Installation and operating instructions

MAICO



ER-UP/G
ER-UPD
ER-UPB

ER 60
ER 100

Centro-M
Centro-E
Centro-H

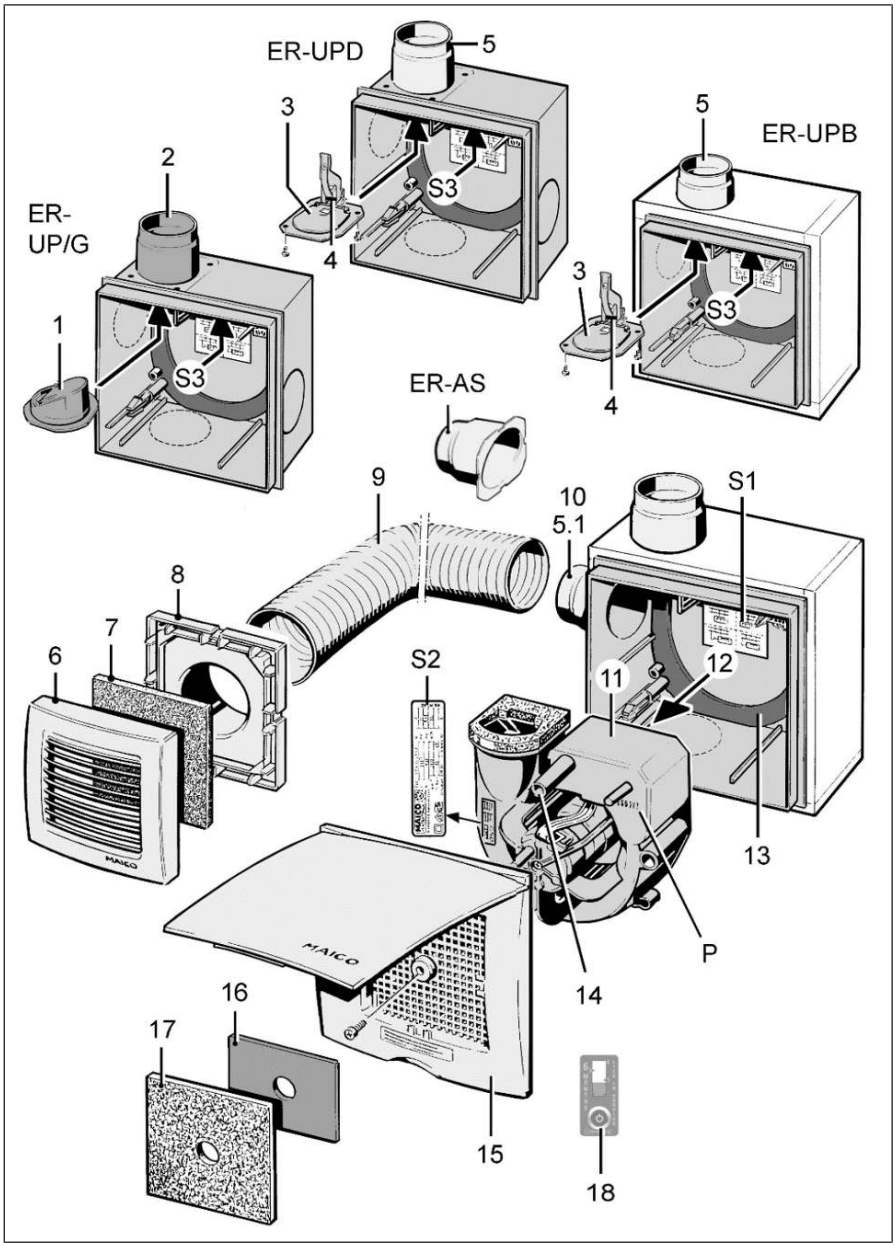
Flush-mounted exhaust air systems according to DIN 18017-3

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Overview of UPG system



ER-UP/G with plastic shutter without fire protection equipment

1	Plastic backflow preventer (Fig. of installation position with air outlet direction to the right)
2	Plastic exhaust socket

ER-UPD with fire protection shut-off device and ER-UPB with fire protection shut-off device and fire protection cover

3	Metal shut-off shutter with release mechanism
4	Soldered strut
5	Metal exhaust socket
5.1	Metal connection socket DN 75/80 for second room extraction ER-UPB

ER-ZR second room connection set

6	Protective grille
7	Filter mat, filter class G2
8	Adapter
9	Suction duct, ZR connection (not included in ER-ZR set)
10	Plastic installation socket for second room extraction

ER 60/100 fan insert

11	Fan insert
12	Electronic circuit boards
13	Housing floor seal
14	Sensor (H or F model)
15	Cover with central screw
16	Regulating plate for second room connection
17	Filter mat, filter class G2
18	Time strip
P	Production date
S1	Wiring diagram
S2	Rating plate
S3	TÜV sticker

ER-AS (special accessories)
Extraction socket for toilet seat air extraction DN 70

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.

1 Scope of delivery

Depending on order, comprising:

- **Shell kit**: ER flush-mounted housing
- **Final assembly set**: Fan insert
- **Other accessories:** e.g. ER-AS for toilet seat air extraction, spacer, wall and cover frames, expanded rubber fitting etc.

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 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

These fans are used to extract air from interior bathrooms and toilet rooms, storage rooms and kitchens with an outside window.

If operated other than stated in DIN 18017-3, the fans may also be used as standalone units (fitted on the wall or ceiling) or to extract air from other rooms (interior kitchen etc.).

The fans are only intended for domestic use and similar purposes.

4 Safety instructions

4.1 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.

⚠ 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.

4.2 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 ER housing. Always use the correct duct material for the respective ER 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 seal with the brickwork or wall boards is incorrect. If used outside the shaft, ensure that the gap remaining between the connection duct and brickwork/wall boards is fully sealed with non-flammable materials resistant to deformation, such as concrete, cement mortar or plaster and for the wall boards, special fire protection filler.
if the metal exhaust socket is incorrectly connected to the connection duct. 3 steel blind rivets are prescribed for the connection with the exhaust socket. These must not impair the shutter function. Before commissioning, ensure that the shut-off shutter moves with ease.
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.

5 System and product information

5.1 Certificates of approval

Certificates of approval on request.

5.2 Installation conditions

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

- in single air extraction systems with a common main duct;
- with an air supply via shaft or duct;
- with permitted connection ducts;
- with unit suitable for the system (Permitted exhaust air systems);
- with flush-mounted installation in the wall or ceiling;
- when correctly installed as per the instructions in this manual and the national technical approval ER 60/ER-UP, ER 100/ER-UP, ER-UP/G: Z-51.1-7 bzw. ER-UPB (L,R,U); ER-UPD: Z-51.1-46;
- with sufficient space from the wall or ceiling;
- with a fireproof installation shaft for ER-UPB housings;
- if unit is completely installed;
- with the correct air filters;
- with the outside air openings stated in the planning documents.

If the installation deviates from DIN 18017-3:

- ER-UP fans can also be used as standalone units.
- Installation in the wall or ceiling is permitted.
- ER-100 fans can be used to extract air from another room (interior kitchen etc.).

5.3 Permitted exhaust air systems

Exhaust air system	ER-UP/G	ER-UPD	ER-UPB
PAM-GLOBAL RML cast ventilation system *	no	yes**	yes***
Ceiling barrier system **	yes*	no	no
System with fireproof shaft *	no	yes**	yes***
Air extraction system without fire protection **	yes*	no	no

* ER-UP/G can be used inside and outside the shaft, connection duct made from flexible aluminium duct, second room connection made from flexible aluminium duct.

** ER-UPD can be used inside and outside the shaft, connection duct made from steel folded spiral-seams duct, second room connection made from flexible aluminium duct.

*** ER-UPB can be used inside the shaft, connection duct made from flexible aluminium duct, second room connection made from steel folded spiral-seams duct.

5.4 Possible combinations

The ER flush-mounted exhaust air systems described here comprise a flush-mounted housing and a fan insert/exhaust air element with cover.

In the **shell construction phase** the **ER-UP housing** (ER-UP/G, ER-UPD and ER-UPB) are installed, wired and provided with a plaster protective cover.

ER-UP/G and ER-UPD housings can be used with a second room connection set (ER-ZR) for second room ventilation. Ensure the right housing variant (ER-UPB/L, ER-UPB/R or ER-UPB/U) for ER-UPB housings.

Toilet seat air extraction at the same time as room ventilation is possible using the second room connection of the ER-UP/G or ER-UPD housings. The Maico extraction socket ER-AS (DN 70) should be used for this purpose and a connection established to the WC seat.

Final assembly is undertaken once the plastering and paint work is complete.

For decentralised ventilation, an ER 60 or ER 100 fan insert is placed in the flush-mounted housing, the exhaust air filter and cover are fitted.

For centralised ventilation, a Centro M / E / H exhaust air element is installed with an exhaust air filter and cover → separate Centro operating instructions.

ER 100 units are approved **for second room ventilation**. The following control types can be used for this: Standard, VZ, VZ 15, VZC, G, I, D or RC. Centralised ventilation with Centro-M / E / H exhaust air elements is possible in combination with ER-UP/G housings under certain preconditions (Installing ER-UP/G housing [▶ 18]).

ER 60 units are not permitted for the second room connection.

For ER radio fans and Maico smart, see 100 RC instructions.

5.4.1 ER-UP housing types

The 3 flush-mounted housing units ER-UP/G, ER-UPD and ER-UPB are available for flush-mounted installation. These should be selected to match the exhaust air system. The connection diameter for all housing types is DN 75 or DN 80.

5.4.2 Flush-mounted housing ER-UP/G

- Plastic housing without fire protection equipment. Can be combined with ceiling barrier.
- Suitable for wall or ceiling installation, inside or outside the exhaust air shaft.
- Permissible air outlet direction with wall installation upwards, to the right or left.
- Plastic exhaust socket with airstream-operated plastic shutter, maintenance-free.
- For connecting second room ventilation with knockout points at bottom, on right and left.

5.4.3 Flush-mounted housing ER-UPD

- Can be combined with Saint-Gobain cast duct PAM-Global RML.
- Can also be used outside fireproof shaft.
- Housing with maintenance-free fire protection shut-off device to prevent fire transmission (K90-18017).
- Suitable for wall or ceiling installation, inside or outside the exhaust air shaft.
- Permissible air outlet direction with wall installation upwards, to the right or left.
- Metal exhaust socket with airstream-operated metal backflow preventer with soldered strut.
- For connecting second room ventilation with knockout points at bottom, on right and left.

5.4.4 Flush-mounted housing ER-UPB

- Housing with maintenance-free fire protection shut-off device to prevent fire transmission (K90-18017).
- Housing with fire protection cover for use in fire-proof exhaust air shafts.
- Suitable for wall or ceiling installation in a fire-proof exhaust air shaft.
- Permissible air outlet direction with wall installation upwards, to the right or left.
- Metal exhaust socket with airstream-operated metal backflow preventer with soldered strut.

5.4.5 Fan insert

- Fan insert with cover and exhaust air filter for installation in ER-UP/G, ER-UPD or ER-PB housing.
- Electrical plug connection for quick installation in the ER-UP housing.
- Fan insert has snap-on attachment for easy installation.
- Cover with exhaust air filter and time strip. Air filters are to be changed regularly when filter change is indicated (time strip).
- Cover can be rotated by ± 5 to compensate for housings which have been fitted at an angle.
- Filter change without tools.
- For single or second room ventilation using a single fan. Exception: H models only for single-room air extraction.
- F and H model: Barrier-free products, as the fan switches itself on and off automatically.
- Energy-saving motor with thermal overload protection. This switches itself off in the event of overheating and then back on again automatically after cooling down.
- The fans may be subject to jet water in areas 1 and 2 (DIN VDE 0100-701: 2008-10 or HD 60 364-7:2007).

The **time strip** is visibly attached to a location of your choice (e.g. next to the cover) 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.

5.4.6 ER-UP controls (circuit board types)

ER-UP fans are available in various models and with various unit properties. These depend on the control/circuit board type used in the fan insert.

The switching variants and functions suited to the circuit board type are described in these instructions. Tolerance of all time details max. + 20 %.

- **Standard model**
- **VZ model**: with start delay and overrun time.
- **VZ 15 model** with start delay and overrun time.
- **VZC model** with adjustable start delay and adjustable overrun time.
- **F model**: Barrier-free. With light control for rooms without windows (min. switch-on brightness 30 lx, max. switch-off brightness on unit 0.3 lx). With start delay (50 sec.) and overrun time (6 min.).
- **G model**: With base load circuit. Continuous operation at 35 m³/h, high speed (full load) can be switched with optional switch.
- **GVZ model** with base load circuit, start delay and overrun time, continuous operation at 35 m³/h, high speed (full load) can be switched with optional switch.
- **I model** with interval control. For manual operation with start delay and overrun time. Operating period can be set to between 0 and 15 hours with intervals of around 10 minutes. Interval control off if 0 hours is set (Ti setting screw in far left position). Interval control active if Ti setting screw is turned at least 1/4 of a turn to the right from the far left position.
- **H model**: Barrier-free. With humidity control. Overrun time controlled by program (min. 15 minutes at full load). Can also be operated manually with optional switch. Not suitable for second room air extraction.
- **D model**: In combination with three-step switch with 3 power levels: 35, 60 or 100 m³/h. Can be used in combination with supply air elements for controlled domestic ventilation.
- **RC model** with radio electronics: Use in radio-controlled ventilation system MAICO smart. Based on EnOcean technology. Network-compatible (master-slave) → separate ER 100 RC operating instructions. On/Off using radio switch or radio control RLS RC. With 3 power levels 35, 60 or 100 m³/h.

Unit type	Circuit board type	Start delay [s]	Overrun time [min]	speed controllable	Mains cable [mm”]
ER 60	Standard board			no	3 x 1.5

Unit type	Circuit board type	Start delay [s]	Over-run time [min]	speed con-trol-lable	Mains cable [mm”]
ER 100	Stand-ard board			yes	3 x 1.5
ER 60 VZ, ER 100 VZ	VZ cir-cuit board	50	6	no	5 x 1.5
ER 60 VZ 15, ER 100 VZ 15	VZ 15 board	50	15	no	5 x 1.5
ER 60 VZC, ER 100 VZC	VZ 24 C board	0…150	1.5… 24	no	5 x 1.5
ER 60 F, ER 100 F	F cir-cuit board	50	6	no	3 x 1.5
ER 60 G, ER 100 G	G board			no	5 x 1.5
ER 60 GVZ, ER 100 GVZ	G board + VZ board			no	5 x 1.5
ER 60 I, ER 100 I	VZI 10 board	50*	10*	no	5 x 1.5
ER 60 H, ER 100 H	H board		15	no	5 x 1.5
ER 100 D	Stand-ard board			no	5 x 1.5
ER 100 RC	RC cir-cuit board		15**	no	3 x 1.5

Tolerance of all time details max. + 20 %.

(W) Factory setting
* Start delay and overrun time for manual operation, e.g. via light switch
** Overrun time only if unit is used with individual switch, without RLS RC room air control.

6 Technical data

6.1 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 Maico MLK door ventilation grille.
- ER-UP/Centro units have resistance to interference in line with EN 55014-2 (depending on pulse type and an energy component of 1000 to 4000 V). These values can be exceeded when operating with fluorescent tubes. In this case, additional interference suppression measures (L, C or RC modules, protection diodes, varistors) are required.
- Take the risk of draughts into account when planning by selecting a suitable installation location.

6.2 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.

6.3 Technical data table

Sound pressure level L_{WA7}	30 to 49 dB(A), depending on unit model

For more technical data → rating plate.

Für Kennlinien → www.maico-ventilatoren.com

6.4 Storage

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

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

7 Mounting preparations

Suitable mounting material is to be provided by the customer.

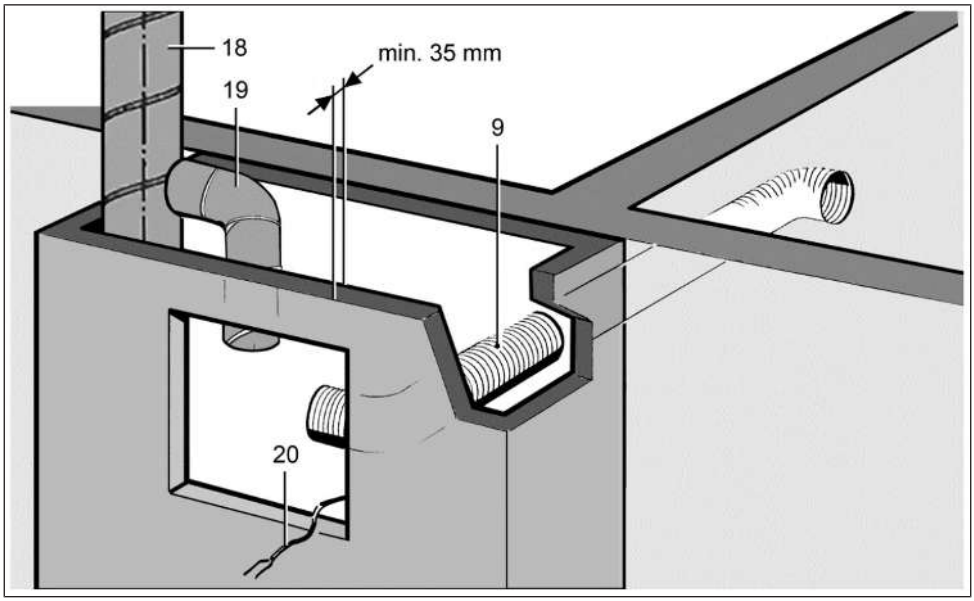
7.1 Requirements in line with approval

7.1.1 Approval provisions

Approval provision	ER-UP/G + ER 60/100/second room	ER-UPD + ER 60/100/second room	ER-UPB + ER 60/100/	ER-UPB + ER second room
Number of units per floor, residential unit or fire zone	**Max. 3** fans or 3 connections	**Max. 3** fans or 3 connections	**Max. 3** fans or 3 connections	**Max. 3** fans or 3 connections
Shaft wall	any board material	Min. 35 mm, any board material	Min. 35 mm, any board material	Min. 35 mm, any board material
Connection diameter	DN 75 or DN 80 mm			
Connection ducts **inside** the shaft	E.g. AFR 80 flexible aluminium duct between main duct in shaft and ER unit, max. 2 m long (→ approval).	Steel folded spiral-seams duct between main duct in shaft and ER unit, max. 2 m long (→ approval)	Flexible aluminium duct AFR 80 or steel folded spiral-seams duct between main duct in shaft and ER unit, max. 2 m long (→ approval).	Flexible aluminium duct AFR 80 or steel folded spiral-seams duct between main duct in shaft and ER unit, max. 2 m long (→ approval). Steel folded spiral-seams duct between ER unit and second room connection.
Connection ducts **outside** the shaft	E.g. AFR 80 flexible aluminium duct between main duct in shaft and ER unit, max. 2 m long (→ approval).	Steel folded spiral-seams duct DN 75 or DN 80 between main duct in shaft and ER 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. 2 x 90°			

Approval provision	ER-UP/G + ER 60/100/second room	ER-UPD + ER 60/100/second room	ER-UPB + ER 60/100/	ER-UPB + ER second room
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			

7.2 Preparations for wall installation



9	Suction duct for second room connection on ER-UP/G: Flexible aluminium duct AFR 75/ AFR 80 ER-UPD: Flexible aluminium duct AFR 75/ AFR 80 or steel folded spiral-seams duct DN75/DN80 ER-UPB: Steel folded spiral-seams duct DN75/DN80
18	Main duct: Steel folded spiral-seams duct
19	Connection duct on ER-UP/G: Flexible aluminium duct AFR 75/ AFR 80 ER-UPD: Steel folded spiral-seams duct DN75/DN80 ER-UPB: Flexible aluminium duct AFR 75/ AFR 80, permitted inside the shaft
21	Power cable

Installation information

- Observe approval: Certificates of approval [▶ 8] and Requirements in line with approval [▶ 12].
- Always use correct duct material for the housing.

- For fire protection systems, the gap remaining between the connection duct and brickwork/wall boards/wall/ceiling must be fully sealed with non-flammable materials that are resistant to deformation (e.g. concrete, cement mortar, fire protection filler).

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.

Preparing the shaft

1. Produce opening in shaft or alternatively produce a wall facing. Ensure a suitable, flat surface for the housing so that the fan insert can be safely inserted in the housing later on.
2. For a second room connection, produce an opening in the wall or shaft for the suction duct. Note permissible housing installation positions.
3. Correctly attach main duct inside the shaft.
4. For fire protection systems, use ceiling compound. To do this, encase the ceiling and pour in the material from above.
5. Connect connection duct, suitable for the housing, to the main duct and seal for ventilation.
6. Cut connection duct to length, note a maximum duct length of 2 m.

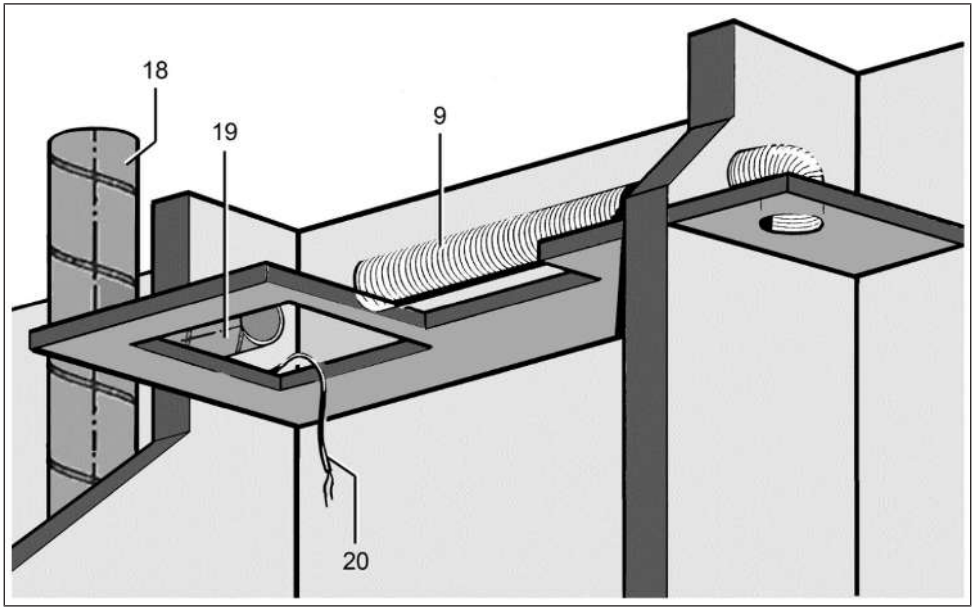
Cut connection duct to a length which allows it to be fitted on the exhaust socket and also sealed for ventilation at the unit end.

7. Lay suction duct and seal gap remaining correctly as described in previous installtion instructions.
8. Lay power cable in shaft and allow to protrude by around 30 cm above the shaft opening.
9. In the ceiling area, fit a spigot made from shaft material F90 around the shaft.

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

10. Lay power cable: Provide unit with electrical connection.

7.3 Ceiling installation preparations

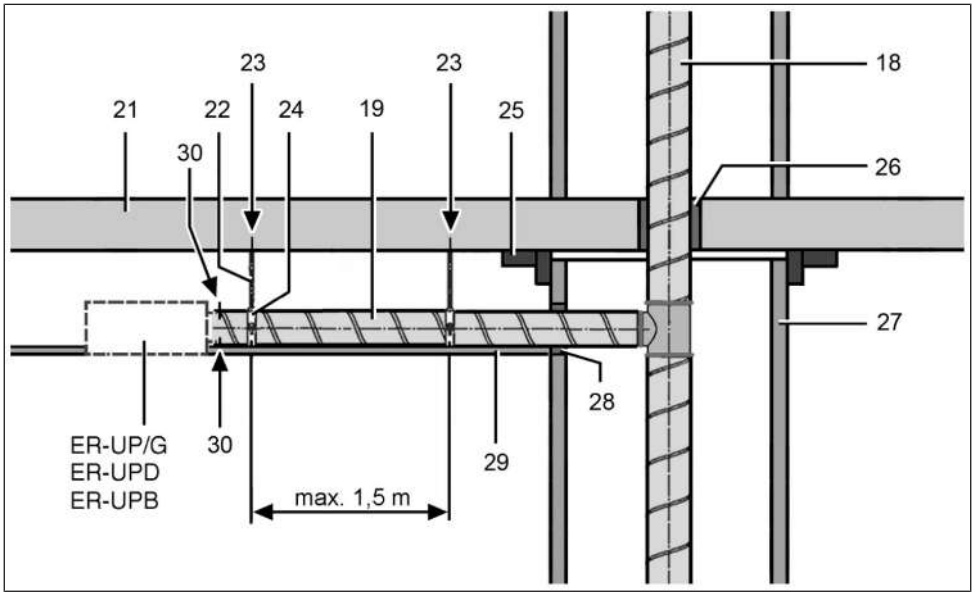


9	Suction duct for second room connection on ER-UP/G: Flexible aluminium duct AFR 75/ AFR 80 ER-UPD: Flexible aluminium duct AFR 75/ AFR 80 or steel folded spiral-seams duct DN75/DN80 ER-UPB: Steel folded spiral-seams duct DN75/DN80
18	Main duct: Steel folded spiral-seams duct
19	Connection duct on ER-UP/G: Flexible aluminium duct AFR 75/ AFR 80 ER-UPD: Steel folded spiral-seams duct DN75/DN80 ER-UPB: Steel folded spiral-seams duct DN75/DN80
20	Power cable

Be sure to note the approval and installation information: Preparations for wall installation.

Preparing the shaft and suspended ceiling

1. Make an opening in the suspended ceiling.
2. Make an opening in the shaft for DN 75 or DN 80 connection duct.
3. For a second room connection, produce the opening in the wall or shaft for the suction duct. Observe installation positions for the second room connection.



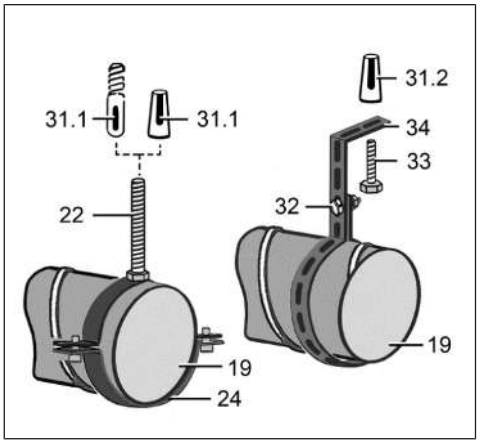
18	Main duct (steel folded spiral-seams duct)
19	ER GH connection duct: Flexible aluminium duct
21	Floor ceiling
22	Steel threaded rod / stair bolt
23	Duct attachment
24	Duct clamp / clamping band
25	Spigot
26	Ceiling compound

27	Shaft wall
28	Wall/board seal
29	Suspended ceiling
30	Steel screws or steel blind rivets (3 of each)
31	Dowel
31.1	Steel dowel or anchor bolt
31.2	Metal expansion dowel
32	Retaining bolt with nut
33	Retaining bolt

34	Steel clamping band

Be sure to note the approval and installation information: Preparations for wall installation.

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



Ensure a spacing of max. 1.5 m between the duct attachments.

1. Correctly attach main duct inside the shaft.
2. For fire protection systems, use ceiling compound. To do this, encase the ceiling and pour in the material from above.
3. Fit duct attachments to the ceiling. Only use permitted mounting material.

⚠ 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).

4. Connect permitted connection duct to main duct and seal for ventilation, for example with cold-shrink tape.
5. Apply wall/board 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.
6. Fit suspended ceiling. With ER-UPD housings, ensure a suitable, flat surface so that the fan insert can be safely inserted in the housing later on.
7. Attach spigot made from shaft material F90 around the shaft.

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

8. Lay power cable: Electrically connecting the unit.

7.4 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.

- Always note the relevant specifications for electrical installations and when fitting equipment. In Germany, observe DIN VDE 0100 and the corresponding parts in particular.
- Observe ambient conditions (Environmental conditions and operating limits) and technical data (Technical data [▶ 11]).
- Observe permitted duct cross-section of max. 1.5 mm².

1. Lay power cable to the installation location.
2. Continue with the safety test of the release device: Preparing the shutter.

7.5 Preparing the shut-off device/ shutter

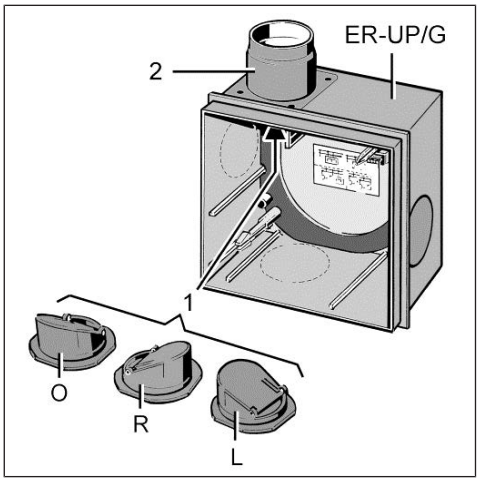
Before mounting the housing, always

- ER-UP/G: check the position of the plastic shutter. Ensure that the shutter is fully functional.
- ER-UPD, ER-UPB: check the metal shut-off device. Ensure that trigger equipment is fully functional.

7.5.1 Plastic shutter without fire protection – ER-UP/G housing

NOTICE Odours may escape from the ventilation channel.
If the installation position is wrong, the plastic shutter will not close leak-tight.
Insert shutter at the top/to the right/to the left/to rear in the exhaust socket of the housing to fit the installation position. Ensure that the shutter closes entirely leak-tight.

For wall installation with air outlet direction (exhaust socket) to the **left** or **right**, install the shutter rotated by 90°, see following figures.



ER-UP/G housing

1	1 Plastic backflow preventer O: Installation position for upwards air outlet direction R: Installation position for right air outlet direction L: Installation position for left air outlet direction
2	2 Plastic exhaust socket

If installing on the wall with air outlet direction (exhaust socket) to the left or right, note the following. Install shutter turned 90° (Pos. [L] or [R]) so it closes fully sealed in the installation position.

Preparing the plastic shutter for wall installation

Upwards air outlet direction "O"

Do not carry out any modifications. The shutter is fitted correctly ex-factory.

Air outlet direction to the right "R"

1. Remove plastic backflow preventer. Simply pull this down and out of the exhaust socket.
2. Turn backflow preventer, pos. [R].
3. Insert backflow preventer in exhaust socket until stop is reached.

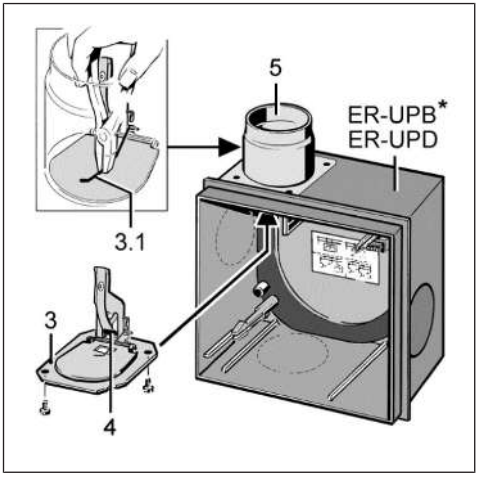
Air outlet direction to the left "L"

4. Remove plastic backflow preventer. Simply pull this down and out of the exhaust socket.
5. Turn backflow preventer, pos. [L].
6. Insert backflow preventer in exhaust socket until stop is reached.

Preparing the plastic shutter for ceiling installation

As a rule use the standard installation position with upwards air outlet direction "O" for ceiling installation. The shutter is fitted correctly ex-factory.

7.5.2 Fire protection shut-off device - ER-UPD and ER-UPB housing



3	Metal shut-off shutter with release mechanism and yoke spring [3.1]
4	Soldered strut
5	Metal exhaust socket
	* Shown without fire protection board

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

Air extraction is then no longer possible.

Check that the soldered strut is inserted correctly before installation. The functionality of the release mechanism must be ensured so that the shut-off shutter also opens in normal operation.

NOTICE Unpleasant smells from the main duct.
The fire protection shut-off device does not close fully sealed if incorrectly installed.
Before installation, check and ensure that the installation position is correct and the release mechanism is fully functional.

Preparing the metal shut-off device with upwards air outlet direction

1. Remove the fitted 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.

Preparing the metal shut-off device with air outlet direction to the right or left
No modifications needed.

1. Check and ensure that shut-off shutter is fully functional.

8 Housing installation

8.1 Installing ER-UP/G housing

The following are not permitted:

- Second room connection with an ER 60 fan insert (all models).
- Second room connection in combination with Centro exhaust air elements.
- Connecting a WC odour extraction unit in combination with Centro exhaust elements.
- Use of an ER fan or Centro exhaust air element in the bathroom or toilet room, if other rooms in the apartment are to be vented with the same unit at the same time.

8.2 Installation information for ER-UP/ G housing

(also Requirements in line with approval [▶ 12] and approval)
ER-UP/G are equipped with a plastic housing without fire protection equipment. The ER-UP/G housing may be installed in the following installation positions:

- **Wall installation** With air outlet direction (exhaust socket) upwards, to the right, to the left or to the rear. Installation with mounting support.
- **Ceiling installation and suspended ceiling:** Installation with mounting support.
- **Ceiling installation and non-suspended ceiling**: Mounting directly on the ceiling.

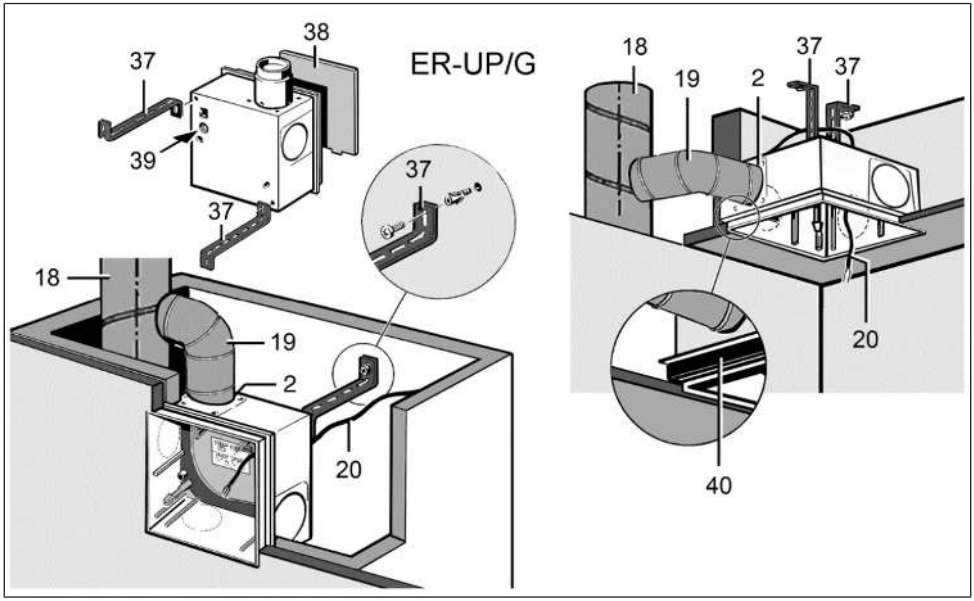
Suitable mounting material is to be provided by the customer.
The plastic shutter should be prepared according to these instructions so that it closes fully sealed in the installation position.
The housing must be inserted without any distortion. Failure to do so will mean that the fan insert cannot engage correctly in the housing and the degree of protection stated on the rating plate is no longer ensured.
Break open the housing segment [S] below to use the ER-ZR second room connection set or the ER-AS extraction socket.
A toilet seat air extraction unit is connected to the housing using the ER-AS extraction socket (DN 75/80).
The toilet seat air extraction unit must not be connected to the second room connection socket or the Centro exhaust air element.
Use ER-MO expanded rubber for acoustic insulation of thin ceilings capable of resonance (System and accessory components).

8.3 Important information about plastering

- Max. compensable plaster overshoot 7 mm.
- Max. protruding housing edge 20 mm, can be compensated for with spacing frame DR 60/100.
- Installation at a depth of 50 to 100 mm can be compensated for with the two-part wall frame ER-MR.
- The gap remaining between the housing and shaft must be fully sealed with non-flammable materials that are resistant to deformation so that incorrect air is not drawn in.
- Joints between the housing and wall can be covered with cover frame ER-AR.

We recommend keeping these installation and operating instructions until final installation in the housing.

8.4 ER-UP/G wall installation, single room



2	Exhaust socket with plastic shutter
18	Main duct, steel folded spiral-seams duct
19	Connection duct, AFR 80 DN 75/80 flexible aluminium duct
20	Power cable
37	Mounting support UPM 60/100 or ER-UPM (2 items)
38	Plaster protective cover
39	Cable grommet
40	ER-MO expanded rubber

1. Remove the plaster protective cover from the housing.

NOTICE The unit will be damaged and function impaired if the fixing screws used are incorrect/too long.
Fixing screws may not penetrate into the housing.
Use the screws provided (mounting support).

2. Cut the mounting support to the required length, bend it into shape and fix it to the housing with the supplied fixing screws.
3. Mark fixing holes for mounting support on rear shaft wall, produce holes and insert dowels. Suitable mounting material is to be provided by the customer.

⚠ DANGER Danger of short-circuits and damage to the unit.
If the cable grommet is not installed correctly, water may penetrate the housing. The degree of protection can no longer be guaranteed.
Drive through cable grommet so that it can seal the cable sheathing all the way round (circular, no slots).

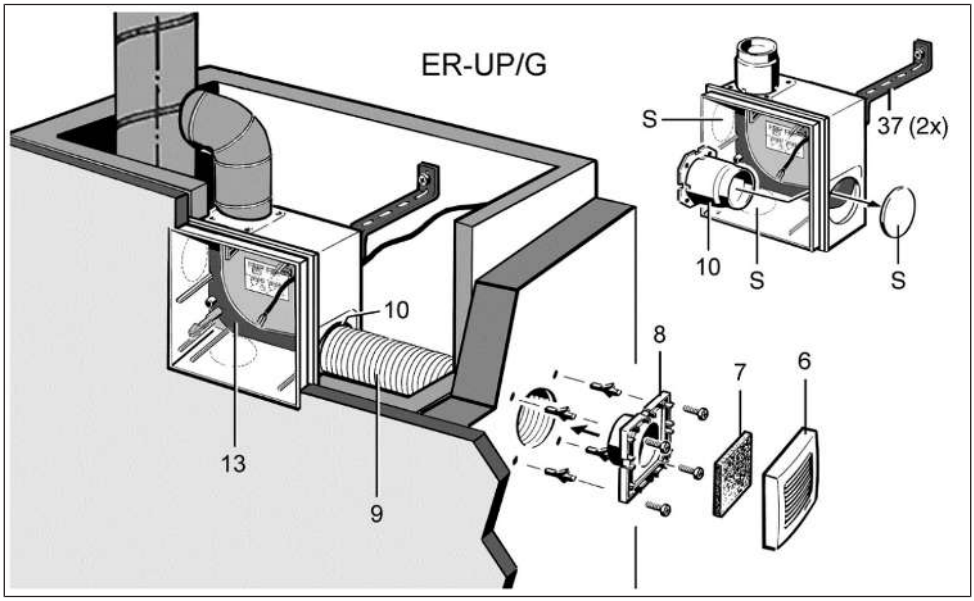
4. Guide power cable from rear of housing through cable grommet into housing.
5. Insert the housing with the mounting support into the shaft and fix it to the rear wall of the shaft.

⚠ DANGER Fire may spread if connection duct is incorrectly installed.
Only use permitted duct material (Requirements in line with approval [▶ 12]).
Correctly attach connection duct to exhaust socket.

6. Connect connection duct to exhaust socket sealed for ventilation, e.g. with cold-shrink tape.
7. Provide unit with electrical connection: Electrically connecting the unit.
8. Insert the plaster protective cover in the housing.

9. Plaster in housing flush with front edge, note tile thickness if necessary: Important information about plastering.

8.5 ER-UP/G ceiling installation, single room



6	Protective grille
7	Filter mat, filter class G2
8	Adapter
9	Suction duct, second room connection: flexible aluminium duct AFR 75/AFR 80
10	Installation socket for second room extraction DN 75/80
13	Housing floor seal
37	Mounting support UPM 60/100 (2 items)
S	Housing segment

1. Remove the plaster protective cover from the housing.

NOTICE The unit will be damaged and function impaired if the fixing screws used are incorrect/too long.
Fixing screws may not penetrate into the housing.
Use the screws provided (mounting support).

2. For suspended ceilings, cut mounting support to the required length, bend it into shape and fix it to the housing (ER GH wall installation, single room).
3. Mark fixing holes for mounting support/housing on ceiling, produce holes and insert dowels. Suitable mounting material is to be provided by the customer.

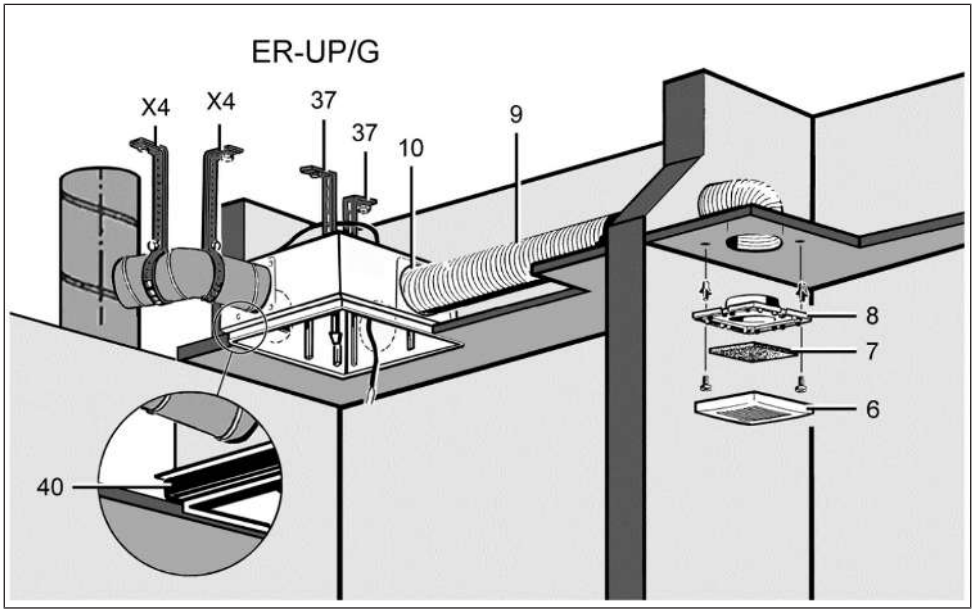
⚠ DANGER Danger of short-circuits and damage to the unit.
If the cable grommet is not installed correctly, water may penetrate the housing. The degree of protection can no longer be guaranteed.
Drive through cable grommet so that it can seal the cable sheathing all the way round (circular, no slots).

4. Guide power cable from rear of housing through cable grommet into housing.
5. Move housing into desired position and secure to ceiling with/without mounting support.

⚠ DANGER Fire may spread if connection duct is incorrectly installed.
Only use permitted duct material (Requirements in line with approval [▶ 12]).
Correctly attach connection duct to exhaust socket.

6. Connect connection duct to exhaust socket sealed for ventilation, e.g. with cold-shrink tape.
7. Provide unit with electrical connection: Electrically connecting the unit.
8. Insert the plaster protective cover in the housing.
9. Plaster in housing flush with front edge.

8.6 ER-UP/G wall installation, second room



6	Protective grille
7	Filter mat, filter class G2
8	Adapter
9	Suction duct, second room connection: flexible aluminium duct AFR 75/AFR 80
10	Installation socket for second room extraction DN 75/80
37	UPM 60/100 mounting support
40	ER-MO expanded rubber
X4	Clamping band or steel threaded rod with duct clamp

1. Cut out housing segment on the marking using a knife.

NOTICE The unit will be damaged/function will be impaired by incorrect air if the installation socket is inserted incorrectly [11.1].
Degree of protection is no longer guaranteed.
Correctly insert installation socket up to stop.
This must audibly engage.

2. Place installation socket in housing. The edge of the socket must click into place on the wall of the housing.
3. Install housing as described above for **single room**.
4. Connect suction duct with installation socket sealed for ventilation.
5. Produce fixing holes for adapter and insert dowels.
6. Connect adapter to suction duct, e.g. with cold-shrink tape.
7. Secure adapter to the wall.
8. Insert filter mat and locate the internal grille in the correct position.

With second room extraction, keep regulating plate somewhere safe for the final installation. This is needed to operate the ER 100 fan insert and is inserted in the cover.

8.7 ER-UP/G ceiling installation, second room

1. Note installation information: Installation information.
2. Mount housing on ceiling as described: ER-UP/G ceiling installation, single room [▶ 20].
3. Mount ER-ZR second room connection set on ceiling as described in: ER-UP/G wall installation, second room [▶ 21].

Secure housing and the connection duct with 2 mounting supports and/or clamping bands/ threaded rods each.

8.8 Installation of ER-UPD housing

The following are not permitted:

- Second room connection with an ER 60 fan insert (all models).
- Second room connection in combination with Centro exhaust air elements.
- Connecting a WC odour extraction unit in combination with Centro exhaust elements.
- Use of an ER fan or Centro exhaust air element in the bathroom or toilet room, if other rooms in the apartment are to be vented with the same unit at the same time.

8.9 Installation information for ER-UPD housing

(also Requirements in line with approval [▶ 12] and approval)

ER-UP/G are equipped with a plastic housing without fire protection equipment. The ER-UP/D housing may be installed in the following installation positions:

They can be installed with an air outlet direction (exhaust socket) upwards, to the right or left and are suitable for ceiling installation. With an upwards air outlet direction, the yoke spring should be removed from the shut-off device.

A description of ceiling installation in a suspended ceiling can be found below. In the case of non-suspended ceilings, the housing is mounted directly on the ceiling.

Wall installation should be undertaken as described for ceiling installation. Suitable mounting material is to be provided by the customer. To screw down the connection duct use steel screws, if screwing into brickwork/concrete use steel dowels.

The metal shut-off device should be prepared according to these instructions.

The ER-UPD housing must be inserted without any distortion. Failure to do so will mean that the fan insert cannot engage correctly in the ER-UPD housing and the degree of protection stated on the rating plate is no longer ensured.

Break open one of the housing segments [S] to use the second room connection set ER-ZR.

Use ER-MO expanded rubber for acoustic insulation of thin ceilings capable of resonance.

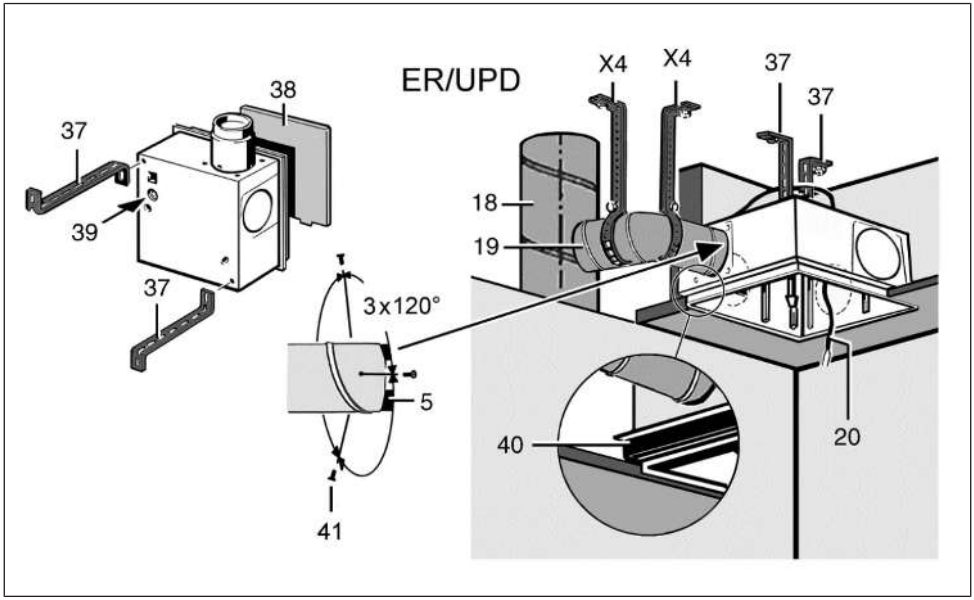
A toilet seat air extraction unit is connected to the ER-UPD housing using the DN 70 extraction socket ER-AS.

8.10 Important information about plastering

- Minimum overlap required for the ventilation shaft (without tiles, etc.) in the area of the connection duct 10 mm.
- Max. compensable plaster overshoot 7 mm.
- Max. protruding housing edge 20 mm, can be compensated for with spacing frame DR 60/100.
- Installation at a depth of 50 to 100 mm can be compensated for with the two-part wall frame ER-MR.
- The gap remaining between the housing and shaft must be fully sealed with non-flammable materials that are resistant to deformation so that incorrect air is not drawn in.
- Joints between the housing and wall can be covered with cover frame ER-AR.

We recommend keeping these installation and operating instructions until final installation in the housing.

8.11 ER-UP/D installation, single room



5	Metal exhaust socket with shut-off shutter
18	Main duct, steel folded spiral-seams duct
19	Connection duct, steel folded spiral-seams duct DN 75/80
20	Power cable
37	UPM 60/100 mounting support
38	Plaster protective cover
39	Cable grommet
40	ER-MO expanded rubber
X 4	Clamping band or steel threaded rod with duct clamp

1. Remove the plaster protective cover from the housing.

NOTICE The unit will be damaged and function impaired if the fixing screws used are incorrect/too long.
Fixing screws may not penetrate into the housing.
Use the screws provided (mounting support).

2. For suspended ceilings, cut mounting support to the required length, bend it into shape and fix it to the ER-UPD housing with the supplied screws.
3. Mark fixing holes for mounting support on ceiling, drill dowel holes and insert steel dowels.

⚠ DANGER Danger of short-circuits and damage to the unit.
If the cable grommet is not installed correctly, water may penetrate the housing. The degree of protection can no longer be guaranteed.
Drive through cable grommet so that it can seal the cable sheathing all the way round (circular, no slots).

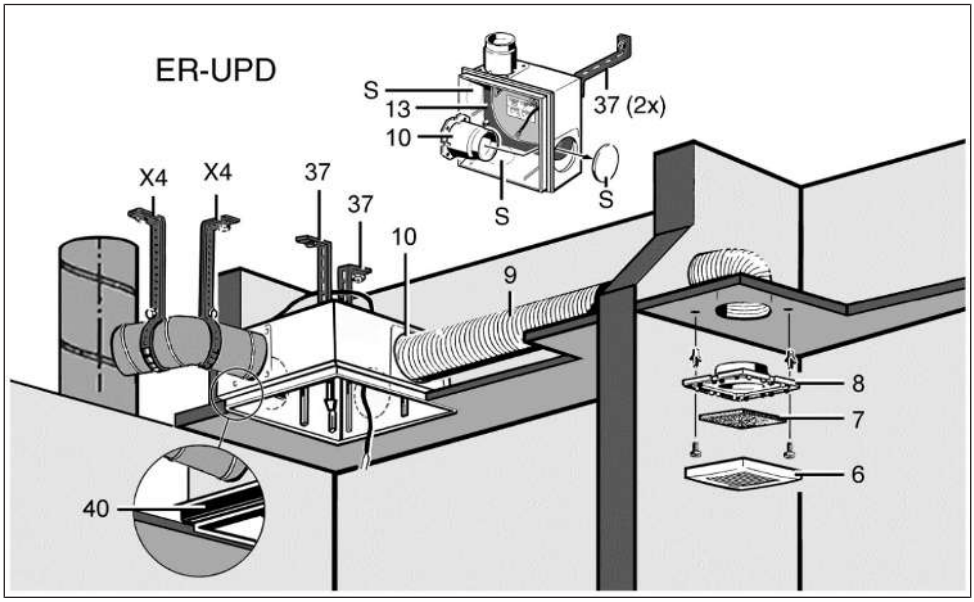
4. Guide power cable from rear of housing through cable grommet into housing.
5. Move housing into desired position and secure to ceiling with both mounting supports.

⚠ DANGER Fire may spread if connection duct is incorrectly installed.
Only use permitted duct material (Requirements in line with approval [▶ 12]).
Correctly attach connection duct to exhaust socket.

6. Slide connection duct to stop above exhaust socket. Secure connection duct and exhaust socket with 3 steel blind rivets. Then seal well for ventilation, e.g. with cold-shrink tape.
7. Produce electrical connection.
8. Insert the plaster protective cover in the housing.

9. Plaster in housing flush with front edge, note tile thickness if necessary: Important information about plastering.

8.12 ER-UP/D installation, second room



6	Protective grille
7	Filter mat, filter class G2
8	Adapter
9	Suction duct, second room connection: flexible aluminium duct AFR 75/AFR 80
10	Plastic installation socket for second room extraction DN 75/80
13	Housing floor seal
37	Mounting support UPM 60/100 (2 items)
40	ER-MO expanded rubber
S	Housing segment
X4	Clamping band or steel threaded rod with duct clamp

1. Cut out housing segment on the marking using a knife.

NOTICE The unit will be damaged and function impaired by incorrect air if the plastic socket is inserted incorrectly.
Degree of protection is no longer guaranteed. Lift up housing floor seal near socket and insert installation socket. Reinsert housing floor seal in the correct position.

2. Place installation socket in housing. The edge of the socket must click into place on the wall of the housing.
3. Install housing as described above for **single room**.
4. Connect suction duct with installation socket sealed for ventilation.
5. Produce fixing holes for adapter and insert dowels.
6. Connect adapter to suction duct, e.g. with cold-shrink tape.
7. Secure adapter to the wall.
8. Insert filter mat and locate the internal grille in the correct position.

With second room extraction, keep regulating plate somewhere safe for the final installation. This is needed to operate the ER 100 fan insert and is inserted in the cover.

8.13 Installation of ER-UPB housing

The following are not permitted:

- Second room connection with an ER 60 fan insert (all models).

- Second room connection in combination with Centro exhaust air elements.
- Connecting a WC odour extraction unit in combination with Centro exhaust elements.
- Use of an ER fan or Centro exhaust air element in the bathroom or toilet room, if other rooms in the apartment are to be vented with the same unit at the same time.

8.14 Installation information for ER-UPB housing

(also Requirements in line with approval [▶ 12] and approval)

ER-UPB are equipped with fire protection cover and metal shut-off shutter with release mechanism.

Wall installation is described below. Ceiling installation should be undertaken following the description for wall installation.

Housings can be installed with an air outlet direction (exhaust socket) upwards, to the right or left. With an upwards air outlet direction, the yoke spring should be removed from the shut-off device.

Suitable mounting material is to be provided by the customer. To screw down the connection duct use steel screws, if screwing into brickwork/concrete use steel dowels.

The metal shut-off device should be prepared according to these instructions.

A second room connection is only permitted with ER-UPB/R, ER-UPB/L or ER-UPB/U.

8.15 Important information about plastering

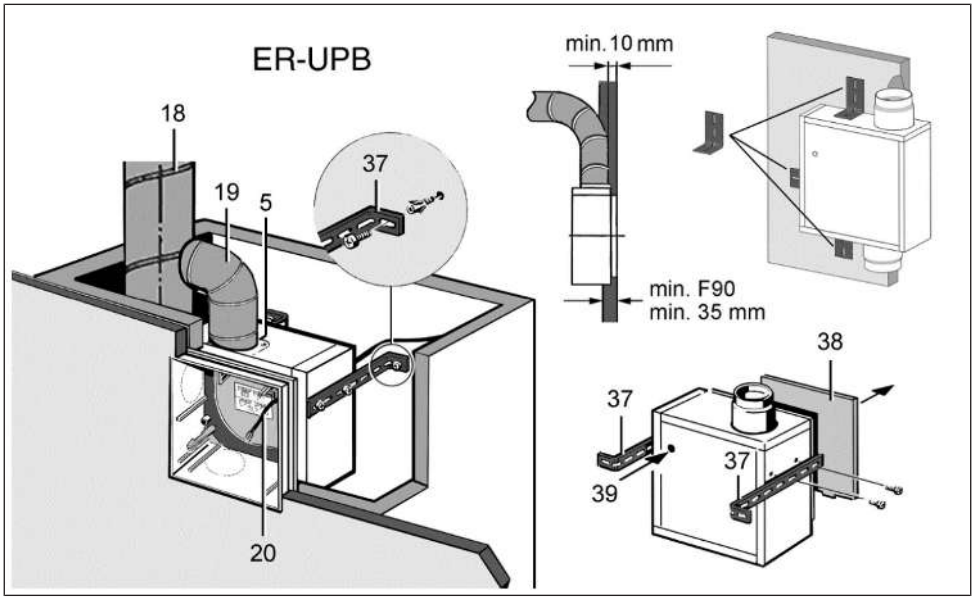
⚠ DANGER Fire may spread if ER-UPB housing is incorrectly installed.

Any gap remaining between the housing and shaft/tiles must be fully sealed with non-flammable materials resistant to deformation.

- Minimum overlap required for the ventilation shaft (without tiles, etc.) in the area of the connection duct 10 mm.
- Max. compensable plaster overshoot 7 mm.
- Max. protruding housing edge 20 mm, can be compensated for with spacing frame DR 60/100.
- Installation at a depth of 50 to 100 mm can be compensated for with the two-part wall frame ER-MR.
- The gap remaining between the housing and shaft must be fully sealed with non-flammable materials that are resistant to deformation so that incorrect air is not drawn in.
- Joints between the housing and wall can be covered with cover frame ER-AR.

We recommend keeping these installation and operating instructions until final installation in the housing.

8.16 ER-UP/B installation, single room



5	Metal exhaust socket with shut-off shutter
18	Main duct, steel folded spiral-seams duct
19	Connection duct, flexible aluminium duct AFR DN75/80
20	Power cable
37	UPM 60/100 mounting support
38	Plaster protective cover
39	Cable grommet

1. Remove the plaster protective cover from the housing.

NOTICE The unit will be damaged and function impaired if the fixing screws used are incorrect/too long.
Fixing screws may not penetrate into the housing.
Use the screws provided (mounting support).

2. For suspended ceilings, cut mounting support to the required length, bend it into shape and fix it to the ER-UPD housing with the supplied screws.
3. Mark fixing holes for mounting support on ceiling, drill dowel holes and insert steel dowels.

⚠ DANGER Danger of short-circuits and damage to the unit.
If the cable grommet is not installed correctly, water may penetrate the housing. The degree of protection can no longer be guaranteed.
Drive through cable grommet so that it can seal the cable sheathing all the way round (circular, no slots).

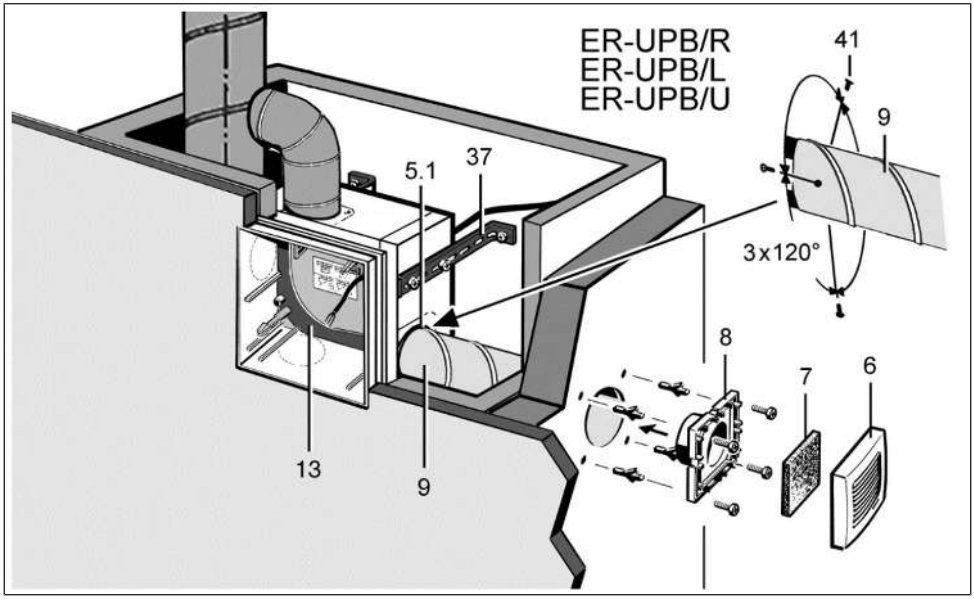
4. Guide power cable from rear of housing through cable grommet into housing.
5. Move housing into desired position and secure to ceiling with both mounting supports.

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

Only use permitted duct material (Requirements in line with approval [▶ 12]).
Correctly attach connection duct to exhaust socket.

6. Slide connection duct to stop above exhaust socket. Secure connection duct and exhaust socket with 3 steel blind rivets. Then seal well for ventilation, e.g. with cold-shrink tape.
7. Produce electrical connection.
8. Insert the plaster protective cover in the housing.
9. Plaster in housing flush with front edge, note tile thickness if necessary: Important information about plastering.

8.17 ER-UPB/R, ER-UPB/L and ER-UPB/U installation (second room)

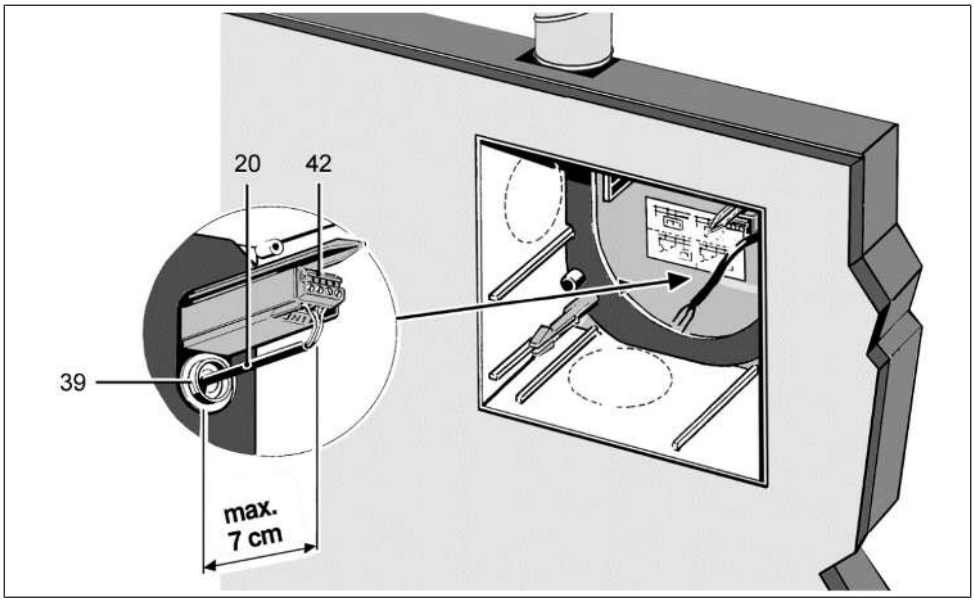


5.1	Steel connection socket DN 75/80 for second room extraction on ER-UPB
6	Protective grille
7	Filter mat filter class G2
8	Adapter
9	9 Suction duct, second room connection: Steel folded spiral-seams duct DN 75/80

1. Install housing as described in these instructions.
2. Secure suction duct and steel socket with 3 steel blind rivets or steel screws and connect sealed for ventilation.
3. Produce fixing holes for adapter and insert dowels.
4. Connect adapter fully sealed to suction duct, e.g. with cold-shrink tape.
5. Secure adapter to the wall with screws.
6. Insert filter mat and fit protective grille in the correct position.

With second room extraction, keep regulating plate somewhere safe for the final installation. This is needed to operate the ER 100 fan insert and is inserted in the cover.

9 Electrical connection



20	Power cable	39	Cable grommet
42	Connection terminal		

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 [▶ 37]. Do not connect additional consumers to terminal 4.

NOTICE Damage to unit due to removal of the humidifying membrane.
If the humidifying membrane on the sensor dome is removed, the degree of protection is no longer guaranteed.

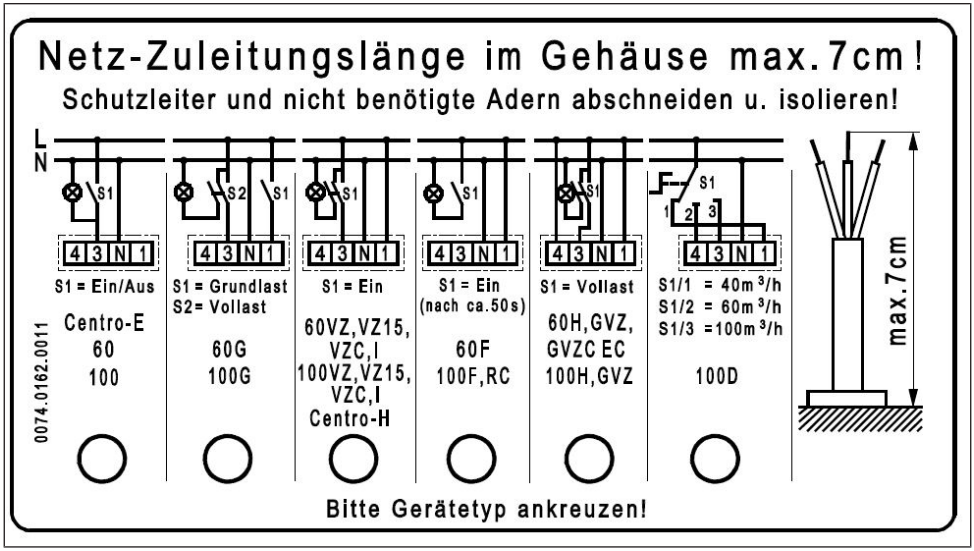
NOTICE Risk of damage to unit in the event of short-circuits.
Cut off and insulate PE conductor and individual cable cores that are not required!

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 circuit diagram on terminal box: Wiring diagrams [▶ 37].

Electrically connecting the unit

1. Switch off mains fuse, secure and fit warning sign.
2. Remove plaster protective cover.
3. Cut off and insulate PE conductor and individual cable cores that are not required.
4. Remove power cable surround and cut to length according to these instructions.
5. Wire power cable to the terminal box according to the circuit diagram.



6. Mark the fan type on the circuit diagram in the flush-mounted housing. This prevents mistakes during final installation, for example, if different fan inserts are fitted in the system.
7. Insert plaster protective cover.

We recommend keeping these installation and operating instructions until final installation in the housing.

10 Installation of fan insert and cover

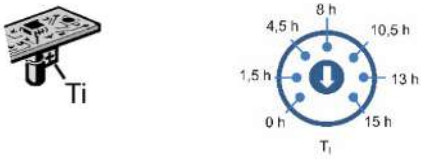
10.1 Settings on electronic circuit boards

- Electronic circuit boards of the ER variants standard, D, VZ, VZ 15, G, GVZ and F have no setting options.
- Electronic circuit boards of the ER variants I, VZC, H, RC can be set as follows.
- Tolerance for time details max. + 20 %.
- Units with time delay switches (VZ, VZ 15, GVZ, VZC, F, I, RC and H fans) have resistance to interference in line with EN 55014-2 (depending on pulse type and energy component 1000 to 4000 V). These values can be exceeded when operating with fluorescent tubes. In this case, additional interference suppression measures (L, C or RC modules, protection diodes, varistors) are required.

Setting

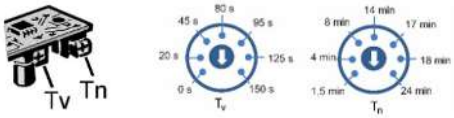
1. Place fan insert on front so that electronic circuit board (control) is freely accessible.
2. Set the desired values with the potentiometers as described below.

10.2 Electronic circuit boards ER 60 I and ER 100 I



Potentiometer Ti: Service life. In far left position, interval control off.

10.3 Electronic circuit boards ER 60 VZC and ER 100 VZC

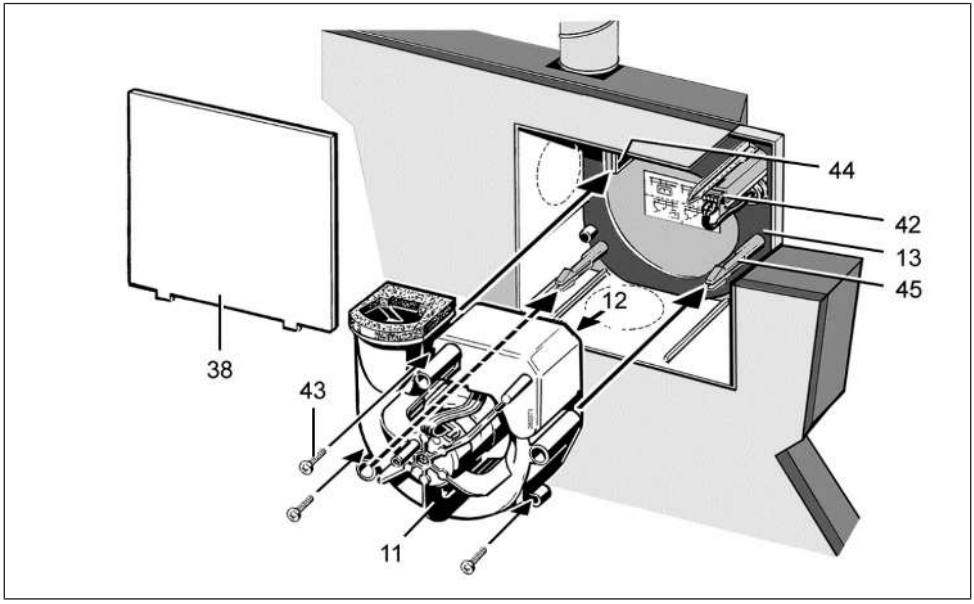


Potentiometer Tv start delay (seconds)
Potentiometer Tn overrun time (minutes)

10.4 Electronic circuit board ER 100 RC

→ separate ER 100 RC operating instructions.

10.5 Installing fan insert/exhaust air element



11	Fan insert
12	Electronic circuit board (control)
13	Housing floor seal
38	Plaster protective cover
42	Connection terminal
43	Optional fixing with screws (to be provided by the customer)
44	Locking lever
45	Stud

The ER fan insert / the Centro exhaust air element is inserted into the flush-mounted housing as follows.

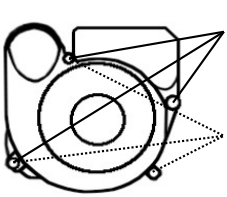
1. Switch off mains fuse, secure and fit warning sign.
2. Remove plaster protective cover and clean any dirt off the flush-mounted housing.
3. Ensure that the fan type ticked in the housing box matches the type to be fitted.
4. Check ease of movement of shut-off shutter/ backflow preventer.
5. When installed, the shut-off shutter/backflow preventer must close automatically.
6. With ER-UPD and ER-UPB, this must close automatically when the yoke spring used is pressed (exception - upwards air outlet). With ER-UPD and ER-UPB ensure that the soldered strut is inserted correctly.
7. Check that the housing floor seal is correctly positioned and insert properly.

NOTICE The sound level will increase if the housing floor seal is fitted incorrectly. Degree of protection not guaranteed if the housing floor seal is incorrectly positioned or missing.
The housing floor seal must lie flat and without any creases in the housing.

8. Check that all screw connections are tight.
9. Check that connection data matches the technical data on the unit (rating plate S2).

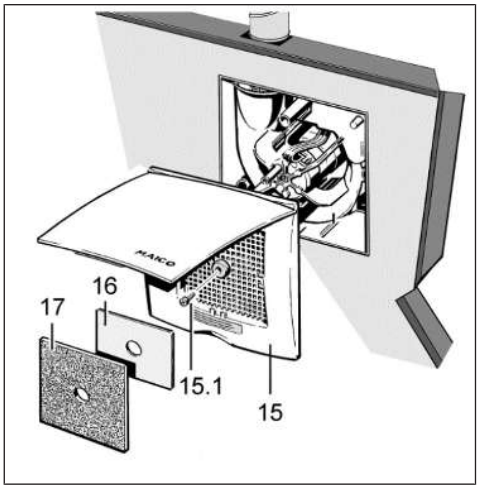
NOTICE Function will be impaired if fan insert is not inserted correctly.
Ensure proper insertion in the locking hooks.
If the fan insert is not firmly seated, screw it to the housing at the 3 positions shown in the figure above. Suitable mounting material is to be provided by the customer.

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



10. Slide fan insert/exhaust air element evenly and in parallel onto both studs. Ensure that both locking tabs of the studs and the locking lever engage audibly.
11. Ensure that the fan insert / exhaust air element is correctly engaged. To do this, gently pull and press against the fan insert/exhaust air element. The fan/exhaust air element must not move. Alternatively, screw down the fan insert/exhaust air element tightly in the housing → previous installation information.

10.6 Installing the cover



15	Cover with central screw [15.1]
16	Regulating plate for second room connection
17	Filter mat, filter class G2

Installation information

- Cover can be turned up to ± 5° (to provide compensation if housing is inserted at too much of an angle). If installing on a wall, ensure that the Maico name is in the bottom right.
- If the housing edge is flush with the plaster, use central screw, M6 x 16 mm, to secure the cover.
- With a plaster overshoot of up to 20 mm to the housing edge, use spacing frame DR 60/100 between the wall and cover. The customer should provide a longer screw (M6 fillister head) to secure the cover.
- If the housing is plastered in too deep, compensate for this with a two-part wall frame ER-MR (can be adjusted between 50...100 mm). This prevents air from being drawn in from the shaft. Use the supplied screw to fix the cover.

1. Fold up cover at the recessed grip, place on the housing and secure with the central screw.
2. If necessary, first fit a spacing or wall frame.
3. With second room extraction, insert regulating plate below locking tabs at the side on the intake grille of the cover, insert filter mat.
4. Lock cover. The lock must engage audibly.
5. Switch on mains fuse, remove warning sign.
6. Undertake initial commissioning and function test.
7. Affix time strip (supplied with the cover) and push the activation button [A] all the way. Installation location of time strip, e.g. near the cover.



The red dye in the interior of the bar [B] is released. The bar indicator first fills slightly. Within the next 6 months, the bar indicator [B] will rise to the upper edge (indicator value 6).

11 Commissioning

1. Switch on mains fuse and remove warning sign.

2. Run function test. To do this, switch fan on and off, observe delay times (control models). Take additional instructions provided into account.
3. Check that the fan is running smoothly.
4. Switch off unit.

12 Operating the unit

ER-UP/Centro units are usually switched on and off manually (using a switch), depending on unit model and connection variant.

Barrier-free units work as per the automatic function. Alternatively, these units can be operated using an optional switch.

Please read the relevant sections in these instructions (ER-UP controls (circuit board types) [▶ 10]) or contact your installer or planner for details of the special functions and operating characteristics.

Control model standard, D, VZ, VZC, G, GVZ, I and RC

The unit is switched on and off with a switch that is to be provided by the customer.

Control model F

Barrier-free unit. The fan switches on once the room lighting is activated. The fan can also be operated manually using an optional switch (Wiring diagrams [▶ 37]).

Control model H

Barrier-free unit. The unit switches on when the humidity reference value Rf is exceeded. No switch needed. The unit can also be operated manually using an optional switch (Wiring diagrams [▶ 37]).

Control model RC

Radio-controlled fan system with up to 3 ER 100 RC fans. These are switched on and off via a radio switch, room air control RLS RC or radio window contacts.

If the fan is switched on and off manually, function in accordance with DIN 18017-3 is not always ensured.

In the event of thermal overload, the unit switches off automatically. Wait until the motor has cooled down. Cool-down time may be up to 10 minutes. The unit switches back on automatically after cooling down.

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.

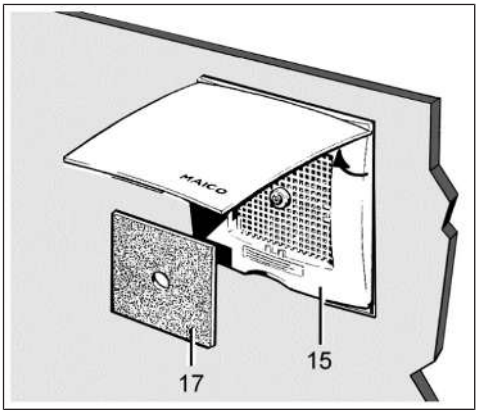
Prior to accessing the connection terminals, switch off all supply circuits. Switch off mains fuse, secure against being accidentally switched back on and position a visible warning sign.

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

Only clean the cover using water.
Do not use aggressive cleaning agents.

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

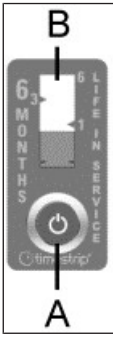
Filter change



15	Cover
17	Filter mat, filter class G2

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

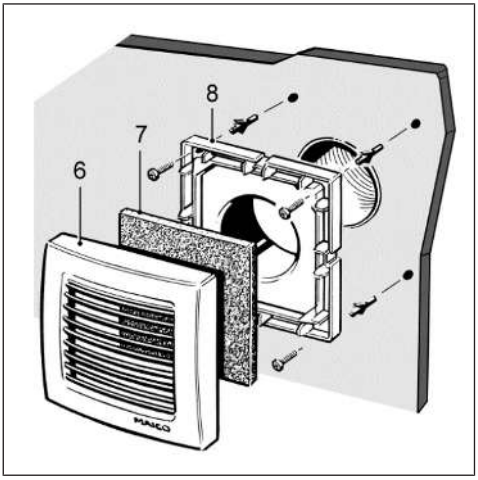
1. Fold up cover.
2. Take out filter mat and replace it.
3. Remove used TimeStrip.
4. Affix new time strip and push the activation button [A] all the way.



The red dye in the interior of the bar [B] is released. The bar indicator first fills slightly. Within the next 6 months, the bar indicator [B] will rise to the upper edge (indicator value 6).

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

13.1 Filter change, second room

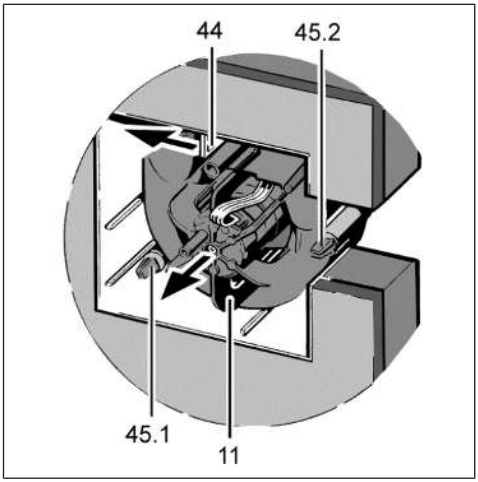


6	Protective grille
7	Filter mat
8	Adapter

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

1. Pull the protective grille forwards.
2. Take out filter mat and replace it.
3. Insert new filter mat into protective grille, then press protective grille into correct position on adapter until it audibly engages.

13.2 Removing fan insert



11	Fan insert
44	Locking lever
45	Studs [45.1] and [45.2]

1. Switch off mains fuse, secure and fit warning sign.
2. Open cover and remove.
3. Press locking lever slightly outwards (→ arrow), release and slightly lift the fan insert.
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 bottom part of housing in parallel.
6. Installation is carried out in reverse order.

Degree of protection according to rating plate only guaranteed if installed as stipulated (fan insert engaged, internal cover closed).

13.3 Cleaning the backflow preventer/shut-off device

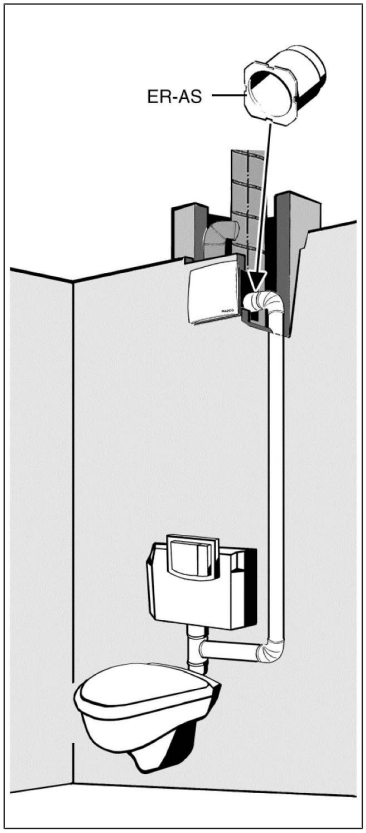
The backflow preventer (ER-UP/G) or shutter with shut-off device against fire transmission (ER-UPD/UPB) must be checked for proper functioning of the shutter and for soiling during the regular inspection.

1. After removing the fan insert, check that the shutter moves easily and closes automatically.

2. (ER-UP/G) If the fan insert is excessively soiled, the backflow preventer can be removed from the exhaust socket, checked for soiling and cleaned if necessary.
3. (ER-UPD/UPB) If the fan insert is excessively dirty, the shutter can be removed (Fire protection shut-off device - ER-UPD and ER-UPB housing [▸ 17]).
4. Check the mechanism of the shutter and shut-off device for dirt and clean if necessary.

NOTICE A manual triggering test of the shut-off device against fire transmission by removing the soldered strut is not permitted!

14 ER-AS extraction socket for WC odour extraction



ER-UP/G and ER-UPD housing units can be connected to the WC flushing pipe using the ER-AS extraction socket. A DN 70 duct cross section facilitates low air speeds in the connecting duct and an effective, draft-free extraction of odours.

Pre-requirement for the connection

A DN 70 branch must be installed in the flushing pipe of the concealed cistern.

Installation

1. Cut the left, right or bottom housing segment "S" out of ER-UP housing at the marking using a knife.
2. Plug ER-AS extraction socket into ER-UP housing. The edge of the socket must click into place on the wall of the housing.

NOTICE Damage to unit in the event of improper installation position of the housing floor seal.

Degree of protection is not guaranteed.
Lift up the housing floor seal before inserting the ER-AS extraction socket and then reposition it correctly afterwards.

3. Install ER-UP/G or ER-UPD housing unit in accordance with these instructions. Note the descriptions relating to the second room connection.
4. Connect connection duct to ER-AS extraction socket and branch in the concealed cistern. Make sure the connections between the connection duct and the extraction socket and the branch are tight.
5. Install fan insert and cover.

It is important that regulating plate and filter mat supplied with the ER-AS are inserted. The cover must engage audibly when locking.

6. Run function test.

15 Fault rectification

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.	Dirty filter. → Replace filter. Locking hook not engaged. → Engage fan insert correctly. Incorrect duct diameter. → Check diameter of the main duct. Supply air cross section is too small. → Increase the supply air cross section.
VZ-, VZ 15-, VZC-, F-, H- and I models: No fan overrun.	The external conductor L connected to terminal 1 is interrupted when the unit is switched off. → Connect unit as per wiring diagram.
VZ, VZ 15, VZC, I models: “Fan starts up immediately and stops immediately if is switched off.	Terminals 1 and 3 are reversed. → Connect unit as per wiring diagram.
Fan doesn’t start up.	Check whether the fan insert is correctly inserted.
Fan is too loud.	Dirty filter. → Replace filter. Fan insert incorrectly installed. → Insert fan insert correctly in accordance with these instructions. The main duct is undersized. → Re-calculate pressure losses.
H model does not switch from base load to full load operation despite there being moisture in the room.	There was no rapid increase in humidity (7% in 2 minutes).
H model no longer switches back to base load operation or off even after a long period in full load operation.	The value has not yet fallen below the reference value. After 1 h, the valve automatically switches from full-load operation to base-load operation after a follow-up time of 15 minutes and resets the reference value.
Additional consumers connected to terminal 4.	Damage to the unit if connected incorrectly. Do not connect additional consumers to terminal 4. The unit may only be connected according to the wiring diagrams (Wiring diagrams [▶ 37]).

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

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

Designation	Article no.
Shutter VM ER-UP/G	E093.0608.0000
Exhaust socket ER-UP/G	0059.0884.0001
Filter mat ZRF: 5 items, filter class G2 according to EN 779	0093.0923
Circuit boards	
ER-60	F101.1012.9002
ER-60 VZ	F101.1014.9004
ER-60 VZ 15	F101.1024.9001
ER-60 VZC	F101.1014.9801
ER-60 G	F101.1012.9102
ER-60 F	F101.1014.9104
ER-60 I	F101.1014.9403
ER-60 GVZ	F101.1014.9504
ER-60 H	F101.1014.9207
ER-100	F101.1013.9002
ER-100 VZ	F101.1015.9004
ER-100 VZ 15	F101.1025.9001

Designation	Article no.
ER-100 VZC	F101.1015.9601
ER-100 G	F101.1013.9102
ER-100 F	F101.1015.9104
ER-100 I	F101.1015.9403
ER-100 GVZ	F101.1015.9502
ER-100 H	F101.1015.9207
ER 100 D	F101.1021.9000
Cover, complete	
ER 60 / ER 100	0059.1017.9000
ER 60 F / ER 100 F	0059.1017.9100
Filter mat ZF 60/100 (5 items), filter class G2 according to EN 779 + filter change indicator (timestrip), PL ER 100 H	0093.0331

In case of questions, please contact:
Maico Elektroapparate-Fabrik GmbH
Steinbeisstraße 20
78056 Villingen-Schwenningen, Deutschland
Tel. +49 7720 694 445
Fax +49 7720 694 175
E-mail: ersatzteilservice@maico.de

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

17 Removal

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 fan insert.
2. Remove all cables.
3. Remove flush-mounted housing from wall.

18 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.

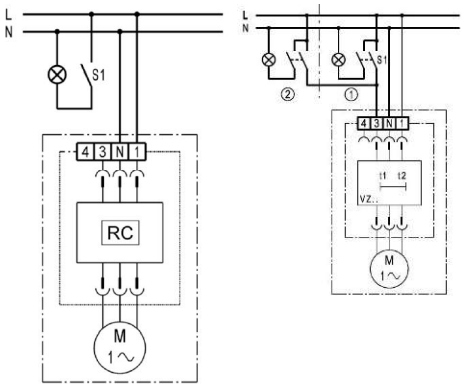
Dispose of the **air filter** in an environmentally-friendly way, in compliance with the regulations valid in the country where you are.

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.

19 Wiring diagrams

19.1 Wiring diagrams

ER 60 and ER 100, Centro E, Centro-H

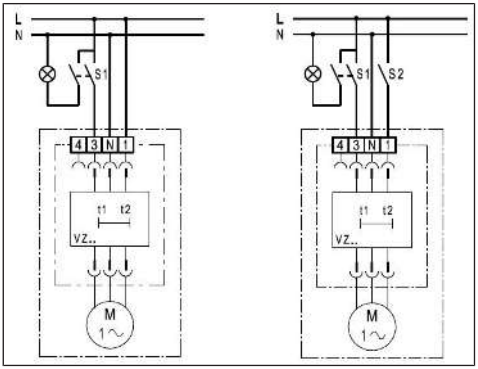


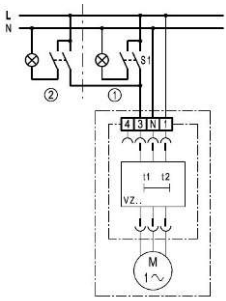
The fan starts up after switching on the room lighting (with switch S1). The fan also switches off after the room lighting has been turned off.

ER 100 with Main and Second room connection

The fan starts up after switching on the room lighting (with switch S1). The fan also switches off after the room lighting has been turned off.

ER 60 VZ, ER 60 VZ 15, ER 100 VZ, ER 100 VZ 15





S1 = Switch On/Off

(ON after approx. 50 seconds)

1 = Main room

2 = Second room

Standard switching:

The fan starts up approximately 50 seconds after the room lighting is switched on. The fan has an overrun time of approximately 6 minutes after switching off. With VZ 15 units, the overrun time is approximately 15 minutes.

Switching option

The fan starts up approx. 50 seconds after switching on the room lighting (with switch S1 and S2).

The fan has an overrun time of approximately 6 minutes after switching off with switch S1. With VZ 15 units, the overrun time is approximately 15 minutes. In addition, the fan can be switched off with switch S2 independent of the room lighting.

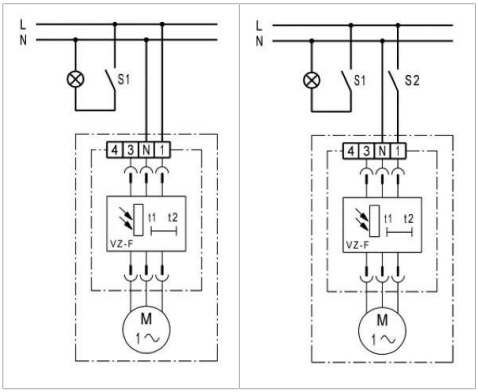
ER 60 VZC, ER 100 VZC

The fan starts up after a start delay when the room lighting is switched on. This can be adjusted continuously from 0 - 150 seconds. Depending on the setting, the fan has an overrun time of between 1.5 and 24 minutes after switching off. The overrun time can be adjusted continuously from 1.5 to 24 minutes.

ER 100 VZ and ER 100 VZ 15 with main and second room connection

The fan starts up approx. 50 seconds after switching on the room lighting (with a switch). The fan has an overrun time of approximately 6 minutes after switching off with the last switch to have been used. With VZ 15 units, the overrun time is approximately 15 minutes.

ER 60 F, ER 100 F



Standard switching:

With light control. The ER 60 F and ER 100 F are designed for installation in windowless, dark rooms. The fan is switched on wirelessly through the brightness of the room lighting by a light control unit. The fan starts up after approximately 50 seconds. The lowest switch-on brightness is 30 lux or 50 lux if a spacing frame is used on the front of the cover. The fan has an overrun time of approximately 6 min. after the light is switched off. The room must be dark for the fan to switch itself off. Maximum lighting strength at the front of the cover is 0.3 lux.

Switching option

The fan can be switched off independently of the room lighting by an additional switch 2.

ER 60 H, ER 100 H

With humidity control.

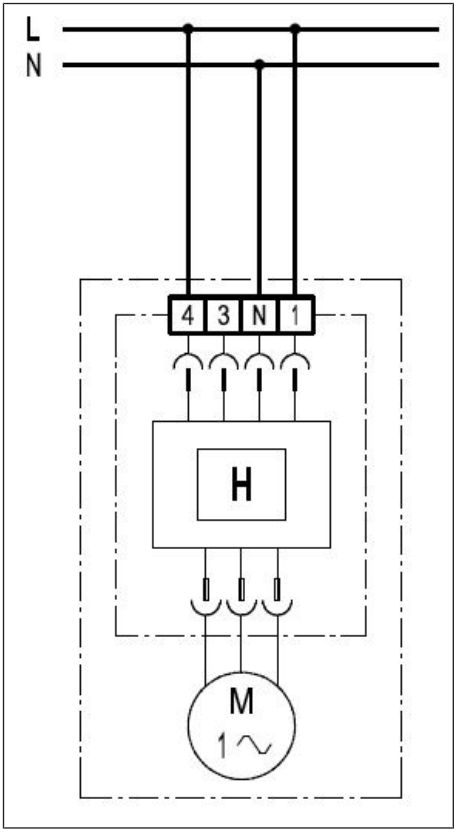
Once the fan insert has been installed, the unit regulates to the current room humidity (relative humidity). This humidity value is saved as the first reference value. The reference value does not have to be specified manually.

If the room humidity increases by 7 % within 2 minutes, the fan automatically switches to the nominal load level (60 or 100 m³/h). The unit continues to run at nominal load level until the stored reference value is undercut again.

If the humidity falls below the saved reference value, the overrun operation starts with an overrun time of 15 minutes (nominal load) If the humidity does not fall below the reference value within 60 minutes, the unit switches back into the operating status before the humidity control was activated. The current humidity value is saved as the new reference value.
If the relative humidity falls below the reference value during operation, the newly established reference value is saved.
ER ... H fans can also be operated using the light switch. With “Light on”, the fan starts in nominal load. Actuation via the light switch takes priority over the automatic humidity function. With “Light off”, the unit continues to run until the remaining overrun time (15 minutes) has passed. The automatic humidity function is then assigned maximum priority again and controls the unit.

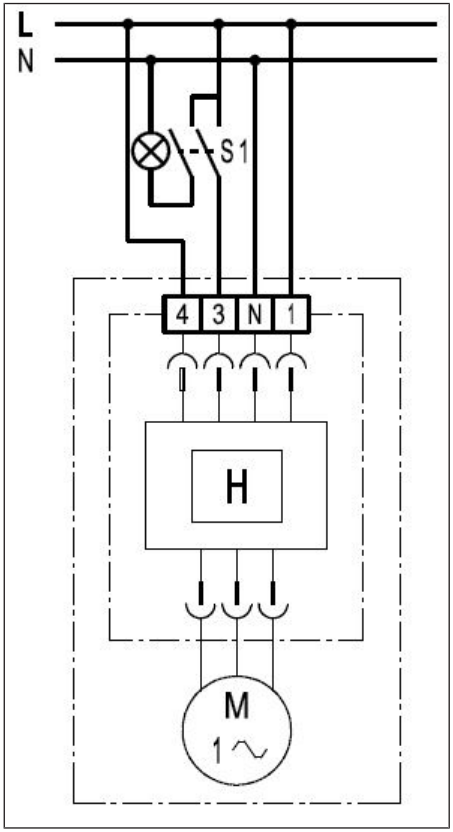
The humidity variant must not be deactivated using a switch on terminal 1 and/or terminal N.

Standard switching: Permanent base load operation



The fan is running in base load operation, humidity control is active. If the switch-on point is exceeded, the fan switches automatically over to full load mode. The fan switches automatically back to base load operation if the relative humidity falls below the switch-off point.

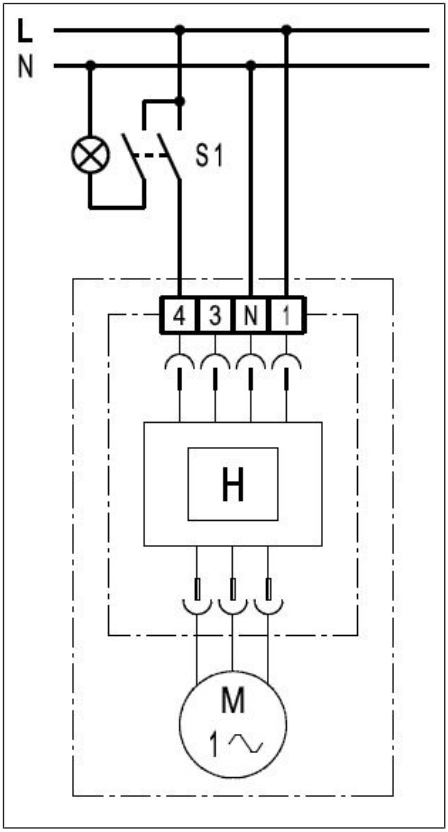
Switching option 1: Permanent base load operation with pre-defined overrun time



The fan is running in base load operation. Humidity control is active, see Standard Switching. Switch "S1" is used to switch manually to full load operation. After switching full load operation off with "S1", the fan continues in full load operation for an overrun time of 6 minutes. If after this time, the humidity as measured at the fan:

- is higher than the switch-off point, the fan continues to run in full load operation until the humidity drops below the switch-off point. Only then does the fan switch automatically back to base load operation.
- is lower than the switch-off point, the fan immediately switches automatically back to base load operation.

Switching option 2: Manual base load operation

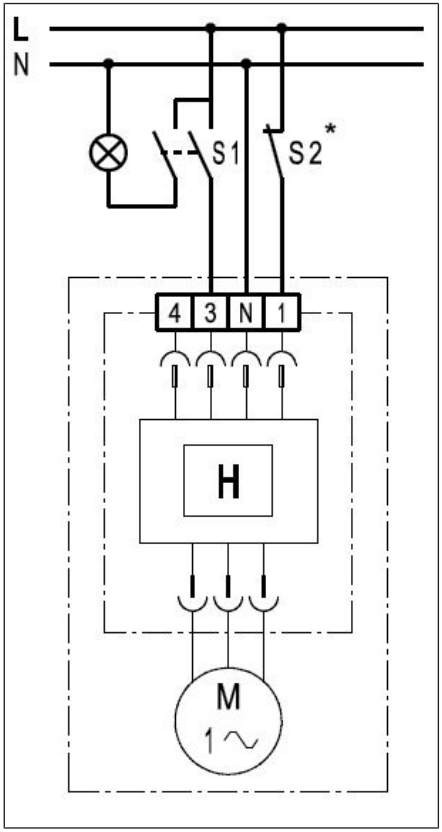


The fan is switched manually to base load with switch “S1”. Humidity control is active, see Standard switching. If, after being manually switched with switch "S1", the fan is in:

- full load operation, i.e. humidity is present, the fan continues to run until the humidity drops below the switch-off point. Only then does the fan switch off automatically.
- base load operation, the fan switches itself off automatically.

If switch S1 is open, the fan can start up automatically as a result of high room humidity.

Switching option 3: Manual full load operation with pre-defined overrun time.



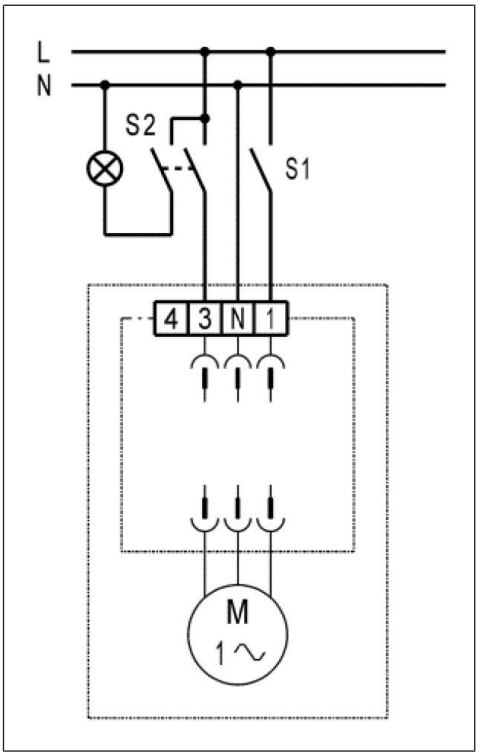
The fan is switched manually to full load operation with switch "S1". Humidity control is active. After switching off with "S1", the fan continues in full load operation for an overrun time of 6 minutes. If after this time, the humidity as measured at the fan

- is higher than the switch-off point, the fan continues to run in full load operation until the humidity drops below the switch-off point. Only then does the fan switch off automatically.
- is lower than the switch-off point, the fan immediately switches itself off automatically.

If switch S1 is open, the fan can start up automatically as a result of high room humidity.

* **With switch S2**, the fan can also be switched off independently of the room lighting in the event of malfunctions caused by reverse polarity voltages, for example.

ER 60 G, ER 100 G

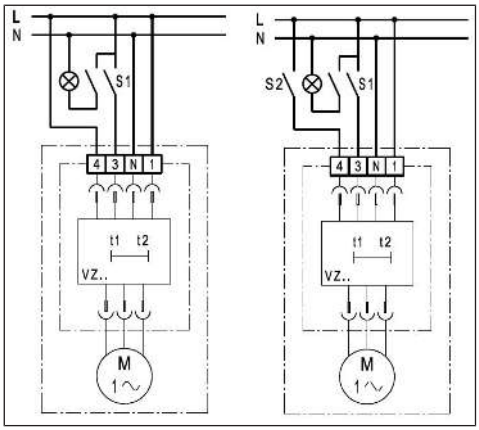


The ER 60 G and/or the ER 100 G can be operated in base or full load operation as required.

S1 Switch for base load operation: Continuous operation at a lower speed with lower air volume.

S2 Switch for full load operation and room lighting: When the room is being used, the unit can be switched to high speed with full volumetric flow.

ER 60 GVZ, ER 100 GVZ



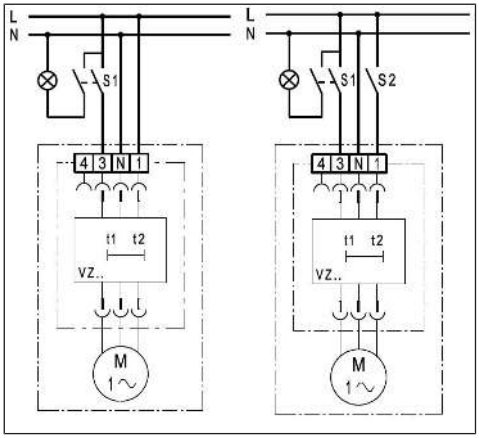
Standard switching:

Fan always runs at base load. When the room is in use (S1=On), the fan switches automatically to full load after approx. 50 seconds.

Switching option

When the room is in use (S1=On), the fan switches automatically to full load after approx. 50 seconds. Base load operation can be switched off manually with switch S2.

ER 60 I, ER 100 I



Interval switching automatically controls the switching-on of the fan after the defined interval time, if the fan has not been switched on during this time. The interval times can be set to between 1 and 15 hours. The switch-on time is 10 minutes.

In the case of manual switch-on, the start delay is approx. 50 seconds and the overrun time is 10 minutes. The interval function can be switched off.

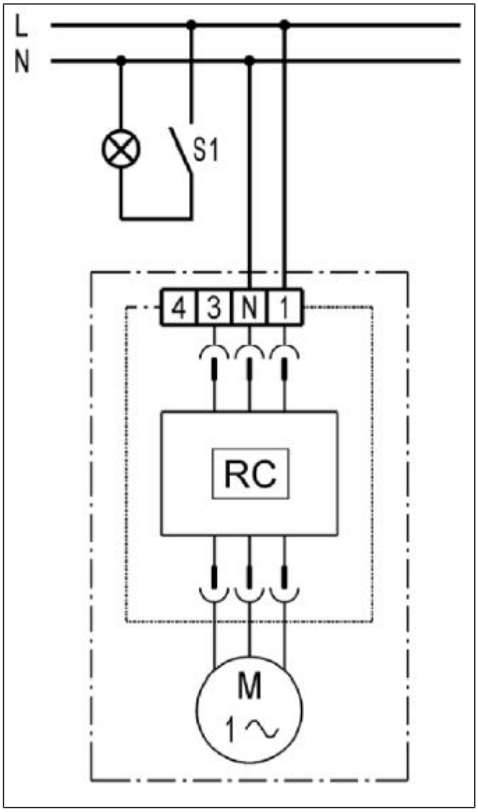
Standard switching:

The fan starts up approximately 50 seconds after the room lighting is switched on. The fan has an overrun time of approximately 10 minutes after switching off.

Switching option

The fan starts up approx. 50 seconds after switching on the room lighting (with switch S1 and S2).

ER 100 RC



The fan can be switched on and gradually ramped up using a radio switch.

Use with RLS RC

Depending on the RLS RC setting, the fans adopt defined operating statuses.

If using an additional radio switch, the operating level selected by this switch is active for 30 minutes.

Then the operating level selected by the RLS RC is adopted. The base load is permanently activated in the factory using a DIP switch.

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