

# Installation Manual

refresh Fresh-Air System with Avent R100

Preliminary version for initial installation

For the installer





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## 1. GENERAL SAFETY INSTRUCTIONS

### Caution:

The following safety instructions should be observed:

- Read this installation manual thoroughly before beginning with the installation of the refresh fresh-air system and putting it into service.
- The system may be installed and removed from service only by qualified personnel.
- Observe all necessary legal and national requirements (accident prevention regulations and approved technical standards) when installing the refresh fresh-air system and putting it into service.
- No liability whatsoever is assumed for any damage caused by non-product-specific storage, inappropriate installation or improper use.
- The technical specifications of this installation manual must be observed to ensure the legal fulfilment of any warranty claims.  
The warranty can be extended to five years by agreement if only genuine Pluggit components are used.
- Technical modifications reserved.

## 2. GENERAL NOTES

### 2.1. INTENDED USE

The refresh fresh-air system is used for the controlled ventilation of flats and residential houses.

For this purpose the supplied outside air is directed through the fresh-air unit and distributed among the respective living areas by means of a ring distribution system.

Humid and used air is extracted and discharged to the outside by the fresh-air unit.

The fresh-air unit may be switched off only for repair work.

### 2.2. NOTES ON THE INSTALLATION

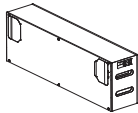
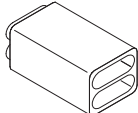
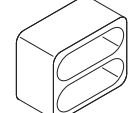
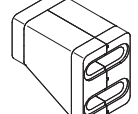

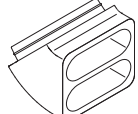
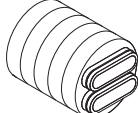
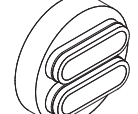
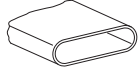
- The fresh-air unit can be installed at the following places.
  - Kitchens
  - Bathrooms
  - WCs
  - Storage rooms
- The fresh-air unit is installed in horizontal position.
- The wall thickness for any wall ducts must be at least 100 mm.
- The maximal adjustable air capacity for fresh air and exhaust air must not exceed  $100 \text{ m}^3/\text{h}$  at a pressure drop of 100 Pa.


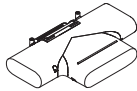

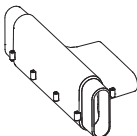
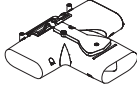


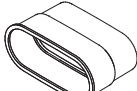
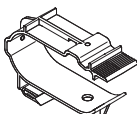
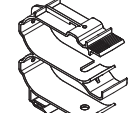


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## 3. REFRESH COMPONENTS

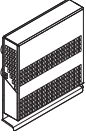
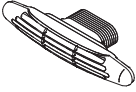

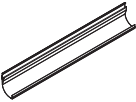
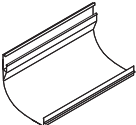
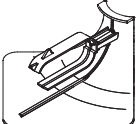
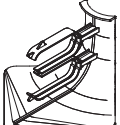
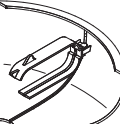

	<b>Item name</b> Dimensions in mm (L x W x H)	<b>Item no.</b>
	Fresh-air unit 1140 x 248.4 x 360	AR100
	Insulation pipe 330 x 198 x 161 (3 x)	IPC200
	Insulation pipe adapter 100 x 198 x 161	IPCAD
	Insulation pipe connecting piece 300 x 198 x 250	IPCAS
	Insulation pipe elbow 182 x 198 x 161	IPCB0
	Lateral insulation pipe elbow 153 x 198 x 161	IPCBS
	Wall duct 250 x 225 x 225	IPCWD
	Wall duct extension element 50 x 225 x 225	IPCWV
	Duct 25 m x 173 x 57	PK200B1


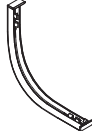
	<b>Item name</b> Dimensions in mm (L x W x H)	<b>Item no.</b>
	Duct 25 m x 113 x 50	PK150B1
	T-piece 186 x 286 x 53	TS150-200-150
	T-piece 104 x 234 x 50	TS150-200-150
	Lateral T-piece 152 x 330 x 101	TSS150-200-150
	Distributor module 220 x 250 x 55	RVT150
	Lateral elbow, 90° 165 x 165 x 44	BS090-150
	Universal adapter 85 x 105 x 59	UA150
	End cap 62 x 112 x 49	UEK150
	Single holder 133 x 40 x 82	RHPK150
	Double holder 137 x 40 x 137	RHDK150



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	<b>Item name</b> Dimensions in mm (L x W x H)	<b>Item no.</b>
	Outside wall-mounted hood 105 x 257 x 276	IPCWH
	Fresh air outlet 101 x 346 x 56	RK0150
	Exhaust air outlet 146 x 213 x 213	REV150
	Single cover profile 2000 x 150 x 90	PPE
	Double cover profile 2000 x 150 x 150	PPD
	Bend cover Inside, single 223 x 201 x 91	EAI1
	Bend cover Inside, double 223 x 215 x 145	EAI2
	Bend cover Outside, single 150 x 235 x 89	EAA1
	Bend cover Outside, double 150 x 232 x 143	EAA2

	<b>Item name</b> Dimensions in mm (L x W x H)	<b>Item no.</b>
	Profile connector, single 145 x 24 x 88	PVA1
	Profile connector, double 143 x 24 x 140	PVA2

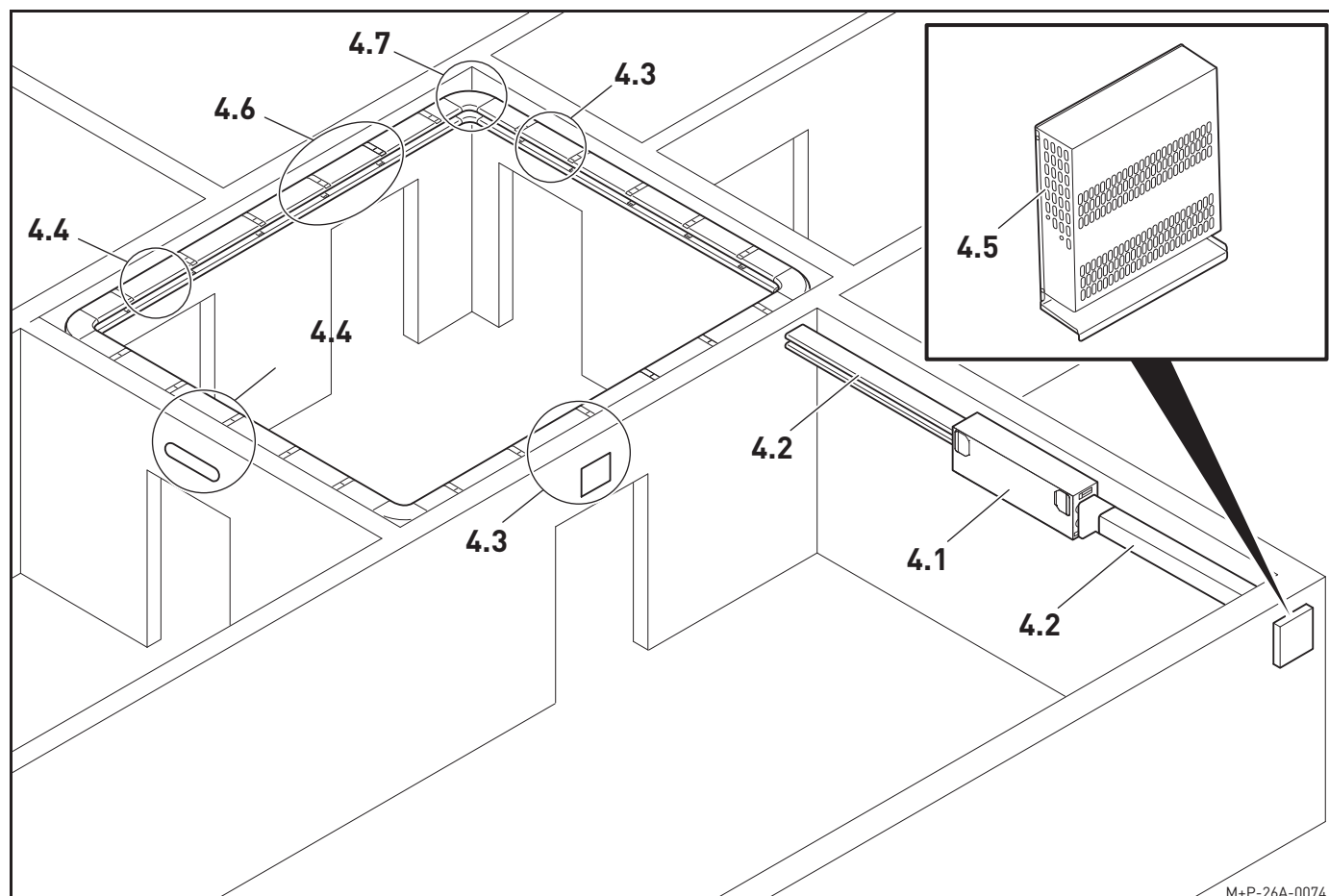


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## 4. INSTALLATION

The following description serves as installation example.



M+P-26A-0074

<b>4.1</b>	Installing the fresh-air unit .....	6
<b>4.2</b>	Fresh-air unit connection.....	9
<b>4.3</b>	Installing the exhaust air outlet .....	10
<b>4.4</b>	Installing the fresh air outlet .....	11
<b>4.5</b>	Installing the outside wall-mounted hood .....	12
<b>4.6</b>	Installing ducts .....	13
<b>4.7</b>	Installing cover profiles.....	14



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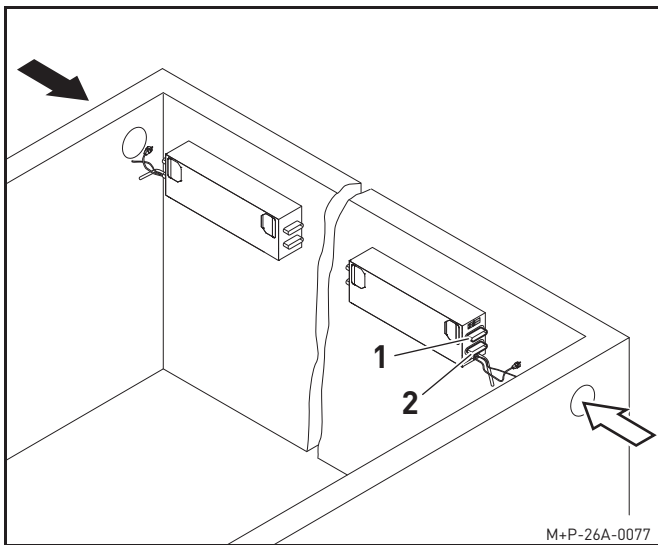
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## 4.1. INSTALLING THE FRESH-AIR UNIT

### Note:

Refer to the separate installation manual if a Pluggit fresh-air unit of a different series is to be installed.

### 4.1.1. Fresh-air unit installation position

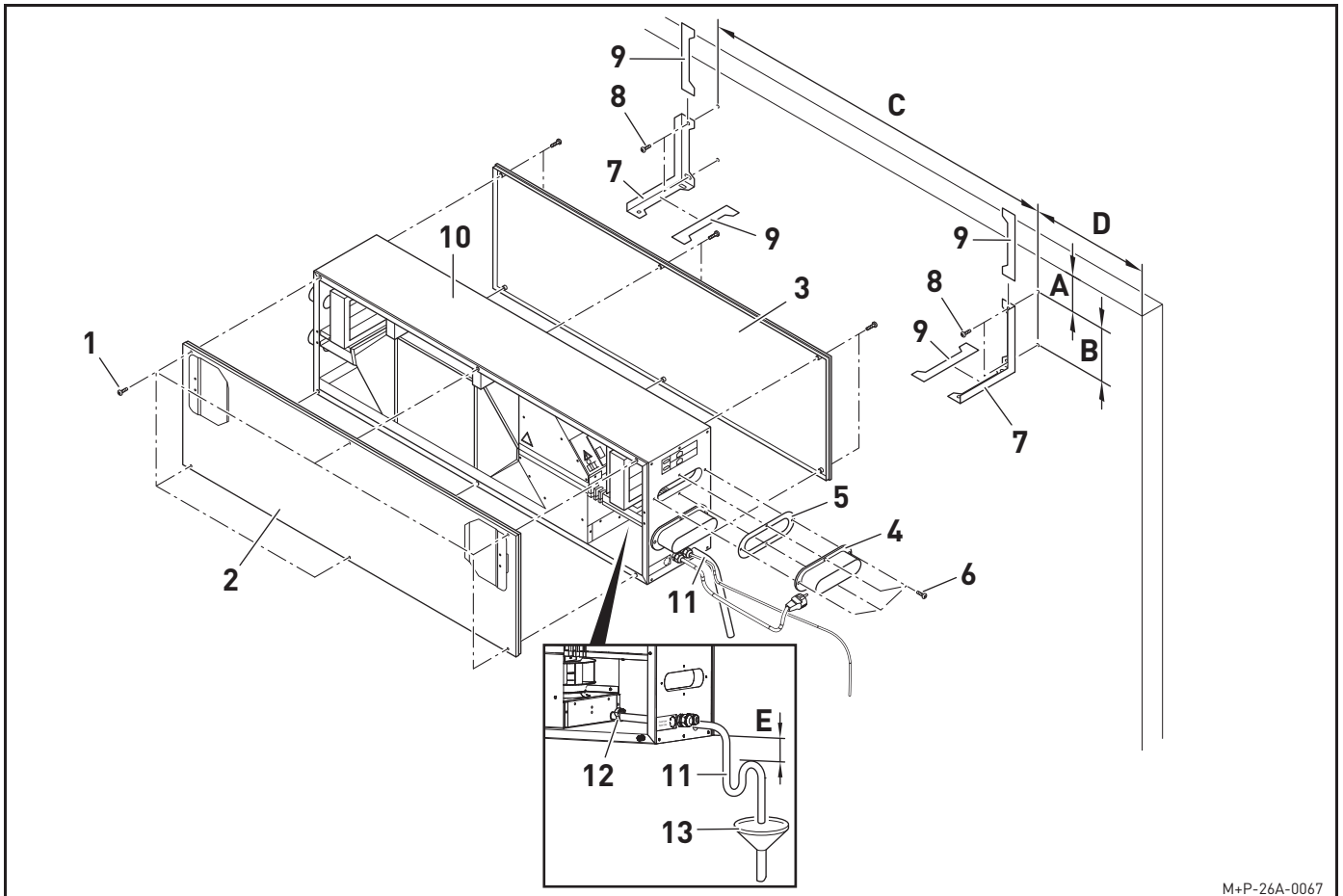


By default, the connection for outside air (1) and outgoing air (2) is in the direction of flow ← .

Swap the covers on each side if the connections are required in the direction of flow ➡ (see page 7).



#### 4.1.2. Installing the fresh-air unit



M+P-26A-0067

1. Unscrew the screws (1) and remove the cover (2) and all accessories.
  - Installation manual
  - Fresh-air unit holder
  - Insulation
  - Connection adapter
  - Remote control
  - Remote control holder
  - Condensate line
  - Screws
2. Depending on the direction of flow, remove the cover (3) in the same way, swap it with the cover (2) and screw them tight on each side.
3. Screw the connection adapter (4) tight on the left and right side with the insulation (5) and screws (6).
4. Screw the holder (7) tight with the screws (8)
  - M8x60 DIN 7982.
  - A** 180 mm
  - B** 175 mm
  - C** 1110 mm
  - D** min. 330 mm
5. Stick the insulation (9) onto the holder (7).
6. Put the fresh-air unit (10) on the holder (7).
7. Fasten the condensate line (11) with a hose clip (12) and put it in a siphon loop at a slope in a funnel (13) or siphon.  
Observe a minimum drain height (E) of the condensate of 100 mm.
8. Fill the condensate collector with approx. 1/4 litre of water and check whether the drain is working properly.

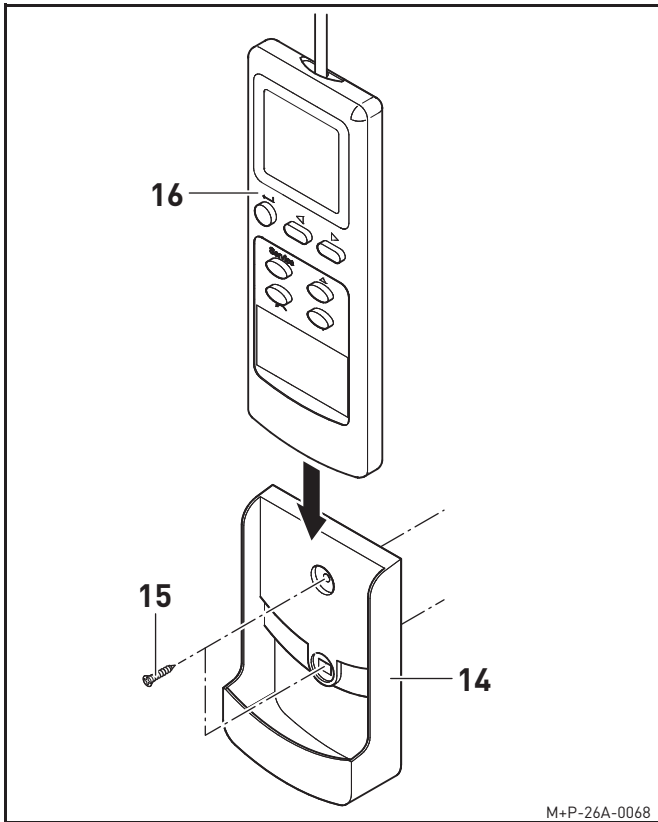
#### Note:

A condensate drain pump must be installed if it is not possible to install the condensate line at a slope due to the structural conditions.



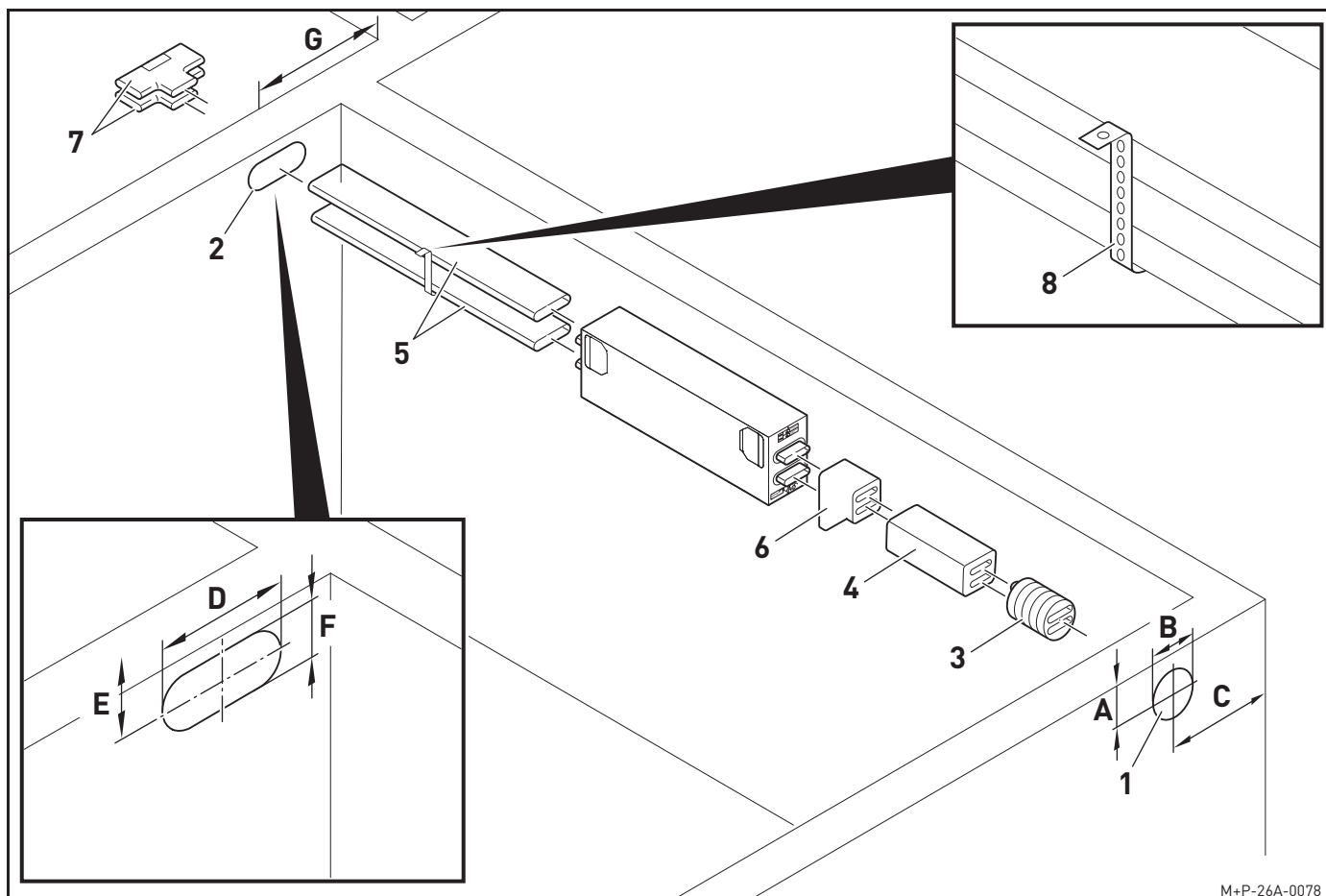
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9. Screw the holder (14) tight with the screws (15) M6x40 DIN 7982.
10. Insert the remote control (16) in the holder (14).

## 4.2. FRESH-AIR UNIT CONNECTION



M+P-26A-0078

### Caution:

The outer wall connection must be selected in such a manner to prevent the outgoing air from accumulating under wall juts or balconies. Check and mark the position of the electrical lines, water lines and gas lines before making the holes in the wall.

1. Make the hole in the wall (1).
  - A 180 mm
  - B  $\varnothing$  225 mm
  - C min. 130 mm
2. Make the hole in the wall (2).
  - D 233 mm
  - E 64 mm
  - F 120 mm
  - G min. 327 mm

### Caution:

There must be a clearance of 300–2000 mm between the fresh-air unit and the outer wall.

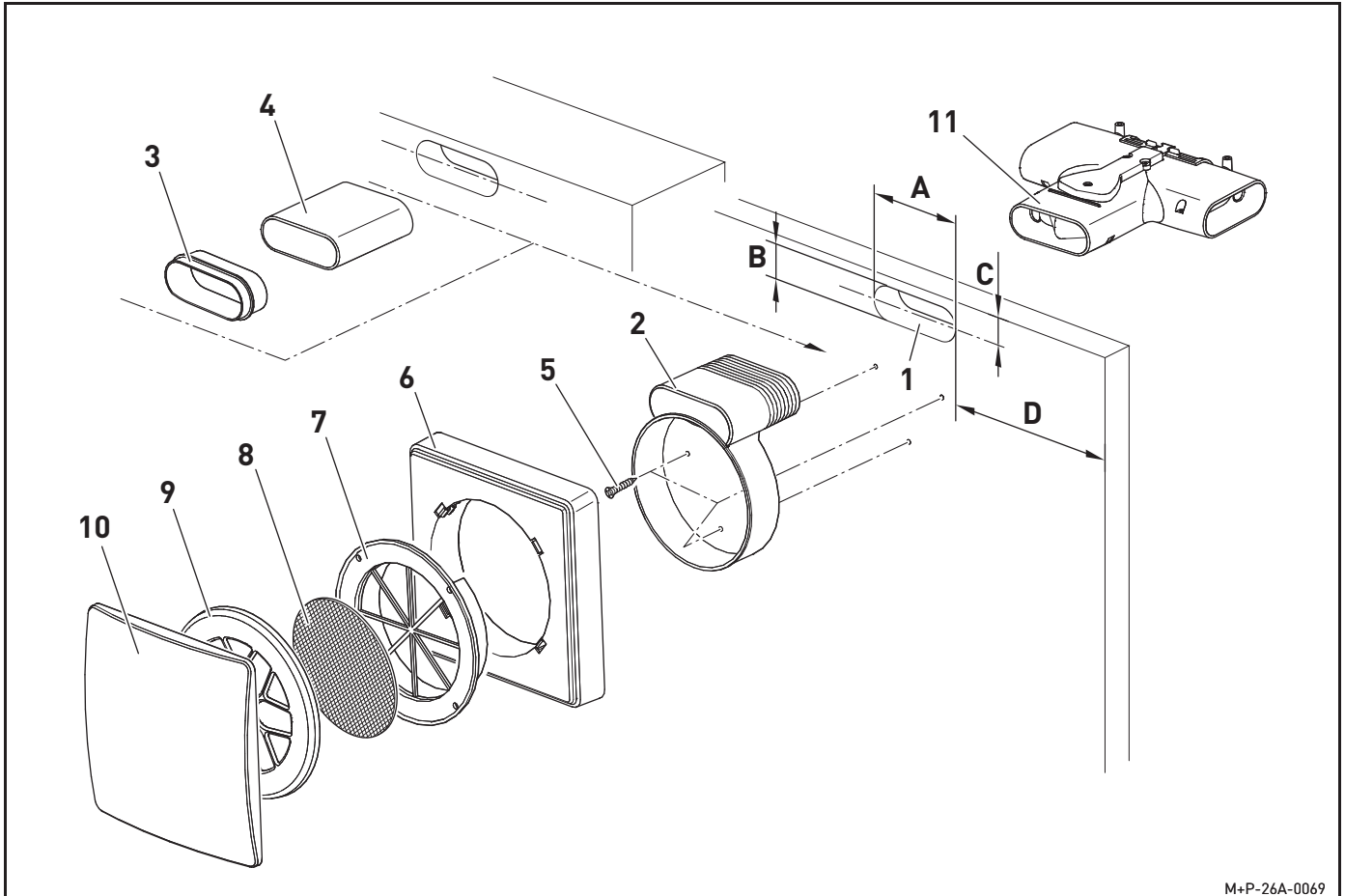
3. Cut the wall duct (3), insulation pipe (4) and ducts (5) to the required length.
4. Install the wall duct (3), insulation pipe (4), adapter (6), ducts (5) and T-pieces (7) as illustrated.
5. Secure the ducts (5) with standard perforated tape (8).
6. Fixate the wall duct (1) with fitting foam and trim it.



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## 4.3. INSTALLING THE EXHAUST AIR OUTLET



M+P-26A-0069

### Caution:

**Check and mark the position of the electrical lines, water lines and gas lines before making the holes in the wall.**

1. Make the hole in the wall (1).

- A** 120 mm
- B** 60 mm
- C** 34 mm
- D** min. 300 mm

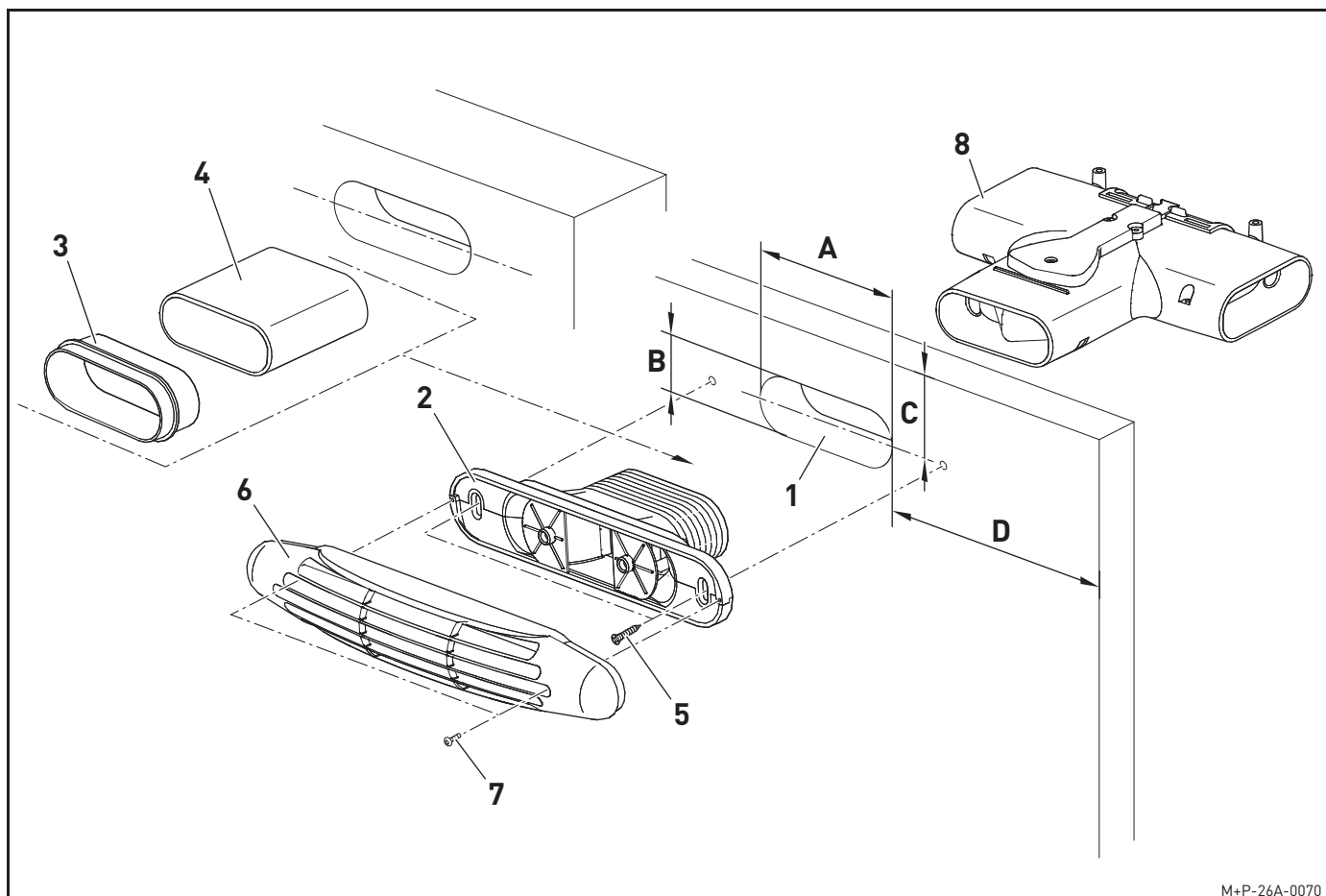
2. If necessary, shorten the angular connecting piece (2) by the lamellae and extend it with an intermediate piece (3) and a piece of duct (4).

### Note:

The angular connecting piece (2) does not have to be shortened at a wall thickness of 100 mm.

3. Screw the angular connecting piece (2) tight with the screws (5) M6x40 DIN 7982.
4. Install the cover (6), filter connection (7), filter (8), filter screen (9), cover (10) and distributor module (11) as illustrated.
5. Set the flow rate (see page 15).

#### 4.4. INSTALLING THE FRESH AIR OUTLET



M+P-26A-0070

##### Caution:

**Check and mark the position of the electrical lines, water lines and gas lines before making the holes in the wall.**

1. Make the hole in the wall (1).

**A** 120 mm  
**B** 60 mm  
**C** 89 mm  
**D** min. 300 mm

2. If necessary, shorten the air nozzle (2) by the lamellae and extend it with an intermediate piece (3) and a piece of duct (4).

##### Note:

The air nozzle (2) does not have to be shortened at a wall thickness of 100 mm.

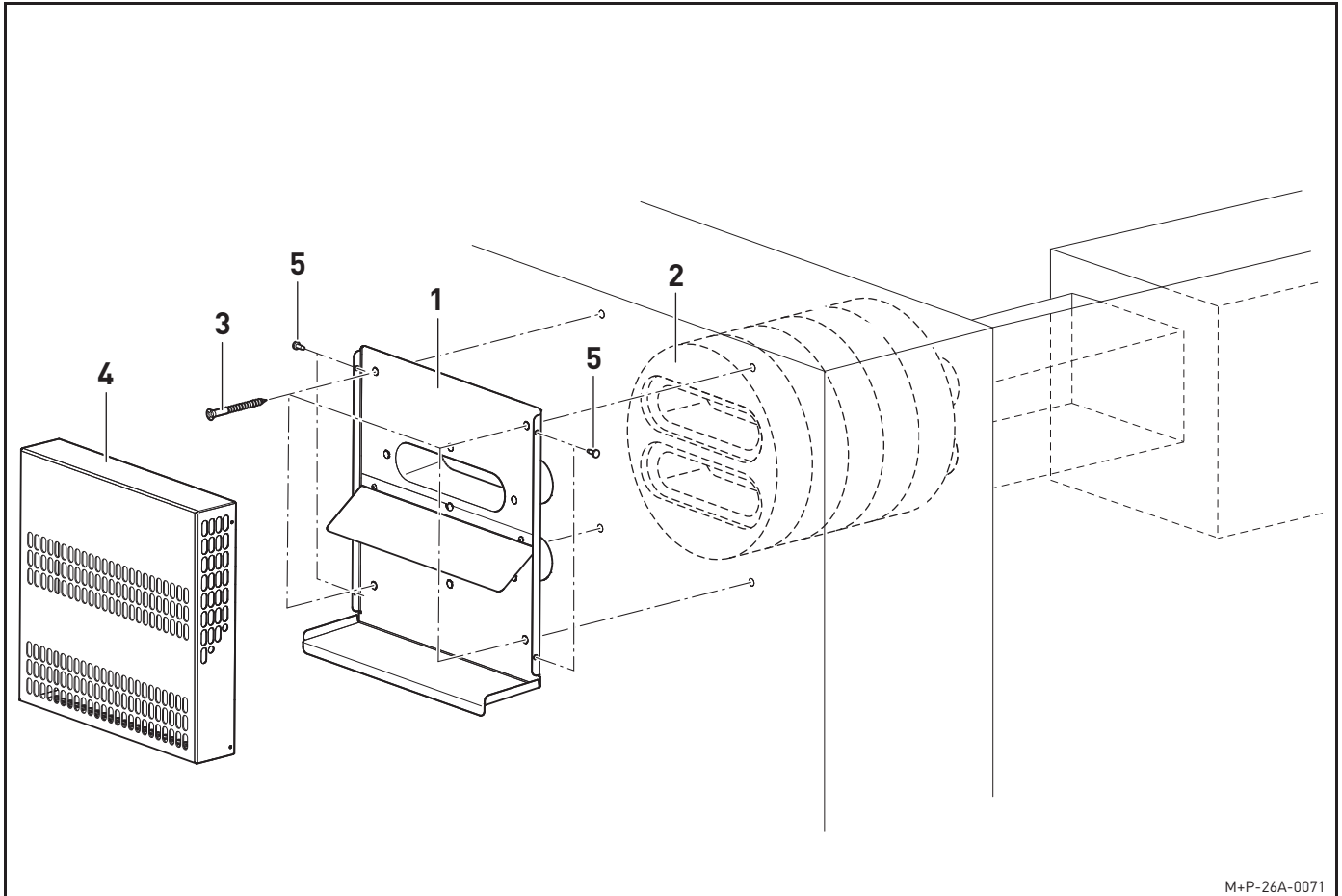
3. Remove the four segments from the air nozzle (2) if the air nozzle (2) is inserted directly on the distributor module (8).
4. Screw the air nozzle (2) tight with the screws (5) M6x40 DIN 7982.
5. Screw the cover (6) tight with the screws (7).
6. Insert the distributor module (8) in the air nozzle (2).
7. Set the flow rate and direction of flow (see page 15).



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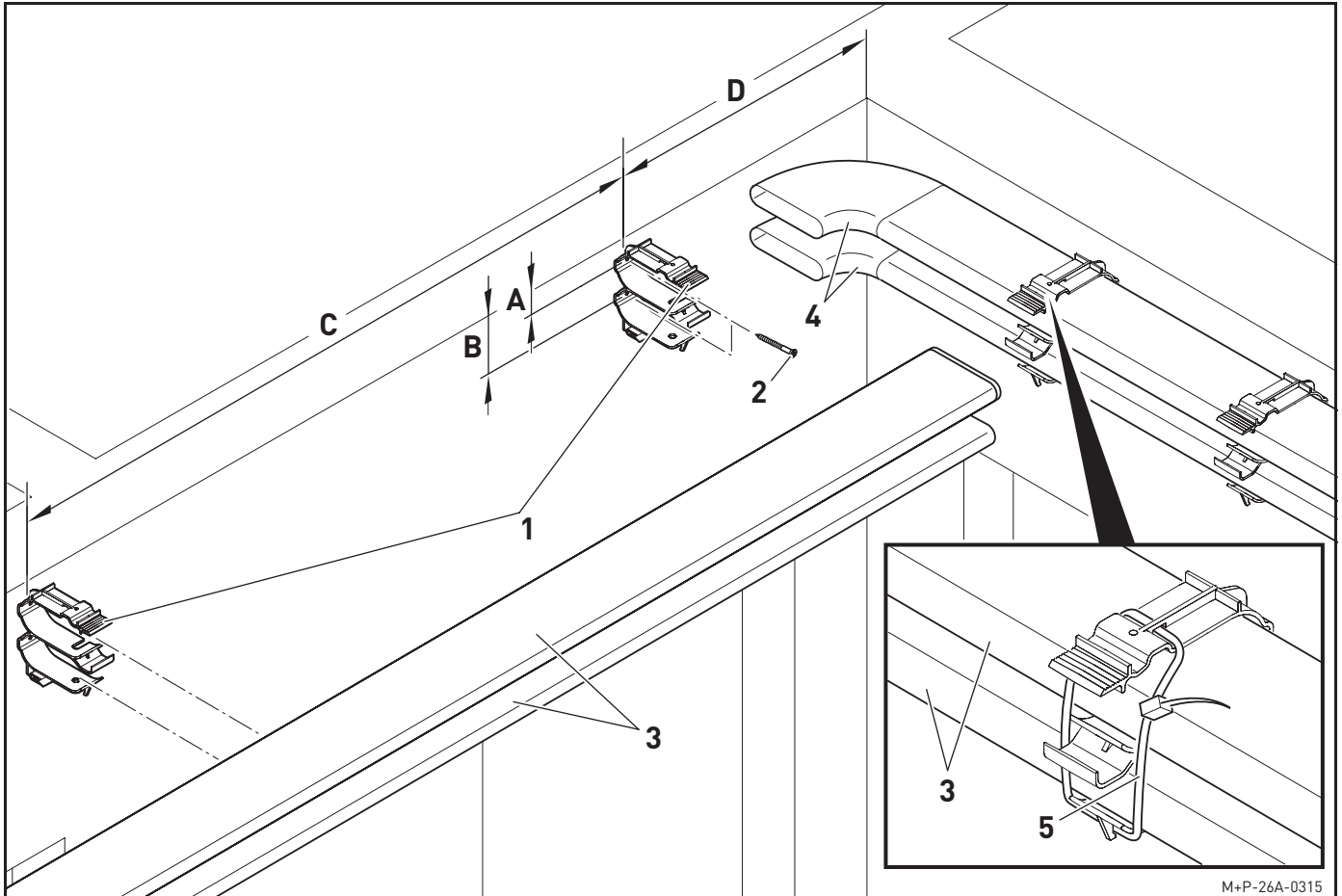
## 4.5. INSTALLING THE OUTSIDE WALL-MOUNTED HOOD



M+P-26A-0071

1. Insert the wall duct insert (1) in the wall duct (2) and screw it tight with the screws (3) M6x60 DIN 7982.
2. Screw the cover (4) tight with the screws (5).

#### 4.6. INSTALLING DUCTS



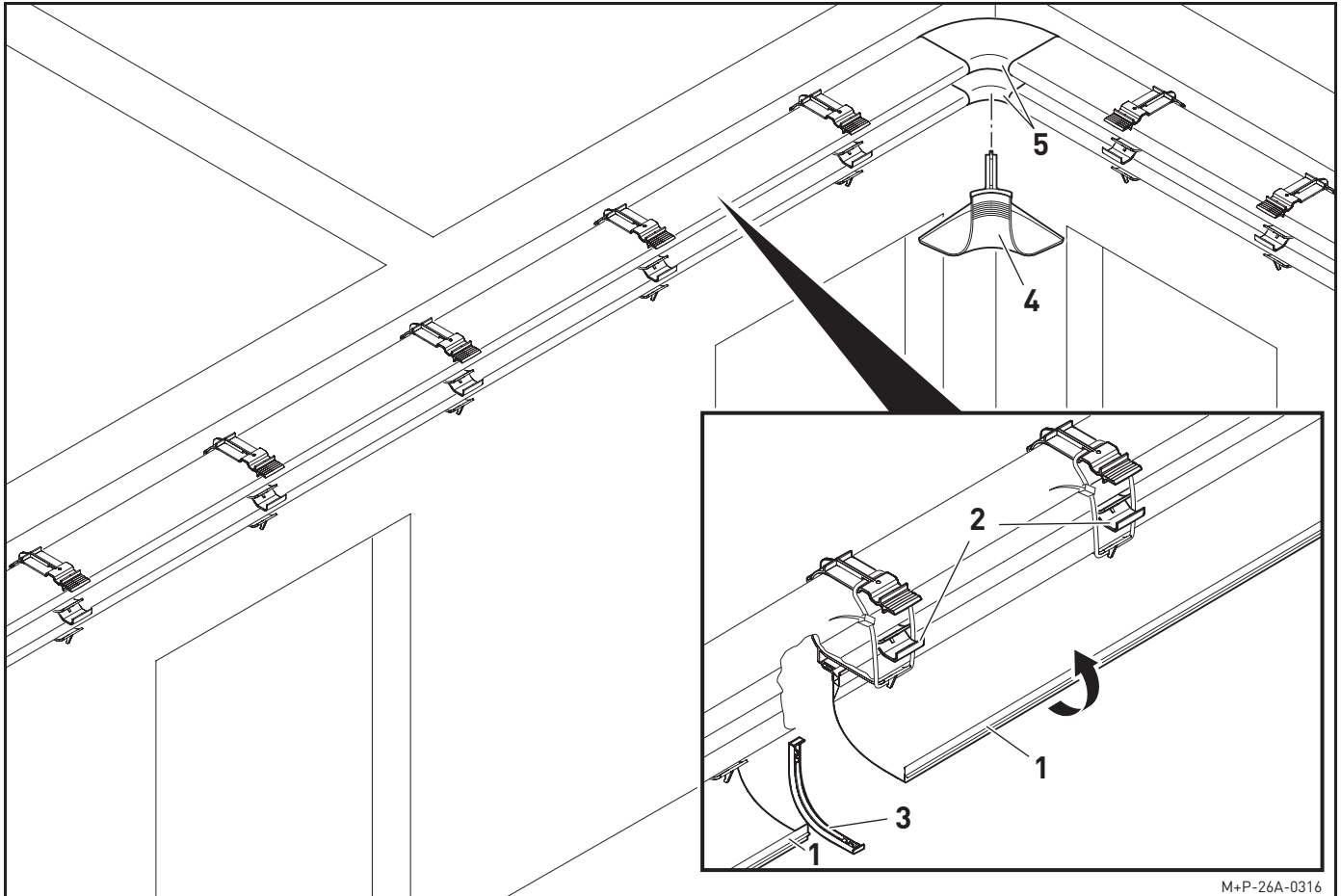
1. Screw the double holders (1) tight with the screws (2) M6x40 DIN 7982.  
**A** 35 mm  
**B** 89 mm  
**C** min. 500 mm  
**D** min. 200 mm
2. Cut the ducts (3) to the required length, insert them in double holders (1) and connect them with elbows (4), distributor modules and T-pieces.
3. If necessary, secure the ducts (3) with cable ties (5).
4. Plaster all wall ducts in a professional manner.



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## 4.7. INSTALLING COVER PROFILES



1. Insert cover profiles (1) in double holders (2), swing them up and connect them with profile connectors (3).
2. Put bend covers (4) on the elbows (5).

### Note:

The fresh-air unit may be covered, depending on the structural conditions.

It should be ensured that the fresh-air unit is easily accessible for maintenance work.



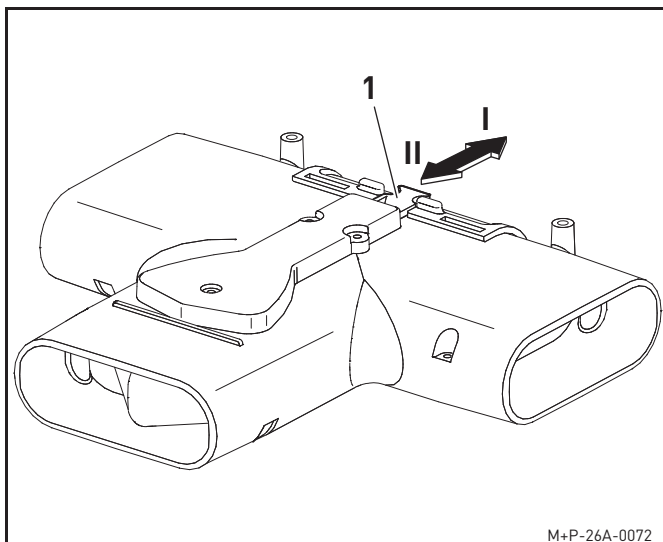


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## 5. SETTINGS

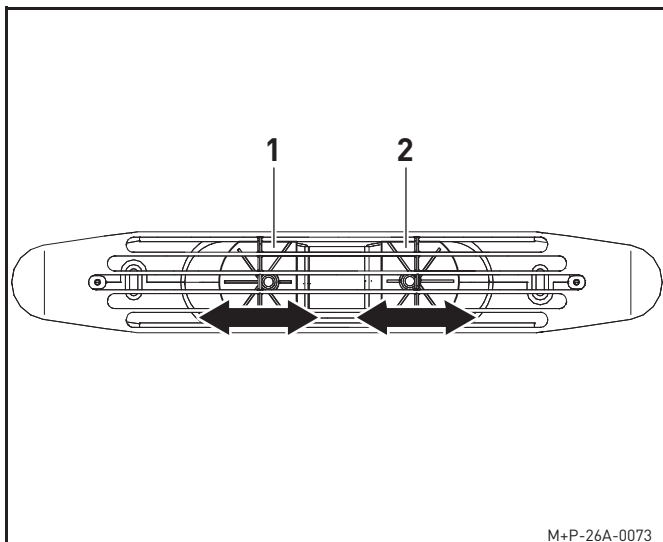
### 5.1. SETTING THE FLOW RATE



Push or pull the slider (1) and set the desired flow rate.

- I Flow rate is increased
- II Flow rate is decreased

### 5.2. SETTING THE DIRECTION OF FLOW



Set the sliders (1) and (2) to the desired direction of flow using an appropriate tool (e.g. screwdriver).

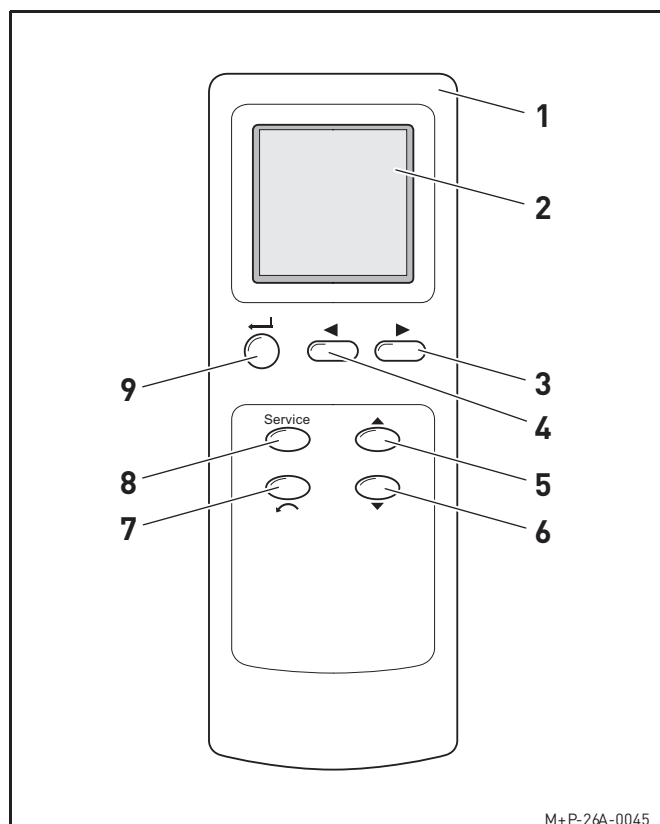
## 6. INITIAL START-UP

### 6.1. REMOTE CONTROL

Press any key to activate the remote control.

#### Note:

The remote control switches to idle mode if no key is pressed within a minute.



- 1 Remote control
- 2 Display
- 3 Move to the right in the menu
- 4 Move to the left in the menu
- 5 Multifunction key
  - For moving up in the menu
  - For increasing values
- 6 Multifunction key
  - For moving down in the menu
  - For decreasing values
- 7 One menu level back
- 8 Service key
- 9 Save settings



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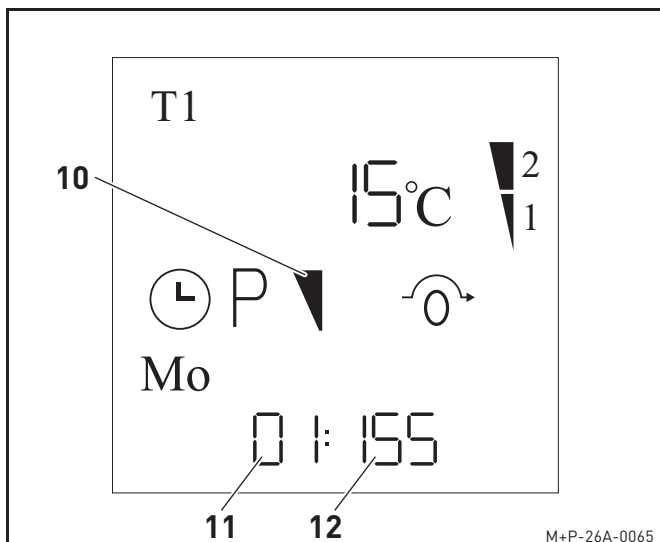
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## 6.2. SETTING THE SPEED OF THE FAN STAGES

All values set in the following must be entered in the section of the operating and maintenance manual titled "Information on starting and operation" in order to set the same values if the remote control is replaced. The following setting ranges are possible for the speed of the fan stages:

	Default setting	Setting range
Speed of stage 1	1680 rpm (-30% of stage 2)	-30% of stage 2
Speed of stage 2	2400 rpm	1600–3200 rpm
Speed of stage 3	3120 rpm (+30% of stage 2)	+30% of stage 2

1. Press any key to activate the remote control.



10 Set fan stages

11 Fan

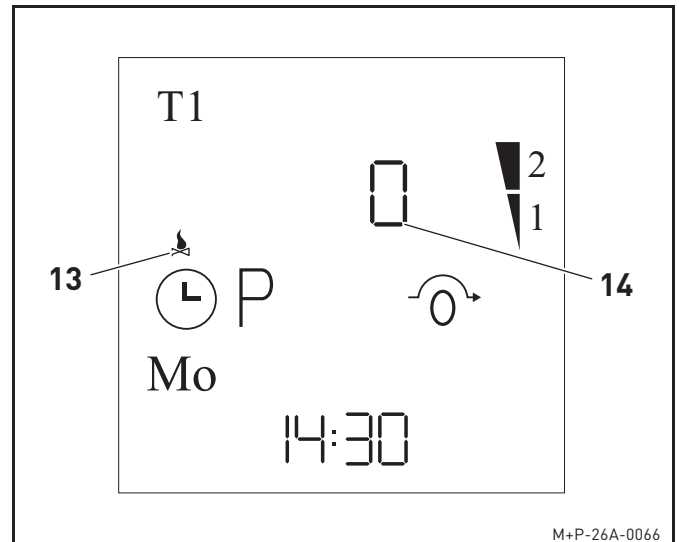
12 Speed

2. Press the keys **SERVICE** and ▼ hold them down. The indicator (10) flashes and the selected fan (11) and the speed (12) light up.
3. Press the key ▼ or ▲ and select the S1 (exhaust air) or S2 (fresh air) fan.
4. Press the key ►.
5. Press the key ▼ or ▲ and set the desired speed.
6. Press the key ◀.

## 6.3. SWITCHING THE FIREPLACE FUNCTION ON/OFF

The fireplace function must be switched on if a room air dependent fireplace (e.g. a fireside) is present. The fresh-air unit goes off for 4 hours if the supplied outside air falls below 3 °C. It automatically goes on again after this time expires.

1. Press any key to activate the remote control.



13 Fireplace function

14 Operating mode

2. Press the keys **SERVICE** and ▼ hold them down. The indicator (13) flashes and the operating mode (14) is displayed.
3. Press the key ▼ or ▲ and select the desired operating mode (14).  
0 Off  
1 On
4. Press the key ◀.

The setting is saved.  
The indicator (13) lights up if the fireplace function is switched on.

## 7. REMOVAL FROM SERVICE/DISPOSAL

### 7.1. REMOVAL FROM SERVICE FOR REMOVAL

The system may be removed from service only by qualified personnel.

- De-energise the system.
- Disconnect the entire system from the mains supply.

### 7.2. PACKAGING

The transport and protective packaging is made largely of reusable materials.

Dispose of all packaging materials according to local regulations.

### 7.3. OLD UNIT

The fresh-air unit contains valuable materials and substances which should not end up in the residual waste. Hand over the old unit to a local recycling plant for recycling.

## 8. TECHNICAL DATA

### 8.1. UNIT DATA

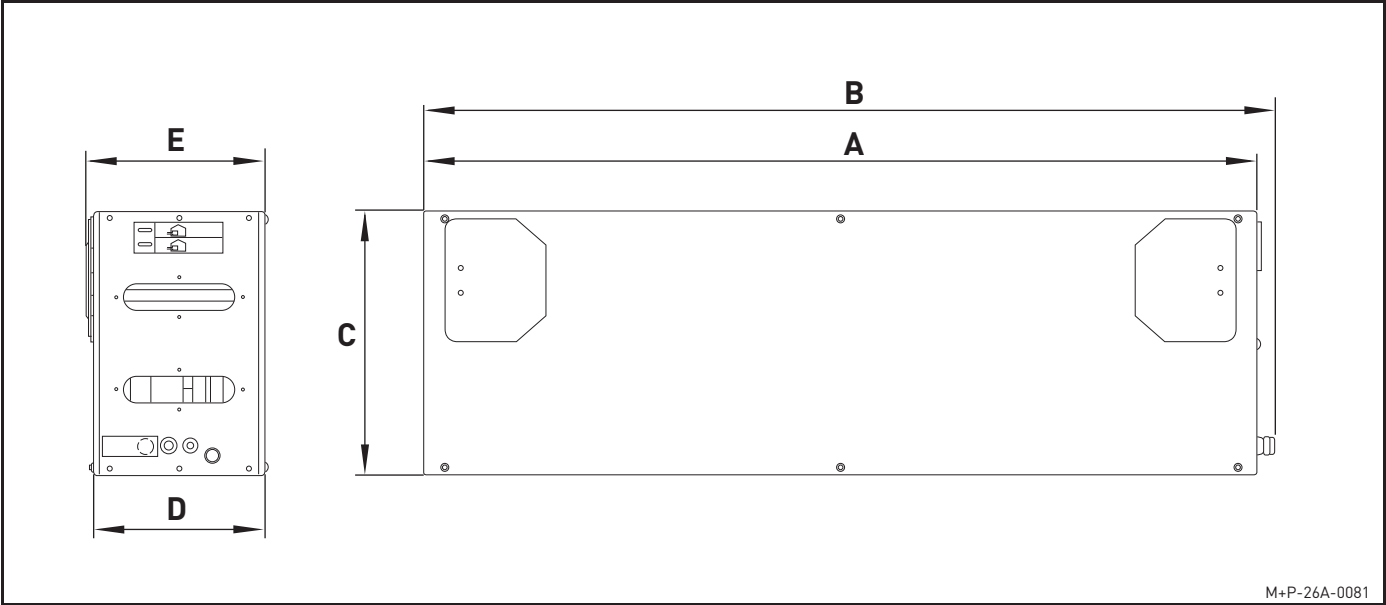
Weight	30 kg
NW of connection	PK200 (172–57 mm)
Condensate water drain (outer diameter)	1/2"
Supply voltage	230 V/50 Hz
Air flow rate	50–130 m <sup>3</sup> /h
Air capacity	100 m <sup>3</sup> /h at 100 Pa
Continuous operation	30 W (100 m <sup>3</sup> /h at 100 Pa)
Speed control	3 presettable stages
DC fans	2 x, bent backwards
Cross-counter-current heat exchanger	Aluminium
Filter	G4 filter quality
Remote control	Cable-tied
Timer	20 daily or weekly programs
Protection class	IP44
Fire-resistance, insulation material	DIN 4102 B2



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8.2. DIMENSIONS



A	Total length	1140 mm
B	Total length incl. cable connections	1190 mm
C	Total height	360 mm
D	Total width	234 mm
E	Total width incl. maintenance flaps	248.4 mm

The diagram illustrates the electrical connections for a control unit. The control panel on the left includes a fuse (F2), relays (LS1, LS2, LS3, LS4), switches (SW1), and various connectors (J1-J10). The right side shows terminals for power supply (L, N, PE), fans (M1, M2), a motor (M3), and sensors (T1, T2, T3, T4). Wires are color-coded and labeled with their functions, such as TACHO, 0-10V, +10V, GND, and NTC. The diagram is organized into sections for different components, with labels like 'Supply Fan', 'Exhaust Fan', 'Bypass', 'Error', 'Antenna', 'Quality Humidity', 'Heating Fan control', and 'Ext. Analog input'.



## The technology makes the difference.

Pluggit innovations with added value for the user and the environment.

Pluggit refresh now also allows existing flats to benefit from the market leader's years of experience and expertise in top-class ventilation of new buildings.



Coanda effect – the fresh air is directed almost silently along the ceiling without any draughts and distributed evenly in the room.



Energy efficiency – a high heat recovery level on its own makes a ventilation system look effective and energy-efficient only at first glance. Decisive for the evaluation is rather the ratio between the energy applied and the heat recovery level achieved – referred to as electrical energy-efficiency. A high level of tightness, an economic design and state-of-the-art heat exchanger technology ensure excellent values for our ventilation systems in terms of heat recovery and energy efficiency.



The CleanSafe principle ensures an almost impossible level of pollution of our distribution system due to technically smooth surfaces supplemented with a trouble-free cleaning concept, with convincing results confirmed by an independent testing institute.

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## How about fresh air?

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