

Heat Pump Water Heater Operation and Installation Manual



Model

CURV-HP200M7

CURV-HP250M7



Please read this manual carefully prior to your use of this water heater.

The appearance of the water heater given in this manual is for reference only.



EN 12897:2016

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Description of parts and components

Exploded view of the heat pump



S/N	Description	S/N	Description	
1	Display panel	12	DC motor	
2	Back cover	13	Fan blade	
3	Electrical box cover	14	Diversion air duct	
4	Control panel	15	Decoration	
5	Electrical box	16	Outlet grate	
6	Electronic expansion valve	17	Outer waterproof cover	
7	Four-way valve	18	Heating element	
8	Compressor	19	Front cover	
9	Evaporator	20	Top cover	
10	Inner waterproof cover	21	Magnesium rod	
11	Support	22	Temperature and pressure valve	

Installation instructions

Air connection

- Remove air grille first



- Pressure drops from duct must be lower than or equal to the static pressure of the fan.
- If the pressure drops out of range, the performance of the appliance will be impaired.

It is recommended that an air grille with a mosquito net be installed at the air inlet of the air guide duct. The ventilation area shall not be less than 180cm²

Installation instructions

Pipeline installation diagram

Installation A



Water outlet

Tank Volume192L246LRated Voltage/Frequency220V-240V/50Hz220V-240V/50HzTank Max Pressure0.7MPa0.7MPaThermal Insulation50mm50mmCarrosion Protection RatingIPX4IPX4IPX4IPX4PerformanceCOP @ 2° C / EN16147*2.802.67COP @ 2° C / EN16147*3.273.20COP @ 1° C / EN16147*3.523.45Air Flow300m³/h300m³/hTopping Cycle*LXLNewer Input By Electric Backup1500W / 6.25 AmpsRated Power Input By Heat Pump320W320WMaximum Power Input By Heat Pump335W / 2.2 Amps335W / 2.2 AmpsMaximum Power Input By Heat Pump535W / 2.2 Amps535W / 2.2 AmpsStandby Power Input Pes*22W / 0.09 Amps43W / 0.17 AmpsHeating Up Time (14°C)*5411°C54.05°CDefault Temperature @7°C*54.11°C54.05°CDefault Temperature @7°C*54.11°C54.05°CDefault Temperature Range (HP)35°C - 65°C35°C - 65°CHeating Up Time (14°C)*22m22mDiameter Of Air Duct Connection160mm1.0/3.3MPaMaximum Length Of Air Duct Combined Intel/Outlet22m22mDiameter Of Air Duct Connection100mm1.0/3.3MPaRefreence Hot Water Temperature @7°C*54.11°C54.05°CDiameter Of Air Duct Connection100mm1.0/3.3M	Model	CURV-HP200M7	CURV-HP250M7	
Reted Voltage/Frequency220V-240V/50Hz220V-240V/50HzTank Max Pressure0.7MPa0.7MPaThermal Insulation50mm50mmCorrosion ProtectionElectronic AnodeElectronic AnodeInsulation Protection RatingIPX4IPX4PerformanceType Of ExtractionAmbient / ExteriorCOP @ 2° C / EN16147*2.802.67COP @ 1° C / EN16147*3.273.20COP @ 1° C / EN16147*3.523.45Air Flow300m³/h300m³/hTapping Cycle*LXLPower Input By Electric Backup1500W / 6.25 Amps1500W / 6.25 AmpsRated Power Input By Heat Pump320W320WMaximum Power Input Pes*22W / 0.09 Amps43W / 0.17 AmpsHeating Up Time (14°C)*6.91h9.04hVolume Of Mixed Water At 40°C@ 7°C*54.11°C54.05°CDefault Temperature @?*C*54.11°C54.05°CDefault Temperature Range (HP)35°C - 65°C35°C - 75°CMaximum Length Of Air Duct Combined Intel/Outlet22m22mDiameter Of Air Duct Conscient1.0/3.3MPa1.0/3.3MPaRefreence Hot Water Temperature @?*C*50dB (A)50dB (A)Sound Pressure Level®130dB30dBAdminet Of Air Duct Conscient1.0/3.3MPa1.0/3.3MPaRefreence Hot Vater Comperation30dB30dBAdminet Pressure Level®130dB30dBAdminet Pressure Level®130dB30dBAdminet Pressure Level®1 </th <th>Tank</th> <th></th> <th></th>	Tank			
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Corrosion ProtectionElectronic AnodeElectronic AnodeInsulation Protection RatingIPX4IPX4PerformancePerformanceAmbient / ExteriorAmbient / ExteriorCOP @ 2°C / EN16147*3.20COP @ 14°C / EN16147*3.523.45Air Flow300m³/hTopping Cycle*LXLPower Input By Electric Backup1500W / 6.25 Amps1500W / 6.25 Amps1500W / 6.25 AmpsSated Power Input By Heat Pump320W	Tank Max Pressure	0.7MPa	0.7MPa	
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Rated Power Input By Heat Pump320W320WMaximum Power Input By Heat Pump535W / 2.2 Amps535W / 2.2 AmpsMaximum Power Input2035W / 8.45 Amps2035W / 8.45 AmpsStandby Power Input / Pes*22W / 0.09 Amps43W / 0.17 AmpsHeating Up Time (7°C)*8.33h10.51hHeating Up Time (14°C)*6.91h9.04hVolume Of Mixed Water At 40°C@7°C*221L314LReference Hot Water Temperature @7°C*54.11°C54.05°CDefault Temperature Setting56°C56°CHeating Temperature Range (HP)35°C - 65°C35°C - 65°CHating Temperature Range (HP & Heater)35°C - 75°C35°C - 75°CMaximum Length Of Air Duct Combined Inlet/Outlet22m22mDiameter Of Air Duct Connection160mm160mmMax Working Pressure Of Refrigerant1.0/3.3MPa1.0/3.3MPaRefrigerant Type / WeightR290 / 0.15kg50dB (A)50dB (A)Sound Pressure Level**50dB (A)50dB (A)50dB (A)Sound Pressure Level@1m36dB36dB36dBAmbient Temperature For Use Of Product.7~45°C.7~45°C.7~45°CThermal Dispersion [kW/24h]0.531.0321.032Thermal Dispersion S [W]22433	Tapping Cycle*	L	XL	
Maximum Power Input By Heat Pump535W / 2.2 Amps535W / 2.2 AmpsMaximum Power Input2035W / 8.45 Amps2035W / 8.45 AmpsStandby Power Input / Pes*22W / 0.09 Amps43W / 0.17 AmpsHeating Up Time (7°C)*8.33h10.51hHeating Up Time (14°C)*6.91h9.04hVolume Of Mixed Water At 40°C @ 7°C*54.11°C54.05°CDefault Temperature Setting56°C56°CBeating Temperature Range (HP)35°C - 65°C35°C - 65°CHeating Temperature Range (HP)35°C - 75°C35°C - 75°CMaximum Length Of Air Duct Combined Inlet/Outlet22m22mDiameter Of Air Duct Connection160mm160mmMax Working Pressure Of Refrigerant1.0/3.3MPa1.0/3.3MPaRefrigerant Type / WeightR290 / 0.15kg50dB (A)50dB (A)Sound Pressure Level**50dB (A)50dB (A)50dB (A)Sound Pressure Level@1m36dB36dB36dBAmbient Temperature For Use Of Product-7~45°C-7~45°C-7~45°C0perating Temperature Of Heat Pump-7~45°C-7-45°CThermal Dispersion S[W]2243	Power Input By Electric Backup	1500W / 6.25 Amps	1500W / 6.25 Amps	
Maximum Power Input 2035W / 8.45 Amps 2035W / 8.45 Amps Standby Power Input / Pes* 22W / 0.09 Amps 43W / 0.17 Amps Heating Up Time (7°C)* 8.33h 10.51h Heating Up Time (14°C)* 6.91h 9.04h Volume Of Mixed Water At 40°C@ 7°C* 221L 314L Reference Hot Water Temperature @7°C* 54.11°C 54.05°C Default Temperature Setting 56°C 56°C Heating Temperature Range (HP) 35°C - 65°C 35°C - 65°C Heating Temperature Range (HP & Heater) 35°C - 75°C 35°C - 75°C Maximum Length Of Air Duct Combined Inlet/Outlet 22m 22m Diameter Of Air Duct Connection 160mm 160mm Max Working Pressure Of Refrigerant 1.0/3.3MPa 1.0/3.3MPa Refrigerant Type / Weight R290 / 0.15kg 8290 / 0.15kg Sound Pressure Level®1m 36dB 36dB Ambient Temperature For Use Of Product -7~45°C -7~45°C Operating Temperature Of Heat Pump -7~45°C -7~45°C Thermal Dispersion [kW/24h] 0.53 1.032 <	Rated Power Input By Heat Pump	320W	320W	
Standby Power Input / Pes*22W / 0.09 Amps43W / 0.17 AmpsHeating Up Time (7°C)*8.33h10.51hHeating Up Time (14°C)*6.91h9.04hVolume Of Mixed Water At 40°C @ 7°C*221L314LReference Hot Water Temperature @7°C*54.11°C54.05°CDefault Temperature Setting56°C35°C - 65°CHeating Temperature Range (HP)35°C - 65°C35°C - 75°CHeating Temperature Range (HP & Heater)35°C - 75°C35°C - 75°CMaximum Length Of Air Duct Combined Inlet/Outlet22m22mDiameter Of Air Duct Connection160mm160mmMax Working Pressure Of Refrigerant1.0/3.3MPa1.0/3.3MPaRefrigerant Type / WeightR290 / 0.15kgR290 / 0.15kgSound Pressure Level**50dB (A)50dB (A)Sound Pressure Level @ Im36dB36dBAmbient Temperature For Use Of Product-7~45°C-7~45°C-7~45°C7~45°C-7-45°C1.032Thermal Dispersion S[W]2243	Maximum Power Input By Heat Pump	535W / 2.2 Amps	535W / 2.2 Amps	
Heating Up Time (7°C)*8.33 h10.51 hHeating Up Time (14°C)*6.91 h9.04 hVolume Of Mixed Water At 40°C @ 7°C*221 L314 LReference Hot Water Temperature @7°C*54.11°C54.05°CDefault Temperature Setting56°C56°CHeating Temperature Range (HP)35°C - 65°C35°C - 65°CHeating Temperature Range (HP & Heater)35°C - 75°C35°C - 75°CMaximum Length Of Air Duct Combined Inlet/Outlet22m22mDiameter Of Air Duct Connection160mm160mmMax Working Pressure Of Refrigerant1.0/3.3MPa1.0/3.3MPaRefrigerant Type / WeightR290 / 0.15kgR290 / 0.15kgSound Pressure Level**50dB (A)50dB (A)Sound Pressure Level @ Im36dB36dBAmbient Temperature For Use Of Product-7~45°C-7~45°COperating Temperature Of Heat Pump-7~45°C-7~45°CThermal Dispersion S[W]2243	Maximum Power Input	2035W / 8.45 Amps	2035W / 8.45 Amps	
Heating Up Time (14°C)*6.91h9.04hVolume Of Mixed Water At 40°C@7°C*221L314LReference Hot Water Temperature @7°C*54.11°C54.05°CDefault Temperature Setting56°C56°CHeating Temperature Range (HP)35°C - 65°C35°C - 65°CHeating Temperature Range (HP & Heater)35°C - 75°C35°C - 75°CMaximum Length Of Air Duct Combined Inlet/Outlet22m22mDiameter Of Air Duct Connection160mm160mmMax Working Pressure Of Refrigerant1.0/3.3MPa1.0/3.3MPaRefrigerant Type / WeightR290 / 0.15kgR290 / 0.15kgSound Pressure Level**50dB (A)50dB (A)Sound Pressure Level@1m36dB36dBAmbient Temperature For Use Of Product-7~45°C-7~45°COperating Temperature Of Heat Pump-7~45°C-7~45°CThermal Dispersion S[W]2243	Standby Power Input / Pes*	22W / 0.09 Amps	43W / 0.17 Amps	
Volume Of Mixed Water At 40°C @ 7°C*221L314LReference Hot Water Temperature @7°C*54.11°C54.05°CDefault Temperature Setting56°C56°CHeating Temperature Range (HP)35°C - 65°C35°C - 65°CHeating Temperature Range (HP & Heater)35°C - 75°C35°C - 75°CMaximum Length Of Air Duct Combined Inlet/Outlet22m22mDiameter Of Air Duct Connection160mm160mmMax Working Pressure Of Refrigerant1.0/3.3MPa1.0/3.3MPaRefrigerant Type / WeightR290 / 0.15kgR290 / 0.15kgSound Pressure Level**50dB (A)50dB (A)Sound Pressure Level © Im36dB36dBAmbient Temperature For Use Of Product-7~45°C-7~45°COperating Temperature Of Heat Pump-7~45°C-7~45°CThermal Dispersion S[W]2243	Heating Up Time (7°C)*	8.33h	10.51h	
Reference Hot Water Temperature @7°C*54.11°C54.05°CDefault Temperature Setting56°C56°CHeating Temperature Range (HP)35°C - 65°C35°C - 65°CHeating Temperature Range (HP & Heater)35°C - 75°C35°C - 75°CMaximum Length Of Air Duct Combined Inlet/Outlet22m22mDiameter Of Air Duct Connection160mm160mmMax Working Pressure Of Refrigerant1.0/3.3MPa1.0/3.3MPaRefrigerant Type / WeightR290 / 0.15kgR290 / 0.15kgSound Pressure Level**50dB (A)50dB (A)Sound Pressure Level @1m36dB36dBAmbient Temperature For Use Of Product-7~45°C-7~45°COperating Temperature Of Heat Pump-7~45°C1.032Thermal Dispersion S[W]2243	Heating Up Time (14°C)*	6.91h	9.04h	
Default Temperature Setting56°C56°CHeating Temperature Range (HP)35°C - 65°C35°C - 65°CHeating Temperature Range (HP & Heater)35°C - 75°C35°C - 75°CMaximum Length Of Air Duct Combined Inlet/Outlet22m22mDiameter Of Air Duct Connection160mm160mmMax Working Pressure Of Refrigerant1.0/3.3MPa1.0/3.3MPaRefrigerant Type / WeightR290 / 0.15kgR290 / 0.15kgSound Pressure Level**50dB (A)50dB (A)Sound Pressure Level@1m36dB36dBAmbient Temperature For Use Of Product-7~45°C-7~45°COperating Temperature Of Heat Pump-7~45°C-7~45°CThermal Dispersion S[W]2243	Volume Of Mixed Water At 40°C @ 7°C*	221L	314L	
Heating Temperature Range (HP) 35°C - 65°C 35°C - 65°C Heating Temperature Range (HP & Heater) 35°C - 75°C 35°C - 75°C Maximum Length Of Air Duct Combined Inlet/Outlet 22m 22m Diameter Of Air Duct Connection 160mm 160mm Max Working Pressure Of Refrigerant 1.0/3.3MPa 1.0/3.3MPa Refrigerant Type / Weight R290 / 0.15kg R290 / 0.15kg Sound Pressure Level** 50dB (A) 50dB (A) Sound Pressure Level@1m 36dB 36dB Ambient Temperature For Use Of Product -7~45°C -7~45°C Operating Temperature Of Heat Pump -7~45°C -7~45°C Thermal Dispersion [kW/24h] 0.53 1.032 Thermal Dispersion S [W] 22 43	Reference Hot Water Temperature @7°C*	54.11°C	54.05°C	
Heating Temperature Range (HP & Heater) 35°C - 75°C 35°C - 75°C Maximum Length Of Air Duct Combined Inlet/Outlet 22m 22m Diameter Of Air Duct Connection 160mm 160mm Max Working Pressure Of Refrigerant 1.0/3.3MPa 1.0/3.3MPa Refrigerant Type / Weight R290 / 0.15kg R290 / 0.15kg Sound Pressure Level** 50dB (A) 50dB (A) Sound Pressure Level @ 1m 36dB 36dB Ambient Temperature For Use Of Product -7~45°C -7~45°C Operating Temperature Of Heat Pump -7~45°C -7~45°C Thermal Dispersion [kW/24h] 0.53 1.032 Thermal Dispersion S [W] 22 43	Default Temperature Setting	56°C	56°C	
Maximum Length Of Air Duct Combined Inlet/Outlet 22m 22m Diameter Of Air Duct Connection 160mm 160mm Max Working Pressure Of Refrigerant 1.0/3.3MPa 1.0/3.3MPa Refrigerant Type / Weight R290 / 0.15kg R290 / 0.15kg Sound Pressure Level** 50dB (A) 50dB (A) Sound Pressure Level@1m 36dB 36dB Ambient Temperature For Use Of Product -7~45°C -7~45°C Operating Temperature Of Heat Pump -7~45°C 1.032 Thermal Dispersion S [W] 22 43	Heating Temperature Range (HP)	35°C - 65°C	35°C - 65°C	
Diameter Of Air Duct Connection 160mm 160mm Max Working Pressure Of Refrigerant 1.0/3.3MPa 1.0/3.3MPa Refrigerant Type / Weight R290 / 0.15kg R290 / 0.15kg Sound Pressure Level** 50dB (A) 50dB (A) Sound Pressure Level@1m 36dB 36dB Ambient Temperature For Use Of Product -7~45°C -7~45°C Operating Temperature Of Heat Pump -7~45°C 1.032 Thermal Dispersion S[W] 22 43	Heating Temperature Range (HP & Heater)	35°C - 75°C	35°C - 75°C	
Max Working Pressure Of Refrigerant1.0/3.3MPa1.0/3.3MPaRefrigerant Type /WeightR290 /0.15kgR290 /0.15kgSound Pressure Level**50dB (A)50dB (A)Sound Pressure Level@1m36dB36dBAmbient Temperature For Use Of Product-7~45°C-7~45°COperating Temperature Of Heat Pump-7~45°C-7~45°CThermal Dispersion [kW/24h]0.531.032Thermal Dispersion S [W]2243	Maximum Length Of Air Duct Combined Inlet/Outlet	22m	22m	
Refrigerant Type / Weight R290 / 0.15kg R290 / 0.15kg Sound Pressure Level** 50dB (A) 50dB (A) Sound Pressure Level@1m 36dB 36dB Ambient Temperature For Use Of Product -7~45°C -7~45°C Operating Temperature Of Heat Pump -7~45°C -7-45°C Thermal Dispersion [kW/24h] 0.53 1.032 Thermal Dispersion S [W] 22 43	Diameter Of Air Duct Connection	160mm	160mm	
Sound Pressure Level** 50dB (A) 50dB (A) Sound Pressure Level @1m 36dB 36dB Ambient Temperature For Use Of Product -7~45°C -7~45°C Operating Temperature Of Heat Pump -7~45°C -7~45°C Thermal Dispersion [kW/24h] 0.53 1.032 Thermal Dispersion S [W] 22 43	Max Working Pressure Of Refrigerant	1.0/3.3MPa	1.0/3.3MPa	
Sound Pressure Level @ 1m 36dB 36dB Ambient Temperature For Use Of Product -7~45°C -7~45°C Operating Temperature Of Heat Pump -7~45°C -7~45°C Thermal Dispersion [kW/24h] 0.53 1.032 Thermal Dispersion S [W] 22 43	Refrigerant Type / Weight	R290 / 0.15kg	R290/0.15kg	
Ambient Temperature For Use Of Product -7~45°C -7~45°C Operating Temperature Of Heat Pump -7~45°C -7~45°C Thermal Dispersion [kW/24h] 0.53 1.032 Thermal Dispersion S [W] 22 43	Sound Pressure Level**	50dB (A)	50dB (A)	
Operating Temperature Of Heat Pump -7~45°C -7~45°C Thermal Dispersion [kW/24h] 0.53 1.032 Thermal Dispersion S [W] 22 43	Sound Pressure Level @1m	36dB	36dB	
Thermal Dispersion [kW/24h] 0.53 1.032 Thermal Dispersion S [W] 22 43	Ambient Temperature For Use Of Product	-7~45°C	-7~45°C	
Thermal Dispersion S [W] 22 43	Operating Temperature Of Heat Pump	-7~45°C	-7~45°C	
	Thermal Dispersion [kW/24h]	0.53	1.032	
Thermal Dispersion Ktant [W/K] 0.49 0.96	Thermal Dispersion S [W]	22	43	
	Thermal Dispersion Ktant [W/K]	0.49	0.96	

Dimension And Connections							
Water Inlet And Outlet Connection	Rp3/4	Rp3/4					
Safety Valve Connection	Rp3/4	Rp3/4					
Drain & Water Intlet Connection	Rp3/4	Rp3/4					
Product Dimensions	600*620*1694mm	600*620*1989mm					
Packing Dimension With Pallet	736*695*1940mm	736*695*2250mm					
Net / Gross Weight	87/110kg	99/122kg					

Yes

Yes

Wi-Fi Connection

Installation instructions

Electrical connections precautions

Installation A



WARNING

- Only qualified professionals may carry out electrical connections, always with the power off.
- The earthing shall comply with local standards.
- Water heaters shall be equipped with a dedicated power line and residual current circuit breakers. The action current shall not exceed 30 mA;
- The ground line and the zero line of the power supply shall be separated entirely. Connecting the zero line to the ground line is not allowed.
- Parameter of the power line: 3×1.5 mm² or more.
- If a power cable is damaged, it shall be replaced by qualified professionals to avoid risks.
- In the case of places and walls where water may be splashed to, installation height of a power socket shall not be less than 1.8 m, and it shall be ensured that water would not be splashed on these places. The socket shall be installed out of children's reach.
- The phase line, zero line and ground line inside a power socket used in your home shall be wired correctly without any wrong positioning or false connection, and internal short circuit shall be avoided. Wrong wiring may cause fire accidents.

Connection to a PV system



Installation introduction

Off-peak power signal wire connection (CURV-HP200M3 / CURV-HP250M3)



Installation instructions

Wiring diagram



Connection to a PV system

Installation operators shall use checking items for trial running of water heaters as per the operationmanual, and make ✓ in □.

- □ The electrical connection is correctly connected.
- □ Water drain pipes are laid correctly.
- □ the ground wire in the hardwire connection.
- □ The control panel works well.
- □ The water tank has been connected with dedicated temperature pressure relief valve
- □ (TPR valve) and check valve.
- □ After the water system is completed, the water tank is filled with water. Water drained out of the water outlet of the hot water pipeline.
- □ After the water pipe of the water system is filled, check the whole water pipeline. There is no leakage.

- Once the tank is filled, the TPR valve releases water when the lever is pulled.
- □ All hot water lines are correctly insulated.

Installation

Air outlet Display Pipe ϕ 180mm

Installation angle refer to the following diagrams



Recommended installation onto a solid floor surface

The discharge pipe D2 should be at least one pipe size larger than the nominal outlet size of the safety device unless its total equivalent hydraulic resistance exceeds that of a straight pipe 9m long, i.e. for discharge pipes between 9m and 18m the equivalent resistance length should be at least two sizes larger than the nominal outlet size of the safety device; between 18m and 27m at least 3 sizes larger, and so on; bends must be taken into account in calculating the flow resistance. See Figure 2, Table 2 and the worked example.

Note: An alternative approach for sizing discharge pipes would be to follow Annex D, section D.2 of BS 6700:2006 + A1:2009).



Typical discharge pipe arrangement

Valve Outlet Size [-]	Minimum size of discharge pipe before tundish [mm]	Minimum size of discharge pipe after tundish [mm]	Minimum allowed length of pipe after tundish [mm]
		22	9
G1/2	15	28	18
	200	35	27
		28	9
G3/4	22	35	18
		42	27

Sizing of copper discharge 'D2' for common temperature relief valve outlet sizes

Cold Water Supply

For satisfactory and safe performance of the water heater the water supply must meet the following criteria:

Minimum dynamic pressure	150 kPa (1.5 bar)
Maximum inlet supply pressure	1200 kPa (12 bar)
Minimum flow rate	15l/min
Max. chlorine content	250mg/L
Max. water hardness	200mg/L

The following instructions have to be followed when installing the cold water mains supply to the water heater:

- The cold water supply to the water heater must come directly from the cold water mains after the mains stop valve to the property.

- The cold water inlet pipework should have at least an inside diameter of 19mm and should meet the requirements of the water regulations for the supply of wholesome water.

Curv recommend an annual maintenance inspection is carried out on the water heater. In hard water areas this should include inspection of the immersion heater, [above 120ppm or 120mg/l]. A local water treatment company should be able to offer free water quality testing. The heating elements may require periodic de-scaling. The installer should do this as part of a maintenance agreement.

If required, precautions can be taken to minimize effects of water hardness, i.e. installation of water conditioner or water softener. These devices should be installed in hard water areas where high water storage temperatures are required, i.e. greater than 60°C storage temperatures, particularly when water hardness exceeds 200ppm. Should the water heater require de-scaling, this must be performed by a qualified technician.

Building Regulation G3 Discharge Requirements

As part of the requirements of Building Regulation G3 this product is factory fitted with a T&P valve, which complies with BS EN 1490. Any discharge from a water heater system should be conveyed to where it is visible, but will not cause danger to persons in or about the building. The tundish and the discharge pipes should be fitted in accordance with the requirements of Building Regulation approved document G3, (England and Wales), Part P of Northern Ireland and Standard 4.9 of Scotland.

The discharge pipe (D2) from the Tundish should:

- "have a vertical section of pipe at least 300mm long below the tundish before any elbows or bends in the pipework and be installed with a continuous fall of at least 1 in 200 thereafter."

The discharge pipe (D2) should be made of:

- "metal; or other material that has been demonstrated to be capable of safely withstanding temperatures of the water discharged and is clearly and permanently marked to identify the product and performance standard"

Curv strongly recommends the use of metal pipework only and Curv does not take responsibility for any damage caused from discharges.

Typical discharge pipe arrangement

This example is for a G½ temperature relief valve with a discharge pipe (D2) having 4 No. 22mm elbows and length of 7m from the tundish to the point of discharge.

From Table 2, the maximum resistance allowed for a straight length of 22mm copper discharge pipe (D2) from a $G\frac{1}{2}$ temperature relief valve is 9.0m. Subtract the resistance for 4 No. 22mm elbows at 0.8m each = 3.2m.

Therefore the maximum permitted length equates to 5.8m, which is less than the actual length of 7m, therefore calculate the next largest size.

Maximum resistance allowed for a straight length of 28mm copper discharge pipe (D2) from a G¹/₂ temperature relief valve is: 18m.

Subtract the resistance for 4 No. 28mm elbows at 1.0m each = 4m.

Therefore the maximum permitted length equates to 14m.

As the actual length is 7m, a 28mm (D2) copper pipe will be satisfactory.

- Where a single common discharge pipe serves more than one system, it should be at least one pipe size larger than the largest individual discharge pipe (D2) to be connected.

- The discharge pipe should not be connected to a soil discharge stack unless the soil discharge stack is capable of safely withstanding temperatures of the water discharged, in which case, it should:

- Contain a mechanical seal, which allows water into the branch pipe without allowing foul air from the drain to be ventilated through the tundish.

- There should be a separate branch pipe with no sanitary appliances connected to it.

- If plastic pipes are used as branch pipes carrying discharge from a safety device, they should be either polybutalene (PB) or cross-linked polyethylene (PE-X) complying with national standards.

- Be continuously marked with a warning that no sanitary appliances should be connected to the pipe.

Termination of discharge pipe

- "The discharge pipe (D2) from the tundish should terminate in a safe place where there is no risk to persons in the vicinity of the discharge."

Examples of acceptable discharge arrangements are:

- "To a trapped gully with the end of the pipe below a fixed grating and above the water seal;

- Downward discharges at low level;

i.e. up to 100mm above external surfaces such as car parks, hard standings, grassed areas etc. are acceptable providing that a wire cage or similar guard is positioned to prevent contact, whilst maintaining visibility.

- Discharges at high level:

e.g. into a metal hopper and metal downpipe with the end of the discharge pipe clearly visible or onto a roof capable of withstanding high temperature discharges of water and 3m from any plastic guttering system that would collect such discharges."



As the discharge would consist of high temperature water and steam, asphalt, roofing felt and nonmetallic rainwater goods may be damaged by such discharges.

Termination of discharge pipe

The expansion vessel is mandatory on the Curv water heater and can be connected directly to the cold water inlet group, utilizing the flexible hose supplied with the vessel. The expansion vessel should always be fitted in accordance with the manufacturer's instructions. No isolating device should be fitted between the water heater and the cold water inlet group.

Furthermore, it is recommended to mount the vessel higher than the water heater to avoid having to drain the water heater when maintaining and replacing the expansion vessel.

It is important to check the pre-charge pressure of the expansion vessel membrane before filling the cylinder. The pre-charge should be greater than or equal to 3 bar.

Note: The expansion vessel must be installed to the side of the expansion relief valve on the inlet group. To do this the blanking plug must be removed and the expansion vessel connected.



ltem	Compone	nt				
1	Pressure Reducing Valve					
2	Manifold Assembly					
3	22mm Balanced Take Off					
4	Gauge - PT Point					
5	5 Connection for Expansion Vessel					
6	Safety Relief Valve					
Max.worki	Max.working temperature: 85°C					
Max. working pressure: 12 bar						
Safety relief valve setting: 6 bar						
Pressure reducing valve setting: 3.5 bar						

Balanced Cold Water Supply

If balanced cold water supply is required a connection can be taken from the bottom of the inlet group.

Drain Valve

It is also recommended to install a drain valve (not supplied) in the lowest point of the cold water feed to the water heater. This allows the water heater to be drained in a controlled manner should this become necessary.

Hot Water Outlet

The hot water pipework is to be directly connected to the hot water outlet connection on the water heater.

Thermostatic Mixing Valve

A thermostatic mixing valve may be required to limit the outlet temperature. In this case, the valve should be installed following the manufacturer's instructions, ensuring none of the safety equipment has been isolated. (i.e. Make sure the connection to the thermostatic mixing valve is taken after the safety equipment of the inlet group)

Pipe Insulation

It is recommended to insulate the hot water pipework from the water heater to the outlets, to reduce the energy requirements for providing hot water. It is also recommended to insulate all other exposed pipework, such as the T&P to the tundish, the coil flow and return and the cold water inlet pipes.

Discharge Pipes from Safety Devices

Discharge Pipe

The temperature and pressure relief valve must be discharged directly or by way of a manifold via a short length of metal pipe (D1) into a tundish; and the discharge pipe must be installed in a continuously downward direction and in a frost free environment. Water may drip from the discharge pipe of the pressure relief device and this pipe must be left open to the atmosphere.

The diameter of discharge pipe (D1) should not be less than the nominal outlet size of the safety device, e.g. temperature relief valve.

Where a manifold is used it should be sized to accept and discharge the total discharge from all the D1 discharge pipes connected to it.

The discharge pipework from the expansion relief valve must be installed constantly falling to an open point of discharge. It is recommended to combine it with the discharge of the temperature and pressure relief valve.

Note: The T&P value is pre-sealed and if moved the seal will be broken, should this occur, it will need to be resealed with an appropriate sealant.

Tundish

The tundish should be vertical, located in the same space as the unvented hot water storage system and be fitted as close as possible to, and lower than, the safety device, with no more than 600mm of pipe between the valve outlet and the tundish. Where discharge may not be apparent, e.g. in dwellings occupied by people with impaired vision or mobility, consideration should be given to the installation of a suitable safety device to warn when discharge takes place, e.g. electronically operated.

Note: To comply with the Water Supply (Water Fittings) Regulations, the tundish should incorporate a suitable air gap. It is important that the tundish is positioned away from any electrical components.

Installation introduction

Wiring diagram



Commissioning

Installers shall use checking list for trial operation of water heaters as per the user manual.

- Electrical wires are fixed securely?
- □ Water drain pipes are connected correctly?
- Ground wires are connected securely?
- □ Supply voltage conforms to relevant electric codes?
- □ The control panel works well?
- □ All noises are normal?
- □ The water tank has been connected with dedicated pressure relief valve (TP valve) and check valve?
- □ Materials for hot/cold water pipes conform to requirements of use of hot/cold water?
- After the water system is completed, the water tank is filled with water?
- □ Is there water drained out of the water outlet of the hot water pipeline?
- □ After the water pipe of the water system is filled, check the whole water pipeline. There is no leakage?
- After the water system is filled with water, is there water flowing out after pressure is relieved via the automatic safe pressure relief valve?
- After the water system is filled with water and after leakage check, all outdoor water pipelines are applied with heat insulation treatment?
- The drain valve, drain pipe and pressure relief valve drain pipe of the water tank have been connected to the sewage system and the drainage can be carried out well?

Operation and functions

Display



Functions & Protections

- A. Electrical leakage protection
 The control system of this machine features an electricity leakage protection function.
- B. 3-minutes protection
 When starting the machine after electricity input, the system will start after approximately 3 minutes ,which is considered to be normal.

C. 10-minutes protection

When restarting the machine immediately after shutdown, the system goes into the protection mode and starts after approximately 10 minutes, which is considered to be normal.

- D. Automatic defrosting function The defrosting mode is automatically activated if the outdoor temperature is too low and after the compressor already runs continuously for a certain period.
- E. Overload protection

The working load of the compressor will be heavy if temperature is high in summer. In order to meet hot water requirements of users and to lengthen service life of the compressor, this product automatically adjusts the fan speed to ensure reliable operation of the compressor.

F. Anti-freezing function

The heat pump starts heating to avoid freezing of the water tank if the temperature in the water tank is too low.

G. The default temperature setting is 55°C.

Description of the pictograms

Symbol	Description
٢	Power ON/OFF switch
MODE	Working mode selection
SET	Confirm button
TIMER	Timer adjust
BOOST	Boost mode. Heat pump and auxiliary power are activated at the same time.
AUTO	Auto mode -Optimised management of the heat pump and the electrics for guaranteed comfort; - Prior using heat pump; - If compressor works more than the default 8 hours , start the auxiliary power; - The compressor maximum continuous working time () can be adjust in the installer settings.
ECO	ECO (off-peak) mode - In this mode ,priority using heat pump; - In two ways using heat pump,should set in the installer settings; 1- timer refer to LP parameter; 2-switch signals by power companies.
VAC	Holiday mode - According to the vacation dates in advance to prepare hot water; - For example, you leave home for vacation on January 1st and return home on January 5th. The date shall be set as (5-1) = 4 days, and corresponding temperature shall also be set. The heat pump will start heating on 00:00 o'clock of January 4th automatically.
\mathbf{S}	- Anti-legionella - Anti-legionella function will be activated every 7 days to heat the tank to 65°C automatically .
HW Loft	Hot water volume display

Operating functions

Installer settings

- To open the installer settings, press 🔘 switch off the system, then press 🖶 and

SET at the same time for 10 seconds.

- When menu is open, press 📕 or 📥 to change the value of the settings.

- Press **SET** to confirm the settings.
- Press 👩 to close the menu.

Parameters	Description	Factory setting	Adjustment range
LL NO,NC	Off-peak signal type When you use off-peak time clock control, first determine the type of signals,Only allow professional installers to operate. - NO corresponds to Normally Open Signal. - NC corresponds to Normally Close Signal.	NO	NO,NC
1 P 0 1, 02	Off-peak logic type - In two ways using heat pump,should set in the installer settings -01 manually set off-peak time; -02 switch signals by power companies.	01	01,02
A:_ on, of	Avoid Legionella - This parameter is used to activate the legionella protection mode. - Once every 7 days, all domestic hot water is heated to 65.	ON	ON , OF
HR E, 5, 1	Auxiliary Heating - 1 corresponds to electrical back-up. - 2 corresponds to electrical and boiler back-up. - 3 corresponds to electrical and solar back-up.	1	1,2,3
LS no,nc	Boiler output signal type 	NO	NO , NC
F5	Fan speed - 1 corresponds to water heaters without ducts. - 2 corresponds to semi-ducting, with a single duct installed. - 3 corresponds to ducts on both the inlet and the outlet.	1	1,2,3
AA 5-10	Compressor maximum continuous working time - If the maximum continuous working time of the compressor more than Set Time, start auxiliary power.	8h	5-10h

Checking and maintenance



- Installation and maintenance of the appliance must be done by a qualified professional .
- Before working on the appliance, Shut down the machine and cut off the power supply .
- Do not touch with wet hands.
- Maintenance operations are important to guarantee optimum performance and e xtend the life of the equipment.

Checking of the Safety valve

- Operate the safety valve at least once every six months to check if it is running correctly. Otherwise check for blocking and replace the safety valve if necessary.

Checking of the hydraulic circuit

- Check the watertightness of the water connections.

Cleaning of the fan

- Check the cleanliness of the fan one time per year.

Checking of the evaporator

Because the evaporator fins is very sharp.Risk of injury on your finger.
Do not damage the fins. Avoid affecting the performance.

- Gean the evaporator at regular intervals using a soft-haiæd brush.
- If they are bent. Carefully realign the evaporator using a suitable comb.

Checking of the condensates discharge pipe

- Check the pipe cleanliness .
- An obstruction by dust may cause poor condensates flow or even a risk accumulation of w ater in the heat pump plastic base.

Checking of the Magnesium rod

- -The magnesium anode should be replaced in time, avoid tank corrosion.
- Checking magnesium anode once every 2 years .In poor water areas need to shorten the time.

Drain the water tank to empty

-Cut off power supply and shut down water inlet valve, then drain the water tank to empty via the sewage outlet.Please stay away from the sewage outlet if there is hot water inside the water tank to avoid injury.

Faults and protection

Fault type	Action	Digital indication	Release
	Operating temperature protection	F2	
Compressor protection	Air exhaust temperature protection	F3	After fault is solved.
	Evaporation high temperature protection	F5	switch on power supply for release
Compressor over-current protection	Over-current protection	F6	
Electricity leakage alarming	The system will automatically cut off power supply if any line fault occurs	E1	
Over temperature alarming	The actual water temperature≥85 ℃	E2	
Fault of the inner temperature sensor	If short circuit or circuit break occurs to the sensor	E3	
Fault of the ambient temperature sensor	If short circuit or circuit break occurs to the sensor	E4	
Fault of the evaporation temperature sensor	If short circuit or circuit break occurs to the sensor	E5	
Fault of the air exhaust temperature sensor	If short circuit or circuit break occurs to the sensor	E6	
Fault of the air intake temperature sensor	If short circuit or circuit break occurs to the sensor	ED	
Communication fault	Communication of main control panel and display panel is abnormal	E7	After fault is solved, switch on power supply for release
Pressure switch protection	Action of the pressure switch at the exhaust outlet	E8	
Ambient temperature protection	Ambient or outdoor temperature $<-7^\circ\mathbb{C}$ or $>37^\circ\mathbb{C}$	E9	
Fault of the Solar or boiler temperature sensor	If short circuit or circuit break occurs to the sensor(CURV-HP250M3C)	EE	
Fault of the Off-peak power switching signal	If not received the Off-peak signal when selecting switch signals by power companies	EF	

X

This symbol located on the product or on its packaging indicates that this product is not to be treated as regular household waste. Instead, it must be taken to a recycling collection point for electrical and electronic equipment. By properly disposing of this product, you are contributing to the preservation of the environment and the wellbeing of your fellow citizens. Improper disposal is hazardous to health and environment. You can obtain further information on how to recycle this product from your municipality, your waste management service or the shop where you purchased it.

Installer settings & WIFI connection

WIFI connection

Your appliance can be connected to your home wireless network and operated remotely using the app.Getting started:

- Ensure your home Wi-Fi network is turned on and that the device is powered on.
- Turn off the device, then press and hold the "-" button to enter the distribution network status. At this point, the Wi-Fi icon will start flashing.



Add a device

- After logging in, If no devices are currently bound, you can click "Add Device", or tap the "+" icon in the top-right corner to add a device.
- When powered on for the first time, the device will automatically emit a hotspot. Alternatively, you can long-press the power button after turning off the device to enter pairing mode and activate the hotspot. At this point, the APP will display a corresponding hotspot animation. Tap to add the device. Alternatively, scan the QR code on the device and follow instructions on screen.
- Select the target WiFi (choose a 2.4G network), enter the password, and click "Next" to proceed.
- Enter WiFi name and password, and the device will initiate the WiFi pairing and binding
 process. Once successfully bound, click "Confirm" to access the device control page.

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App Status

The Heat Pump is internet-enabled, allowing you to conveniently adjust the temperature and mode using a mobile app. Its one-touch bacteriostasis feature helps ensure your water stays clean and healthy.

Select mode



- Auto Mode:Once this mode is activated, the device will immediately start the heat pump heating process at any time.
- ECO Mode: In this mode, users can customise heating schedules for weekdays and weekends, and optionally enable heating during off-peak electricity hours.
- Elec Mode: In this state, the device operates in electric heating mode.

Sterilisation mode

Holiday Mode

Corr Corr

Set the holiday mode before your trip. It will automatically activate the antibacterial function the day before you return, and once sterilisation is complete, the heating system will turn on automatically.

Sterilisation

Boost	30
2 Carden and VL and Ky Symposist and Physics Add	
Sterilisation	39
Interval	base un 7 days
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Child Lock	, III,
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You can set the sterilisation temperature, duration, and frequency, allowing the system to automatically perform cyclic sterilisation for you.

Target Temperature



You can adjust the temperature here.



SERVICE RECORD DETAILS

Before completing the appropriate Service Record below, please ensure you have carried out the service as described in the manufacturer's instructions and in compliance with all relevant codes of practice.

It is recommended that your hot water system is serviced regularly and that your service engineer completes the appropriate Service Record below.

SERVICE 1 DATE	SERVICE 2 DATE	
ENGINEER NAME	ENGINEER NAME	
TELEPHONE NO.	TELEPHONE NO.	
REG NO.	REG NO.	
SIGNATURE	SIGNATURE	

SERVICE 3 DATE	SERVICE 4 DATE	
ENGINEER NAME	ENGINEER NAME	
TELEPHONE NO.	TELEPHONE NO.	
REG NO.	REG NO.	
SIGNATURE	SIGNATURE	

SERVICE 5 DATE	SERVICE 6 DATE	
ENGINEER NAME	ENGINEER NAME	
TELEPHONE NO.	TELEPHONE NO.	
REG NO.	REG NO.	
SIGNATURE	SIGNATURE	

SERVICE 7 DATE	SERVICE 8 DATE	
ENGINEER NAME	ENGINEER NAME	
TELEPHONE NO.	TELEPHONE NO.	
REG NO.	REG NO.	
SIGNATURE	SIGNATURE	





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COMMISSIONING & SERVICE CHECK SHEET DOCUMENT

PROJECT NAME	
PROJECT REFERENCE NUMBER	
APARTMENT NUMBER	
PLOT NUMBER	

CURV CYLINDER SERIAL NUMBER	
MODEL NUMBER	

CHECK LIST - YES or NO

HEAT PUMP IS LEVEL	YES	NO
HEAT PUMP IS UNDAMAGED	YES	NO
THE POWER SUPPLY 16 AMP SWITCH FUSE SPUR	YES	NO
ELECTRICAL CABLES ARE SECURE AND UNDAMAGED	YES	NO
CYLINDER CONDENSATE FITTED AND FUNCTIONAL	YES	NO



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G3 CHECK LIST

EXPANSION VESSEL TESTED TO WORKING PRESSURE	YES	NO
EXPANSION VESSEL IS THE CORRECT SIZE	YES	NO
22 mm Combination PRESSURE RELIEF VALVE HAS BEEN FITTED	YES	NO
TPR IS INSTALLED AND FUNCTIONAL	YES	NO
D1 & D2 INSTALLED AS REQUIRED BY G3	YES	NO
MAIN WATER WORKING PRESSURE	YES	NO

DUCTWORK CONNECTIONS AND SIZING

AIR GRILLS HAVE BEEN REMOVED	YES	NO
SIZE OF UNIT DUCT CONNECTION TO UNIT INLET/OUTLET		
TYPE OF DUCTWORK		
TOTAL LENGTH OF SUPPLY AND EXHAUST DUCTS		
SIZE AND TYPE OF EXTERNAL DUCT GRILLS		
AIR FLOW RATES		
SUPPLY		
EXHAUST		



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REPORTED FAULT

FAULT CODE IF APPLICABLE	
ACTION TAKEN	

REPORT

TIME: _____

DATE: _____



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FURTHER ACTION:

INSTALLERS DETAILS / CURV ENGINEERS DETAILS

NAME	
COMPANY	
DATE	
SIGNATURE	

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Registered Office: Unit 1, Lakes Court, Lancaster Park, Newborough Road, Needwood, Burton-On-Trent, England, DE13 9PD