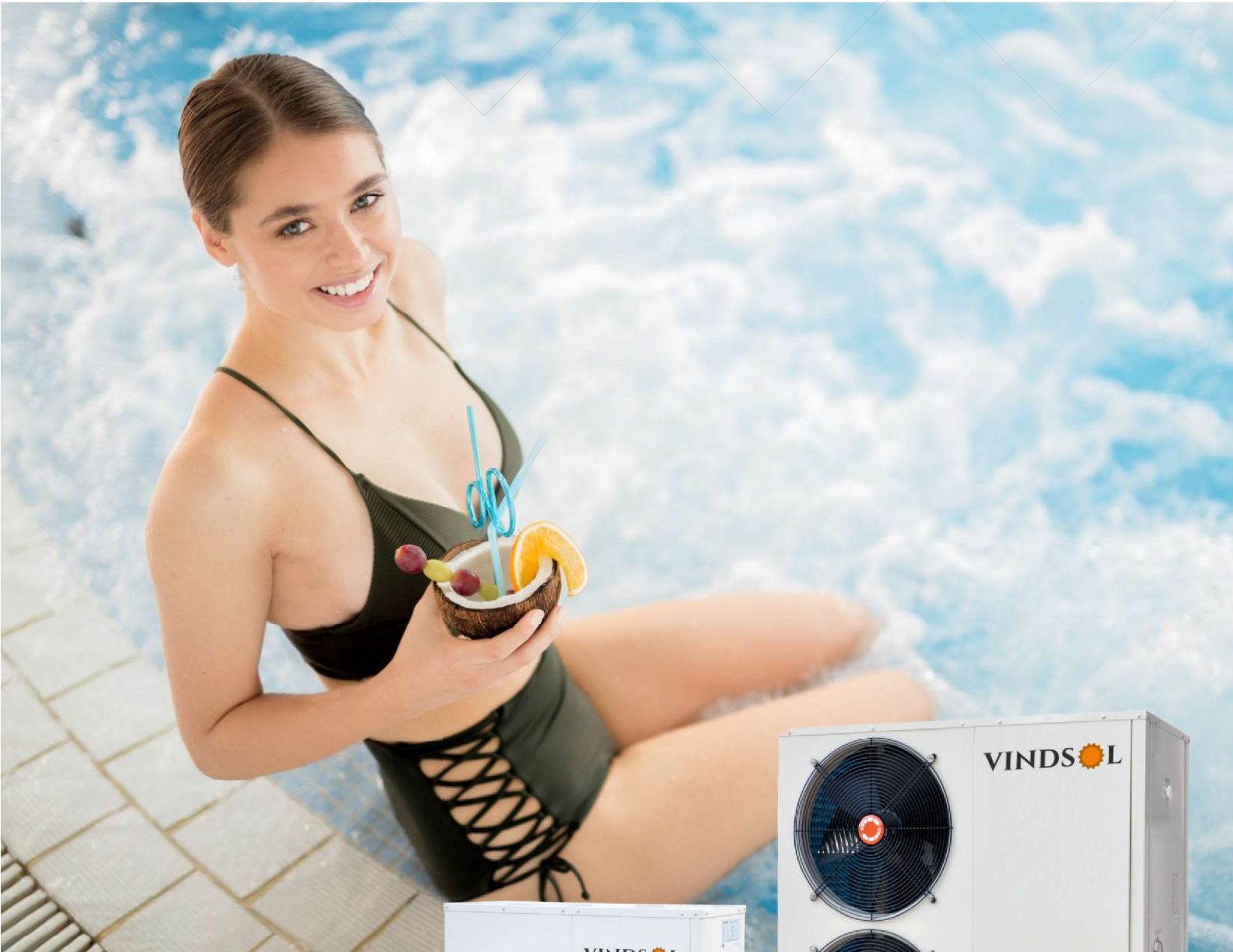


VINDSOL

HARNESSING THE NATURE'S ENERGY FOR YOU



Spa-Pool Air Source Heat Pump





The Company profile

VINDSOL Energy Solutions & Systems supplies a wide range of efficient and reliable heat pumps for Domestic, Commercial & Swimming pool hot water requirements

VINDSOL always focuses on providing cost effective & environmental friendly solutions to the problem of rising energy costs.

Our Mission is to have Reliable & Quality Design, Be Customer Centric, Provide Technology for future and to be Environmentally responsible.

Reliable & Quality design

VINDSOL Air Source Heat Pumps are manufactured from the highest quality materials and designed not just to meet, but to exceed all relevant performance and environmental standards.

Customer centric

VINDSOL understands the customer requirements and provides solutions in terms of technical and commercial aspects. When you order any of our heat pump you can feel secure in the knowledge that you are purchasing the best quality and most reliable product.

After sales Support

Backed by highly efficient administration and warranty schemes, the Company is also focused on providing an exceptional after-sales service for all of its customers.

A brighter future with green technology

There is a growing awareness that we all need to do more to reduce our dependency on fossil fuels. With this in mind VINDSOL has focused in bringing out a wide range of renewable energy based heat pump products

VINDSOL signifies nature's energy. "VIND" represent the wind energy and "SOL" represent Solar Energy, thereby it represents our total commitment to the customers we serve with latest and environmental friendly products.

Introduction – Heat Pump Technology

Heat pump converts the sensible heat in the ambient natural air into heat energy and uses to heat the water. In this aspect, this system can be classified as a Renewable Energy source as the heat in the ambient air is replenished by the Sun.

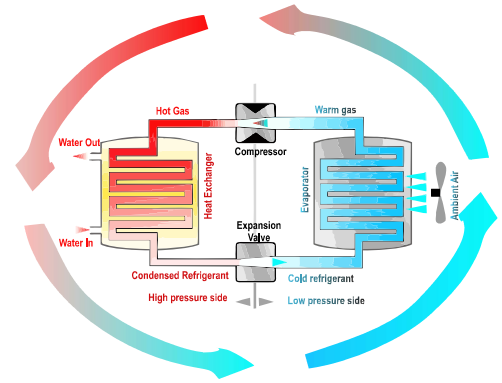
History Behind Heat Pump

The theory of heat extraction using gas was founded in 1805 by Oliver Evans, with the first domestic fridge appearing around 1890. Heat pump is derived from there and is similar to air conditioner. With such a vast history, air source heat pump technology is a proven and reliable concept for hot water application.

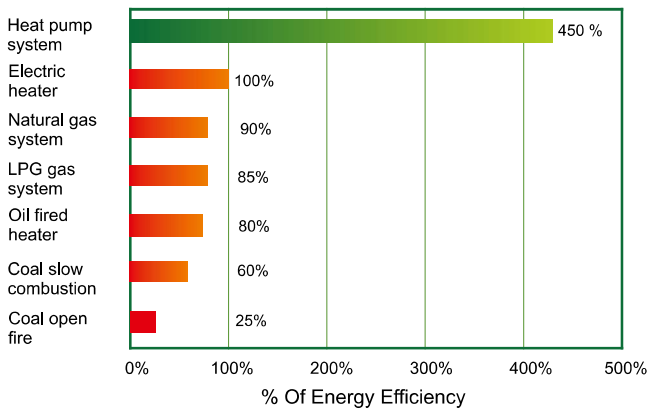


How do Heat pump works ?

Hot Water Heat Pumps work on a similar principal to a refrigerator; they are able to absorb energy from the surrounding outdoor air and transfer this energy into a refrigerant. The heat energy is upgraded using a refrigerant cycle and this renewable energy is transferred into the water. The refrigerant used in VINDSOL Hot Water Heat Pumps has zero ozone depletion potential. This refrigerant allows useful heat energy to be absorbed even when the outdoor conditions drop below freezing.



How Efficient Heat pump is?



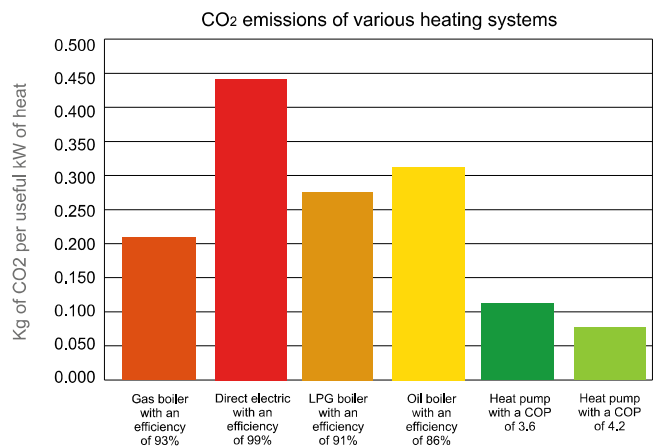
A Co-Efficient of Performance (COP) is a ratio of heat energy produced compared to electrical energy consumed by an appliance. The higher the COP, the less energy is consumed to produce the same amount of heat. A comparison of COPs shows that electric heating has a COP of 1; meaning for every 1kW of energy consumed only 1kW of heat is produced. Gas heating is even lower at 0.85, which means for every 1kW consumed only 0.85kW of useful heat is produced.

Care for environment

VINDSOL Electric Hot Water Heat Pumps are extremely energy efficient and can achieve COPs between 3-4.5, meaning they can produce 3-4.5kW of heat for every 1kW consumed.

As no fossil fuels are directly burnt in the operation of a heat pump, CO₂ emissions are also greatly reduced in comparison to gas or oil-fired boilers.

The refrigerant used in VINDSOL Hot Water Heat Pumps has zero ozone depletion potential.





Benefits



Constant hot water supply of 55-60 deg irrespective of the season outside.



Energy saving of 60-75 % is outstanding compared to conventional electrical heating systems with quick payback period.



Very low maintenance Long service life and low maintenance cost, with stable equipment performance Its service life can reach over 10-15 years



HIGH reliability Designed specifically for the outlasting harsh climatic conditions and last longer than other heating methods.



All Seasons working Heat pumps can operate all day every day all season. Including overcast & rainy days.



Environmental protection Eco friendly refrigerants emit much lower Co2 footprint than other heating equipments, without burning any fossil fuels.



Convenient and Easy installation Using our qualified service and installation teams. It can be installed in any place, such as roof and floor etc.



Self Diagnostic function Errors are automatically detected by the system with specific code. Each code designate an error for easy understanding and troubleshooting.

Core components

SCROLL COMPRESSOR



Highest durable and reliable compressor in the market

EMERSON Copeland Panasonic
Fully protected (High/low temp. and pressure. over current, phase protection)
Anti liquid impact.

4 WAY REVERSING VALVE



Design ensures instantaneous changeover with minimal pressure drop. The valves are equipped with a mechanism that prevents incomplete changeover

Danfoss SAGNO MIRA

ELECTRONIC EXPANSION VALVE



Effectively controls the temperature & regulates optimum refrigerant flow for best in class C.O.P.

Danfoss SAGNO MIRA EMERSON
Better operating conditions means less faults and consequently a reduction in maintenance costs.

REFRIGERANT



Various option of Refrigerant liquid as per application that is environmentally friendly, non flammable and non toxic

**R410A R417A
R134A R407C**

HYDROPHILIC FINNED EVAPORATOR



The hydrophilic coated finned evaporator with enhanced frosting and corrosion resistance.

The corrugated louvered fin extend heat exchanging surface, thereby facilitating more contact with inlet air and improved efficiency of the evaporator.

COAXIAL HEAT EXCHANGER



Coaxial heat exchanger consist of spiral grooves inner tube and a outer tube. water and refrigerant in counter current flow design.



Spiral grooved structure enhance the turbulence intensity, increased heat transfer coefficient.

LARGE AIR FLOW FAN



Wide fan blade, low noise, high temperature and abrasion resistant.

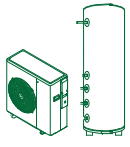
Large air flow design, means more air into the system, accelerating the heat exchange and improve efficiency.

INTELLIGENT LCD CONTROLLER



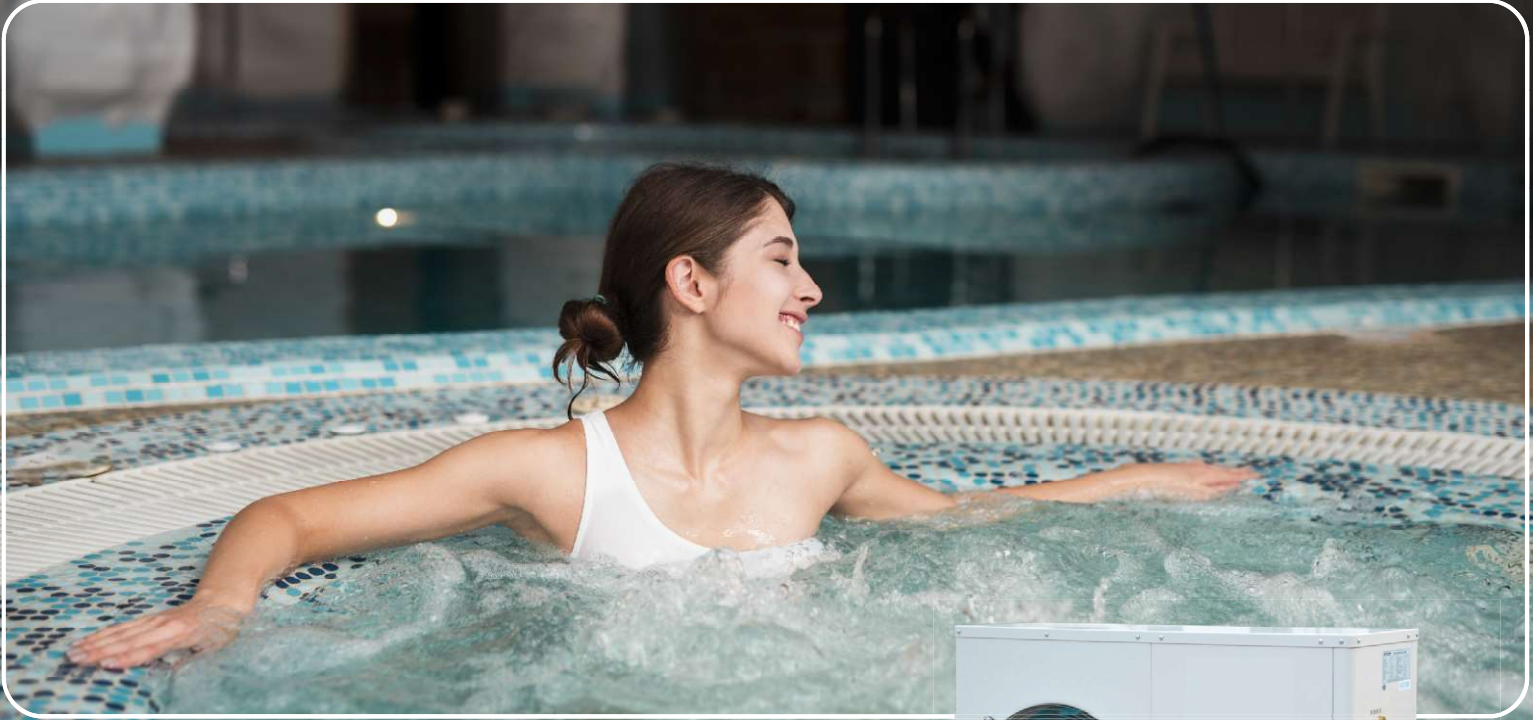
One touch intelligent controller with Touch screen design, clear working condition displaying, and self-check function of error.





Spa - Pool Heat pumps

Monoblock type / Split type



Spa / pool heat pumps

Heat pump technology has been widely adopted in the pool industry due to its significant cost savings. In fact most pool heat pumps can save owners 70% or more in heating costs.

Until now most spa owners were stuck with standard electric heaters. However, electricity is becoming more and more expensive and will continue this upper trend.

A Vindsol® Spa Heat Pump for your spa is an ideal choice for heating both small pools and spas and backyard residential swimming pools.

A pool heater or a pool heat pump are the most common heating solutions that allow you to extend your swimming season. Both enable energy-efficient heating for every budget, and there are various factors to consider when determining which is the best heating solution for your pool.

Designed to extend the usable season for your spa or even provide year-round comfort, Vindsol® pool heaters are unmatched in features and benefits.



Features



Solid Build quality:
The outer cabinet structure is made of Galvanized steel making them more rust resistant & durable.



Very Quiet in operation
And low aesthetic impact. provided with anti vibration mounts.



Auto restart
System resumes back to its previous setting once the power is restored



Compact dimension:
Takes up minimal space Compared to industrial solar water heating installations



Intelligent Auto defrost
ensures stable operation even in very low ambient temperatures.



ON off timer
System can be set to turn on/off automatically as per the requirement

System Protections



Under voltage protection
Over voltage protection



Phase imbalance Protection



Anti freeze Protection



Under current protection
Over current protection



Open phase Protection



Compressor Overload



Compressor high discharge Temperature protection



Phase reversal Protection



Compressor high Pressure protection

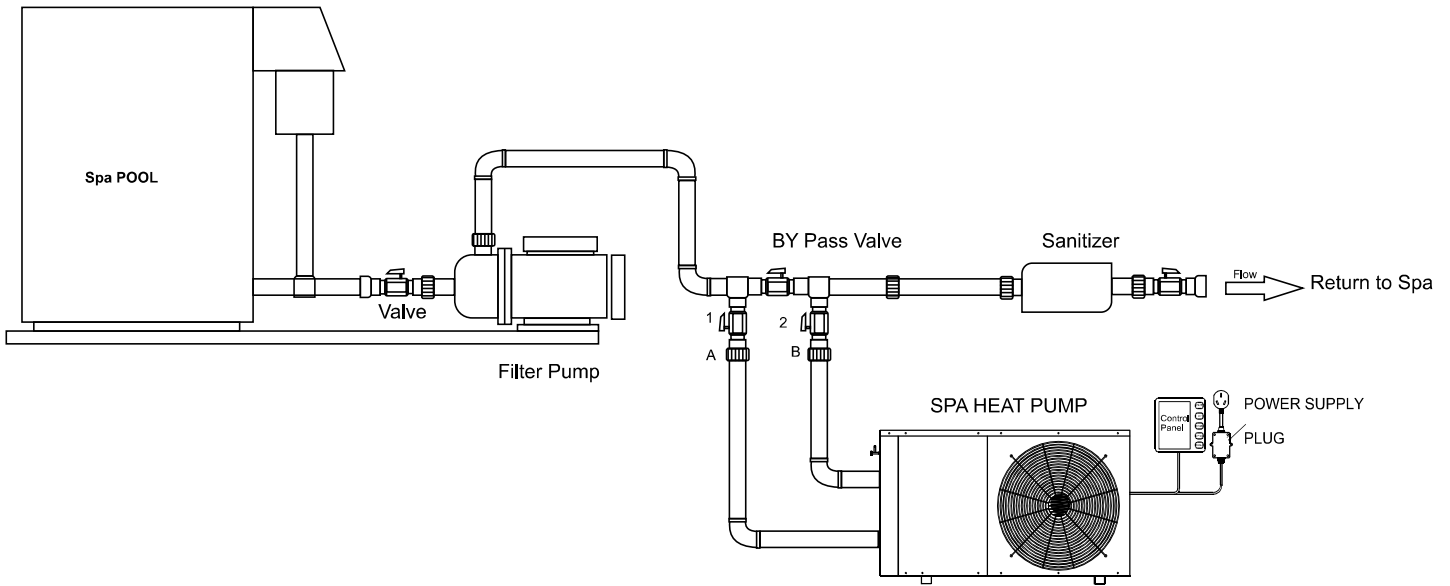


Spa - Pool Heat pumps

Technical specification

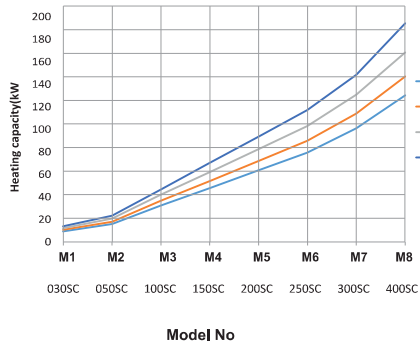
Model		VSP-010SP	VSP-015SP	VSP-020SP	VSP-030SP
Heating Capacity	kW	4.5	7	9	13.5
	Btu/h	15360	23893	30720	46080
COP		5.62	5.38	5.62	5.62
Rated outlet water temp.	°C	45 °C			
Max outlet water temp.	°C	50 °C			
Rated Input Power	kW	0.8	1.3	1.6	2.4
Rated Input Current	A	3.7	6	7.3	11
Power Supply		220V/1N50Hz			
Compressor	Type	Rotary			Scroll
	Make	Panasonic			Copeland USA
	Start Mode	Direct Start			
	Quantity (Nos)	1	1	1	1
Heat Exchanger	Type	Titanium in PPR / Titanium in stainless steel			
	Quantity (Nos)	1	1	1	1
Evaporator	Fin Type	Hydrophillic Aluminium			
	Tube Type	Inner Groove Tube			
Refrigerant	Throttle Type	Japan Saginomya Electronic expansion valve			
	Type	R417A/R410A/R407C			
Water Side	Cycle Flow (lpm)	1.7 ~ 2.5	2.2 ~ 3.3	2.9 ~ 4.4	3.5 ~ 5.2
	Pipe Size (mm)	Rc1-1/2(DN40)			
Fan	Type	Low noise high efficiency axial type			
	Input Power (W)	28	28	28	90
	Speed (rpm)	850			
	Direction	Horizontal			
	Quantity (Nos)	1	1	1	1
Protections		Under / Over voltage protection, Under /Over current protection, Open phase, Phase reversal, Phase imbalance, Compressor high discharge temperature protection, Compressor high discharge pressure protection, Compressor overload, Anti-Freeze protection.			
Noise DB(A)		≤48dB(A)		≤54dB(A)	
Net Weight		45	50	60	66
Cabinet		Stainless steel / Powder coated steel / Plastic			
Dimension	Length (mm)	1000	1000	1000	1110
	Width (mm)	365	365	365	470
	Height (mm)	560	560	560	680

Schematic installation

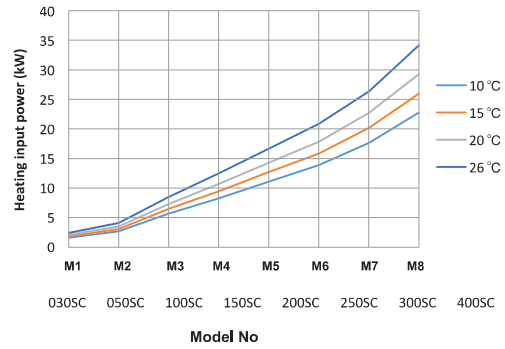


Performance Curves

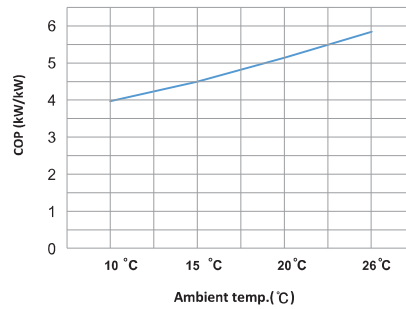
Heating capacity at different ambient temp
(Inlet water Temp. °C)



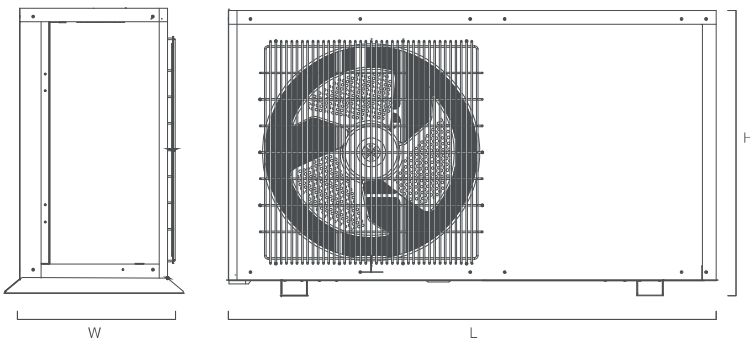
Heating input Power at different ambient temp
(Inlet water Temp. °C)



COP at different ambient temp
(Inlet water Temp. °C)

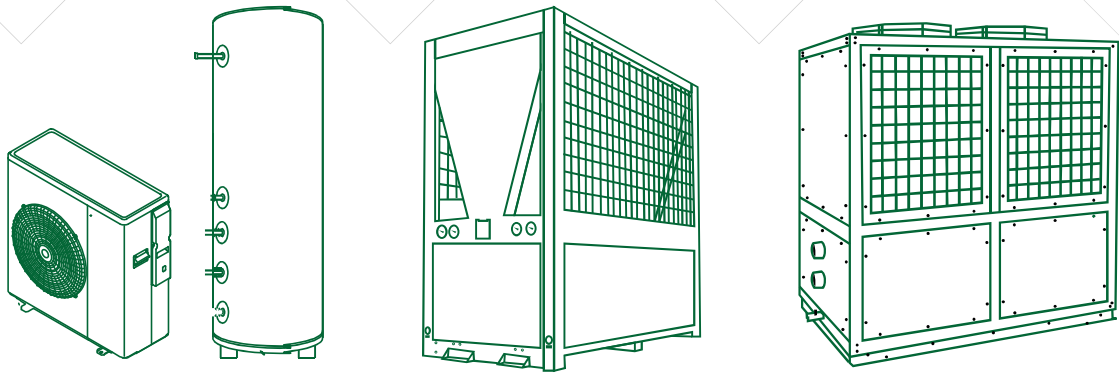


Dimension



Model	Dimension		
	Length (mm)	Width (mm)	Height (mm)
VSP-010SP	1000	365	560
VSP-015SP	1000	365	560
VSP-020SP	1000	365	560
VSP-030SP	1110	470	680





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