

Temperature Control



1- AIR/WATER HEATING/COOLING PUMP

Air/water heating/cooling pump is part of the AQUA product line, which indicates the swimming pool and SPA heat pump.

Swimming pool heat pump can be used for heating or cooling swimming pool, spa or some other open water system.

Water system pressure should be less than 3 bar.

(Cannot be used for close water system such as air conditioning, ground source heating and so on.)

PRODUCT FEATURES:



High Efficiency

Adopt heat pump for heating and the energy comes from ambient air. So its COP can reach 5.5



Safety

Water and electricity are completely separate. ECO friendly gas, no fire, no electricity leakage, safer than fuel burner or electrical heater.



Environmentally Friendly

Adopt R407C, R410-A, R22 as refrigerant, according to the requirements of EU Montreal Protocol.



Corrosion Prevention

The condenser uses titanium metal, its corrosion resistance is 4-5 times of ordinary copper tube, the corrosion ability of the unit is significantly improved, while the effective way to prevent fluoride leakage. So the medium of heat exchange can also contain seawater, mild industrial water, etc.



Online after sales service

If there is after sales problem comes to you, an alarm icon will occur on the main interface to remind you. You can press it for information, then solve the problem yourself according to the specification step by step. If you couldn't, you can authorize us through the AQUA Network platform for help. After receiving the authorization, our professional engineers will serve you timely.



Intelligent Defrosting

By means of both mechanical and automatic control, defrosting can be operated in a shorter time to avoid severe attenuation of heating capacity in winter and not run when not necessary.



Antifreezing Control

The unit starts up automatic antifreezing control when shutdown (no power off), using of antifreezing heat exchanger, 10 freezing tests, no leakage.



Various protective measures

- Lack-phase and anti-phase protection
- Self memory function when power off
- Overpressure protection
- Leakage refrigerant protection
- Water protection for unit
- Overcurrent protection
- Temperature over protection



Advanced control system

- Displaying operating and trouble status.
- Checking real-time operation parameters etc.
- The cable length between controller and the unit can be up to 100m for flexible installation.
- Keep balance running of compressor
- Automatically adjusting capacity according to the change of water inlet the temperature.
- Can achieve the perfect docking with BMS. Realizing remote control based on user requirement for easy management and maintenance. And can realize multi unit modular operation



Compressor

AQUA products and the world famous brand compressor manufacturers (COPELAND\MISUBISHI\DAIKIN\PANASONIC\SANYO\GMCC) have good cooperation, so as to ensure the high quality of the machine.



HOW DOES THE UNIT WORK?

AS A CHILLER

1 STAGE ONE

The temperature of the hot gaseous refrigerant discharged from the compressor is much higher than the outside ambient air temperature. When the outside air passes across the condenser coil, the gaseous refrigerant transfers its heat to the air and condenses into liquid.

2 STAGE TWO

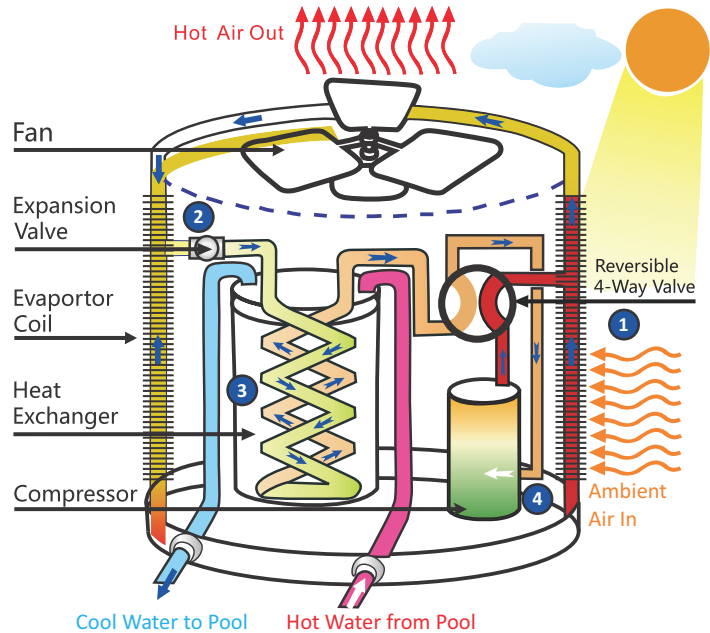
The liquid refrigerant passes through the expansion valve, reducing its pressure and temperature.

3 STAGE THREE

The low temperature refrigerant passes to the heat exchanger evaporator, where the actual heat transfer takes place: the refrigerant absorbs heat from the water pumped into the heat exchanger and evaporates, whereby the water temperature is reduced.

4 STAGE FOUR

The gas refrigerant is then sucked to the compressor and compressed, increasing its pressure and temperature, ready to start the whole cycle once again.



AS A HEAT PUMP

1 STAGE ONE

The heat transfer medium (the refrigerant) is colder than the outside air. As the outside air passes across the evaporator coil, the liquid refrigerant absorbs heat from the air and evaporates.

2 STAGE TWO

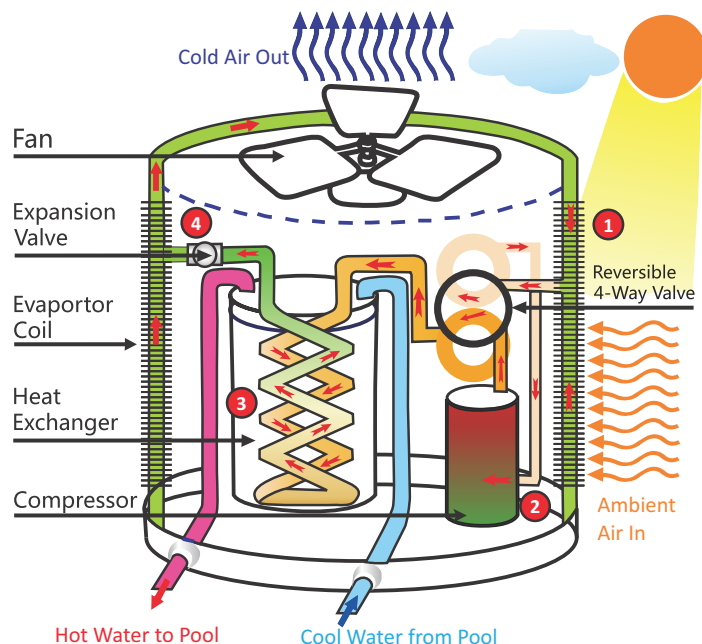
The gaseous refrigerant then passes to the compressor and is compressed. When compressed, the pressure is increased and the temperature of the vapor rises, effectively concentrating the heat.

3 STAGE THREE

The hot gaseous refrigerant passes to the heat exchanger condenser, where the actual heat transfer takes place: the intensely hot gaseous refrigerant transfers its heat to the water pumped into the heat exchanger and condenses back into a liquid.

4 STAGE FOUR

The liquid refrigerant then passes through an expansion valve, reducing its pressure and temperature, ready to start the whole cycle once again.



Vertical : Gas type – R407C

		PH-02620-R407C	PH-02625-R407C	PH-02630-R407C	PH-02640-R407C	PH-02650-R407C	PH-02660-R407C	PH-02670-R407C	PH-02710-R407C	PH-02712-R407C	
POWER SUPPLY		V/Ph/Hz	220/1/50	220/1/50	220/1/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	
YL-H01-Heating: A24/W26°C	Heating capacity	kW	9.5	12	14	16	21	25	31	40	45
		BTU/h	32414	40944	47768	54592	71652	85300	105772	136480	153540
	Power input	kW	1.7	2.2	2.5	2.9	3.8	4.6	5.7	7.3	8.2
	Current	A	7.9	9.9	11.6	5.2	6.8	8.3	10.3	13.0	14.6
	COP	W/W	5.5	5.5	5.5	5.5	5.5	5.4	5.4	5.5	5.5
YL-H02-Heating: A15/W26°C	Heating capacity	kW	8.1	10.2	11.9	13.6	17.9	21.3	26.4	34.0	38.3
		BTU/h	27552	34802	40603	46403	60904	72505	89906	116008	130509
	Power input	kW	1.8	2.3	2.6	3.0	4.0	4.7	5.9	7.6	8.5
	Current	A	8.2	10.3	12.0	5.4	7.1	8.4	10.5	13.5	15.2
	COP	W/W	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
YL-C01-Cooling: A35/W30°C	Cooling capacity	kW	8	8.4	9	10	17	21.0	22.0	35	38
		BTU/h	27296	28661	30708	34120	58004	71652	75064	119420	122832
	Power input	kW	2.1	2.3	2.4	2.6	4.5	5.5	5.8	9.2	9.4
	Current	A	9.7	10.3	11.1	4.7	8.1	9.9	10.3	16.5	16.7
	EER	W/W	3.75	3.70	3.70	3.80	3.76	3.80	3.80	3.80	3.85
YL-C02-Cooling: A46/W30°C	Cooling capacity	kW	6.8	7.1	7.7	8.5	14.5	17.9	18.7	29.8	30.6
		BTU/h	23202	24362	26102	29002	49303	60904	63804	101507	104407
	Power input	kW	2.3	2.4	2.6	2.8	4.8	5.9	6.2	9.8	9.9
	Current	A	10.3	11.0	11.7	5.0	8.6	10.5	11.0	17.5	17.8
	EER	W/W	3.00	2.96	2.96	3.04	3.01	3.04	3.04	3.04	3.08
OPERATING	water outlet temp.range	C°	5~40	5~40	5~40	5~40	5~40	5~40	5~40	5~40	5~40
	ambient temp. range	C°	-10~53	-10~53	-10~53	-10~53	-10~53	-10~53	-10~53	-10~53	-10~53
	Compressor type		Rotary*1	Scroll*1	Scroll*1	Scroll*1	Scroll*1	Scroll*1	Scroll*1	Scroll*2	Scroll*2
	Controller		micro processor based digital controller with LCD touch screen display								
	Noise	dB(A)	48	48	50	50	53	55	55	59	59
HEAT EXCHANGER	Type		Titanium/PVC	Titanium/PVC	Titanium/PVC	Titanium/PVC	Titanium/PVC	Titanium/PVC	Titanium/PVC	Titanium/PVC	Titanium/PVC
	Standard water flow	m ³ /h	4.1	5.2	6.0	6.9	9.0	10.7	13.3	17.2	19.3
	Suggested water flow	m ³ /h	3~5.5	3.5~7	4~8	4.5~9	6~12	7~14	9~18	11~23	13~26
	Water pressure drop (max)	KPa	10	10	11	11	12	12	13	15	15
	Water pipe		–	–	–	–	–	–	–	PPR or PVC	PPR or PVC
	Water connection	mm	50	50	50	50	50	50	50	63	63
FAN	Position		Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
	Material		plastic	plastic	plastic	plastic	plastic	plastic	plastic	plastic	plastic
DIMENSION (WxHxD)	Net	mm	695/655/740	695/655/740	706/686/940	706/686/940	706/686/940	706/686/940	810/810/955	1450/705/1065	1450/705/1065
	Shipping	mm	744/710/890	744/710/890	755/740/1090	755/740/1090	755/740/1090	755/740/1090	860/860/1100	1525/780/1210	1525/780/1210
WEIGHT	kg	70/77	75/82	125/135	135/145	140/150	145/155	150/160	250/270	260/280	

Note: We reserve the rights to modify the above specifications without notice, please contact us for updated information.

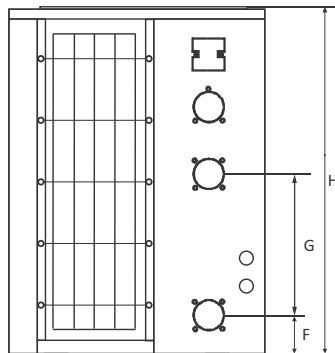
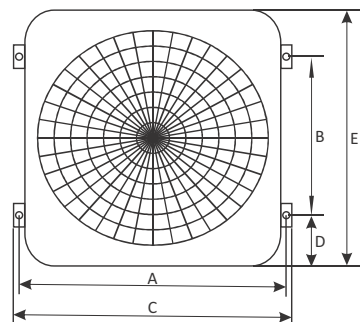
Vertical : Gas type – R407C

		PH-02713-R407C	PH-02714-R407C	PH-02715-R407C	PH-02720-R407C	PH-02730-R407C	PH-02740-R407C	PH-02750-R407C	PH-02760-R407C	PH-02770-R407C	
POWER SUPPLY	V/Ph/Hz	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	
MAX. POOL VOLUME	m ³	230	270	350	440	570	670	750	920	1000	
YL-H01-Heating: A24/W26°C	Heating capacity	kW	50	65	80	105	135	158	180	210	250
		BTU/h	170600	221780	272960	358260	460620	539096	614160	716520	853000
	Power input	kW	9.1	11.8	14.5	19.1	24.5	28.7	32.7	38.2	45.5
	Current	A	16.3	21.1	26.0	34.1	43.9	51.4	58.5	68.3	81.3
	COP	W/W	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
YL-H02-Heating: A15/W26°C	Heating capacity	kW	42.5	55.3	68.0	89.3	114.8	134.3	153.0	178.5	212.5
		BTU/h	145010	188513	232016	304521	391527	458232	522036	609042	725050
	Power input	kW	9.4	12.3	15.1	19.8	25.5	29.8	34.0	39.7	47.2
	Current	A	16.9	21.9	27.0	35.5	45.6	53.3	60.8	70.9	84.4
	COP	W/W	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
YL-C01-Cooling: A35/W30°C	Cooling capacity	kW	43	55	70	78	100	117	135	158	180
		BTU/h	146716	187660	238840	266136	341200	399204	460620	539096	614160
	Power input	kW	11.3	14.5	18.4	20.9	26.8	31.3	36.0	41.6	47.4
	Current	A	20.2	25.9	32.9	37.3	47.9	55.9	64.4	74.3	84.7
	EER	W/W	3.80	3.80	3.80	3.80	3.73	3.74	3.75	3.80	3.80
YL-C02-Cooling: A46/W30°C	Cooling capacity	kW	36.6	46.8	59.5	66.3	85.0	99.5	114.8	134.3	153.0
		BTU/h	124709	159511	203014	226216	290020	339323	391527	458232	522036
	Power input	kW	12.0	15.4	19.6	22.2	28.5	33.2	38.3	44.2	50.3
	Current	A	21.5	27.5	35.0	39.6	50.9	59.4	68.4	79.0	90.0
	EER	W/W	3.04	3.04	3.04	2.99	2.98	2.99	3.00	3.04	3.04
OPERATING	water outlet temp.range	C°	5~40	5~40	5~40	5~40	5~40	5~40	5~40	5~40	5~40
	ambient temp. range	C°	-10~53	-10~53	-10~53	-10~53	-10~53	-10~53	-10~53	-10~53	-10~53
	Compressor type		Scroll*2	Scroll*3	Scroll*3	Scroll*4	Scroll*5 or 4	Scroll*6 or 3	Scroll*7 or 3	Scroll*8 or 4	Scroll*10 or 4
	Controller		micro processor based digital controller with LCD touch screen display								
	Noise	dB(A)	59	62	62	62	65	65	65	65	68
HEAT EXCHANGER	Type		Titanium/PVC	Titanium/PVC	Titanium/PVC	Titanium/PVC	Titanium/PVC	Titanium/PVC	Titanium/PVC	Titanium/PVC	Titanium/PVC
	Standard water flow	m ³ /h	21.5	27.9	34.4	45.1	58	67.9	77.4	90.3	107.5
	Suggested water flow	m ³ /h	15~29	19~37	23~46	30~60	38~77	45~91	52~103	60~120	72~143
	Water pressure drop (max)	KPa	16	18	20	24	30	31	32	32	34
	Water pipe		PPR or PVC	PPR or PVC	PPR or PVC	PPR or PVC	PPR or PVC	PPR or PVC	PPR or PVC	PPR or PVC	PVC
	Water connection	mm	63	63	63	75	90	90	110	110	160
FAN	Position		Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
	Material		plastic	plastic	plastic	plastic	plastic	plastic	plastic	plastic	plastic
DIMENSION (WxHxD)	Net	mm	1450/705/1265	2150/765/1310	2150/765/1310	1630/1408/1310	2200/1615/1355	2200/1615/1355	2200/1615/1355	2200/1615/1355	2086/2004/2310
	Shipping	mm	1525/780/1410	2270/870/1450	2270/870/1450	1680/1513/1450	2260/1710/1520	2260/1710/1520	2260/1710/1520	2260/1710/1520	2280/2115/2440
WEIGHT	kg	265/285	440/500	510/570	560/620	820/870	910/950	1180/1230	1200/1250	1450/1500	

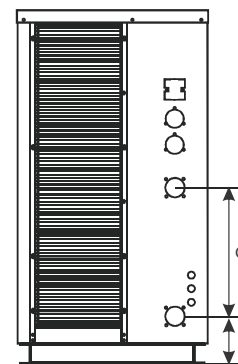
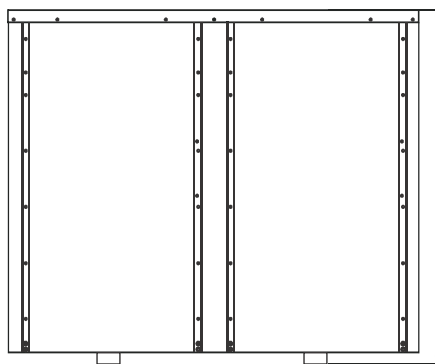
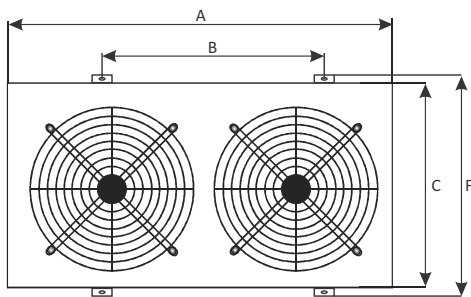
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Temperature Control

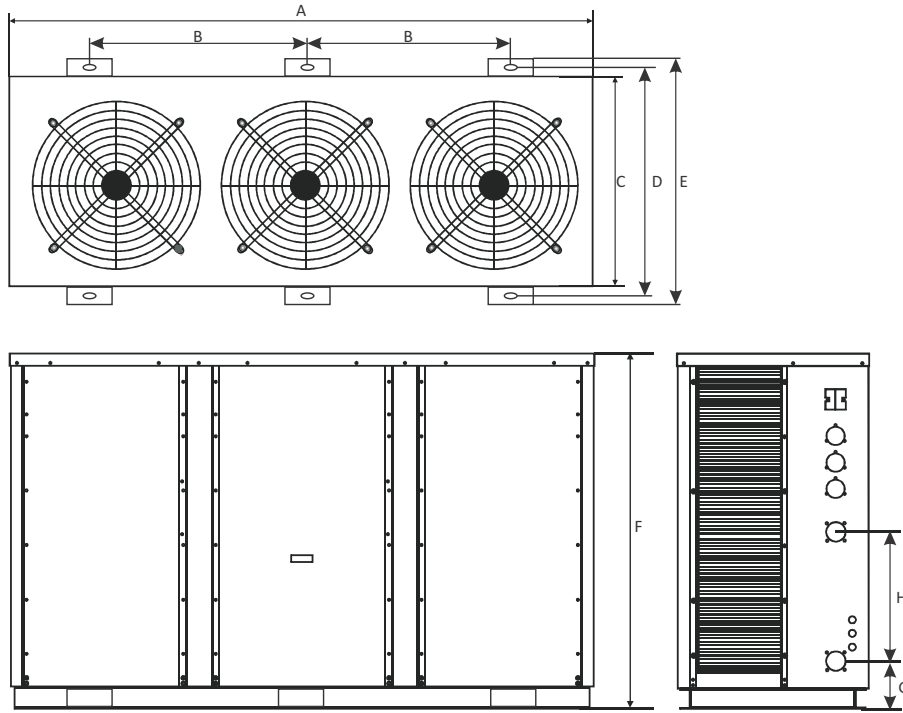
UNIT DIMENSIONS:



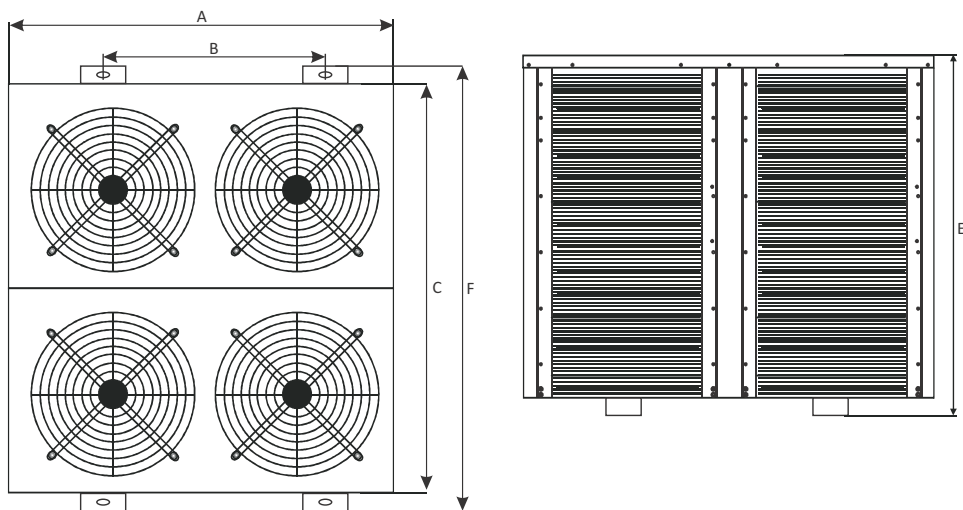
CODE	DIMENSIONS (mm)							
	A	B	C	D	E	F	G	H
PH-02620	682	450	714	125	703	84	300	796
PH-02625								
PH-02630								
PH-02640								
PH-02650	724	450	746	120	690	84	420	920
PH-02660								
PH-02670								



CODE	DIMENSIONS (mm)						
	A	B	C	D	E	F	G
PH-02710	1450	750	700	730	1260	84	500
PH-02712							
PH-02713	1450	750	700	730	1460	84	500

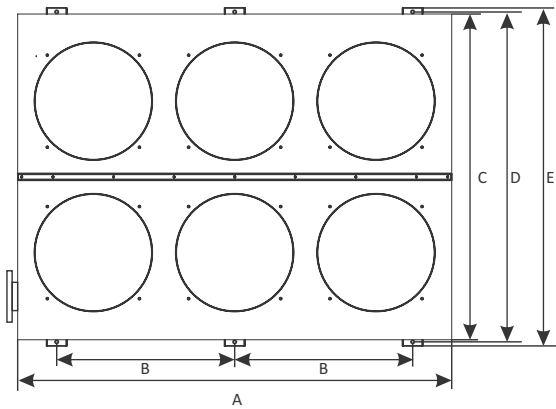
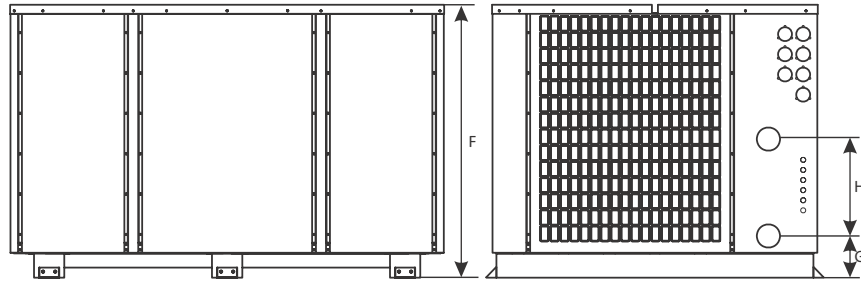


CODE	DIMENSIONS (mm)							
	A	B	C	D	E	F	G	H
PH-02714	2150	908	765	788	828	1310	84	500
PH-02715								

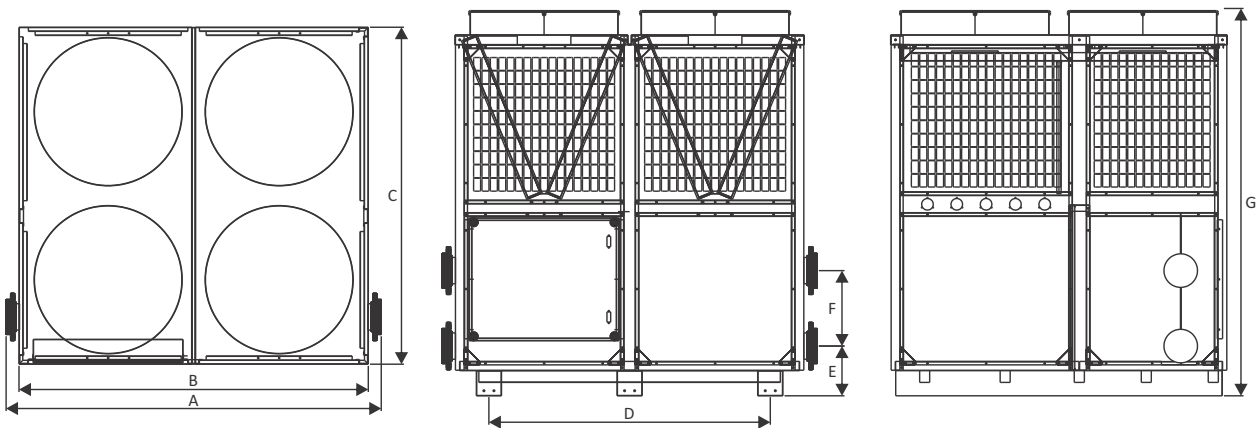


CODE	DIMENSIONS (mm)				
	A	B	C	D	E
PH-02720	1630	1100	1408	1471	310

Temperature Control

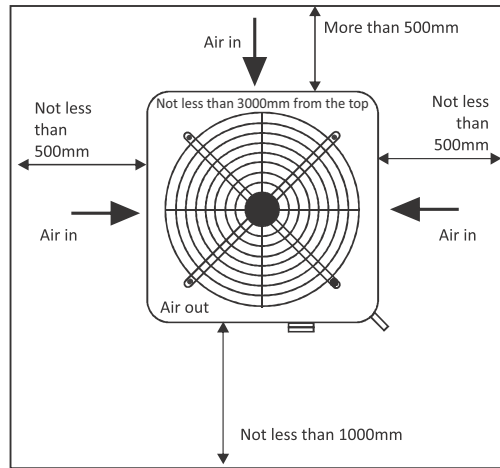


CODE	DIMENSIONS (mm)							
	A	B	C	D	E	F	G	H
PH-02730								
PH-02740	2200	882	1615	1634	1674	1355	207	500
PH-02750								
PH-02760								

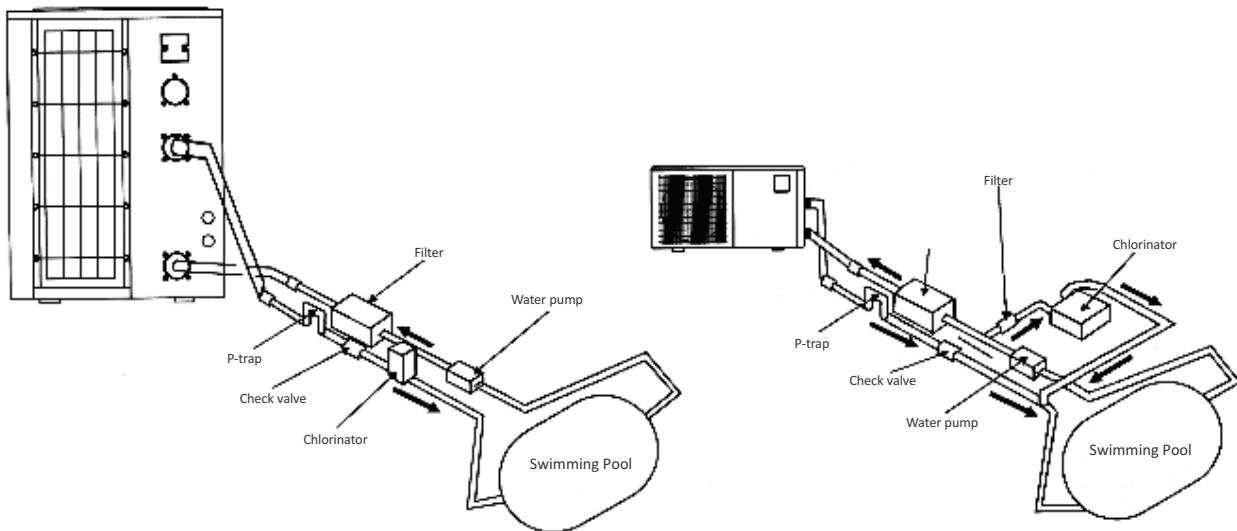


CODE	DIMENSIONS (mm)						
	A	B	C	D	E	F	G
PH-02770	2240	2086	2010	1680	297	450	2310

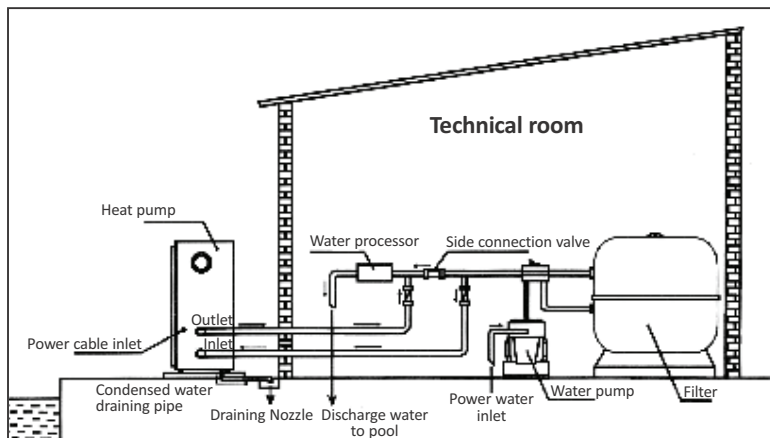
LOCATION OF THE HEAT PUMP:



INSTALLATION OF THE CHECK VALVE:



POOL SYSTEM SET UP:



CONNECTING THE BY-PASS:

