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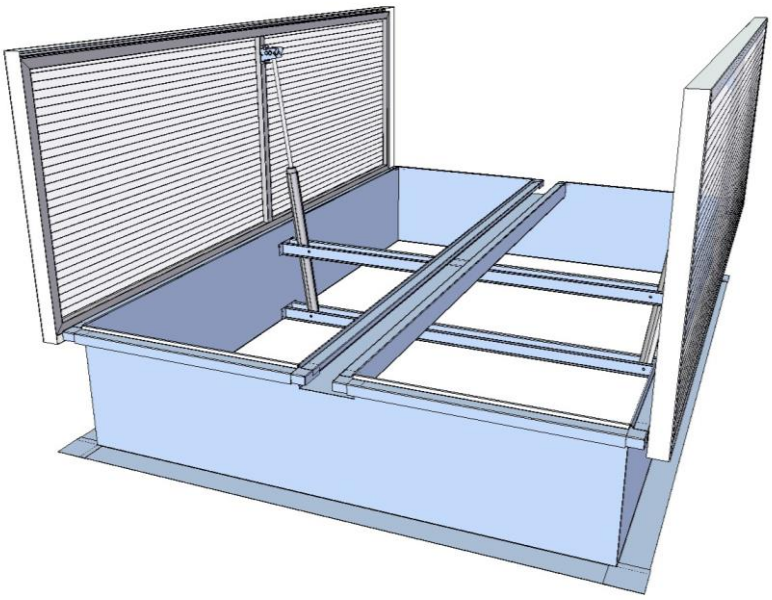
OPERATION AND MAINTENANCE MANUAL

mcr-PROLIGHT spot smoke vents type DVP, DVPS



☐ type DVP

☐ type DVPS

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TABLE OF CONTENTS

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_2 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 smoke vents and smoke & ventilation vents type DVP and DVPS. 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 appropriate personal protective equipment - 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 requirement, MERCOR offers double-leaf smoke vents and fixed and opening skylights, on straight bases, in a broad range of clear dimensions and base heights.
All steel elements of the vents 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,
- ALU laminate layers (aluminum - thermal insulation - aluminium.

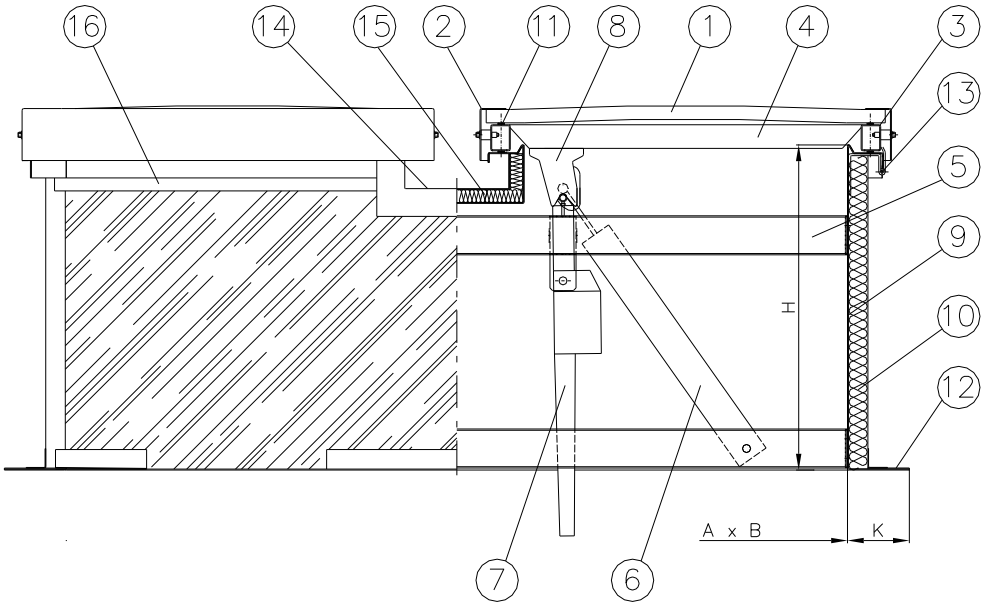
mcr-PROLIGHT type DVP, DVPS vents are offered with the following control systems:

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

The triggering of smoke 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.

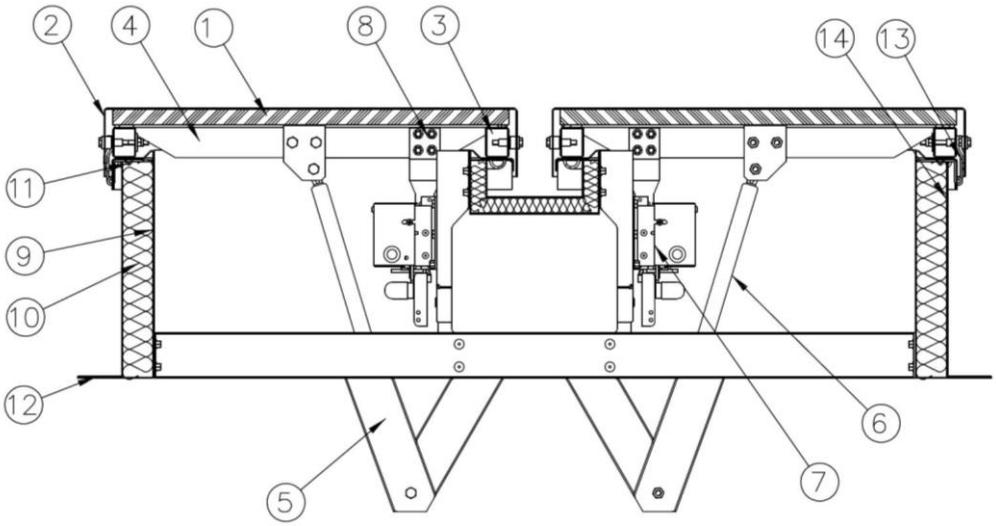
mcr-PROLIGHT type DVP, DVPS smoke vents comprise of a fixed part - the base, and a moving part - the leaf with glazing.

a/ pneumatic/electrical control



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

b/ mechanical control



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

Fig. 1 mcr-PROLIGHT type DVP vent - control

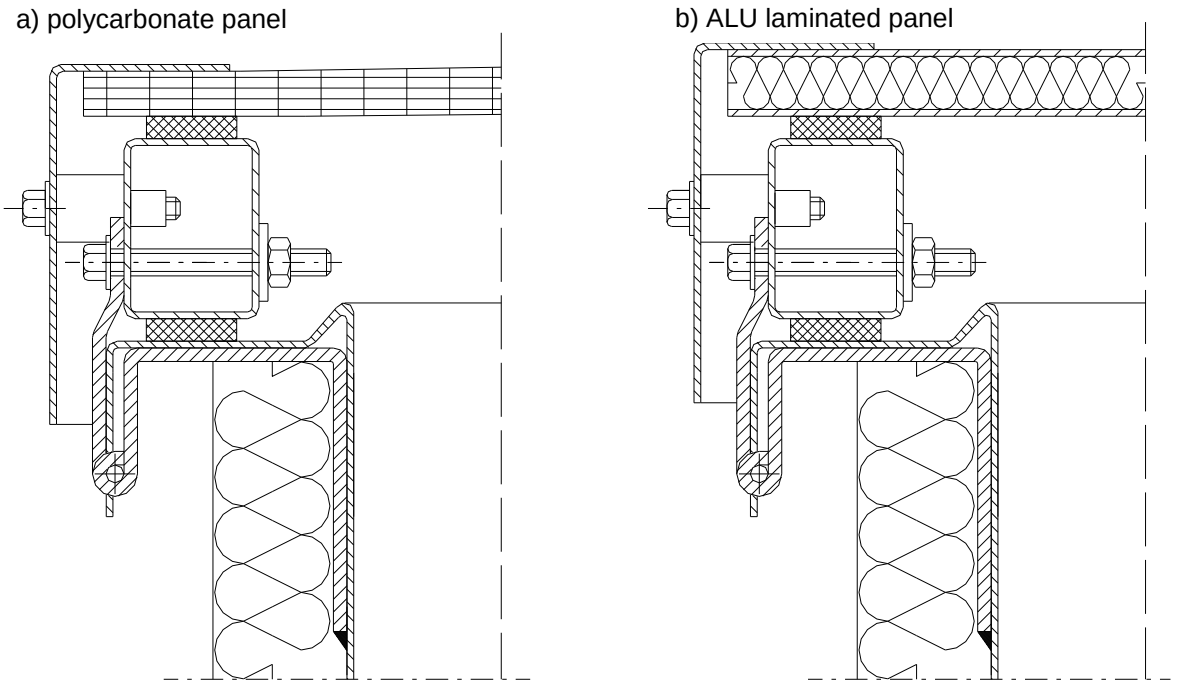


Fig. 2 Typical glazing of mcr-PROLIGHT type DVP smoke vents

4. TRANSPORT AND DELIVERY

mcr-PROLIGHT type DVP, DVPS vents are delivered pre-assembled, but in specific cases (additional external processing, low base heights, etc.) they may be delivered in the form of assemblies. The following are always delivered separately: deflectors, dome type leaf glazing and electrical actuators for ventilation function. 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.

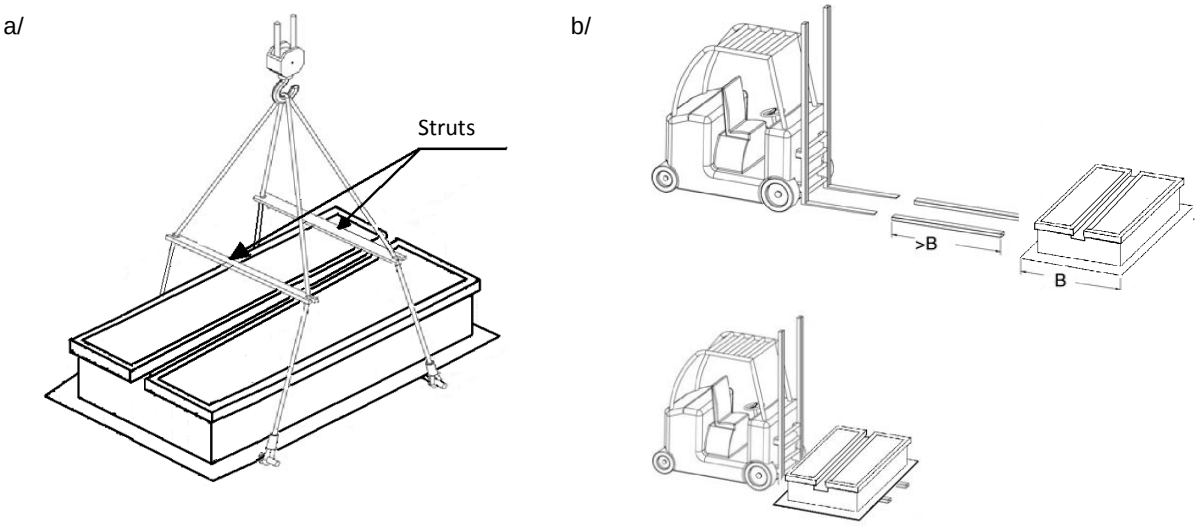


Fig. 3 Handling using crane (A) and forklift (B)

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 vent 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

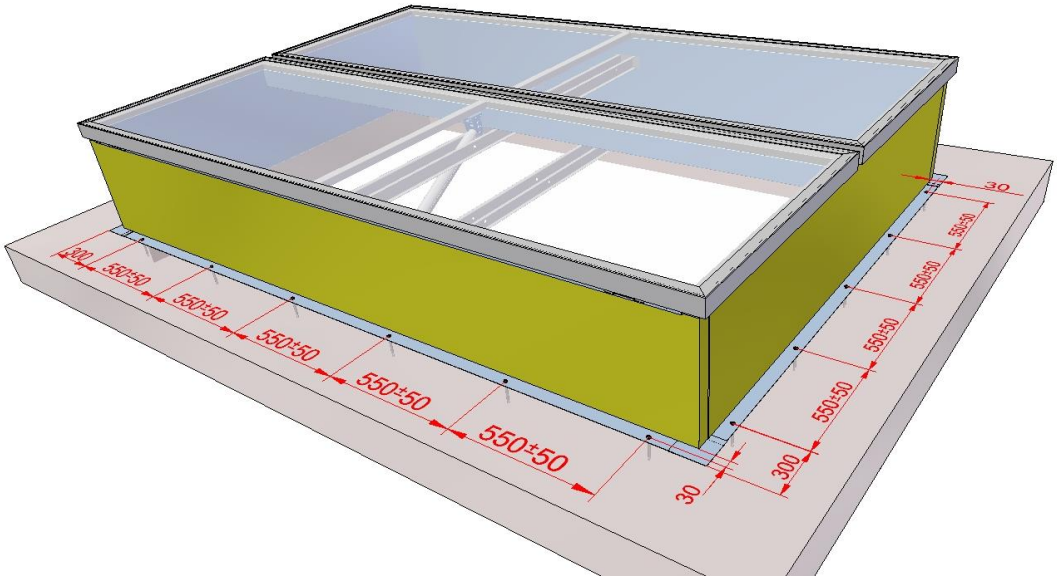


Fig. 4 Method of mcr-PROLIGHT DVP positioning on the roof - fixtures spacing

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.

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

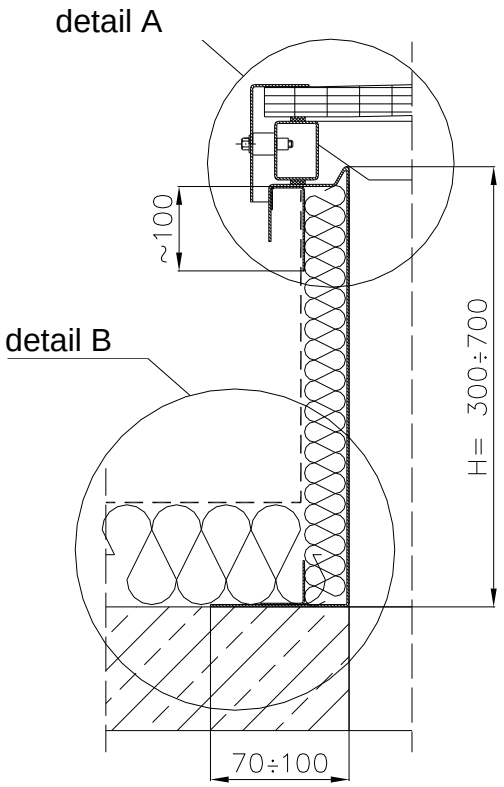
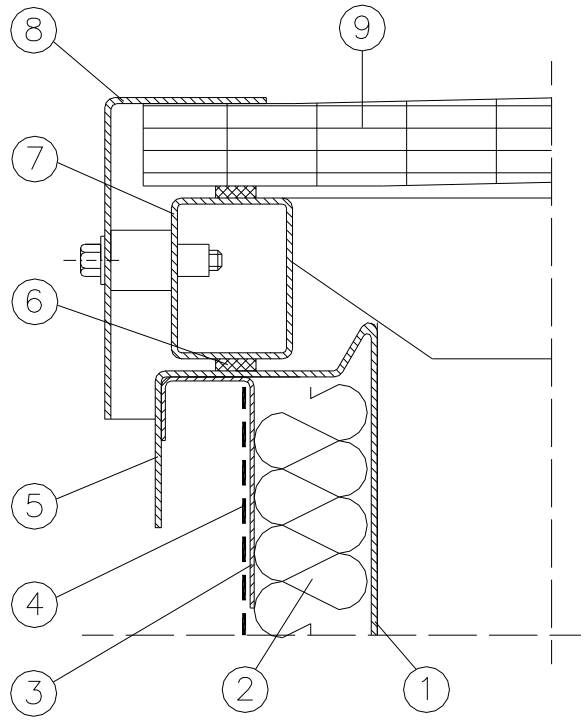


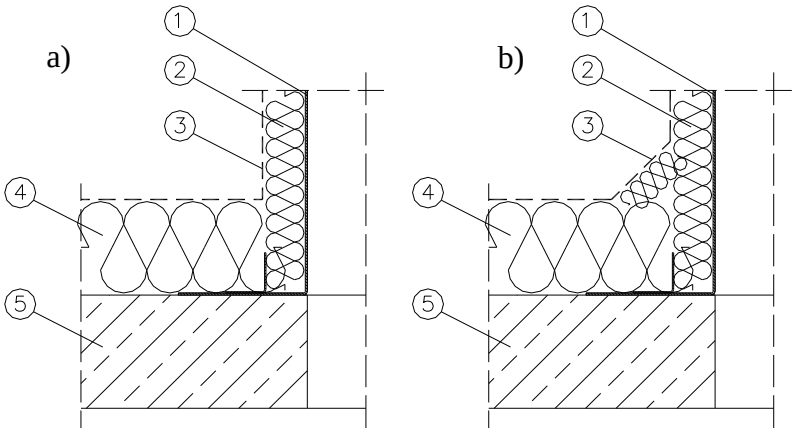
Fig. 5 Placement of steel base on roof (DETAIL B) and method of sealing with roof membrane or roofing paper (DETAIL A)



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

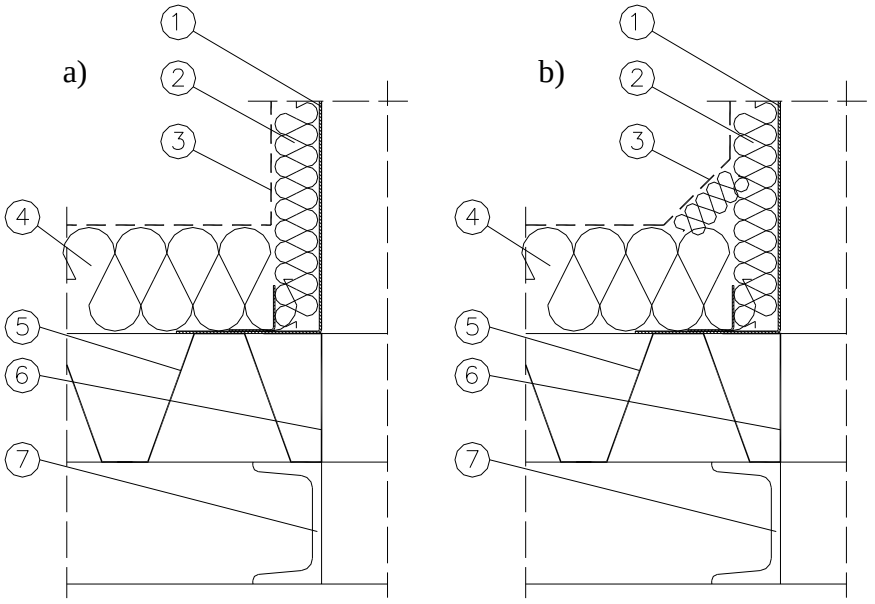
Fig. 6 Method of sealing with roof membrane or roofing paper (detail A)

Details B



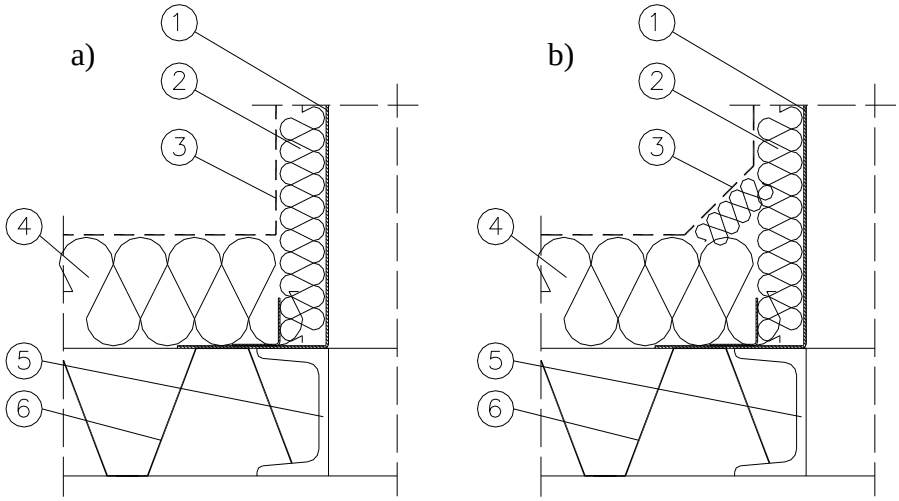
1. vent steel base
2. base thermal insulation
3. processing with membrane or roofing paper
4. roof thermal insulation
5. reinforced concrete panel

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



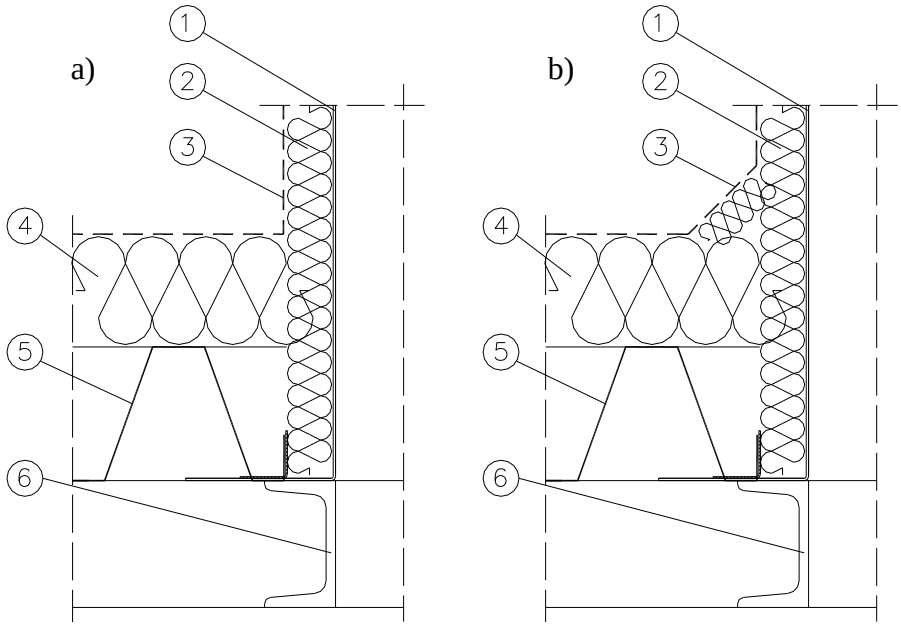
1. vent steel base
2. base thermal insulation
3. processing with membrane or roofing paper
4. roof thermal insulation
5. roofing sheet
6. additional roof flashing
7. steel bearing structure

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



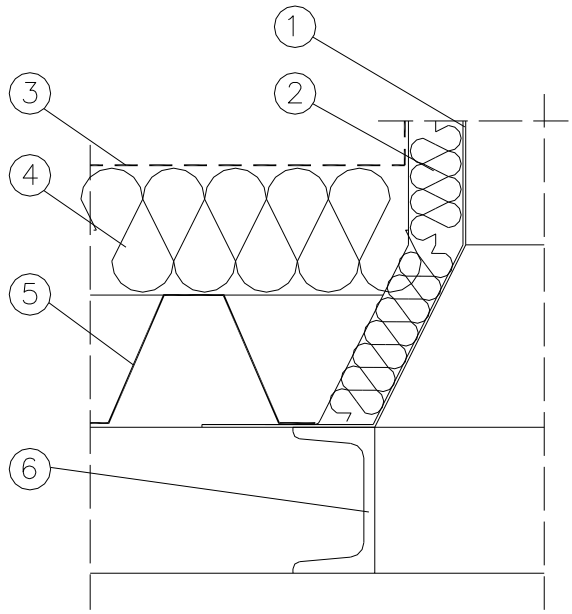
1. vent steel base
2. base thermal insulation
3. processing with membrane or roofing paper
4. roof thermal insulation
5. steel bearing structure
6. roofing sheet

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



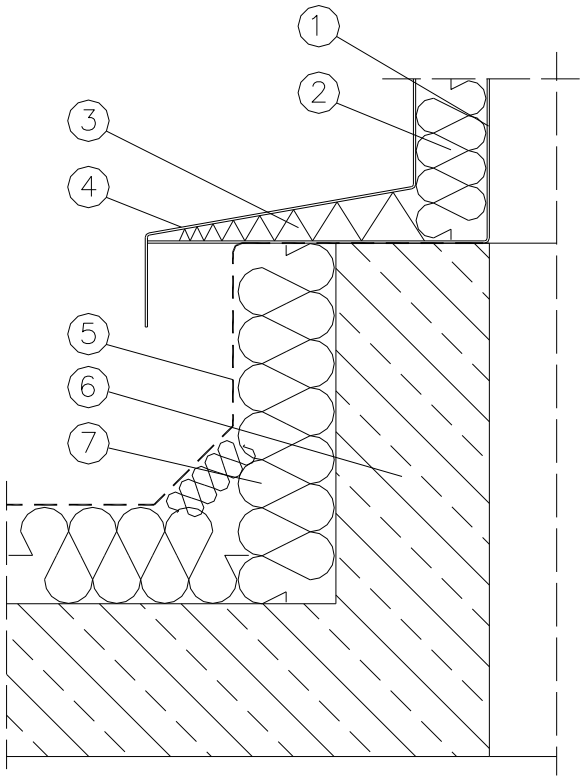
1. vent steel base
2. base thermal insulation
3. processing with membrane or roofing paper
4. roof thermal insulation
5. roofing sheet
6. steel bearing structure

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



1. vent slanted steel base
2. base thermal insulation
3. processing with membrane or roofing paper
4. roof thermal insulation
5. roofing sheet
6. steel bearing structure

Fig. 11 Slanted steel base on steel structure



1. overlay type steel vent base
2. base thermal insulation
3. overlay thermal insulation
4. base overlay
5. processing with membrane or roofing paper
6. reinforced concrete plinth
7. roof thermal insulation

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

For installation of mcr-PROLIGHT DVP, DVPS vents on slanted roofs, the base must be positioned in such way that the vent hinges are situated parallel to the roof slope direction.

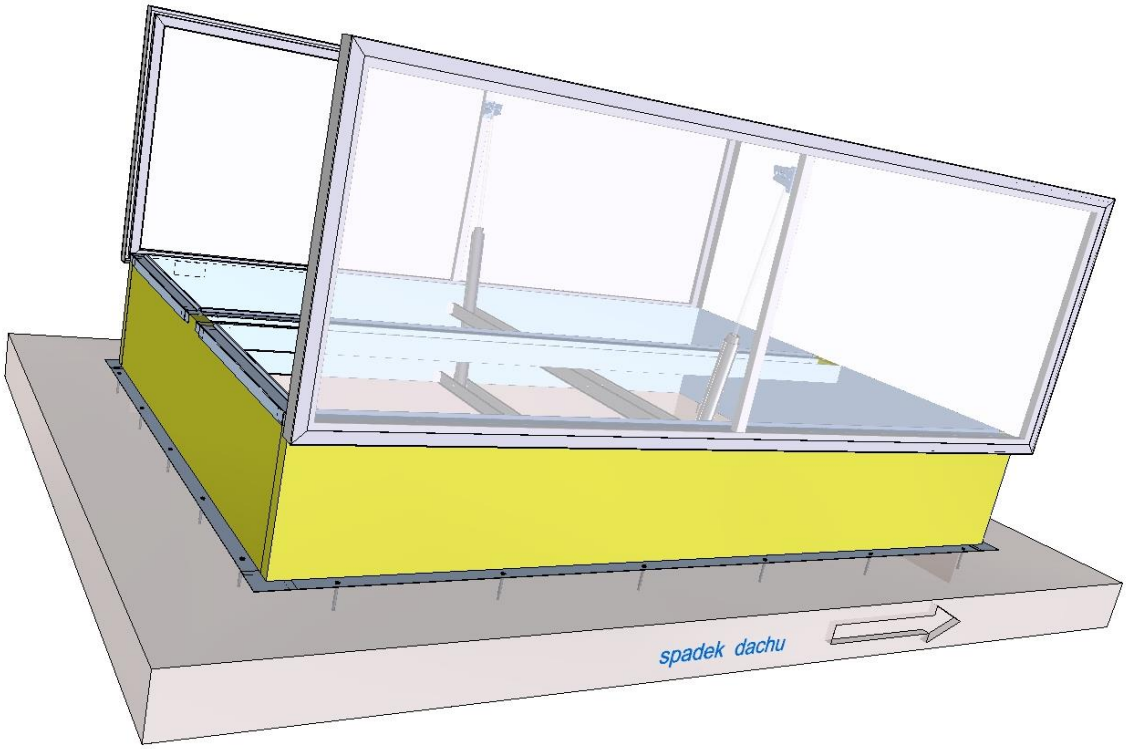


Fig. 13 Vent installation on slanted roofs

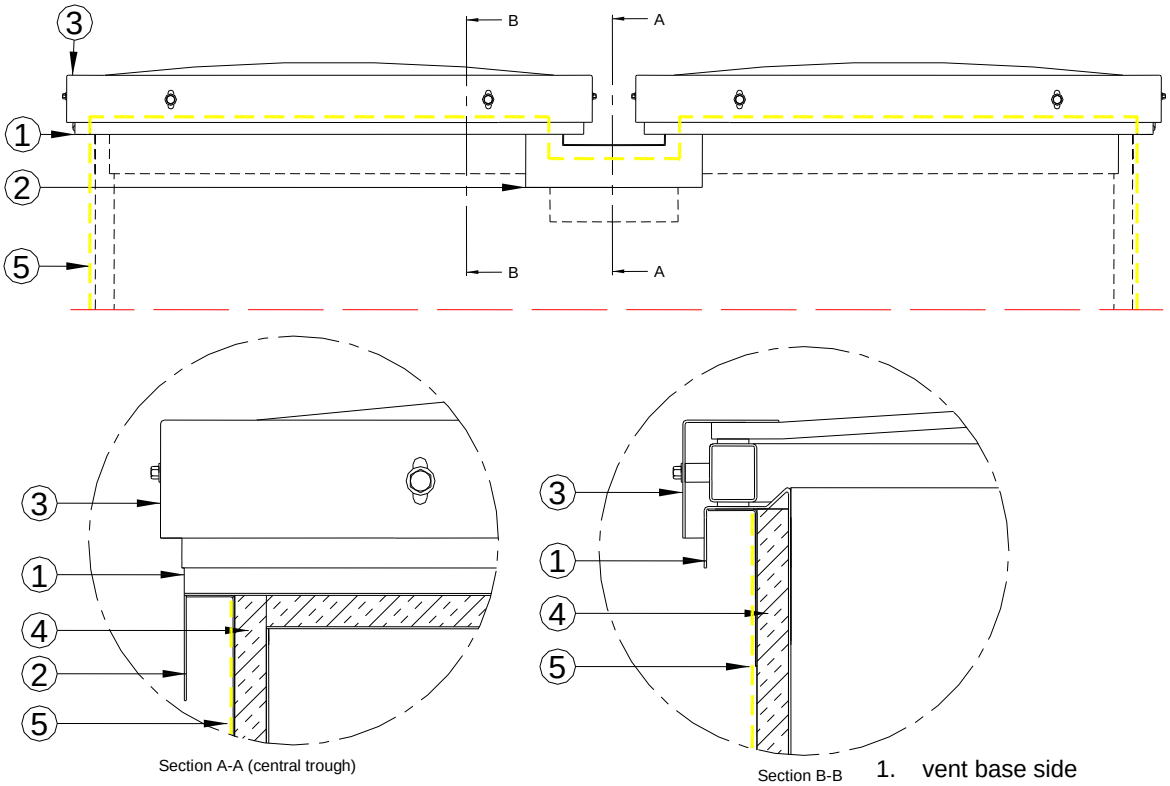


Fig. 14 Diagram of water insulation installation on mcr-PROLIGHT vent

1. vent base side
2. trough cover - part of base
3. vent leaf
4. thermal insulation
5. water insulation performed on the object

6. DEFLECTORS AND 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.

Deflectors are delivered on site in the form of pre-bent elements. 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 aluminum/steel rivets must be used for installing the deflectors, 2 pcs per each installation holder.

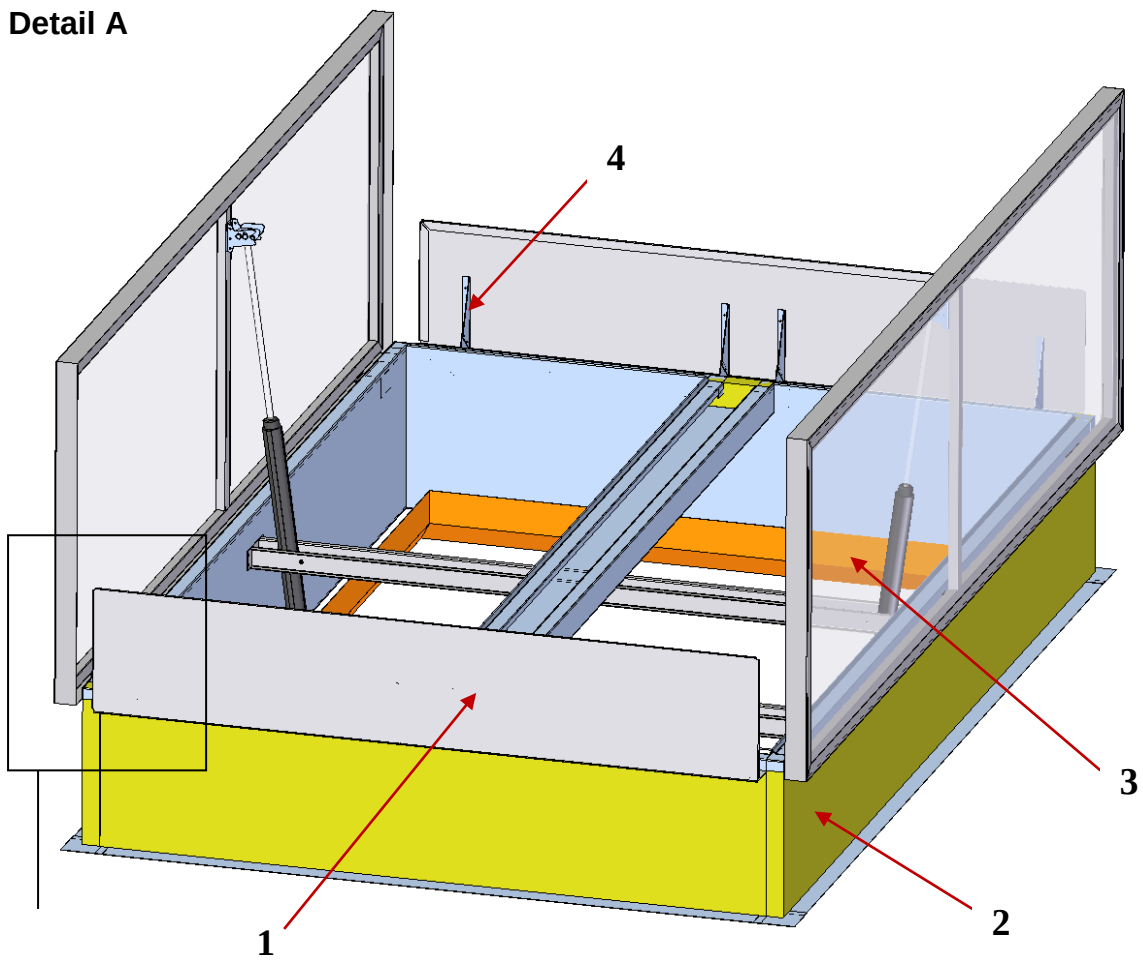
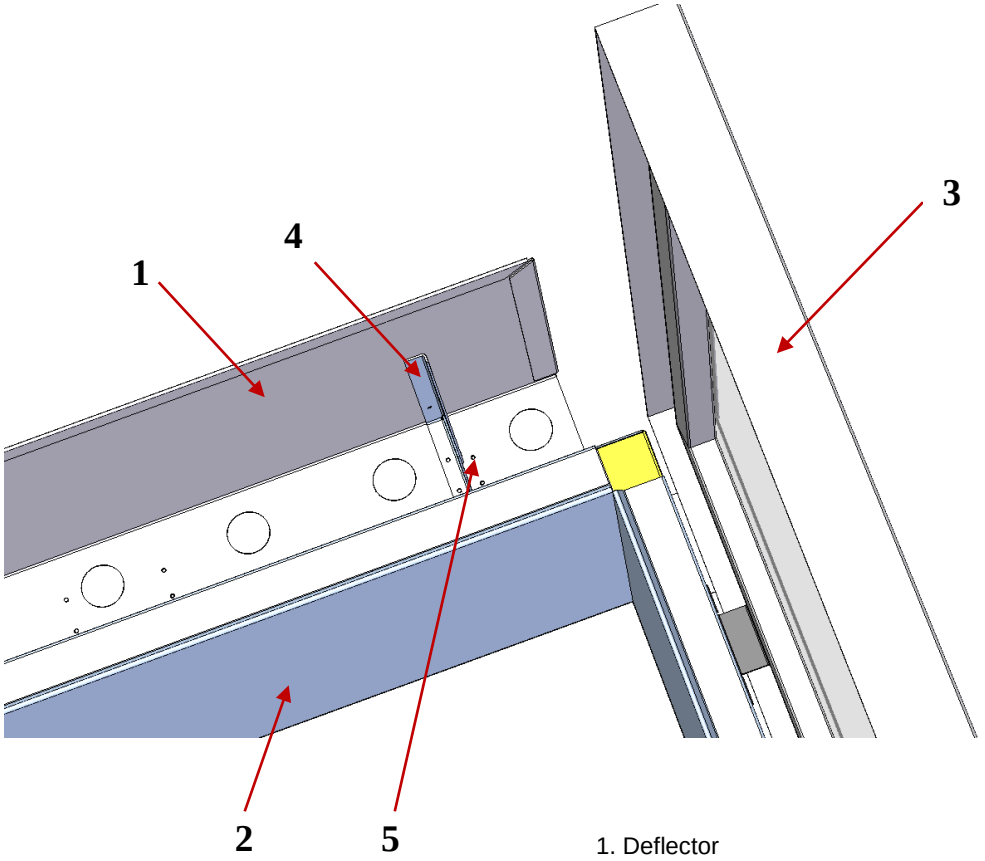


Fig. 15 mcr-PROLIGHT type DVP vent with deflectors fitted

1. Deflector
2. Vent base filled with mineral wool
3. Vent leaf
4. Bracing rib (in selected quantities)



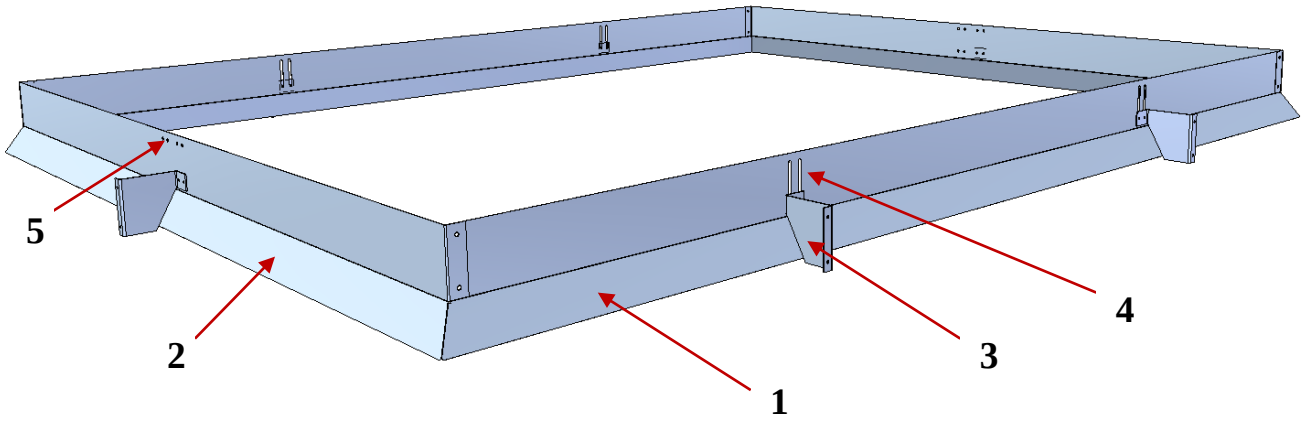
1. Deflector
2. Vent base filled with mineral wool
3. Vent leaf
4. Bracing rib (in selected quantities)
5. Installation holder - deflectors riveting area

Fig. 16 Deflector fixing to vent base - view from the inside of vent - detail A

6.2. Inlet deflector

Inlet deflector, in combination with the other deflectors, is used for improving the active aerodynamic efficiency of DVP 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 Ø6.5 mm holes)
- lower the deflector to operating position - according to the prepared holes
- tighten the fixing screws (use only nuts with protection)



1. Deflector (side A with bean holes)
2. Deflector (side B with Ø6.5 mm holes)
3. Installation holder
4. Bean holes
5. Ø6.5mm holes

Fig. 17 Inlet deflector (installation holders installed in transporting position)

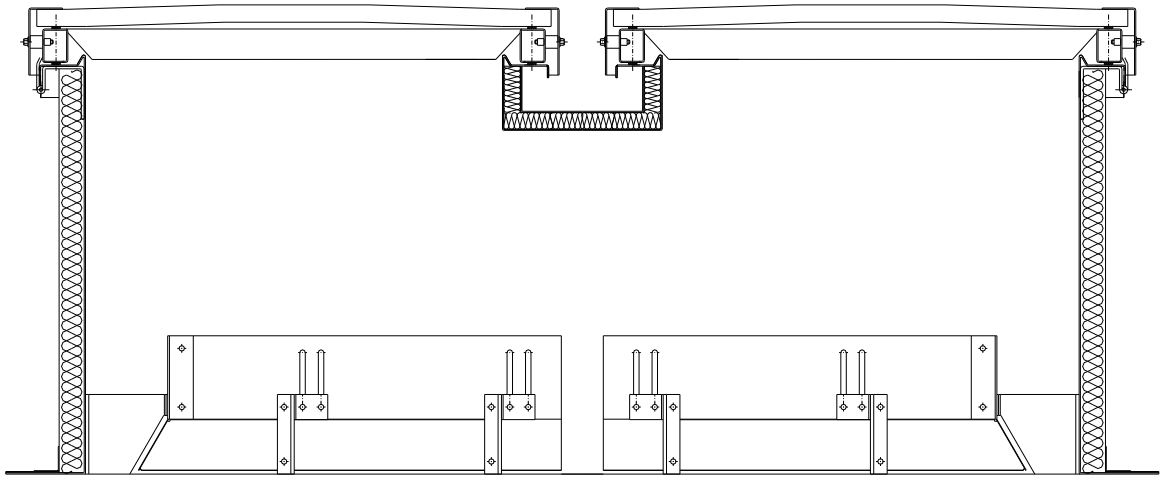


Fig. 18 Inlet deflector in transporting position (hidden in the vent)

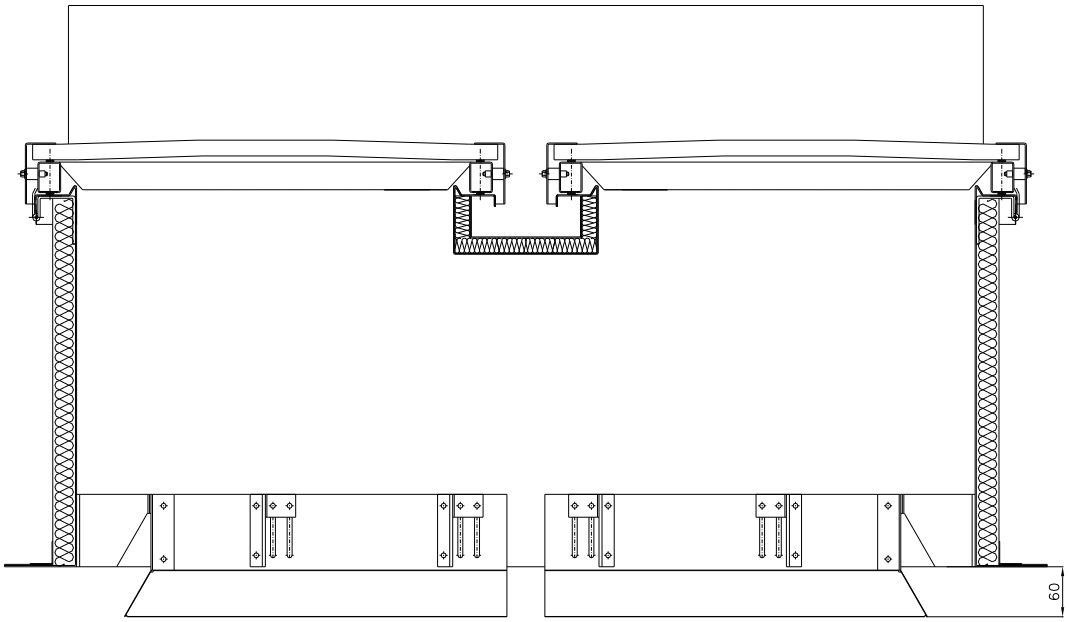


Fig. 19 Inlet deflector in operating position

7. VENT LEAF ADJUSTMENT

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

The vent leaf is joined with the actuator through a hook console, or - for small vents - directly. 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.

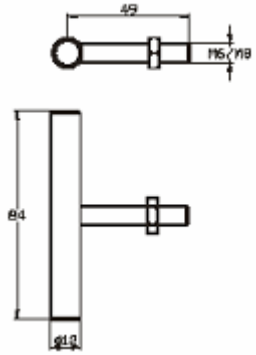


Fig. 20 'T' bolt

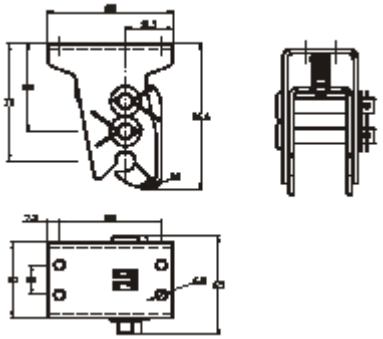


Fig. 21. Hook console

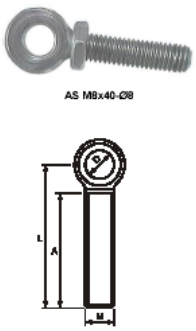


Fig. 22. Eye bolt

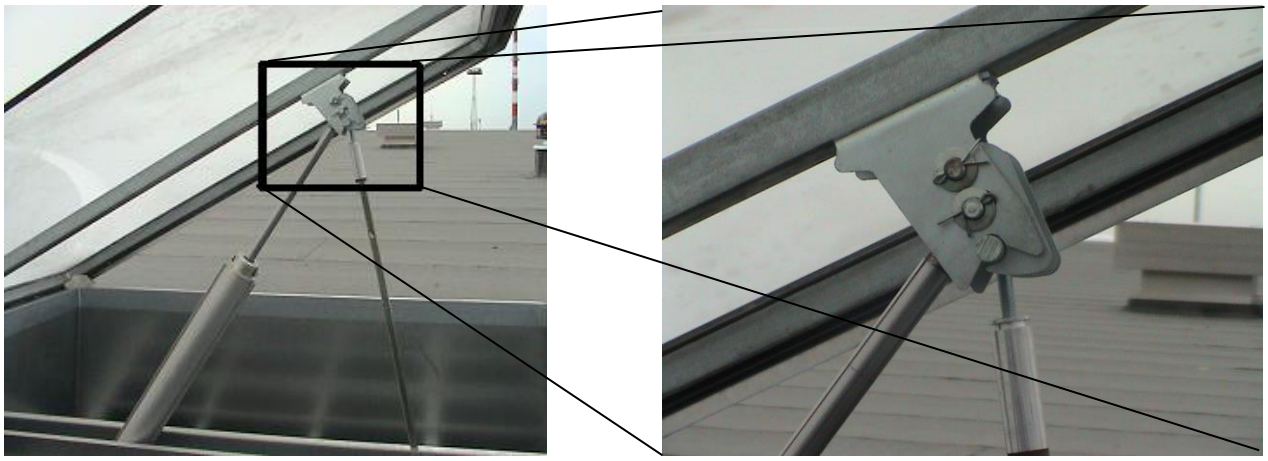


Fig. 23. Actuator - hook console joint

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 type DVP and DVPS flaps feature pneumatic actuators with thermal triggers, electrical actuators or gas springs, 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 11).

If the flap must be shut immediately, proceed with the following before the service technicians arrive: disconnect the immobilized actuator from the leaf (e.g. disconnect the eye bolt from the hook console, or undo the eye bolt from the actuator, or disconnect the actuator from the cross-bar/console), then shut the leaf and secure 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.

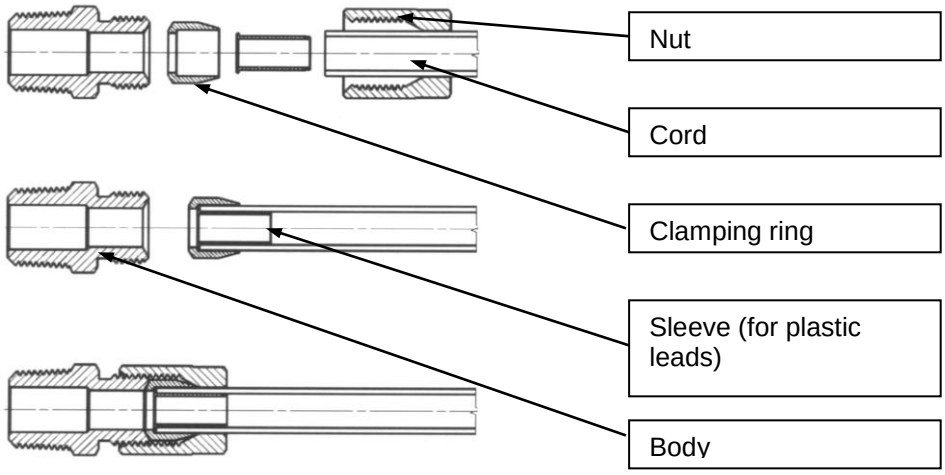


Fig. 24 Method of installation of flexible hoses of pneumatic system

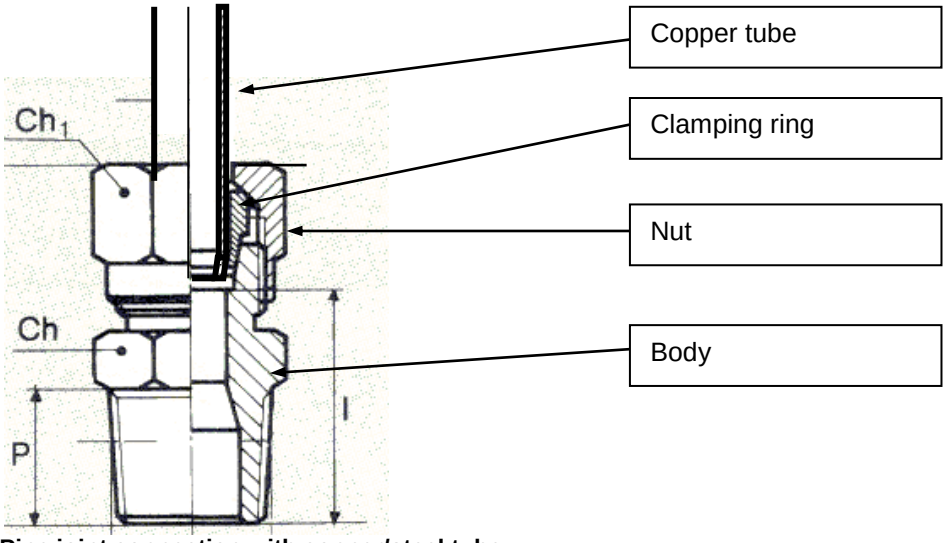


Fig. 25. Pipe joint connection with copper/steel tube

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_2 cartridge** by hand **(3)**.

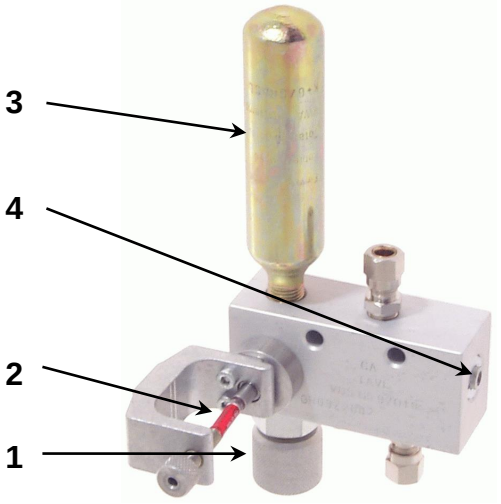


Fig. 26. Thermal trigger

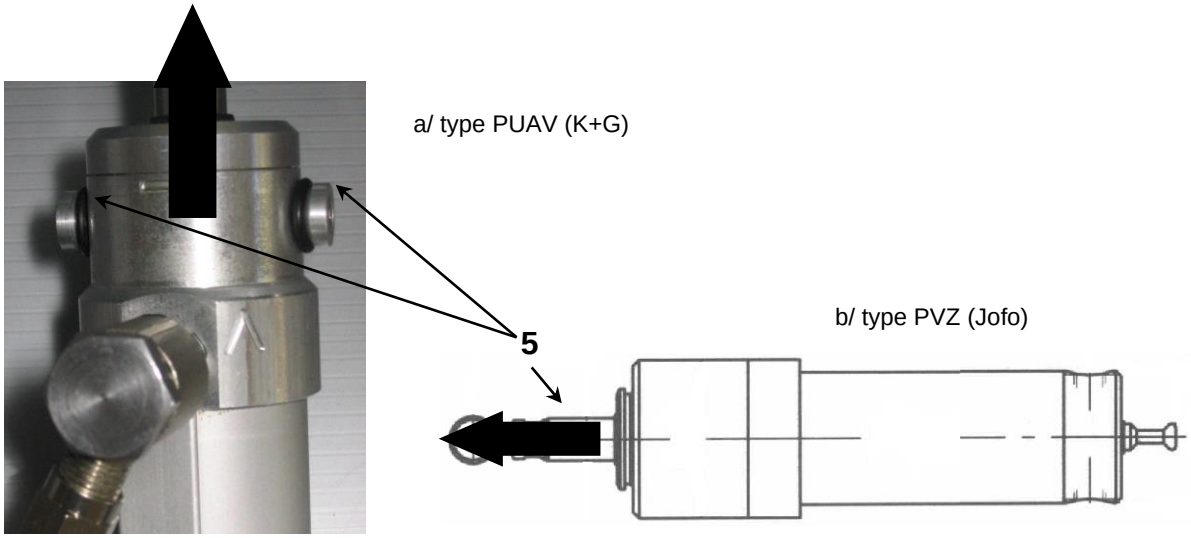


Fig. 27 Pneumatic actuator

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_2 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. 23).
3. Lower the vent leaf.
4. Check the leaf closure state.
5. Repeat actions 2-4 for the other leaf.
6. Insert a new CO_2 cartridge in the thermal trigger or alarm box.
7. Replace the thermal fuse (alcohol vial (2)) if required.

8.2. Electric smoke exhausting 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 +
blue cable – } spindle engages

brown cable –
blue cable + } spindle disengages

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.

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 is usually not factory installed. It is to be fixed in the upper cross-bar to the existing holes, using ST12-1/8 screws (For Exxx-230 actuator) or 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. 28. Ventilation control actuator (type Exxx-230)

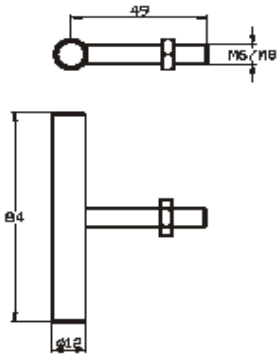


Fig.29. 'T' bolt

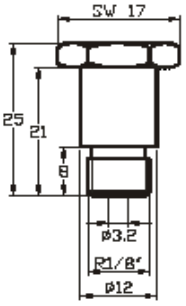


Fig. 30. ST12-1/8 screw

Connection diagram for 230 V AC 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).

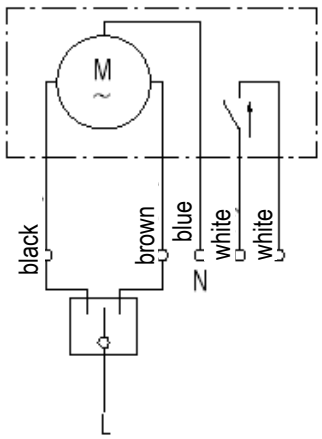


Fig. 28 Actuator type Exx-230

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).

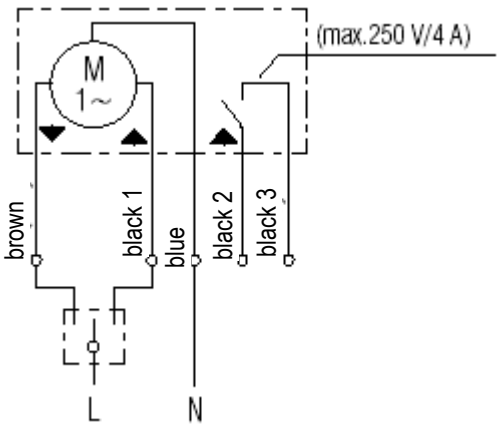


Fig. 29. Actuator type JMB-500-300-LA

8.4. Mechanical control

The mechanical control system features hydraulic pneumatic actuators (gas springs) and locks. 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. 30 presents the standard lock variant (A) and the variant with electromagnet (b), accordingly. 2 locks of the same type are used in double-leaf vents.

a) Standard lock b) Lock with electromagnet

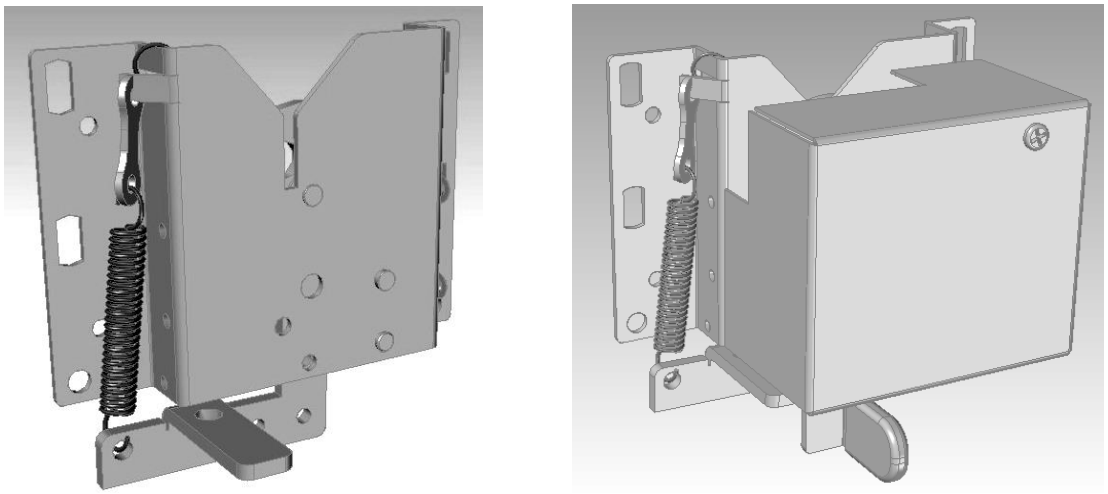


Fig. 30. Lock types for mechanical control

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

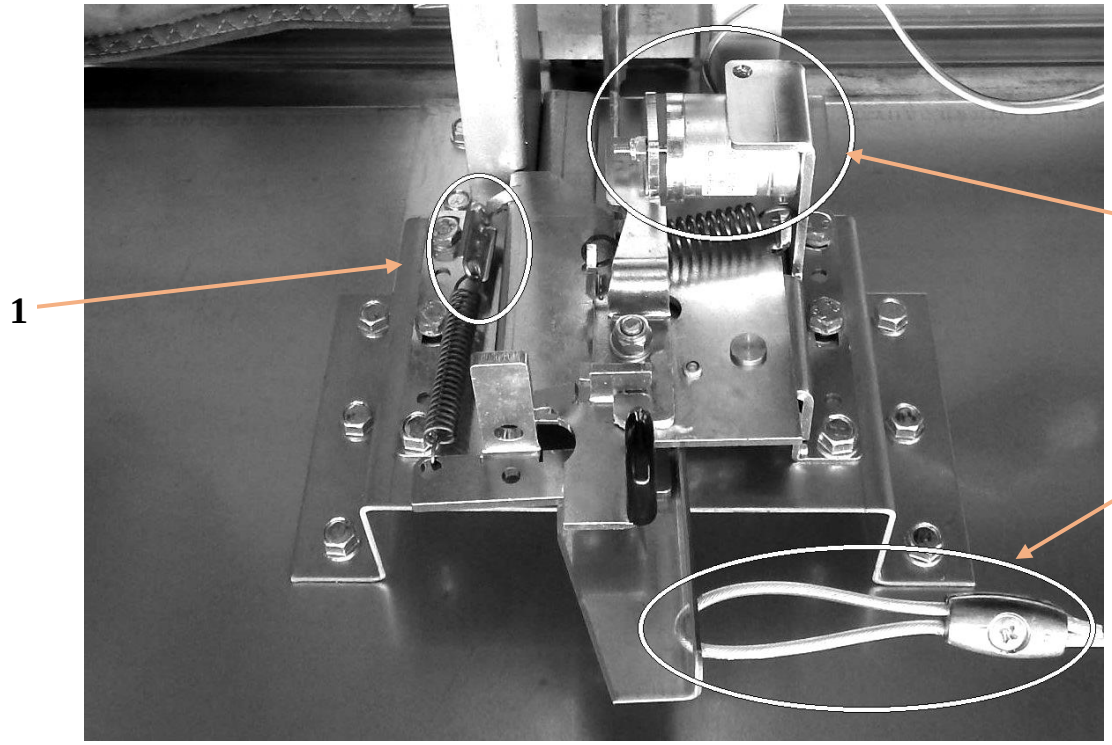
Electromagnet rating can be read from the identification label.

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. 31.

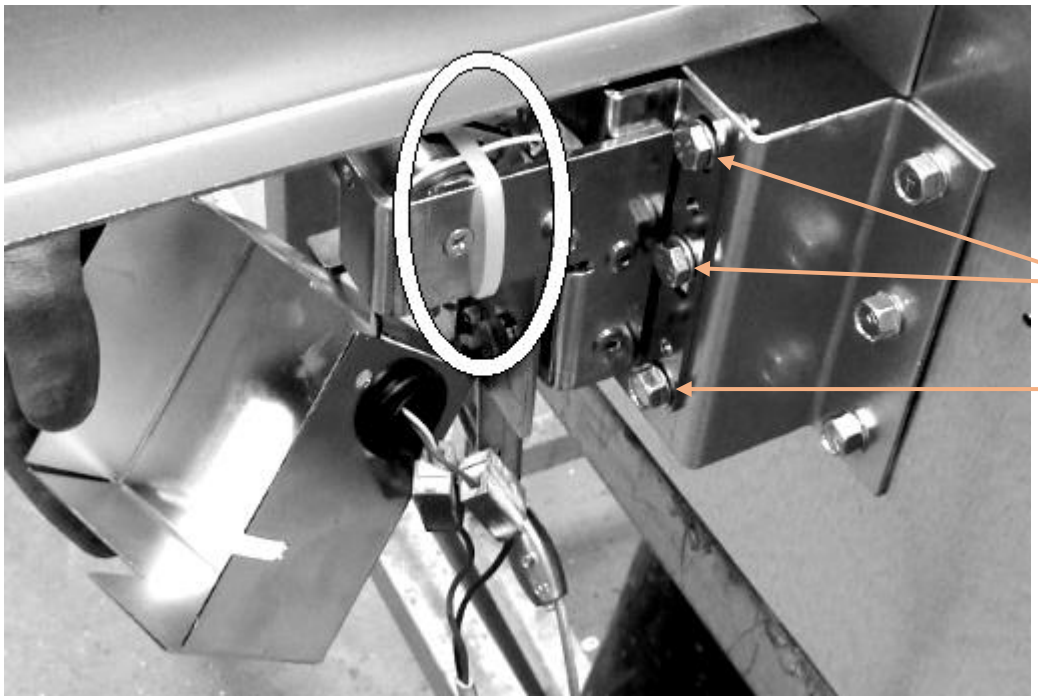


1. Safety fuse
2. Electromagnet
3. Cord

Fig. 31. Lock opening methods

8.4.2. Preparing locks for operation

The vent is delivered to the client with the locks secured with a cable strap (for locks with electromagnet only). The protection method and location is presented on fig. 32.



1. Countering self-drilling screw
2. Screws for adjusting the lock position

Fig. 32. Lock secured using cable strap

After installing the vent at its final location, and before commissioning it, protections must be removed from both locks. To this end, first remove the lock casings by undoing the screws fixing the casings. To do so, cut the strap and remove it. The strap cutting operation is presented in fig. 33. After completing the above, install the lock casings back and tighten the screws fixing the casings.

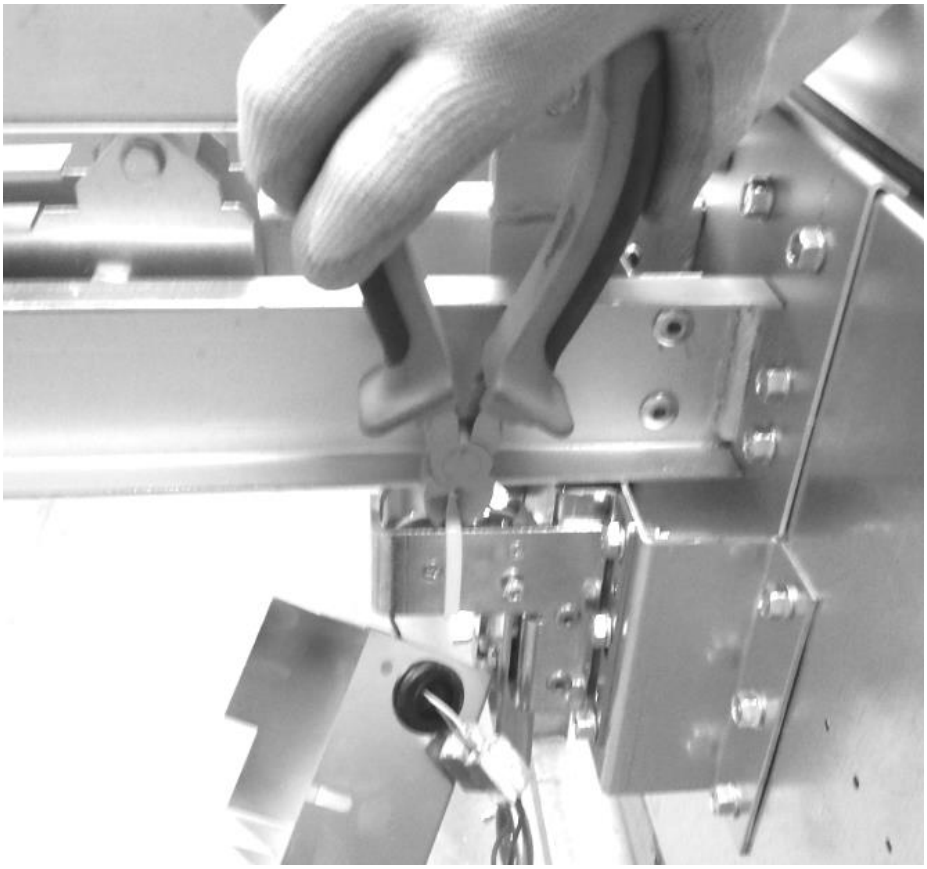
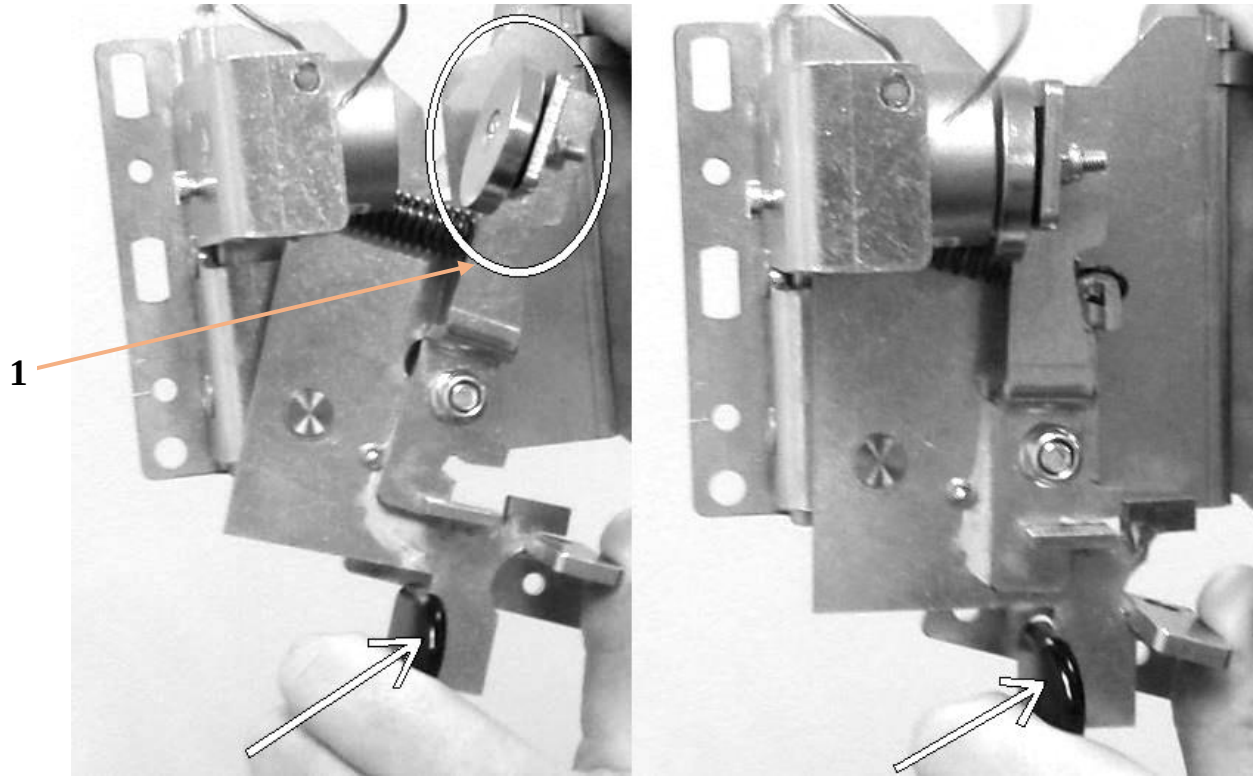


Fig. 33. Cable strap cutting operation for removing the lock protection

For locks equipped with electromagnet - connect the lock and prepare it for operation. Observe the following points (to be performed for both locks):

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. 34 - 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. 34.
4) Close the vent leaf. Make sure that the lock follower (rounded element) is open as shown on fig. 35a - 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. 35b.

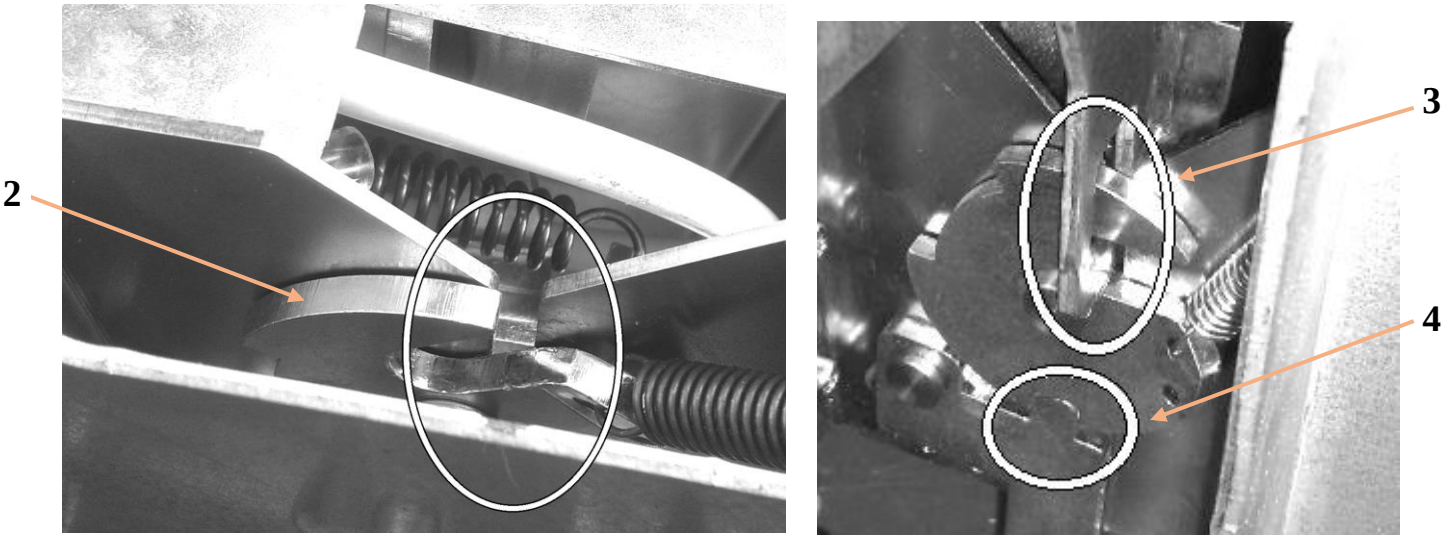


1. Electromagnet armature

Fig. 34. Closing the lock armature

a) Lock follower closed

b) Lock follower shut



2. Lock follower

3. Latch closed
4. Lock lever in shut position

Fig. 35. Lock before and after shutting

8.4.3. Locks adjustment

There are two methods for adjusting the locks installed in the vent. The locks adjustment order is irrelevant, since they operate independently.

Method 1 – lock fixture height adjustment:

The screws fixing the lock and also serving the purpose of adjustment are presented on fig. 32 - 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 secure the lock from unintended moving using a counter self-drilling screw - labelled as item "1" on figure 32.

Method 2 – adjustment of electromagnet armature fixture

After closing the armature, it should contact the electromagnet at its full area. If a situation shown on fig. 36 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/locks does/do not operate correctly, the reason may be their wrong adjustment. In such case, the adjustment works described above must be performed.

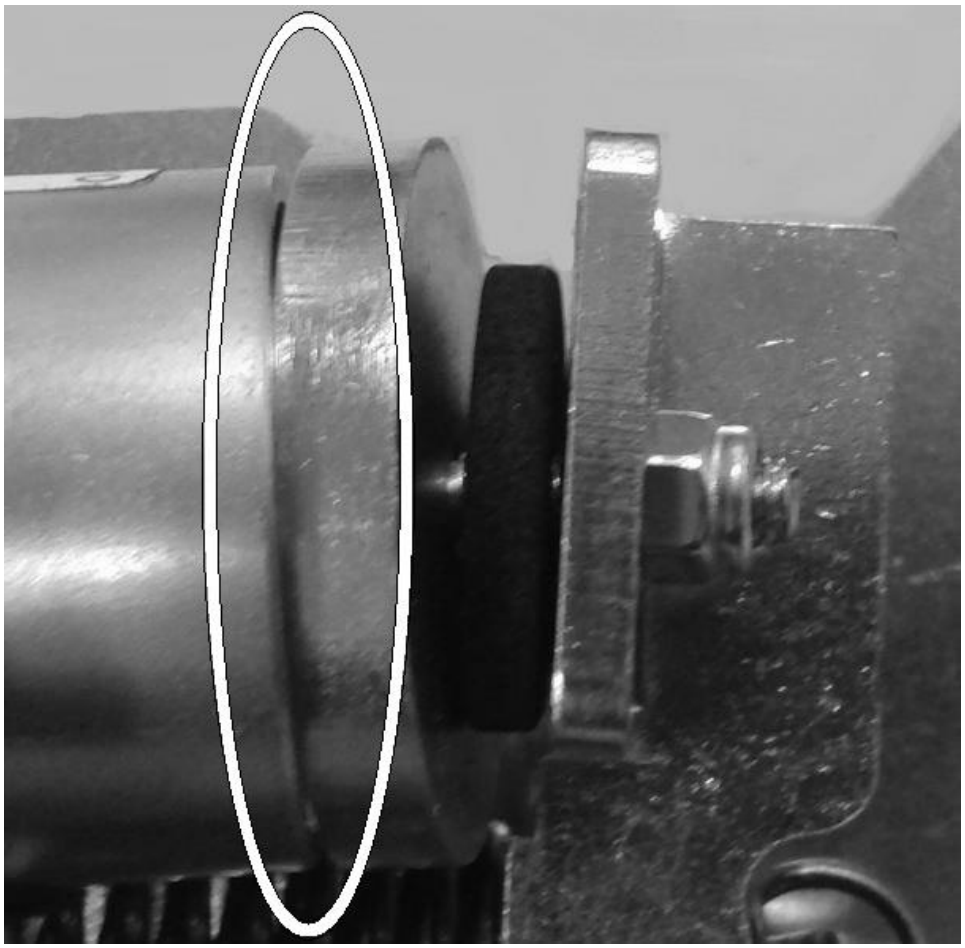
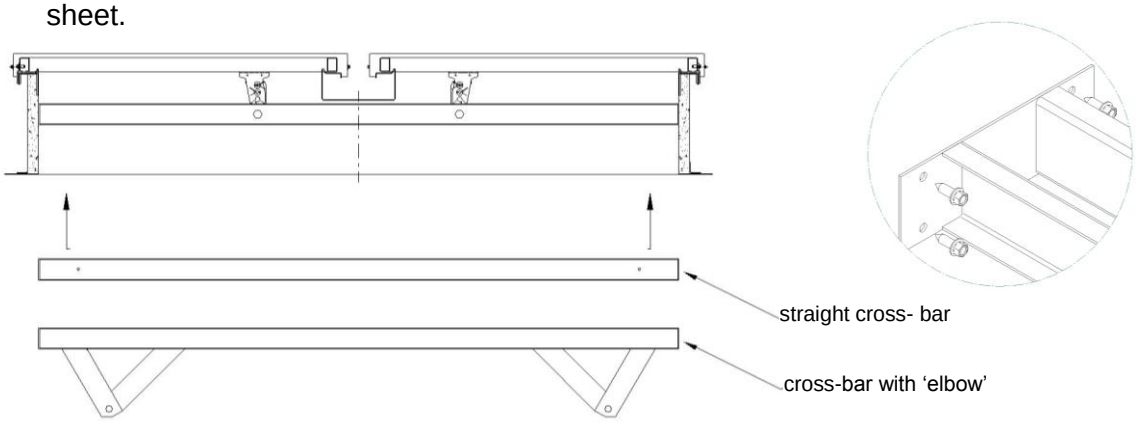


Fig. 36 Incorrectly adjusted electromagnet armature

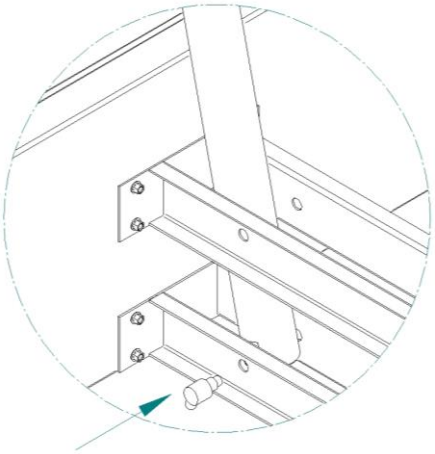
9. INSTALLATION OF CONTROL DELIVERED SEPARATELY

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

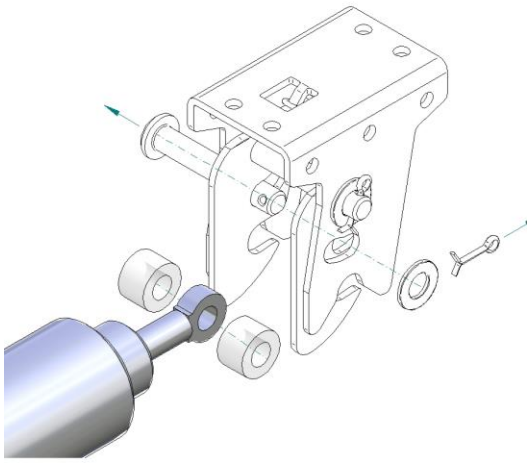
A. Place the cross-bar in the flap base (along its axis), at height shown on the appended drawing of the control system. The cross-bar may differ in its design, depending on the flap size and control type. Fix it to the base using ø6.3 self-drilling screws for steel sheet.



B. Place the actuators inside the cross-bar, and fix them using the supplied joints or sleeve (mcrW/SG). Use hexagonal keys for installation The sleeve tightening torque should be 10 Nm. It is recommended to protect the joints and sleeves from loosening with Loctite 243 or similar agent.



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.

NOTE
An assembly drawing appropriate to the dimensions and type of the flap is necessary.

10. 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 the condition of gaskets.
5. For vents with mechanical control, check that the cords opening the locks are not tangled, and move without additional resistance. Confirm proper operation of the lock. In case of their improper operation, perform the adjustment actions 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. Check that the clamping frame holding the leaf glazing is securely fixed. If the clamping frame loosens, loosen M6x30 screws slightly, and then screw them in consecutively, simultaneously pressing on the frame and the glazing downwards.
8. 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 roofs with mcr-PROLIGHT vents installed - it causes risk of discoloration and damage to the aluminium profiles and polycarbonate panels. Any damages to the vents caused by failure to observe the above instructions are not subject to warranty or other claims.

11. WARRANTY AND SERVICE TERMS

1. MERCOR S.A. grants a 12-month quality warranty for the equipment, counted from the purchase date, unless the agreement provides otherwise.
2. MERCOR S.A. declares to remove, within 21 days counted from the date of receiving a written claim, save for item 5, any physical defects in equipment identified within the warranty period.
3. In case of defects that have occurred as a result of improper operation of equipment, or for other reasons set out in item 6, the Buyer/person entitled to warranty shall bear the costs of their removal.
4. The warranty liability only applies to defects occurring for reasons attributable to the sold equipment.
5. MERCOR S.A. reserves the right to extend the repair time in case of complicated repairs or repairs that require purchasing special assemblies [elements] or replacement parts.
6. The warranty does not cover:
    - damage and faults of equipment caused by incorrect operation, tampering by user, failure to perform periodical technical inspection or maintenance works;
    - damage to equipment occurred for reasons not attributable to MERCOR S.A., particularly including: random events, such as: torrential rain, flooding, hurricane, thunderbolt strike, mains overvoltage, explosion, hail, crashing of airborne vehicle, fire, avalanche, landslides, or consequential damage resulting from the above mentioned reasons. Torrential rain is defined as rain of efficiency ratio at least 4, as defined by the Polish IMiGW authority. In the event when it is impossible to determine the ratio mentioned in the preceding sentence, the actual condition and the magnitude of damage occurred on site will be taken into account, and thus the effect of torrential rain will be assessed. Hurricane is defined as wind of minimum speed 17.5 m/s (damage is deemed to be caused by hurricane if hurricane has been identified in the direct vicinity);
    - damage occurred as a result of neglecting the duty of immediately reporting an identified defect;
    - detriment to the quality of coatings caused by natural aging process (fading, oxidation);
    - defects caused by the use of abrasive or aggressive cleaning agents;
    - parts subject to natural wear during operation (e.g. gaskets), unless they had a factory defect;
    - damage occurred as an effect of aggressive external factors, particularly chemical and biological factors, or factors which originate from production processes and operations performed within the building, or in the direct vicinity of the building in which the devices were installed;
    - contamination of polycarbonate chambers with dust or particles whose effective grain diameter is smaller than 50 µm;
    - water vapour condensation inside polycarbonate chambers during operation.
7. Each defect covered by warranty should be reported to MERCOR S.A. without delay, within 7 days from the moment of identifying.
8. The buyer/warrantee is obliged to proper maintenance of the equipment, performing periodical (min. twice a week) technical inspections and maintenance operations
9. The warranty shall become void with immediate effect in the case:
    - when the Buyer/warrantee introduces structural changes on his own, without prior consultation with MERCOR S.A.,
    - of failure to timely perform technical inspections and maintenance works, or when such inspections and works are performed by unauthorized persons or by a company not holding a valid service authorization from MERCOR S.A., or when the equipment was improperly operated,
    - of any intervention of unauthorized persons - outside of the definition of normal operation of equipment.
10. In cases specified in item 9, MERCOR S.A. statutory warranty is also excluded.

Applicable provisions of the Civil Code apply for matters not stipulated in these warranty terms.

Service

1. The equipment should be subjected to periodical technical inspections and maintenance procedures every 6 months throughout their entire life (para 3 item 3 of the Regulation of the Minister of Internal Affairs and Administration of April 21, 2006 on the fire protection of buildings, other works and land, Polish Journal of Laws Dz.U. of 2006, no. 80, item 563).
2. The periodical technical inspections and maintenance procedures should be conducted by companies having appropriate authorization of MERCOR S.A. (para 3 item 3 of the Regulation of the Minister of Internal Affairs and Administration of April 21, 2006 on the fire protection of buildings, other works and land, Polish Journal of Laws Dz.U. of 2006, no. 80, item 563).
3. For matters related to technical inspections, maintenance and servicing of the equipment, please call the Service Department at 058/ 341 42 45, ext. 173, 175, 177 or fax at 058/ 341 39 85 from 8 to 16 (Mon-Fri).

12. CERTIFICATES OF CONFORMITY

INSTYTUT TECHNIKI BUDOWLANEJ
ZAKŁAD CERTYFIKACJI
ul. FILTROWA 1, 00-611 WARSZAWA
tel.: (22) 57 96 167, (22) 57 96 168, fax: (22) 57 96 295

AC 020

CERTYFIKAT ZGODNOŚCI WE

1488-CPD-0151/W

Zgodnie z Dyrektywą Rady Wspólnot Europejskich nr 89/106/EWG z dnia 21 grudnia 1988 roku *w sprawie zbliżenia ustaw, rozporządzeń i przepisów administracyjnych państw członkowskich, dotyczących wyrobów budowlanych*, zgodnie ze zmianami dokonanymi przez Dyrektywę nr 93/68/EWG Rady Wspólnot Europejskich z dnia 22 lipca 1993 roku potwierdza się, że wyrób budowlany:

PUNKTOWE KLAPY ODDYMIAJĄCE MCR-PROLIGHT

o właściwościach użytkowych według załącznika nr Z-1488-CPD-0151/W (strony1-14) będącego integralną częścią certyfikatu

wprowadzone do obrotu przez:

MERCOR SA
ul. Grzegorza z Sanoka 2
80-408 Gdańsk

i produkowane w zakładzie produkcyjnym:

MERCOR SA Zakład Produkcyjny Cieplewo
ul. Kwarcowa 3a
83-031 Łęgowo

w którym Producent wdrożył zakładową kontrolę produkcji i prowadzi badania próbek pobranych w tym zakładzie zgodnie z planem badań. Jednostka notyfikowana nr 1488 – *Instytut Techniki Budowlanej* - przeprowadziła wstępne badania typu w celu określenia właściwości wyrobu oraz wstępną inspekcję zakładu i zakładowej kontroli produkcji, a także prowadzi stały nadzór, ocenę i akceptację zakładowej kontroli produkcji.

Niniejszy certyfikat potwierdza, że wszystkie postanowienia dotyczące oceny zgodności i właściwości użytkowych wyrobu opisane w załączniku ZA normy:

EN-12101-2:2003

(odpowiednik krajowy: PN-EN 12101-2:2005)

zostały zastosowane i wyrób spełnia wszystkie ustalone wymagania.

Niniejszy certyfikat, wydany po raz pierwszy 01.07.2010 (zaktualizowany 15.12.2010, 21.01.2011, 27.07.2011, 01.09.2011, 02.07.2012), jest ważny bezterminowo, o ile wyrób spełnia wymagania zharmonizowanego dokumentu odniesienia i warunki produkcji oraz system zakładowej kontroli produkcji nie uległy istotnym zmianom.

ZASTĘPCA KIEROWNIKA
Zakładu Certyfikacji
Piotr Maciejak

INSTYTUT TECHNIKI BUDOWLANEJ

Warszawa, 02.07.2012

DYREKTOR
Instytutu Techniki Budowlanej
Jan Bobrowicz

SNAS
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

FIRES
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. Kwarcowa 3A, Cieplewo,
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 22th 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

NOTIFIKOVANÁ OSOBA 1396
FIRES
The Experts on Fire Safety
NOTIFIED BODY 1396

Ing. Mária Gašperová
Head of Certification body

064202

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

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