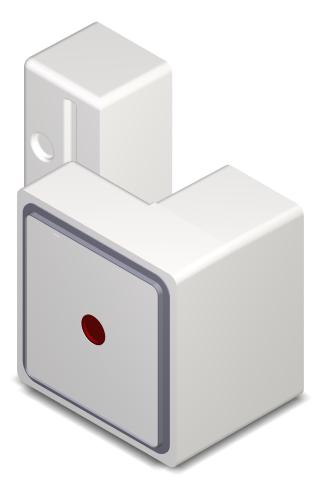


HOME VENTILATION WITH HEAT RECOVERY

Flush-mount installation kit with plastering trim (solid construction) M-WRG-M/MB

for flush-mounting ventilation units from the M-WRG-S and M-WRG-K series



Part no. 5300-01-01 Week 36/2015 EN

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Contents

1	Introduction	4
1.1	Notes on this installation manual	4
1.2	Description	4
1.3	Target group	
1.4	Nameplate	
1.5	Storage	
1.6	Revision index	
1.7	Explanation of the symbols used	5
2	Safety instructions	6
2.1	Hazard classification	
2.2	Notes on using the ventilation units safely	
2.3	Intended use	
2		-
3	Planning notes	
3.1	Requirements for the installation wall	
3.2 3.3	Positioning the ventilation unit indoors	
	Unrestricted access to the ventilation unit	
3.4	Retrospectively flush-mounting the installation kit	Ø
4	Warranty and liability	9
4.1	Warranty	9
4.2	Liability	9
5	Items supplied	10
5 5.1	Items supplied Installation kit M-WRG-M/MB, part no. 5051	
	Installation kit M-WRG-M/MB, part no. 5051	10
5.1	••	10 10
5.1 5.2 5.3	Installation kit M-WRG-M/MB, part no. 5051 Options Installation materials required	10 10 10
5.1 5.2	Installation kit M-WRG-M/MB, part no. 5051 Options Installation materials required Dimensions of the installation kit	10 10 10 11
5.1 5.2 5.3	Installation kit M-WRG-M/MB, part no. 5051 Options Installation materials required Dimensions of the installation kit	10 10 10
5.1 5.2 5.3 6	Installation kit M-WRG-M/MB, part no. 5051 Options Installation materials required Dimensions of the installation kit Tools and equipment required	10 10 10 11
5.1 5.2 5.3 6 7	Installation kit M-WRG-M/MB, part no. 5051 Options Installation materials required Dimensions of the installation kit Tools and equipment required General installation instructions	10 10 10 11 12
5.1 5.2 5.3 6 7 8	Installation kit M-WRG-M/MB, part no. 5051 Options Installation materials required Dimensions of the installation kit Tools and equipment required General installation instructions	10 10 10 11 12 12 13
5.1 5.2 5.3 6 7 8 9	Installation kit M-WRG-M/MB, part no. 5051 Options Installation materials required Dimensions of the installation kit Tools and equipment required General installation instructions Installing the installation kit Breaking through the wall	10 10 10 11 12 12 13
5.1 5.2 5.3 6 7 8 9 9.1 9.1.1	Installation kit M-WRG-M/MB, part no. 5051 Options Installation materials required Dimensions of the installation kit Tools and equipment required General installation instructions Installing the installation kit Breaking through the wall Planning the wall breakthrough for new builds	10 10 10 11 12 12 13 13
5.1 5.2 5.3 6 7 8 9 9.1 9.1.1	Installation kit M-WRG-M/MB, part no. 5051 Options Installation materials required Dimensions of the installation kit Tools and equipment required General installation instructions Installing the installation kit Breaking through the wall Planning the wall breakthrough for new builds Breaking through an existing wall	10 10 10 11 12 12 13 13 13
5.1 5.2 5.3 6 7 8 9 9.1 9.1.1 9.1.2	Installation kit M-WRG-M/MB, part no. 5051 Options Installation materials required Dimensions of the installation kit Tools and equipment required General installation instructions Installing the installation kit Breaking through the wall Planning the wall breakthrough for new builds Breaking through an existing wall Chasing out channels for connecting cables	10 10 10 11 12 13 13 13 13
5.1 5.2 5.3 6 7 8 9 9.1 9.1.1 9.1.2 9.2	Installation kit M-WRG-M/MB, part no. 5051 Options Installation materials required Dimensions of the installation kit Tools and equipment required General installation instructions Installing the installation kit Breaking through the wall Planning the wall breakthrough for new builds Breaking through an existing wall Chasing out channels for connecting cables Running the connecting cables	10 10 10 11 12 13 13 13 13 13
5.1 5.2 5.3 6 7 8 9 9.1 9.1.1 9.1.2 9.2 9.3	Installation kit M-WRG-M/MB, part no. 5051 Options Installation materials required Dimensions of the installation kit Tools and equipment required General installation instructions Installing the installation kit Breaking through the wall Planning the wall breakthrough for new builds Breaking through an existing wall Chasing out channels for connecting cables Running the connecting cables Inserting the wall box	10 10 10 11 12 13 13 13 13 14 14
5.1 5.2 5.3 6 7 8 9.1 9.1.1 9.1.2 9.2 9.3 9.4	Installation kit M-WRG-M/MB, part no. 5051 Options Installation materials required Dimensions of the installation kit Tools and equipment required General installation instructions Installing the installation kit Breaking through the wall Planning the wall breakthrough for new builds Breaking through an existing wall Chasing out channels for connecting cables Running the connecting cables Inserting the wall box Inserting the cardboard insert and plaster cover Fixing the wall box	10 10 10 11 12 13 13 13 13 14 14 16
5.1 5.2 5.3 6 7 8 9 9.1 9.1.1 9.1.2 9.2 9.3 9.4 9.5	Installation kit M-WRG-M/MB, part no. 5051 Options Installation materials required Dimensions of the installation kit Tools and equipment required General installation instructions Installing the installation kit Breaking through the wall Planning the wall breakthrough for new builds Breaking through an existing wall Chasing out channels for connecting cables Running the vall box Inserting the wall box	10 10 10 11 12 13 13 13 13 13 14 14 16
5.1 5.2 5.3 6 7 8 9 9.1 9.1.1 9.1.2 9.2 9.3 9.4 9.5 9.6	Installation kit M-WRG-M/MB, part no. 5051 Options Installation materials required Dimensions of the installation kit Tools and equipment required General installation instructions Installing the installation kit Breaking through the wall Planning the wall breakthrough for new builds Breaking through an existing wall Chasing out channels for connecting cables Running the connecting cables Inserting the wall box Inserting the cardboard insert and plaster cover Fixing the wall box Filling gaps around the wall box with foam	10 10 10 11 12 12 13 13 13 14 16 16 17 18



10	Installing the ventilation unit	23
9.15	Attaching the outer wall terminal	22
9.14	Sealing ventilation pipes on external wall	22
9.13	Inserting and fixing the ventilation pipes	21
9.12	Cutting ventilation pipes to length	20
9.11	Preparing the wall box for connecting the ventilation pipes	20
9.10	Plastering the wall box on the outside	19



1 Introduction

1.1 Notes on this installation manual



This installation manual contains important information that should be followed when installing the installation kit for the M-WRG-S and M-WRG-K ventilation units.

- Read all the instructions carefully before installing the kit to avoid possible risks and mistakes.
- ► When installation is complete, give these instructions to the home owner, caretaker or property manager.
- These instructions are part of the product. Keep the instructions in a safe place for future reference.

- Follow ALL danger and warning instructions and notes on precautionary measures.
- Read sections "2 Safety instructions" on page 6 and "3 Planning notes" on page 7 carefully.

1.2 Description

This manual describes how to flush-mount the M-WRG-M/MB installation kit (see Fig. 1) in solid walls.

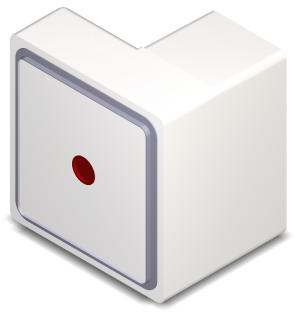


Fig. 1: M-WRG-M/MB



1.3 Target group

The activities described in this manual must only be carried out by technicians with the following qualifications:

- Training in the installation and commissioning of electrical devices
- Training in electrical hazards and the local safety requirements
- Knowledge of the relevant standards and directives
- Knowledge and observance of this document and all the safety instructions

1.4 Nameplate

The nameplate is attached in two places:

- beneath the red signal cover on the plaster cover (see item 1 in Fig. 2)
- beside the hole for the mains cable (item 1 in Fig. 3)

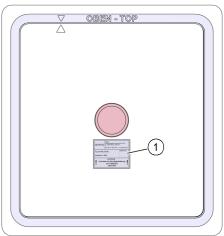


Fig. 2: Nameplate on the plaster cover

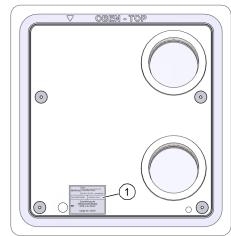


Fig. 3: Nameplate beside the hole for the mains cable

1.5 Storage

Store the installation kit in its original packaging in a dry place where the temperature ranges between 0 °C and +40 °C.

1.6 Revision index

Edition	Manual	Date
3 rd edition	Installation manual M-WRG-M/MB	Week 36/2015 EN

1.7 Explanation of the symbols used

- This symbol indicates an action to be taken.
- This symbol indicates a list.



2 Safety instructions

This manual contains notes that you must follow for your own personal safety and to avoid injury and damage to property. They are highlighted by warning triangles and are shown as follows according to the level of danger.

2.1 Hazard classification

The signal word designates a hazard with a **high** degree of risk which, if it is not avoided, will result in death or severe injury.

The signal word designates a hazard with a **medium** degree of risk which, if it is not avoided, will result in death or severe injury.

The signal word designates a hazard with a **low** degree of risk which, if it is not avoided, could result in minor or moderate injury.

NOTE

A note as used in this manual contains important information about the product or about a part of the manual to which particular attention should be paid.

2.2 Notes on using the ventilation units safely

- Fire protection
 - Follow the requirements of the national technical approval from the Deutsches Institut für Bautechnik (DIBt), approval number Z-51.3-138, when planning and installing the unit.
- Operation with fireplaces
 - An additional safety device (underpressure or differential pressure monitor) is needed to monitor operation when M-WRG ventilation units are used in conjunction with fireplaces.
 - Follow the requirements of the German Fire Code (FeuVo) when planning and installing the unit.
 - Contact the local chimney sweep before the end of the planning phase.
 - ► Have the chimney sweep approve the operation of the ventilation unit.

Installation in wet areas

The following rules from DIN VDE 0100-701/702 (IEC 60364-7-701) apply to installation in wet areas:

- Protection zone 0 and 1: The unit must NOT be installed in these areas.
- Protection zone 2: The unit may be installed in this area if the mains switch is covered with a protective cap. The protective cap must be installed at the factory.



- ► You will need to include the mains switch protective cap (M-WRG-SN, part no. 5430) when you order the ventilation unit.
- Other zone: The unit may be installed in this area.

— Build-up of icicles and ice patches at low temperatures

The heat recovery process in our ventilation units causes condensation. This condensation is dissipated to the outside via the exhaust air pipe. When external temperatures drop below 0 $^{\circ}$ C this can cause a build-up of icicles at the outer wall terminals and ice patches on the ground.

You should therefore position the outer wall terminals so as to exclude any possibility of accidents.

2.3 Intended use

- The ventilation unit is intended for supplying air to and extracting air from living and recreation rooms (bedrooms, playrooms, living rooms, bathrooms, basement workshops, offices, consulting rooms, etc.). The ventilation unit is installed in a perpendicular position in the external wall. Any different or more extensive usage will be regarded as contrary to the intended use.
- The intended use also includes compliance with all the notes in the installation manual.
- For any use contrary to the intended use, Meltem Wärmerückgewinnung GmbH & Co. KG shall accept no liability for any damage that may occur and offers no warranty that the components will work perfectly and correctly.

3 Planning notes

3.1 Requirements for the installation wall

- The installation kit can be installed in solid walls that are at least 17.5 cm thick.
 - ► For walls that are 60 cm thick or more, you will need 100 cm long supply and exhaust air pipes (M-WRG-LR 100, part no. 5580).

NOTE

The wall box fixes the ventilation pipes with a 2° fall.

- If the unplastered wall is thin (24 cm or less), do not cut off the wall box flush with the unplastered wall (see section "9.9 Aligning the wall box on the outside before plastering" on page 18). Allow the wall box to protrude in the vicinity of the external thermal insulation composite system (ETICS) as this is the only way to allow the ventilation pipes to pass far enough through the wall box and so be fixed in place.
- ▶ When fitting the ETICS, make sure that the ventilation pipes maintain their 2° fall.

3.2 Positioning the ventilation unit indoors

- The ventilation unit must be installed indoors in a perpendicular position on an external wall.
- The ventilation unit must be installed so that the openings for exhaust air and supply air point up.
- For a standard room height of 2.50 m, the best effect for air exchange is achieved if the sup-



ply and extract air openings are roughly 30 cm (top edge of the unit) below the ceiling.

- Maintain the following minimum distances:
 - For this installation kit, the distance between the top edge of the wall box and the ceiling must be at least 15 cm. Otherwise air turbulence or an air short circuit may occur.
 - The distance between the side edge of the ventilation unit and adjacent surfaces should be at least 5 cm. The ventilation unit will be easier to operate if this minimum distance is maintained. It also allows the filter to be replaced without obstruction.
- In taller rooms, position the ventilation unit so that an operator can still reach the control panel unaided (without steps, ladders, etc.). Alternatively order a type of ventilation unit that is not controlled from the unit itself.

3.3 Unrestricted access to the ventilation unit

The ventilation unit must always be freely accessible for operation and maintenance.

- Make sure that the ventilation unit is not blocked, obstructed or covered when the room is subsequently decorated and furnished, otherwise it cannot be used and it will not be possible to replace the filter. You should therefore maintain a clearance of at least 150 mm in front of the ventilation unit cover.
- Make sure that the supply and extract air openings are not blocked, obstructed or covered when the room is subsequently decorated and furnished.

3.4 Retrospectively flush-mounting the installation kit

Danger from emerging gas or electric shock

- Make sure that there are no supply lines in the vicinity of the wall breakthrough (e.g. gas, water or power).
- Make sure that the wall breakthrough does not affect the local static loading requirements.
 - Fit a lintel if necessary.



4 Warranty and liability

4.1 Warranty

The following cases shall invalidate the warranty:

- The installation kit was not installed as described in the installation manual.
- The ventilation unit was not installed as described in the installation manual.
- Genuine Meltem parts were not replaced with genuine parts.
- Unapproved changes were made to the installation kit or ventilation unit.
- Repairs were carried out incorrectly.
- The ventilation unit was operated without a filter.
- The warranty does not cover wearing parts such as filters.

4.2 Liability

The manufacturer's liability shall not apply in the following cases:

- The installation kit was not installed as described in the installation manual.
- The ventilation unit was not installed as described in the installation manual.
- Genuine Meltem parts were not replaced with genuine parts.
- Unapproved changes were made to the installation kit or ventilation unit.
- Repairs were carried out incorrectly.
- The ventilation unit was operated without a filter.



5 Items supplied

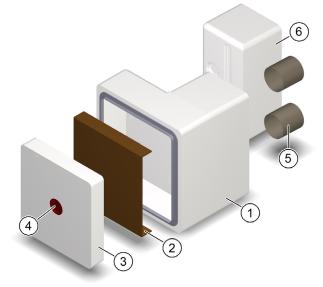


Fig. 4: Items supplied with the installation kit M-WRG-M/MB

5.1 Installation kit M-WRG-M/MB, part no. 5051

Item	Description	Quantity
1	Wall box	1x
2	Cardboard insert	1x
3	Plaster cover for wall box	1x
4	Signal cover	1x
5	Protective sleeve	2x

5.2 Options

Item	Description	Part no.
6	Installation kit filler piece M-WRG-M/Fü	5575-5
-	Plaster scrim M-WRG-PG	5060

5.3 Installation materials required

Additional installation materials are needed for flush-mount installation. These must be ordered separately.

Item	Description	Part no.
-	Outdoor air and exhaust air pipe 2 x 0.5 m - DN 100 M-WRG-LR 50	5574





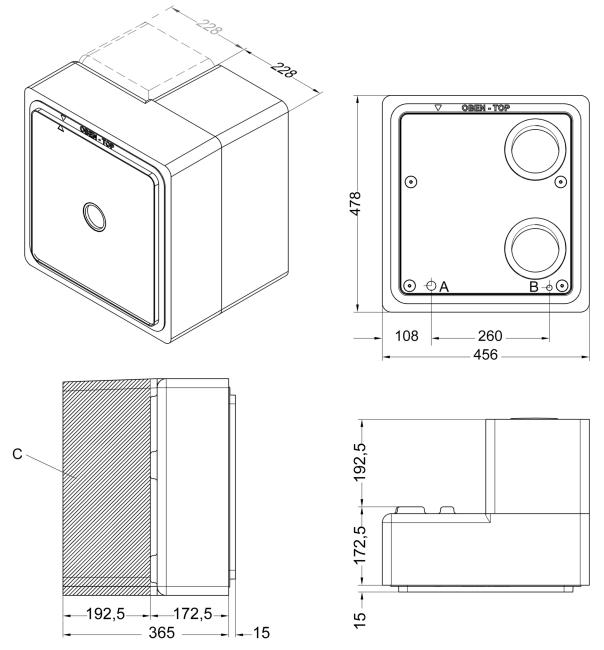


Fig. 5: Dimensions of the installation kit with filler piece in millimetres

- A Hole for mains cable
- B Hole for control cable (only needed for certain ventilation units, see Table 1 on page 15)
- C The installation kit can be shortened by 192.5 mm.



7 Tools and equipment required

- Expanding foam with abP (national technical test certificate of the DIBt) approval ("exact gap" foam is recommended)
- Low modulus sealant, solvent-free if applied to polystyrene
- Saw for cutting the ventilation pipes to length
- Spirit level
- Styrofoam saw
- Wall chaser
- Wedges for fixing the wall box, 8x alternatively use inflatable air cushions, 4x, e.g. Amo-Bag from Würth, part no. 07156780
- If necessary, wedges for fixing the filler piece, 4x
 alternatively use inflatable air cushions, 2x, e.g. Amo-Bag from Würth, part no. 07156780

NOTE

If the installation kit is to be retrospectively installed in a solid wall, you will need additional tools to break through the wall.

8 General installation instructions

NOTE

- The unit must be installed in accordance with the generally acknowledged rules of technology.
- Connections with adjacent components must be formed to absorb movements between the contact surfaces.
- Seal any connections that are exposed to driving rain with tapes, profiles or sealants such that they offer sufficient protection against the expected conditions.

Follow the relevant accident prevention regulations

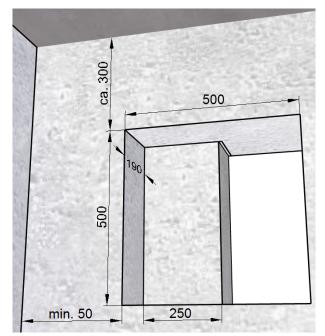
- Follow the accident prevention regulations when setting up the installation location.
- Protect the outside area against falling parts.

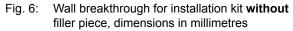


9 Installing the installation kit

9.1 Breaking through the wall

The wall breakthrough can either be included when planning a new build or subsequently made in the solid wall.





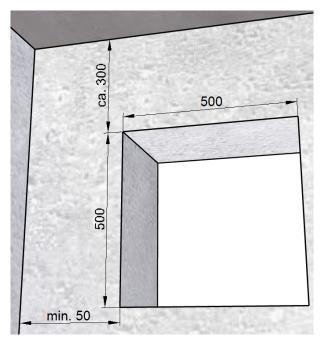


Fig. 7: Wall breakthrough for installation kit **with** filler piece, dimensions in millimetres

9.1.1 Planning the wall breakthrough for new builds

- Commission an architect or design professional to include the wall breakthrough at a suitable point in the construction drawing and execute it when constructing the building shell. There are two possible versions of the wall breakthrough:
 - Wall breakthrough with recess (see Fig. 6) for installation kit without filler piece M-WRG-M/Fü
 - Full-width wall breakthrough (see Fig. 7) for installation kit with filler piece M-WRG-M/Fü

9.1.2 Breaking through an existing wall

Danger due to damaging supply lines and changing the stress loadings

- Make sure that there are no supply lines in the vicinity of the wall breakthrough (e.g. gas, water or power).
- Make sure that the wall breakthrough does not affect the local static loading requirements.
 - ► Fit a lintel if necessary.



- Break through the wall. There are two possible versions of the wall breakthrough:
 - Wall breakthrough with recess (see Fig. 6 on page 13) for installation kit without filler piece M-WRG-M/Fü
 - Full-width wall breakthrough (see Fig. 7 on page 13) for installation kit with filler piece M-WRG-M/Fü

9.2 Chasing out channels for connecting cables

Chase one channel for the mains cable (item 1 in Fig. 8) and one for the control cable, if required (item 3 in Fig. 8).

NOTE

- A separate channel is needed for the control cable.
- The wall channels in Fig. 8 are shown by way of example. Alternative cable ducts are shown as dashed lines (items 2 and 4 in Fig. 8). For the subsequent electrical installation work, we recommend running the mains cable from the left and the control cable (if used) from the right at the wall breakthrough.



DANGER

Potentially fatal voltages.

- The electrical installation work must only be carried out by a qualified electrician.
- The VDE regulations or any special safety regulations applicable in your country apply to the electrical installation work.
- Disconnect the mains cable for connecting to the ventilation unit on all poles from the mains supply.
- Make sure that the mains supply cannot be switched on again.

NOTE

Table 1 and Table 2 on page 15 contain overviews of the recommended mains cable and control cable types. A control cable is only needed for certain types of ventilation unit.

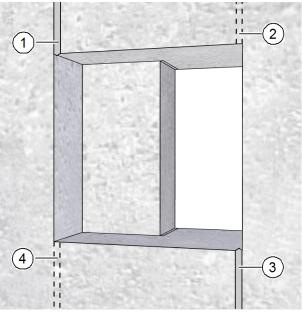


Fig. 8: Chasing out channels for connecting cables

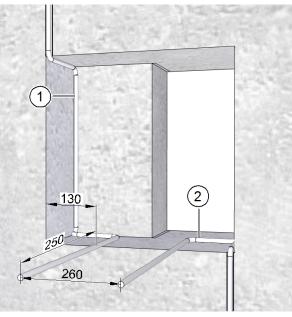


Fig. 9: Running the connecting cables, dimensions in millimetres



- Run the mains cable (item 1 in Fig. 9 on page 14) and the control cable, if required (item 2 in Fig. 9 on page 14). The cables should extend roughly 250 mm beyond the wall.
- Fix the mains cable and the control cable (if required) in position.

Part no.	Type of ventilation unit	Type of mains cable	Type of control cable
5010	M-WRG-S	NYM-J 3 x 1.5 mm ²	-
5016-1-3	M-WRG-S/Z-T-FU		
5016-1-3-1	M-WRG-S/Z-T-F-FU		
5016-1-3-2	M-WRG-S/Z-T-FC-FU		
5030	M-WRG-K		
5030-2	M-WRG-K/FC		
5016-1-0	M-WRG-S/Z-S	NYM-J 3 x 1.5 mm ²	J-Y (St) Y 4 x 2 x 0.6 mm ² or
			J-Y (St) Y 4 x 2 x 0.8 mm ²
5016-1-1	M-WRG-S/Z-T	NYM-J 3 x 1.5 mm ²	J-Y (St) Y 10 x 2 x 0.6 mm ² or
5016-1-1-1	M-WRG-S/Z-T-F		J-Y (St) Y 10 x 2 x 0.8 mm ²
5016-1-1-2	M-WRG-S/Z-T-FC		
5016-1-2	M-WRG-S/Z-KNX	NYM-J 3 x 1.5 mm ²	J-Y (St) Y 2 x 2 x 0.8 mm ² or
5016-1-2-1	M-WRG-S/Z-KNX-F		EIB-Y (St) Y 2 x 2 x 0.8 mm ²
5016-1-2-2	M-WRG-S/Z-KNX-FC		
5016-2-2	M-WRG-S/Z-EIB		
5016-2-1	M-WRG-S/Z-24	NYM-J 3 x 1.5 mm ²	J-Y (St) Y 4 x 2 x 0.6 mm ² or
			J-Y (St) Y 4 x 2 x 0.8 mm ²
5013	M-WRG-S 485	NYM-J 3 x 1.5 mm ²	J-Y (St) Y 3 x 2 x 0.6 mm ² or
5014-1	M-WRG-S 485-TF		J-Y (St) Y 3 x 2 x 0.8 mm ²
5014-2	M-WRG-S 485-TFC		

Table 1: Types of mains cable and control cable for each ventilation unit type

Part no.	External control input option	Type of mains cable	Type of control cable
5046-30	M-WRG-O/EST	NYM-J 4 x 1.5 mm ²	-
5046-31	M-WRG-O/EST-1		
5046-32	M-WRG-O/EST-2		

Table 2: Mains cable types for external control input options



9.4 Inserting the wall box

NOTE

- Prepare the breakthrough surfaces suitably for the wall box.
- Remove the plaster cover (item 1 in Fig. 10) and the cardboard insert (item 2 in Fig. 10) from the wall box (item 5 in Fig. 10).
- Thread the mains cable (item 3 in Fig. 10) through the hole A (item A in Fig. 10).

NOTE

Hole B for the control cable is sealed when the unit is supplied.

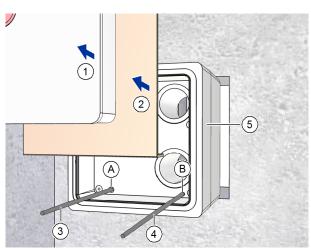


Fig. 10: Inserting the wall box

- ▶ If necessary, use a screwdriver to punch through the sealed hole (item B in Fig. 10).
- ► Thread the control cable, if required (item 4 in Fig. 10) through the hole B (item B in Fig. 10).
- Push the wall box (item. 5 in Fig. 10) fully into the wall breakthrough.

9.5 Inserting the cardboard insert and plaster cover

- Place the cardboard insert (item 1 in Fig. 11) in the wall box (item 4 in Fig. 11).
- Insert the plaster cover (item 2 in Fig. 11) into the wall box (item 4 in Fig. 11) as far as it will go.
- Check that the red signal cover (item 3 in Fig. 11) is seated in the plaster cover.

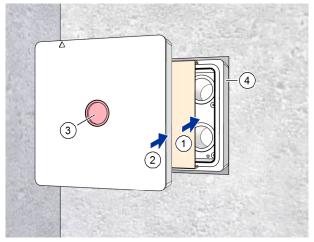


Fig. 11: Inserting the cardboard insert and plaster cover



9.6 Fixing the wall box

- Fix the wall box (item 1 in Fig. 12) in position in the wall breakthrough using wedges or air cushions (item 2 in Fig. 12).
- Use the spirit level (item 3 in Fig. 12) to align the wall box so that it is perpendicular and flush with the wall.

NOTE

- Make sure that the wall box is perpendicular as this is the only way to ensure that any condensation will be carried outside by the 2° pipe fall.
- ► Fix the filler piece, if needed, to the external wall with wedges or air cushions.

NOTE

The plastering trim is 15 mm deep (see Fig. 13).

- If the depth of plaster should be more than 15 mm, position the wall box so that it protrudes sufficiently out of the solid wall. If you do not do this, there is a risk that the ventilation unit will not work correctly.
- If the interior wall is not perpendicular or flat, align the front surface of the plastering trim (item 1 in Fig. 13) parallel to a plaster stop bead running vertically.

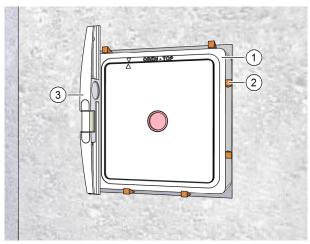


Fig. 12: Fixing the wall box

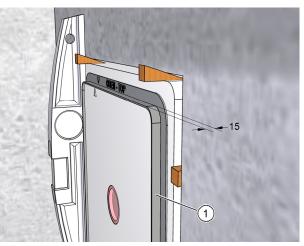


Fig. 13: Depth of plastering trim 15 mm

9.7 Filling gaps around the wall box with foam

NOTE

- Check that the wall box is seated correctly. Once you have used the foam, you will not be able to align the wall box further.
- Fill the gaps between the wall box and wall breakthrough all around and continuously with expanding foam (item 1 in Fig. 14) or using another suitable filling material.
- Once the foam has hardened, remove any wedges that extend beyond the solid wall.

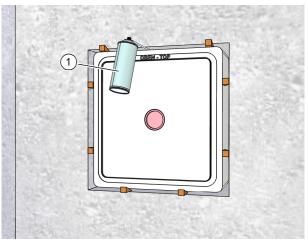


Fig. 14: Filling gaps around the wall box with foam



9.8 Plastering the wall box on the inside

NOTE

- Prepare the substrate suitably before plastering.
- Make sure that the signal cover (item 1 in Fig. 15) is seated in the plaster cover (item 2 in Fig. 15).
- Cut off any excess expanding foam on the wall box.
- Apply the plaster scrim M-WRG-PG (item 3 in Fig. 15) to the wall box and the solid wall.

NOTE

Applying plaster scrim will minimise subsequent cracking of the plaster.

Plaster the internal wall. The plaster forms the airtight layer on the internal wall. The expanding foam does not act as an airtight layer.

9.9 Aligning the wall box on the outside before plastering

- Fill the gaps between the wall box and wall breakthrough all around and continuously with expanding foam or using another suitable filling material.
- If the solid wall is **less than** 36.5 cm thick:
 - Use a Styrofoam saw to cut off the excess wall box (item 1 in Fig. 16 and Fig. 17) and filler piece, if necessary (item 2 in Fig. 17), so that they are flush with the solid wall or any insulation.

NOTE

The wall box fixes the ventilation pipes with a 2° fall.

If the unplastered wall is thin (24 cm or less), do not cut off the wall box flush with the unplastered wall. Allow the wall box to protrude in the vicinity of the external thermal insulation com-

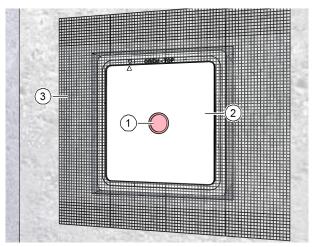


Fig. 15: Plastering the wall box on the inside

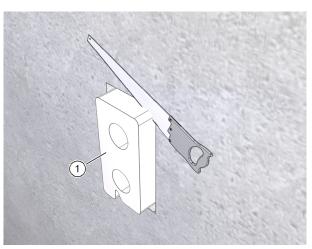


Fig. 16: Aligning the wall box without filler piece

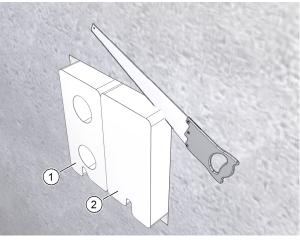


Fig. 17: Aligning the wall box with filler piece



posite system (ETICS) as this is the only way to allow the ventilation pipes to pass far enough through the wall box and so be fixed in place.

- ▶ When fitting the ETICS, make sure that the ventilation pipes maintain their 2° fall.
- If the solid wall is **more than** 36.5 cm thick:
 - Compensate for thicker walls with continuous pipes. For walls that are 60 cm thick or more, you will need 100 cm long supply and exhaust air pipes (M-WRG-LR 100, part no. 5580).

NOTE

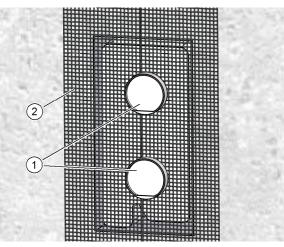
The pipes must be continuous. Pipes that have been joined must not be used as there is a risk of allowing condensation to penetrate the masonry.

9.10 Plastering the wall box on the outside

NOTE

The outer wall terminals M-WRG-ESG/UP and M-WRG-EFL must be installed before the external wall is plastered.

Insert the protective sleeves (item 1 in Fig. 18 and Fig. 19). They should extend beyond the solid wall so that they will end flush with the subsequent plaster coat. The protective sleeves provide the bonding surface for the external plaster.



NOTE

- Prepare the substrate suitably before plastering.
- Apply the plaster scrim (item 2 in Fig. 18 and Fig. 19) to the outside of the wall box, to the masonry and to the facade insulation.

NOTE

Applying plaster scrim will minimise subsequent cracking of the plaster.

Plaster the external wall. The plaster forms the windtight layer on the external wall.

Fig. 18: Plastering the wall box without filler piece

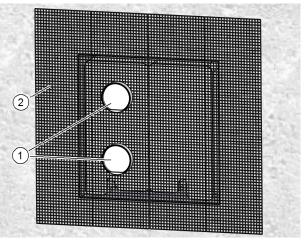


Fig. 19: Plastering the wall box with filler piece



9.11 Preparing the wall box for connecting the ventilation pipes

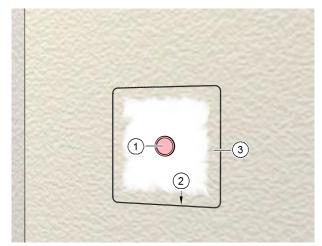
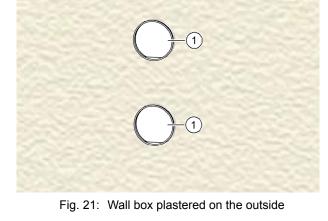


Fig. 20: Wall box plastered on the inside Work on the internal wall:



- ▶ Remove the signal cover (item 1 in Fig. 20).
- ▶ Use a blade to score the plaster on the inside of the plastering trim (item 2 in Fig. 20).
- Carefully remove the plaster cover (item 3 in Fig. 20).
- Work on the external wall:
 - Remove the two protective sleeves (item 1 in Fig. 21).

9.12 Cutting ventilation pipes to length

- Push the two ventilation pipes (item 1 in Fig. 22) into the openings in the wall box until they end flush (item 2 in Fig. 22).
- On the outer wall, mark the excess length of the ventilation pipes to suit the outer wall terminal, see Table 3 on page 21.

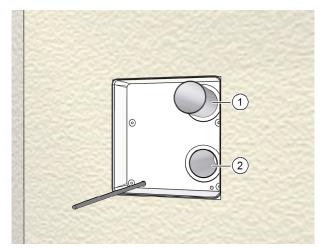


Fig. 22: Cutting ventilation pipes to length



Outer wall terminal	Excess
Stainless steel pod, M-WRG-ES	5 - 10 mm from the plastered external wall
Stainless steel pipe set, M-WRG-ESR	25 - 30 mm from the plastered external wall
Stainless steel louvred design (surface-mount) M-WRG-ESG/AP	5 - 10 mm from the plastered external wall
Stainless steel louvred design (flush-mount) M-WRG-ESG/UP	5 - 10 mm from the unplastered external wall, depending on the layer structure

Table 3: Excess length of the ventilation pipes from the external wall

- Remove the ventilation pipes from the openings in the wall box.
- Shorten the ventilation pipes to the marked length.
- Deburr the inner and outer ends of the ventilation pipes.

NOTE

If you do not deburr the ventilation pipes there is a risk of damaging the seals at the ventilation unit and outer wall terminal.

9.13 Inserting and fixing the ventilation pipes

- Apply low modulus sealant to the outer skin of the ventilation pipes (item 1 in Fig. 23).
- Push the ventilation pipes back into the openings in the wall box.
- Twist the two ventilation pipes into the openings in the wall box until they end flush (item 2 in Fig. 23).

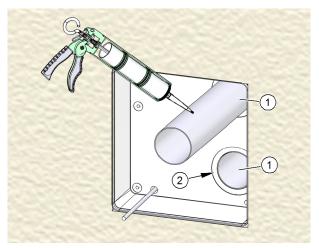


Fig. 23: Inserting and fixing ventilation pipes



9.14 Sealing ventilation pipes on external wall

NOTE

If the external plaster encloses the ventilation pipes all round and without gaps, you can skip the steps described in this section.

- Chamfer both pipe breakthrough edges (item 1 in Fig. 24) to roughly 5x45° to create enough space for the sealing joints with low modulus sealant.
- Fill the chamfers of the pipe breakthrough edges all-round with low modulus sealant on the outside.

NOTE

Only use a solvent-free sealant if the sealant is applied to polystyrene.

9.15 Attaching the outer wall terminal

Do not run without the outer wall terminal.

- Please note that the ventilation unit must not be used without the outer wall terminal for safety reasons.
- Attach the outer wall terminal to the outer wall.

NOTE

Installation of the outer wall terminal is described in the separate installation manual "Outer wall terminals M-WRG-ES...", part no. 5300-20-01.

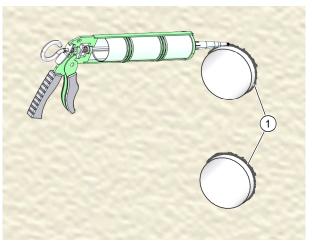


Fig. 24: Sealing ventilation pipes on the external wall

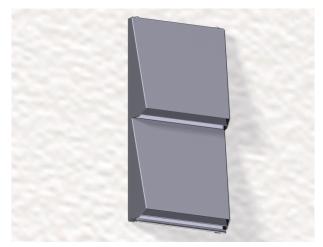


Fig. 25: Attaching the outer wall terminal



10 Installing the ventilation unit

NOTE

Installation of the ventilation unit in the wall box is described in the "Ventilation unit installation manual M-WRG-S and M-WRG-K", part no. 5300-10-01.

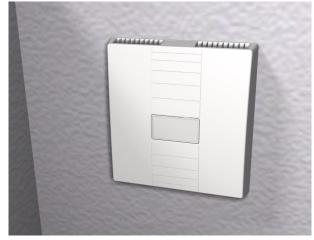


Fig. 26: Ventilation unit installed





We have checked the content of this publication for conformity with the unit described in it. There may nevertheless still be differences, so we cannot guarantee complete accuracy.

The information in this publication is regularly checked and any necessary corrections are made in the subsequent editions.

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