

PLATE HEAT EXCHANGER



KWT

EN USER'S MANUAL

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This user's manual is a main operating document intended for technical, maintenance, and operating staff.

The manual contains information about purpose, technical details, operating principle, design, and installation of the KWT unit and all its modifications.

Technical and maintenance staff must have theoretical and practical training in the field of ventilation systems and should be able to work in accordance with workplace safety rules as well as construction norms and standards applicable in the territory of the country.

SAFETY REQUIREMENTS

This unit is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the unit by a person responsible for their safety. Children should be supervised to ensure that they do not play with the unit.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

Cleaning and user maintenance shall not be done by children without supervision.

Children shall not play with the appliance.

Precautions must be taken to avoid the back-flow of gases into the room from the open flue of gas or other fuel-burning appliances.

The appliance may adversely affect the safe operation of appliances burning gas or other fuels (including those in other rooms) due to back flow of combustion gases. These gases can potentially result in carbon monoxide poisoning. After installation of the unit the operation of flued gas appliances should be tested by a competent person to ensure that back flow of combustion gases does not occur.

While mounting the unit, avoid compression of the casing!

Misuse of the unit and any unauthorised modifications are not allowed.

Do not expose the unit to adverse atmospheric agents (rain, sun, etc.).

Transported air must not contain any dust or other solid impurities, sticky substances, or fibrous materials.

Do not use the unit in a hazardous or explosive environment containing spirits, gasoline, insecticides, etc.

Do not close or block the intake or exhaust vents in order to ensure efficient air flow.

Do not sit on the unit and do not put objects on it.

The information in this user's manual was correct at the time of the document's preparation.

The Company reserves the right to modify the technical characteristics, design, or configuration of its products at any time in order to incorporate the latest technological developments.

Do not touch the unit with wet or damp hands.

Do not touch the unit when barefoot.

BEFORE INSTALLING ADDITIONAL EXTERNAL DEVICES, READ TO THE APPROPRIATE USER MANUALS.

THE PRODUCT MUST BE DISPOSED SEPARATELY AT THE END OF ITS SERVICE LIFE.

DO NOT DISPOSE THE UNIT AS UNSORTED DOMESTIC WASTE.

IF THE OPERATING CONDITIONS DO NOT COMPLY WITH THOSE SPECIFIED IN THE USER MANUAL, CONSULT A QUALIFIED SPECIALIST



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PURPOSE

The unit is designed to recover the heat energy of the air being extracted from the room to heat up the clean supply air. Due to the ability to save heating energy by means of energy recovery, the unit is an important element of energy-efficient premises. The heat exchanger is a component part and is not designed for stand-alone operation. The heat exchanger efficiency is proportionate to the inlet air temperature. The product is rated for continuous operation. Transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, sticky substances, fibrous materials, coarse dust, soot and oil particles or environments favourable for the formation of hazardous substances (toxic substances, dust, pathogenic germs).



IF THE OPERATING CONDITIONS DO NOT COMPLY WITH THOSE SPECIFIED IN THE USER MANUAL, CONSULT A QUALIFIED SPECIALIST

DELIVERY SET

Name	Number
Heat exchanger	1 pc.
User's manual	1 pc.
Packing box	1 pc.

DESIGNATION KEY

KWT 50x90

Dimensions of the rectangular cross-section for connection [cm]
Series
 KWT: Plate heat exchanger

TECHNICAL DATA

The unit is designed for indoor application with the ambient temperature ranging from $-25\text{ }^{\circ}\text{C}$ up to $+50\text{ }^{\circ}\text{C}$ and relative humidity up to 60 % without condensation.

In cold, damp rooms, there is a possibility of freezing or condensation inside and outside the casing.

The humidity in the air condenses on the heat exchanger plates in winter, and at temperatures of $-5\text{ }^{\circ}\text{C}$ and below, the condensate starts to freeze over.

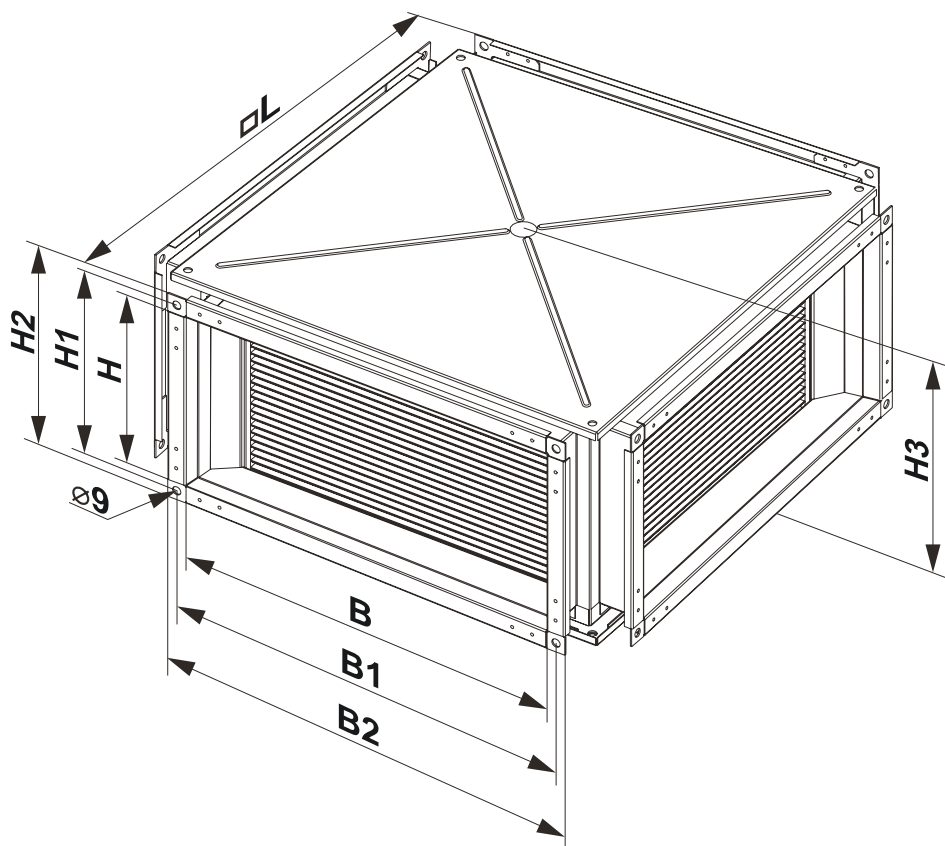
Under such conditions, heat recovery efficiency approaches 0.

It is recommended to prevent condensation from freezing over on heat exchanger plates.

In order to prevent condensation from forming on the internal walls of the product, it is necessary that the surface temperature of the casing is $2\text{--}3\text{ }^{\circ}\text{C}$ higher than the dew point temperature of the transported air.

Ingress protection rating against access to hazardous parts and water ingress is IP22.

The unit design is constantly being improved, thus some models may slightly differ from those described in this manual.



Type	Dimensions [mm]								Weight [kg]
	B	B1	B2	H	H1	H2	H3	L	
KWT 40x20	400	420	440	200	220	240	275	530	17.1
KWT 50x25	500	520	540	250	270	290	325	630	22.6
KWT 50x30	500	520	540	300	320	340	375	630	24.2
KWT 60x30	600	620	640	300	320	340	375	730	31.0
KWT 60x35	600	620	640	350	370	390	425	730	33.4
KWT 70x40	700	720	740	400	420	440	475	830	47.8
KWT 80x50	800	820	840	500	520	540	575	930	61.1
KWT 90x50	900	920	940	500	520	540	575	1130	78.8
KWT 100x50	1000	1020	1040	500	520	540	575	1130	78.3

DESIGN AND OPERATING PRINCIPLE

Assembled one by one, the plates form a single stack with air ducts.

The longitudinal ducts are placed in the plates in parallel to each other, which allow air flows to move without mixing.

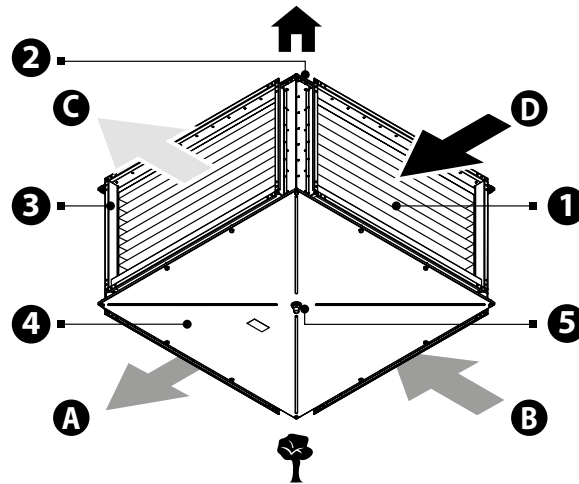
Stale air from the room enters the product and is exhausted outside.

Clean air from outside flows through the product and is supplied to the room.

Heat energy of warm (cooled) stale air coming from the room and clean cold (warm) air coming from outside is exchanged in the product. The heat recovery minimizes heat energy losses and operational costs for heating premises in the cold season or cooling premises in the hot season.

The supply and extract air streams flow in a counter-flow pattern, one towards the other.

The heat energy is transferred through thin walls of the plates.



1: heat exchanging insert, 2: top cover, 3: casing, 4: bottom cover (drain pan), 5: condensate outlet
A: exhaust air, B: intake air, C: supply air, D: extract air

The bottom cover, which is also a drain pan, is designed to collect the condensate that forms in the heat exchanger insert. The bottom cover has a condensate outlet in the lowermost point of the heat exchanger's casing.

MOUNTING AND SET-UP

The product can be operated in both horizontal and vertical positions, as long as condensate drainage from the air duct at the heat exchanger outlet is ensured.

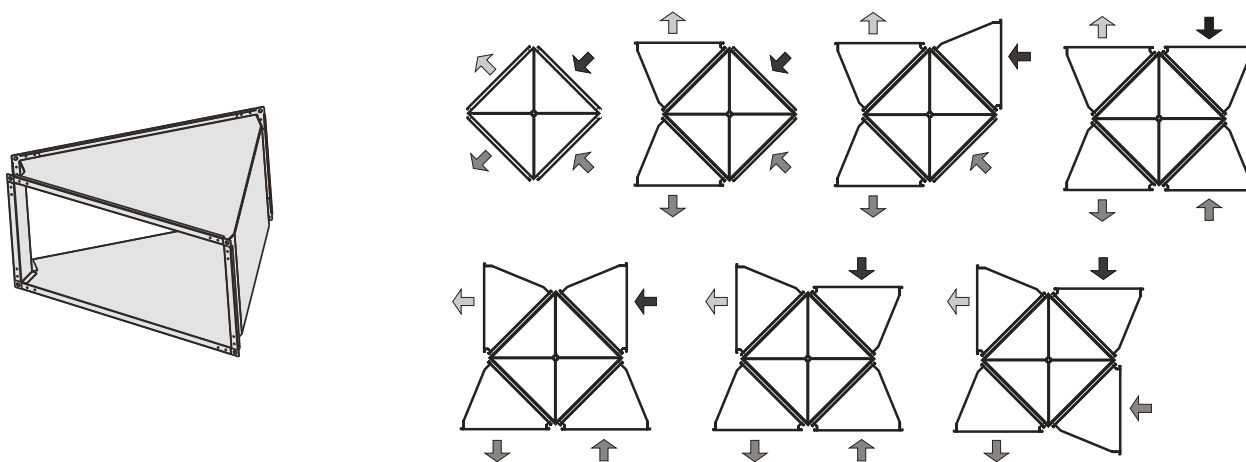
When calculating the mounting position of the unit, provide service access for maintenance and repair.

The product can be directly connected to rectangular air ducts with parallel air ducts, as well as with perpendicular or diagonal 45° distribution of air ducts.

The connection options are enabled through the use of BH bends.

The BH swivel bend is designed for easy installation of the heat exchanger with various air duct types.

The BH bend is not included in the delivery set and must be ordered separately.



Additional optional components for plate heat exchangers include summer inserts of the SB C4 series.

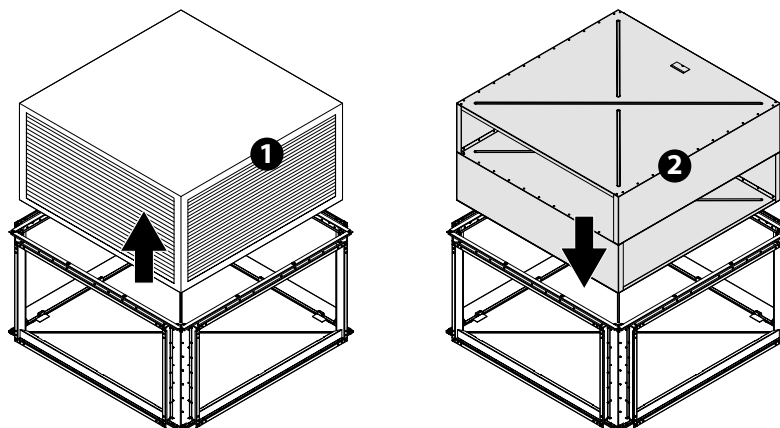
They are used in summer, preventing heat transfer from extract air to supply air.

It is recommended to use them in premises with high heat generation.

In this case, the unwanted heating of the supply air by the warmer exhaust air is minimized.

The summer insert is inserted in the unit instead of the heat exchanging insert, replacing it.

The SB C4 summer insert is not included in the delivery set and must be ordered separately.



1: heat exchanging insert, 2: summer insert



**READ THE USER'S MANUAL BEFORE INSTALLING THE UNIT.
BEFORE INSTALLING ADDITIONAL EXTERNAL DEVICES, READ THE APPROPRIATE USER
MANUALS.**

TECHNICAL MAINTENANCE

If during the visual inspection of the product the core is found to be soiled (dust, dirt, sand, etc.), it is recommended to clean the product. To clean the unit, carefully pull out the heat exchanging insert and clean the stack with a soft brush.

Alternatively, a vacuum cleaner with an attachment brush can be used for cleaning.

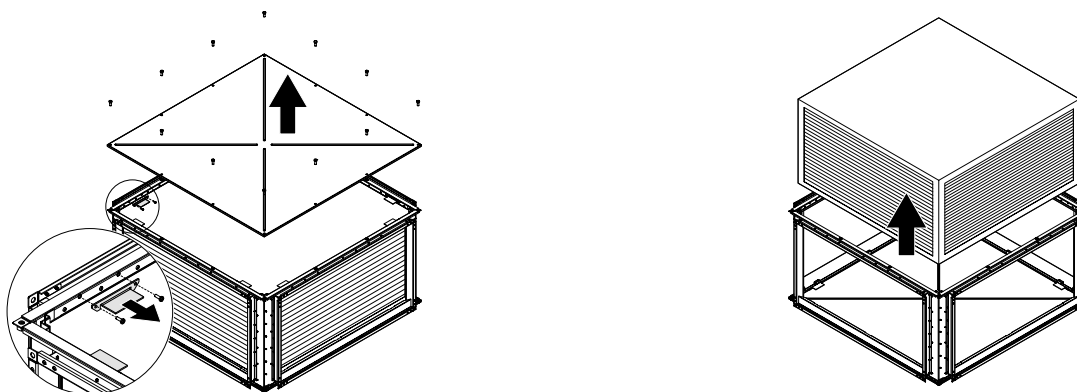
After the procedure, it is recommended to blow the product (using a vacuum cleaner) to reliably remove residual dust and soil from the working area.

IMPORTANT: when cleaning the product, do not use sharp tools and rough brushes, which may mechanically damage the core plates.

The heat exchanging insert may be rinsed with water if necessary.

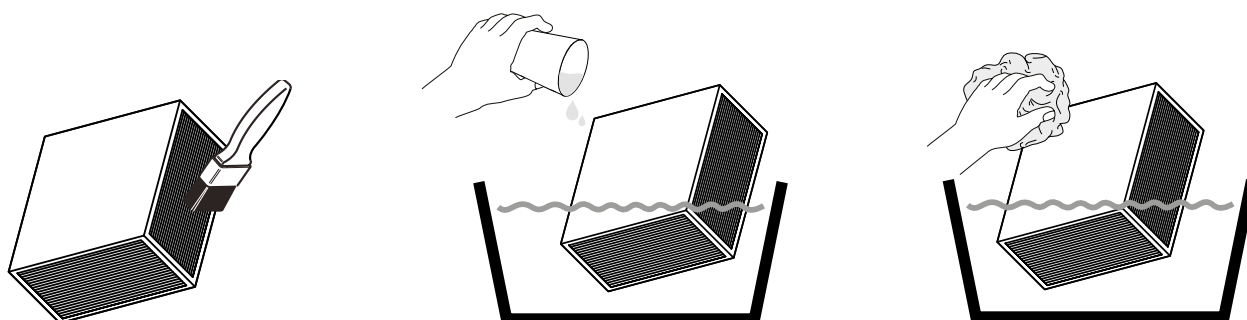
After carefully rinsing the insert with running water of standard pressure, dry it for one day in a well-ventilated area.

The heat exchange insert should be turned over while drying to ensure that the water is removed reliably.



IMPORTANT: do not use chemicals or high-pressure running water when rinsing, as this may deform the core plates.

The manufacturer is not liable for any damage that may be caused to the product during cleaning.



TROUBLESHOOTING

POSSIBLE FAULTS AND TROUBLESHOOTING

Trouble	Possible reasons	Troubleshooting
Low air flow. Cold supply air.	The product is soiled.	Clean or replace heat exchanging insert.
Water leakage.	The drainage system is soiled, damaged, or installed incorrectly.	Clean the drain line. Check the drain line slope. Make sure that the U-trap is filled with water and that drain hoses are frost protected.

If troubleshooting steps have failed, contact the Seller of the product.

In case of faults not described in the table, contact the Seller for to further information.

STORAGE AND TRANSPORTATION REGULATIONS

- Store the unit in the manufacturer's original packaging box in a dry closed ventilated premise with temperature range +5 °C...+40 °C and relative humidity up to 70 %.
- Storage environment must not contain aggressive vapors and chemical mixtures provoking corrosion, insulation, and sealing deformation.
- Use suitable hoist machinery for handling and storage operations to prevent possible damage to the unit.
- Follow the handling requirements applicable for the particular type of cargo.
- The unit can be carried in the original packaging by any mode of transport provided proper protection against precipitation and mechanical damage. The unit must be transported only in the working position.
- Avoid sharp blows, scratches, or rough handling during loading and unloading.
- Prior to the initial power-up after transportation at low temperatures, allow the unit to warm up at operating temperature for at least 3-4 hours.

MANUFACTURER'S WARRANTY

The product is in compliance with EU norms and standards on low voltage guidelines and electromagnetic compatibility. We hereby declare that the product complies with the provisions of Electromagnetic Compatibility (EMC) Directive 2014/30/EU of the European Parliament and of the Council, Low Voltage Directive (LVD) 2014/35/EU of the European Parliament and of the Council and CE-marking Council Directive 93/68/EEC. This certificate is issued following test carried out on samples of the product referred to above.

The manufacturer hereby warrants normal operation of the unit for 24 months after the retail sale date provided the user's observance of the transportation, storage, installation, and operation regulations. Should any malfunctions occur in the course of the unit operation through the Manufacturer's fault during the guaranteed period of operation, the user is entitled to get all the faults eliminated by the manufacturer by means of warranty repair at the factory free of charge. The warranty repair includes work specific to elimination of faults in the unit operation to ensure its intended use by the user within the guaranteed period of operation. The faults are eliminated by means of replacement or repair of the unit components or a specific part of such unit component.

The warranty repair does not include:

- routine technical maintenance
- unit installation/dismantling
- unit setup

To benefit from warranty repair, the user must provide the unit, the user's manual with the purchase date stamp, and the payment paperwork certifying the purchase. The unit model must comply with the one stated in the user's manual. Contact the Seller for warranty service.

The manufacturer's warranty does not apply to the following cases:

- User's failure to submit the unit with the entire delivery package as stated in the user's manual including submission with missing component parts previously dismantled by the user.
- Mismatch of the unit model and the brand name with the information stated on the unit packaging and in the user's manual.
- User's failure to ensure timely technical maintenance of the unit.
- External damage to the unit casing (excluding external modifications as required for installation) and internal components caused by the user.
- Redesign or engineering changes to the unit.
- Replacement and use of any assemblies, parts and components not approved by the manufacturer.
- Unit misuse.
- Violation of the unit installation regulations by the user.
- Violation of the unit control regulations by the user.
- Unit connection to power mains with a voltage different from the one stated in the user's manual.
- Unit breakdown due to voltage surges in power mains.
- Discretionary repair of the unit by the user.
- Unit repair by any persons without the manufacturer's authorization.
- Expiration of the unit warranty period.
- Violation of the unit transportation regulations by the user.
- Violation of the unit storage regulations by the user.
- Wrongful actions against the unit committed by third parties.
- Unit breakdown due to circumstances of insuperable force (fire, flood, earthquake, war, hostilities of any kind, blockades).
- Missing seals if provided by the user's manual.
- Failure to submit the user's manual with the unit purchase date stamp.
- Missing payment paperwork certifying the unit purchase.



FOLLOWING THE REGULATIONS STIPULATED HEREIN WILL ENSURE A LONG AND TROUBLE-FREE OPERATION OF THE UNIT



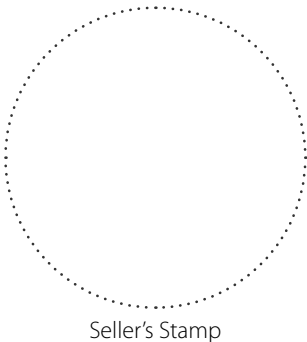
USER'S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP

CERTIFICATE OF ACCEPTANCE

Unit Type	Plate heat exchanger
Model	
Serial Number	
Manufacture Date	
Quality Inspector's Stamp	

SELLER INFORMATION

Seller	
Address	
Phone Number	
E-mail	
Purchase Date	
This is to certify acceptance of the complete unit delivery with the user's manual. The warranty terms are acknowledged and accepted.	
Customer's Signature	

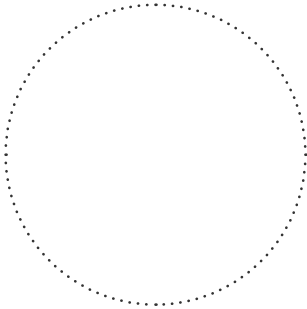


Seller's Stamp

INSTALLATION CERTIFICATE

The _____ unit is installed pursuant to the requirements stated in the present user's manual.

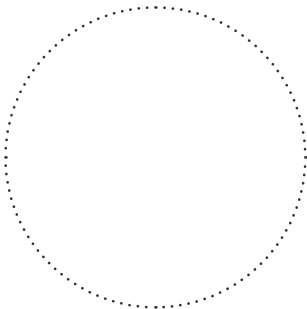
Company name	
Address	
Phone Number	
Installation Technician's Full Name	
Installation Date:	Signature:
The unit has been installed in accordance with the provisions of all the applicable local and national construction, electrical and technical codes and standards. The unit operates normally as intended by the manufacturer.	
Signature:	



Installation Stamp

WARRANTY CARD

Unit Type	Plate heat exchanger
Model	
Serial Number	
Manufacture Date	
Purchase Date	
Warranty Period	
Seller	



Seller's Stamp

