



C. Connect the actuator to the hook console fixed to the vent leaf. To do so, remove the pin and place the mandrel through the actuator eye bolt, and through two nylon sleeves



D. Then, depending on the control type, connect the assembly to the installation, as shown on point 9, and then perform adjustment as shown on point 8.

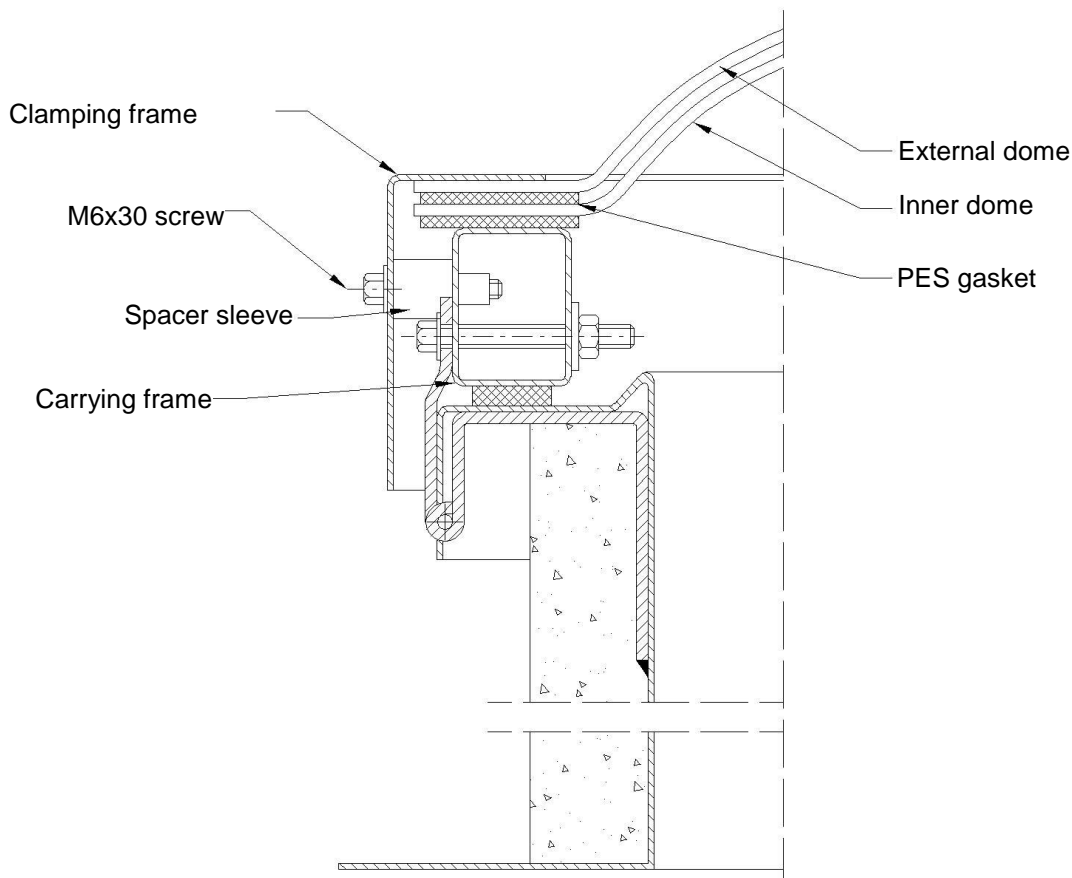
## 10. LEAF GLAZING

Dome-type glazing is delivered separately for transportation reasons. The domes must be installed to the vent leaf on site; after installing the vent, proceed as shown on the diagram:

1. remove the bracing frame (undo M6x30 screws, remove spacer sleeves);
2. check condition of PES gasket on the bearing frame (clean it from dust);
3. lay the multi-layered domes elements from the shortest to the tallest - separate the individual domes with the supplied gasket - glue the gasket to the previously laid gasket - at circumference (see figure below), maintaining a 1 cm space at the edges;
4. install the pressing frame;
5. insert the spacer sleeves;
6. screw in M6x30 screws, while pressing down on the frame.

Multi-chamber polycarbonate glazing is delivered pre-installed. To replace it if necessary, follow points 1, 2, 4, 5, 6 above.

If the clamping frame loosens, loosen M6x30 screws slightly, and then screw them in consecutively, while pressing down on the frame.



**Fig. 39 Installed dome diagram**

## 11. VENTS MAINTENANCE

The devices must be installed in observance of all the necessary SHE principles, particularly those related with working at height and using adequate personal protective equipment.

Periodical maintenance works and service inspections are required on the installed devices. These are performed by MERCOR S.A. authorized service. The service interval is 6 months. The following actions are required from the user between inspections.

1. Checking the condition of electrical connections, particularly checking for mechanical damage.
2. Checking the condition of pneumatic connections, particularly checking for mechanical damage.
3. Checking hook consoles (to see if they are completely shut and not blocked).
4. Check that the pressure frame holding the vent glazing is securely fixed; in case of loosening, proceed as shown on point 10.
5. For vents with mechanical control, check that the cord opening the lock is not tangled and moves without additional resistance. Check proper operation of the lock. In case of its fault, proceed with the adjustments described in point 8.4.3
6. Periodical cleaning of the surfaces of domes/polycarbonate panels:  
use sponge or soft fabric and lukewarm water with a mild cleaning detergent for general household use. The panels must not be scrubbed with brushes and sharp items. Do not use abrasive, strongly alkaline agents or solvents. In doubt, test the cleaning agent on a sample or small area.
7. Due to natural processes taking place in the polycarbonate panel chambers, water condensation may be observed. The most frequent symptom of this is occurrence of mist, or - in case of high humidity - visible drops. If diffusion-based air exchange is ensured between the air inside the chambers and the ambient air, humidity levels in both areas will equalize in time, and the above mentioned visual effects will disappear.

**Condensation does not affect the material's life or quality of the product.**

### **NOTE**

**It is prohibited to use salt for snow fighting works on roofs with mcr-PROLIGHT vents installed - it causes risk of discoloration and damage to the aluminium profiles, polycarbonate panels of acrylic domes. Any damages to the vents caused by failure to observe the above instructions are not subject to warranty or other claims.**

## 12. WARRANTY AND SERVICE TERMS

1. "MERCOR" S.A. grants a 12-month quality guarantee for equipment, starting from the date of purchase, unless the agreement provides otherwise.
2. If during the term of guarantee any physical defects of the equipment become evident, "MERCOR" S.A. shall remove them within 21 days of the written notification, subject to paragraph 6.
3. "MERCOR" S.A. reserves the right to lengthen the repair time in the event of complicated repairs or those that require non-standard sub-assemblies [elements] or spare parts to be purchased.
4. Liability under the Guarantee covers only defects resulting from causes inherent in the equipment sold.
5. In the event of defects resulting from inappropriate operation of the equipment or due to other reasons stated in par. 6, the Buyer/Guarantee Holder shall bear the costs of their removal.
6. The guarantee does not cover:
  - damages and breakdowns of the equipment due to inappropriate operation, user's interference, lack of maintenance or periodic servicing;
  - equipment damages resulting from causes other than those that "MERCOR" S.A. is responsible for, in particular: acts of God such as torrential rainfall, flood, hurricane, flooding, stroke of thunder, overvoltage in the mains, explosion, hail, fall of aircraft, fire, avalanche, landslide and secondary damages due to the above-listed causes. Torrential rain is defined as rain with an efficiency index of at least 4 (or 5 in Chomicz scale or torrential rain grade IV (A4)). Should it be impossible to determine the index mentioned in the previous sentence, the actual condition and the degree of damage at the place of its origin proving that it is the consequence of torrential rain will be considered. Hurricane is defined as wind blowing at the speed of at least 17.5 m/s (damages are deemed to have been caused by hurricane if the effects of hurricane have been found in the immediate neighborhood);
  - damages due to failure to immediately report the defect discovered;
  - worsened quality of coating due to the natural ageing process (fading, oxidation);
  - defects due to using abrasive or aggressive cleaning products;
  - parts liable to natural wear and tear during operation (e.g. seals) unless a manufacturing fault has occurred;
  - damages due to aggressive external factors, especially chemical and biological ones.
7. Each defect under guarantee should be reported to a local representative of "MERCOR" S.A. immediately, i.e. within 7 days of its discovery.
8. Applications can be made by phone at +48/ 58 341 42 45, by email to [claim@mercor.com.pl](mailto:claim@mercor.com.pl) or by sending a letter to: "MERCOR" S.A. 80-408 Gdańsk, Grzegorza z Sanoka 2.
9. The Buyer/Guarantee Holder is responsible for proper operation and maintenance of the equipment and for regular (min. twice a year) servicing.
10. The Guarantee shall expire forthwith if:
  - The Buyer/Guarantee Holder makes design modifications on his own without consulting "MERCOR" S.A.,
  - Maintenance or periodic servicing are not done in due time or are performed by unauthorized persons or a service center not authorized by "MERCOR" S.A., or the equipment is operated in the wrong way,
  - Any interference of unauthorized persons – except activities connected with normal operation of the equipment.
11. Moreover, in the cases specified in par. 10, "MERCOR" S.A. has no warranty obligations.

### SERVICING INSPECTIONS:

1. Devices should be subject to periodical servicing inspections every 6 months during the entire period of their operation.
2. The servicing inspections should be performed by companies having adequate authorisation of MERCOR SA.
3. On issues related to service please contact the Service Department, phone 058/ 341 42 45 ext. 127 or fax 058/ 341 39 85, Monday to Friday from 8 to 16.

As regards matters not regulated by these "Warranty terms and conditions", relevant regulations in the Civil Code, and in particular Art. 577-581 shall apply.



## 13. CERTIFICATES OF CONFORMITY

	<p><b>BUILDING RESEARCH INSTITUTE CERTIFICATION DEPARTMENT</b></p> <p>ul. FILTROWA 1, 00-611 WARSZAWA ph.: +48 (22) 57 96 167, +48 (22) 57 96 168, fax: +48 (22) 57 96 295 e-mail: certyfikacja@itb.pl, www.itb.pl</p>	
<p><b>EC CERTIFICATE OF CONFORMITY</b></p> <p><b>1488-CPD-0151/W</b></p>		
<p>In compliance with Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products (the Construction Products Directive or CPD), as later amended, it has been stated that the construction product</p>		
<p><b>NATURAL SMOKE AND HEAT EXHAUST VENTILATORS mcr-PROLIGHT</b></p>		
<p>performance according to Annex No: Z-1488-CPD-0151/W (pages 1+14) which is an integral part this certificate</p>		
<p>placed on the market by</p> <p><b>MERCOR SA</b> <b>ul. Grzegorza z Sanoka 2</b> <b>80-408 Gdańsk</b></p>		
<p>and produced in the factory</p> <p><b>MERCOR SA Zakład Produkcyjny</b> <b>Cieplewo, ul. Kwarцова 3a</b> <b>83-031 Łęgowo</b></p>		
<p>is submitted by the manufacturer to a factory production control and to the further testing of samples taken at the factory in accordance with a prescribed test plan and that the notified body No. 1488 - <i>Building Research Institute</i> - has performed the initial type-testing for the relevant characteristics of the product, the initial inspection of the factory and of the factory production control and performs the continuous surveillance, assessment and approval of the factory production control.</p>		
<p>This certificate attests that all provisions concerning the attestation of conformity and the performances described in Annex ZA of the standard</p>		
<p><b>EN 12101-2:2003</b></p>		
<p>were applied and that the product fulfils all the prescribed requirements.</p>		
<p>This certificate was first issued on 01.07.2010 (updated on 15.12.2010, 21.01.2011, 27.07.2011, 01.09.2011, 02.07.2012) and remains valid as long as the conditions laid down in the harmonised technical specification in reference or the manufacturing conditions in the factory or the FPC itself are not modified significantly.</p>		
<p>DEPUTY HEAD of the Certification Department</p>  <p>Piotr Maciejak</p>		<p>DIRECTOR of the Building Research Institute</p>  <p>Jan Bobrowicz</p>
<p>Warsaw, 02.07.2012</p>		



  
Reg. No. 041/P-007

NOTIFIED BODY No. 1396  
Osloboditeľov 282, 059 35 Batizovce, Slovakia  
tel. +421 52 7752298 fax. +421 52 7881412 http://www.fires.sk

  
The Experts on Fire Safety

## Certificate of constancy of performance

**1396 - CPR – 0040**

In compliance with Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product

### NATURAL SMOKE AND HEAT EXHAUST VENTILATOR, TYPE MCR PROLIGHT

used either as a dual purpose ventilator or only as a smoke and heat exhaust ventilator without daily ventilation, with properties and used on conditions as described in Initial type-testing report No. C1396/10/0011/4203/SC issued by FIRES, s.r.o., Notified Body 1396 on 22. 06. 2010 amended by an actual report of continuous surveillance,

produced by

**MERCOR SA**

**ul. Grzegorza z Sanoka 2, 80-408 Gdańsk, Poland**

and produced in the manufacturing plant

**MERCOR SA**

**Zakład Produkcyjny, ul. Kwarцова 3A, Ciepłowo,  
83 031 Łęgowo, Poland**

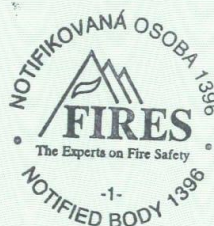
This certificate attests that all provisions concerning the assessment and verification of constancy of performance and the performances described in Annex ZA of the standard

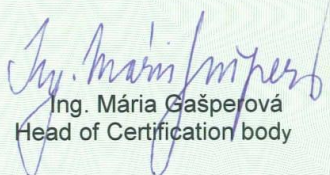
**EN 12101 - 2: 2003**

under system 1 are applied and that the product fulfils all the prescribed requirements set out above.

This certificate was first issued on 22<sup>th</sup> June 2010 and will remain valid as long as the test methods and/or factory production control requirements included in the harmonized standard, used to assess the performance of the declared characteristics, do not change, and the product, and the manufacturing conditions in the plant are not modified significantly.

Batizovce, 20. 05. 2014



  
Ing. Mária Gašperová  
Head of Certification body

064202

FIRES 136a/C-12/12/2013-E