

200L INDIRECTED SOLAR WATER HEATING SYSTEM (Anti-frozen)

1) System components and description:

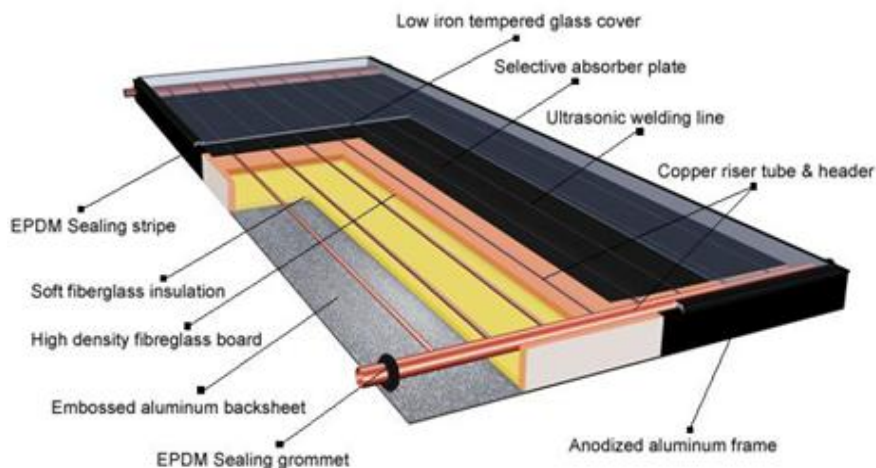
Part Name / Model No.		H-200S-CR
Description		200L anti-frozen, indirected pump circulation solar water heating system
Tank Capacity		200 Liters
Collector		HSC-01QT-10A (2.5M2 enlarged version)
Absorber surface		Nickel bottom coating + Selective black chrome surface.
Number of collector		1 collector
Gross Absorber Area		2.5M2
Tank Heat Exchanger		Copper coil heat exchanger: $\Phi 12\text{mm} \times \delta 1\text{mm} \times 20$ meters
Auxiliary Electric heater		2KW
Working station	Control System + thermostat	Full automatic control working station. Auto or manual start/stop the pump and the electric heater under preset mode. collector/pipeline frost protection, tank/collector high temperature protection.
	Circulation pump	WILO RS15/6 hot water circulation pump
	Expansion tank	8 liters expansion tank
	Fitting / Valves/ gauges	Brass fittings Pressure gauge, digital flowmeter Valve of safety valve: 6 bar safety valve Assistant parts: T valves, ball valves, etc

2) Collector Specification:

Absorber coating: Nickel bottom coating + Selective black chrome surface.
 Optical Performance: Absorption: minimum 95% / Thermal Emission: ,maximum 12%
 Risers tube: 1886mm x $\Phi 10\text{mm}$ x $\delta 0.45\text{mm}$
 Riser fin: Copper 1840mm x 125mm x $\delta 0.15\text{mm}$
 Header tube: 1310mm x $\Phi 22\text{mm}$ x $\delta 0.6\text{mm}$
 Number of Risers: 10 risers
 Frame Casing: Anodized Aluminum alloy
 Cover glass: 4mm tempered glass, low reflection, high transitivity up to 87%.
 (optional: 3.2mm low-iron, tempered patterned solar glass, transitivity up to 92%)
 Insulation: 25mm soft fiberglass layer + 25mm high- density fiberglass board.
 Back sheet: 0.5mm aluminum board.
 Sealing profile: EPDM-mixed rubber
 Connection: $\Phi 22\text{mm}$
 Ext. Dimension: 2000 x 1250 x 82mm (L x W x H)
 Gross /Absorber area: 2.5m²/2.38m²
 Operation pressure: 6.5Kpa / 6.5bar



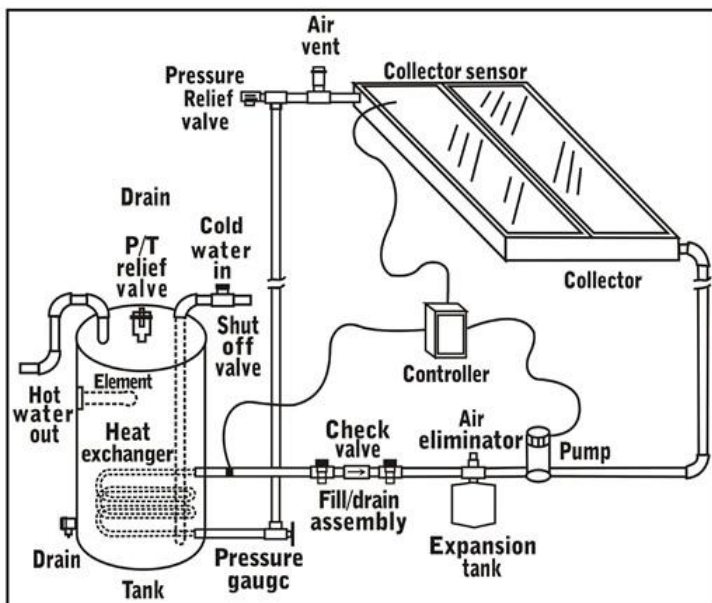
3) Structure of the collector



4) Water tank specification

Model Number	ST-200AV
Capacity	200 litres
Internal Tank material	1.5mm high grade steel
Internal Tank lining material	4mm Environmental Crystal plastic (Cross Linked Polymer)
Internal Tank Diameter	dia. 470mm x 1185mm
Outer Case Material	0.6 mm painted steel
Tank out Diameter	Dia. 555mm x 1321mm
Insulation thickness	45mm high-density Polyurethane
Working Pressure	6 bar
Heat Exchanger	Copper coil heat exchanger: Φ 12mm x δ 1mm x 20 meters
Tank accessories	1 x Pressure and temperature relief valve 1 x Auto air vent 1 x Vacuum breaking valve. 1 x 2KW electric heater

5) System Drawing:



Indirect pumped system using antifreeze solution



Working station