ALARKO

HEAT PUMP WATER HEATER R290 SERIES

ENERGY EFFICIENCY

A+ energy efficiency with smart grid support, save money and be eco-friendly.

POLICY BACKGROUND

Refrigerators with GWP greater than 150 will be phased out, while refrigerants with low GWP will become a trend

In the European Parliament and Council Directive (EU) 2019/1937 on the Amendment to Fluorinated Greenhouse Gases and the Abolition of Regulation (EU) 517/2014, it is mentioned that: Integrated or split type air conditioners with a rated capacity of 12KW or less, as well as other self regulating equipment including heat pumps, require switching to refrigerant with a GWP<150

2006

Launch the first fluoride gas regulation
Focus on fluorinated gases ("refrigerant management")

2014

Launch the first fluoride gas regulation
Focus on fluorinated gases ("refrigerant management")

2024

The third fluoride gas regulation will be launched

- 2022.4 the committee passed proposals on the regulation of fluorinated greenhouse gases and ozone depleting substances.
- 2023.3, the parliament passed its position on the proposal,
- 2023.4, the board of directors reached a consensus on the overall approach.

2027

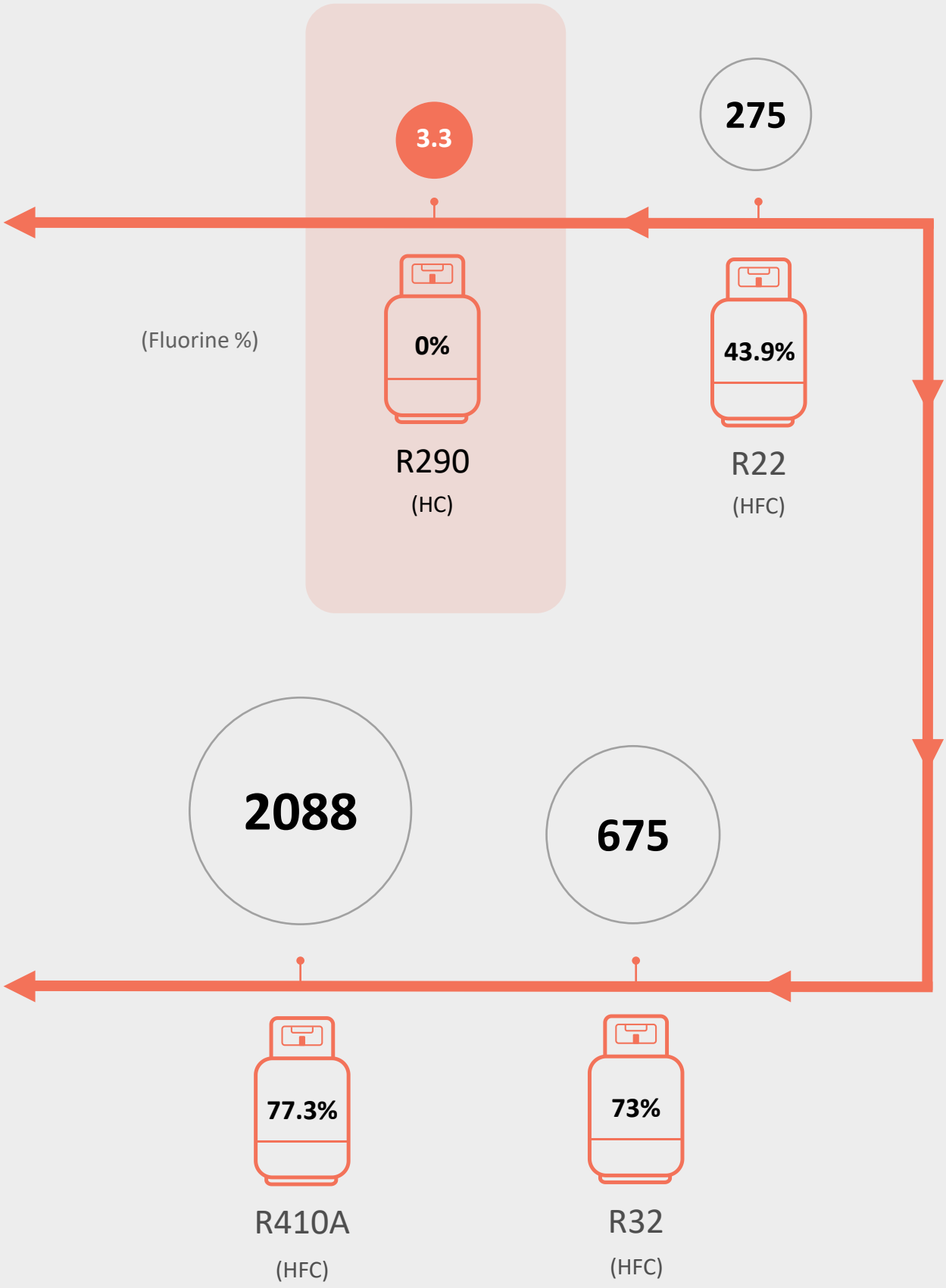
Split type ATW heat pump and integrated air conditioning
Need to replace all

2029

Split type ATA air conditioning
Need to replace all

R290 BIOLOGICALLY FRIENDLY

Global Warming Potential (GWP)



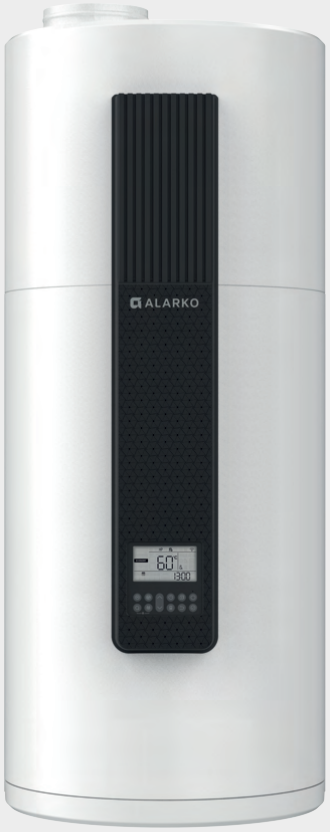
Wall-Hung & Combo Water Heater

Product line

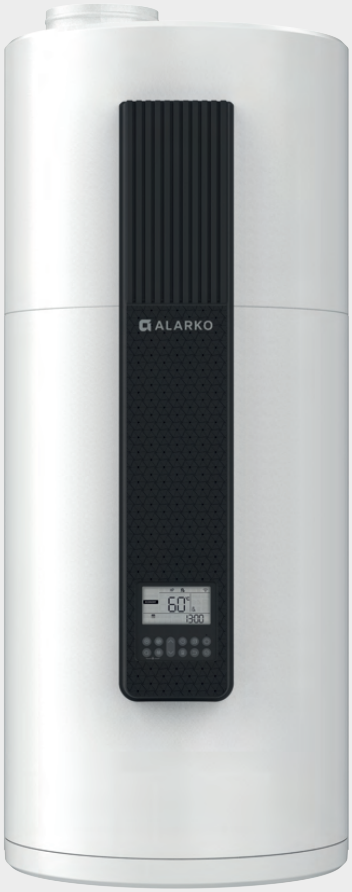
Water Tank Volume	Type	Heat Pump	Electric heater	Energy Efficiency	Refrigerant	Image
80L	Wall-Hung	0.95kW	1.5kW	A+	R290	
100L		0.98kW	1.5kW	A+	R290	
150L		1.30kW	1.5kW	A+	R290	
190L	COMBO	1.43kW	1.64kW	A+	R290	
190L with Solar Coil				A+	R290	
300L		1.50kW	1.64kW	A+	R290	
300L with Solar Coil				A+	R290	

Wall-Hung & Combo Water Heater

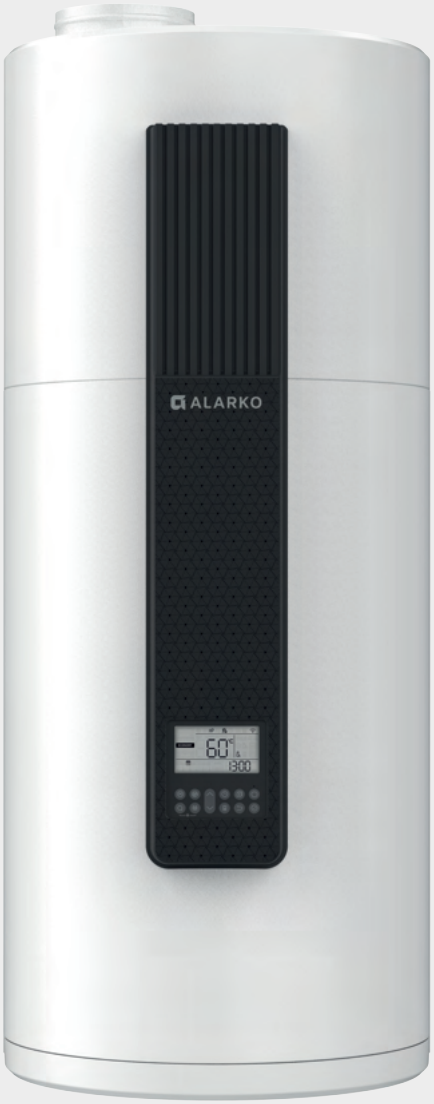
R290 Wall-Hung Water Heater-80/100/150L



80L
FLR-HWH-80WH



100L
FLR-HWH-100WH



150L
FLR-HWH-150WH

- High Efficiency
- Enhanced Comfort
- More Convenient
- High Reliability
- Easy Installation and Service

Wall-Hung & Combo Water Heater

R290 Wall-Hung Water Heater-80/100/150L

Model			FLR-HWH-80WH		FLR-HWH-100WH		FLR-HWH-150WH	
Running models			Heat pump	E-heater	Heat pump	E-heater	Heat pump	E-heater
Running ambient temp.		℃	0～43 -7～43 for models with air inlet duct	0～43 -20～45 for models with air inlet duct	0～43 -7～43 for models with air inlet duct	0～43 -20～45 for models with air inlet duct	0～43 -7～43 for models with air inlet duct	0～43 -20～45 for models with air inlet duct
Outwater Temp.		℃	Default 50℃,38℃～65℃(70)		Default 50°C,38°C～65°C(70)		Default 50°C,38°C～65°C(70)	
Power supply		Ph-V-Hz	1-220～240-50		1-220～240-50		1-220～240-50	
Storage size		Ltr	78		98		145	
Water heating	Capacity（A15/12°C,W 15~45°C）	kW	0,95	1,50	0,98	1,50	1,30	1,50
	η		112%	/	111%	/	122%	/
	scf		0,1	/	0,1	/	0,09	/
	energy class		A+		A+		A+	
	Max. current	A	9,0		9,0		10,5	
Unit	Dimension (D×H)	mm	Φ500×548×1196		Φ500×548×1360		Φ500×548×1707	
	Packing (W×H×D)	mm	620×1295×585		620×1450×585		620×1785×585	
	Net/gross weight	kg	57/63		62/68		80/87	
Sound power level (without duct)		dB(A)	54		54		56	
Refrigerant type/quantity		kg	R290/0.15		R290/0.15		R290/0.15	
Air flow		m³/h	190		200		240	
Compressor	Model		RDSN58V11TZL		RDSN58V11TZL		RDSN89V11TZL	
	Type		Rotary		Rotary		Rotary	
	Brand		GMCC		GMCC		GMCC	
	Capacity	W	1135		1135		1710	
Water Side Heat exchanger			Microchannel heat exchanger		Microchannel heat exchanger		Microchannel heat exchanger	
E-heater		kW	1.5×1		1.5×1		1.5×1	
Mixed water at 40 ℃ V40		L	85		110		160	

Remark:

The specification may be changed for product improvement, please refer to the nameplate.

Wall-Hung & Combo Water Heater

R290 Combo Water Heater-190/300L

190L
FLR-HWH-190C
FLR-HWH-190CSC

300L
FLR-HWH-300C
FLR-HWH-300CSC

Wall-Hung & Combo Water Heater

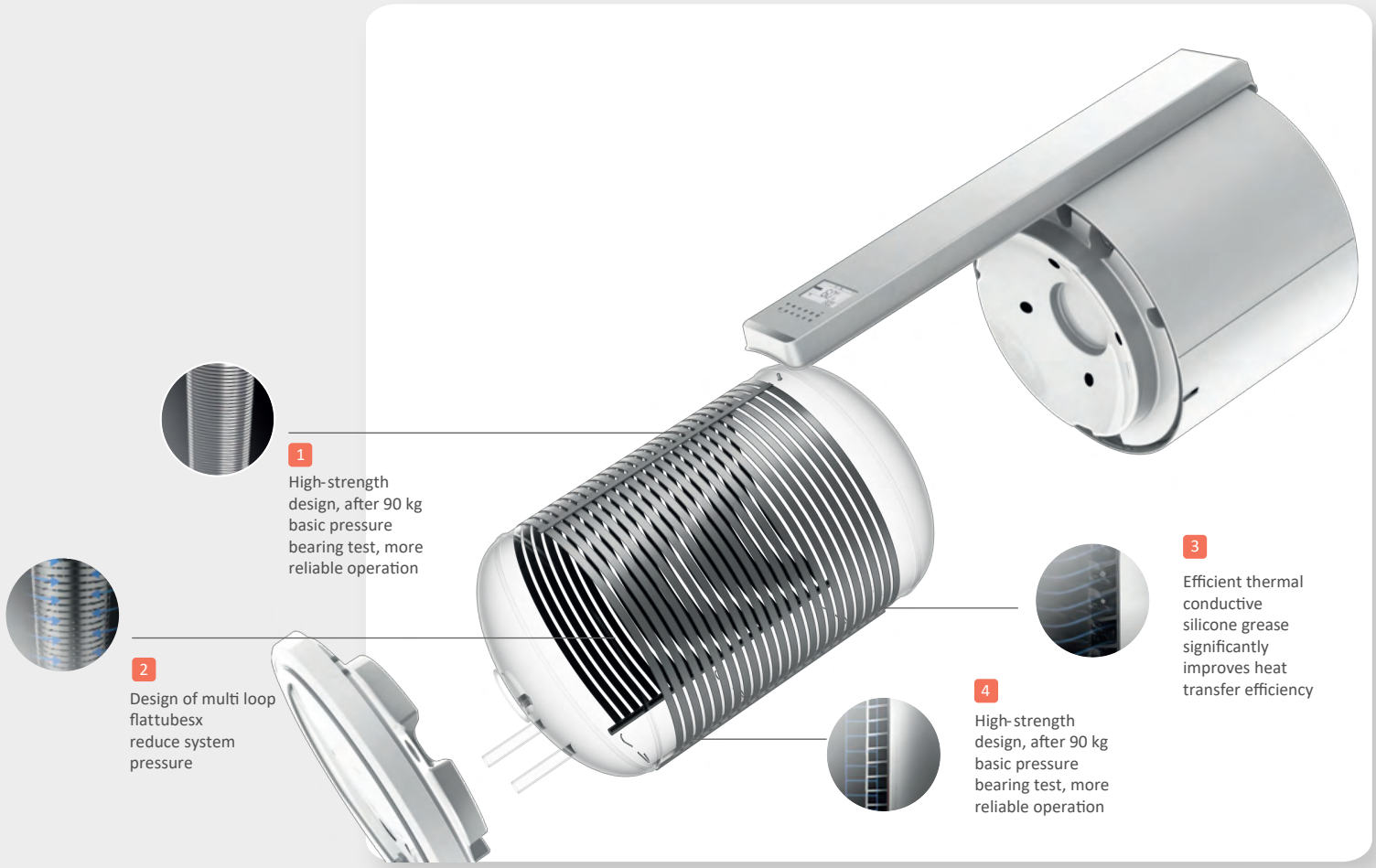
R290 Combo Water Heater-190/300L

SPECIFICATIONS

Model			FLR-HWH-190C	FLR-HWH-190CSC	FLR-HWH-300C	FLR-HWH-300CSC
Power supply		Ph-V-Hz	1-220～240-50	1-220～240-50	1-220～240-50	1-220～240-50
Running ambient temp.	Heat pump	℃	-7～43	-7～43	-7～43	-7～43
	E-heater		-20～46	-20～46	-20～46	-20～46
Storage size		Ltr	185	181	275	270
Maximum inlet water pressure		Mpa	0.7	0.7	0.7	0.7
Net/gross weight		kg	91/112	94/115	123/148	132/160
Dimension (D×H)		mm	Φ560×595×1730	Φ560×595×1730	Φ660×695×1895	Φ660×695×1895
Packing (W×H×D)		mm	655x675x1945	655x675x1945	775×745×2110	775×745×2110
MAX.Hot water temperature with heat pump		℃	65	65	65	65
MAX.Hot water temperature additional electric heater		℃	70	70	70	70
Tank	Material	-	Enameled steel	Enameled steel	Enameled steel	Enameled steel
	Cathodic protection	-	Mg rod anode / Electronic + Mg anode is optional	Mg rod anode / Electronic + Mg anode is optional	Mg rod anode / Electronic + Mg anode is optional	Mg rod anode / Electronic + Mg anode is optional
	Water inlet pipe	mm	DN20	DN20	DN20	DN20
	Water outlet pipe	mm	DN20	DN20	DN20	DN20
	Drainage pipe	mm	DN20	DN20	DN20	DN20
Electrical data (Heat pump+electric heater)	Maximum heat pump power input	W	600	600	710	710
	E-heater	W	1640	1640	1640	1640
	Maximum power input	W	2240	2240	2350	2350
Refrigerant design pressure		MPa	3.0/1.2	3.0/1.2	2.7/1.1	2.7/1.1
Refrigerant ciruit	Compressor	-	Rotary	Rotary	Rotary	Rotary
	Refrigerant	-	R290	R290	R290	R290
	Refrigerant charge	g	150	150	150	150
	Evaporator	-	Copper-aluminum finned coil	Copper-aluminum finned coil	Copper-aluminum finned coil	Copper-aluminum finned coil
	Condenser	-	Aluminum tube wound outside tank	Aluminum tube wound outside tank	Aluminum tube wound outside tank	Aluminum tube wound outside tank
Solar coil	Material	-	/	SUS 316	/	SUS 316
	Surface	m^2	/	0,6	/	1,1
	Max pressure	MPa	/	1,0	/	1,0
Data according to EN 16147: 2017 standard for AVERAGE climate (unit in ECO mode, Hot water setpoint = 54 ° C; Inlet water = 10 ° C; Inlet air temp = 7 ° C DB / 6 ° C WB) * according to European regulation 812/2013	Load profile	-	L	L	XL	XL
	Water heating energy efficiency class	-	A+	A+	A+	A+
	Water heating energy efficiency -η	%	131	130	132	128
	COP_{DHW}	-	3,146	3,14	3,25	3,13
	Reference hot water temperature-θ_{wh}	℃	53	53	52	53
	Annual electricity comsuption-AEC	kWh/a	780,8	785	1267	1312
	SCF (Smart)	%	13	/	/	/
Data according to EN 12102-2: 2019 ECO mode with Inlet air temp = 7 ° C DB / 6 ° C WB	Indoor sound power level (without duct)	dB(A)	56	51	54	51

MICROCHANNEL HEAT TRANSFER TECHNOLOGY

The contact area between the heat exchanger and the water tank is increased, therefore the heat exchange effect is better; Porous parallel flow design, higher heat transfer efficiency under the same heat transfer area.



INTERNAL COIL

Installing internal coils in the low water temperature zone

IMPROVE ENERGY EFFICIENCY AND SAVE ENERGY：

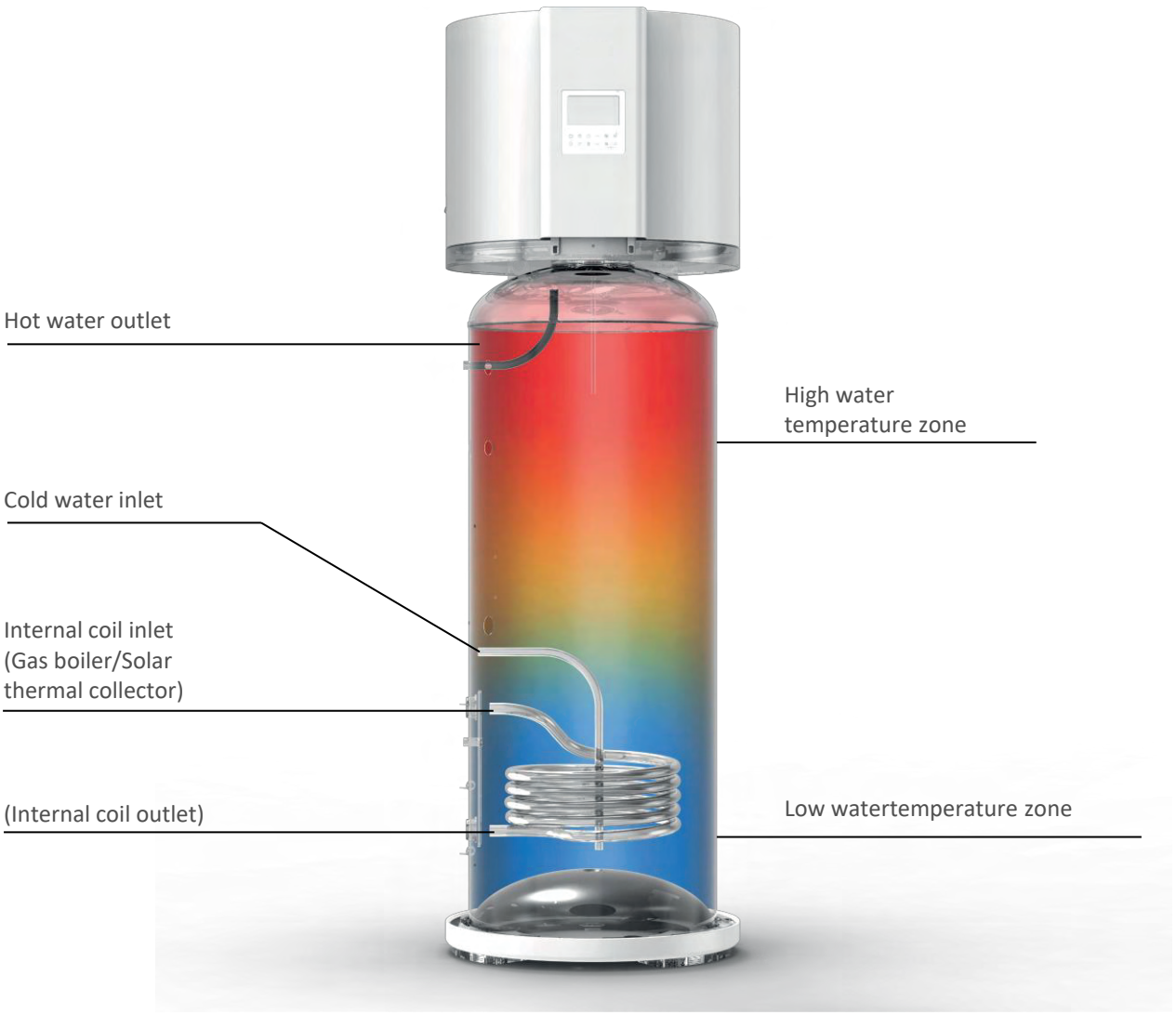
Transfer heat energy, and improve the energy efficiency of the heat pump and save energy

INCREASE THE HEATING RATE OF HOT WATER:

Heating capacity is large and the heating rate of hot water is fast

SUITABLE FOR MULTIPLE APPLICATIONS：

Can meet three connection modes of solar collector
Can be connected to gas boiler as a powerful auxiliary heat source

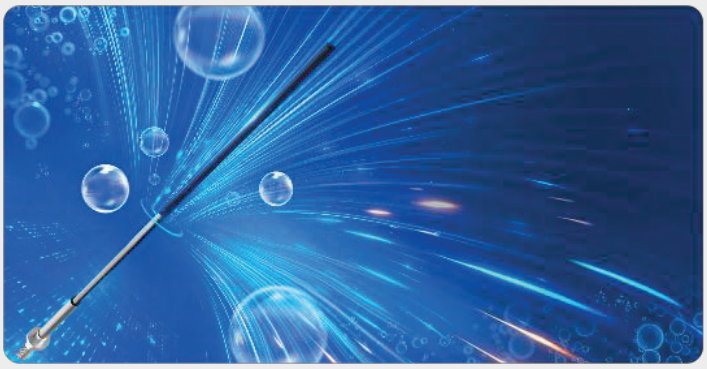


MORE DURABLE

Equipped with noble metal electronic anode rods, achieving corrosion protection through out the entire life cycle of the inner tank and extending the service life of the inner tank.

Electronic anode

Equipped with both electronic anode and magnesium rod anti-corrosion technologies, the product guarantees full life cycle corrosion protection of the inner tank, regardless of whether it is powered on or off.



Enamel water tank

High impact strength

More than 100 thousand of impact tests

Strong corrosion resistance

500 hours corrosion resistance test, equipped with magnesium anode

High absorption capacity

Tank coating materials from international famous brand FERRO, adheres to the tank tightly

High pressure bearing strength

Dedicated steel helps ensuring the strength under pressure

Top manufacturing technology

International cutting-edge enamel manufacturing process by German famous EISENMAN professional production line

Thick insulation layer

45mm

thick insulation layer

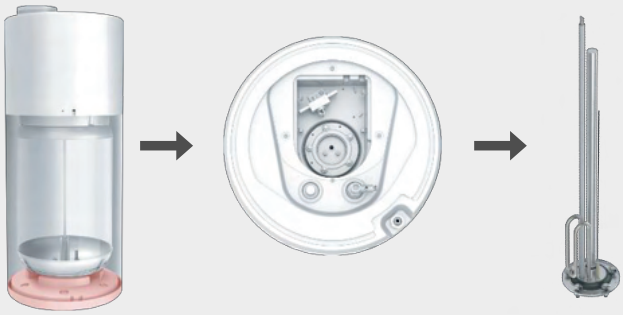
EASY INSTALLATION AND MAINTENANCE

Special air inlet/outlet design, fits well for the installations inside the room (for EU models)

Easy Maintenance

Magnesium rod is easy to maintain

Open the bottom service cover to replace the magnesium rod, which is easy to operate.

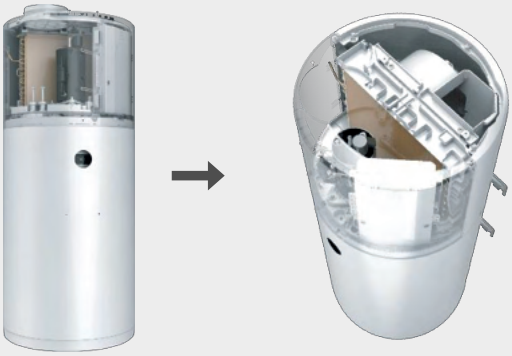


Positive maintenance

The electronic control, compressor, valve body and other components that may involve maintenance components are located directly on the front, requiring only the removal of the front cover plate for an easy maintenance.

Easy fan maintenance

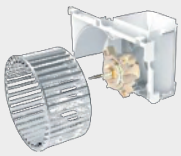
Install the upper case, motor, and wind turbine as a component onto the lower shell. During maintenance, simply remove the upper case to access the motor and wind turbine component for repair.



1. Open the top cover, trim panel and front cowl

2. Loosen the screws

Component view



Disassembly view

3. Take out the assembly with lower worm gear, wind turbine and motor

MORE CONVENIENT, MORE CARING

The new R290 product has a variety of operating modes that cater to all your needs.

Disinfection function

Equipped with both electronic anode and magnesium rod anti-corrosion technologies, the product guarantees full life cycle corrosion protection of the inner tank, regardless of whether it is powered on or off.

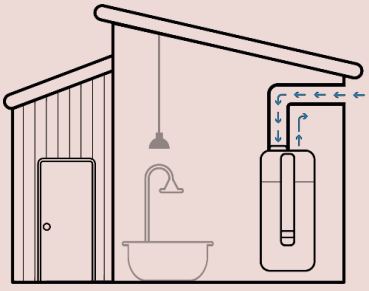
Running frequency	7 days
Start time	23:00

Vacation mode

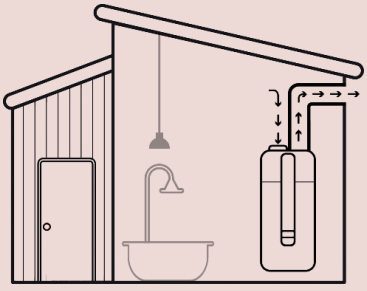
Vacation mode allows you to set the operation during your vacation. At the end of the vacation time, the unit will automatically enter disinfection mode and resumes previous settings from before entering vacation mode.

Ventilation function (optional)

Strengthen indoor air circulation for fresher air.



Bringing fresh outdoor air to the indoor



Exhausting dirty indoor air to the outdoor

Photovoltaic（PV）ready

The Combo unit can be connected to photovoltaic systems; a signal from the PV system can trigger the heating process using this free green energy to power the Combo unit.

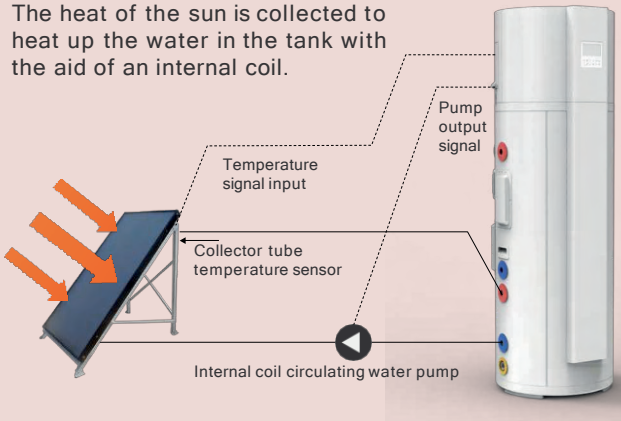
Solar thermal integration with internal coil

Heat exchanger coil application in the lower temperature zone of the unit.

Multiple applications

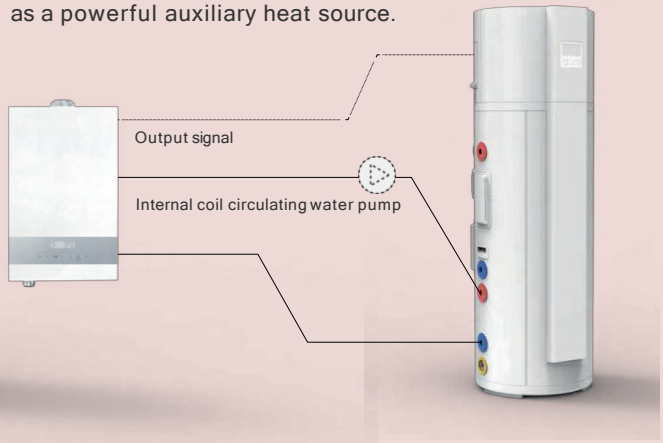
Solar collector

Can be connected to solar collector. The heat of the sun is collected to heat up the water in the tank with the aid of an internal coil.



External boiler

Can be connected to an external boiler as a powerful auxiliary heat source.



In the garage

In the basement

In the storage room

Note: Manufacturer reserves the right to change any product specifications without notice.

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