



OPERATION AND MAINTENANCE MANUAL

**AWAK P2 and AWAK PS2
Single-leaf smoke dampers with electric drive,
with polycarbonate covering**

No. 14/03

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1. INTRODUCTION

The purpose of this operation and maintenance manual (OMM) is to acquaint the user with the purpose, construction, principle of operation, conditions for use, maintenance and repair of smoke dampers with an electric smoke control system.

This OMM provides information on the components and devices that can be included in a smoke ventilation system. It is not always necessary to use all the components described in the OMM. Compliance with the recommendations contained in the OMM will ensure the proper functioning of the system in terms of smoke extraction, and the safety of the system users. For this to be possible, all employees employed by the user should be familiar with the purpose and operation of the system, and its maintenance services are required to read this documentation in detail.

NOTE !

Failure by the user of the smoke ventilation system to observe the recommendations and instructions contained in this OMM relieves the manufacturer of all obligations and warranties.

2. SUBJECT OF DOCUMENTATION

The subject of this documentation is AWAK-type roof smoke dampers with polycarbonate covering and an electric smoke control system (Figure 1). The dampers are installed on the flat roofs (max.¹⁵⁰) of single-storey buildings, as well as in the roofs above the top floor, in the case of multi-storey buildings.

Smoke dampers have the task of extracting smoke and heat from the rooms involved in a fire. Properly designed and installed smoke dampers perform the following functions during a fire:

- facilitate evacuation by keeping the lower part of the room free of smoke,
- facilitate rescue operations,
- provide protection for the building's structure and equipment,
- reduce indirect fire losses caused by evolving smoke and hot fire gases.

In the normal operation of buildings, smoke dampers act as rooflights in the roof slopes and can also perform the function of ventilation.

3. TECHNICAL DESCRIPTION

3.1. Designation of smoke dampers

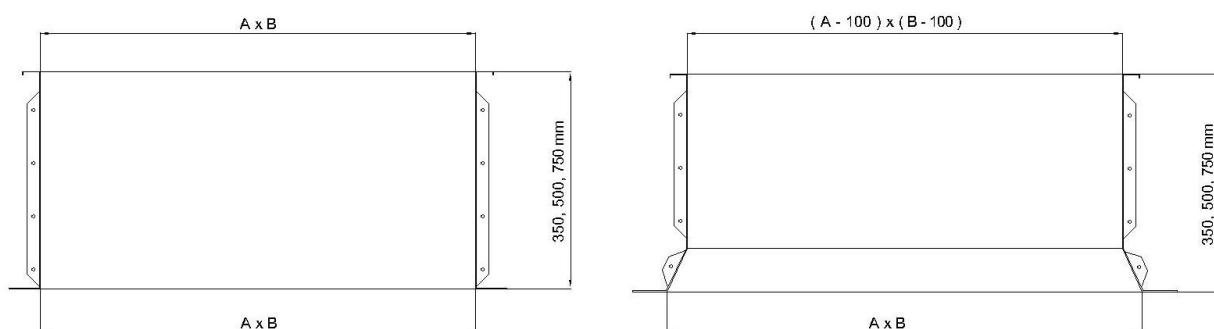
After installation, each smoke damper is permanently marked with nameplate with a CE label in a visible position (on the actuator frame).

The name and address of the manufacturer, the manufacturer's number, the number of the declaration of performance, the number of the notified body and the number of the certificate in accordance with which it was manufactured, as well as the parameters of the given smoke damper, are indicated on the plate.

3.2. Design of smoke dampers

Base

The base of the smoke dampers may be made of galvanised steel sheet of min. 1,25 mm or aluminium sheet of min. 2.0 mm (the bases require additional insulation with a layer of mineral wool, polystyrene or other thermal insulation material of min. 40 mm). Steel and aluminium bases are manufactured as: straight (height 350, 500, 750 mm), or right-angled (height 350 or 500, 750 mm). Bases of any height between 300-750 mm are made individually (on request). The bases have special cut-outs in the corners, which (after installation and machining of the base) allow the free installation of the so-called PVC "clamping" frame.



Supporting structures must be installed under the bases of the smoke dampers around the entire perimeter of the base (this absolutely applies to bases made of steel or aluminium sheet segments).

Tilting segment

The hinged section of the smoke dampers consists of a frame and a polycarbonate covering. The frame is made of PVC profiles or aluminium profiles, protected by gaskets around the perimeter to prevent water from entering the damper. The cover of the smoke damper is made of a sheet of cellular polycarbonate, (the open chambers are covered with protective tape), and aluminium profiles fixed around the entire perimeter. Polycarbonate coverings are made in milky or transparent colours (other colours on special request). Fastening of the coverings to the frame is carried out with self-tapping screws (through aluminium profiles)

The hinged segment is attached to the base using 2 to 5 stainless steel hinges. (depending on the dimensions of the base). Details of the fitting are shown in Figures 2, 5, 9

Drive

One electric actuator type G13 ÷ 80 or SG 13 ÷ 80 with an extension length of 435 to 1545 mm is used to open smoke dampers both in the ventilation function and in the basic function, which is smoke removal. The drive is a 24 V DC power supply.

4. CHARACTERISTICS OF THE ELECTRICAL CONTROL SYSTEM

The electric smoke removal system consists of several devices, working together, which enable smoke dampers to be opened automatically or manually when a fire occurs.

The main device of the electric smoke ventilation system is a maintenance-free control unit supplied with 220 V AC (equipped with a 24 V DC power supply), to which (when a fire occurs) an electrical impulse is sent.

The pulse arriving at the control unit is sent automatically from smoke detectors or temperature detectors .

In addition, the pulse can be sent manually by pressing the smoke alarm button in the alarm attachment.

Activation of the control unit triggers the electric actuators and opens the smoke dampers.

Each control unit is also equipped with batteries that will keep the system running in the event of a mains power failure (emergency power supply) for 72 hours.

5.CONDITIONS OF DELIVERY

Smoke dampers and controls are supplied to the user as assemblies and sub-assemblies.

The securing of these elements during transport must be done in such a way that they are not damaged and road safety is ensured.

Unloading must be carried out using generally available means of handling or manually under the supervision of a person authorised to do so by the manufacturer.

6. INSTALLATION INSTRUCTIONS

6.1. Installation of the base

- a) assemble the base segments and bolt together using M8x16 screws and nuts (for sheet metal base - fig. 2),
- b) position the twisted base in the light of the hole so that the diagonals are equal,
- c) fix the base to the supporting structure with :
 - self-tapping screws - metal substructure,
 - studs - concrete substructure,
 - wood screws - wood substructure.

NOTE: Fix the base with fasteners with a spacing of no more than 250mm and at least three pieces per side of the base.

6.2. Implementation of thermal and damp-proofing treatment

(Figures 3 - 4): For sheet metal base:

- a) cover the base with a 40 mm thick layer of mineral wool,
- b) bitumen sheeting, PVC sheeting should be made over the entire height of the base and overlapped on the top flange.

NOTE: The way in which the bitumen membrane/roof membrane overlaps and the base corner treatment should be carried out should allow the tie frame to be applied freely.

6.3. Assembly of the tie frame

- a) place the frame on the machined base and rivet with steel / aluminium rivets.

NOTE: do not rivet the hinged side (this side will be fixed together with the hinge frame).

6.4. Installation of the hinge frame (Fig. 2, 5):

- a) position the frame so that the axis of symmetry of the frame coincides with the axis of symmetry of the base,
- b) rivet the hinges to the clamping frame and the base with steel rivets.

NOTE: After assembling the hinge frame, check the correct opening and the tightness of the frame.

6.5. Assembly of the drive (Fig. 6 - 8):

- a) screw the hook bolt to the top crosshead using M6 x 50 screws and nuts (Fig. 6),
- b) align the base frame with the actuator in the symmetry axis of the base and then fixing the frame to the base with steel rivets.
- c) fix the eyelet of the actuator spindle in the hook bolt,
- d) adjust the hook bolt anchor so that there is no gap between the hinge frame and the alignment frame when the flap is closed. Adjustment consists of moving the entire bolt console up/down or unscrewing/screwing the bolt anchor (fig. 8),
- e) check that the damper opens and closes correctly when connected to 24V .

6.6. Installation of polycarbonate covering (Fig. 10):

- a) Apply and position the polycarbonate covering on the hinge frame,
- b) Using self-tapping screws, cross-tighten the cover to the hinge frame (to remove unnecessary tension).

7. INSTALLATION CONTROL

The final inspection of the installation of the smoke dampers is carried out by means of a protocol with the manufacturer's representative. Following the inspection, one copy of the protocol is provided to each party.

During the final inspection of the smoke dampers, the individual components must be examined for compliance with this documentation, for correctness and operability, and for operational readiness.

The correct operation of the dampers should be understood to mean that they should open fully during the test opening.

NOTE !

Failure to have the assembly accepted by an authorised manufacturer's company in the case of self-assembly will render the above OMM and guarantee invalid.

8. INSTRUCTIONS FOR USE

Methods of activating smoke dampers:

- activation of the emergency button,
- triggering of a smoke detector,
- signal from FAS (fire alarm system)

Closing the smoke flap:

- activation of the "RESET" button

9. TECHNICAL INSPECTIONS

As the smoke dampers are intended for use in fire emergencies in buildings, no scheduled maintenance is planned for them, as they must be fully operational at all times.

However, periodic reviews are foreseen. They should be carried out at regular intervals; under current legislation, they must be carried out at least once a year. As the manufacturer, KERA AWAK Sp. z o.o. provides for inspection and maintenance for its smoke ventilation systems twice a year. During the inspection, the smoke damper including the entire triggering system, fittings and supply lines must be checked by a specialist for operability and operational readiness and maintained and repaired if necessary.

Each inspection must be entered on the periodic inspection sheet.

Periodic inspections of the dampers are carried out by KERA AWAK Sp. z o.o., through its authorised representatives or authorised service technicians.

10. CLASSIFICATION OF DAMPERS FOR REPAIRS

Any repairs to the smoke dampers must only be carried out by the manufacturer's repair teams or other teams authorised by the manufacturer.

In the event of damage, the user is obliged to immediately notify the manufacturer of the need to carry out operational tests (inspection, repair) due to the noticed malfunction or damage.

Any tripping of a smoke damper, as a result of a fire hazard, requires a committee to examine its condition and qualify it for repair or replacement with a new one.

The replacement of the damper with a new one is not covered by the guarantee in this situation, i.e. a flap qualified for replacement as a result of fire damage is not subject to replacement under the guarantee.

11. GENERAL RULES ON REPAIRS

When repairing dampers or smoke control devices, the manufacturer's company rules apply.

When carrying out repairs, generally available workshop tools and universal measuring equipment are used, while observing generally applicable occupational safety and fire regulations.

12. GENERAL HSE RULES

The generally applicable occupational safety regulations must be observed during the installation, use and repair of smoke dampers and smoke control devices.

During the service life of the smoke dampers, the following rules must be particularly observed:

- all employees must be familiar with the purpose of the dampers and the operation of their control system,
- dampers and their control system should not be used for purposes other than their intended use,
- dampers and their control system must be operational at all times,
- if a system with an alarm box is used, the door of the box must be kept absolutely closed,
- alarm boxes should be installed in easily accessible locations.

13. LIST OF SPARE PARTS

All parts required for repairs are supplied by the manufacturer or a body authorised by the manufacturer to carry out repairs.

14. LIST OF FIGURES

fig. 1 - AWAK P2 and AWAK PS2 single-leaf smoke damper with electric drive with polycarbonate covering.

fig. 2 - Connection of the basic elements of the damper, sheet metal base Fig. 3 - Variants for fixing sheet metal bases.

- a) Using a support structure,
- b) Using the substructure. fig. 4-

Mounting of the tie frame.

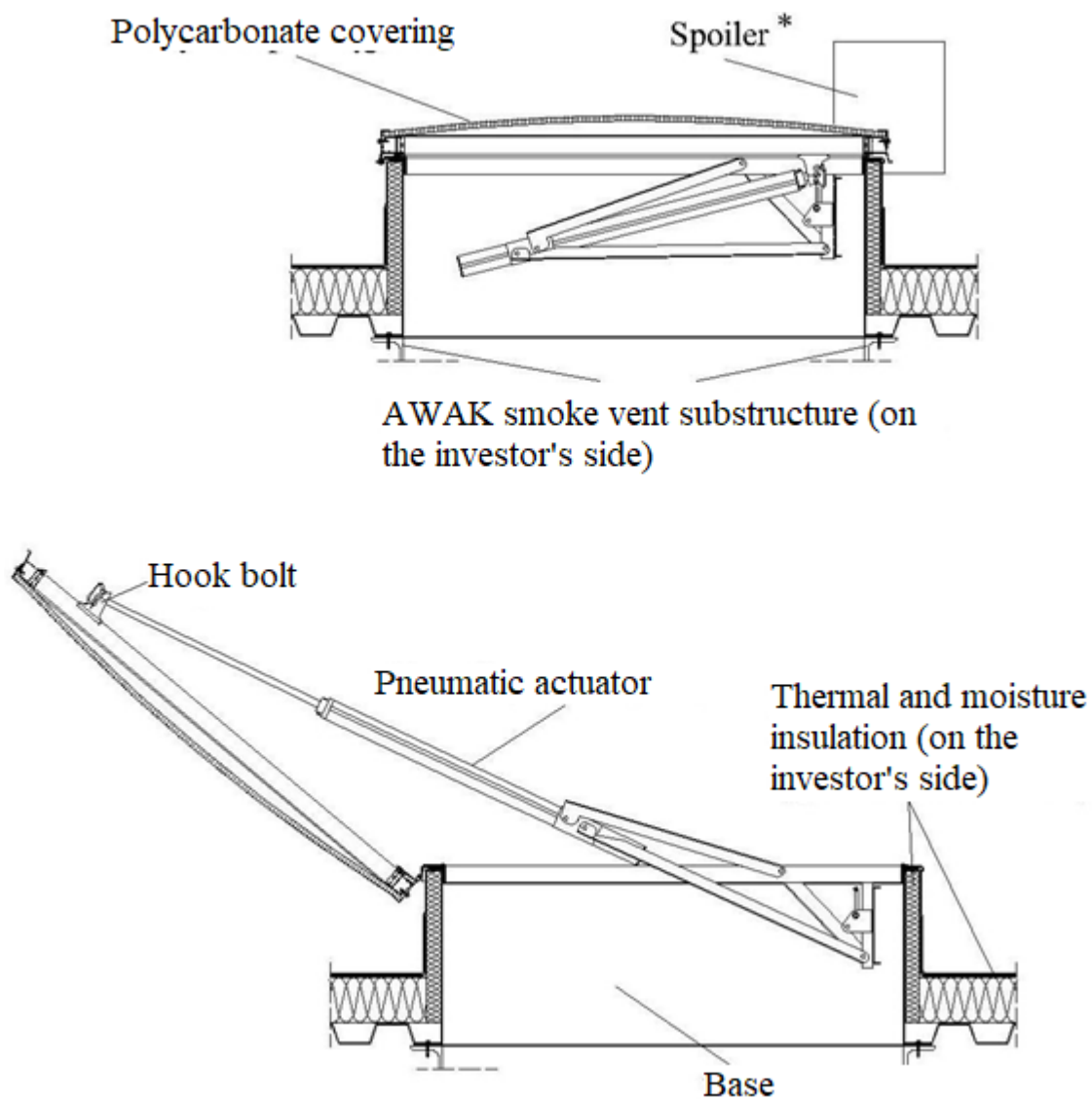
fig. 5 - Fastening the clamping and hinge frame. fig. 6

- Installation of the hook bolt.

fig. 7 - Smoke damper actuator installation.

fig. 8 - Adjustment of the hook bolt anchor.

fig. 9 - Fixing of polycarbonate covering, steel sheet base Fig. 10 - Diagram of smoke extraction system



* Air vane available as an option for the smoke damper

Fig. 1 - AWAK P and AWAK S single-leaf smoke damper with electric drive with polycarbonate covering.

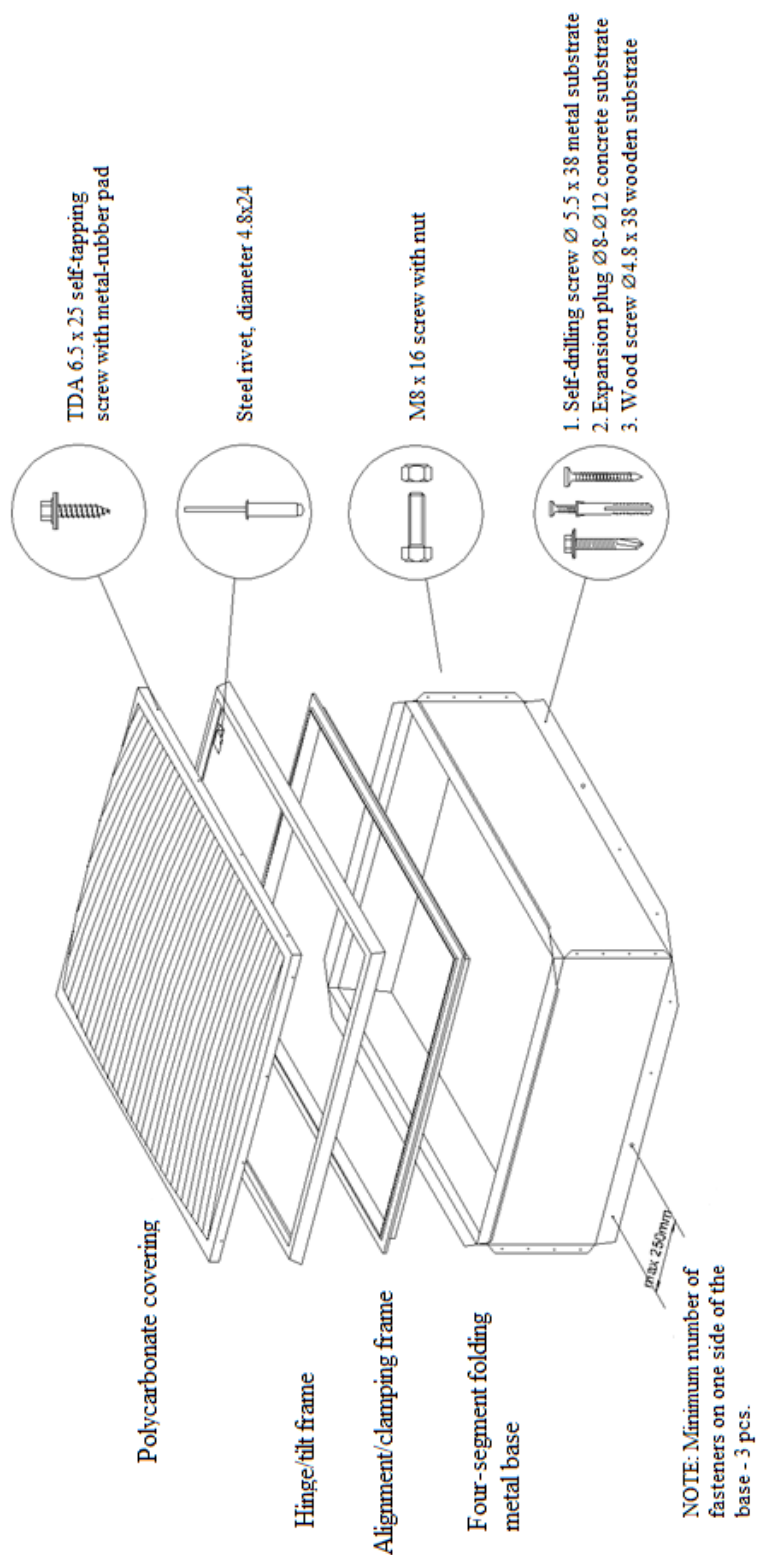


Fig. 2 - Connection of the basic elements of the damper, sheet metal base

KERA AWAK Sp. z o.o.
64-320 Buk, ul. Dobieżyńska 56
www.awak.pl

1. Load-bearing structure
2. Trapezoidal sheeting
3. Substructure
4. Connector (different types are used,
depending on the construction material)
5. Base in sheet steel or aluminium
6. Thermal insulation layer (on the customer's side)
7. Moisture barrier (on the part of the client)
8. Alignment frame

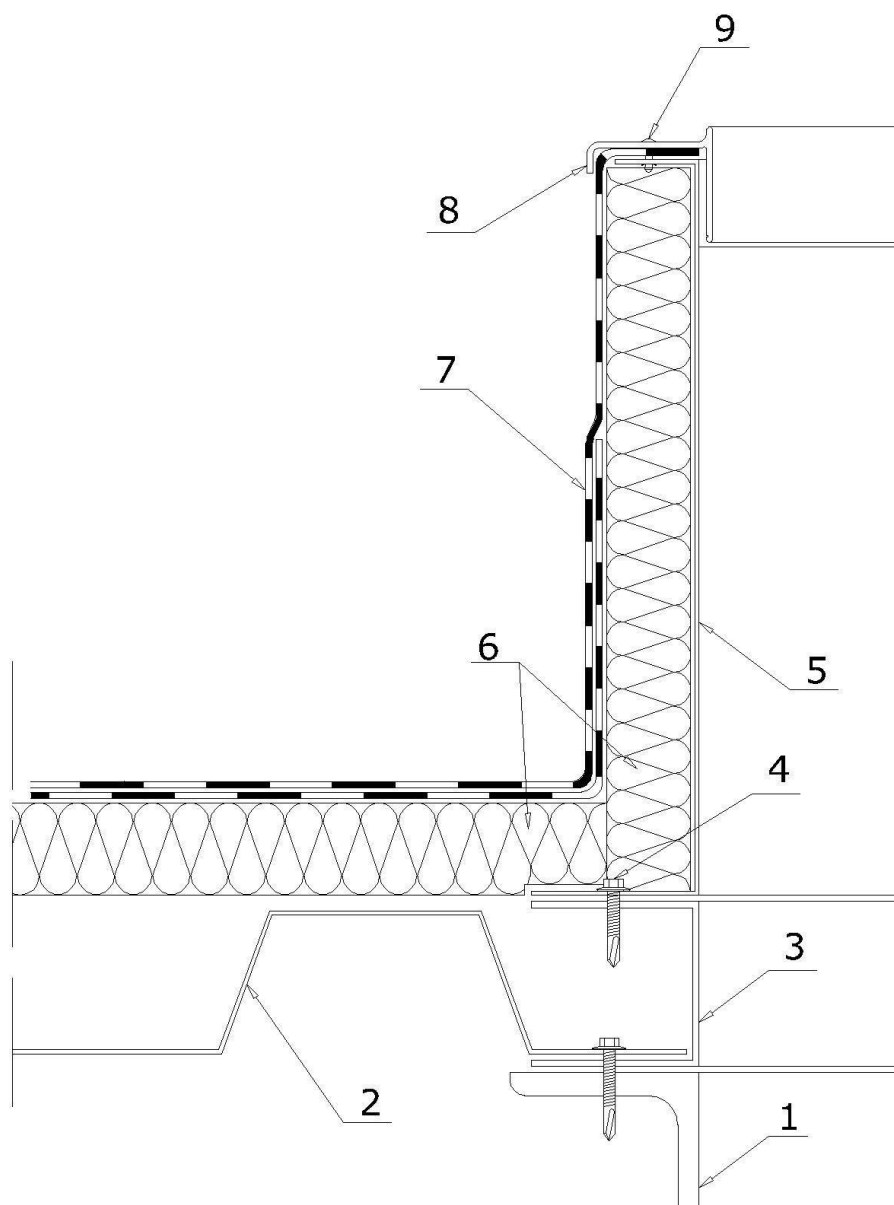


Fig. 3.a. Variant for fastening sheet metal bases - using a support structure

1. Load-bearing structure
2. Trapezoidal sheeting
3. Connector (different types are used,
depending on the construction material)
4. Base in sheet steel or aluminium
5. Thermal insulation layer (on the customer's side)
6. Moisture barrier (on the part of the client)
7. Alignment frame

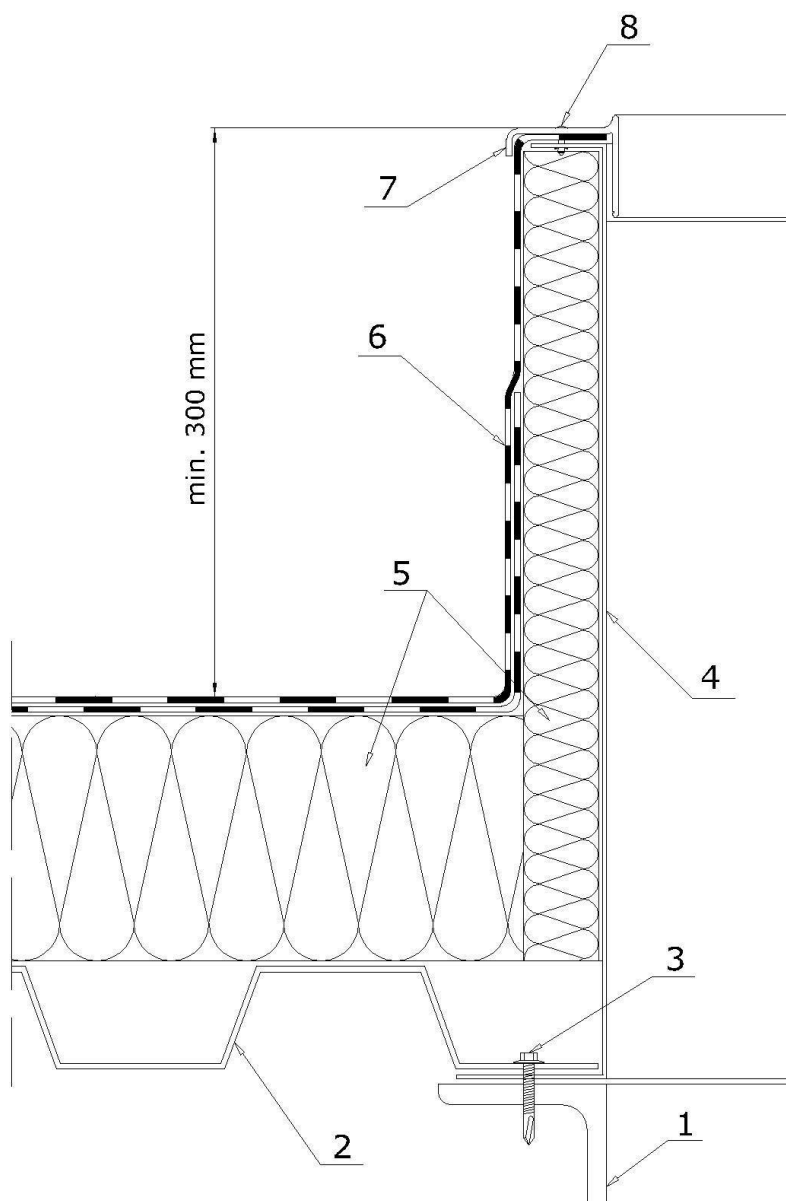


Fig. 3.b. Variant for fastening sheet metal bases - with substructure

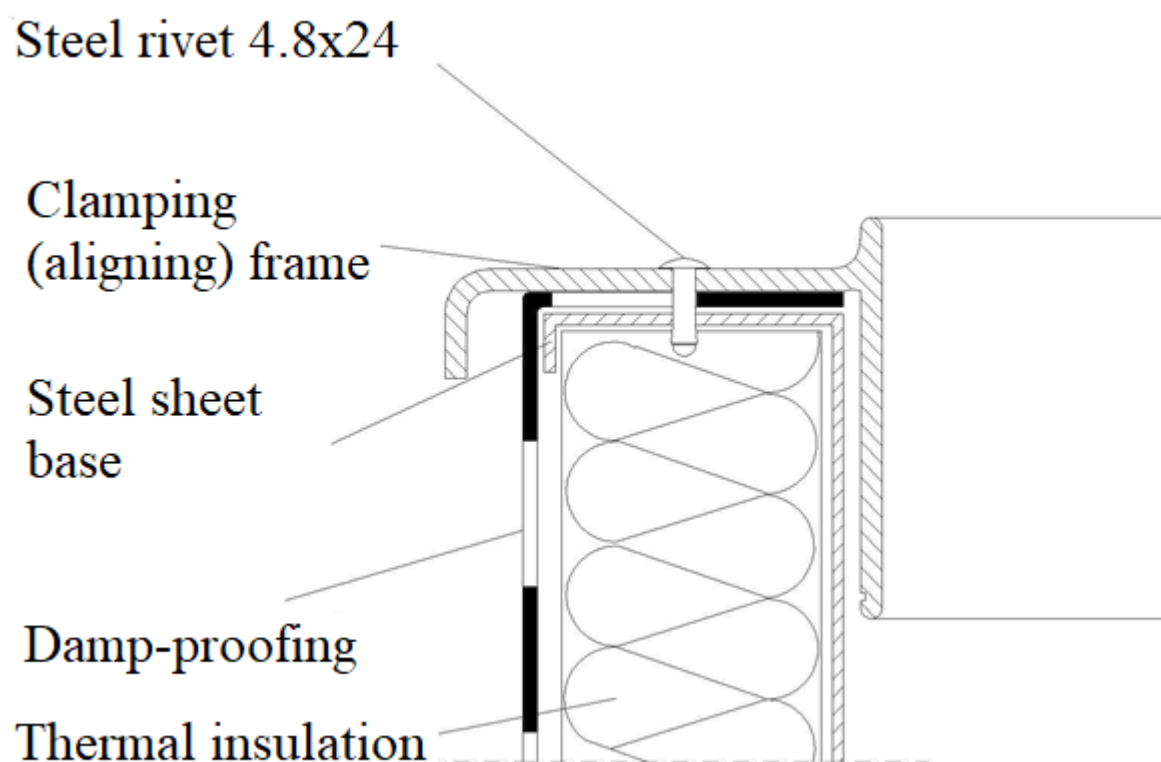


Fig. 4. Mounting of the tie frame.

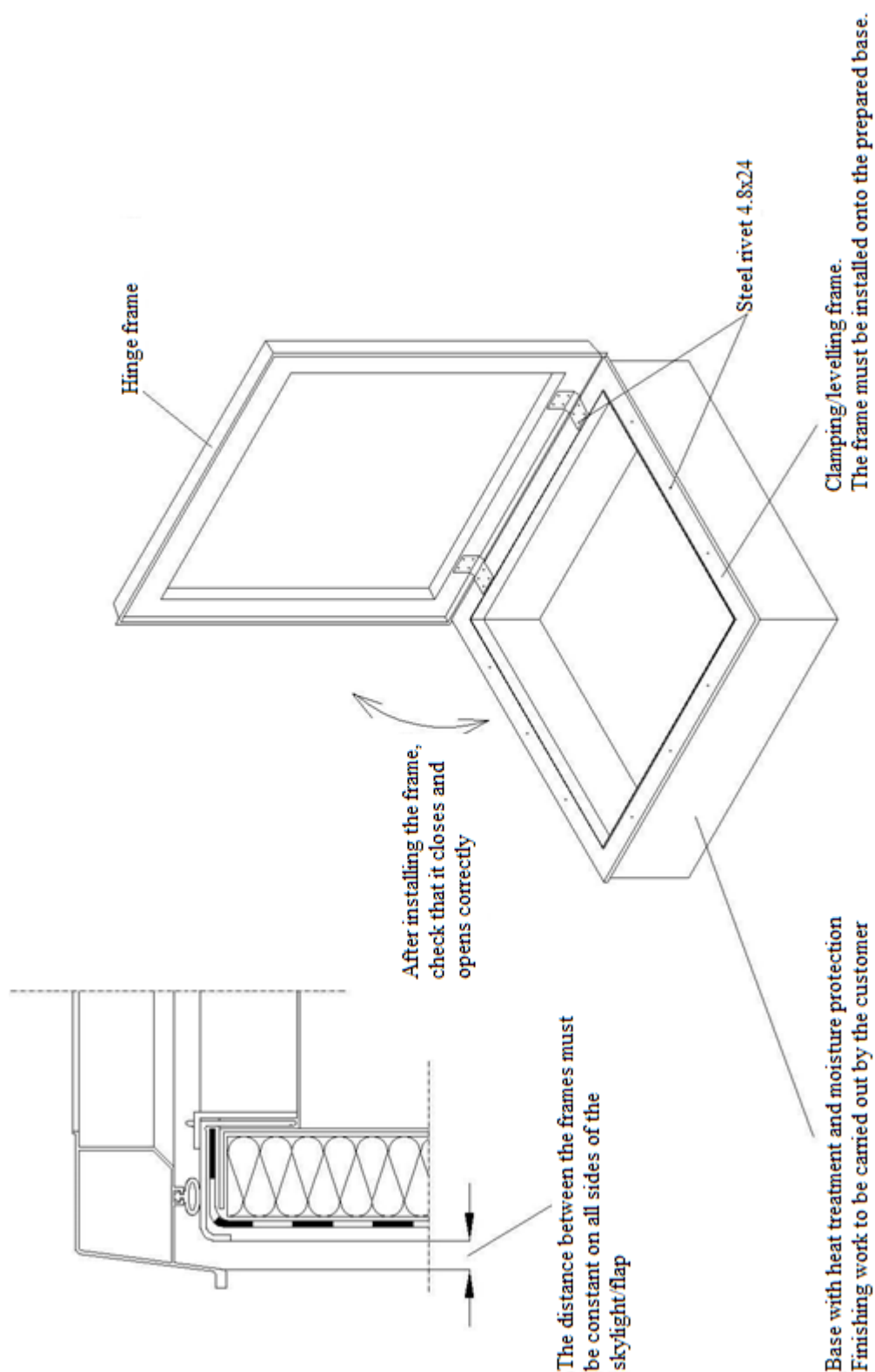


Fig. 5 Fixing of the clamping and hinge frame.

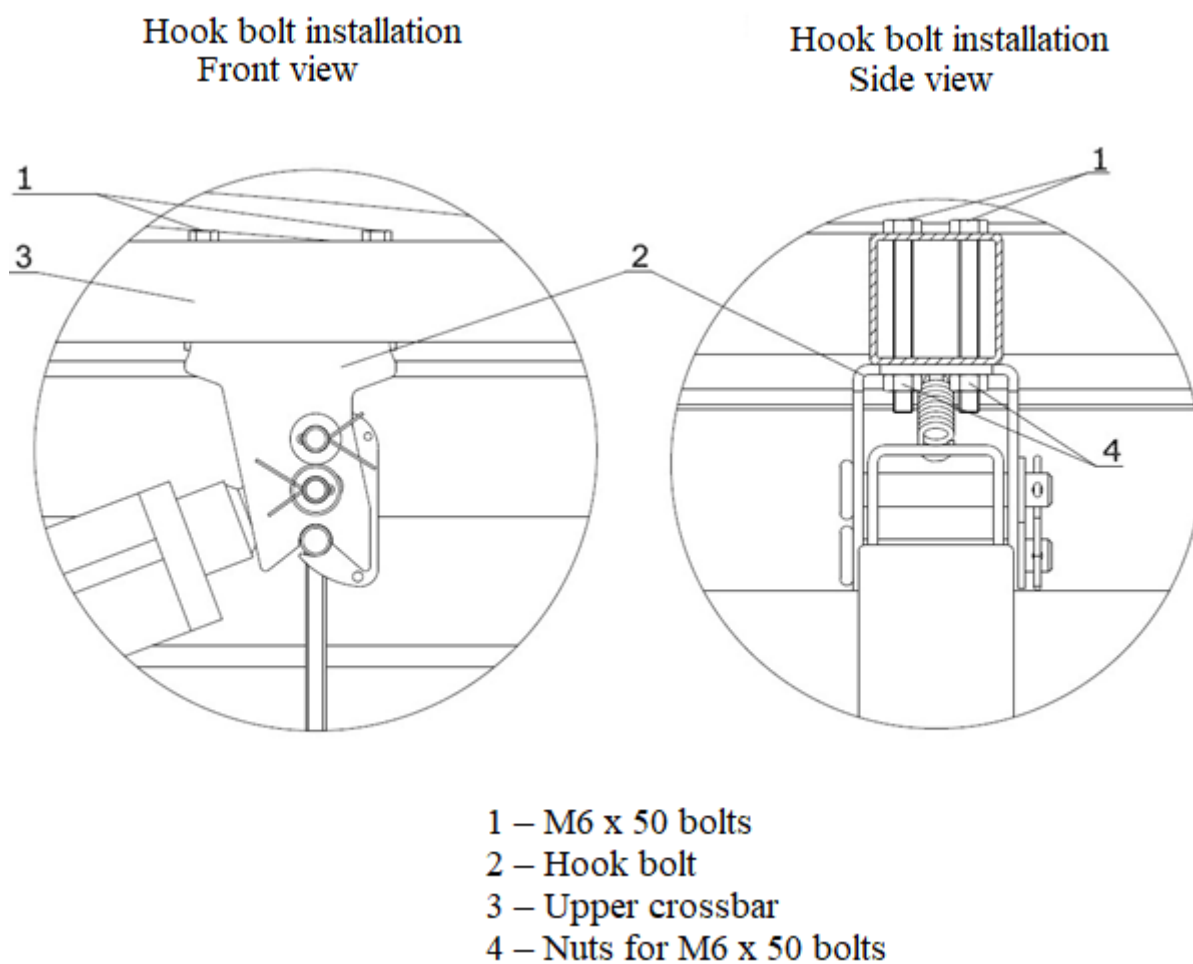


Fig. 6. Installation of the hook bolt.

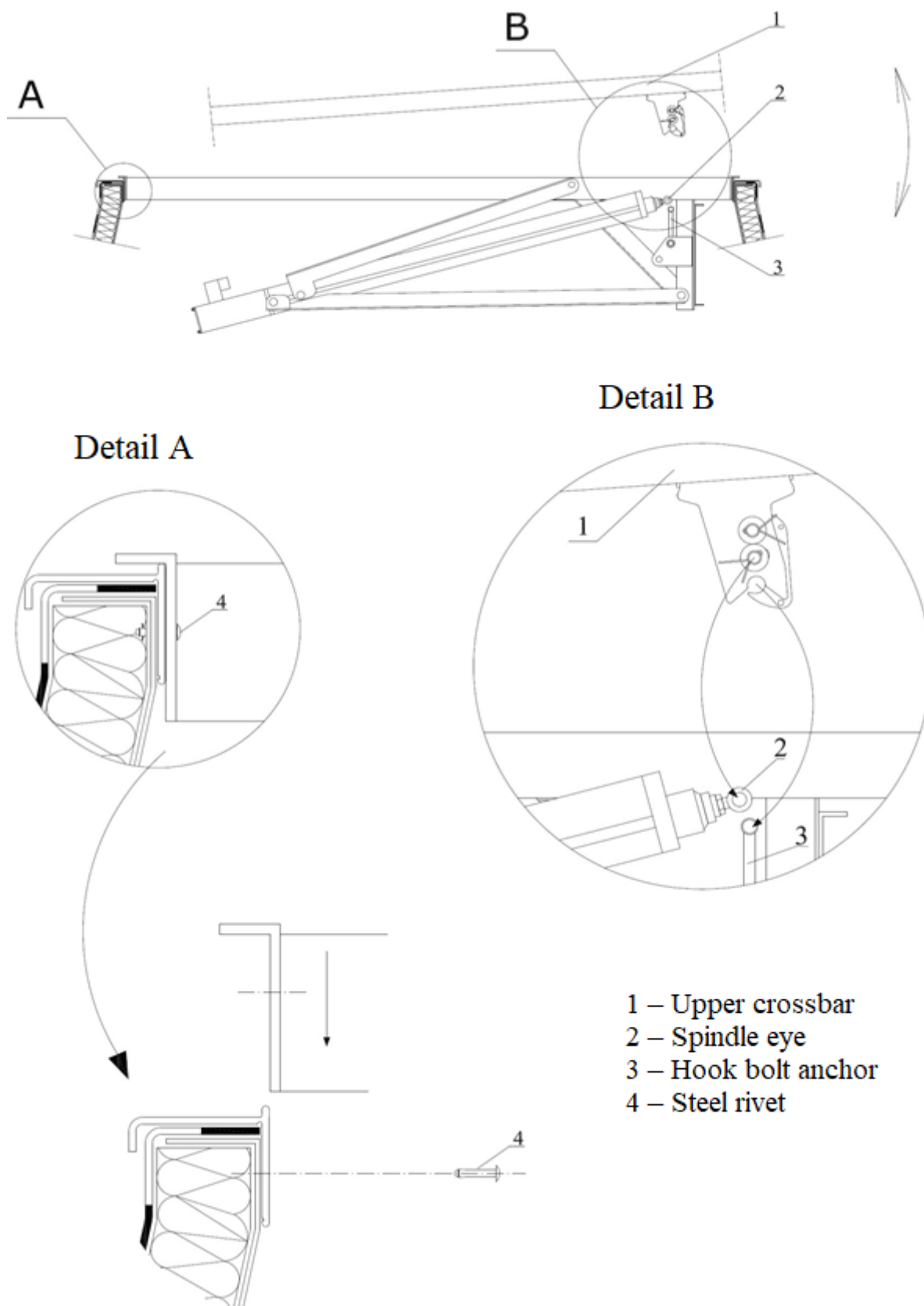


Fig. 7. Smoke damper actuator installation

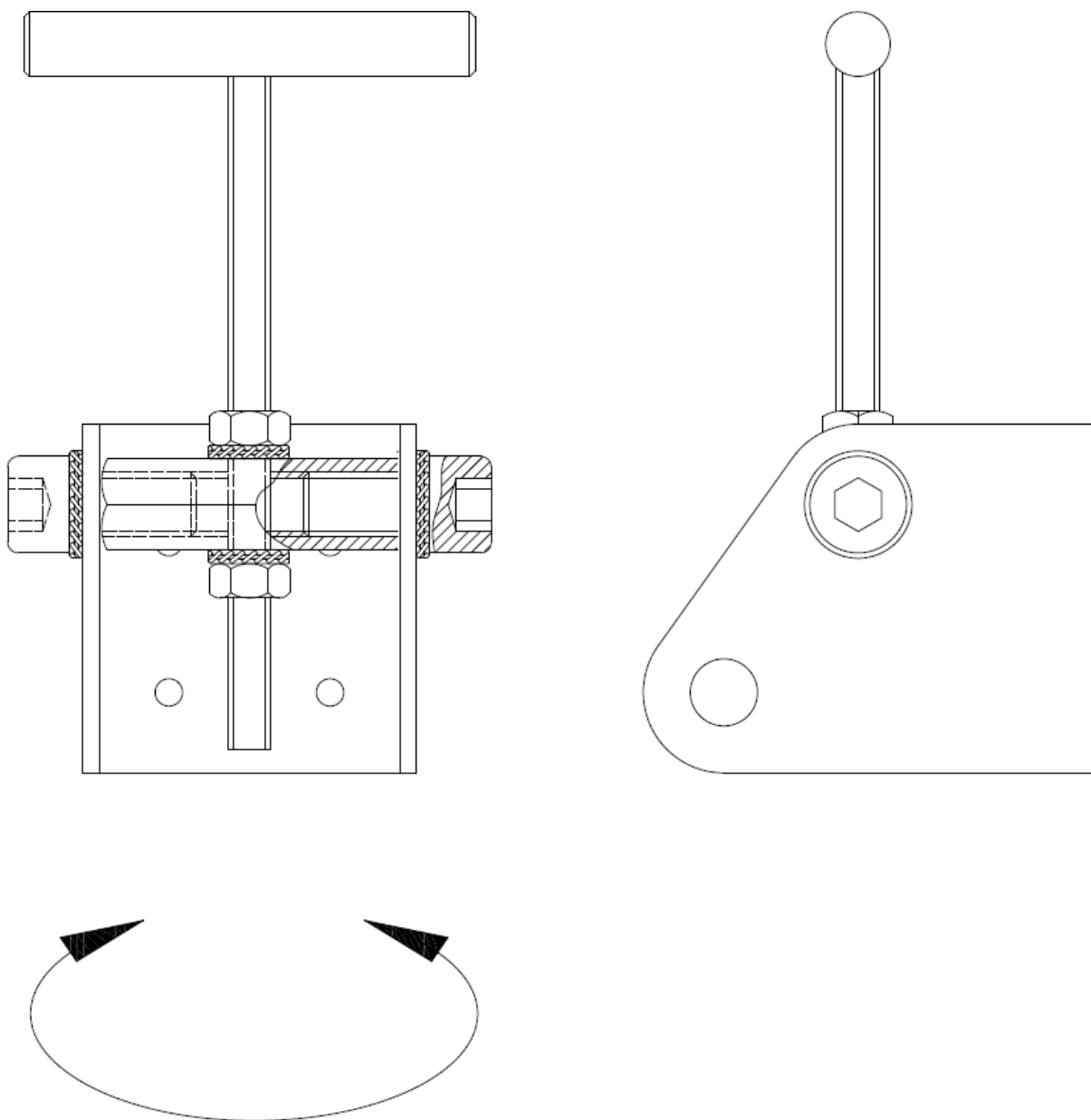


Fig. 8. Adjustment of the hook bolt anchor

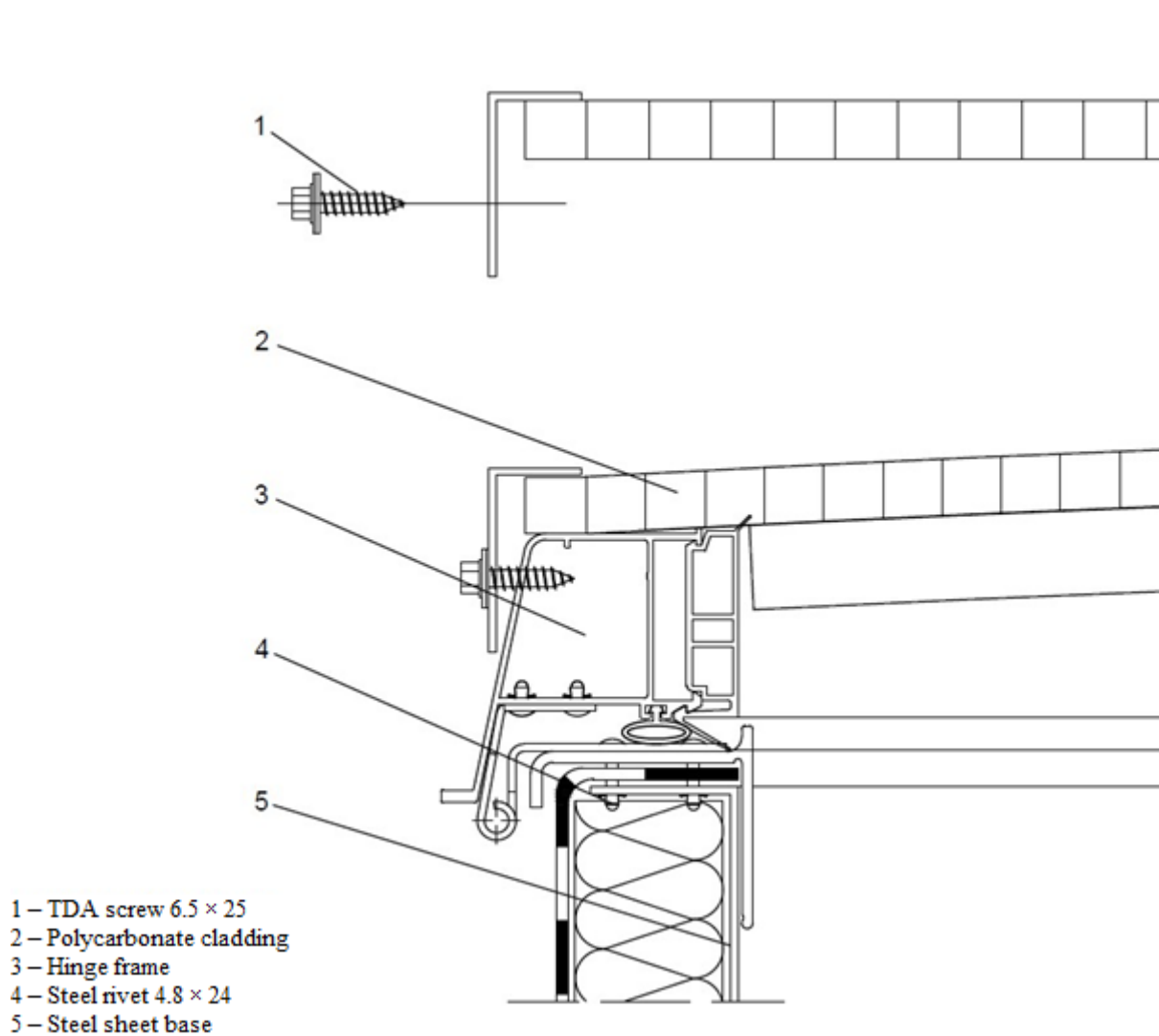


Fig. 9 Fixing of polycarbonate covering, steel sheet base.

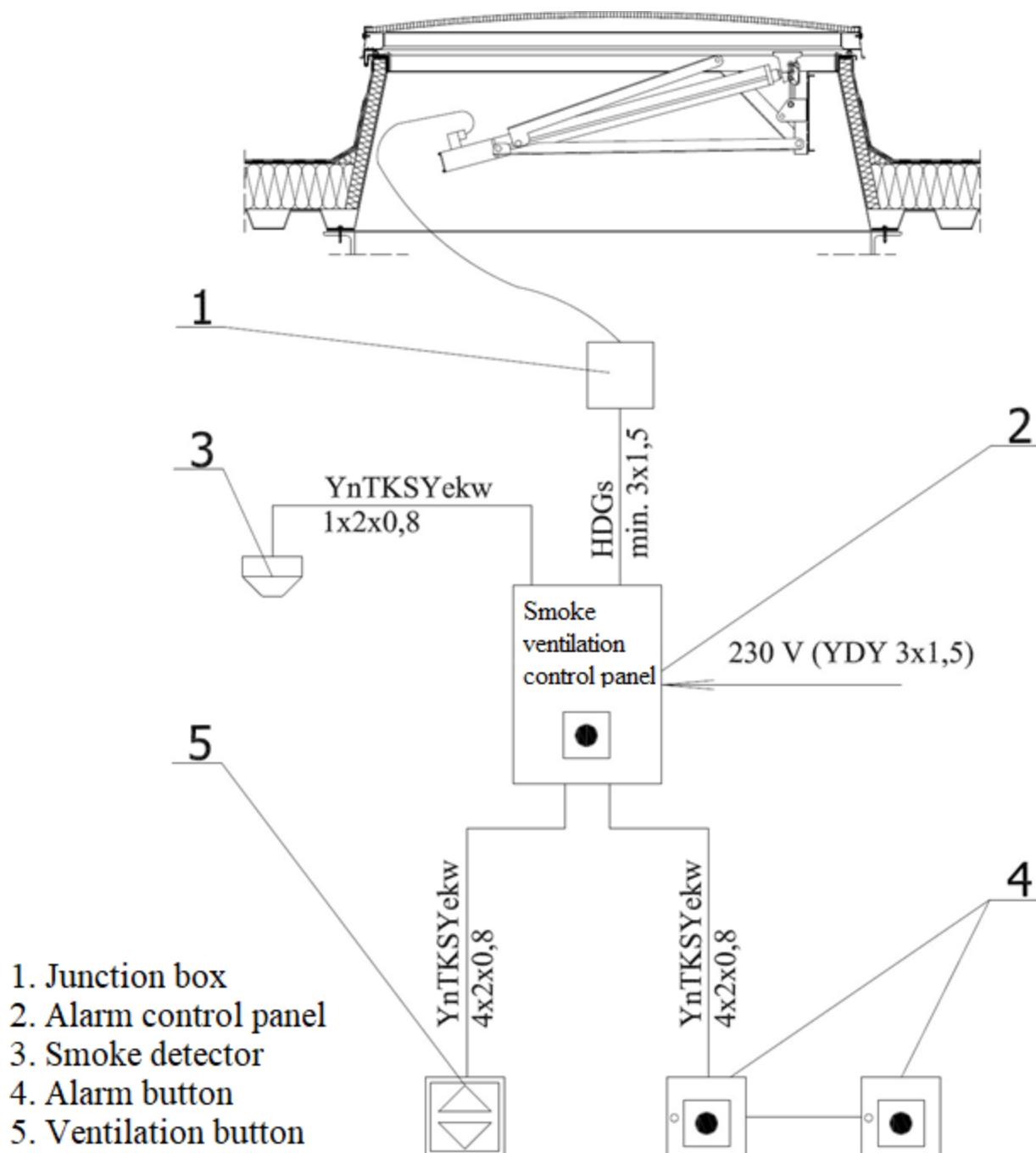


Fig.10. Diagram of smoke extraction system

INTERIM INSPECTION CHART

No.	date	User representative (name and surname)	Manufacturer's representative (name)	COMMENTS (Signatures of the Representatives)
1	2	3	4	5

REPAIR CHART

.p.	date	User representative (name and surname)	Manufacturer's representative (name)	COMMENTS (Signatures of the Representatives)
1	2	3	4	5

CONTRACTOR:

„KERA AWAK” Sp. z o.o.

ul. Dobieżyńska 56

64-320 Buk

fax: (061) 8-108-838

Repair order

No.....

1. Date:

2. ORDERING PARTY:.....
(exact name and address)

.....
.....

3. TIN:

4. Warranty/invoice card number:

6. Contact details:

.....
..... (name) (telephone number)

6. WE COMMISSION THE REPAIR: WARRANTY ; PAID *):

.....
(job content - description of defect)
.....
.....
.....
.....
.....

7. We will pay the amount by bank transfer from
account:.....
within 14 days

Signature and stamp of the Ordering Party

*) delete as appropriate

KERA AWAK Sp. z o.o.
64-320 Buk, ul. Dobieżyńska 56
www.awak.pl

(order to be sent by fax or post)

CONTRACTOR:
„KERA AWAK” Sp. z o.o.
ul. Dobieżyńska 56
64-320 Buk
fax: (061) 8-108-838

Notification of smoke dampers for servicing

No.....

1. Date:

2. ORDERING PARTY:.....
(exact name and address)

.....
.....

3. TIN:

4. Warranty/invoice card number:

6. Contact details:
(name) (telephone number)

7. Please send us a quotation for the technical inspection and maintenance of the smoke and heat extraction system, which we are obliged to do by the Decree of the Minister of the Interior on the fire protection of buildings, other construction objects and areas (Journal of Laws No. 92/92, Chapter, § 23 pt. 4) and the terms of guarantee

Signature and stamp of the Ordering Party

(order to be sent by fax or post)

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