

# ZERN ENGINEERING

## with OJ Electronics drive

■ UNIQUENESS

■ INNOVATION

■ RESULT

## ZERN ENGINEERING WITH OJ ELECTRONICS DRIVE

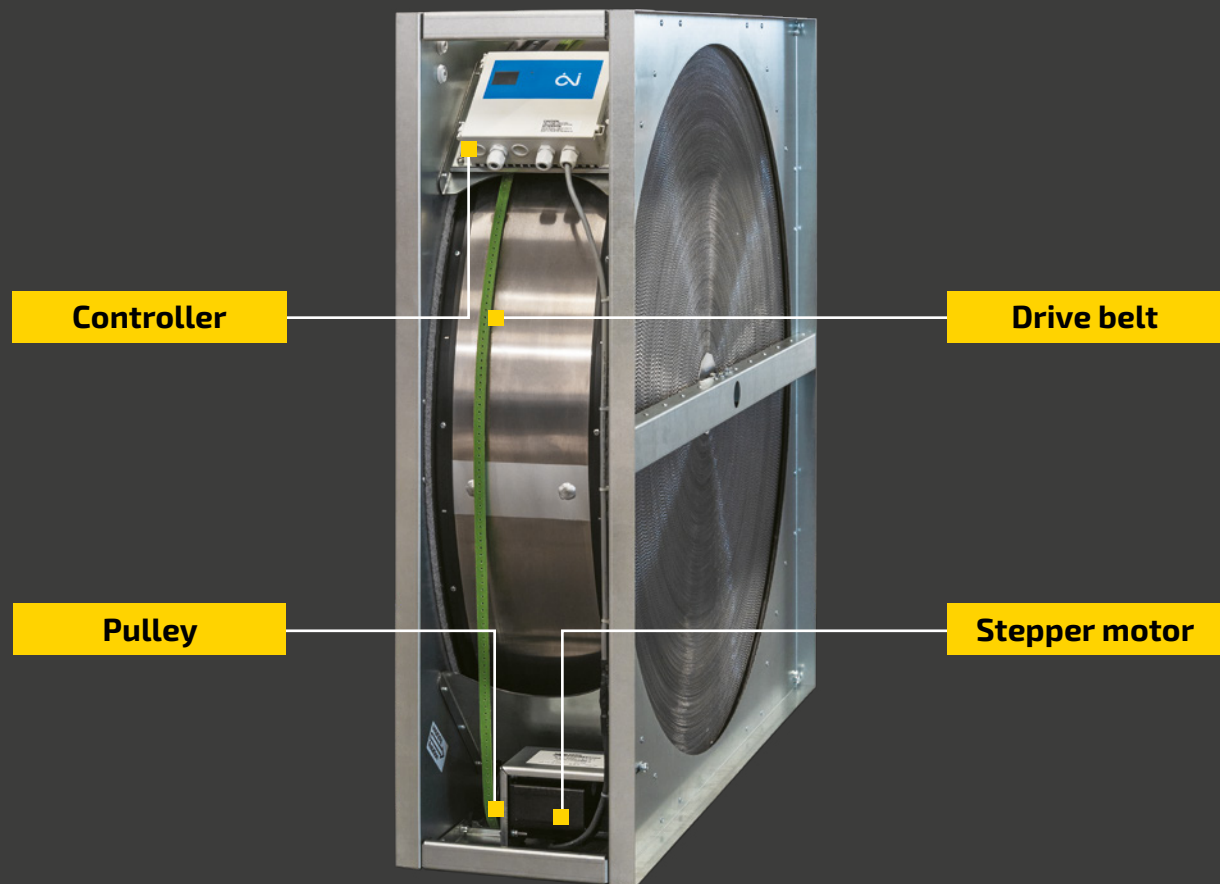
The drive is one of the main elements of the rotary heat exchanger and is responsible for rotating the heat-intensive matrix, which is responsible for the heat exchange.

Uninterrupted, precise, and coordinated operation of all components of the rotary heat exchanger is key to the operation of the entire ventilation system.

The latest OJ Electronics drive exemplifies our dedication to advancing technological frontiers. It serves not merely as a component but as the central element in a meticulously crafted system, guaranteeing unprecedented efficiency in heat exchange. Prioritizing precision, reliability, and energy conservation, our drive takes the performance of your rotary heat exchanger to a next level.

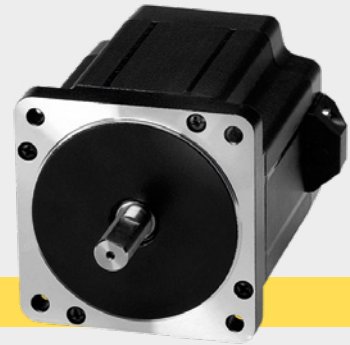
### DRIVE COMPOSITION

The main drive components of the rotary heat exchanger:



## STEPPER MOTOR

A stepper motor is a type of brushless DC electric motor that divides a full rotation into a series of equal steps. Unlike conventional motors, stepper motors do not require continuous rotation for precise control, making them ideal for applications that demand accuracy and reliability.



### Key features of stepper motor:



Precise positioning



Open loop control



High torque at low speeds



Reliability and durability



Cost-effective solution

## OJ DRHX CONTROLLER

The OJ DRHX is a state-of-the-art controller designed specifically for rotary heat exchangers, bringing a new level of precision and efficiency to HVAC systems. Developed by OJ Electronics, a trusted name in the industry, this advanced controller is tailored to meet the demanding requirements of modern HVAC applications.



### Key features of OJ DRHX controller:



Intelligent stepper motor control



User-friendly interface



Adaptive programming



Diagnostic capabilities



Compatibility with different heat exchangers

## PULLEY AND DRIVE BELT

The pulley and drive belt are standard products and are selected according to the diameter of the rotor wheel and the required operating parameters.



## ADVANTAGES OF USING STEPPER MOTORS IN ROTARY HEAT EXCHANGERS:



### **Optimized energy efficiency.**

The precise control provided by stepper motors ensures that rotary heat exchangers operate at peak efficiency, minimizing energy consumption and reducing operating costs.



### **Smooth operation.**

The step-by-step movement of the motor results in smooth and controlled rotations, preventing sudden shocks or vibrations. This feature is particularly important in applications that require consistent and smooth motion.



### **Easy integration with controllers.**

When paired with integrated controllers, stepper motors can be easily integrated into complex systems. This ease of integration improves overall system efficiency and performance.



### **Improved system accuracy.**


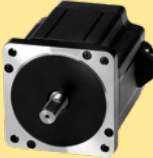
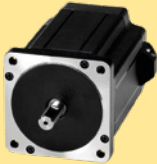
The ability of stepper motors to move in precise increments improves the accuracy of rotary heat exchangers, ensuring that they reach and maintain the desired position with minimal error.



### **Reduced heat generation.**

Stepper motors generate less heat during operation than some other motor types, contributing to a cooler operating environment and preventing potential heat-related problems.

## STEPPER MOTOR DATA

Stepper motor	Units	MRHX-3P02N-03Cx	MRHX-3P04N-03Cx	MRHX-3P08N-03Cx
				
Torque	Nm	2	4	8
Power (250 rpm)	W	55	110	260
Weight	Kg	≈ 2.4 kg	≈ 3.5Kg	≈ 5 Kg
Compatible with rotary wheel	Ø, mm	500 - 600	601 - 1800	1801 - 2500
Stepper motor voltage	V	3 x 0-200~	3 x 0-200~	3 x 0-200~
Revolutions	rpm	1 - 400	1 - 400	1 - 400
Operating temperature	°C, °F	-40°C/+40°C -40°F/+104°F	-40°C/+40°C -40°F/+104°F	-40°C/+40°C -40°F/+104°F
Storage temperature	°C, °F	-40°C/+70°C -40°F/+158°F	-40°C/+70°C -40°F/+158°F	-40°C/+70°C -40°F/+158°F
Dimensions	mm	85 x 85 x 67 *1	85 x 85 x 97 *1	85 x 85 x 156 *1
Shaft diameter	mm	12	12	12
Cable length (with connector)	mm	300	300	300
Electrical connection	-	4-pole Tyco MATE-N-LOK	4-pole Tyco MATE-N-LOK	4-pole Tyco MATE-N-LOK
Max. radial force (20 mm from the flange)	N	250	250	250
Max. axial force	N	60	60	60
Ingress protection	IP	54	54	54

x=5: CE approval, \*1: +3mm in length (only for variants with x=7)

## ADVANTAGES OF USING THE OJ DRHX CONTROLLER IN ROTARY HEAT EXCHANGERS:



### **Energy savings.**

The intelligent control provided by the OJ DRHX results in precise and optimized operation, minimizing energy consumption and contributing to significant cost savings over time.



### **Improved system reliability.**

With adaptive programming and diagnostic capabilities, the controller ensures the reliability and longevity of the rotary heat exchanger, reducing the risk of unexpected failures.



### **Customizable to your needs.**

Tailor the controller settings to the specific requirements of your HVAC system. The customizable nature of the OJ DRHX allows for optimum performance in a variety of applications.



### **Compliance with industry standards.**

The OJ DRHX meets and exceeds industry standards, giving you the peace of mind because your HVAC system is equipped with a controller of the highest quality and reliability.



### **Seamless integration.**

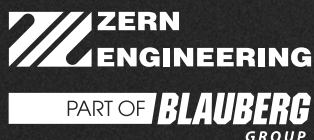
Integrating the OJ DRHX into your rotary heat exchanger system is a seamless process thanks to its compatibility with various heat exchangers and user-friendly interface.

## OJ DRHX CONTROL UNIT DATA

Control Unit	DRHX-1055-MAD5	DRHX-1220-MAD5
		
Modbus	Yes	Yes
0-10V	Yes	Yes
Display	Yes	Yes
Intelligent rotor	Standard	Standard
External rotor	Accessories	Accessories
Aut. purge function	Yes	Yes
Deformation assurance	Yes	Yes
Max power	55W	110/220W
Supply power	1x230VAC	1x230VAC
Nominal torque	2Nm	4/8Nm
Max rpm	400rpm	400rpm *
Motor power	3x0-200VAC	3x0-200VAC
Dimensions (b, h, d) [mm]	183.0x142.7x55.0	183.0x142.7x55.0
Ingress protection (IP)	IP54	IP54

\*: Only for 4Nm motor





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