

AM-FD

Activation Mechanism

User Manual



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Good to know

Current information on all products is available on www.design.systemair.com

Introduction

The activation mechanism for FD fire dampers is a crucial part of the damper. Its purpose is to drive the fire damper's blade between the open and closed positions. In case of emergency, AM-FD will close the damper blade and remain closed to fulfill classification parameters of the fire damper. Activation mechanism types for FD dampers are interchangeable with some degree of compatibility. The AM-FD activation mechanism is suitable for FDR-3G, FDS-3G, FDS-EI90S and FDS-EI120S fire dampers.



FDR-3G

Circular Fire Damper
Dimension range (mm): DN 100 up to 1000



FDS-EI90S

Rectangular Fire Damper
Dimension range (mm): $W > 1200$ and/or $H > 800$
up to 1600×1000



FDS-3G

Rectangular Fire Damper
Dimension range (mm): $W \times H = 100 \times 100$
up to 1200×800



FDS-EI120S

Rectangular Fire Damper
Dimension range (mm): $W > 1200$ and/or $H > 800$
up to 1600×1000

NOTE: AM-FD is not available for ATEX rated fire dampers.

Warnings

Some damper parts may have sharp edges; therefore, to protect yourself from injury, please use gloves during damper installation and manipulation. To prevent electric shock, fire or any other damage which could result from incorrect damper usage and operation, it is important to:

1. ensure that installation is performed by a trained person.
2. closely follow the written and depicted instructions provided within this User Manual.
3. perform damper inspection in accordance with this User Manual.
4. check the damper's functionality as per the chapter "Fire Damper Functionality Check" before you install the fire damper. This procedure prevents the installation of a damper that has been damaged during transportation or handling.



IMPORTANT:

Fire dampers are delivered with an order-specified activation mechanism by default. Use this accessory in case of a future on-site damper upgrade.

Use AM-FD Selector on [Systemair DESIGN](#) for ordering.

Compatibility Check

Before installing an AM-FD accessory, check the mechanism compatibility by comparing the 3-digit code provided on the AM-FD label with codes listed on the fire damper body label. If your fire damper label has your mechanism compatibility code listed, the mechanism can be installed.

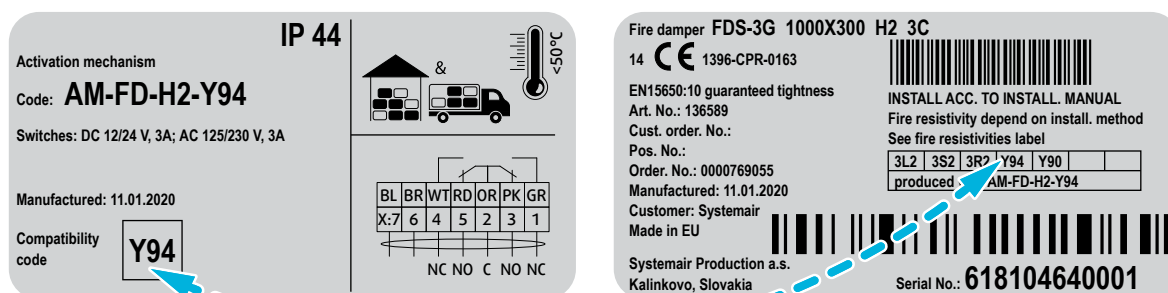


Fig. 1: Example of an AM-FD label (left) and fire damper label (right)

Damper Preparation

Manually Operated Activation Mechanism

The damper blade must be in the closed position for activation mechanism removal.

IMPORTANT: Danger of electric shock!

Switch off the power supply before working on any electrical equipment.

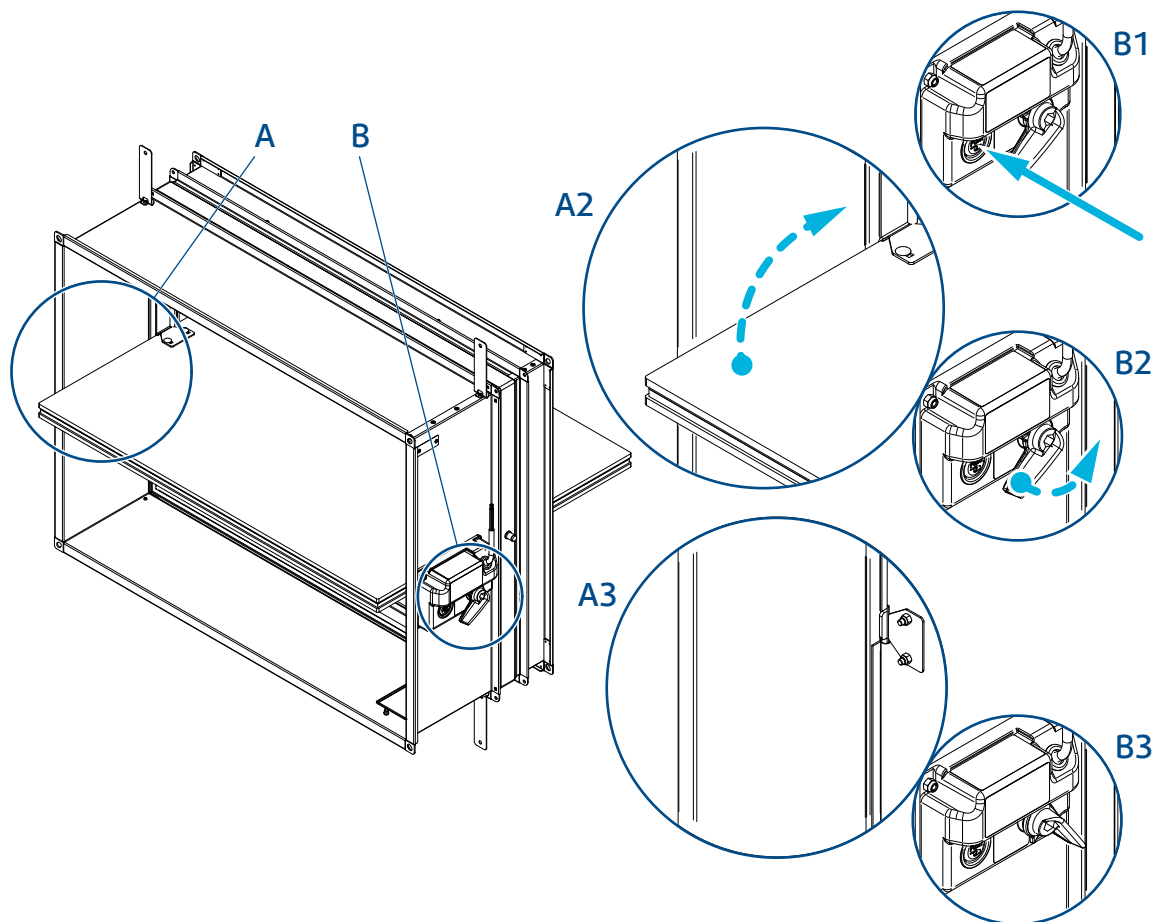


Fig. 2: Manually operated activation mechanism damper preparation

1. Push the red knob to close the damper blade.
2. The spring-fitted manual mechanism will close the damper blade.
3. Make sure the indication on the manual mechanism points to the correct closed position and the blade is in closed position.

Actuator Operated Activation Mechanism

The damper blade must be in the closed position for activation mechanism removal.

IMPORTANT: Danger of electric shock!

Switch off the power supply before working on any electrical equipment.

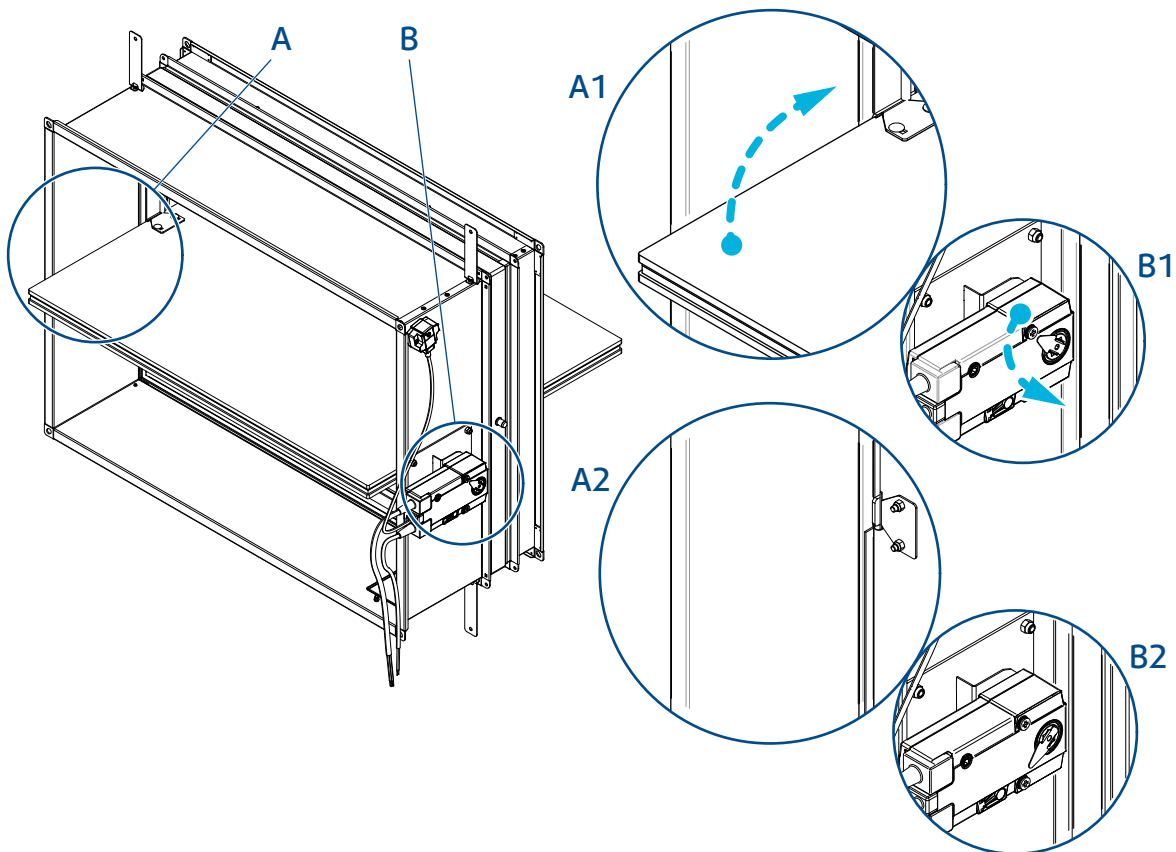


Fig. 3: Actuator operated activation mechanism damper preparation

1. When disconnecting the power from an actuator operated fire damper the actuator will automatically close the damper blade.
2. Make sure the actuator indicates the correct position and the blade is in the closed position.

Removal of the Activation Mechanism

Manually Operated Activation Mechanism

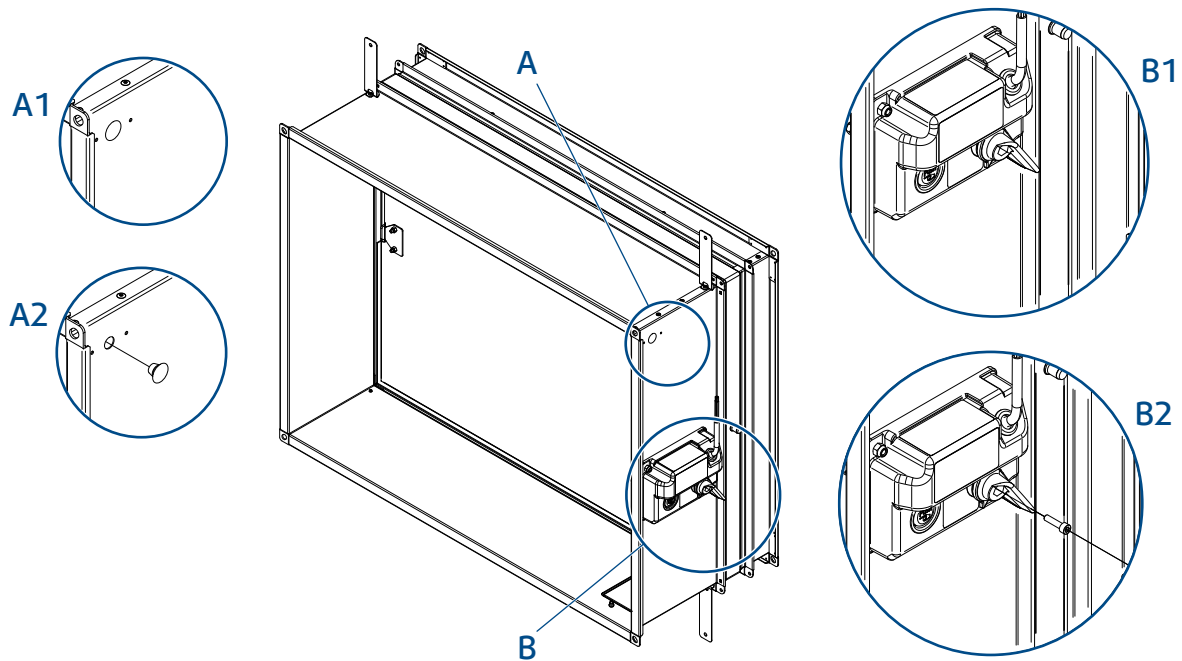


Fig. 4: (part 1/2) Manually operated activation mechanism removal

1. To remove the activation mechanism, the damper blade must be in the closed position (B).
Look for a small black plug (A) sitting flush with the damper body.
2. Remove the screw sunken inside a red lever with a screwdriver (B).
Do not remove the plastic plug (A) if you change to a different manually operated activation mechanism.
If you change to an actuator operated activation mechanism, use a flat screwdriver or a knife and force the plastic plug out of the hole (A).

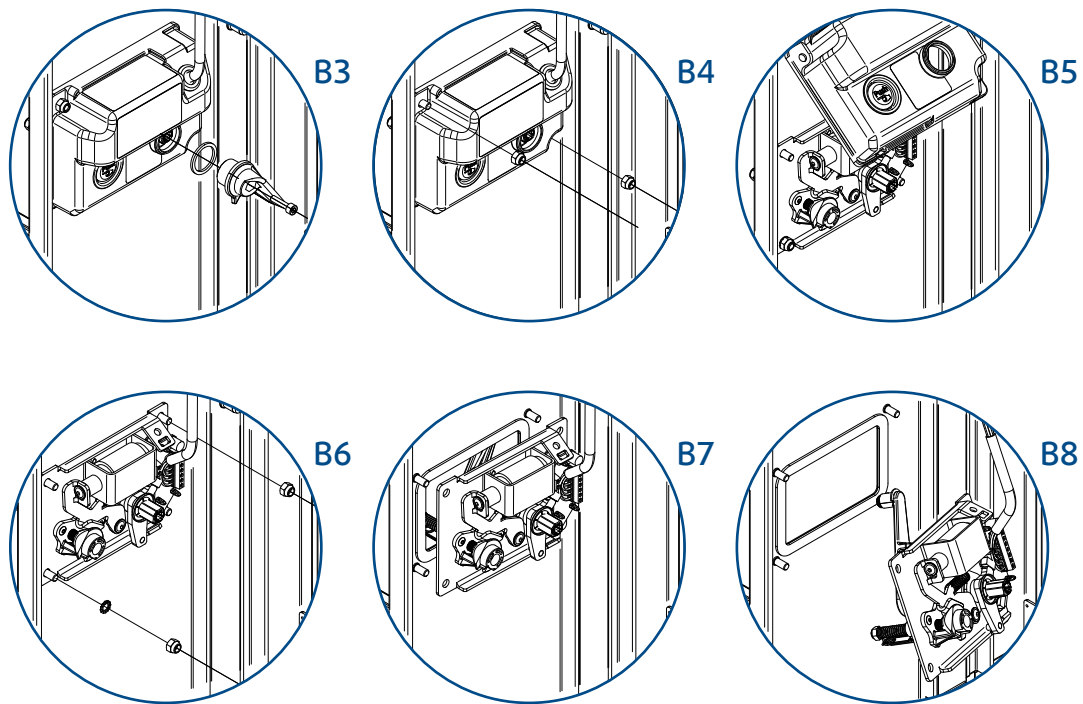


Fig. 4: (part 2/2) Manually operated activation mechanism removal

3. Pull the red lever out together with its seal.
4. Loosen and remove the two visible nuts holding the cover in place.
5. Make sure the mechanism is not connected to a power source.
Remove the mechanism cover with respect to the connected wire and its crossing.
6. Unscrew the two remaining nuts holding the mechanism base and remove the washer.
7. Gently apply force to pull the mechanism out. The connection gasket can hold them in place.
8. Slightly rotate the mechanism to avoid bumping the mechanism lever or its thermal link into the damper body.

Actuator Operated Activation Mechanism

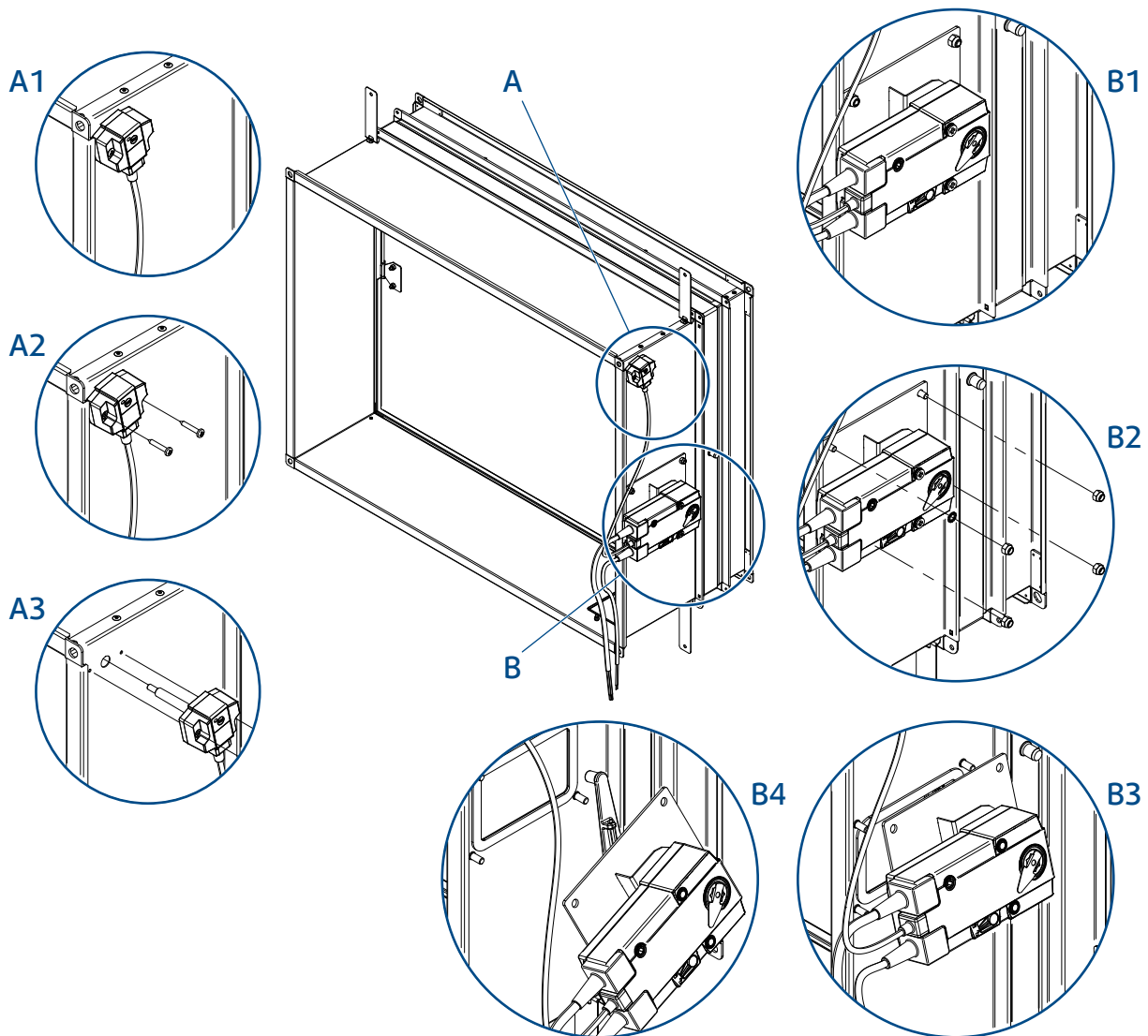


Fig. 5: Actuator operated activation mechanism removal

1. To remove the activation mechanism, the damper blade must be in the closed position.
2. Remove the screws from the thermal fuse (A) with a screwdriver.
Remove the nuts from the mechanism base (B) with the help of a wrench
3. Gently apply force to pull out the mechanism (B) and the thermal fuse (A). The connection gasket can hold them in place.
4. Slightly rotate the mechanism to avoid bumping the mechanism lever into the damper body.

Installing the Activation Mechanism

Manually Operated Activation Mechanism

For installing the activation mechanism, the blade must be in the closed position. You should clearly see the coulisse slot hole. It is recommended to inspect the free movement of the blade and the closure gasket for its condition.

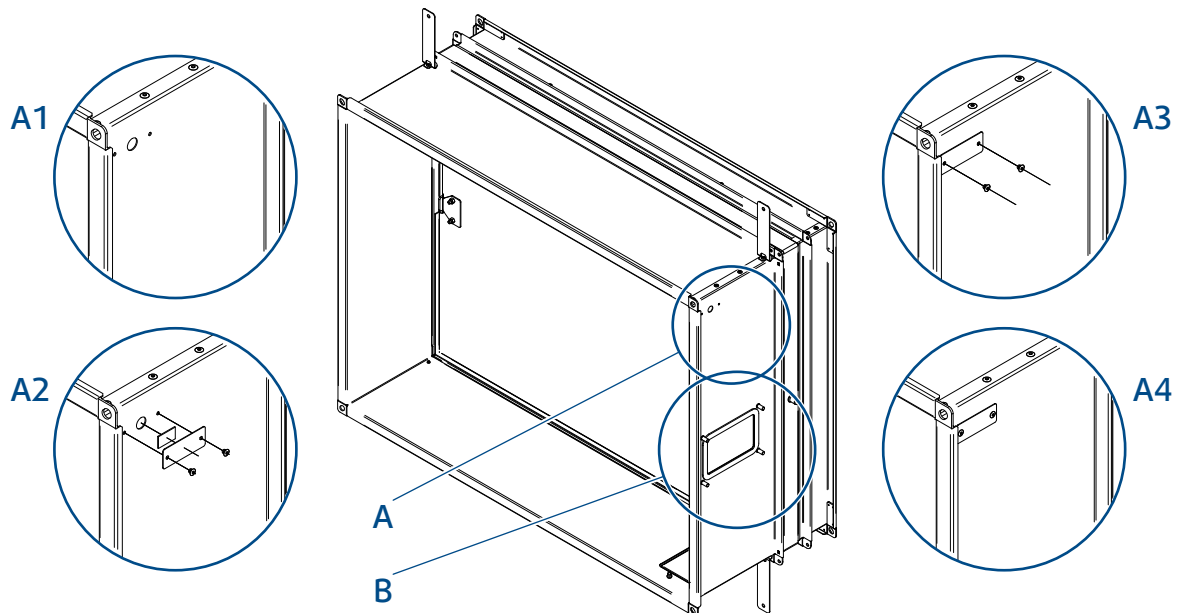


Fig. 6: (part 1/2) Manually operated activation mechanism installation

1. The damper blade must be in the closed position. (A) Find the three small holes that were uncovered after the actuator fuse removal. Slightly rotate the mechanism to avoid bumping into the damper body (B).
2. Press the fuse opening cover with the foam side onto the damper body and align it with the two smaller holes (A). While inserting the mechanism, make sure you align and fit the lever pin into the coulisse (B).
3. Insert two rivets or screws into the holes (A). Insert nuts in the two opposite corners as shown and fix with maximal torque of 2 Nm. Make sure to add a serrated washer under one of the nuts (B).
4. Fix the two rivets in place (A). Insert the cover by pulling the cable through the gasket in the mechanism's plastic cover (B).

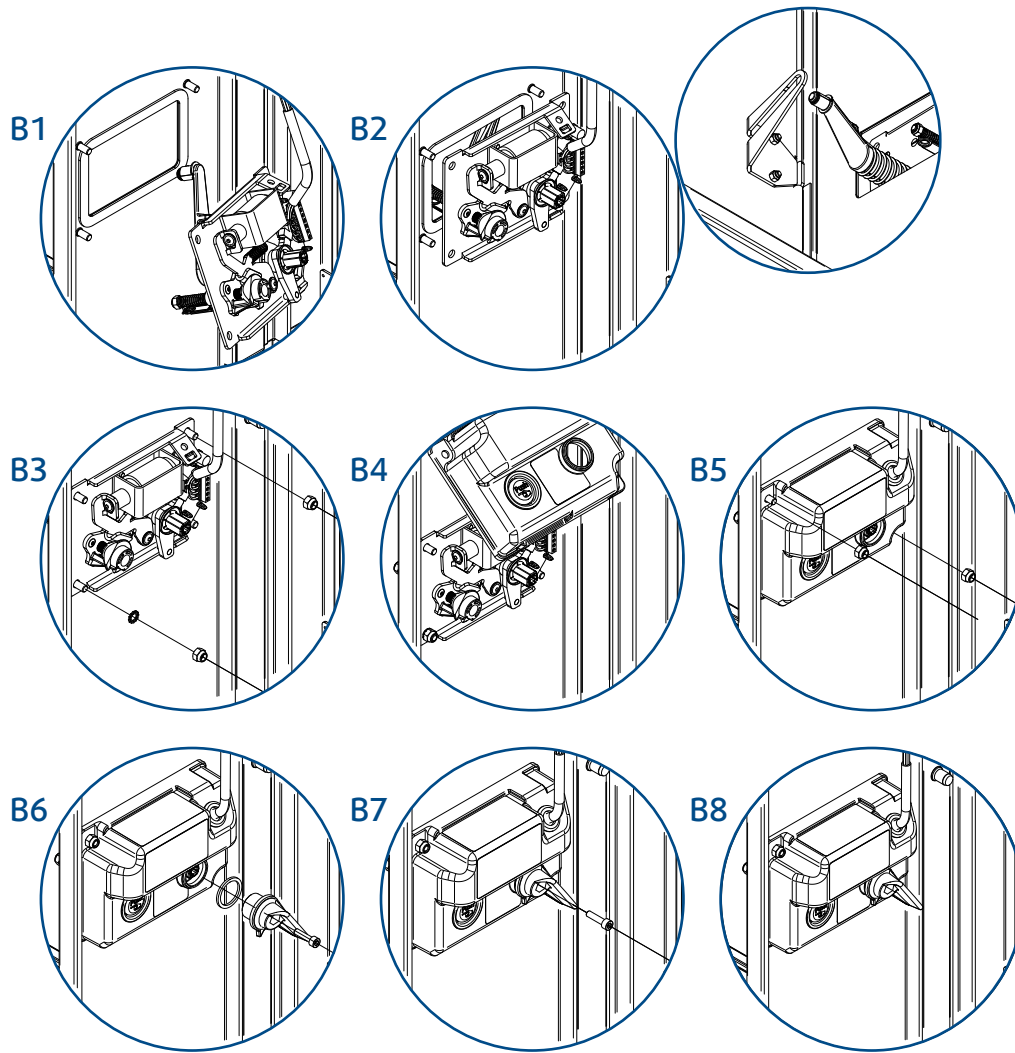


Fig. 6: (part 2/2) Manually operated activation mechanism installation

5. Align the mechanism plastic cover and fix the two remaining nuts in the opposite corners with maximum torque of 2 Nm (B).
6. Insert the red lever through the foam gasket and press onto the lever shaft (B). The red lever fits only in one position so make sure to align the chamfered edge of the shaft.
7. Insert a fixing screw into the red lever (B).
8. Fix the screw into the lever hollow shaft.

Actuator Operated Activation Mechanism

For installing the activation mechanism, the blade must be in the closed position. You should clearly see the coulisse slot hole. It is recommended to inspect the free movement of the blade and the closure gasket for its condition.

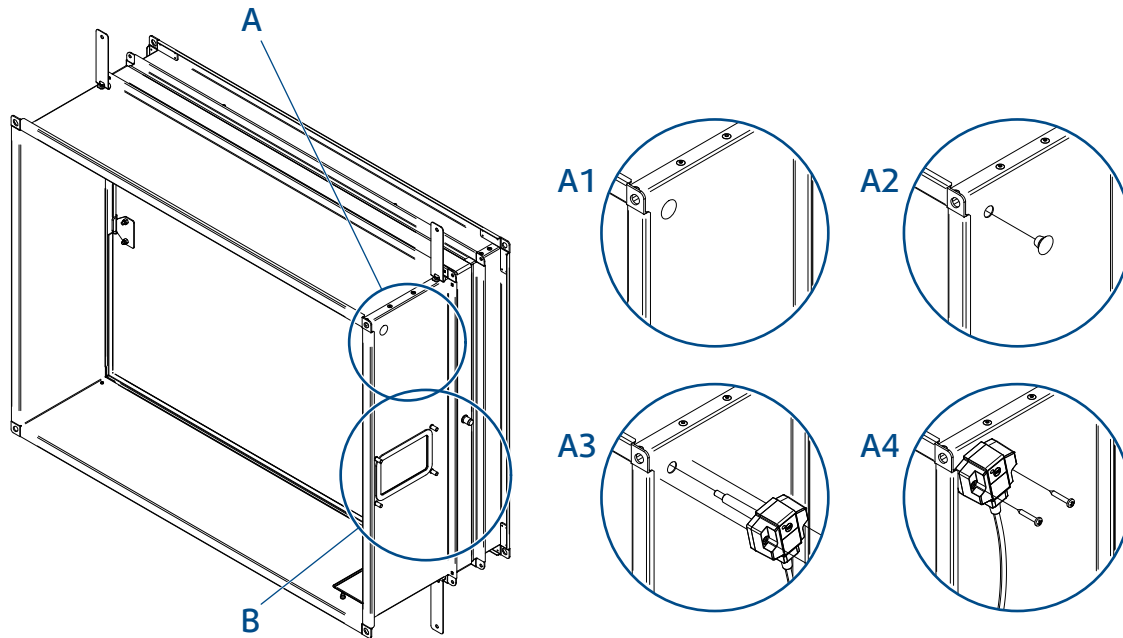


Fig. 7: (part 1/2) Actuator operated activation mechanism installation

1. Look for a small black plug sitting flush with the damper body (A). Make sure the gaskets around the damper's mechanism opening are in usable condition (B).
2. Use a flat screwdriver or a knife and force the plastic plug out of the hole (A). Slightly rotate the mechanism to avoid bumping into the damper body (B).
3. Fit the actuator thermal fuse into the opening (A). While inserting the mechanism, make sure you align and fit the lever pin into the coulisse (B).
4. Align the fuse with the damper body and fix it in place with the two included screws (A). Insert four nuts onto the threaded pins welded onto the damper's body (B).
5. Through the inspection opening check that the lever is fitted in the coulisse. Fix the four nuts on the mechanism with maximal torque of 2 Nm (B).

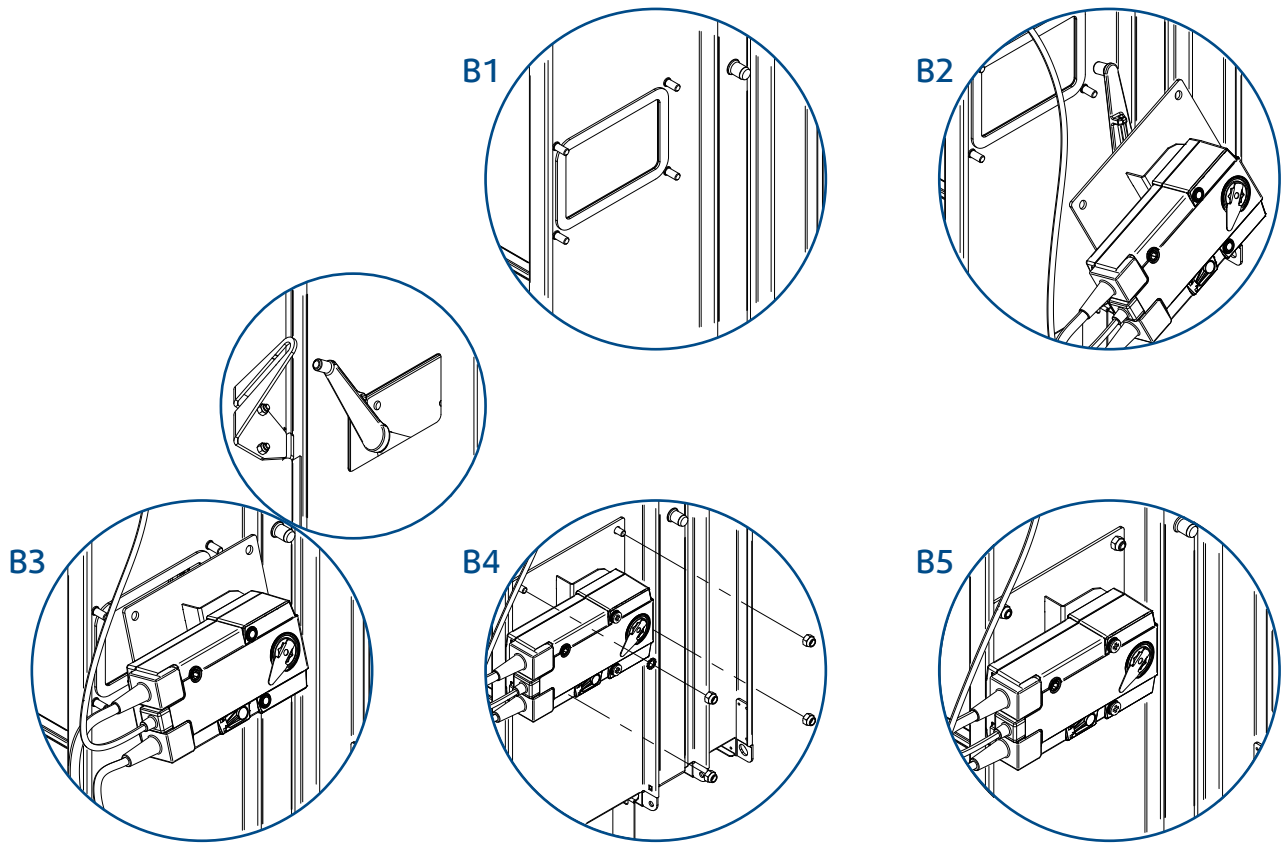


Fig. 7: (part 2/2) Actuator operated activation mechanism installation

Set the Damper into Operation

After the mechanism installation, it is necessary to adjust the damper into its operating position – open the fire damper.

Manually Operated Activation Mechanism

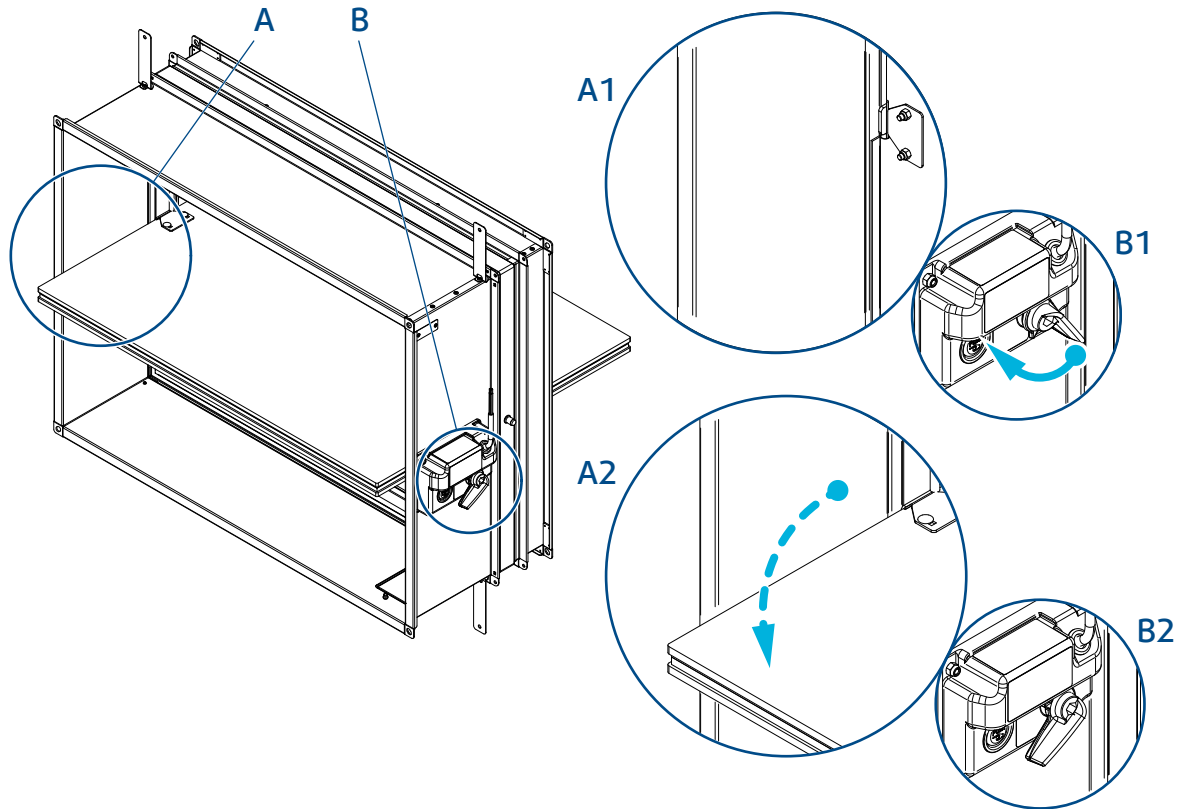


Fig. 8: Manually operated activation mechanism set into operation

1. Turn the mechanism lever into the “OPEN” position using hexagon bent wrench size 10 (wrench not included in the packaging). If the installation was done correctly, the damper blade should open.

Through the inspection opening, inspect the correct position of the damper and the smooth movement of the blade. It is now possible to connect the mechanism to the power supply if the mechanism is fitted with switches and/or an electromagnet. The control system must signal the damper blade’s open position.

IMPORTANT: Log the mechanism change in the Operation Journal of the fire damper. Make sure to change the mechanism type on the damper label (e.g. from H0 to H2) by sticking the included sticker on the existing label.

Actuator Operated Activation Mechanism

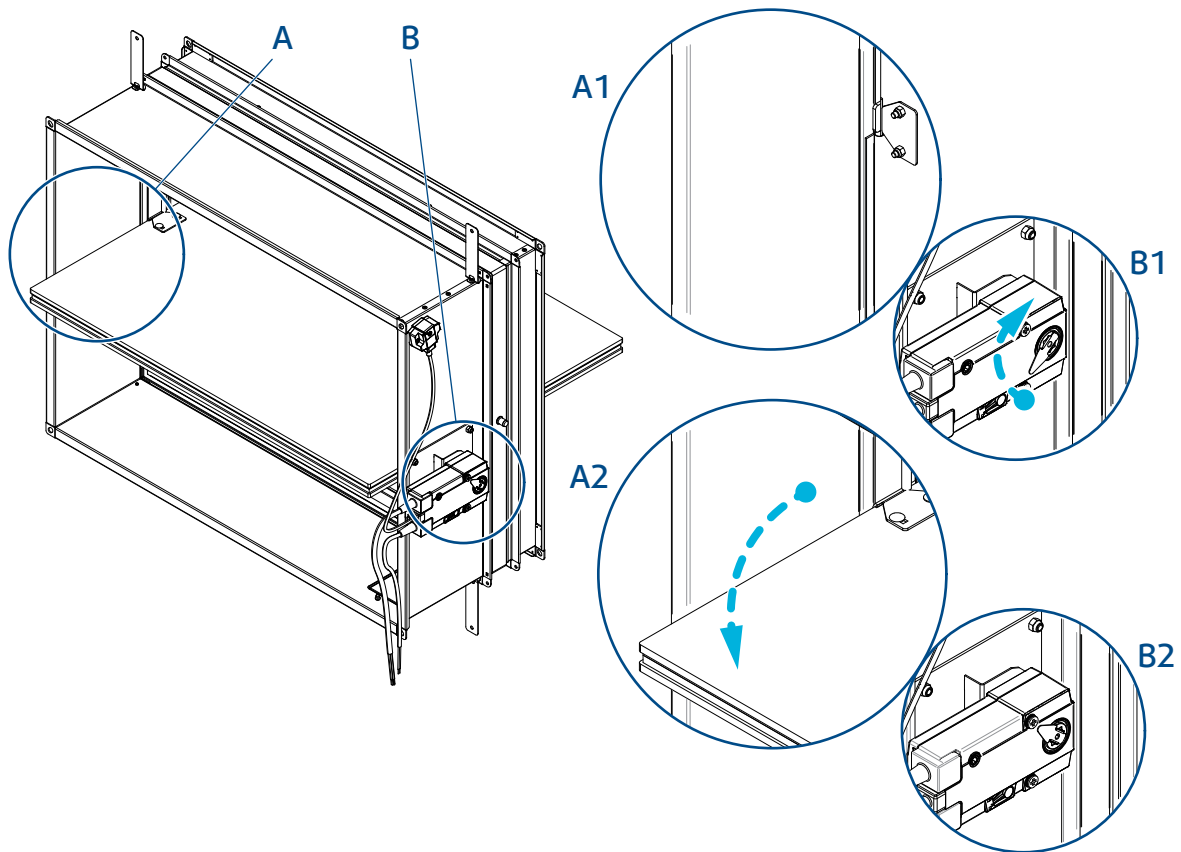


Fig. 9: Actuator operated activation mechanism set into operation

1. Connect the electric driving mechanism to the relevant electric power supply.
2. The actuator is activated and adjusts the damper into its operating position. Through the inspection opening, inspect the correct position of the damper and the smooth movement of the blade.

IMPORTANT: Log the mechanism change in the Operation Journal of the fire damper. Make sure to change the mechanism type on the damper label (e.g. from H5-2 to B24-T) by sticking the included sticker on the existing label.



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Electrical Connections

Electric parameters of the microswitches, electromagnets and actuators based on the type of activation mechanism and its connection schemes can be found in the "UserManual_FDR_FDS" document, under the section "Electrical Connections" (document is available on [Systemair DESIGN](#)).

Fire Damper Functionality Check

Manually Operated Activation Mechanism

1. Open the damper - turn the red lever (2) using a hexagon bent wrench No. 10 (5). Turn the red lever so that the indicator arrow is pointing to the "OPEN" position (3). The red lever needs to remain in the "OPEN" position, and the microswitch for the open position indication must be pushed (if installed).
2. Close the damper - release the mechanism by pressing the red release knob (1), the red lever will adjust its indicator arrow pointing to the "CLOSED" position (4) and remain locked in this position, the microswitch for the closed position indication must be pushed (if installed).
3. Open the damper - turn the red lever (2) using a hexagon bent wrench No. 10 (wrench not included in the packaging). Turn the red lever so that the indicator arrow is pointing to the "OPEN" position. The red lever needs to remain in the "OPEN" position, and the microswitch for the open position indication must be pushed (if installed).

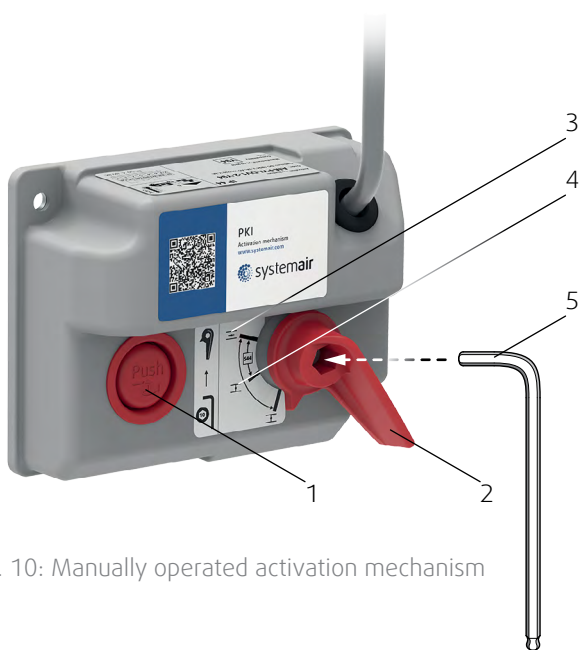
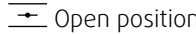



Fig. 10: Manually operated activation mechanism

Legend

1	Release knob
2	Crank
3	 Open position
4	 Closed position
5	Hexagon bent wrench No. 10

Actuator Operated Activation Mechanism

1. The fire damper must open automatically after the actuator circuit closes – the arrow on the actuator axis must show the 90° position.
2. Press the control switch (1) on the thermal fuse (Fig. 11) and hold it until the fire damper is fully closed – the arrow on the actuator axis must show the 0° position.
3. Release the control switch on the thermal fuse. The fire damper must become fully open/the evacuation damper must be fully closed – the arrow on the actuator axis must show the 90° position - which is the operating position.

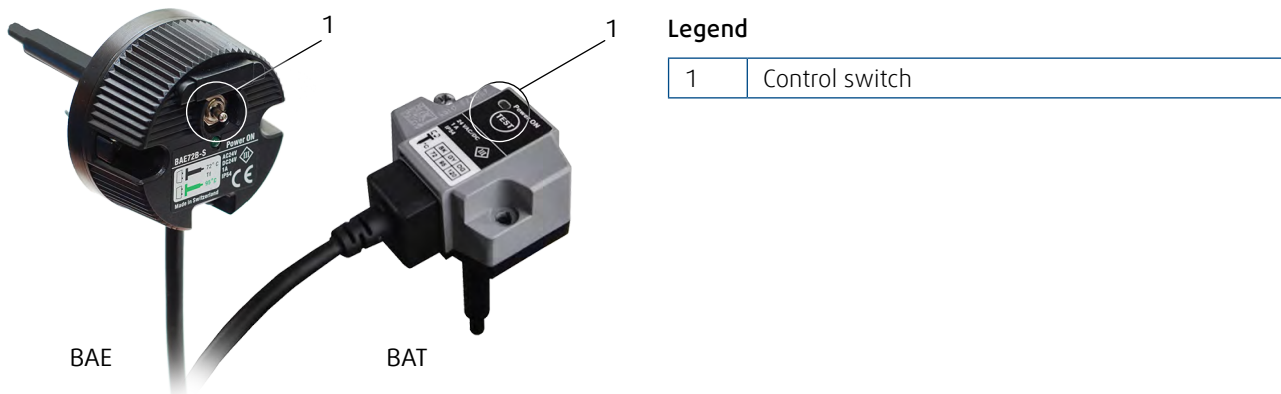


Fig. 11: Electro-thermal fuse

Warranty Conditions

For warranty conditions, contact your local Systemair representative.

Before you approve the fire damper for service, its functionality must be tested as per the “Fire Damper Functionality Check” chapter.

MAKE SURE THE DAMPER CAN PROPERLY CLOSE AFTER THE MECHANISM HAS BEEN CHANGED!

