



## ► Water Cooled Water Chillers

# RWC/RWR 170 to 360



161 to 312 kW



**Engineering Data Manual**

**EDM RWC-A.3GB**

Date : May 2007

Supersedes : TM RWC-A.2GB/09.05

*Airwell*

# Specification

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## General characteristics

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The water-cooled water chillers RWC and remote air-cooled water chillers RWR are a compact design suitable for chilled water or glycol cooling. They are designed to be located in a plant room.

RWC chillers require a cooling tower or dry cooler for heat rejection, and RWR chillers require an air-cooled condenser (supplied by others) for heat rejection.

## Benefits

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A narrow width and low base area make them an ideal replacement for existing chillers in refurbished buildings.

The range is available with refrigerant R407C with zero ozone depletion value.

Units are easy to install with low weight, single power and control supplies plus flow and return water connections.

The units are acoustically lined with high-density insulation to ensure a particularly quiet operation.

All models have two refrigerant circuits to provide 50% safety factor, and user-friendly microprocessor control. All components are easily accessible for maintenance operations.

The chillers shall be completely factory assembled with all interconnecting refrigerant piping and wiring ready for field installation. After assembly a full test run shall be performed with water flowing through the evaporators.

The RWC models shall be pressure tested, evacuated and fully charged with refrigerant and include an initial oil charge. RWR models shall be pressure tested evacuated and include a nitrogen holding charge and an initial oil charge.

The unit base and frame shall be of heavy gauge galvanized steel fastened with stainless steel nuts and bolts. Models shall have a galvanized steel enclosure with an access panel. Galvanized steel parts shall be finished in baked paint colored white RAL 9001.

## Compressors

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The Scroll compressors shall have internal motor protection and an internal overflow valve from discharge to suction. Starting shall be direct on line. The compressors shall be mounted on rubber anti-vibration pads and housed in a separate enclosure ensuring an efficient acoustic insulation.

## Evaporators

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The dual circuit evaporator shall be the direct expansion type with refrigerant in the tubes and chilled liquid flowing through the baffled shell. The design working pressure of the shell will be 10 bars and 30 bars on the tube side. Vent and drain connections shall be provided. The cooler shall be covered with flexible, closed-cell, foam insulation.

## Condensers

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The condenser shall be a cleanable shell and tube type with a built in sub-cooler and removable water heads. The design working pressure on the waterside shall be 10 bars.

For units RWR, one provision shall be made for connection to a remote air-cooled condenser (supplied by others).

## Refrigerant circuits

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Two refrigerant circuits shall be provided and each circuit shall include : a service valve for refrigerant charging, suction, discharge and liquid line isolating valves, a sight glass with moisture indicator, a thermostatic expansion valve, and a wire mesh filter.

## Power and control panel

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All controls and motor starting equipment necessary for full unit operation shall be factory wired and tested. Control and power components shall be located in separate compartments. The panel shall be designed to IP53 weather protection.

The control compartment shall contain an electronic circuit board and a soft touch key control panel with display of operating functions, alarms and stops.

The power compartment shall contain compressor contactors, fuses and supply protection.

## Accessories and options

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### Acoustic Kit

Acoustic jacket fitted on each compressor.

### Remote Control Kit

Field mounted control panel to provide remote control.

### HP & LP Pressure Gauge Kit

Factory fitted mechanical gauge kit for display of unit operating parameters.

### Condenser Manifold Kit (RWC only)

Field mounted manifolds to provide a single point of connection for leaving and return water circuits of condensers.

### Flow Switch Kit

Field mounted flow switches for evaporator water circuits.

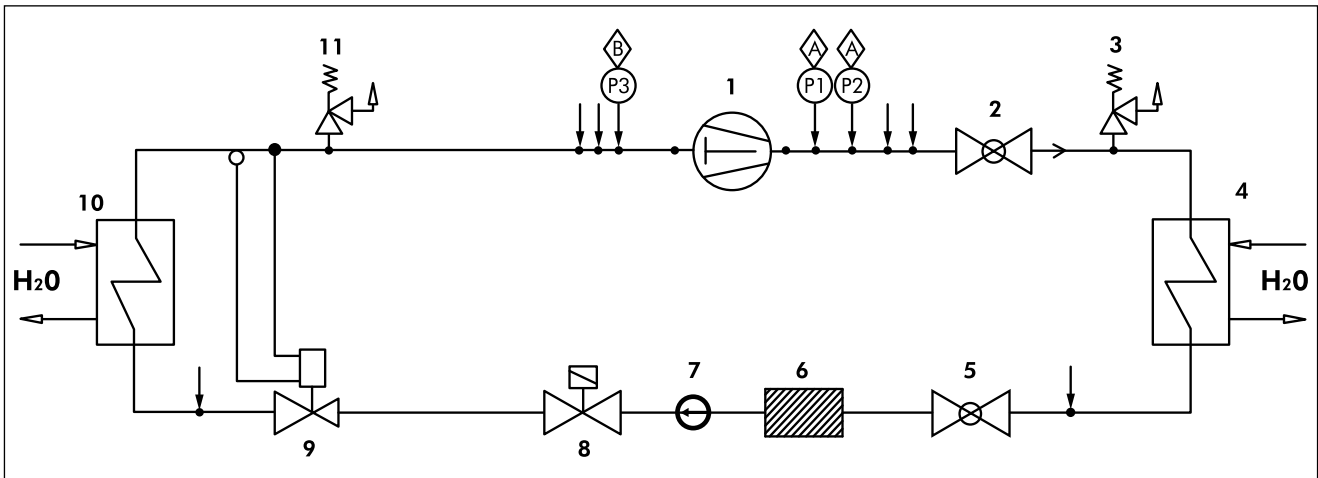
### Pressostatic Valves (RWC only)

Pressostatic valves are remotely located in the leaving condenser water pipe work from each of the two condensers. They are wired to the RWC control panel.

When the actual condensing pressure equals the control set point, the valves open the modulating water flow.

# Refrigerant Flow Diagrams

## RWC units



COMPONENTS	
1	Compressor
2	Discharge valve
3	PED safety valve
4	Condenser
5	Liquid valve
6	Filter
7	Sight glass
8	Solenoid valve
9	Thermal expansion valve
10	Evaporator
11	PED safety valve

SAFETY DEVICES	
↓	Pressure tapping points and refrigerant charge/discharge points
⬠A	HP pressure switch
⬠B	LP pressure switch

### Cooling mode

Low pressure liquid refrigerant enters the cooler (Evaporator) and is evaporated and superheated by the heat energy absorbed from the chilled water passing through the cooler shell.

Low pressure vapour enters the compressor where pressure and superheat are increased. Heat is rejected by the water cooled condenser.

The fully condensed and subcooled liquid refrigerant then enters the expansion valve where pressure reduction and further cooling takes place before returning to the cooler.

### Heating mode

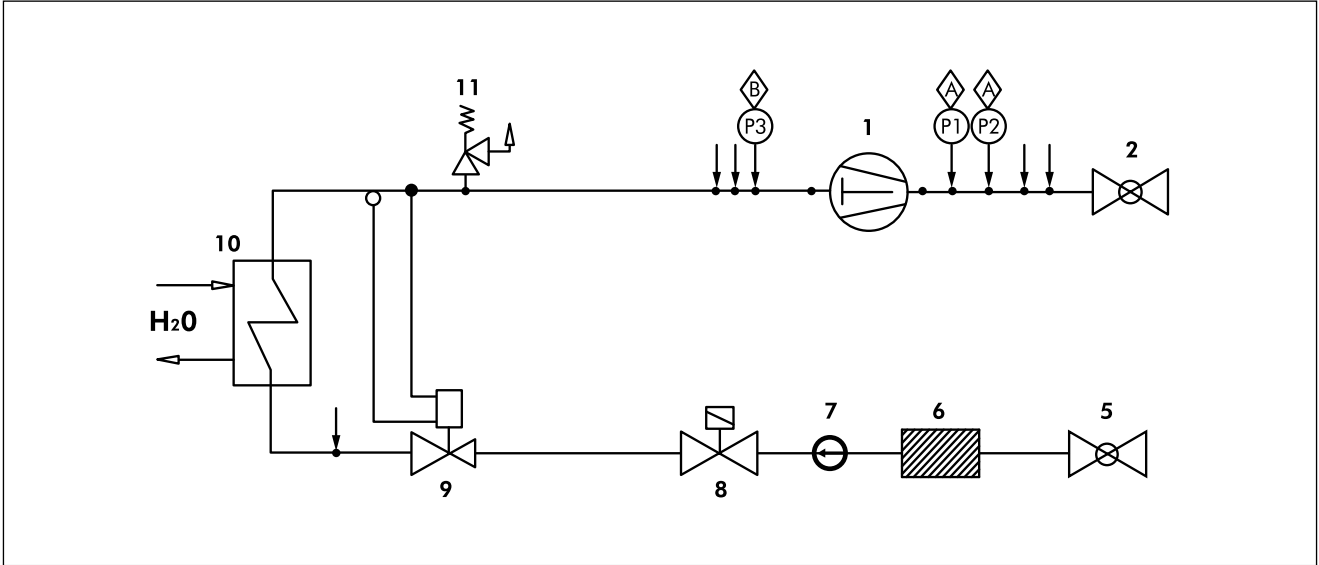
The RWC unit can operate as a water to water heat pump by reversing the cycle on the water circuits using three way valves.

Pressostatic two way valves are available as an option for remote location in the evaporator and condenser water pipework.

**Note :** This type of operation is possible only if the condensers are supplied with well water or disposable water. The system cannot be used if a cooling tower is used.

# Refrigerant Flow Diagrams (cont'd)

## RWR units



COMPONENTS	
1	Compressor
2	Discharge valve
5	Liquid valve
6	Filter
7	Sight glass
8	Solenoid valve
9	Thermal expansion valve
10	Evaporator
11	PED safety valve

SAFETY DEVICES	
↓	Pressure tapping points and refrigerant charge/discharge points
⬠A	HP pressure switch
⬠B	LP pressure switch

## Cooling mode

The operation of the RWR is identical to the RWC except for the water cooled condenser which is replaced by a remote air cooled condenser.

# Control

## Main features

- Microprocessor control
- User-friendly keyboard
- Proportional and integral control of the return water temperature (RWT)
- Hysteresis control of the leaving water temperature (LWT)
- Access code to enter the Manufacturer's Level
- Access code to enter the Assistance Level
- Alarm and LED
- Backlighted LCD
- Pump-Down logic (start-stop)
- Rotation of the compressor operation
- Night mode (or Low Noise) control
- Counting of the pump/compressors' hours of operation
- Display of discharge pressure values
- History of stored alarms (option)
- Programming of different setpoints with 4 ranges of time/setpoint.

The following accessories can be also connected :

- Real Time Clock Memory Card : alarm history and programming of different setpoints with ranges of time
- Serial Communication RS485 Card; to connect the **Chiller Control** to a BMS network
- Remote Display Terminal
- Wire Remote Control
- Phase monitor kit

## Control of RWC-RWR with 4 compressors

### The "Chiller Control" system

The RWC-RWR machines with 4 scroll compressors are provided with a microprocessor card which is fully programmed by default for the control of a cooling only chiller with 2 circuits, 2 compressors per circuit, a high-pressure transducer per circuit.

## Keyboard and display terminal

### General information

The figure shows the terminal with the front door open.

It is provided with a LCD 4 lines x 20 columns, keyboard and microprocessor-controlled LED's, so as to allow the programming of the control parameters (setpoint, differential bands, alarm thresholds) and the main operations to be carried out by the user.

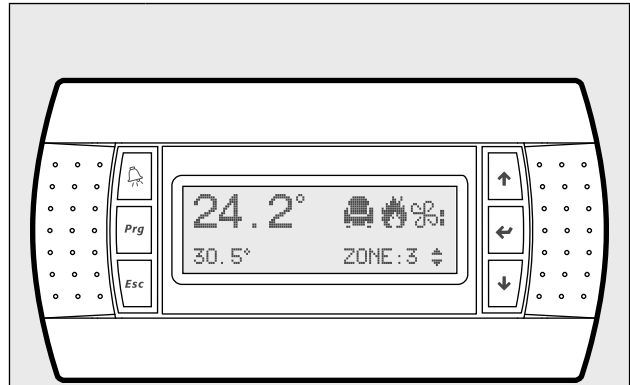
### Terminal and keyboard description

The terminal makes it possible to carry out the following operations :

- The initial configuration of the machine
- The change of all the main operating parameters
- The display of the detected alarms
- The display of all the measured quantities

The terminal and the card are connected by a 6-way phone cable.

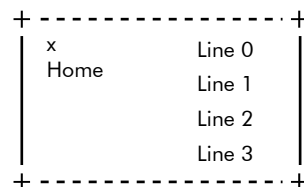
The connection of the terminal to the basic card is not essential for the normal operation of the controller.



	Access to the "display mask" of the machine status.
	<b>Esc key</b> : allows you to move from one mask to another.
	<b>Alarm key</b> : used to display the alarms, to reset them in manual. Press it one to display the mask of the activated alarm, press it again to reset the alarm signal.
	<b>Prg + Esc keys</b> : pressing these keys at the same time, allows you to turn the unit On/Off.
	<b>Up-down keys</b> : allows you to set the control parameters' values and to move from one mask to another (not backlighted).
	<b>Enter key</b> : used to move the cursor inside the masks and to save the values of the set parameters.
	<b>Alarm + Enter keys</b> : press these keys at the same time to enter the "storical alarm" after 1' come back at status machine menu.

### Display

The display is an LCD 4 lines x 20 columns. The quantities and the information about the operation of the unit are alternated in the form of subsequent screens, named.



# Operating Limits

RWC / RWR			170		200		240		280		320		360	
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Evaporator	Liquid leaving temperature	Water °C	+6 to +15											
		Water with glycol °C	-5 to +15											
		Water temp. difference °K	3 to 7											
	Water flow (1)	l/s	5.5	12.8	6.4	14.9	17.2	16.8	9.0	26.0	9.7	23.0	10.7	25.0
	Pressure drop (1)	kPa	18	99	24	133	11	59	17	93	20	107	24	130
	Max. working pressure - Water side	bar	10											
Condenser (2)	Water leaving temperature	°C	+30 to +50											
	Water flow (1)	l/s	3.5	8.2	4.1	9.5	4.6	10.6	5.7	13.4	6.2	14.5	6.9	16.0
	Pressure drop (1)	kPa	14	75	19	102	15	81	24	128	17	94	21	115
	Max. working pressure - Water side	bar	10											

(1) Total unit flow rate and pressure drop are given.

(2) Only for RWC models.

## Correction Factors

### Fouling factors

EVAPORATOR			CONDENSER		
Fouling factor (m <sup>2</sup> .°C/kW)	Cooling capacity	Power input	Fouling factor (m <sup>2</sup> .°C/kW)	Cooling capacity	Power input
0.044	1.000	1.000	0.044	1.000	1.000
0.088	0.987	0.995	0.088	0.987	1.023
0.176	0.964	0.985	0.176	0.955	1.068
0.352	0.915	0.962	0.352	0.910	1.135

# Water Flow and Water Pressure Drop

Water flow is calculated as follows :

$$Q = \frac{P \times 860}{(\Delta T \times 3600)}$$

with **Q** : Water flow (l/s)  
**ΔT** : Temperature difference (K)  
**P** : Heat exchanger capacity (kW)

Water pressure drop is calculated as follows :

$$\Delta P = \frac{K \times Q^2}{10}$$

with **ΔP** : Pressure drop (kPa)  
**K** : Pressure drop coefficient

EVAPORATOR PRESSURE DROPS						
RWC MODELS	170	200	240	280	320	360
<b>K</b>	6.0	6.0	2.1	2.1	2.1	2.1
<b>Min. water flow</b> l/s	5.5	6.4	7.2	9.0	9.7	10.7
<b>Nominal water flow</b> l/s	7.7	8.9	10.1	12.6	13.6	14.9
<b>Max. water flow</b> kPa	12.8	14.9	16.8	21.0	22.6	24.9
<b>Min. pressure drop</b> kPa	18	24	11	17	20	24
<b>Nominal pressure drop</b> kPa	36	48	21	33	39	47
<b>Max. pressure drop</b> kPa	99	133	59	93	107	130

CONDENSER PRESSURE DROPS						
RWC MODELS	170	200	240	280	320	360
<b>K</b>	11.2	11.2	7.2	7.2	4.5	4.5
<b>Min. water flow</b> l/s	3.5	4.1	4.6	5.7	6.2	6.9
<b>Nominal water flow</b> l/s	4.9	5.7	6.4	8.0	8.7	9.6
<b>Max. water flow</b> kPa	8.2	9.5	10.6	13.4	14.5	16
<b>Min. pressure drop</b> kPa	14	19	15	23	17	21
<b>Nominal pressure drop</b> kPa	27	36	29	46	34	41
<b>Max. pressure drop</b> kPa	75	101	81	129	94	115

# Physical Data - RWC 170 to 360

RWC MODELS		170	200	240	280	320	360
Cooling capacity (1)	kW	160.8	186.5	210.6	263.6	283.7	312.3
Power input (1)	kW	45.8	52.6	56.8	73.0	81.7	90.5
Heat rejection	kW	205.7	238.4	267.4	336.6	365.4	402.8
Number of refrigerant circuits		2	2	2	2	2	2
Number of capacity steps		4	4	4	4	4	4
Power supply	V(%)-Ph-Hz	400 (±10%)/3/50					
Starting type		Direct					
<b>COMPRESSORS</b>							
Number		4	4	4	4	4	4
Type		Scroll					
<b>EVAPORATORS</b>							
Type		Shell and tube heat exchanger					
Number		1	1	1	1	1	1
Nominal water flow	l/s	7.7	8.9	10.1	12.6	13.6	14.9
Nominal water pressure drop	kPa	36	48	21	33	39	47
Water volume each	l	63	63	53	53	53	53
<b>CONDENSERS</b>							
Type		Shell and tube heat exchanger					
Number		2	2	2	2	2	2
Nominal water flow	l/s	4.9	5.7	6.4	8.0	8.7	9.6
Nominal water pressure drop	kPa	27	37	29	46	34	41
Water volume each	l	7.2	7.2	9.4	9.4	11.6	11.6
<b>EVAPORATOR HYDRAULIC CONNECTIONS</b>							
Type		Victaulic					
Inlet diameter		4"	4"	4"	4"	4"	4"
Outlet diameter		4"	4"	4"	4"	4"	4"
<b>CONDENSER HYDRAULIC CONNECTIONS</b>							
Type		Victaulic					
Inlet diameter		2"	2"	2" 1/2	2" 1/2	2" 1/2	2" 1/2
Outlet diameter		2"	2"	2" 1/2	2" 1/2	2" 1/2	2" 1/2
<b>WEIGHT</b>							
Shipping	kg	1217	1262	1398	1514	1540	1554
Operating	kg	1294	1339	1470	1586	1616	1630
<b>DIMENSIONS</b>							
Length	mm	2200	2200	2200	2200	2200	2200
Width	mm	800	800	800	800	800	800
Height	mm	1820	1820	1820	1820	1820	1820
<b>SOUND LEVELS (WITHOUT ACOUSTIC JACKET)</b>							
Sound power levels	dB(A)	81	82	82	84	85	86
Sound pressure levels (2)	dB(A)	63.9	64.9	64.9	66.9	67.9	68.9
<b>SOUND LEVELS (WITH ACOUSTIC JACKET)</b>							
Sound power levels	dB(A)	77	78	78	80	81	82
Sound pressure levels (2)	dB(A)	59.9	60.9	60.9	62.9	63.9	64.9

(1) At conditions : evaporator water temperature of 12/7 °C and condenser water temperature of 30/35 °C.

(2) Sound pressure levels given at 1 meter from the unit in free field.



# Physical Data - RWR 170 to 360

RWR MODELS		170	200	240	280	320	360
Cooling capacity (1)	kW	160.8	186.5	210.6	263.6	283.7	312.3
Power input (1)	kW	45.8	52.6	56.8	73.0	81.7	90.5
Heat rejection	kW	205.7	238.4	267.4	336.6	365.4	402.8
Number of refrigerant circuits		2	2	2	2	2	2
Number of capacity steps		4	4	4	4	4	4
Power supply	V(%)-Ph-Hz	400 (±10%)/3/50					
Starting type		Direct					
<b>COMPRESSORS</b>							
Number		4	4	4	4	4	4
Type		Scroll					
<b>EVAPORATORS</b>							
Type		Shell and tube heat exchanger					
Number		1	1	1	1	1	1
Nominal water flow	l/s	7.3	8.5	9.6	12	13	14.2
Nominal water pressure drop	kPa	32	43	19	30	35	42
Water volume each	l	63	63	53	53	53	53
<b>EVAPORATOR HYDRAULIC CONNECTIONS</b>							
Type		Victaulic					
Inlet diameter		4"	4"	4"	4"	4"	4"
Outlet diameter		4"	4"	4"	4"	4"	4"
<b>REFRIGERANT CONNECTIONS</b>							
Type		To be brazed					
Discharge line diameter		1" 3/8	1" 3/8	1" 3/8	1" 3/8	1" 3/8	1" 3/8
Liquid line diameter		7/8"	7/8"	7/8"	7/8"	7/8"	7/8"
<b>WEIGHT</b>							
Shipping	kg	1080	1122	1216	1313	1327	1341
Operating	kg	1143	1185	1269	1366	1380	1394
<b>DIMENSIONS</b>							
Length	mm	2200	2200	2200	2200	2200	2200
Width	mm	800	800	800	800	800	800
Height	mm	1820	1820	1820	1820	1820	1820
<b>SOUND LEVELS (WITHOUT ACOUSTIC JACKET)</b>							
Sound power levels	dB(A)	81	82	82	84	85	86
Sound pressure levels (2)	dB(A)	63.9	64.9	64.9	66.9	67.9	68.9
<b>SOUND LEVELS (WITH ACOUSTIC JACKET)</b>							
Sound power levels	dB(A)	77	78	78	80	81	82
Sound pressure levels (2)	dB(A)	59.9	60.9	60.9	62.9	63.9	64.9

(1) At conditions : evaporator water temperature of 12/7 °C and condensing temperature of 45 °C.

(2) Sound pressure levels given at 1 meter from the unit in free field.

## Electrical Data - RWC/RWR

MODELS		170	200	240	280	320	360
<b>UNIT</b>							
Nominal supply voltage	V(%)-Ph-Hz	400(±10%)/3/50					
Max. power input	kW	66	77	89	112	130	147
Nominal current	A	87	97	107	127	149	171
Max. current FLA	A	111	131	151	190	219	248
Max. starting current LRA	A	281	355	375	415	477	506
<b>COMPRESSORS</b>							
Quantity		4	4	4	4	4	4
Max. power input	kW	16.4 x 4	16.4 x 3 + 28.1	(16.4+28.1)x2	28.1 x 4	(28.1+36.7)x2	36.7x4
Max. current FLA	A	28 x 4	28 x 3 + 48	(28+48)x2	48 x 4	(48+62)x2	62x4
Max. starting current LRA	A	198 x 4	198 x 3 + 272	(198+272)x2	272 x 4	(272+320)x2	320x4
Crankcase heater	W	70	70	70	150	150	150

## Sound Data

### Models RWC/RWR 170 to 360 - Standard version (without acoustic jacket)

RWC/RWR	Frequencies (Hz)							Lw global dB(A)	Lp global dB(A) *
	125	250	500	1000	2000	4000	8000		
170	61.1	76.8	77.9	76.3	74.8	67.4	55.4	<b>81.0</b>	<b>63.9</b>
200	62.1	77.8	78.9	77.3	75.8	68.4	56.4	<b>82.0</b>	<b>64.9</b>
240	62.1	77.8	78.9	77.3	75.8	68.4	56.4	<b>82.0</b>	<b>64.9</b>
280	64.1	79.8	80.9	79.3	77.8	70.4	58.4	<b>84.0</b>	<b>66.9</b>
320	65.1	80.8	81.9	80.3	78.8	71.4	59.4	<b>85.0</b>	<b>67.9</b>
360	66.1	81.8	82.9	81.3	79.8	72.4	60.4	<b>86.0</b>	<b>68.9</b>

(\*) Sound pressure levels given at 1 meter from the unit according to ISO 3744 standard. Tolerance : ±2 dB(A).

### Models RWC/RWR 170 to 360 - Low noise version (with acoustic jacket)

RWC/RWR	Frequencies (Hz)							Lw global dB(A)	Lp global dB(A) *
	125	250	500	1000	2000	4000	8000		
170	57.1	72.8	73.9	72.3	70.8	63.4	51.4	<b>77.0</b>	<b>59.9</b>
200	58.1	73.8	74.9	73.3	71.8	64.4	52.4	<b>78.0</b>	<b>60.9</b>
240	58.1	73.8	74.9	73.3	71.8	64.4	52.4	<b>78.0</b>	<b>60.9</b>
280	60.1	75.8	76.9	75.3	73.8	66.4	54.4	<b>80.0</b>	<b>62.9</b>
320	61.1	76.8	77.9	76.3	74.8	67.4	55.4	<b>81.0</b>	<b>63.9</b>
360	62.1	77.8	78.9	77.3	75.8	68.4	56.4	<b>82.0</b>	<b>64.9</b>

(\*) Sound pressure levels given at 1 meter from the unit according to ISO 3744 standard. Tolerance : ±2 dB(A).

# Performance Data - RWC 170 to 360

Sizes	LWT (°C)	Condenser leaving water temperature (°C)														
		30			35			40			45			50		
		Cool. cap. (kW)	Power input (kW)	Heat reject. (kW)	Cool. cap. (kW)	Power input (kW)	Heat reject. (kW)	Cool. cap. (kW)	Power input (kW)	Heat reject. (kW)	Cool. cap. (kW)	Power input (kW)	Heat reject. (kW)	Cool. cap. (kW)	Power input (kW)	Heat reject. (kW)
RWC 170	6	162.2	41.0	202.3	154.6	45.2	198.9	146.9	49.4	195.6	139.3	53.5	192.2	131.6	55.9	188.2
	7	168.7	41.5	209.3	<b>160.8</b>	<b>45.8</b>	<b>205.7</b>	153.0	49.9	202.1	145.1	54.0	198.5	137.2	56.5	194.4
	10	178.9	43.1	220.8	170.8	47.2	217.1	162.9	51.5	213.4	154.8	55.6	209.7	146.7	58.1	205.5
	12	185.4	44.2	228.3	177.2	48.3	224.5	169.0	52.4	220.6	160.9	56.6	216.8	152.8	59.1	212.6
RWC 200	6	188.1	47.2	234.6	179.3	52.0	230.5	170.4	56.8	226.5	161.5	61.5	222.5	152.6	64.3	217.9
	7	195.7	47.8	242.6	<b>186.5</b>	<b>52.6</b>	<b>238.4</b>	177.5	57.3	234.1	168.3	62.1	229.9	159.2	64.9	225.1
	10	207.4	49.6	256.2	198.1	54.4	251.7	188.8	59.1	247.3	179.5	63.9	242.8	170.1	66.8	237.9
	12	215.0	50.8	264.9	205.5	55.5	260.2	196.1	60.4	255.7	186.6	65.1	251.1	177.2	68.0	246.1
RWC 240	6	212.4	51.0	263.0	202.4	56.2	258.6	192.3	61.3	254.2	182.3	66.5	249.9	172.3	69.6	244.8
	7	220.8	51.7	272.1	<b>210.6</b>	<b>56.8</b>	<b>267.4</b>	200.3	62.0	262.8	190.0	67.2	258.1	179.8	70.2	252.9
	10	234.2	53.6	287.2	223.6	58.8	282.3	213.1	64.0	277.5	202.6	69.1	272.7	192.1	72.2	267.2
	12	242.7	54.9	297.0	232.0	60.0	291.9	221.3	65.3	286.9	210.6	70.4	281.9	200.0	73.6	276.5
RWC 280	6	265.7	65.6	330.8	253.2	72.2	325.6	240.6	78.9	320.3	228.1	85.5	315.1	215.6	89.3	308.9
	7	276.4	66.4	342.2	<b>263.6</b>	<b>73.0</b>	<b>336.6</b>	250.6	79.6	331.0	237.8	86.4	325.5	224.9	90.2	319.1
	10	293.1	68.9	361.2	279.8	75.6	355.3	266.7	82.2	349.4	253.6	88.8	343.7	240.4	92.8	337.1
	12	303.6	70.5	373.3	290.3	77.2	367.4	276.9	83.8	361.3	263.6	90.4	355.3	250.2	94.5	348.7
RWC 320	6	286.0	73.4	359.2	272.6	80.9	353.5	259.0	88.3	347.8	245.6	95.7	342.1	232.0	100.0	335.4
	7	297.5	74.3	371.5	<b>283.7</b>	<b>81.7</b>	<b>365.4</b>	269.8	89.1	359.4	256.0	96.7	353.4	242.1	100.9	346.4
	10	315.5	77.1	392.1	301.2	84.6	385.8	287.1	92.0	379.4	272.9	99.4	373.2	258.8	103.9	366.0
	12	326.8	78.9	405.3	312.5	86.4	398.9	298.1	93.8	392.3	283.7	101.2	385.8	269.3	105.8	378.6
RWC 360	6	314.9	81.3	395.9	300.1	89.5	389.7	285.2	97.7	383.4	270.4	106.0	377.2	255.5	110.7	369.8
	7	327.5	82.2	409.6	<b>312.3</b>	<b>90.5</b>	<b>402.8</b>	297.0	98.7	396.2	281.8	107.0	389.5	266.5	111.7	381.9
	10	347.4	85.4	432.3	331.6	93.6	425.3	316.1	101.9	418.2	300.5	110.1	411.4	284.9	115.0	403.4
	12	359.8	87.4	446.8	344.0	95.6	439.7	328.2	103.9	432.4	312.3	112.1	425.3	296.5	117.1	417.4

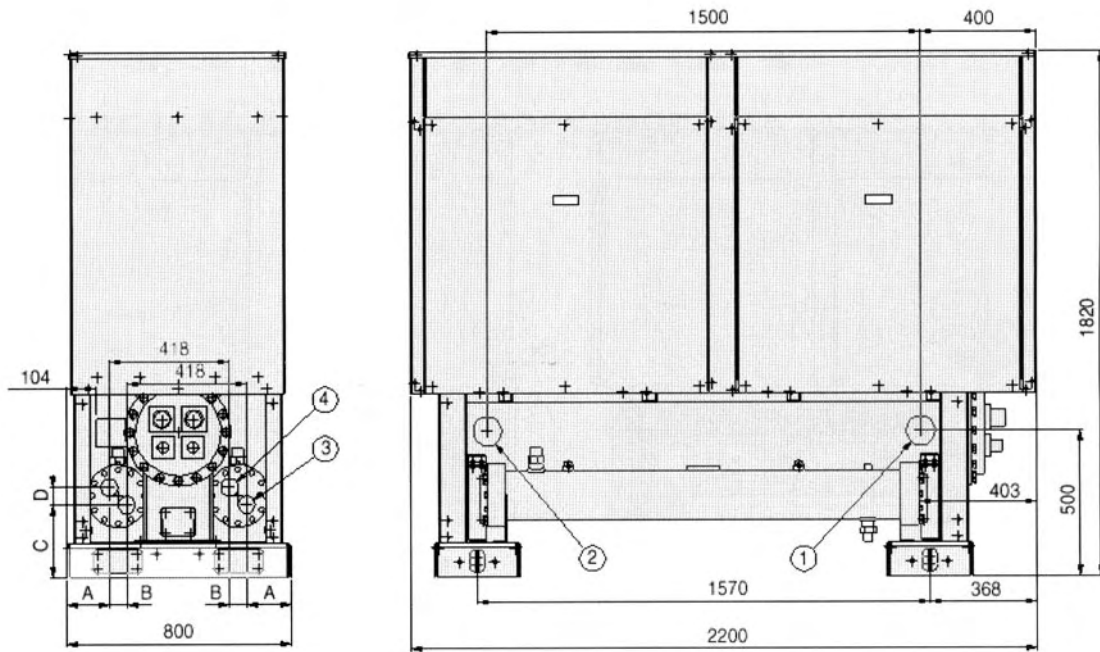
LWT : leaving water temperature.  
Power input given for compressors only.

# Performance Data - RWR 170 to 360

Sizes	LWT (°C)	Condensing temperature (°C)														
		40			45			50			55			60		
		Cool. cap. (kW)	Power input (kW)	Heat reject. (kW)	Cool. cap. (kW)	Power input (kW)	Heat reject. (kW)	Cool. cap. (kW)	Power input (kW)	Heat reject. (kW)	Cool. cap. (kW)	Power input (kW)	Heat reject. (kW)	Cool. cap. (kW)	Power input (kW)	Heat reject. (kW)
RWR 170	6	162.2	41.0	202.3	154.6	45.2	198.9	146.9	49.4	195.6	139.3	53.5	192.2	131.6	55.9	188.2
	7	168.7	41.5	209.3	<b>160.8</b>	<b>45.8</b>	<b>205.7</b>	153.0	49.9	202.1	145.1	54.0	198.5	137.2	56.5	194.4
	10	178.9	43.1	220.8	170.8	47.2	217.1	162.9	51.5	213.4	154.8	55.6	209.7	146.7	58.1	205.5
	12	185.4	44.2	228.3	177.2	48.3	224.5	169.0	52.4	220.6	160.9	56.6	216.8	152.8	59.1	212.6
RWR 200	6	188.1	47.2	234.6	179.3	52.0	230.5	170.4	56.8	226.5	161.5	61.5	222.5	152.6	64.3	217.9
	7	195.7	47.8	242.6	<b>186.5</b>	<b>52.6</b>	<b>238.4</b>	177.5	57.3	234.1	168.3	62.1	229.9	159.2	64.9	225.1
	10	207.4	49.6	256.2	198.1	54.4	251.7	188.8	59.1	247.3	179.5	63.9	242.8	170.1	66.8	237.9
	12	215.0	50.8	264.9	205.5	55.5	260.2	196.1	60.4	255.7	186.6	65.1	251.1	177.2	68.0	246.1
RWR 240	6	212.4	51.0	263.0	202.4	56.2	258.6	192.3	61.3	254.2	182.3	66.5	249.9	172.3	69.6	244.8
	7	220.8	51.7	272.1	<b>210.6</b>	<b>56.8</b>	<b>267.4</b>	200.3	62.0	262.8	190.0	67.2	258.1	179.8	70.2	252.9
	10	234.2	53.6	287.2	223.6	58.8	282.3	213.1	64.0	277.5	202.6	69.1	272.7	192.1	72.2	267.2
	12	242.7	54.9	297.0	232.0	60.0	291.9	221.3	65.3	286.9	210.6	70.4	281.9	200.0	73.6	276.5
RWR 280	6	265.7	65.6	330.8	253.2	72.2	325.6	240.6	78.9	320.3	228.1	85.5	315.1	215.6	89.3	308.9
	7	276.4	66.4	342.2	<b>263.6</b>	<b>73.0</b>	<b>336.6</b>	250.6	79.6	331.0	237.8	86.4	325.5	224.9	90.2	319.1
	10	293.1	68.9	361.2	279.8	75.6	355.3	266.7	82.2	349.4	253.6	88.8	343.7	240.4	92.8	337.1
	12	303.6	70.5	373.3	290.3	77.2	367.4	276.9	83.8	361.3	263.6	90.4	355.3	250.2	94.5	348.7
RWR 320	6	286.0	73.4	359.2	272.6	80.9	353.5	259.0	88.3	347.8	245.6	95.7	342.1	232.0	100.0	335.4
	7	297.5	74.3	371.5	<b>283.7</b>	<b>81.7</b>	<b>365.4</b>	269.8	89.1	359.4	256.0	96.7	353.4	242.1	100.9	346.4
	10	315.5	77.1	392.1	301.2	84.6	385.8	287.1	92.0	379.4	272.9	99.4	373.2	258.8	103.9	366.0
	12	326.8	78.9	405.3	312.5	86.4	398.9	298.1	93.8	392.3	283.7	101.2	385.8	269.3	105.8	378.6
RWR 360	6	314.9	81.3	395.9	300.1	89.5	389.7	285.2	97.7	383.4	270.4	106.0	377.2	255.5	110.7	369.8
	7	327.5	82.2	409.6	<b>312.3</b>	<b>90.5</b>	<b>402.8</b>	297.0	98.7	396.2	281.8	107.0	389.5	266.5	111.7	381.9
	10	347.4	85.4	432.3	331.6	93.6	425.3	316.1	101.9	418.2	300.5	110.1	411.4	284.9	115.0	403.4
	12	359.8	87.4	446.8	344.0	95.6	439.7	328.2	103.9	432.4	312.3	112.1	425.3	296.5	117.1	417.4

LWT : leaving water temperature.  
 Power input given for compressors only.

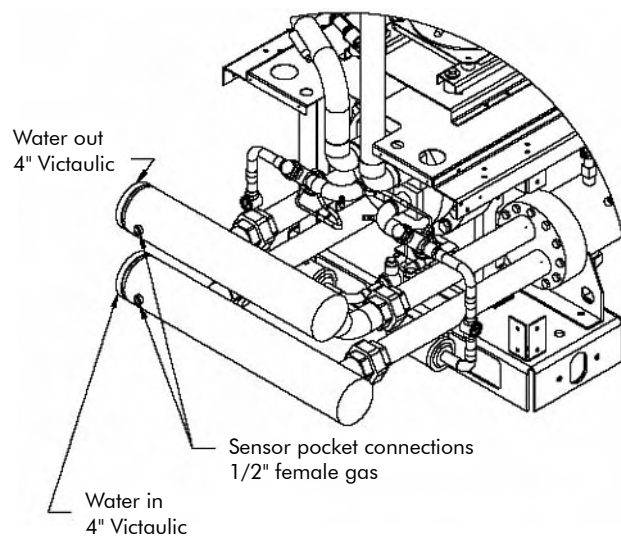
# Dimensions - RWC 170 to 360



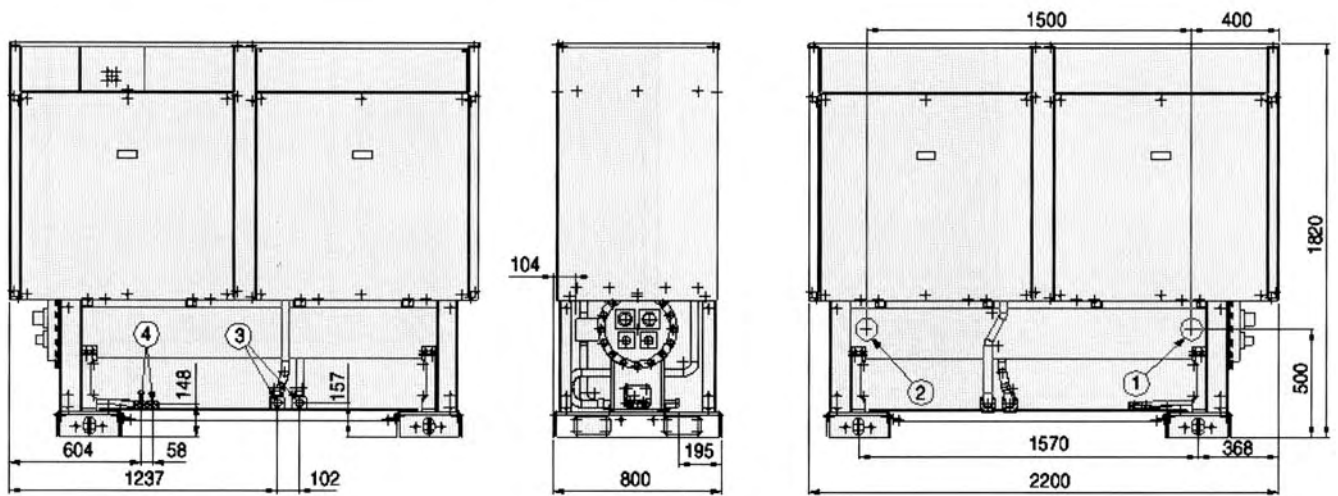
LEGEND	
1	Evaporator water in
2	Evaporator water out
3	Condenser water in
4	Condenser water out

Sizes	A	B	C	D	1-2	3-4
170	151	60	249	60	DN 100 (4")	2" female gas
200	151	60	249	60	DN 100 (4")	2" female gas
240	146	70	257	70	DN 100 (4")	2" 1/2 female gas
280-360	146	70	257	70	DN 100 (4")	2" 1/2 female gas

## Condenser Manifold Kit (Optional)



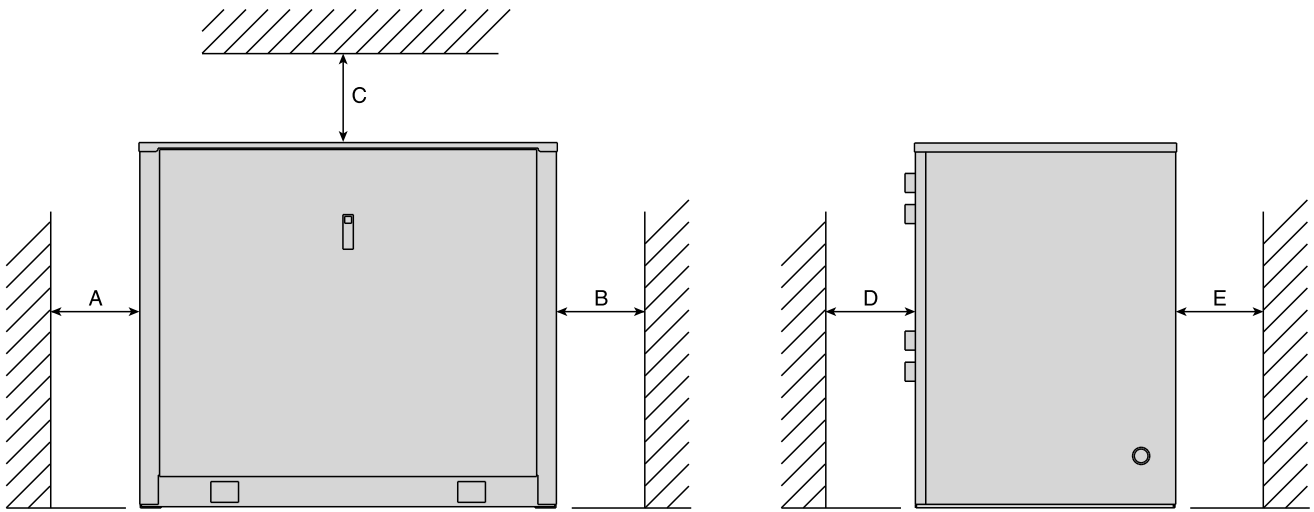
# Dimensions - RWR 170 to 360



LEGEND	
1	Evaporator water in
2	Evaporator water out
3	Discharge line connection
4	Liquid line connection

Sizes	1-2	3	4
170 to 360	DN 100 (4")	1" 3/8	7/8"

# Space Requirements



Sizes	Distance (mm)				
	A	B	C	D	E
170 to 360	2200	800	1000	1000	1500

# Airwell

*As part of our ongoing product improvement programme, our products are subject to change without prior notice. Non contractual photos.*



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