

A Brine to Air Energy Collector

Increases the thermal efficiency of your MVHR unit, saves even more energy and reduces costs of heating and cooling to minimum



KEY FEATURES

- Connect your MVHR unit for enhanced thermal efficiency
- Can be automatically controlled by an Adroit unit
- Brine is kept at a sub-soil temperature of 8 to 12°C
- Provides additional pre-heating to your MVHR unit during the winter
- It also provides cooler air in the summer
- Water temperature gauges monitor the supply and return temperature of the brine
- Fitted with a G4 filter
- Wall mounted, 12 litre pressure expansion tank with relief valve included

Brine to Air Exchanger

The Brine to Air Exchanger enhanced the thermal efficiency of your MVHR unit by provided additional pre-heating to your unit during the winter and also helps to cool the air during the summer.

The Brine to Air Exchanger uses the warmth in the ground to maintain the brine's temperature of 8 - 12°C.

A 1.2 m deep flexible polyethylene under-soil tube pumps brine through a loop.

To increase the heat exchange the tube should be laid directly under the soil in a sand bed.

The minimum space between the parallel tubes should be 0.5 m.

Alternatively to laying the tube horizontally a vertical bore can be used.



OPERATING MODES

Brine to Air Energy collector can work either in automatic or manual mode.

In automatic mode operation of the circulation pump is controlled by the MVHR unit. The pump circulates the brine when the outside air temperature falls below 5°C or

when actual supply air temperature is higher than the set value.

System can be switched into the manual mode by using an operation switch. In this mode the circulation pump is always turned on regardless of the outdoor air temperature.

INSTALLATION SCHEME

Brine to air heat exchanger is mounted in-line before mvhr unit. It is important that the air flows through the heat exchanger in horizontal direction. To provide optimum performance it is recommended that approx. 1m of straight duct is mounted upstream and downstream of the brine to air heat exchanger.

The ducting should be done with Airflex ISO system to avoid creation of the condensation. Alternatively insulated spiral ducting can be used.

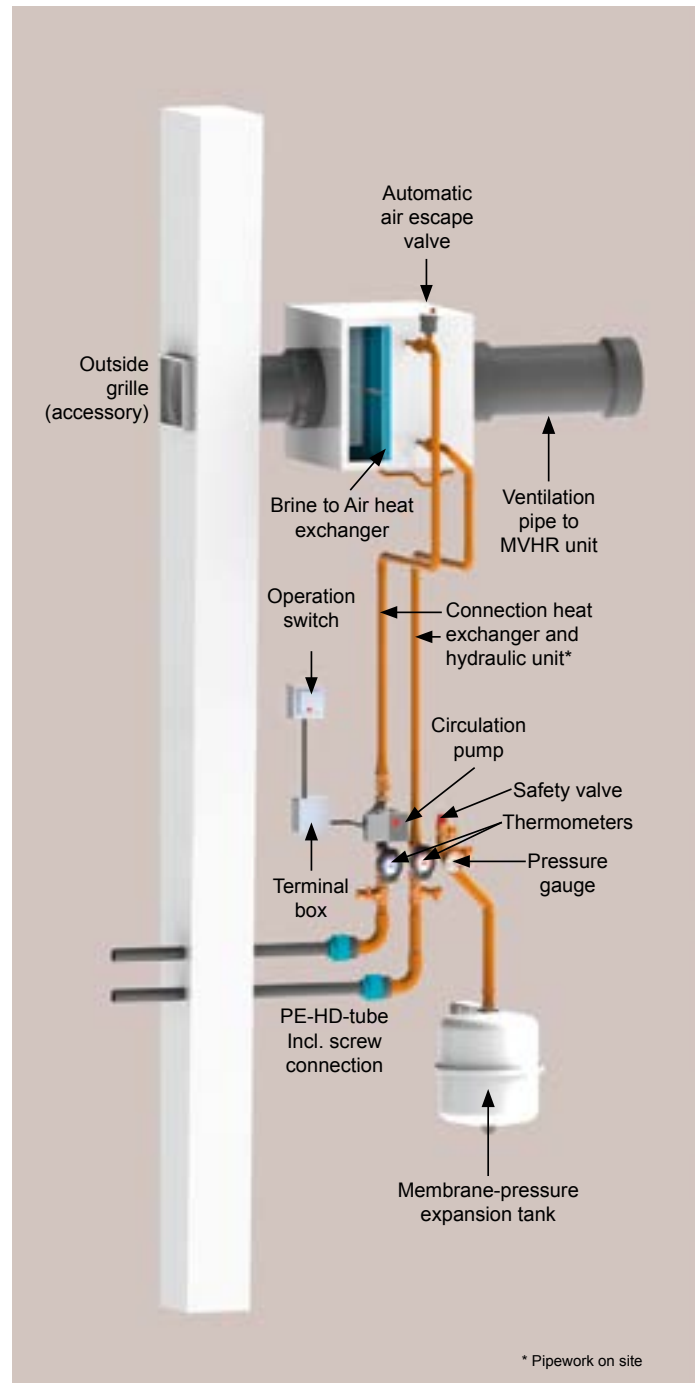
Pipework and connection between hydraulic kit and brine to air heat exchanger shall be provided on site. The pipe connections of the hydraulic kit are 3/4" IG.

The quick vent valve must be installed at the highest point of the pipework.

It is recommended to install undersoil tube when outdoor air is above 5°C. The area where the undersoil tube is laid should not be built over so it is guaranteed that seeping rainwater can contribute to the thermal regeneration of the soil.

The filling of the system is carried out via feed and drain cock located on the hydraulic kit. During this operation take care to avoid air entering the system.

After the installation of the undersoil pipework, system should be tested at high pressure for tightness check.



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SPECIFICATION

Brine to Air Energy Collector is delivered as a kit, which ensures full functionality and optimal performance.

Components included in the kit:

- Highly efficient brine to air heat exchanger delivered with ceiling / wall mounting plate. Heat exchanger fins are made of aluminium to ensure the best heat transfer to incoming outdoor air. Tubes inside the heat exchanger are made of copper.

There is a convertible G4 filter integrated, which prevents the contaminating of the heat exchanger and enables

variable air flow direction. The Filter must be always mounted before heat exchanger. The filter should be cleaned 2 to 4 times a year and replaced at least once a year.

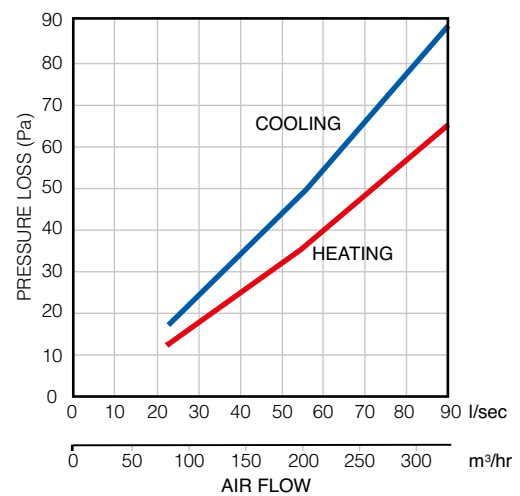
Heat exchanger should be periodically checked to see if it gets dirty and should be cleaned if necessary.

Condensate connection located at the bottom of the heat exchanger casing must be checked before the cooling season

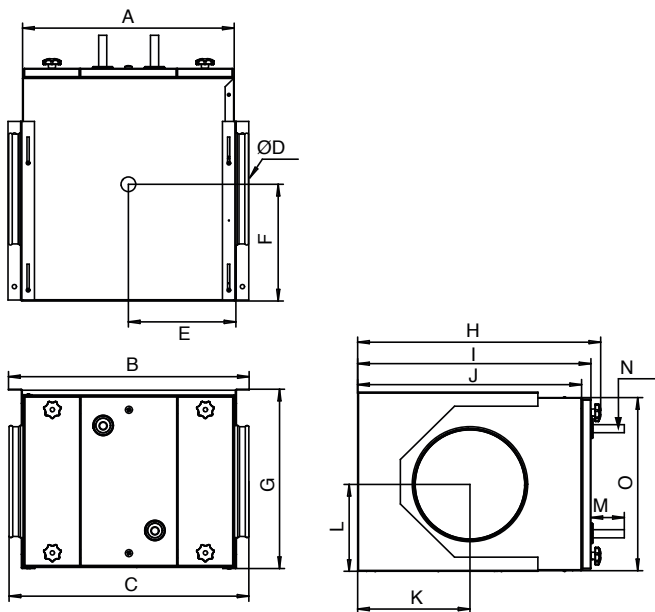
TECHNICAL DATA

Specification	Brine to air heat exchanger
Casing	Double skin steel with insulation
Heat exchanger material	Aluminium
Heat exchanger Pipe connection	Copper, 2 x Ø12 mm
Duct connection	2 x Ø200 mm
Condensate discharge	12 mm
Filter	G4
Weight	16kg

HEAT EXCHANGER PRESSURE LOSS



DIMENSIONS



Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Brine to air heat exchanger	367	431	450	Ø200	187	200 + (60)	334	420 + (60)	399 + (60)	378 + (60)	190 + (60)	160	50	Ø12	320

All dimensions in mm

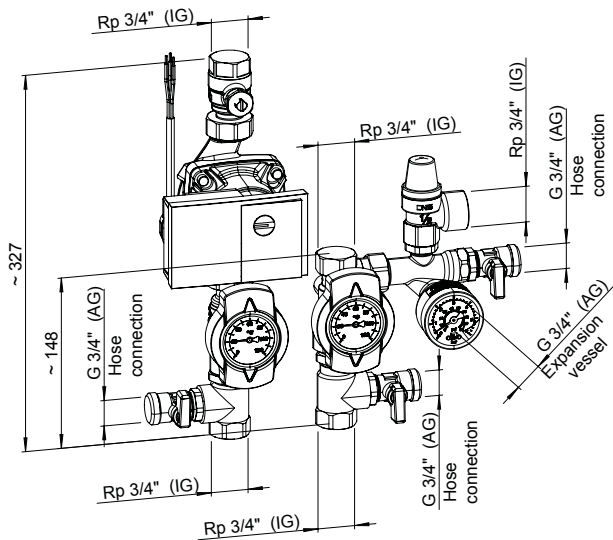


HYDRAULIC KIT

- Brine pump (230 V), includes safety device
- Temperature gauges for supply and return
- Automatic protection against reverse flow
- Pressure expansion tank - 12 litres, connection $\frac{3}{4}$ " , delivered with wall bracket and stop valve for maintenance
- Electrical terminal box with 24 V DC relay and operation switch

Technical data of the hydraulic kit

Current max.	0.44A
Voltage	230V, 50Hz
Power consumption	3-45W
Protection class	IP 44



UNDERSOIL TUBE SET

Undersoil tube with screw connections and 20l canister with ethylene glycol

- Flexible PE-HD undersoil tube - 100 running metres, Ø32 mm, wall thickness 2.9 mm
- Screw connection set made from high class polymer (PP) to connect the undersoil tube to the hydraulic kit
- 20l canister with ethylene glycol to ensure anti-freeze protection for the system. Glycol has to be homogeneously mixed with water first before filling the pipe-work system. The following mixing ratios apply to the ethylene glycol offered by Airflow:

Glycol mixing ratio	Frost protection until °C
22%	-10°C
29%	-15°C
35%	-20°C
40%	-25°C



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