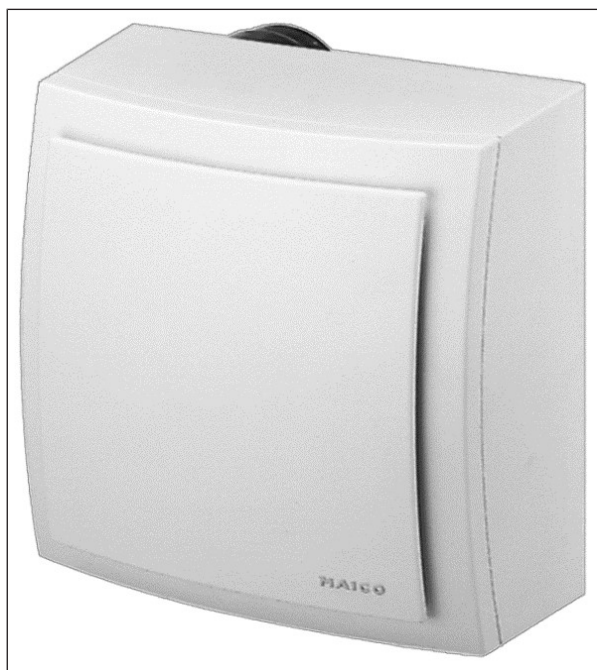


Installation and operating instructions



Surface-mounted system for centralised ventilation, in accordance with DIN 18017-3



Centro-M-APB
Centro-E-APB
Centro-H-APB



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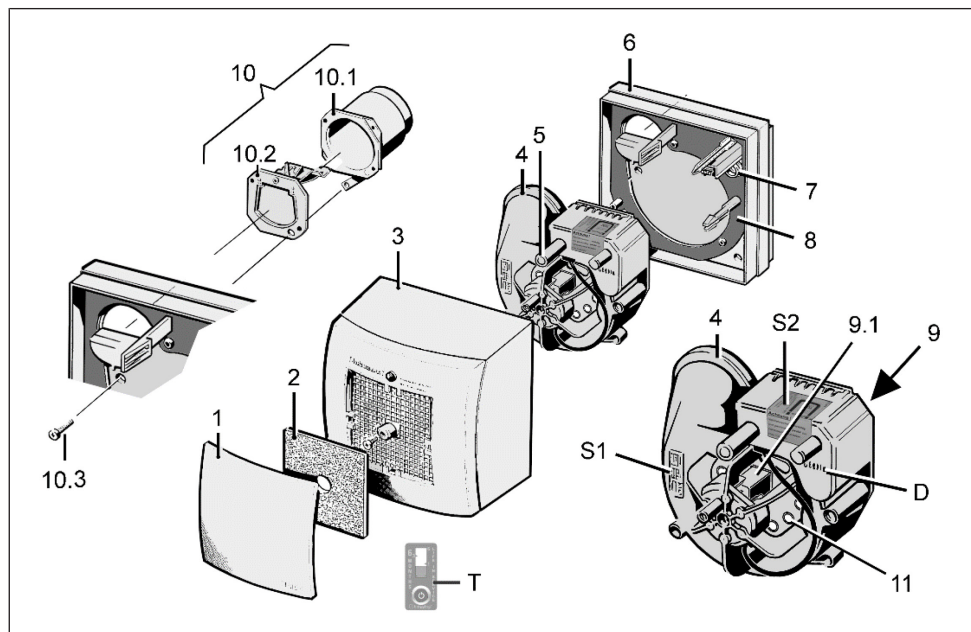


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Preface

Please read the instructions carefully before installing and using for the first time. Follow the instructions. Pass these instructions on to the owner for safekeeping.

Overview of Centro APB system



1 Scope of delivery

1	Cover
2	G2 air filter
3	Upper part of housing
4	ER EC fan insert
5	Humidity sensor (only H model)
6	Lower part of housing
7	Cable grommet
8	Housing floor seal
9	Electronic circuit boards
9.1	Servomotor
10	Fire protection shut-off device
10.1	Metal exhaust socket with tab
10.2	Metal shut-off shutter with release mechanism
10.3	Fixing screw, to be provided by the customer
11	Sealing plugs, 8 pieces
D	Production date
S1	Rating plate
S2	TÜV sticker stating "Slide in blower unit in parallel"
T	Time strip

1 Scope of delivery

Centro-APB exhaust air element

- Surface-mounted housing with provided fire protection shut-off device for connection to the DN 75/DN 80 exhaust air duct.

Other components

- Air filter
- Time strip on title page of these instructions
- Installation and operating instructions

2 Specialist installer qualifications

Installation may only be carried out by **trained specialists** who have the necessary knowledge and experience in **ventilation engineering**. The unit must be connected in accordance with the national technical approval.

Only a **qualified electrician** is permitted to work on the electrics. You are deemed a qualified electrician if you are familiar with the relevant standards and guidelines, can competently and safely connect units to an electrical power supply in line with the Wiring diagrams [► 22] and are able to

recognise and avoid risks and dangers associated with electricity on the basis of your technical training and experience.

3 Intended use


Centro-APB exhaust air elements are intended for use in central ventilation systems with a common main duct. The installation is done surface-mounted on the wall or ceiling.

The exhaust air elements are used to ventilate interior bathrooms, toilet rooms and open-plan kitchens (with exterior windows), storage rooms, etc.

Exhaust air elements are only intended for domestic use and similar purposes. No other or additional use is intended.

4 General safety instructions

The unit must not be used in the following situations under any circumstances:


 **DANGER Risk of combustion/fire from flammable materials, liquids or gases in the vicinity of the unit.**

Do not place any flammable materials, liquids or gases near the unit, which may ignite in the event of heat or sparks and catch fire.

 **DANGER Explosion hazard due to gases and dust.**

Explosive gases and dust may ignite and cause serious explosions or fire.

Never use unit in an explosive atmosphere (risk of explosion).

 **DANGER Explosion hazard due to explosive substances in the lab extraction units.**

Explosive substances in lab extraction units may ignite and cause serious explosions or fire.

Aggressive substances may damage the unit.

Never use unit in combination with a lab extraction unit (risk of explosion).

 **WARNING Risk to health from chemicals or aggressive gases/vapours.**

Chemicals or aggressive gases/vapours may harm health, especially if they are distributed throughout the rooms by the unit.

Never use unit to distribute chemicals or aggressive gases/vapours.

NOTICE Damage to unit due to grease and oil vapours from range hoods.

Grease and oil vapours from range hoods may contaminate the unit and air ducts and reduce efficiency.

Never use unit to convey these substances.

NOTICE Damage to the unit when continuously conveying steam-saturated air.

Never use unit to convey steam-saturated air

NOTICE Damage to the unit due to imbalance of the impeller when conveying solid particles.

Never use unit to convey solid particles that could adhere to the unit.

NOTICE Unit damage during the construction phase, caused by soiling of the unit and air ducts.

Unit operation is not permitted during the construction phase.

Do not operate unit during the construction phase.


NOTICE Damage to unit in the event of moisture ingress.

IP X5 (protection against water jets).

Never use unit outdoors.

Observe all safety instructions.

5 Safety instructions regarding installation, operation, cleaning and maintenance

 DANGER Risks for children and people with reduced physical, sensory or mental capabilities or a lack of knowledge.

Unit may only be installed, commissioned, cleaned and maintained by persons who can safely recognise and avoid the risks associated with this work.

 DANGER Danger of electric shock from operating the unit when not fully mounted.

Electric components are a potential source of electric shock.

If the unit is open, all off the supply circuits must be switched off (mains fuse off), secured against being accidentally switched back on and a visible warning sign must be attached.

Only operate the unit when it is completely installed.

 DANGER Danger if the relevant regulations for electrical installations are not observed.

Before removing the housing cover or removing the fan insert and before installing the electrics, switch off all supply circuits, switch of mains fuse and secure it against being accidentally switched back on again. Attach a warning sign in a clearly visible place.

Be sure to observe the relevant regulations for electrical installation; e.g. DIN EN 50110-1. In Germany, particularly observe VDE 0100, with the corresponding sections.

A mains isolation device with contact openings of at least 3 mm at each pole is mandatory.

Only connect unit to permanently wired electrical installation and with NYM-O or NYM-J cables, depending on the unit variant, 3 x 1.5 mm² or 5 x 1.5 mm².

Units may only be operated using the voltage and frequency shown on the rating plate.

Unit may be energized even when at a standstill and may switch on automatically due to sensors (time delay, humidity etc.). Maintenance and fault finding only permissible when carried out by qualified electricians.

The degree of protection stated on the rating plate is only guaranteed if installation is undertaken correctly and if the connecting cable is correctly guided through the stepped grommet (The grommet must completely enclose the cable sheathing). The fan insert must also be engaged and the housing cover installed.

⚠ DANGER Danger due to fire transmission:

if an incorrect connection duct is connected to the housing. Always use the correct duct material for the respective housing.

if incorrect ceiling compound is used for exhaust air systems with an intermediate ceiling (PAM-GLOBAL RML or ceiling barrier system). Ensure that the gap remaining between the main duct and wall or ceiling is fully sealed with non-flammable materials resistant to deformation, such as concrete, cement mortar or plaster.

if the ventilation connection between the metal exhaust socket and the flexible aluminium duct (by means of cold-shrink tape) is not properly executed inside the shaft.

if, outside the shaft, the metal exhaust socket is incorrectly connected to the folded spiral-seams connection duct. 3 steel blind rivets are prescribed for the connection with the connection socket. These must not impair the shutter function. Before commissioning, ensure that the shut-off shutter moves with ease.

if the tab of the fire protection shut-off device is not or not correctly screwed to the wall or the wall board.

if the metal shut-off shutter is not correctly inserted and screwed down in the exhaust socket. During installation, it is essential that the shut-off shutter is correctly positioned and screwed down. The soldered strut must be correctly inserted and the shutter must move with ease.

⚠ DANGER Risk of injury in case of damaged unit.

Switch the unit off immediately if you discover damage or faults that could endanger persons or property.

Prevent from being switched back on until fully repaired.

⚠ WARNING Risk to health if filters are not replaced or if there are no air filters.

Heavily soiled or moist air filters can accumulate harmful substances (mould, germs, etc.). This may also happen if the unit is shut down for an extended period. If the air filter is missing, the unit and air ducts become soiled.

Never operate the unit without air filters.

Only use original filters.

Regularly change air filter when a filter change is indicated (LED or TimeStrip).

If the unit has not been used for a long time, always replace the air filters.

⚠ WARNING Risk of injury when working at heights.

Use appropriate climbing aids (ladders).

Stability should be ensured, if necessary have the ladders steadied by a 2nd person.

Ensure that you are standing securely and cannot lose your balance and that there is no one under the unit.

⚠ WARNING Risk of injury and risk to health from parts which may affect the ventilation system which are added or modified at a later date.

Parts (range hood, air-ventilated fireplace etc.) which are added or modified at a later date may result in health risks and operation which is not permitted. Parts may only be added or modified at a later date if system compatibility is established/ensured by a planning office. If using an exhaust air range hood or air-ventilated fireplace, this must be accepted by a regional master chimney sweep.

⚠ WARNING Risk of injury and health risk in the event of changes or modifications or if components which are not permitted are used.

The unit may only be operated with original components. Changes and modifications to the units are not permitted and release the manufacturer from any guarantee obligations and liability, e. g. if the housing is drilled at a point which is not permitted.

⚠ CAUTION Risk to health if unit is not correctly cleaned.

Clean the unit regularly, at least every 2 years.

This is the only way of ensuring that the unit is running hygienically.

⚠ CAUTION Exercise caution when handling packaging materials.

Observe applicable safety and accident prevention requirements.

Store packaging material out of the reach of children (risk of suffocation).

NOTICE Non-intended operation/impermissible operation due to incorrectly mounted unit.

Only install unit in accordance with the planning documents.

In particular, note the information on ventilation channels and sound deadening.

Observe planning instructions regarding unit position and distance to other façade components. If necessary, use isolating elements.

NOTICE With the unit covered, higher resistance (pressure).

Higher operating noise, higher consumption. Never cover the exhaust air element during operation.

6 System and product information

6.1 Certificates of approval

Certificates of approval on request.

6.2 Centro centralised ventilation system

Exhaust air elements are components of the centrally controlled Centro air extraction system.

A central roof fan or ventilation box extracts the stale, humid air via the exhaust air elements installed in bathrooms, toilet rooms and kitchens. At the same time, outside air flows draught-free into the apartment(s) via supply air elements. The Centro pressure controller keeps the air supply pressure of the central fan constant.

6.3 Exhaust air elements

Centro-M-APB

Manual model. For use in systems with jointly variable volumetric flows. Fixed air volume setting by pushing out sealing plugs in each exhaust air element.

Centro-E-APB

Electric model. With electro-thermal servomotor for switching between basic and demand-based ventilation. Fixed air volume setting of the basic ventilation by pushing out sealing plugs in each exhaust air element. Demand-based ventilation automatically via servomotor.

Centro-H-APB

Model with automatic humidity control.

Barrier-free product as the fan switches itself on and off automatically. Once the exhaust air element has been installed, the unit regulates to the current room humidity (relative humidity). This humidity value is saved as the first reference value. The reference value does not have to be specified manually.

If the room humidity rises by 7 % within 2 minutes, the exhaust air element switches to full load operation (demand-based ventilation). If the relative humidity falls below the reference value during operation, the newly established reference value is saved. The exhaust air element then automatically switches back to base load operation.

If the humidity does not fall below the reference value within 60 minutes, the unit continues to operate for 15 minutes in nominal load and then switches to base load operation or off. The exhaust air element then automatically switches back to base load operation.

Demand-based ventilation automatically or via a switch (for example light switch). After manual switch-on (light switch) the exhaust air element runs with a start delay of approx. 1 minute with demand-based ventilation (full load). After manual switch-off, the exhaust air element continues to run in nominal load operation with an overrun time of 15 minutes (valve closing time approx. 2 - 3 minutes).

Fixed air volume setting of the basic ventilation by pushing out sealing plugs in each exhaust air element. Demand-based ventilation possible via a switch (e.g. light switch). For function: Wiring diagrams [► 22].

6.4 Product features

- Filter change is indicated via time strip (→ Title page).

i **The time strip** is visibly attached to a location of your choice (e.g. next to the exhaust air element) and after the filter change interval has elapsed, it can be disposed of in the domestic waste. **Do not affix the time strip under the cover.** New time strips are included in the scope of delivery of the exchange air filter.

- Centro-APB with maintenance-free fire protection shut-off device K 90-18017 (incl. metal backflow preventer with soldered strut).
- With DN 75/DN 80 exhaust socket.
- Lower part of housing can be turned, so the exhaust socket can be connected to main duct in the top left or top right.

- Cold smoke barrier as a standard feature.
- No additional telephony sound absorbers required.
- Control circuit board in spiral housing for Centro-H-APB.
- Electrical plug connection for quick spiral housing installation in the lower part of the housing. Spiral housing secured with snap-fit fasteners.
- Shaft level difference according to DIN 4109, tested by IAB Oberursel (The Institute for Acoustics and Building Physics in Germany).
- Upper part of housing with exhaust air filter. Trouble-free filter change without tools.

6.5 Installation conditions

If installed in accordance with DIN 18017-3, use is only permitted:

- in central ventilation systems with a common main duct;
- with permitted connection ducts;
- with unit suitable for the system (Permitted exhaust air systems);
- with surface installation on the wall or ceiling;
- if correctly installed as per the instructions in this manual and national technical approval;
- if unit is completely installed;
- with the correct air filters;
- with the outside air openings stated in the planning documents.

6.6 Permitted exhaust air systems

Exhaust air system	Centro-APB
PAM-GLOBAL RML cast ventilation system *	yes
System with fire-proof shaft *	yes

For permissible connection ducts: Requirements in line with approval [► 9].

7 Technical data

7.1 Environmental conditions and operating limits

- Permissible maximum temperature of air medium + 40 °C.
- The air supply to the home must be set up so that virtually no air can flow into the living areas from the kitchen, bathroom or WC.

- A room from which the air is to be extracted must be fitted with a non-closable, free supply air cross section of at least 150 cm², e.g. with MLK door ventilation grille.
- Centro-E-APB and Centro-H-APB with resistance to interference according to EN 55014-2 – 1000 to 4000 V depending on pulse type and energy component. When operating with fluorescent tubes, these values can be exceeded. In this case, additional interference suppression measures (L or RC modules, protection diodes, varistors) are required.

7.2 Regulations for operation with fireplaces

Sufficient supply air intake must be ensured during operation with **air-ventilated fireplaces**. The maximum permitted pressure difference per residential unit is 4 Pa.

The unit may only be installed in residential units with air-ventilated fireplaces under the following conditions:

- the evaluation criteria drawn up by the responsible, regional master chimney sweep are met;
- Parallel operation of air-ventilated fireplaces for liquid or gaseous fuels and air-extracting equipment can be prevented using safety devices or
- the extraction of exhaust gas from the air-ventilated fireplaces is monitored by special safety devices. The ventilation system or the fireplaces must be switched off if the equipment is triggered.

7.3 Technical data table

Degree of protection	
Centro-M-APB	-
Centro-E-APB	IP X5
Centro-H-APB	IP X5
Sound pressure level L _{WA7}	26 to 33 dB(A), depending on unit model
Weight	up to 1.5 kg

For more technical data → rating plate.

For characteristic curves → www.maico-ventilatoren.com

7.4 Storage

Only store unit horizontally in a suitable, dry room. Ambient temperature – 10 °C to + 60 °C.

Maico accepts no liability for corrosion damage caused by improper storage, e.g. storage in a damp environment.

8 Mounting preparations

I Suitable mounting material is to be provided by the customer.

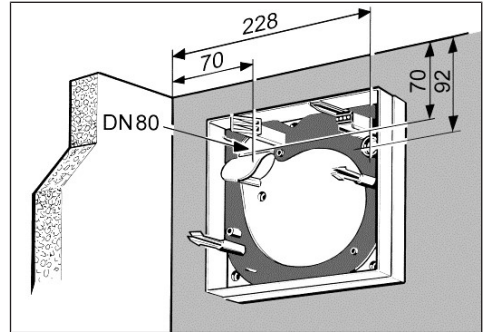
8.1 Requirements in line with approval

8.1.1 Approval provisions

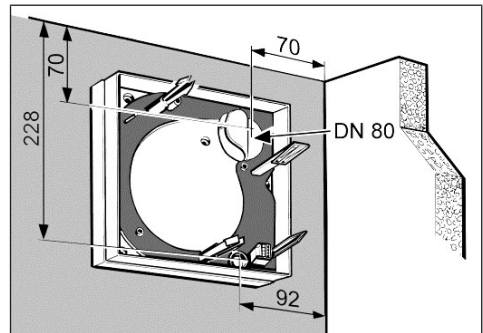
Approval provision	Centro-APB
Number of units per floor, residential unit or fire zone	Max. 3 fans or 3 connections
Shaft wall	min. 35 mm , board materials (F90)
Connection ducts inside the shaft	Steel folded spiral-seams duct , between the main duct in the shaft and the unit, max. 2 m long (→ approval).
Duct elbows in the unit connection duct	Max. 90° bend, ascending
Number of duct elbows permitted for wall installation	Max. 1 x 90°
Number of duct elbows permitted for ceiling installation	Max. 2 x 90°
Regulating equipment in the exhaust air duct	Not permitted
Wall/ceiling opening for DN 80 unit connection duct	Brickwork or concrete: 130 mm. Board materials (F90): Outer Ø of pipe

8.2 Permitted installation positions:

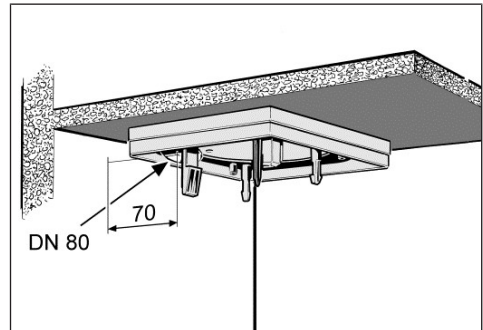
Wall installation, top left corner of room



Wall installation, top right corner of room



Ceiling installation

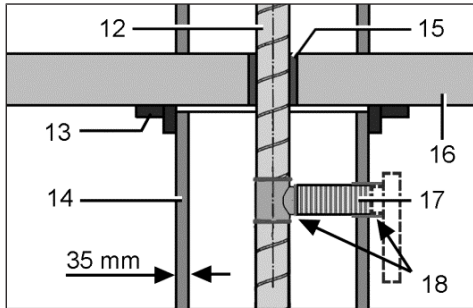


8.3 Preparations for installation with fire protection requirements

NOTICE Damage to unit, malfunctioning in the event of corrosion damage from mortar.

Wrap ventilation ducts, connected to the unit, with a suitable adhesive tape to protect against corrosion inside the brickwork, e.g. using cold-shrink tape.

8.3.1 Preparations for wall installation (with fire protection)



12	Main duct (steel folded spiral-seams duct)
13	Spigot
14	Shaft wall
15	Ceiling compound
16	Floor ceiling
17	Connection duct: Flexible aluminium duct AFR 80
18	Sealing material, e.g. cold-shrink tape

i It is essential that requirements in line with approval are observed (Requirements in line with approval [► 9]).

NOTICE Damage to unit, malfunctioning in the event of corrosion damage from mortar.

Wrap ventilation ducts, connected to the unit, with a suitable adhesive tape to protect against corrosion inside the brickwork, e.g. using cold-shrink tape.

8.3.2 Preparations for ceiling installation (with fire protection)

(Connection outside of the shaft)

1. Correctly attach main ventilation duct inside the shaft.
2. Apply ceiling compound. To do this, encase the ceiling and pour in the material from above.
3. Make a wall or shaft opening for the flexible aluminium duct.

⚠ DANGER Danger to life due to fire transmission in case of faulty ceiling compound. It is essential that the remaining gap between the main duct and the wall or ceiling is completely sealed with non-flammable materials that are resistant to deformation. For example, use concrete or cement mortar.

4. Connect the flexible aluminium duct to the main duct and seal for ventilation.
5. Cut flexible aluminium duct to length, observe a maximum duct length of 2 m.

i Dimension the length of the flexible aluminium duct so that it protrudes from the wall or shaft so that the connection socket can be attached later. Also attach a ventilation seal on the unit side.

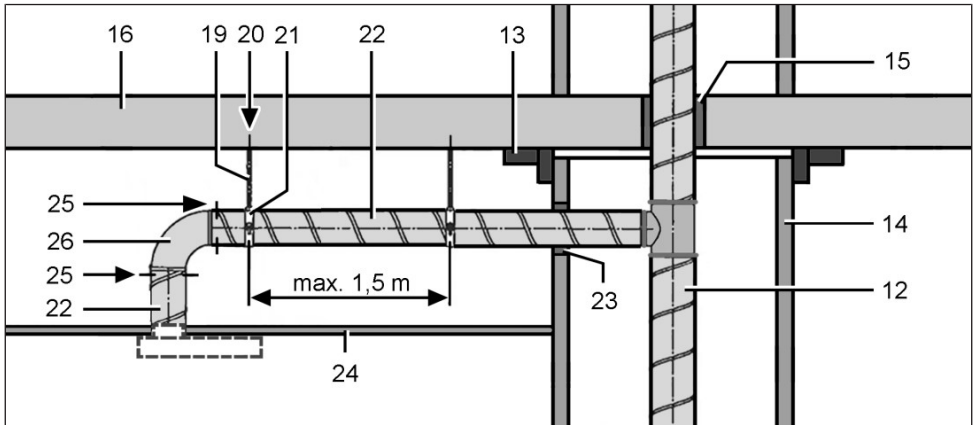
6. Ensure a suitable, level substructure.

i Compensate any unevenness in the wall or ceiling so that the housing can be installed without warping. Otherwise it may be that the fan insert can no longer be inserted into the housing or that the degree of protection indicated on the rating plate is no longer guaranteed.

7. Attach spigot made from shaft material F90 around the shaft.

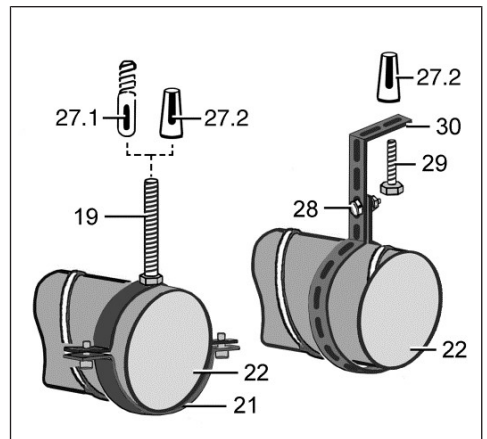
i The spigot compensates for the length of the shaft walls in the event of a fire.

8. Continue with the safety test of the APB shut-off device: Safety instructions for installation of the fire protection shut-off device [► 12].



12	Main duct (steel folded spiral-seams duct)
13	Spigot
14	Shaft wall
15	Ceiling compound
16	Floor ceiling
19	Steel threaded rod / stair bolt
20	Duct attachment
21	Duct clamp / clamping band
22	Steel folded spiral-seams duct
23	Wall/wall board seal
24	Suspended ceiling
25	Steel screws or steel blind rivets (3 of each)
26	Steel duct bend
27.1	Anchor bolt / steel dowel
27.2	Metal expansion dowel
28	Retaining bolt with nut
29	Retaining bolt
30	Steel clamping band

Duct attachment with duct clamp, alternatively duct attachment with clamping band



Danger due to fire transmission

⚠ DANGER Danger to life due to fire transmission if an incorrect connection duct is used on the APB housing when installed in the ceiling.

Always use steel folded spiral-seams ducts for the connection.

i Keep a maximum distance of 1.5 m between the duct fastenings. It is essential to observe the installation instructions: Mounting preparations [► 9].

⚠ DANGER Danger to life due to fire transmission in case of faulty ceiling compound.
It is essential that the remaining gap between the main duct and the wall or ceiling is completely sealed with non-flammable materials that are resistant to deformation. For example, use concrete or cement mortar.

⚠ DANGER Danger to life due to fire transmission if not flush with the brickwork or with panel building materials.

If used outside the shaft, seal the gap remaining between the connection duct and brickwork/wall boards with non-flammable materials resistant to deformation.

For example, use concrete or cement mortar for brickwork or special fire protection filler for wall boards.

NOTICE Damage to unit, malfunctioning in the event of corrosion damage from mortar.

Wrap ventilation ducts, connected to the unit, with a suitable adhesive tape to protect against corrosion inside the brickwork, e.g. using cold-shrink tape.

Procedure

i It is essential to observe the installation instructions: Mounting preparations [▶ 9].

1. Correctly attach main duct inside the shaft.
2. Apply ceiling compound. To do this, encase the ceiling and pour in the material from above.
3. Make shaft opening for the DN 80 steel folded spiral-seams duct.
4. Fit duct attachments to the ceiling. Only use permitted, suitable mounting material.
5. Connect DN 80 steel folded spiral-seams duct to main duct and seal for ventilation, for example with cold-shrink tape.
6. Apply brickwork compound. Seal gap between brickwork and folded spiral-seams duct. The gap remaining must be fully sealed with non-flammable materials that are resistant to deformation. For example, use concrete or cement mortar or for wall boards, use fire protection filler.
7. Fasten duct bends with 3 steel screws or 3 steel blind rivets.

8. Make the DN 80 opening for the unit connection socket in the suspended ceiling (fire resistance is not required). It is essential to observe the permissible installation positions: Permissible installation positions for AP and APB fans.
9. Attach the suspended ceiling and provide a suitable, level substructure.

i It is imperative to compensate any unevenness in the wall or ceiling so that the lower part of the housing can be installed without warping. Otherwise it may be that the fan insert can no longer be inserted into the lower part of the housing or that the degree of protection indicated on the rating plate is no longer guaranteed.

10. Attach spigot made from shaft material F90 around the shaft.

i The spigot compensates for the length of the shaft walls in the event of a fire.

11. Continue with the safety-related test of the shut-off device: Safety instructions for installation of the fire protection shut-off device [▶ 12].

8.4 Preparations for the electrical connection

⚠ DANGER Danger to life from electric shock.

Before laying the power cable, switch off all supply circuits. Switch off mains fuse, secure against being accidentally switched back on and position a visible warning sign.

i Always note the relevant specifications for electrical installations and when fitting equipment. In Germany, observe DIN VDE 0100 and the corresponding parts in particular.

1. Lay power cable to the installation location.

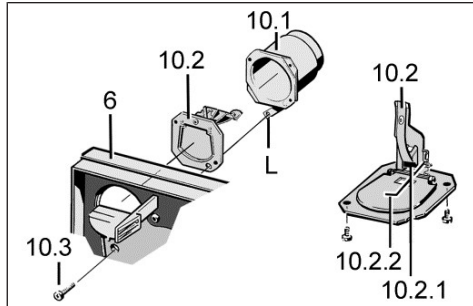
8.5 Safety instructions for installation of the fire protection shut-off device

Maintenance-free fire protection shut-off device against fire transmission.

With metal exhaust socket and metal shut-off shutter and soldered strut with soldered strut locking device. This is approved for a PAM-GLOBAL RML cast iron ventilation duct system or a system with a fire-proof shaft.

It is essential to observe the permissible installation positions: Permitted installation positions:

[► 9].



6	Lower part of housing
10.1	Metal exhaust socket
10.2	Metal shut-off shutter
10.3	Retaining bolt
10.2.1	Soldered strut
10.2.2	Yoke spring

⚠ DANGER Danger to life due to fire transmission if the tab of the metal backflow preventer is incorrectly screwed on.

It is essential to fasten the metal backflow preventer and tab to the wall/ceiling with a suitable screw and metal dowel.

Fixing screw is to be provided by the customer.

9.1 Wall installation, lower part of housing

⚠ DANGER For connection outside the shaft: Danger to life due to fire transmission if the metal exhaust socket is incorrectly connected to the connection duct.

Make the connection in accordance with these instructions and the general building approval.

3 steel blind rivets are prescribed for the connection with the connection socket. These must not impair the shutter function.

Before commissioning, ensure that the shut-off shutter moves with ease.

NOTICE The metal shut-off device is permanently closed if there is no soldered strut.

Check that the soldered strut is in the correct place before installation.

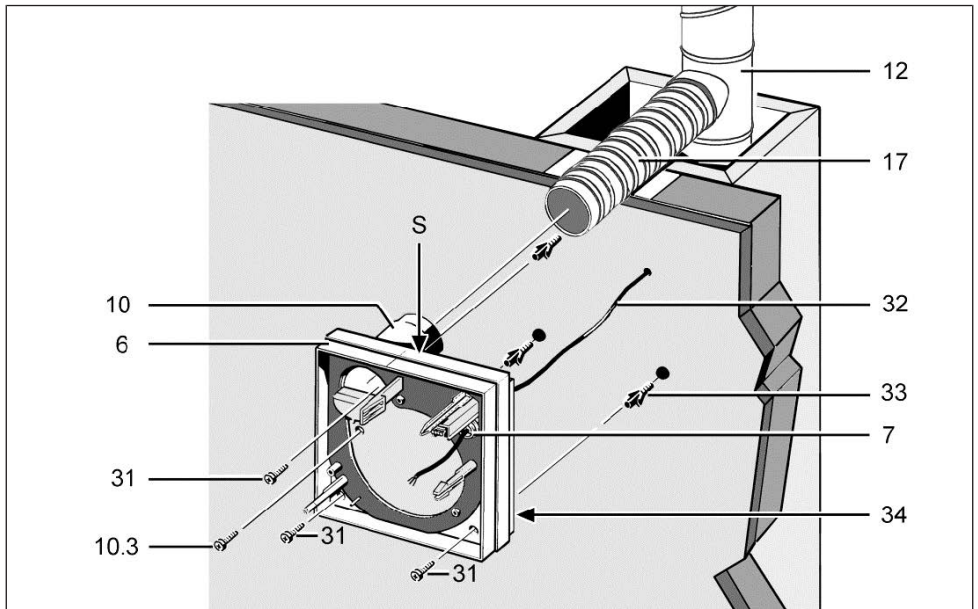
NOTICE Unpleasant smells from the main duct. Shut-off device does not close tightly in cases of improper installation.

Before mounting, check the correct installation position and check that the shut-off shutter functions.

When installing on ceiling: Prepare metal shut-off device for upwards air outlet direction

1. When shut-off device is inserted, remove yoke spring. To do this, use pliers to pull yoke spring out of exhaust socket from above.
2. Check and ensure that shut-off shutter is fully functional.

9 Housing installation



6	Lower part of housing
7	Cable grommet
10	Metal connection socket with shut-off device
10.3	Fixing screw, to be provided by the customer
12	Main duct (steel folded spiral-seams duct)
17	Connection duct: AFR 80 flexible aluminium duct
31	Fixing screw (3 items, to be provided by the customer)
32	Power cable
33	Dowel (to be provided by the customer)
34	Housing seal
S	Nominal opening for surface-mounted connection

2. Mark fixing holes on wall: 3x fixing holes for lower part of housing. For APB, also 1x fixing hole for tab of metal exhaust socket. It is essential that the permissible installation positions are observed.
3. Drill fixing holes and insert dowels. Suitable mounting material is to be provided by the customer.
4. Check ease of movement of shut-off shutter/backflow preventer. When installed, the shut-off shutter/backflow preventer must close automatically.
5. When the power cable is surface installed at position "S", knock out the housing segment at the nominal opening and cut small recesses into the cross struts on the rear of the lower part of the housing to route the ducts.

NOTICE Danger of short-circuits and damage to the unit. If the power cable is incorrectly fed or if the cable grommet is not fitted correctly, water may penetrate into the fan housing. The degree of protection cannot be guaranteed.

Pierce the cable grommet so that it tightly seals the power cable. Guide the surface-mounted or flush-mounted cables correctly into the intended cable grommet.

i It is essential that the safety instructions provided in these instructions for the shut-off device or shutter are observed.

1. Switch off mains fuse, secure against being accidentally switched back on and position a visible warning sign.

6. Pierce a round opening in the cable grommet with a grommet puncher.

7. Guide the power cable into the terminal compartment such that the cable grommet fits around the cable sheathing completely.

⚠ DANGER Fire may spread if connection duct is incorrectly installed.

Only use permitted duct material
Correctly attach connection duct to exhaust socket.

8. Pull connection duct out of wall/shaft.

NOTICE The noise level will increase if the housing seal is fitted incorrectly.

Ensure that the housing seal is correctly inserted into the lower part of the housing all the way round.

9. Check/ensure that housing seal is fitted correctly all the way round.
10. Slide connection duct up to stop above exhaust socket. Connection between connection duct and exhaust socket must be leak-tight, use cold-shrink tape for example.

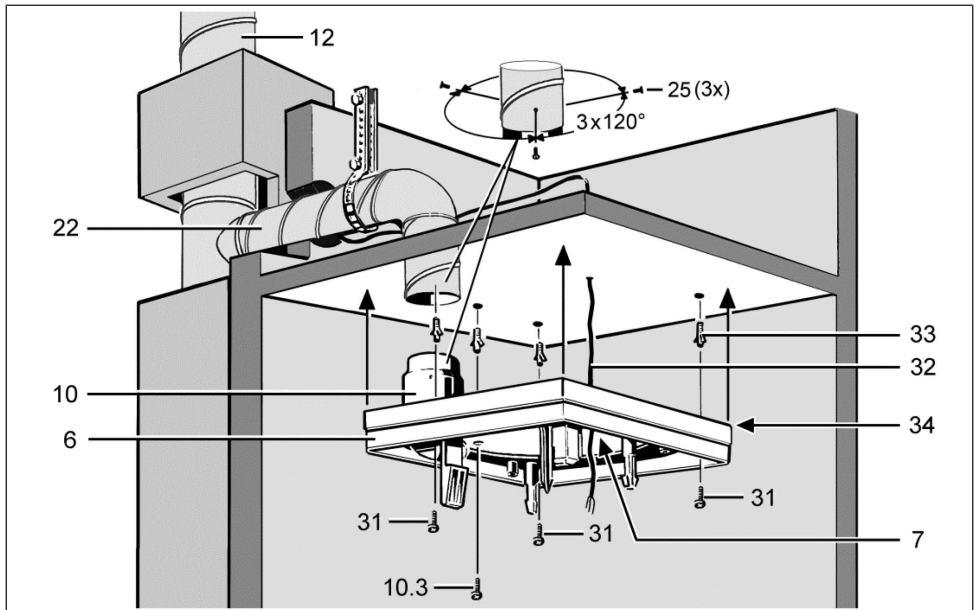
Prescribed mounting material

	Steel screw	Steel dowel
Masonry or concrete	•	•
Panel building materials	•	

i Keep gap remaining between the connection duct and wall board/brickwork/concrete as small as possible.

11. Use 3 screws to secure the bottom part of housing to the wall. For APB, also screw down tab of connection socket with fixing screw. Suitable mounting material is to be provided by the customer. Again check ease of movement of shutter/backflow preventer. When installed, the shut-off shutter/backflow preventer must close automatically.

9.2 Ceiling installation, lower part of housing



6	Lower part of housing
7	Cable grommet
10	Metal connection socket with shut-off device
10.3	Fixing screw, to be provided by the customer
12	Main duct (steel folded spiral-seams duct)
22	Connection duct: steel folded spiral-seams duct. For ceiling barrier system or ventilation ducts without fire protection, flexible aluminium duct.
25	Steel blind rivets (3 items / 120°), to be provided by the customer
31	Fixing screw (to be provided by the customer)
32	Power cable
33	Dowel (to be provided by the customer)
34	Housing seal

⚠ DANGER Risk of incorrect installation if non-permitted mounting material is used.

Only secure connection duct to ceiling with permitted mounting material (duct clamp or clamping band).

Prescribed mounting material

	Steel screw	Steel dowel
Masonry or concrete	•	•
Panel building materials	•	

1. Install lower part of housing on ceiling as described in "Wall installation" chapter.

i It is essential that the hazard notes in:

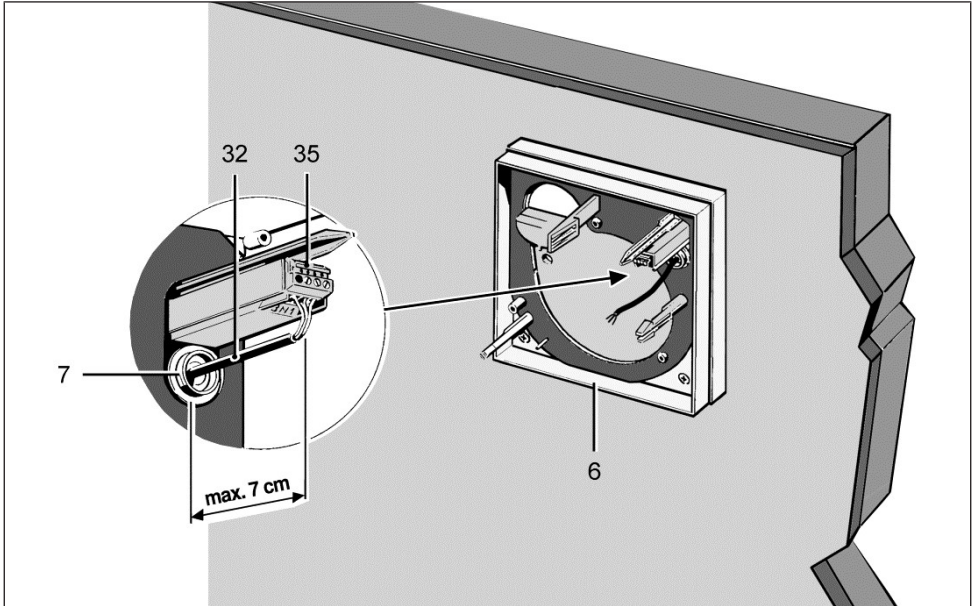
Mounting preparations are observed.

i It is essential that the safety instructions for the shut-off device or shutter are observed:

Safety instructions for installation of the fire protection shut-off device [► 12]

2. Check ease of movement of shut-off shutter/backflow preventer. When installed, the shut-off shutter/backflow preventer must close automatically.

10 Electrical connection



6	Lower part of housing
7	Cable grommet
32	Power cable
35	Connection terminal

i To prevent the unit and/or electric components from malfunctioning as a result of reverse polarity voltages and induction (incorrect ignition or glowing/flaring of LED, energy-saving or neon lamps), the unit and electric components connected in parallel, such as room lighting, should be connected via a double-pole switch.

⚠ DANGER Danger to life from electric shock.

Prior to accessing the connection terminals, switch off all supply circuits. Switch off mains fuse, secure against being accidentally switched back on and position a visible warning sign.

⚠ DANGER Danger from electric shock/The unit will be damaged if installed incorrectly with too long a power cable.

If the cable feed is too long inside the housing, the fan insert cannot be installed correctly. The power cable may be damaged when inserting the fan unit.

Area for mains connection labelled: Lay wires according to the contour. Note that the maximum spacing to the connection terminal box is 7 cm. Do not cut the power cable inside the housing too short.

NOTICE Risk of damage if ESD sensitive components on the board are touched.

Avoid direct touching of the components or contact surfaces.

NOTICE Damage to the unit if connected incorrectly.

For example, if an electric load is connected to terminal 4 or if connected to 2 phases. Connect the unit according to the wiring diagrams: Wiring diagrams [► 22]. Do not connect additional consumers to terminal 4.

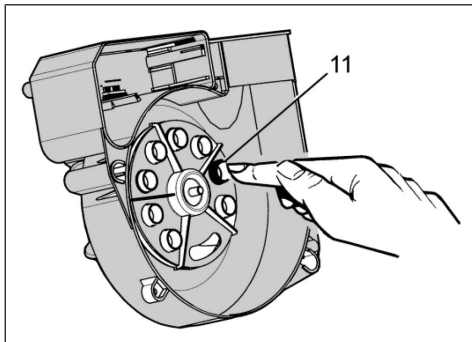
NOTICE Risk of damage to unit in the event of short-circuits.

Cut off and insulate PE conductor and individual cable cores that are not required!

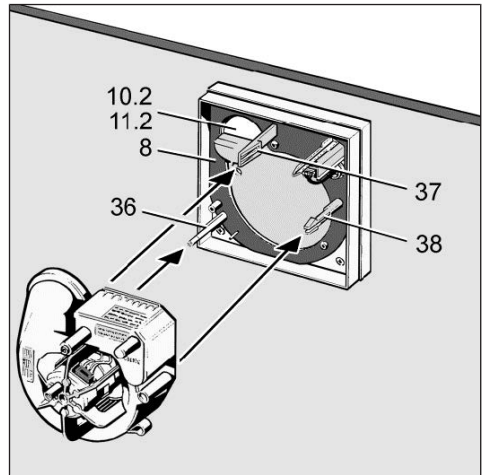
Always note the relevant specifications for electrical installations and when fitting equipment. In Germany, observe DIN VDE 0100 and the corresponding parts in particular. In rooms with baths or shower units, for example, this would be Part 701.

1. Switch off mains fuse, secure and fit warning sign.
2. Remove power cable's sheathing and cut to length as described.
3. Cut off and insulate PE conductor and individual cable cores that are not required!
4. Make electrical connection according to wiring diagram on terminal box: Wiring diagrams [► 22].

11 Installation of spiral housing and upper part of housing



1. Press the desired number of sealing plugs out of the housing.
Centro-M-APB with fixed air volume setting.
Centro-E-APB and Centro-H-APB with fixed air volume setting for basic ventilation.



8	Sealing
10.2	Shut-off shutter
36, 38	Locking tabs
37	Locking lever

2. Switch off mains fuse and fit warning sign
3. Check ease of movement of shut-off shutter. In the installation position, the shut-off shutter must close automatically due to the pressure of the inserted yoke spring.
4. Check that the housing floor seal is correctly positioned, then insert properly.

NOTICE The noise level will increase if the housing floor seal is fitted incorrectly. Degree of protection not guaranteed if housing floor seal is positioned incorrectly.

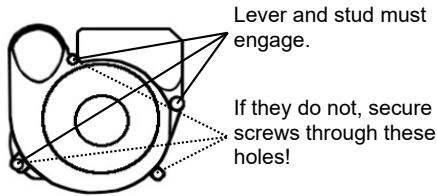
The housing floor seal must lie flat and without any creases in the housing.

5. Check that all screw connections are tight.
6. Check ventilation ducts for dirt and clean if necessary.
7. Check that connection data matches the technical data on the unit (rating plate S2).

NOTICE Function will be impaired if fan insert is not inserted correctly.

Ensure proper insertion in the locking hooks. If the fan insert is not firmly seated, screw it to the housing at the 3 positions shown in the figure above. Suitable mounting material is to be provided by the customer.

Note wiring diagrams in box base.
Cables must not prevent the unit from being slid in.



→ Installation information in unit

NOTICE Function will be impaired if spiral housing is not inserted correctly.

Ensure proper insertion in the 3 fixing points.

- Slide spiral housing evenly, in parallel, onto both studs. Ensure that the two locking tabs of the stud and the locking lever audibly engage so spiral housing is secure.

NOTICE Damage to the unit.

Degree of protection is not guaranteed if in the wrong installation position.

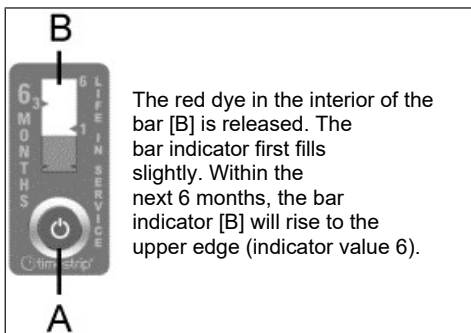
Only fit upper part of housing with the Maico name in the bottom right.

- Attach upper part of housing and fasten with central screw.

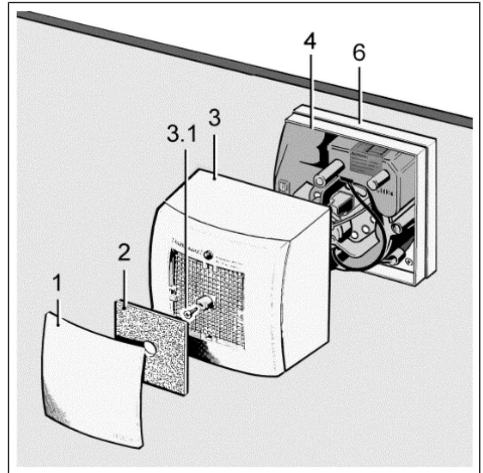
i Upper part of housing can only be fitted in one position. Ensure that the two arrows on the upper part of the housing and the words "exhaust socket" are facing the exhaust socket.

- Check that filter mat is fitted correctly.

- Affix time strip (→ Title page) and push the activation button [A] all the way.



- Fit cover (MAICO name in bottom right). The cover must audibly click into place.



12 Commissioning

- Switch on mains fuse and remove warning sign.
- Run function test. To do this, switch unit on and off, observe delay times (for control models Controls (circuit board types)).
- Check that the unit is running smoothly. It is also important that the air can flow unhindered.
- Switch off unit.

13 Cleaning, maintenance

The unit is practically maintenance-free. The air filter simply needs replacing every 3 to 6 months, depending on the degree of soiling.

⚠ DANGER Danger to life from electric shock.

Prior to accessing the connection terminals, switch off all supply circuits. Switch off mains fuse, secure against being accidentally switched back on and position a visible warning sign.

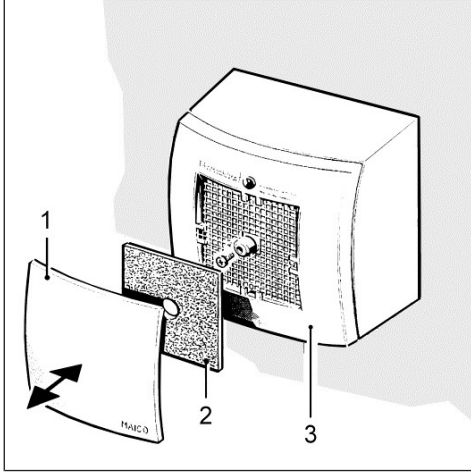
NOTICE Risk of damage to unit if incorrect cleaning agent is used.

Only clean the cover using water.

Do not use aggressive cleaning agents.

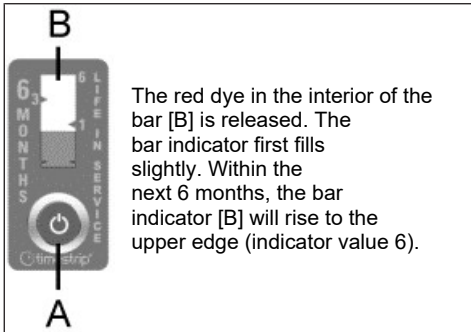
- Clean housing components with dry cloth only.
- If the cover or upper part of the housing is very dirty, clean with water.

Filter change



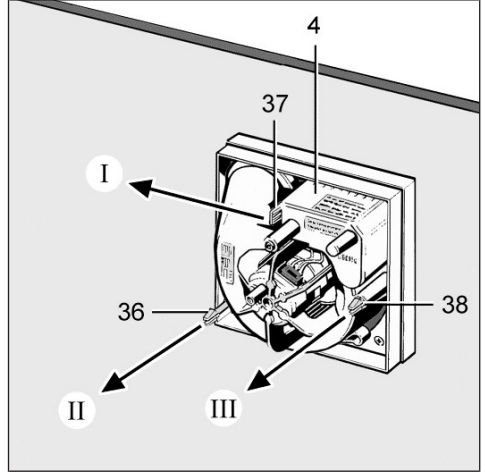
i Filter change interval every 3 to 6 months, depending on the degree of soiling.

1. Remove cover.
2. Take out filter mat and replace it.
3. Remove used TimeStrip.
4. Affix new time strip and push the activation button [A] all the way.



5. Place filter mat on intake grille of the upper housing part and replace cover. The cover must audibly click into place.

14 Removing the housing



4	Fan insert	36	Locking tabs
37	Locking lever	38	Locking tabs

1. Switch off mains fuse, secure and fit warning sign.
2. Remove cover and upper part of housing.
3. Press locking lever slightly to the left (→ arrow I), release and raise the fan insert slightly.
4. Press together locking tabs of stud and raise fan insert slightly.
5. Press together locking tabs of stud and evenly pull entire fan insert out of lower part of housing in parallel (→ arrows I - III).
6. Installation is carried out in reverse order.

15 Fault rectification

i Fault finding and repairs only permissible when carried out by qualified electricians.

! **DANGER** Danger to life from electric shock.

Prior to accessing the connection terminals, switch off all supply circuits. Switch off mains fuse, secure against being accidentally switched back on and position a visible warning sign.

Fault	Cause → Measure
Fan performance inadequate.	<p>Dirty filter. → Replace filter.</p> <p>Locking hook not engaged. → Engage fan insert correctly.</p> <p>Incorrect duct diameter. → Check diameter of the main duct.</p> <p>Supply air cross section is too small. → Increase the supply air cross section.</p>
Spiral housing too loud.	<p>Dirty filter. → Replace filter.</p> <p>Fan insert incorrectly installed. → Insert fan insert correctly in accordance with these instructions.</p> <p>The main duct is undersized. → Re-calculate pressure losses.</p>
H model does not switch from base load to full load operation despite there being humidity in the room.	No rapid increase in humidity (7% in 2 minutes) took place.
H model no longer switches back to base load operation or off even after a long period in full load operation.	The level has not yet fallen below reference value. After 1 h, the valve automatically switches from full load operation to base load operation after an over-run time of 15 minutes and resets the reference value.
Additional consumers connected to terminal 4.	<p>Damage to the unit if connected incorrectly.</p> <p>Do not connect additional consumers to terminal 4.</p> <p>The unit may only be connected according to the wiring diagrams (Wiring diagrams [► 22]).</p>

i If the fault persists or reoccurs: Disconnect the unit completely from the power supply. Let a qualified electrician determine the cause of the fault and eliminate it. If you have any question relating to troubleshooting: Service: +49 7720 6940.

16 Spare parts

i Spare parts may only be sourced from and fitted by a specialist installer.

Designation	Article no.
Cover for upper part of housing	0059.1037.0001
Filter mat ZF 60/100: 5 pieces, filter class G2 according to EN 779 with filter change indicator (time strip)	0093.0331
Upper part of housing, complete Centro-APB 60/100	0059.1036.9001
Spiral housing without cover	E084.0184.0000
Centro-E-APB	E084.0185.0000
Centro-H-APB	
Lower part of housing, complete Centro-APB 60/100	E059.1035.9200
SB printed circuit boards, complete Centro-H / H-APB	F101.1027.900

In case of questions, please contact:

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 78056 Villingen-Schwenningen, Deutschland
 Tel. +49 7720 694 445
 Fax +49 7720 694 175
 E-mail: ersatzteilservice@maico.de

i Spare parts can be ordered at www.shop.maico-ventilatoren.com.



17 Removal

i Dismantling may only be undertaken by a qualified electrician.

⚠ DANGER Danger to life from electric shock.

Prior to accessing the connection terminals, switch off all supply circuits. Switch off mains fuse, secure against being accidentally switched back on and position a visible warning sign.

1. Remove spiral housing.
2. Remove all cables.
3. Remove lower part of housing from the wall.

18 System and accessory components

18.1 Accessories

Designation	Article no.
Filter mat ZF 60/100: 5 items, filter class G2 in accordance with EN 779 with filter change display (time strip)	0093.0331
Sound-absorbing element ER-SE AP	0192.0679

19 Environmentally responsible disposal

The ventilation unit and the packaging contain parts that can be recycled, and should not end up in the domestic waste.

Dispose of the **packaging material** in an environmentally-friendly way, in compliance with the regulations valid in the country where you are.

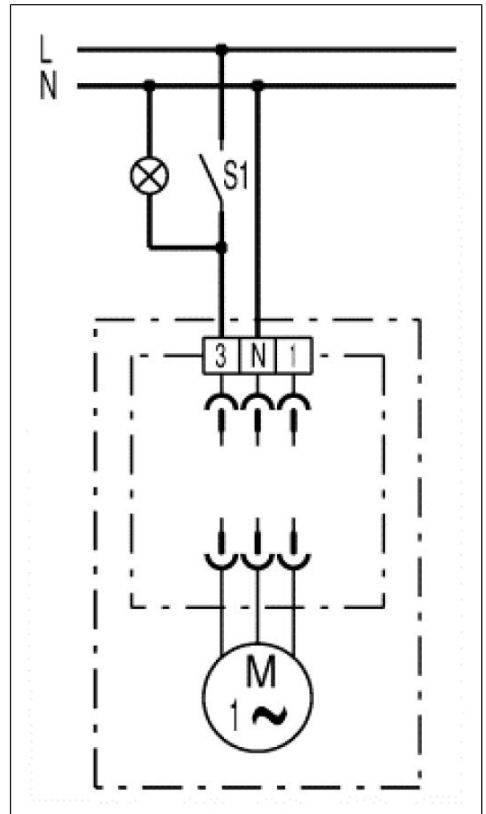
Dispose of the **air filter** in an environmentally-friendly way, in compliance with the regulations valid in the country where you are.

At the end of its service life, dispose of the **unit** in an environmentally-friendly way, in compliance with the regulations valid in the country where you are.

20 Wiring diagrams

20.1 Wiring diagrams

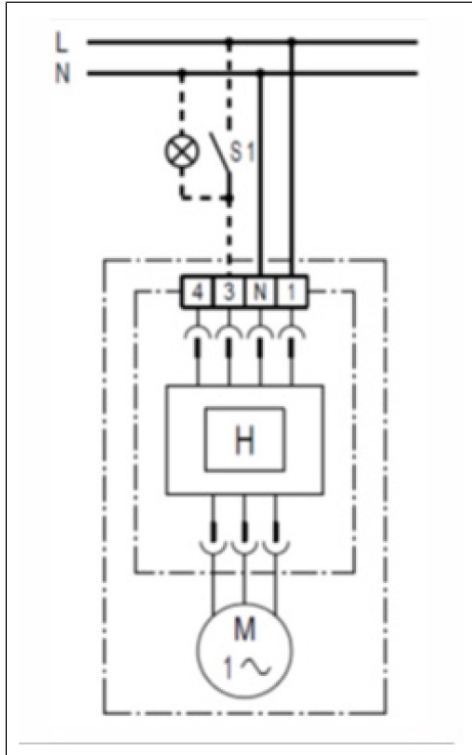
Centro-E-APB



Centro-E-APB with servomotor. For use in systems with variable volumetric flows for individual apartments.

Basic and demand-based ventilation can be switched on and off via a light switch. Demand-based ventilation after start delay of approx. 1 minute. Overrun time after switching off, approx. 3 minutes.

Control of the volumetric air flows within the ventilation system with Centro pressure controller. Speed control of the central fan automatically.

Centro-H-APB

Exhaust air element with servomotor and humidity control.

For use in systems with variable volumetric flow for individual apartments.

Standard operation – basic ventilation, automatic switchover to full load if required (switch-on/switch-off point adjustable). Demand-based ventilation can also be switched on by light switch. Control of the volumetric air flows within the ventilation system with Centro pressure controller. Speed control of the central fan automatically.

Once the exhaust air element has been installed, the unit regulates to the current room humidity (relative humidity). This humidity value is saved as the first reference value. The reference value does not have to be specified manually.

If the room humidity rises by 7 % within 2 minutes, the exhaust air element switches to full load operation (demand-based ventilation). If the relative humidity falls below the reference value during operation, the newly established reference value is saved.

The exhaust air element then automatically switches back to base load operation. Demand-based ventilation automatically or via a switch (for example light switch).

After manual switch-on (light switch) the exhaust air element runs with a start delay of approx. 1 minute with demand-based ventilation (full load). After manual switch-off, the exhaust air element continues to run in nominal load operation with an overrun time of 15 minutes (valve closing time approx. 2 - 3 minutes).

i When switch S1 is open, the exhaust air element can start up automatically as a result of high room humidity.



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