



# INSTALLATION AND OPERATING INSTRUCTIONS FOR THE KASTT ROTARY HEAT EXCHANGERS

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This document is an integral part of the Technical Conditions (hereinafter referred to as TC) for the design, ordering and delivery of rotary heat exchangers for heat recovery (hereinafter referred to as RHE).

## 1 GENERAL

This document contains instructions for transport, installation, commissioning, operation, servicing and maintenance of the RHE.

Before starting any of these activities, it is necessary to study these regulations and then follow them.

## 2 TRANSPORTATION TO THE INSTALLATION SITE, HANDLING ON THE CONSTRUCTION SITE

### 2.1 RHE transport

The RHE is transported by conventional means of transport and must always be carried out in a vertical position (i.e. the axis of rotation of the rotor is horizontal). The carrier shall be liable for securing the load against tipping and mechanical damage.

### 2.2 RHE handling on construction site

It is always necessary to move (transport) RHE around the construction site in a vertical position. RHE laying or tilting, even for a short period of time (to facilitate handling) is not permitted.

### 2.3 Manufacturer's measures

Each RHE has a DO NOT TURN (THIS SIDE UP) label and a FRAGILE GOODS label. In the case of proven non-compliance with the method of handling and transport, the contractor is not bound by the product warranty.

The product is delivered packed in shrinkable PE foil. Deviations are possible at the customer's request (pallet, foam profiles, bubble wrap, etc.).



## 2.4 Other

Each product is accompanied with a delivery note = warranty card.

Technical conditions are available at [www.kastt.cz](http://www.kastt.cz). Otherwise, the technical conditions are sent only on request.

The delivery of goods is fulfilled by enabling the loading of goods in the contractor's production plant. Another method of acceptance can be specified in the contract.

## 3 STORAGE ON THE CONSTRUCTION SITE

### 3.1 General

During storage, the product must be protected against mechanical damage and moisture. This requirement is based on the assumption of possible precipitation of air humidity under the PE foil and subsequent oxidation of galvanized elements.

## 4 RHE ASSEMBLY

### 4.1 Check before starting the installation

Before starting the installation, it is necessary to check:

- completeness of the delivery,
- potential damage caused during transport, handling and storage,
- rotor rotation (manually) - for RHE supplied as a whole,
- voltage system parameters,
- decisive performance parameters for the function of the device.

All deviations from the standard and defects must be eliminated before installation.

### 4.2 Installation, start-up

Installation and start-up of the RHE may only be carried out by a trained specialist installation company. The electrical installation and its commissioning may only be performed by a worker with professional qualifications according to the COOS Decree No. 50/78 Coll., Section 6 or higher.

Prior to commissioning, the equipment must be inspected for electrical installation and the M&R system in accordance with ČSN 34 1500. During the operation, the operator is obliged to perform regular inspections of electrical equipment within the deadlines according to ČSN 33 1500.

## 5 COMMISSIONING

### 5.1 Qualification

The RHE may only be put in operation by a professional company with an appropriate qualification.

### 5.2 Before the first start-up

Before starting the RHE for the first time, it is necessary to check:

- if the rotor is secured for transport, remove the locking elements,
- cleanliness of rotating and solid parts that come into contact (perform careful cleaning, especially from metal chips and sawdust; Al sawdust / chips are of a technological nature and do not reduce the quality of the product)
- whether the rotor is rotating freely,



- correct setting of rotor sealing elements (brushes, felt),
- connection to the air handling unit, pipes, or building construction,
- alignment of the rotor in the shaft bearing, or tightening the bearing,
- electrical installation,
- belt tension,
- the current protection of the electric motor must be set to a value lower than the value of the label current.

### 5.3 At the first start-up

At the first start-up, the following must be checked:

- correct direction of rotor rotation,
- correct setting of rotor sealing elements (brushes, felt),
- current consumption (must not exceed the value indicated on the electric motor nameplate),
- vacuuming of aluminum chips from the vicinity of the RHE (these are chips of a technological nature that do not reduce the quality of the product).

After fulfilling these preconditions, the RHE can be put into trial operation.

### 5.4 Training

The professional company putting the RHE into operation is obliged to train the user's staff, of which a written document must be provided. Without the certificate, the warranty will not come into effect and the equipment must not be put into permanent operation.

### 5.5 Other

It is forbidden to start or operate the RHE with the inspection hole open on the motor side or with the panels removed. During operation, it is necessary to prevent access of persons to moving parts.

## 6 INSTALLATION, OPERATION AND MAINTENANCE

### 6.1 Obligations of the operator

The operator checks the functions of all parts, the tightness of the connections, the temperature of the transported air, the clogging of the filters of the outdoor and return air, the belt tension, the pressure difference.

### 6.2 Maintenance, cleaning, service

Before starting maintenance, cleaning and service work on the RHE, it is essential to switch off the power supply and take measures to prevent the electric motor from switching on during this work.

At the same time, the status and function of the operating files to which the RHE is connected and with which the correct function is related are checked. These are in particular:

- electrical installations / wiring,
- M&R system,
- CH system,
- cooling system.

### 6.3 Preventive maintenance plan:

Interval			Subject of action	Activity performed, procedure
semi-annually	annually	when necessary		
	x		Drive function check	visual inspection
	x		Belt check	visual inspection, tensioning or replacement if necessary
	x		Sealing check	visual inspection, adjustment or replacement if necessary
	x		Bearing check	visual inspection, lubrication if necessary <sup>*1</sup> , or replacement
	x		Divided rotor casing check	visual inspection, tightening the screws (always perform after the first assembly, after 80 hours of operation)
		x	Clogging check	visual inspection, cleaning depending on the operation (type of air pollution) and clogging.
		x	Check of RHE surroundings	vacuuming of RHE surroundings from technological Al chips.
	x		Rotor run-out check	visual inspection, contacting service department of the RHE manufacturer, if necessary

\*1 Lubrication of bearings is performed according to the type of bearing:  
 Clamping bearings - lubricate with a grease nipple  
 Tapered roller bearings - lubricate with a grease nipple after removing the cover  
 Ball bearings - maintenance-free (lifetime filling)

Recommended lubricants:

Plastic lubricants - greases based on mineral oils with temp. range of use -30°C to + 130°C

The individual tasks must be unconditionally and demonstrably ensured by the operator, the service sheet of the device must be kept. The operator is further obliged to perform regular inspections of electrical equipment within the deadlines according to ČSN 33 00.

## 7 SPARE PARTS

Spare parts are not supplied with the product. If necessary, spare parts can be ordered from the manufacturer. The order must state the type of RHE, serial number, year of manufacture and specify the required part.

## 8 SERVICE

**8.1** Warranty and post-warranty service is provided by the manufacturer. The manufacturer may entrust service to trained service companies. Contact details will be provided by the manufacturer.



**8.2** When claiming goods, it is necessary to submit a delivery note = warranty card, protocol on operator training and a duly completed service book. All paid service operations are invoiced according to the valid price list of service works or according to the concluded service contract.

## 9 SAFETY INSTRUCTIONS



- It is important to pay attention to safety warnings and cautions, non-observance of which may cause personal injury or damage, or destruction of the product or its surroundings.
- Assembly of units, connection of electrical installation, commissioning of the unit, repairs, maintenance and operation may be performed only by a natural or legal person with a valid authorization.
- Operation, cleaning, maintenance and repairs of the product may only be performed by properly instructed and trained personnel in accordance with the instructions of the responsible employee.
- The user of the product is obliged to train or ensure the training of personnel responsible for the operation and maintenance of the product (hereinafter referred to as the operator), to acquaint them with these instructions and with all regulations and standards concerning the operation of the product, especially safety.
- The applicable standards, safety regulations and generally accepted technical rules must be observed during installation, electrical connection, commissioning, repairs and maintenance of the units.
- Under no circumstances is it allowed to connect the device to the power supply before connecting the protection system.
- Under no circumstances may you carry out repairs or maintenance when the device is connected to the power supply.
- The unit must be disconnected from the power supply during inspections, cleaning and repairs.
- The heat exchangers may only be used for the operating conditions for which they were delivered. The manufacturer is not responsible for any damage caused by improper use and the user bears all risk.
- Labels / type plates must be kept intact and clean for the life of the unit. Be careful when cleaning the unit, solvents and thinners will damage the labels!
- During transport and relocation, the provisions of ČSN 27 0144 must be observed and the safety of transport must be observed.
- Changes or additions or modifications to the heat exchangers that could affect safety must not be made without the consent of the manufacturer.
- When using and operating the heat exchangers, the instructions in this manual or the conditions agreed with the manufacturer for atypical design must be observed.



- Operation of the heat exchanger with the inspection panel (side panel) removed is strictly forbidden.
- The installation site of the heat exchanger and the entire air handling unit must be equipped with the necessary safety and fire protection in accordance with local regulations.