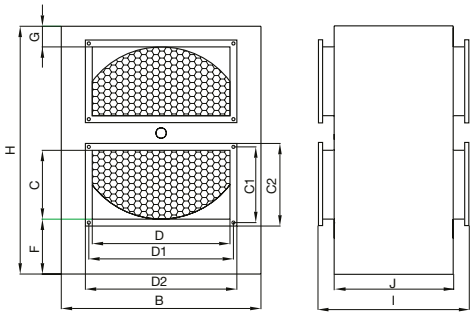
RRW HE

energy efficient system



Technical parameters

Size	B [mm]	C [mm]	C1 [mm]	C2 [mm]	D [mm]	D1 [mm]	D2 [mm]	F [mm]	G [mm]	H [mm]	I [mm]	J [mm]	weight [kg]
RRW 200 HE	580	200	220	240	400	420	440	160	60	720	442	295	59
RRW 225 HE	580	250	270	290	500	520	540	120	20	720	442	295	62
RRW 250 HE	680	300	320	340	500	520	540	100	20	820	442	295	67
RRW 285 HE	680	300	320	340	600	620	640	100	20	820	442	295	67
RRW 315 HE	780	350	370	390	600	620	640	100	20	920	442	295	71
RRW 355 HE	780	400	420	440	700	720	740	50	20	970	442	295	75
RRW 400 HE	1080	500	520	540	800	820	840	60	60	1220	442	295	110
RRW 450 HE	1080	500	520	540	1000	1020	1040	60	60	1220	442	295	110

Cabinet
The exchanger housing is made of steel, galvanized sheet. There are flanges on the fronts of the cabinet for fixing the inlet and outlet square piping. There is an inspection cover on the side of the case to access the motor or replace the belt.

Regeneration
Rotary exchangers meet the requirements of EC Regulation No. 1253/2014. The accumulative mass of the exchanger rotor is formed by a cylinder, which has a number of small channels, created by winding a straight and corrugated aluminum alloy foil. The rotor is housed in ball bearings with permanent lubrication. The rotor seal is non-contact, there is a clearance between the rotor and the seal that can be defined.

3.2

Motor
The drive of the rotor by means of a rubber belt is ensured by an asynchronous motor with a short armature with a worm gearbox. Thus approx. 12 rpm is achieved. For enthalpy exchangers, approx. 20 rpm is achieved. The motor can be equipped with a frequency converter with central and autonomous regulation of the supply air temperature. The heat exchangers can be equipped with anti-freeze protection provided by a pressure sensor, which slows down the rotor speed in case of increased pressure loss on the rotary heat exchanger. However, under normal conditions, freezing does not occur. The direction of rotation is indicated by a glued arrow.

Speed control
For basic applications, regulation by switching RRW HE on and off using a thermostat is sufficient, when a 1×230 V/50 Hz motor is supplied with the exchanger. This regulation is limited in the case of large heat loads, when it is necessary to limit the ability to transfer a large amount of heat. Consult this option with our experts. Scheme recommended by the manufacturer on request. RRW HE rotary heat exchangers can also be regulated using a frequency converter, when the heat exchanger is fitted with a 3×230 V/50 Hz motor.

Variants
• RRW xxx HE yyy rotary regenerative heat exchanger, where xxx is the size, yyy is the drive type (G1-AC or G3-AC).
The basic design is with a 1×230 V/50 Hz motor (ON/OFF regulation). An alternative is a 3×230 V/50 Hz motor (frequency converter control). The engine type needs to be specified in the order.

• G1-AC drive 40 W 1×230 V/50 Hz
• G3-AC drive 40 W 3×230 V/50 Hz

Instructions
If the correct design is maintained, the exchanger does not require frequent cleaning, the exchanger bearings and the motor are maintenance-free. In the terms set by the operating regulations (but at least once a year), it is necessary to check the sealing brushes, the drive belt and carry out electrical revisions. In demanding operating conditions with higher dust and humidity, the operating regulations must be consulted with the heat exchanger manufacturer.

Information
RRW HE rotary heat exchangers are intended for modular systems with fans IRB, IRT for square pipe systems (400×200 to 1000x500 mm), respectively with a reduction for fans CVB, CVT, CVAB/CVAT-N, CAB into a circular piping (diameter 200 to 500 mm). On special order, rotary regenerative heat exchangers can also be produced for ILHT or CVTT fans. The supplied air-air rotary regeneration exchangers can be used in central and decentralized ventilation systems in industrial and comfort air conditioning. The air flow is in the range from 600 to 5350 m³/hour. This range is covered by a series of 4 types. For standard conditions, we recommend a flow velocity in the range of 2 to 4 m/s. The RRW HE rotary heat exchanger enables the transfer of heat (in the case of a special design, also the transfer of enthalpy, i.e. heat and moisture) from the exhaust air to the supply air. Heat is transferred by means of the storage mass of the rotor, where approximately one half is in the exhaust air flow and the other half is supplied with outdoor air. Cold transfer may occur under certain conditions. By rotating the rotor, the heat exchange surface of the exchanger is located alternately in the stream of incoming and outgoing air, and thus the transfer of heat or cold (or enthalpy) occurs. These exchangers belong to devices with high heat transfer efficiency (enthalpy). Therefore, their use is suitable for all air-conditioning systems with higher air flows. They are very suitable as part of assembly units for supply and exhaust of ventilation air. There is then a reduction in operating costs and thus a reduction in the return on investment.

• wheel diameter 500, 600, 700, 1000 mm
• air speed 2 to 4 m/s
• flow rate 600–5350 m³/h
• motor power 40 W
• speed approx. 12 rpm.
• efficiency 73 to 80 %

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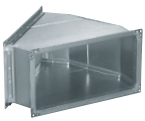
proposal, consultation of the regulation set on tel. 602 679 469



IFS 45, IFS 90 – fittings in the size range 200 to 450 are used to connect rotary heat exchangers and recuperators

RRW 200 HE, RRW 225 HE

wheel diameter 500 mm

flow	pressure loss	effectiveness according to EC No. 1253/2014	air speed [m/s]	
[m³/h]	[Pa]	[%]	RRW 200 HE	RRW 225 HE
600	100	79,1	2,1	1,3
700	117	78,1	2,4	1,6
800	135	77,0	2,8	1,8
900	152	75,9	3,1	2,0
1000	170	74,8	3,5	2,2
1150	197	73,1	4,0	2,6
1250	215	71,9	4,3	2,8

RRW 250 HE, RRW 285 HE

wheel diameter 600 mm

flow	pressure loss	effectiveness according to EC No. 1253/2014	air speed [m/s]	
[m³/h]	[Pa]	[%]	RRW 250 HE	RRW 285 HE
950	108	78,7	1,8	1,5
1100	125	77,6	2,0	1,7
1250	143	76,5	2,3	1,9
1400	161	75,3	2,6	2,2
1550	179	74,2	2,9	2,4
1700	197	73,0	3,1	2,6
1850	216	71,8	3,4	2,9

RRW 315 HE, RRW 355 HE

wheel diameter 700 mm

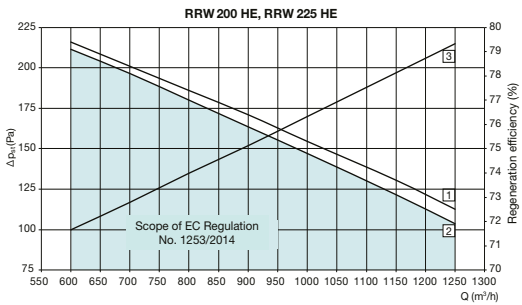
flow	pressure loss	effectiveness according to EC No. 1253/2014	air speed [m/s]	
[m³/h]	[Pa]	[%]	RRW 315 HE	RRW 355 HE
1100	90	79,7	1,5	1,1
1350	111	78,4	1,8	1,3
1600	133	77,1	2,1	1,6
1850	154	75,8	2,4	1,8
2100	176	74,4	2,8	2,1
2350	198	73,0	3,1	2,3
2550	216	71,8	3,4	2,5

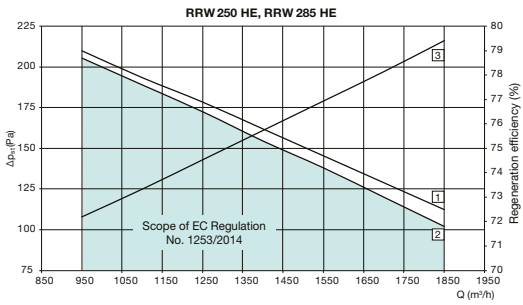
RRW 400 HE, RRW 450 HE

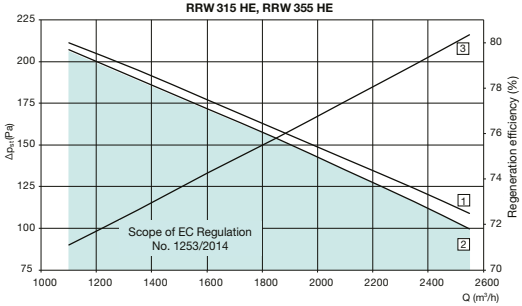
wheel diameter 1000 mm

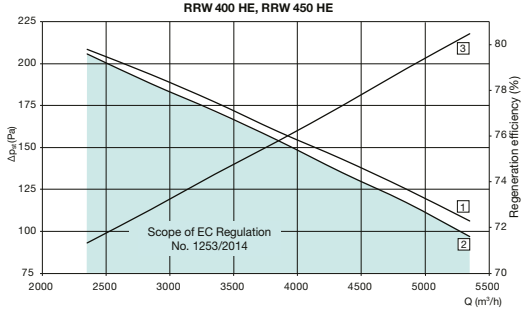
flow	pressure loss	effectiveness according to EC No. 1253/2014	air speed [m/s]	
[m³/h]	[Pa]	[%]	RRW 400 HE	RRW 450 HE
2350	93	79,6	1,6	1,3
2850	113	78,3	2,0	1,6
3350	134	77,1	2,3	1,9
3850	154	75,8	2,7	2,1
4350	175	74,4	3,0	2,4
4850	197	73,1	3,4	2,7
5350	218	71,6	3,7	3,0

Characteristics









1 efficiency for parameters: WITHDRAWAL: 22 °C/ 50 % RH SUPPLY: -12 °C/90 % RH

2 effectiveness according to EC/1253/2014 3 pressure loss