

## Installation instructions

**REMKO LWM series**

**Monobloc heat pumps**

**Air/water system for heating and cooling**

LWM 80, LWM 110, LWM 150, LWM 110 Duo, LWM 150 Duo



**Instructions for Technicians**

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**Read these operating instructions carefully before commissioning / using this device!**

**These instructions are an integral part of the system and must always be kept near or on the device.**

Subject to modifications; No liability accepted for errors or misprints!

**Translation of the original**

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## 1 Safety and usage instructions

### 1.1 General safety notes

Carefully read the operating manual before commissioning the units or their components for the first time. It provides useful tips and notes such as hazard warnings to prevent injury and material damage. Failure to follow the directions in this manual can endanger persons, the environment and the equipment itself or its components and will void any claims for liability.

Store this manual and the information required for the operation of this system (e.g. refrigerant data-sheet) in the vicinity of the unit.

The refrigerant used in the system is flammable. If applicable, observe the local safety conditions.



**Warning of inflammable substances!**

### 1.2 Identification of notes

This section provides an overview of all important safety aspects for proper protection of people and safe and fault-free operation. The instructions and safety notes contained within this manual must be observed in order to prevent accidents, personal injury and material damage.

Notes attached directly to the units must be observed in their entirety and be kept in a fully legible condition.

Safety notes in this manual are indicated by symbols. Safety notes are introduced with signal words which help to highlight the magnitude of the danger in question.



**DANGER!**

Contact with live parts poses an immediate danger of death due to electric shock. Damage to the insulation or individual components may pose a danger of death.



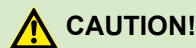
**DANGER!**

This combination of symbol and signal word warns of a situation in which there is immediate danger, which if not avoided may be fatal or cause serious injury.



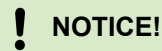
**WARNING!**

This combination of symbol and signal word warns of a potentially hazardous situation, which if not avoided may be fatal or cause serious injury.



**CAUTION!**

This combination of symbol and signal word warns of a potentially hazardous situation, which if not avoided may cause injury or material and environmental damage.



**NOTICE!**

This combination of symbol and signal word warns of a potentially hazardous situation, which if not avoided may cause material and environmental damage.



*This symbol highlights useful tips and recommendations as well as information for efficient and fault-free operation.*

### 1.3 Personnel qualifications

Personnel responsible for commissioning, operation, maintenance, inspection and installation must be able to demonstrate that they hold a qualification which proves their ability to undertake the work.

### 1.4 Dangers of failure to observe the safety notes

Failure to observe the safety notes may pose a risk to people, the environment and the units. Failure to observe the safety notes may void any claims for damages.

In particular, failure to observe the safety notes may pose the following risks:

- The failure of important unit functions.
- The failure of prescribed methods of maintenance and repair.
- Danger to people on account of electrical and mechanical effects.

## 1.5 Safety-conscious working

The safety notes contained in this manual, the existing national regulations concerning accident prevention as well as any internal company working, operating and safety regulations must be observed.

## 1.6 Safety notes for the operator

The operational safety of the units and components is only assured providing they are used as intended and in a fully assembled state.

- The units and components may only be set up, installed and maintained by qualified personnel.
- Protective covers (grille) over moving parts must not be removed from units that are in operation.
- Do not operate units or components with obvious defects or signs of damage.
- Contact with certain unit parts or components may lead to burns or injury.
- The units and components must not be exposed to any mechanical load, extreme levels of humidity or extreme temperature.
- Spaces in which refrigerant can leak sufficient to load and vent. Otherwise there is danger of suffocation.
- All housing parts and device openings, e.g. air inlets and outlets, must be free from foreign objects, fluids or gases.
- The units must be inspected by a service technician at least once annually. Visual inspections and cleaning may be performed by the operator when the units are disconnected from the mains.

## 1.7 Safety notes for installation, maintenance and inspection

- Appropriate hazard prevention measures must be taken to prevent risks to people when performing installation, repair, maintenance or cleaning work on the units.
- The setup, connection and operation of the units and its components must be undertaken in accordance with the usage and operating conditions stipulated in this manual and comply with all applicable regional regulations.

- Regional regulations and laws as well as the Water Ecology Act (WHG) must be observed.
- Only install and store the units in rooms larger than 4 m<sup>2</sup>. With a failure to comply, leaks may result in the room filling with a flammable mixture! The minimum room size of 4 m<sup>2</sup> required for installation and storage pertains to the basic fill quantity of the unit. This varies according to the installation type and total fill quantity of the system. The calculation must take place in accordance with valid DIN standards. Make sure that the installation site is suitable for safe unit operation.
- The electrical power supply should be adapted to the requirements of the units.
- Units may only be mounted at the points provided for this purpose at the factory. The units may only be secured or mounted on stable structures, walls or floors.
- Mobile units must be set up securely on suitable surfaces and in an upright position. Stationary units must be permanently installed for operation.
- The units and components should not be operated in areas where there is an increased risk of damage. Observe the minimum clearances.
- The units and components must be kept at an adequate distance from flammable, explosive, combustible, abrasive and dirty areas or atmospheres.
- Safety devices may not be modified or bypassed.

## 1.8 Unauthorised modification and changes

Modifications or changes to units and components are not permitted and may cause malfunctions. Safety devices may not be modified or bypassed. Original replacement parts and accessories authorised by the manufacturer ensure safety. The use of other parts may invalidate liability for resulting consequences.

## 1.9 Intended use

Depending on the model, the equipment and the additional fittings with which it is equipped is only intended to be used as an air-conditioner for the purpose of cooling or heating the air in an enclosed room.

Any different or additional use shall be classed as non-intended use. The manufacturer/supplier assumes no liability for damages arising from such use. The user bears the sole risk in such cases. Intended use also includes working in accordance with the operating and installation instructions and complying with the maintenance requirements.

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Under no circumstances should the threshold values specified in the technical data be exceeded.

## 1.10 Warranty

For warranty claims to be considered, it is essential that the ordering party or its representative complete and return the "certificate of warranty" to REMKO GmbH & Co. KG at the time when the units are purchased and commissioned.

The warranty conditions are detailed in the "General business and delivery conditions". Furthermore, only the parties to a contract can conclude special agreements beyond these conditions. In this case, contact your contractual partner in the first instance.

## 1.11 Transport and packaging

The devices are supplied in a sturdy shipping container. Please check the equipment immediately upon delivery and note any damage or missing parts on the delivery and inform the shipper and your contractual partner. For later complaints can not be guaranteed.



### **WARNING!**

**Plastic films and bags etc. are dangerous toys for children!**

Why:

- Leave packaging material are not around.
- Packaging material may not be accessible to children!

## 1.12 Environmental protection and recycling

### Disposal of packaging

All products are packed for transport in environmentally friendly materials. Make a valuable contribution to reducing waste and sustaining raw materials. Only dispose of packaging at approved collection points.



### Disposal of equipment and components

Only recyclable materials are used in the manufacture of the devices and components. Help protect the environment by ensuring that the devices or components (for example batteries) are not disposed in household waste, but only in accordance with local regulations and in an environmentally safe manner, e.g. using certified firms and recycling specialists or at collection points.



## 2 Installing the heat pump

- The unit should be delivered as near as possible to the site of installation in its original packaging in order to avoid transport damage.
- The unit is to be checked for visible signs of transport damage. Possible faults are to be reported immediately to the contractual partner and the haulage company.
- Suitable sites for installation are to be selected with regard to machinery noise and the set-up process.

### ! NOTICE!

The site for the unit must be selected so that machinery noise that occurs disturbs neither the residents nor the facility operator. Observe the TA-noise specifications as well as the table containing the drawings relating to sound pressure levels!

The sound pressure calculator of the "Bundesverbandes Wärmepumpe e.V." (German Federal Association of Heat Pumps) can be used for theoretical calculations ([www.waermepumpe.de/schallrechner/](http://www.waermepumpe.de/schallrechner/)).

1. ➤ Place the heat pump as close to the installation space as possible. (Fig. 1)



Fig. 1: Heat pump in delivery state

2. ➤ Cut the straps and remove the box and protective film. Check the heat pump for damage (Fig. 2).

When installing, pay attention to where the suction and air discharge side is located (see Fig. 12).



Fig. 2: Remove the boxes and the film and check for damage

3. ➤ Remove the cover from the heat pump. The cover can only be removed once the storm protection has been removed using tools.



Fig. 3: Removing the cover

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4. ➤ Then undo the front four screws on the finned grille at the air inlet side.



*Fig. 4: Removing the grille cover*

5. ➤ Once the screws have been removed, you can take off the finned grille to the front.



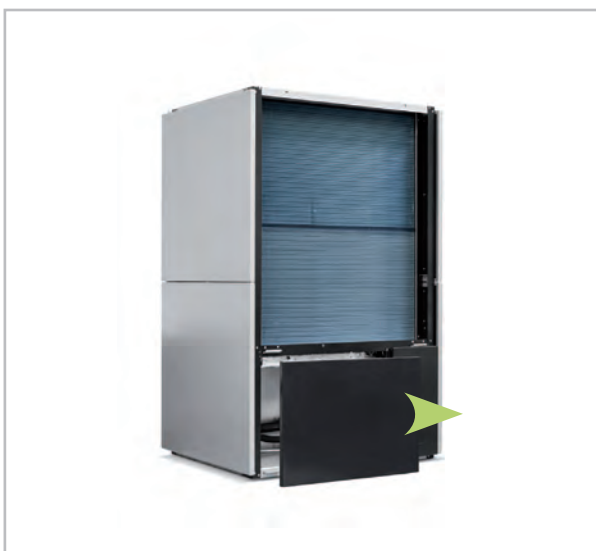
*Fig. 5: Removing the finned grille*

6. ➤ Loosen the bottom panelling. To do so, remove the screw above the panelling sheet.



*Fig. 6: Releasing the bottom panelling*

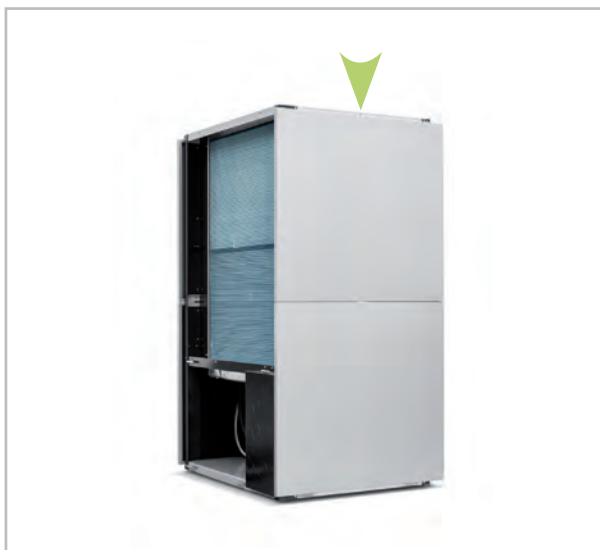
7. ➤ Once you have removed the screw, you can remove the panelling sheet.



*Fig. 7: Removing the panelling*



- 8.** ➤ To remove the side panelling, you must remove the top screw on the panelling sheet.



*Fig. 8: Undoing the screw*

- 9.** ➤ After undoing the screw, you can remove the side panelling.



*Fig. 9: Removing the top side panelling*

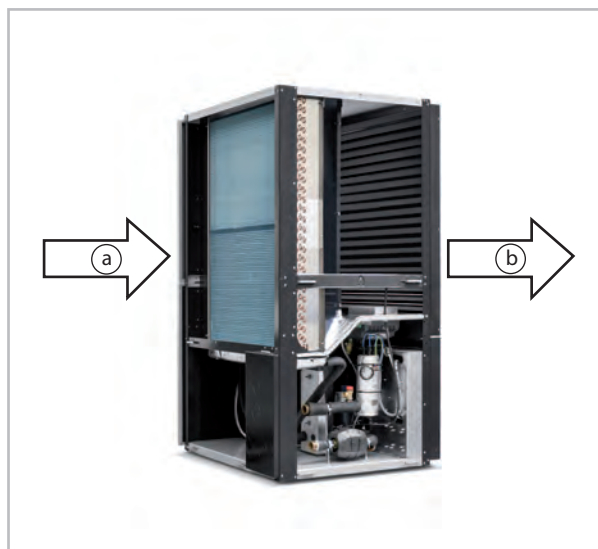
- 10.** ➤ To remove the bottom side panelling, you must remove the screw on the top edge of the bottom panelling sheet.



*Fig. 10: Undoing the screw and removing the bottom side panelling*

- 11.** ➤ The area for the hydraulic connection is now accessible.

The hydraulic connection can be established from the front or from below. Note that the pump is installed in the return flow (heat pump water inlet). The hydraulic connections are shown in Fig. 12.



*Fig. 11: Access to the hydraulic connection*

- a: Air inlet  
b: Air outlet

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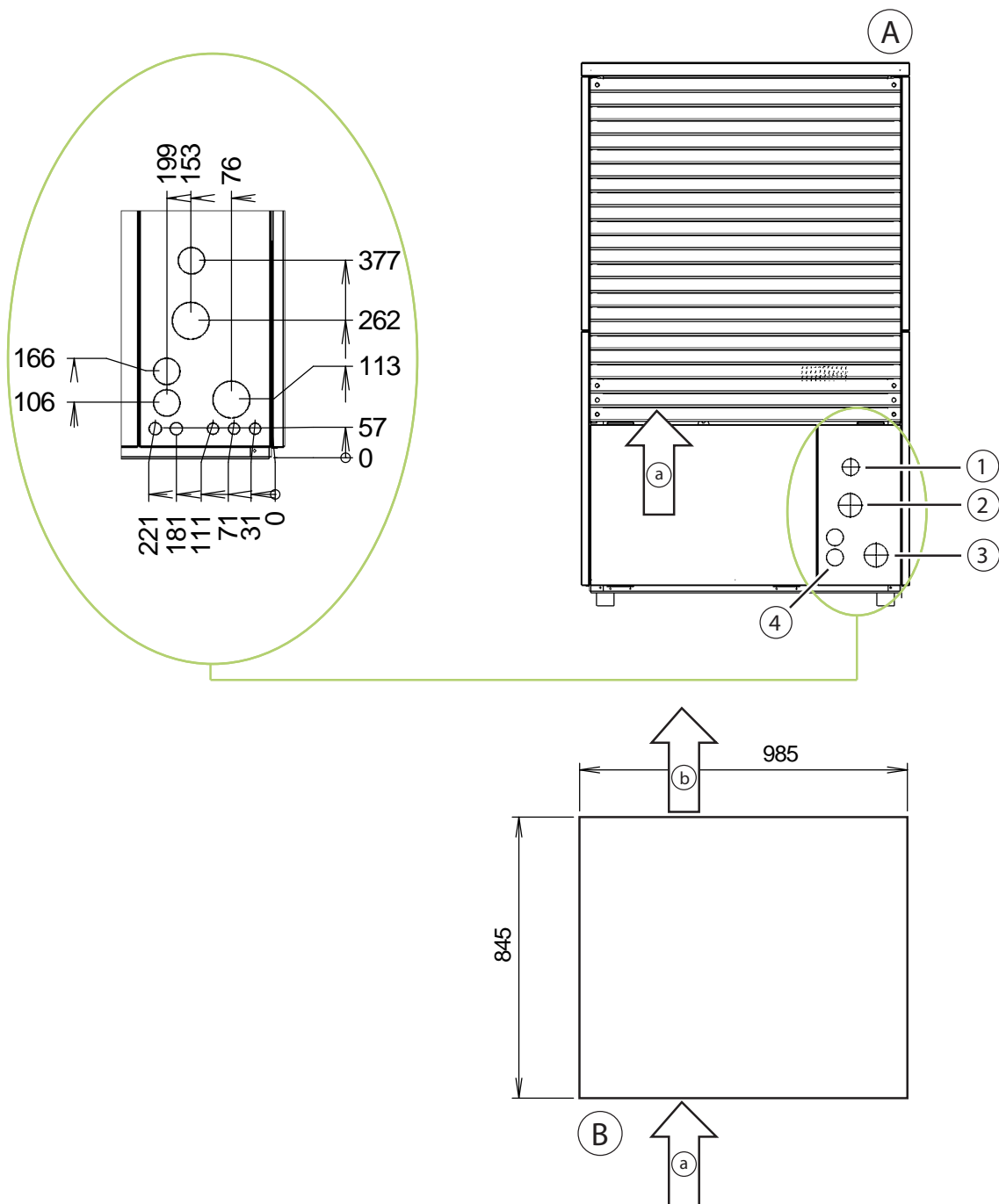


Fig. 12: Designations of the pipe connections

- |                           |                                 |
|---------------------------|---------------------------------|
| A: Rear view              | 3: Return flow heat pump 1 1/4" |
| B: Bird's eye view        | 4: Cable inlets                 |
| 1: Condensate drain       | a: Air inlet                    |
| 2: Inlet heat pump 1 1/4" | b: Air outlet                   |

## Access to the electrical connection

1. ➡ To remove the panel for the electrical connection, undo the screw on the top edge at the air outlet side.



Fig. 13: Removing the panelling

2. ➡ Then undo the two screws on the protective panel of the electrical connection.



Fig. 14: Undoing the screws



Fig. 15: Access to the electrical connection

### **DANGER!**

All electrical installation work must be done by an electrician.

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## Transporting the heat pump

Four holding eyelets are included in the scope of supply for transporting the heat pump. In order to mount these holding eyelets on the heat pump, it is necessary to remove the panelling sheets on the heat pump as described previously.



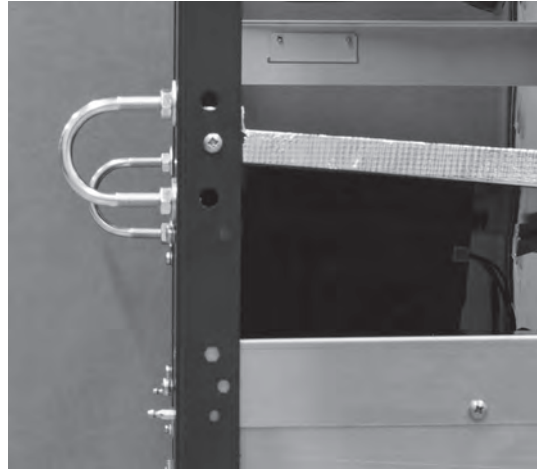
*Fig. 16: Holding eyelets*

Mount the transport fastenings at the four points intended.



*Fig. 17: Mounting points for the holding eyelets*

With the transport fastenings, you have the option of transporting the heat pump to the installation space with a crane or two suitable transport bars.



*Fig. 18: Holding eyelets mounted on the heat pump*

### **Vibration dampers**

Four vibration dampers are included in the scope of supply for installing the heat pump.



*Fig. 19: Vibration dampers*

These vibration dampers must be mounted on the intended threaded sleeves, on the underside of the heat pump respectively. For this purpose the heat pump module must be lifted and the vibration dampers mounted on the threaded sleeves.



*Fig. 20: Vibration dampers mounted*

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## 3 Unit and foundation dimensions

### Unit dimensions

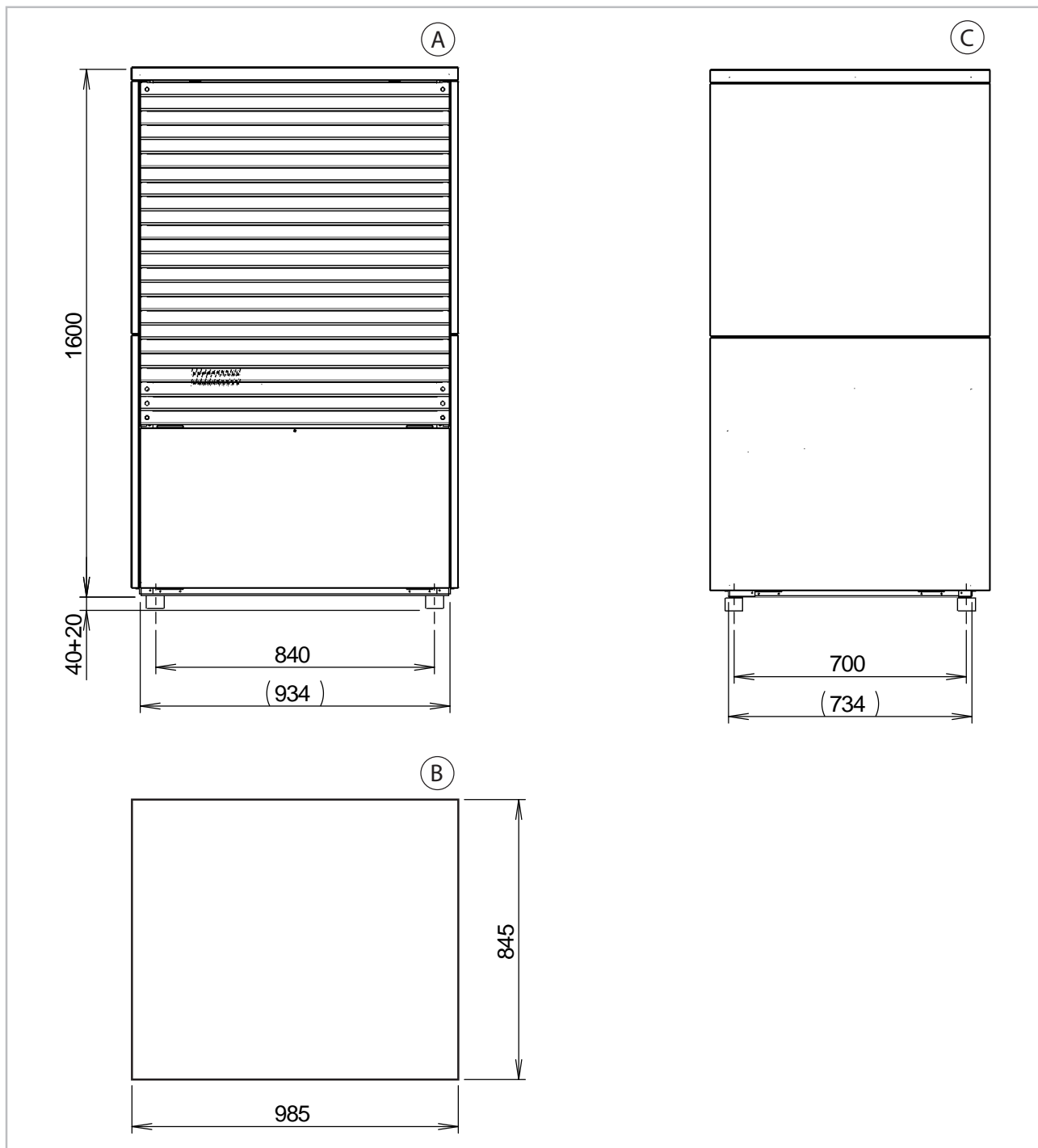


Fig. 21: Unit dimensions (all dimensions in mm)

A: Front view

B: Bird's eye view

C: Side view

## Strip foundation

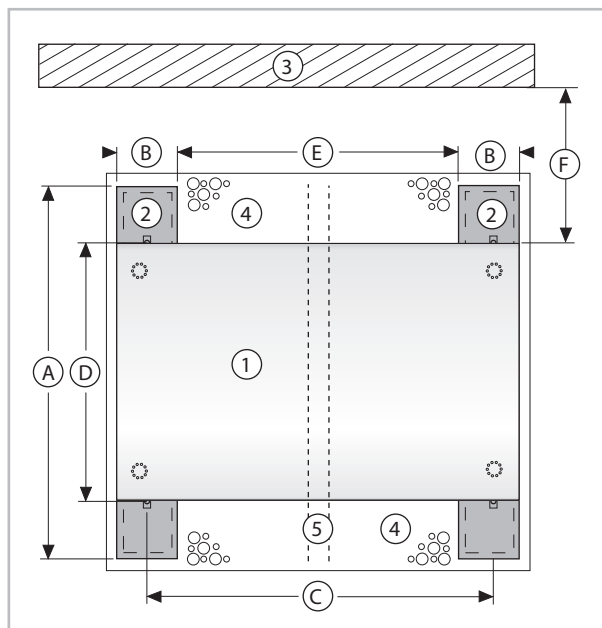


Fig. 22: Dimensions for the strip foundation (bird's eye view)

- 1: Heat pump
- 2: Reinforced strip foundation, frost free
- 3: Housewall
- 4: Gravel layer for seepage
- 5: Drainage pipe

### Dimensioning the strip foundation (all dimensions in mm)

Dimension	LWM 80	LWM 110	LWM 150
A	1000	1000	1000
B	200	200	200
C	840	840	840
D	700	700	700
E	600	600	600
F	300	300	300

### ! NOTICE!

#### Anti-freeze protection

In the case of heat pump systems, in which frost-free conditions are not assured, a drainage facility should be provided. If control and heating circulation pump are ready for operation, the anti-freeze protection function of the controller works. The system must be emptied when the heat pump is shut down or there is a power failure. For heat pump systems in which a power failure cannot be detected (e.g. holiday home), the heating circuit must be operated with a suitable anti-freeze protection.

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