

HRR

Heat recuperators with rotary heat exchanger.
Air flow rates from 1.000 to 30.000 m³/h

The units of the HRR series have been designed to satisfy the requirements for thermo-hygrometric wellness and air change-over, typical of public ambiances.

The units are characterized by a high-efficiency rotary heat exchanger (with the possibility to obtain the hygroscopic treatment of the surface). The recuperation, thus obtained from the heat exchanger, allows to minimize the use of the air conditioning unit, giving as end-result an elevate saving in the cost management.

High economic savings are granted by the use of plug fans with electronic control motors (yp to 17) or with high-efficiency motors controlled by frequency inverter.

These units are fully "plug & play" ones, since they are equipped with electronic control and electrical panel. The special control software is able to maximize the use of the unit according to the energetic conditions.

>Versions

7 sizes available for internal or external installation.

2 versions:

- with rotary exchanger (T);
- with rotary hygroscopic exchanger (H).

>Accessories

RSR recirculation damper

RBF cold water coil module with 3-way valve.

RBC hot water coil module with 3-way valve.

RBP cold water coil and water re-heating coil module with 3-way valve.

RBE electric coil module.

VRC condensate drain pan.

MSS module with sound attenuators.

TDP protection roof.


Further accessories (ex: direct expansion coil module, dampers, anti-vibration dampers, etc.) are available on request.



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>Main technical data

HRR Model		07	09	12	15	17	21	24
Version		T	T	T	T	T	T	T
Nominal supply and exhaust air flows	m³/h	1.100	1.950	3.700	5.950	7.800	12.200	16.100
Maximum supply and exhaust static available pressure	Pa	420	660	1.100	1.120	1.040	1.440	1.530
Nominal total input power	kW	0,76	1,88	5,79	7,78	9,78	19,41	26,29
Maximum supply and exhaust air flows	m³/h	2.000	4.370	5.880	10.650	14.800	24.750	31.350
Maximum total input power	kW	0,82	2,04	6,90	8,78	10,24	22,37	30,37
Total recovered capacity ¹	kW	10,7	19	36	57,9	75,9	118	156
Total recovered sensible capacity	kW	7,4	13,1	24,9	40,1	52,5	82,1	108
Winter exchanger efficiency ¹	%	80	80	80	80	80	80	80
Total recovered cooling capacity ²	kW	2,8	4,9	9,3	14,9	19,5	30,5	40,3
Sensible cooling capacity ²	kW	2,7	4,7	9	14,4	18,9	29,6	39
Summer exchanger efficiency ²	%	80	80	80	80	80	80	80
Total number of fans	n°	2	2	2	2	2	4	4
Sound power level 	dB(A)	65,6	67	75,3	76,7	78	78	79
Power supply	ph-V-Hz	400 - 3+N - 50						
RBC warm water coil								
Heating capacity ³	kW	8,7	16	27	46,2	60,6	97,7	129
Water flow ³	m³/h	0,8	1,4	2,4	4	5,2	8,4	11,1
Water pressure drop ³	kPa	16	16	13	16	22	27	8
RBF Cold water coil								
Total cooling capacity ⁴	kW	9,3	17,3	28,8	59,8	79,9	114	161
Sensible capacity ⁴	kW	3,9	7,3	12,3	23,9	31,9	45,8	64,7
Water flow ⁴	m³/h	1,6	3	4,9	10,3	13,7	19,7	27,9
Water pressure drop ⁴	kPa	19	19	18	23	34	10	12

For the performances of H Version, please contact FAST SpA.

¹ Performances referred to: fresh air volume same as exhaust air volume; fresh air inlet temperature -5°C, 80% RH; room air temperature 20°C, 50% RH.

² Performances referred to: fresh air volume same as exhaust air volume; fresh air inlet temperature 35°C, 50% RH; room air temperature 26°C, 50% RH.

³ Coil inlet water temperature 70°C; difference in temperature inlet-outlet from the coil 10°C. Fresh air inlet temperature -5°C, 80% RH; room air temperature 20°C, 50% RH.

⁴ Coil inlet water temperature 7°C; difference in temperature inlet-outlet from the coil 5°C. Fresh air inlet temperature 35°C, 50% RH; room air temperature available 26°C, 50% RH.

 Supply fan (not ducted) sound pressure level with static useful pressure equal to 0 Pa.

>Features

Frame and panels: bearing frame and sandwich panels 50 mm thick in galvanized sheet inside and pre-painted galvanized steel sheet outside, insulation with injected polyurethane foam (density 50 kg/m³). Different type of panels are available on demand.

Base frame with continuous galvanized steel profiles. Sizes 07 and 09 come in a single block, while others are divided in sections. The inspection of the unit is possible on both sides.

Filters: on the fresh air and exhaust air side, standard with soft bags class F7 (according to EN 779).

All filters are removable from the side and equipped with differential pressure switch in order to signal the filters' clogging

High efficiency heat exchanger rotary type (with hygroscopic treatment as option) and low pressure drop.

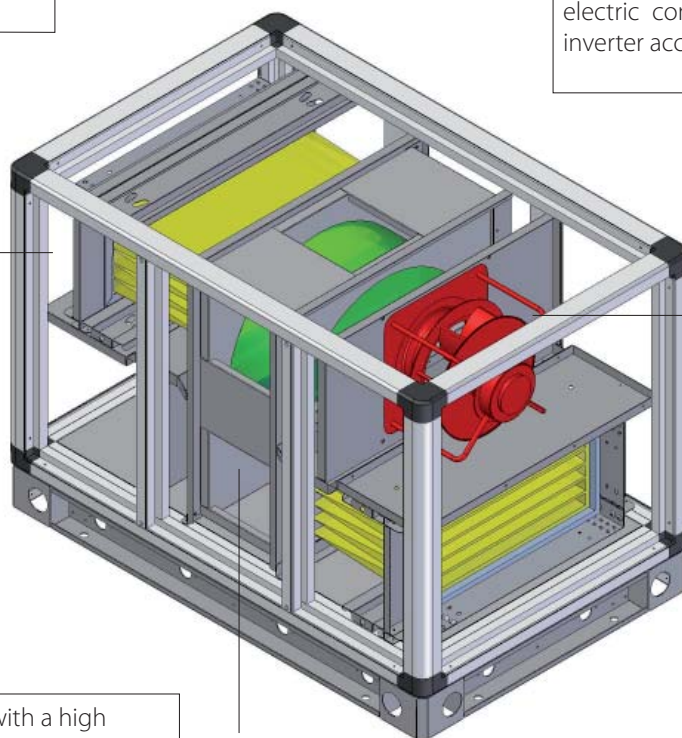
Exhaust and supply fans :

Equipped with high efficiency backward-curved blades plug fans. Electric motors are directly-coupled to the fans for sizes 07-17 and with inverter for sizes 21-24

Electronic control: the unit can be equipped with an electric and control panel inside in order to reduce the energy consumptions. Serial port for communication on RS485 with MODBUS Master/Slave protocols .

Series soft septs filters class F7

Plug fan are equipped with electric control motor or with inverter according to the size



The unit is equipped with a high efficiency rotary heat exchanger

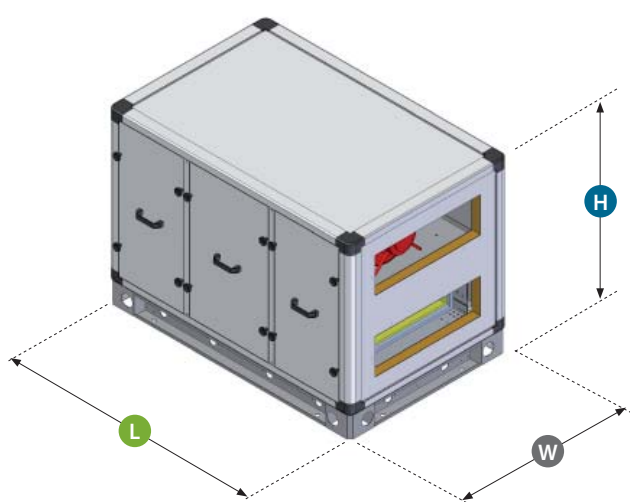
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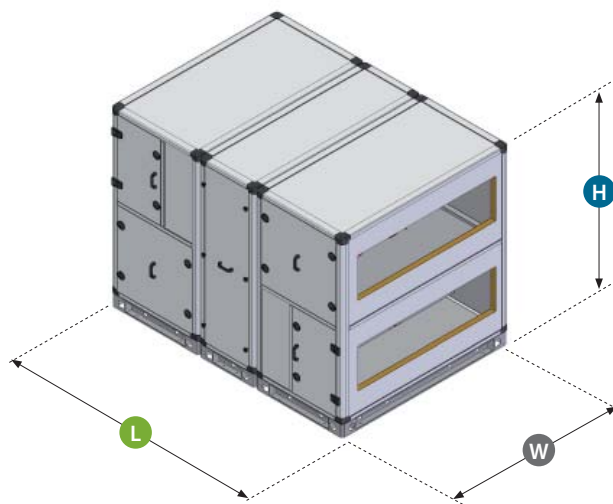
> Sizes and weights

HRR Model			07	09	12	15	17	21	24
Length	L	mm	1.375	1.535	2.045	2.365	2.365	3.005	3.005
Width	W	mm	895	1.005	1.375	1.695	1.855	2.335	2.665
Height (with base fame H=120mm)	H	mm	965	1.285	1.445	1.765	2.085	2.405	2.725
Weight		kg	240	340	570	820	1.010	1.610	1.980

Dimensions and weights of the base unit.



HRR 07-09



HRR 12-24