LEWT kit



The ground-to-air heat exchanger LEWT further optimises the efficiency of ventilation units with heat recovery.

Advantages

- Additional preheating during the cold season without any significant additional energy requirements.
- Prevention of icing of the heat exchanger.
- Pleasant cooling on hot days.
- Additional post-heating of supply air is only necessary in case of very low outdoor temperatures.
- Complete kit with coordinated components.

Functional principle

The ground-to-air heat exchanger LEWT utilises the fact that the ground temperature remains relatively constant throughout the year. The intake air is drawn through an upstream ground collector pipe. This can be installed in an existing construction pit at a depth of approx. 1.2 to 1.5 m; the total pipe length should be at least 40 m.

- This results in the following:
- During the cold season
  The preheating of cold intake air of up to 14 K. Thus, the intake air is normally at a temperature above 0 °C when it reaches the ventilation unit with heat recovery (anti-icing operation). This results in an increased heat recovery rate and a higher supply air temperature. Post-heating is only necessary in case of very low outdoor temperatures.
- On hot summer days
  The ground-to-air heat exchanger reduces the intake air temperature.
- During the transitional period
  Intake either through the ground collector or direct intake opening. This is dependent on the outdoor temperature measured via the thermostats. The electric bypass shutter automatically controls the ideal intake volume. This preconditions the intake air before it reaches the ventilation unit, helping to achieve further energy savings and a comfortable indoor climate.

Delivery

- The ground-to-air heat exchanger LEWT is delivered as a kit corresponding to the course of processing on-site and for optimised transportation. It consists of three sets, which are described on the adjacent page.
- The individual components are perfectly matched to each other and form a system. This guarantees simple, quick and precise installation as well as high functional reliability.

Planning information

- In order to maximise the heat transfer, the ground collector pipe should be laid at a depth of at least 1.2 m, since the temperature there is constantly approx. 8 °C throughout the year. The ground temperature increases and stabilises with installation depth.
- During installation, it should be ensured that there is a gradient of at least 2% for the condensate drain.
- In order to increase the heat transfer, the pipe should be laid directly in the ground in a sand bed. Furthermore, if ground collector pipes are laid in parallel, the distance should not be less than 1 m (from pipe to pipe).
- A minimum bend radius of 1 m is recommended to minimise the air-side pressure loss.

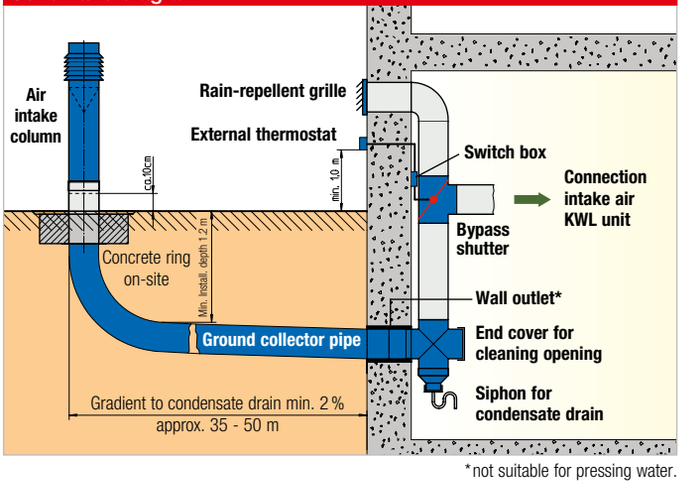
Complete kit
consisting of ground collector pipe, outlet wall bushing, air intake column, control and pipe fittings.

LEWT kit	Ref. no. 02977

Pictorial schematic for installation in buildings with basements

The ground collector pipe enters the building via an underground wall outlet.

Schematic diagram

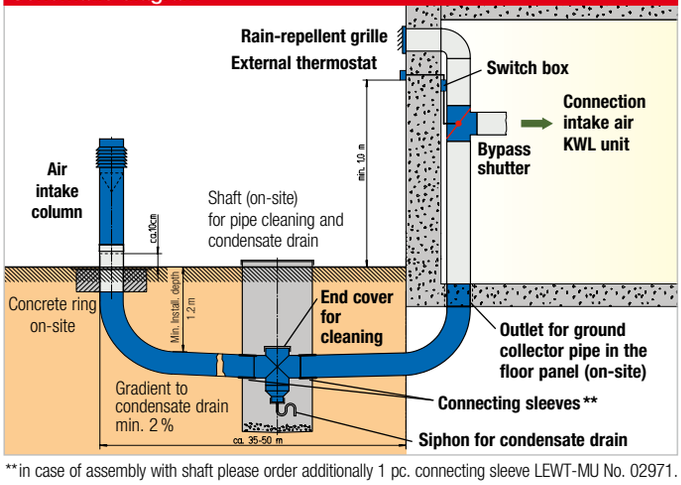


*not suitable for pressing water.

Pictorial schematic for installation in buildings without basements

The ground collector pipe is placed in the building via the floor panel. A shaft must be provided on-site for inspection purposes.

Schematic diagram



**in case of assembly with shaft please order additionally 1 pc. connecting sleeve LEWT-MU No. 02971.

LEWT-E+M



LEWT-A

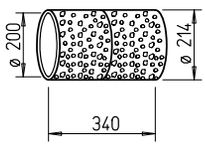


LEWT-S+F



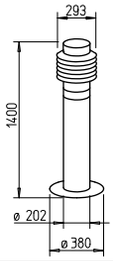


Outlet wall bushing

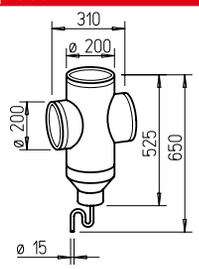


Dimensions in mm

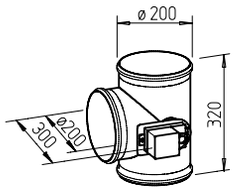
Air intake column



Crosspiece



Bypass shutter



Ground collector pipe and wall outlet LEWT-E+M

Description

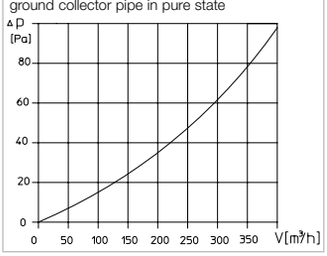
- ☐ FFlexible, externally corrugated and internally smooth ground collector pipe with low air resistance; external Ø 200 mm.
- ☐ Coextruded composite pipe made of physiologically and toxicologically safe polyethylene (PE-HD). Antibacterial, antistatic inner wall. Specifically developed as a ventilation duct for ground installation.
- ☐ Easy to clean, fulfils DIN 1946-6 (VDI 6022).
- ☐ 100 % odourless, assured top quality level excludes the transmission of harmful substances and vapours.
- ☐ The PE-HD material achieves double the conductivity of PP with comparable wall thicknesses / pipe cross-sections. In comparison to PVC, the heat conductivity is two and a half times better.
- ☐ Delivered in bundle with 2 x 25 liner metres. Includes wall outlet DN 200 made of polypropylene (sanded), profile seal rings, connecting sleeve and seals.
- ☐ Ground collector pipe, wall outlet and profile seal rings comply with protection category IP 67 when processed according to instructions.

Air intake column LEWT-A with filter

Description

- ☐ Air intake column in modern design and aesthetic stainless steel look for supply air intake.
- ☐ Simple plug-in connection between the intake column and ground collector pipe.
- ☐ Fixation with support plate or bordering plate (on-site) in drywall construction or set in concrete.
- ☐ All parts made of stainless steel.
- ☐ With integrated cone air filter, class ISO Coarse 60 % (G4). Prevents the ingress of dirt, insects and contaminants.
- ☐ Cone filter must be removed by hand for cleaning and replacement after removing the blade head.

Pressure loss Air intake column
with filter ISO Coarse 60 % (G4) and 40 metre ground collector pipe in pure state



Control and moulded duct parts LEWT-S+F

Description

- ☐ Automatic control of air intake via the ground collector pipe or directly from the outdoor area depending on the outdoor temperature measured by the thermostat.
- ☐ Temperature range for direct intake individually adjustable at thermostat.
- ☐ The desired operating mode can be manually selected.

Delivery

- ☐ Bypass shutter NW 200 with actuator 230 V; for vertical installation using the crosspiece.
- ☐ Crosspiece for connection to the wall outlet. Includes cleaning opening, condensate collector, siphon and end cover.
- ☐ Rain-repellent grille (no Fig.) as wall cover for direct intake opening. Prevents the ingress of rain, small animals and insects into the intake air duct.

Technical data Thermostat	
Load capacity	16 A (4 A ind.)
Voltage	230V, 50/60 Hz
Protection category	IP54
Wiring diagram no.	798.1
Temperature range (adjust.)	2 x 0 – 40 °C
Technical data Actuator	
Voltage	230V, 50/60 Hz
Power consumption	1.5 W
Protection category	IP54

- ☐ Setpoint adjuster and thermostat for automatic and manual bypass shutter control. For attachment in weatherproof location in the outdoor area on the north side of the building at a height of approx. 1 m.



Dim. in mm B 200 x H 90 x T 70

- ☐ Switch box with double toggle switch for following operating modes:
  - – Thermostatic operation, automatic
  - – Ground heat, manual
  - – Intake air, manual



Dim. in mm W 110 x H 180 x D 100

Accessories

Replacement air filter class ISO Coarse 60 % (G4)
Unit = 3 pcs.

ELF-LEWT-A	Ref. no. 02975

Additional connecting sleeve
Includes 2 pcs. seal rings.

LEWT-MU	Ref. no. 02971

Reference

The individual components of the LEWT kit are to be ordered separately:

Type	Ref. no.
LEWT-E+M	02991
LEWT-S+F	02990
LEWT-A	02992
LEWT crosspiece	02967