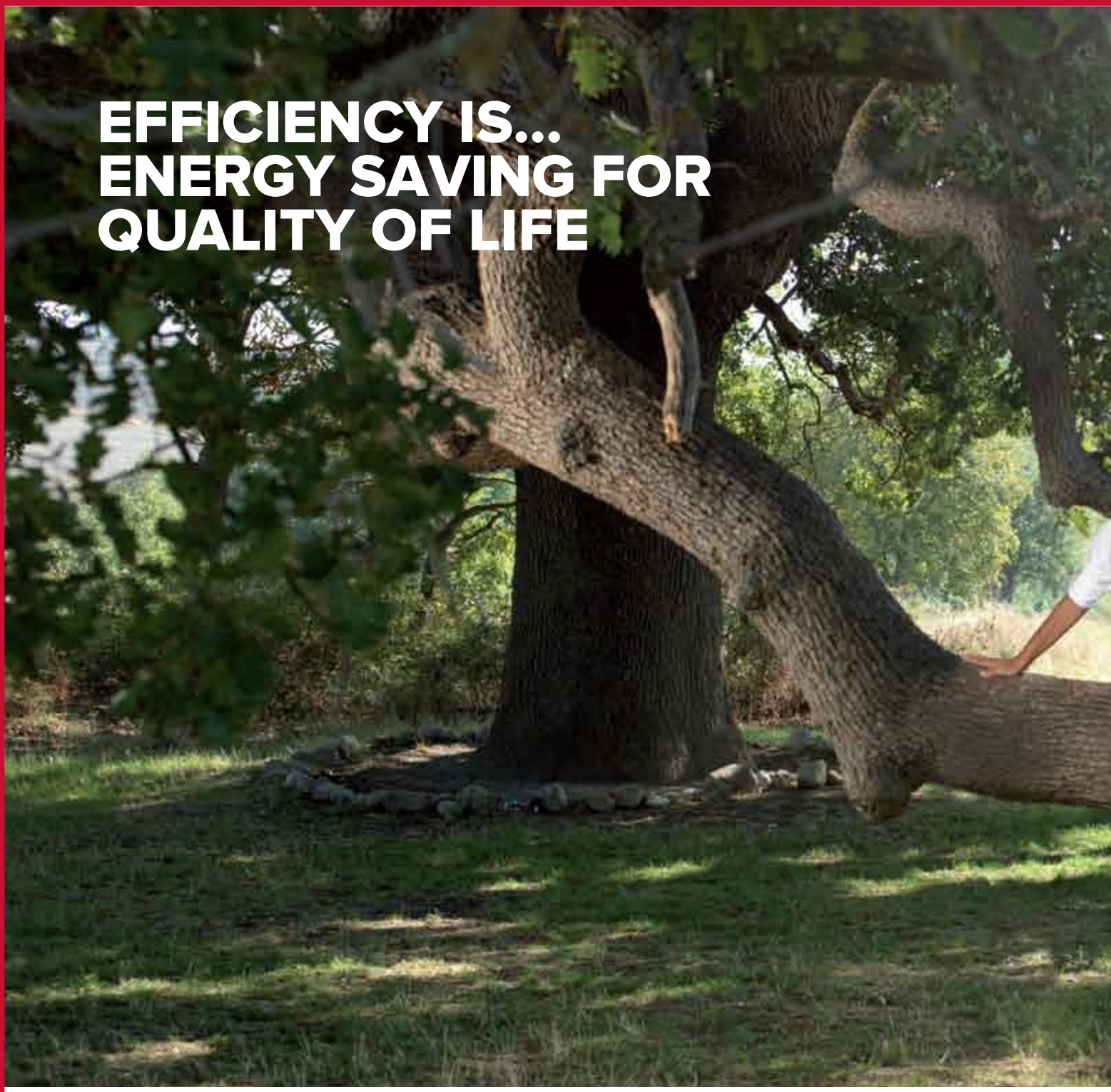
ARISTON

HEAT PUMP COMMERCIAL

HOT WATER I RENEWABLE



EFFICIENCY IS... ENERGY SAVING FOR QUALITY OF LIFE

HOW TO READ THE SYMBOLS

The icons have been designed to facilitate the reading of the features of each product. Ariston makes it possible, from the very beginning, to quickly and easily identify performance levels, understand the different ranges and evaluate purchasing criteria.

SINGLE COMPRESSOR
Special compressor for medium power of heat pump

ENERGY SAVING
Guaranteed with multiple of energy efficient features designed for each product.

C.O.P 4
Efficiency of machine as ratio between total thermal Energy given and electric Energy absorbed.

DEFROSTING SYSTEM
System that prevents condensation water from freezing allowing to work in heat pump function with external air at -5°C

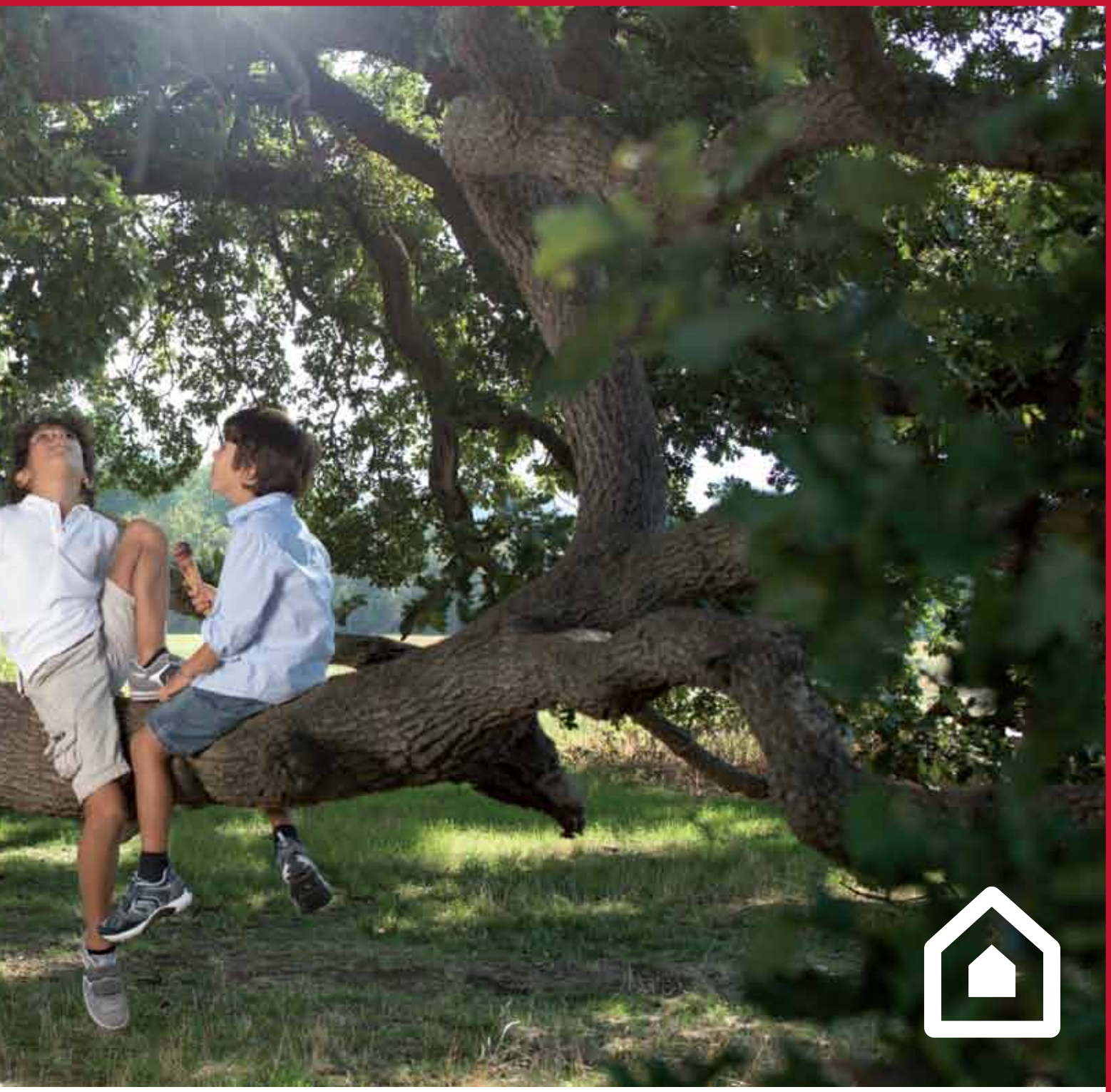
ECOLOGICAL GAS R417A
Thanks to the ecologic gas R417A will not damage the ozone layer.

HIGH EFFICIENCY
Product characterized by high energy performance, lower energy consumption and pollutant emissions.

DUAL COMPRESSOR
Big power with dual compressor for a big power of heat pump.

SUPER SILENCE
Low noise in all operation modes.

BIG POWER
With a minimum input power this machine produced big output power.



EFFICIENT PRODUCT

Heat pump only uses 1/3 of the electric energy necessary to heat water compared to a traditional water heater. The C.O.P. (Coefficient Of Performance) defines the efficiency of the heat pump throught the ratio between the energy obtained and the energy given. This parameter is high above one, showing a great advantage in using Heat pump. For every 100 units of heat given to the water, only 30 units of electric energy are required while the other 70 units are freely taken from the air.

C.O.P. > 3

COMMERCIAL HOT WATER REQUIREMENT

	HOT WATER COMFORT	MULTI-PROTECTION
 / AR-6PM		• Compressor high temperature protection. • Compressor High & Low pressure protection. • Compressor over-load protection. • High water temperature protection. • Motor overcurrent & overheat protection. • Power supply shortage protection. • Anti-freezing protection. • Ambient temp sensor . • Defrosting temperature sensor. • Water flow switch failure protection. • Power-off memory function & Automatic restart function. • Intelligent defrosting function. • Smart water compensation.
 / AR-10PM		
 / AR-17PTP		
 / AR-35PTP		

HOT WATER NEEDS	C.O.P	PHASE
 Residential House	4 COP	SINGLE PHASE
 Villa / Bungalow		
 Apartment / Hotel / Hospital Industrials / School		THREE PHASE

HEAT PUMP TECHNOLOGY

Heat pump commercial uses a thermodynamic cycle to heat the water through the air sucked by the thermal group inverting the heat natural flow. A refrigerant fluid (R417A),
through status changes, compression and expansion cycles, withdraws the heat in the air at low temperature and gives it to domestic water at a higher temperature. This is the reverse mechanism to the one used in refrigerators.
The product electric consumption is only the one necessary to let the fan (that captures the air) and the compressor (that allows the refrigerant fluid to circulate in the system) work.

THERMODYNAMIC CYCLE

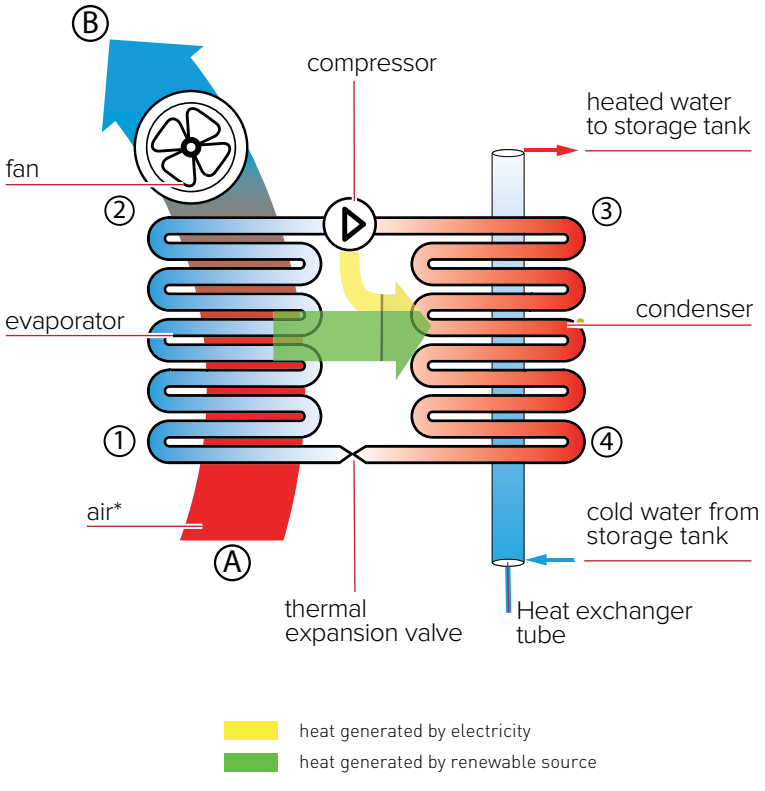
A-B External air is aspirated inside the heat pump thanks to a fan; when passing through the fins of the evaporator, the air gives its heat and lose 10°C approx. Finally it is expelled.

1 -2 The refrigerant fluid goes through the evaporator and absorbs the heat given by the air.During this process it changes its physical status and evaporate, keeping temperature and pressure almost constant. (10°C ; 5 bar).

2 - 3 The refrigerant fluid crosses the compressor and experiences a pressure rising which involves an increase of temperature. At the end of the process the fluid is overheated vapor and its temperature and pressure are 70°C and 20 bar respectively.

3 - 4 Within the condenser, the refrigerant fluid gives its heat to the water which warms up. By doing this, the refrigerant condensate at constant pressure (20 bar) and then experiences a significant reduction of temperature. (70 –>40°C).

4 - 1 The refrigerant fluid passes through the expansion valve, suddenly loose both pressure and temperature and partially evaporate thus returning to the initia conditions of temperature and pressure. (40–>10°C; 5 l bar). The thermodynamical cycle can now start over.



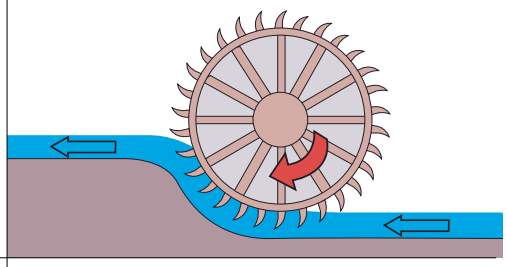
*Air heat energy resource can be obtained from Sun, Burning, Human/Animal, Vehicle exhaust, Industrial waste gas, etc

Heat pump : more than just a water heater

WORKING PRINCIPLE

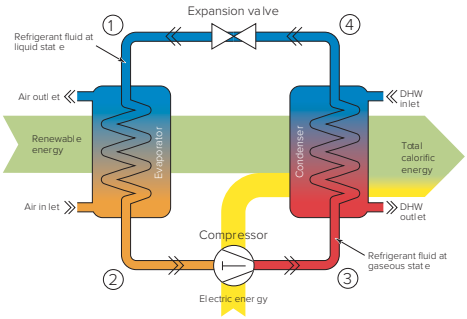
The heat pump is a device which is used to transfer heat from the heat source at lower temperature to the heat source at higher temperature; this process is not spontaneous but requires a “pumping work” from the machine itself.

An heat pump works like an hydraulic pump which, thanks to a certain amount of mechanical energy, moves the water from a lower level to an upper level, disregarding the normal laws of nature.



THERMODINAMIC HEAT PUMPS

There are many physical principle thanks to which it is possible to perform the “pumping” of the heat: gas compression, Peltier’s thermoelectric effect and the refrigeration cycle with phase change. In the case of an heat pump with phase change, a fluid evaporates and condensates at different temperature in a thermodynamical cycle, thanks to expansion and compression processes. When evaporating, the fluid subtracts heat from the source at lower temperature while when condensating the fluid gives back the heat to the source at higher temperature. The most important part of this machine is therefore a compressor driven by an electric motor.



REFRIGERANT FLUID

The thermodynamic characteristics of the fluid are a primary aspect to take into consideration for the proper working of the process. If, for example, heat is taken from a source at 10°C (i.e. external air) to be given to a source at 40°C (i.e. domestic hot water), the fluid evaporation has to take place at a temperature lower than 10°C and its condensation at temperature above 40°C. This fluids are called “refrigerant fluid”.
The fluid used in our heat pump water heater is R417A; it is harmless to the ozone layer, it does not contain chlorine, damaging for the environment, it is not toxic or flammable, all advantages for both the users’ and the installers’ safety. The R417A gas, thanks to high thermodynamic features, guarantees high efficiency.

C.O.P.

The C.O.P. (Coefficient Of Performance) shows the efficiency of this kind of machines as the ratio between total thermal Energy given and electric Energy absorbed.

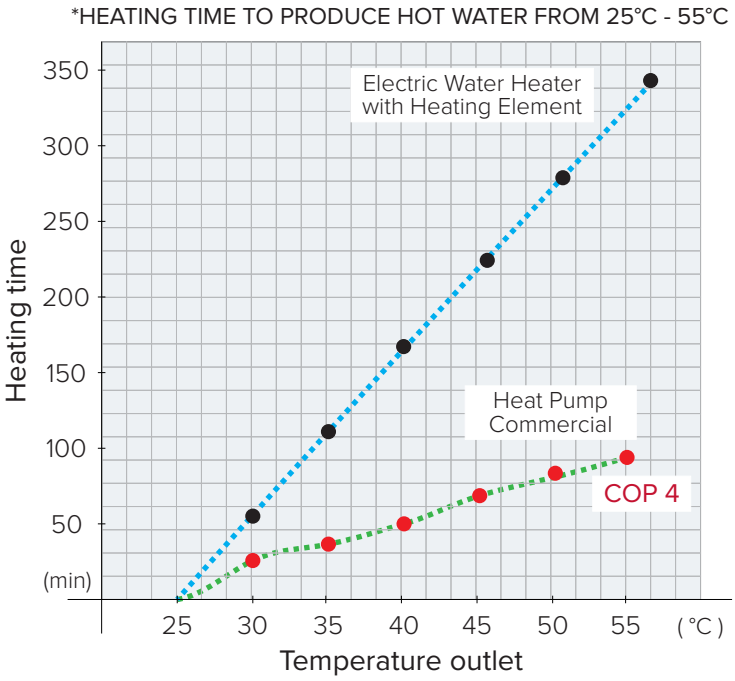
$$COP = \frac{\text{Energy produced}}{\text{Energy absorbed}}$$

The heat pumps can use the “free” thermal energy of the surrounding environment. The quantity of “free”energy is much higher than the quantity of electric energy consumed, therefore the COP is generally higher than 2 and can reach values up to 6.

High efficiency
for a saving energy

Rapid warming to maximum comfort.

Commercial heat pump gives maximum comfort for hot water needs in a big capacity with the rapid warming.



High COP for more Saving energy and High performance

	SATISFACTION HEATING TIME	SATISFACTION ELECTRICITY COST	FRESH AIR**
Electric Water Heater with Heating Element	☺	☺	☹
HEAT PUMP COMMERCIAL	☺☺☺	☺☺☺	☺☺

**Only for AR-17PTP and AR-35PTP

SMART INVESTMENT

Efficiency means lower consumption: the heat pump water heater ensures an energy and cost saving that has a very short payback period, comparing its performances to those of an electric water heater with heating element.

Considering the growing cost of electricity, efficiency will play more and more a primary role in the purchasing of a water heater.

*Using same capacity power 6 kW between EWH and Heat Pump, to heat up 1000 Liter water from 25°C until 55°C

AR-6PM

HIGH EFFICIENCY · DEFROSTING SYSTEM · ECOLOGICAL GAS R417A · SUPER SILENCE · C.O.P 4 · ENERGY SAVING · SINGLE COMPRESSOR

DESCRIPTION

- Compact air/water heat pump for outside installation.
- With suction gas cooled rotary compressor.
- With extensive epoxy coated hydrophilic aluminum/ rifled Cu lamellar tube evaporator and anti-corrosion coated coaxial condenser.
- Axial fan
- Refrigerant cycle with thermostatic expansion valve, filter, gas-liquid separator, high and low pressure switches.
- With efficient automatic defrosting by hot gas principle.
- Electric and terminal box. With control and Disturbance signaling.
- Heating regulator for mounting to the wall.
- Filled with refrigerant R417a.
- Water pump embedded for convenient installation.

		AR-6PM
Voltage	V	220
Phase		Single phase
Frequency	Hz	50
Heating capacity*	kW	5,80
Rated power input*	kW	1,36
Maximum current	A	9
Heating water capacity	L/H	124
COP*		4,26
Refrigerant		R417 A
Refrigerant charge	g	1200
Compressor		
Type		Rotary
Brand		Highly
Quantity		1
Condenser		Single wall tube in tube
Circulation pump		Grundfos
Rated water flow rate	m^3/h	1,6
Pressure Drop	Kpa	40
Circulation pump pressure head	m	2,5
Max. water temperature	°C	60
Operation temp. range	°C	-10 ~ 45
Noise	dB(A)	≤56
Connection	Inch	G3/4”
Weight	Kg	65
Index protection		IPX4
Insulation class		1
Dimension	mm	835x320x870

Super silence, High efficiency for better energy saving and lower cost.

*at ambient temp. 30°C/60%H, inlet 25° C and outlet 55° C

AR-10PM

HIGH EFFICIENCY · DEFROSTING SYSTEM · ECOLOGICAL GAS R417A · SUPER SILENCE · C.O.P 4 · ENERGY SAVING · SINGLE COMPRESSOR

DESCRIPTION

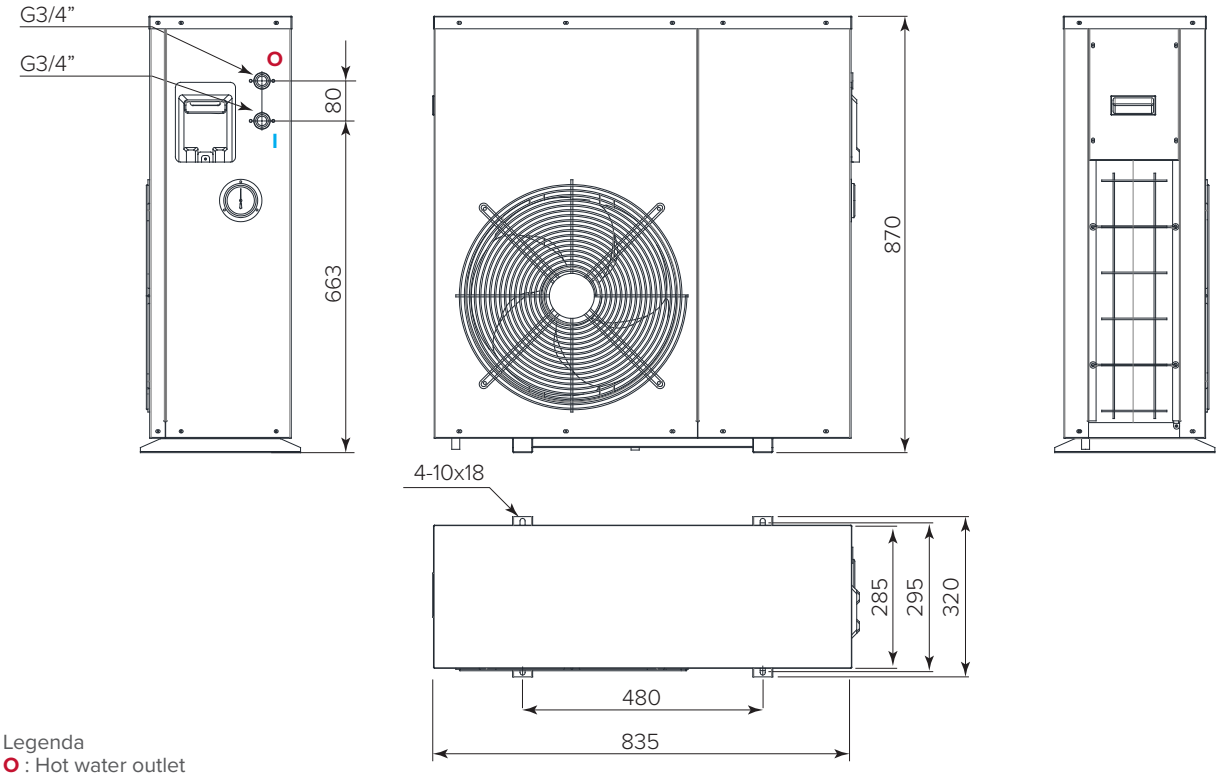
- Compact air/water heat pump for outside installation.
- With suction gas cooled rotary compressor.
- With extensive epoxy coated hydrophilic aluminum/ rifled Cu lamellar tube evaporator and anti-corrosion coated coaxial condenser.
- Axial fan
- Refrigerant cycle with thermostatic expansion valve, filter, gas-liquid separator, high and low pressure switches.
- With efficient automatic defrosting by hot gas principle.
- Electric and terminal box. With control and Disturbance signaling.
- Heating regulator for mounting to the wall.
- Filled with refrigerant R417a.
- Water pump embedded for convenient installation.

High efficiency for a better comfort Hot water. -10°C inlet air min. temperature.

		AR-10PM
Voltage	V	220
Phase		Single phase
Frequency	Hz	50
Heating capacity*	kW	11,20
Rated power input*	kW	2,83
Maximum current	A	20
Heating water capacity	L/H	240
COP*		3,96
Refrigerant		R417 A
Refrigerant charge	g	2100
Compressor		
Type		Rotary
Brand		Highly
Quantity		1
Condenser		Single wall tube in tube
Circulation pump		Grundfos
Rated water flow rate	m^3/h	2,00
Pressure Drop	Kpa	45
Circulation pump pressure head	m	3,5
Max. water temperature	°C	60
Operation temp. range	°C	-10 ~ 45
Noise	dB(A)	≤58
Connection	Inch	G1"
Weight	Kg	84
Index protection		IPX4
Insulation class		1
Dimension	mm	1200x440x870

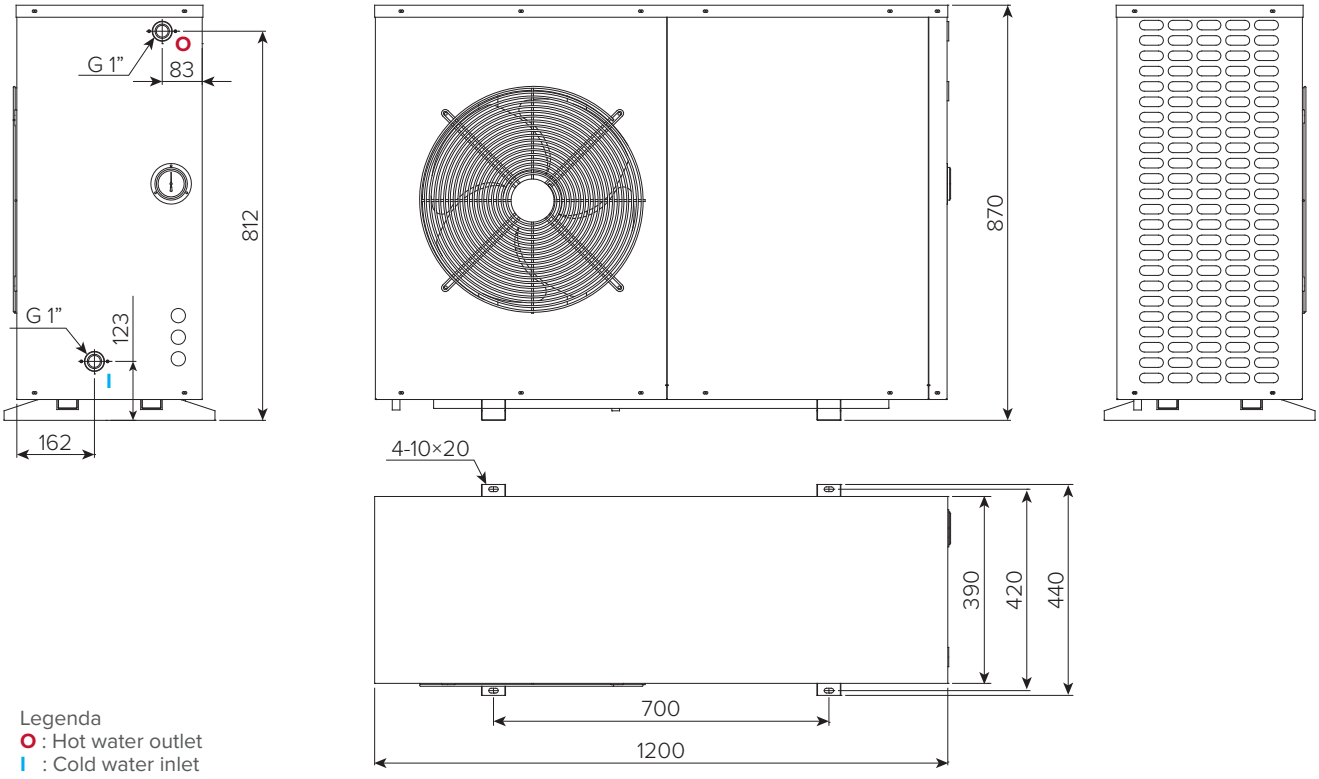
*at ambient temp. 30°C/60%H, inlet 25° C and outlet 55° C

DIMENSION AR-6PM



Legenda
O : Hot water outlet
I : Cold water inlet

DIMENSION AR-10PM



Legenda
O : Hot water outlet
I : Cold water inlet

AR-17PTP

BIG POWER · HIGH EFFICIENCY · DEFROSTING SYSTEM · ECOLOGICAL GAS R417A · SUPER SILENCE · C.O.P 4 · ENERGY SAVING · SINGLE COMPRESSOR

DESCRIPTION

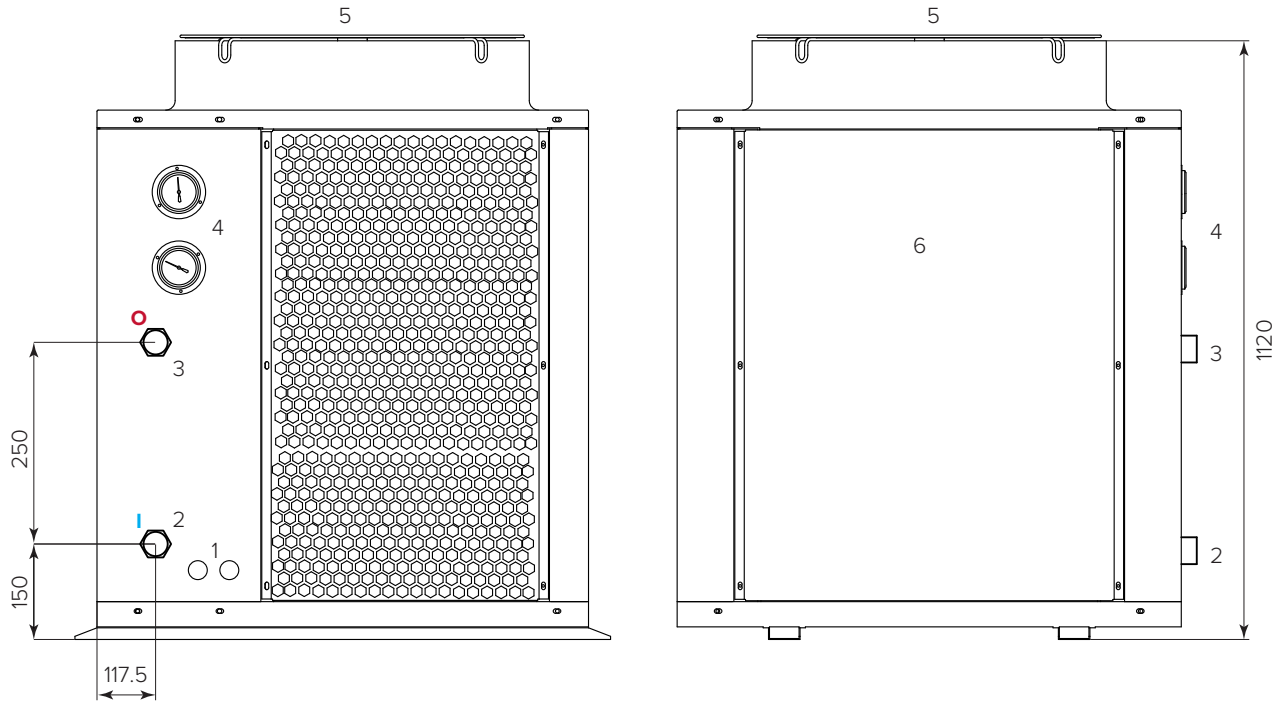
- Compact air/water heat pump for outside installation.
- With suction gas cooled rotary compressor.
- With extensive epoxy coated hydrophilic aluminum/ rifled Cu lamellar tube evaporator and anti-corrosion coated coaxial condenser.
- Axial fan
- Refrigerant cycle with thermostatic expansion valve,
- filter, gas-liquid separator, high and low pressure switches.
- With efficient automatic defrosting by hot gas principle.
- Electric and terminal box. With control and Disturbance signaling.
- Heating regulator for mounting to the wall.
- Filled with refrigerant R417a.

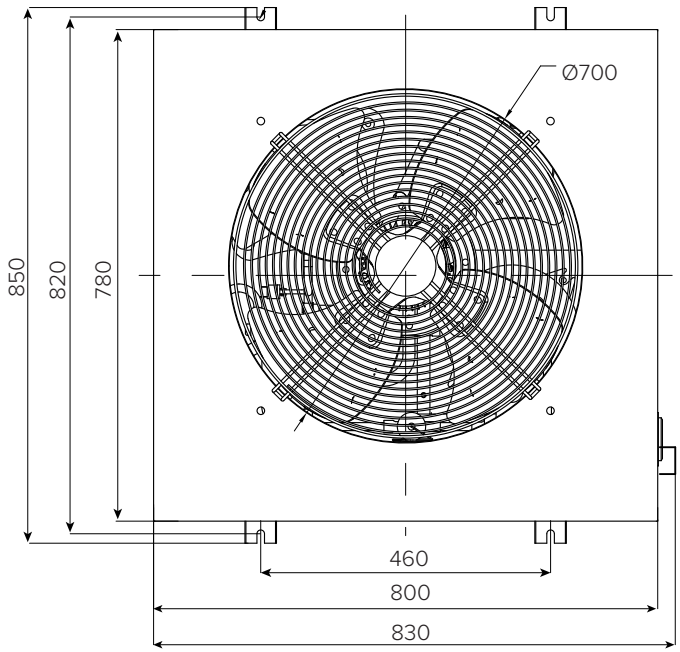
		AR-17PTP
Voltage	V	380
Phase		three phase
Frequency	Hz	50
Heating capacity*	kW	21,70
Rated power input*	kW	5,31
Maximum current	A	14
Heating water capacity	L/H	465
COP*		4.09
Refrigerant		R417 A
Refrigerant charge	g	3900
Compressor		
Type		Rotary
Brand		Highly
Quantity		1
Condenser		Single wall tube in tube
Circulation pump		-
Rated water flow rate	m^3/h	4,00
Pressure Drop	Kpa	60
Circulation pump pressure head	m	-
Max. water temperature	°C	60
Operation temp. range	°C	-10 ~ 45
Noise	dB(A)	≤60
Connection	Inch	G1”
Weight	Kg	160
Index protection		IPX4
Insulation class		1
Dimension	mm	830x850x1120

High efficiency, with minimum input power produced
Big power output

*at ambient temp. 30°C/60%H, inlet 25° C and outlet 55° C

DIMENSION AR-17PTP





1.Cable wiring.
2.Heating water input.
3.Heating water output.
4.High/Low pressure gauge.
5.Air output.
6.Wiring box.

Legenda
O : Hot water outlet
I : Cold water inlet

AR-35PTP

BIG POWER · HIGH EFFICIENCY · DEFROSTING SYSTEM · ECOLOGICAL GAS R417A · SUPER SILENCE · C.O.P 4 · ENERGY SAVING · DUAL COMPRESSOR

DESCRIPTION

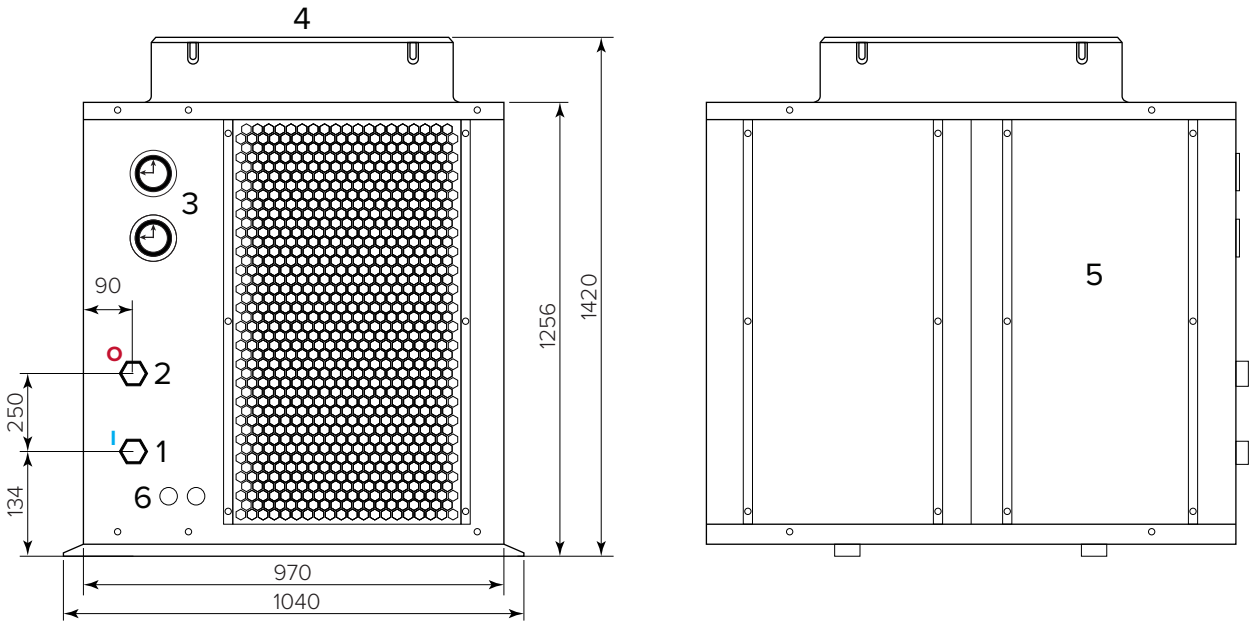
- Compact air/water heat pump for outside installation.
- With suction gas cooled rotary compressor.
- With extensive epoxy coated hydrophilic aluminum/ rifled Cu lamellar tube evaporator and anti-corrosion coated coaxial condenser.
- Axial fan
- Refrigerant cycle with thermostatic expansion valve,
- filter, gas-liquid separator, high and low pressure switches.
- With efficient automatic defrosting by hot gas principle.
- Electric and terminal box. With control and Disturbance signaling.
- Heating regulator for mounting to the wall.
- Filled with refrigerant R417a.

		AR-35PTP
Voltage	V	380
Phase		three phase
Frequency	Hz	50
Heating capacity*	kW	45,30
Rated power input*	kW	11,27
Maximum current	A	29
Heating water capacity	L/H	970
COP*		4,02
Refrigerant		R417 A
Refrigerant charge	g	3700x2
Compressor		
Type		Rotary
Brand		Highly
Quantity		2
Condenser		Single wall tube in tube
Circulation pump		-
Rated water flow rate	m^3/h	8,00
Pressure Drop	Kpa	75
Circulation pump pressure head	m	-
Max. water temperature	°C	60
Operation temp. range	°C	-10 ~ 45
Noise	dB(A)	≤62
Connection	Inch	G1-1/4”
Weight	Kg	290
Index protection		IPX4
Insulation class		1
Dimension	mm	1230x1040x1420

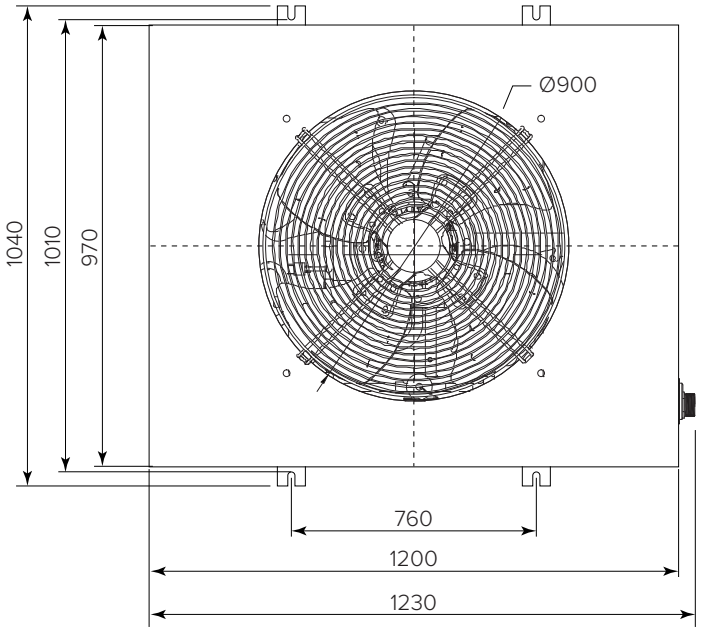
Dual compressor, for a big capacity needs of hot water rapidly

*at ambient temp. 30°C/60%H, inlet 25° C and outlet 55° C

DIMENSION AR-35PTP



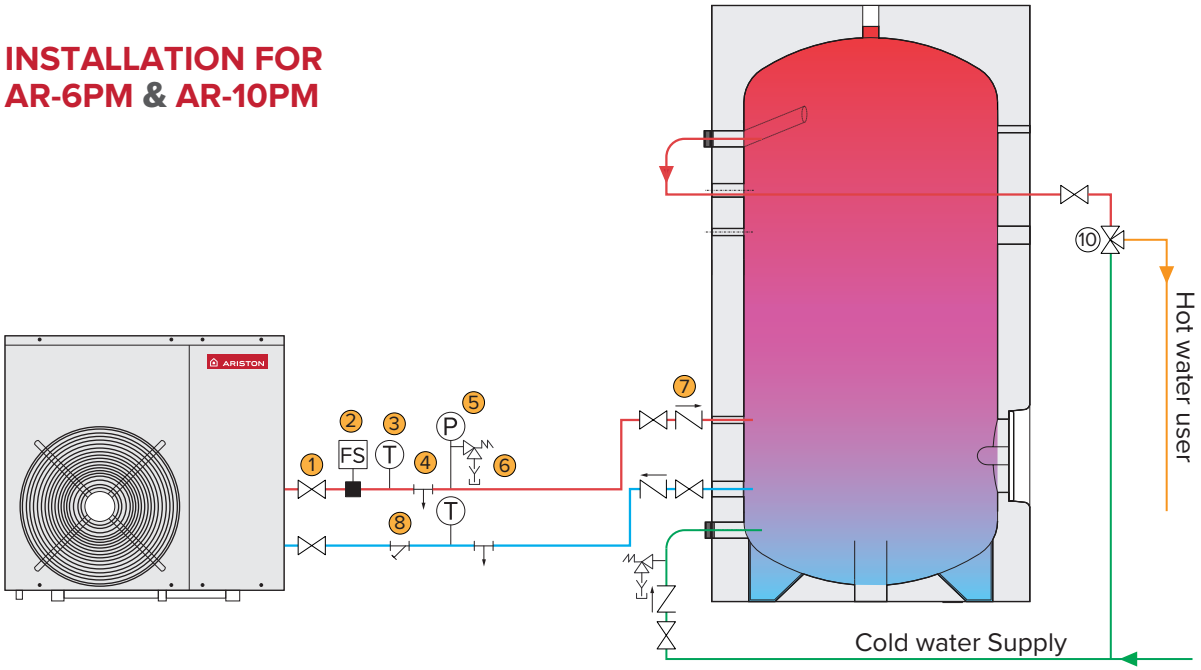
1. Heating water input
2. Heating water output
3. High/Low pressure gauge
4. Air output
5. Wiring box
6. Cable wiring



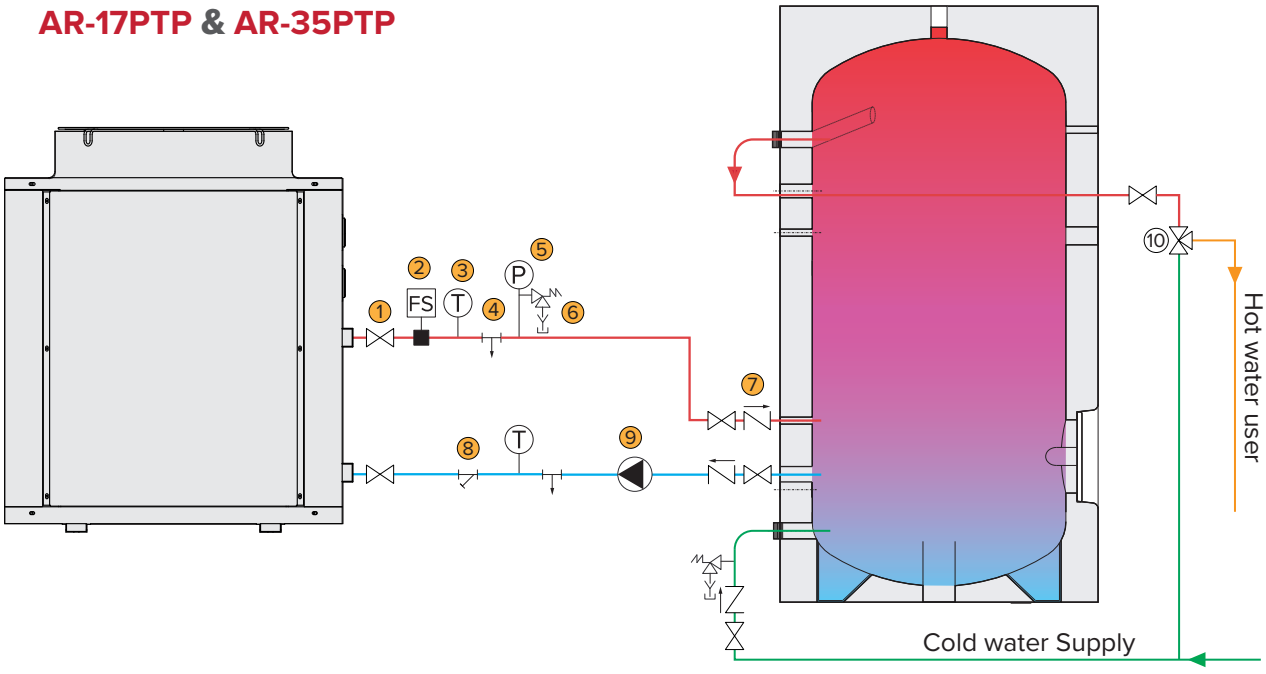
Legenda
O : Hot water outlet
I : Cold water inlet

INSTALLATION GUIDE

INSTALLATION FOR AR-6PM & AR-10PM



INSTALLATION FOR AR-17PTP & AR-35PTP

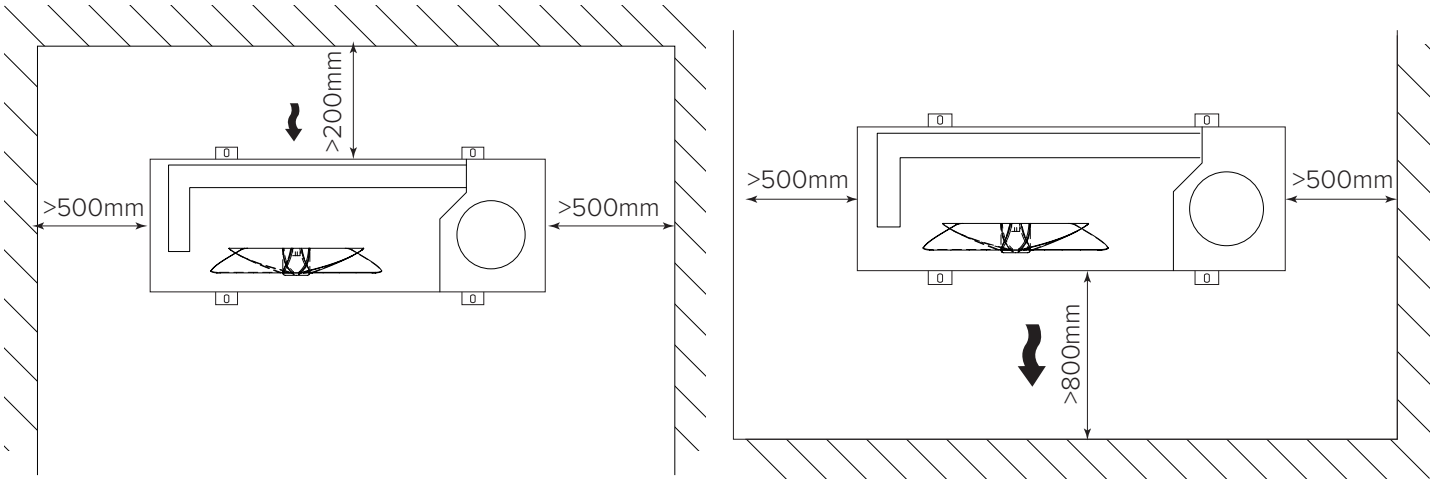


Legenda:

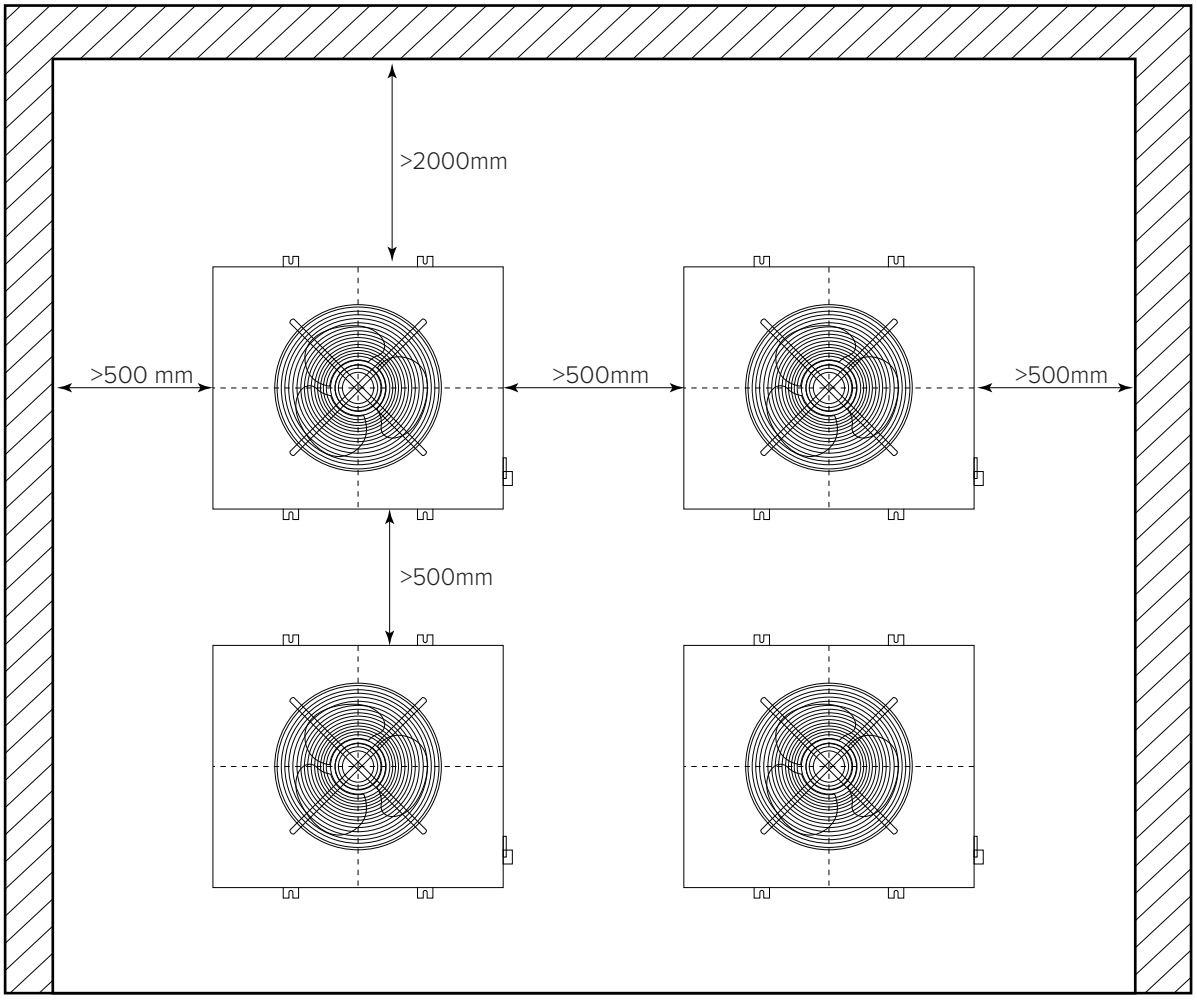
1. Ball valve
2. Flow switch
3. Thermostat
4. Drain & Filling valve
5. Pressure gauge
6. Safety valve
7. Check valve
8. Y Strain
9. Pump

INSTALLATION DIMENSIONING PRODUCT

INSTALLATION FOR AR-6PM & AR-10PM



INSTALLATION FOR AR-17PTP & AR-35PTP



Ariston focuses on four operational areas of critical importance to the overall efficiency of the company.

And it does, to support its partners (wholesalers, installers, technical assistance centers, designers, end users) and the sales network with an efficient, interactive and flexible.

SERVICES

TECHNICAL TRAINING

TECHNICAL ADVICE PRE / POST SALE

CONSULTANCY ON STANDARDS

Transmit **correct information** and useful is the first step to achieve a **high level of quality**. In a business like that in which we **operate**, the technical support is a prerequisite for delivering a good product.

Before and after the sale, we are present with a constant consultancy. Because every technological system must lie at the root.

TECHNICAL SUPPORT AND SYSTEM DIMENSIONING

021-29865999

SERVICE AND MAINTENANCE

021-4226333

SERVICE CENTRE, TELP. BEBAS PULSA 0800 1138 138 (KHUSUS JABODETABEK)

Jakarta	(021) 4226333	Jember	(0331) 4435249	Medan	(061) 4556961		(021) 55744234	**KERJASAMA OPERASIONAL**	
Bandung	(022) 6044366		085100821459	Pekanbaru	(0761) 8328098	Tasikmalaya	(0265) 2350597	Probolinggo	081230220219
	(022) 4217401	Kediri	(0354) 76224679	Palembang	(0711) 8031997	Yogyakarta	(0274) 586463	Pekalongan	(0285) 412088
	(022) 4209772		(0354) 681518	Palu	(0451) 457670			Solo	(0271) 645110
Banjarmasin	(0511) 7850088	Kendari	(0401) 3136507	Purwokerto	(0281) 6445740	**DEALER**		Temanggung	(0293) 491454
Bogor	(0251) 8820208	Lampung	(0721) 240147	P. Siantar	(0622) 25516	Pontianak	(0561) 766688	Yogyakarta	(0274) 486123
Cirebon	(0231) 205696	Makasar	(0411) 458454		(0622) 7161511	Medan	(061) 7321230		(0271) 9486123
Cianjur	(0263) 2283065		(0411) 424046	Samarinda	(0541) 7773672				
Denpasar	(0361) 8495095	Madiun	(0351) 451345	Semarang	(024) 7617875				
Jambi	(0741) 7111104	Malang	(0341) 7688800	Surabaya	(031) 7320439				
	(0741) 7550715	Manado	(0431) 868964	Tangerang	(021) 55744233				

ARISTON OFFERS COMPLETE CUSTOMER SATISFACTION

The Internet site provides operators within the sector with all the information which are linked to the “product catalogue”, offering individual details of technical features, exploded views and spare parts lists, updates for operating booklets and instruction manuals.
It provides users with telephone numbers and addresses for the relevant Assistance Centres and stockists in their local area.

ariston.com

SERVICE

The capillary network of Ariston Technical Assistance Centres has been developed to cover the entire country, in order to guarantee emergency and routine maintenance operations which demonstrate efficiency and a high degree of professional preparation.

A group of experts also support our Customers in the constant updating process relating to new products and technologies

DESIGN ITALIANO

ARISTON THERMO GROUP

Ariston Thermo SpA
Viale A. Merloni, 45 • 60044 Fabriano (AN) - ITALY
Fax: 0732 602416

PT. Ariston Thermo Indonesia
Dipo Business Centre, 15th floor
Jl. Jend. Gatot Subrot Kav 51-52
Jakarta 10260 - Indonesia

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