





CO₂ WATER HEATERS

CO₂ ECO Water Heater

Energy efficient and environmentally friendly water and space heating with SANYO's new CO₂ ECO

The innovative CO₂ ECO heat pump from SANYO Air Conditioners boasts highly efficient water and space heating. Using the first ever rotary 2-stage compressor, with carbon dioxide (CO₂) gas, as its heat source, the CO₂ ECO offers an environmentally friendly heating solution for everyone wanting to reduce CO₂ emissions and running costs.

SANYO's CO₂ ECO supplies space heating and hot water, reliably, and at a COP rating of 3.75, making it highly efficient when compared with electric heaters, which generally have a COP rating of 1. For its refrigerant, the CO₂ ECO uses heat energy derived from compressed carbon dioxide gas, a non-toxic natural refrigerant which is less harmful to the environment than other refrigerants.

New increased capacity - 9.0kW

The CO₂ ECO heat pump is now available in larger 9.0kW capacity in addition to the 4.5kW model. This gives a wider choice of performance to suit both domestic and larger commercial applications.

Environmentally friendly

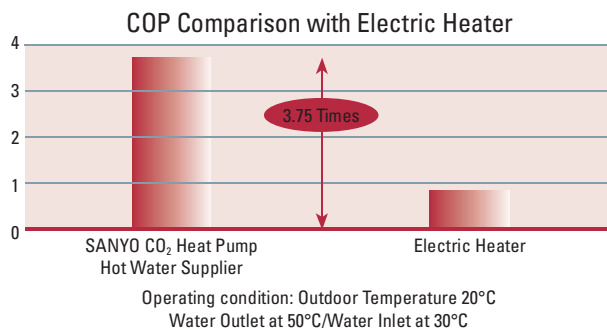
A natural refrigerant (CO₂) heat pump hot water supplier that considers the global environment.

For its refrigerant, SANYO CO₂ ECO uses heat energy derived from compressed CO₂, friendly to the ecosystem and our living environment. CO₂ is an atoxic natural refrigerant with Ozone Depletion Potential "0" and Global Warming Potential "1".



Characteristics of Natural Refrigerant CO ₂			
		ODP*	GWP*
CO ₂	Natural refrigerant	0	1
R410A	HFC	0	1900
R407C	HFC	0	1600
R22	HCFC	0.055	1700

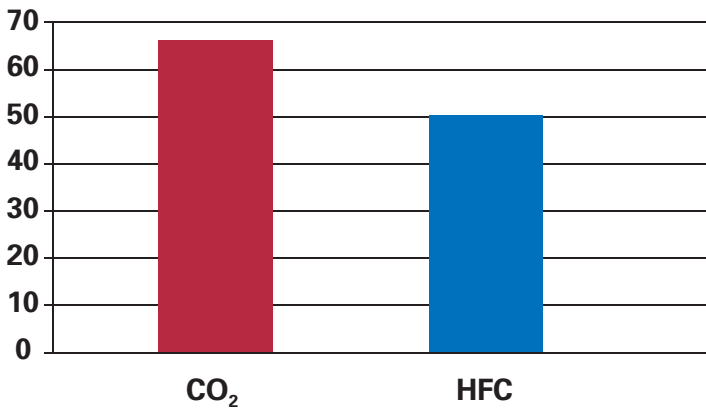
*Ozone Destruction Potential
*Global Warming Potential



Higher working temperature

CO₂ refrigerant allows a higher working temperature compared to HFC heat pumps. Temperatures of 65°C compared to 45-50°C means that there is no need for electric heaters to boost the temperature to kill legionella. Higher temperatures also mean higher storage capacity and more flexibility for different heating applications.

Maximum working temperature



Economical

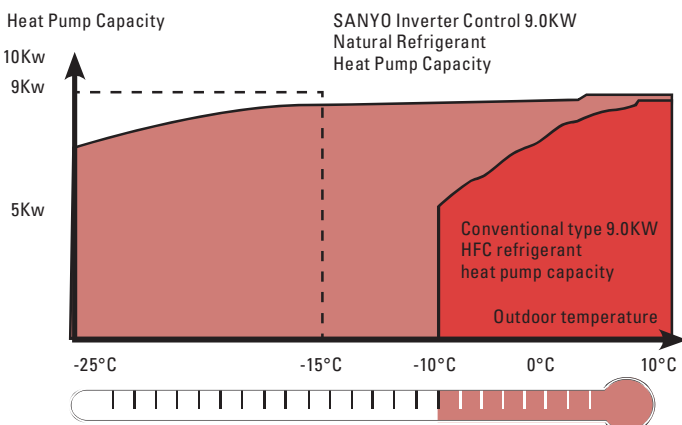
The high-efficiency heat pump method is responsible for its superior energy-conservation capability.

The coefficient of performance (COP) is 3.75 for SANYO "CO₂ ECO" compared to 1 for electric heaters (standard condition).

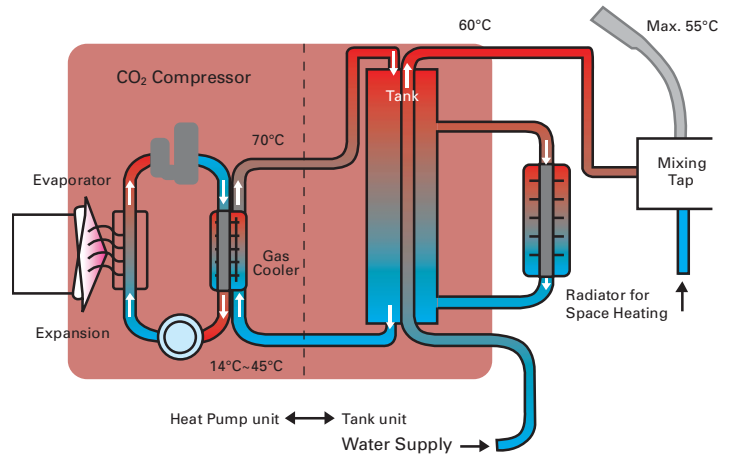
Low ambient operation

With SANYO CO₂ ECO, the heat pump operates continuously in the harsh condition of -25°C, maintaining its performance at no less than 4.0kW for the 4.5kW unit and no less than 8.0kW for the 9.0kW unit. The consistent operation of the heat pump at extremely low temperatures is made possible by the refrigerant circuit technology developed and refined by SANYO.

In many heat pump models using HCFC or HFC the refrigerant can only withstand the ambient temperature down to approximately -10°C. Electric heaters are required for temperatures below this level, resulting in performance that is not high in efficiency.

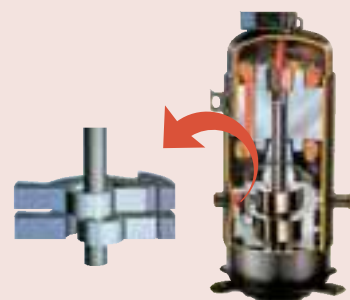
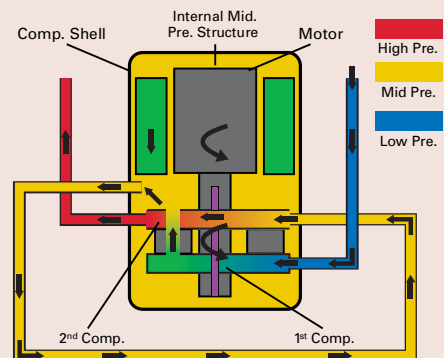


SANYO CO₂ ECO effectively utilises heat in the atmosphere.



The world's first CO₂ rotary 2 stage compressor

Central to the CO₂ ECO's performance is its innovative rotary 2-stage compression system. Developed by SANYO, the technology represents a world first in compressor design. The system is resistant to high working pressure differentials, has high reliability through load dispersion, and suffers lower leakage loss, as well as low vibration and noise levels during operation (45 dB(A)). With the compressor weighing in at only 9kg, the compression system is also compact and lightweight aiding installation.



NEW

NEW - now 4.5kW and 9.0kW High Capacity models available

Key features:

- Supplies abundant space heating and hot tap water
- Environmentally friendly with CO₂ natural refrigerant
- Choice of 4.5kW and new high capacity 9.0kW
- COPs of up to 3.8
- Heat pump operation even at low ambient temperatures (down to -25°C)
- High performance DC rotary 2 stage compressor
- Inverter control and 3 phase 400V power supply
- High efficiency split refrigerant cycle
- Reliable and rugged design
- Freeze protection circuit
- The unique construction of water-to-refrigerant heat exchanger ensures improved efficiency



4.5kW Heat Pump Unit

Tank Unit

MODEL NO.	HP unit	SHP-C45DEN
	Tank unit	SHP-TH45GDN
Performance		
Heating capacity input		4,5kW/1,20W
COP (Out door temp. 20°C)		3,75W/W
Heating capacity/input		4,5kW/1,45W
COP (Out door temp. 7°C)		3,10W/W
Heating capacity/input		4,5kW / 2,48W
COP (Out door temp. -15°C)		1,81W/W
Electrical Ratings		
Power supply	HP unit	1 phase/230V/50Hz
	Tank unit	3 phase/400V/50Hz
Maximum current	HP unit	1 x 16A
	Tank unit	3 x 25A
Tank unit		
Tank volume		223L
Maximum working pressure		2,5bar
Maximum working pressur tap water		10 bar
Auxiliary electric heater capacity		9.0kW + 6.0kW
Dimensions	Net (H/W/D)	1,562mm/600mm/624mm
	Shipment (H/W/D)	1736mm/700mm/747mm
Weight	Net/shipping	160.0kg/205kg
	Heat pump unit	
Refrigerant/amount		R744 (CO ₂) / 0.86kg
Operation noise		45,0 dB(A)
Compressor		DC Rotary two stage
Dimensions	Net (H/W/D)	690mm/840mm/290mm
	Shipment (H/W/D)	765mm/943mm/433mm
Weight	Net/shipping	65,0kg/72,0kg



Heat Pump



Tank Unit



Tank unit		SHP-TH90GDN
Performance		
Heating capacity/input		9,0kW/2,9kW
COP (Out door temp. 7°C)		3.1
Heating capacity/input		9,0kW/5,0kW
COP (Out door temp. -15°C)		1.8
Heating capacity / input		8,0kW/5,0kW
COP (Out door temp. -20°C)		1.6
Electrical ratings		
Power supply	HP unit	3 phase/400V/50Hz
	Tank unit	3 phase/400V/50Hz
Maximum current	HP unit	3 x 10 A
	Tank unit	3 x 25 A
Tank unit		
Tank volume		223L
Maximum working pressure		2,5bar
Maximum working pressure tap water		10 bar
Auxiliary electric heater capacity		9,0kW + 6,0kW
Dimensions	Net (H/W/D)	1,562mm/600mm/624mm
	Shipment (H/W/D)	1736mm/700mm/747mm
Weight	Net/shipping	160,0kg/205kg
Heat pump unit		
Refrigerant/amount		R744 (CO ₂)/1,4kg
Operation noise		49,0 dB(A)
Type of compressor		DC Rotary 2 Stage
Dimensions	Net (H/W/D)	1,235mm/930mm/340mm
	Shipment (H/W/D)	1,330mm/1,044mm/420mm
Weight	Net/shipping	105,0kg/115,0kg

Various tank options are available to suit different power requirements

		Tank Unit					
HP Outdoor Unit		SHP-TH45GEN	SHP-TH45GHN	SHP-TH45GDN	SHP-TH90GEN	SHP-TH90GHN	SHP-TH90GDN
Performance		Heating	Heating	Heating	Heating	Heating	Heating
Capacity HP unit	kW	4.5	4.5	4.5	9.0	9.0	9.0
Power supply HP unit	V/Ph/Hz	230V 1+N 50	230V 3+N 50	400V 3+N 50	230V 1+N 50	230V 3+N 50	400V 3+N 50