Installation of optical smoke detector 83320301 GOLD/COMPACT

1. General

Optical smoke detector 83320301 is used for measuring flue gases in ventilation ducts. The product consists of the smoke detector and a duct enclosure system especially designed for optimal airflow through the smoke detector. Together with the venturi pipe, it can detect smoke without having to cover the entire diameter of the ventilation duct.

The system meets all the requirements for good fire safety at air velocities between 1 m/s and 20 m/s. The smoke detector is used with a control unit (fitted in the ELQA control cabinet or a separate control box for smoke function) for controlling fans, fire dampers and smoke dampers.

Accessories

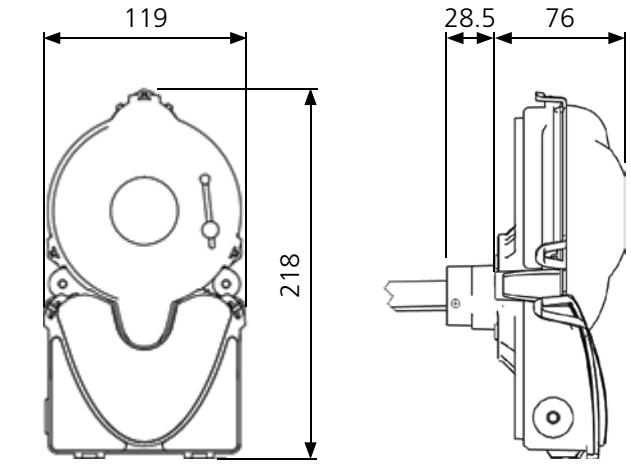
Use an installation bracket when installing on circular or insulated ducts.

Protective hood for installation outdoors, in attics, etc.

2. Technical data

Detector type	Optical
Operating voltage	24V DC from control unit
Current, operation	Approx. 0.04 mA
Current, service alarm	Approx. 10 mA (at 22 V)
Current, alarm	Approx. 40 mA (at 22 V)
Ambient temperature	-20°C to +55°C
Air humidity	Max 99% rH
Enclosure class	IP65
Tested and approved EN 54-7	Smoke detector according to CE,

Dimensions



(All dimensions are given in mm)

3. Maintenance

When the smoke detector becomes dirty, it becomes more sensitive and may trigger a service alarm. This can be delayed by vacuuming the detector once a year.

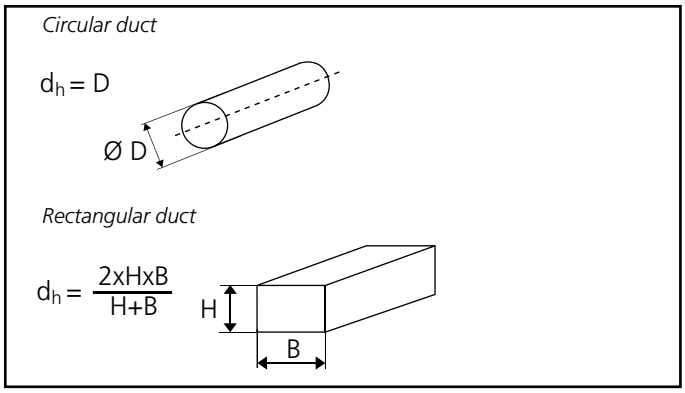
4. Installation and placement

The smoke detector can be mounted on either side of the duct. The product is supplied with a rotating part that is mounted on the ventilation duct with the selected venturi pipe. It also has a "FLOW arrow" for simple installation in the correct airflow direction. The direction of the arrow should match the direction of airflow in the duct. The detector enclosure with cable entries can be rotated in any direction to adapt to the characteristics of the installation site. Both the cover for the smoke detector chamber and the connection chamber have snap locks for quick handling.

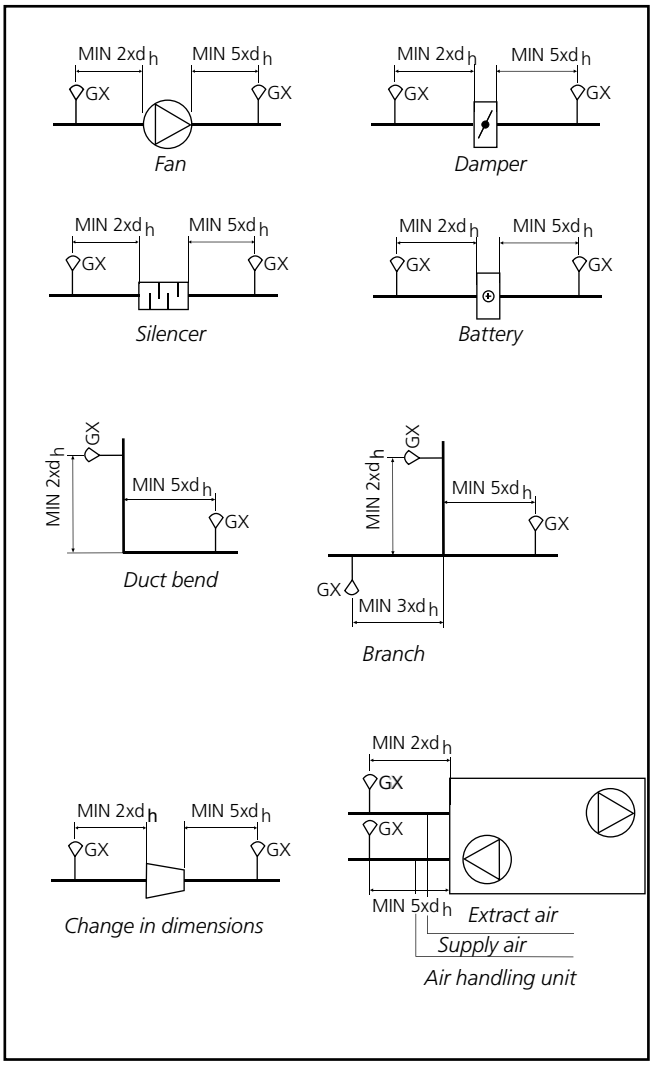
The detector is equipped with a bayonet fitting, making it easy to install and remove.

To ensure adequate fire smoke detection, the smoke detector should be placed so that the distance **to** the nearest source of interference in the duct (see examples of interference sources below), measured in the direction of airflow, is at least as large as 2 x the hydraulic diameter of the duct. The nearest placement **after** a source of interference must be at least 5 x the hydraulic diameter of the duct.

Hydraulic diameter



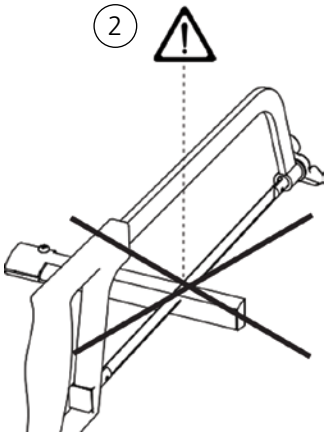
Examples of sources of interference

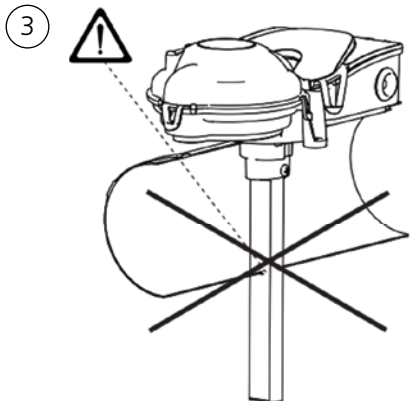


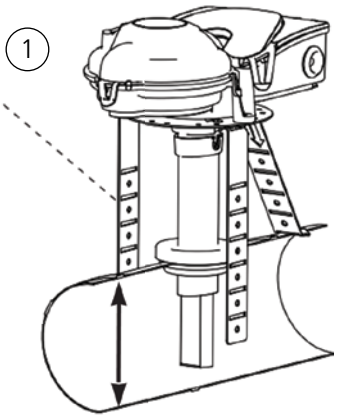
1 *Installation for different mounting conditions*

Ø < 200 mm (2/3 ft)

1. For ducts less than 200 mm (2/3 ft), use mounting bracket 83320401
2. Do not cut the pipe PST195.
3. The pipe for the detector must never penetrate the duct.

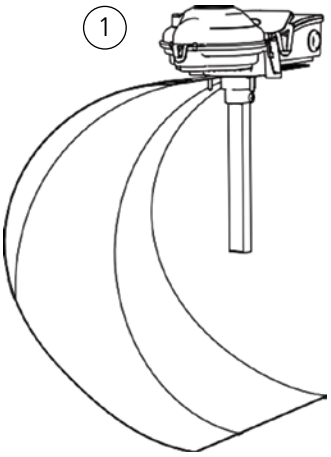


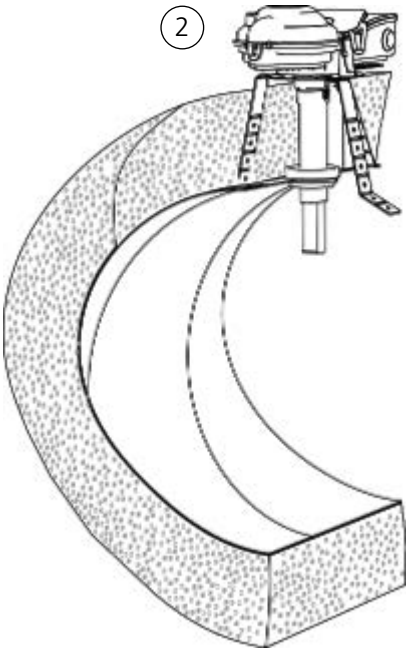




Ø > 200 mm (2/3 ft)

1. For ducts larger than 200 mm (2/3 ft) hydraulic diameter, the detector can be mounted directly on the duct.
2. If the duct is insulated, use mounting bracket 83320401.





2 *Drill a hole in the duct.*

Without mounting bracket, ø 38 mm (1.5")

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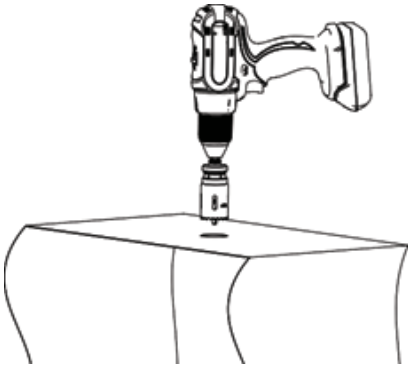
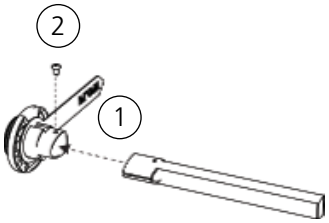
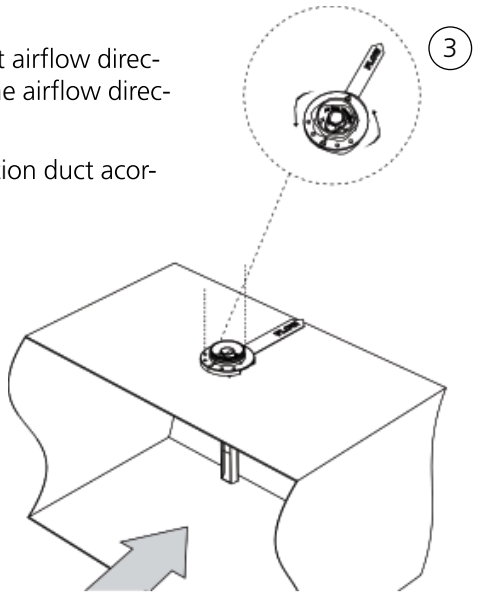
With mounting bracket, ø 51 mm (2")

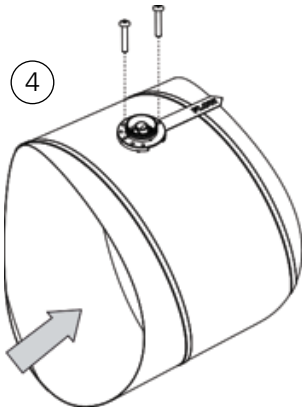


3 *Install the pipe and the rotating section.*

1. Insert the pipe until it bottoms out in the rotating section.
2. Secure it with the locking screw.
3. Turn the rotating section to the correct airflow direction so that the white FLOW arrow and the airflow direction match each other.
4. Secure the rotating part to the ventilation duct acording to the instructions.

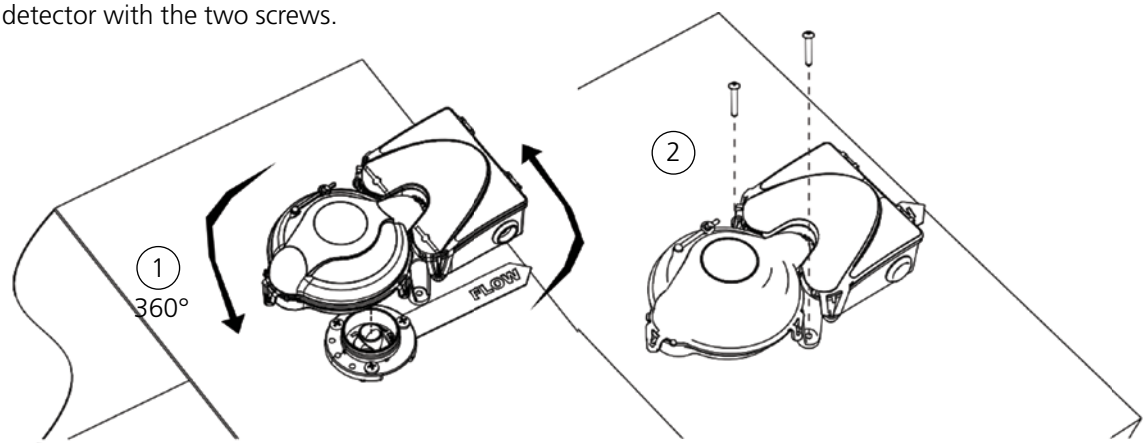






4 *Installation on the duct.*

1. Mount the detector on the rotating part and rotate it in the required direction.
2. Secure the detector with the two screws.

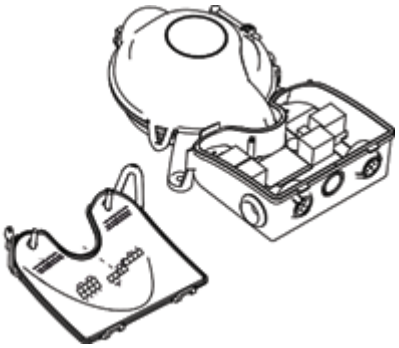


5 *Electrical connections*

1. Remove the cover over the connection housing by carefully loosening the snap locks. The detector has two pre-mounted IP67-approved cable glands for cable diameters 4–11 mm, like Klikseal.

NOTE! The cable must only be routed through cable glands in one direction: into the detector. To replace an installed cable, cut the cable on the outside of Uniguard and pull the rest out from the inside.

2. Connect the cables according to the wiring diagram in Section 6.



6 *Detector test.*

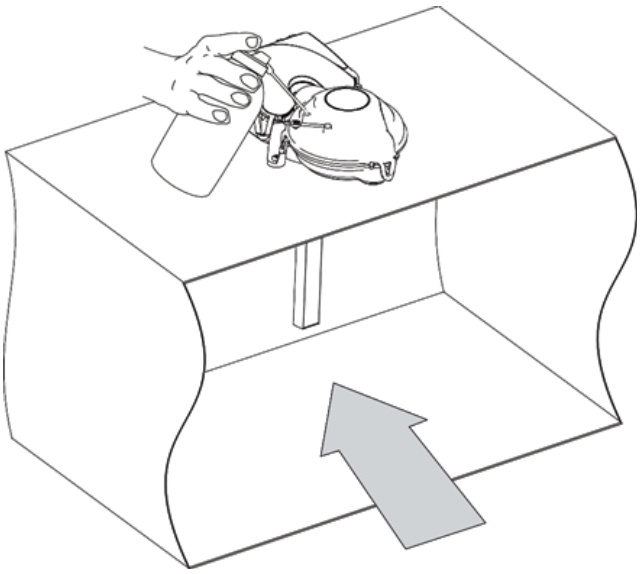
1. Test the detector with aerosol spray for smoke detectors (e.g. SOLO A5).

2. Remove the plug for the test hole and spray lightly with an aerosol.

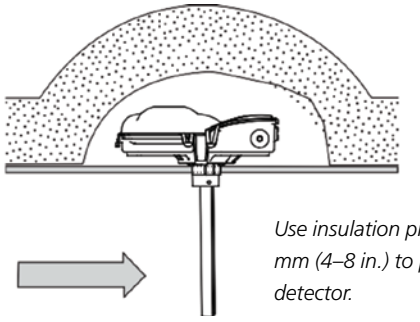
When a fire alarm is triggered, the LED on the detector shines red, and in the event of a service alarm (contamination), it shines yellow.

IMPORTANT!
Refit the plug for the test hole.

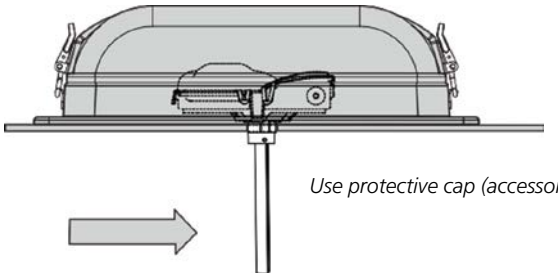
Do not drill holes in the casing for signs, etc. Holes will cause air leakage and severely disrupt the detector's function.



7 *Installation in places where possible condensation problems may arise, e.g. attics.*



Use insulation protection of 100–200 mm (4–8 in.) to protect the entire detector.

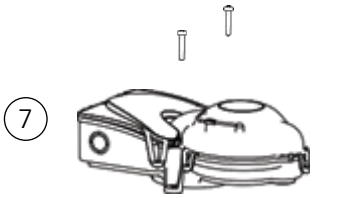


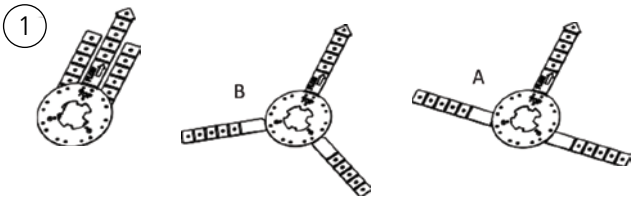
Use protective cap (accessory).

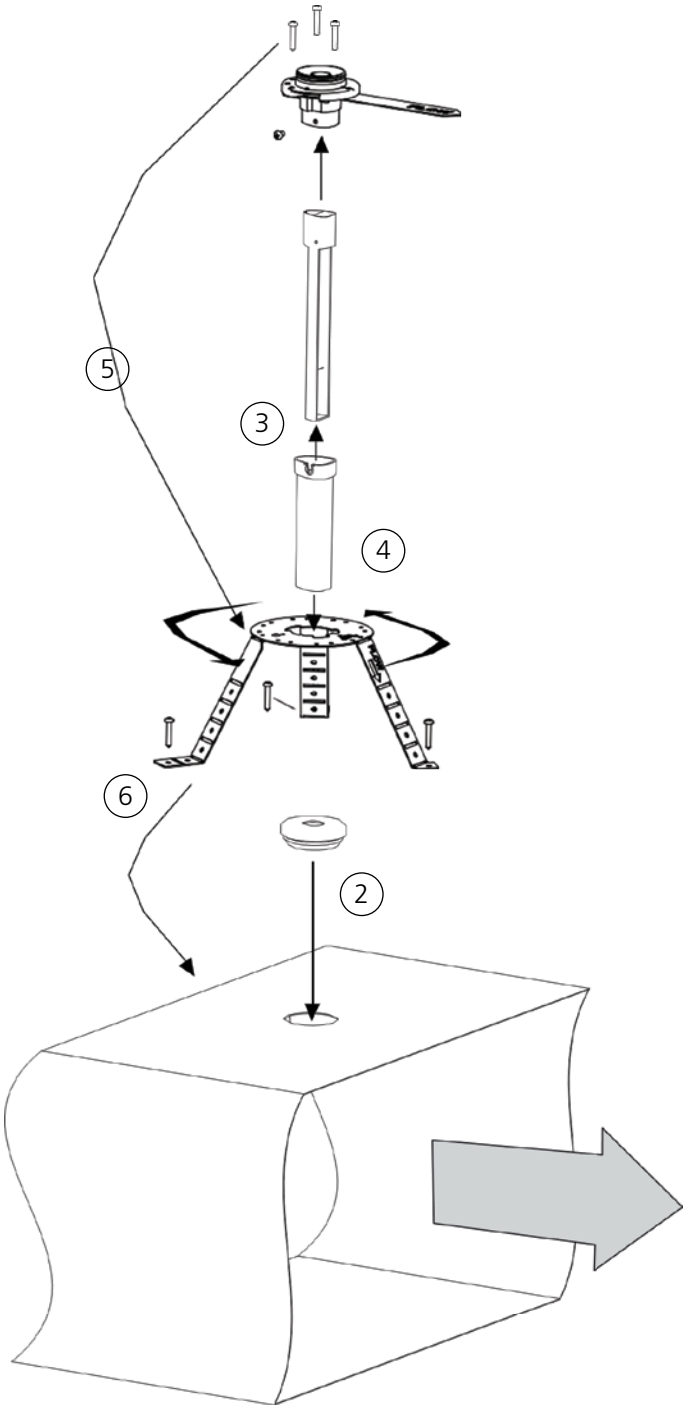
Mark the location of the detector with a sign.

A remote LED alarm indication is recommended when the detector is hidden.

8 *Mounting bracket for insulated ducts and ducts less than 200 mm (2/3 ft).*







1. A flat mounting bracket is supplied. Shape the mounting bracket to position A or B. The mounting bracket can be easily bent to fit circular or rectangular ducts.

Lock the legs of the bracket with the mounting screws on the rotating section.

2. Drill a hole Ø 51 mm (2 inches) and install the rubber gasket.

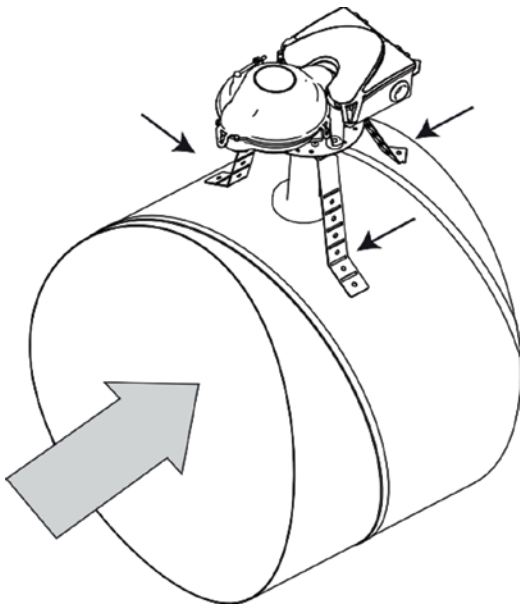
3. Install the pipe and sleeve. Secure them with the locking screw.

4. Insert the pipe into the mounting bracket. Make sure that the flow arrows are in the same direction.

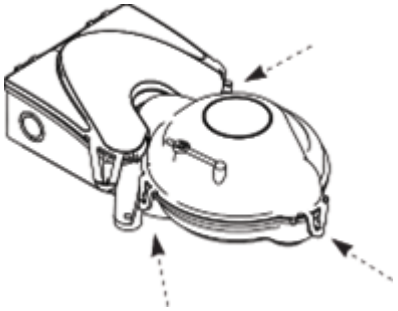
5. Secure the rotating section and lock the legs with the three screws.

6. Mount the bracket in the correct airflow direction on the duct and secure it with the three screws.

7. Fit the cover on the rotation section and secure it with the two screws.

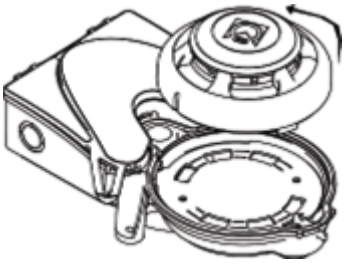


9 *Replacement of smoke detector (if needed)*

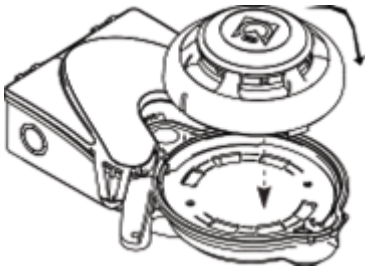


1. Remove the cover by carefully bending the snap locks outwards.

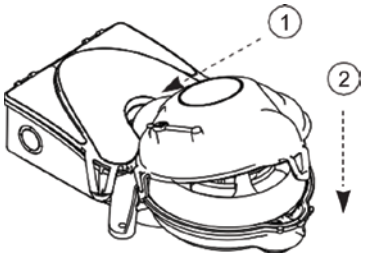
2. Remove the cover.



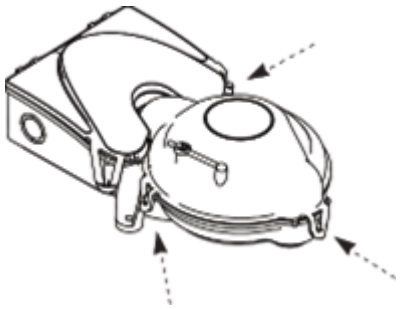
3. Remove the smoke detector by turning it anticlockwise approximately 1/5 turn.



4. Insert the new detector and turn it clockwise.



5. Replace the cover.
(1) Start by placing the cover's "lip" in the cavity next to the air intake.
(2) Press down the cover.



6. Check that all three snap locks are firmly pressed in place.

10 Final checks

- Check that the Uniguard rotation section is correctly installed in accordance with the direction of airflow in the duct.
- Check that the plastic plug for the test hole is installed correctly.
- Full scale tests with smoke generator are recommended to check the function.

Troubleshooting.

The smoke detector alarm is triggered without any smoke being present.

- The smoke detector is broken or contaminated. The detector insert needs to be replaced.