

# USER MANUAL

## HEAT PUMP WATER HEATER



ASHP WATER HEATER

# HEAT PUMP

More Heat. More Savings

# **INSTRUCTION MANUAL FOR V-GUARD HEAT PUMP WATER HEATING SYSTEM**

Dear Customer,

We congratulate you for being the proud owner of a V-Guard Heat Pump Water Heating System. This product comes to you from a company committed to total quality and dedicated to customer delight, since 1977. The immense trust and support our valued customers give us has always been, and always will be, our motivation to strive harder and harder to live up to their expectations. By using this product you are not only helping the country save on raw materials (which goes into the generation of electricity) but also contribute towards a greener environment. We, the members of V-Guard, thank you and wish you many years of free hot water.

## OPERATING PRINCIPLE:

The heat pump makes use of a refrigerant for its operation. The low temperature refrigerant after absorbs free heat from the atmospheric air in the evaporator is compressed by a highly efficient electrical compressor to a high temperature and high pressure vapour refrigerant. This vapour is then passed through a heat exchanger (condensor) to transfer the heat to the water in the storage tank to produce hot water. The refrigerant then passes through an expansion valve and it goes back to the evaporator for absorbing the free heat from the atmospheric air again and the cycle is repeated.

## PRODUCT RANGE:

Capacity (Ton)	Heating Capacity (kW)	COP (Coefficient of Performance)	Diameter of Pipe
1	4.1	4.21	1.9 cm (3/4)
1.5	6.2	4.26	1.9 cm (3/4)
2	8.6	4.24	1.9 cm (3/4)
3	12	4.25	1.9 cm (3/4)
5	21	4.29	2.54 cm (1)
6	28	4.29	2.54 cm (1)
10	43	4.34	3.18 cm (1 1/4)
15	55	4.36	3.81 cm (1 1/2)
20	90	4.4	5.08 cm (2)

## **INSTALLATION INSTRUCTIONS:**

### **A. Mounting Details:**

1. The system should be installed, preferably, on a flat roof. The roof should be strong enough to support a weight of entire system with water and foundation for heat pump should be at a minimum height of 100 mm.
2. Level surface for proper drainage.
3. Ensure that a suitable electrical supply line is provided. See the rating plate on the heat pump for electrical specifications. Please take a note of the specified current rating. No junction box is needed at the heat pump; Connections are made inside of the heat pump electrical compartment. Conduit may be attached directly to the heat pump jacket.
4. The location of the system should be as near to the utility points as possible, to minimise heat loss from the plumbing lines.
5. It is advised to use PVC conduit for the electrical supply line.
6. A filter on the water inlet is needed.
7. The plumbing should be insulated to reduce its heat loss.
8. Supports should be properly grouted with appropriate bolts & nuts.

Note: We recommend installing ball valves on the inlet and outlet water connections for ease of serviceability.

## **B. Plumbing Instructions:**

1. A Horizontal Type NRV of good quality should be provided in the cold water inlet line.
2. For plumbing, use only pipes which can withstand temperatures up to 100°C at the outlet, for hot water.
3. Exposed pipe lines carrying hot water from the system to the utility points should be properly insulated, to avoid heat losses.
4. Each part connected to unit needs to be connected with union and installed with ball valve.
5. All the pipelines and pipe fittings must be insulated to prevent heat loss.
6. Install a drain valve at the lowest point of the system to enable the system to be drained.
7. In order to reduce the back pressure, the pipes should be installed horizontally.

**Note:**

1. Only the assembly and provisional installation of the equipment, at site, is in the manufacturer's scope. All related plumbing, civil and electrical work will be in the scope of the customer.
2. The price of the system is for a standard system and site conditions are assumed as normal with flat roof. Any deviations from the normal installation shall incur extra cost and shall be charged to the customer accordingly.
3. A maximum water temperature of 60° C is recommended within heat pump.
4. It is recommended to turn off the heat pump when ambient air temperature is less than -7° C or if on vacation for longer than a week.
5. To save energy, it is recommended that the heat pump is operated during daytime when the ambient temperature is higher.
6. If you do not plan to use hot water for a prolonged period, then you might choose to turn the heat pump off or decrease the temperature setting of the control several degrees to minimize energy consumption.

#### **D. Safety Precautions:**

1. DO NOT install the heat pump near to hazardous materials and places
2. DO NOT install the heat pump under deep sloping roofs without gutters which will allow rain water, mixed with debris, to be forced through the unit.
3. Place the heat pump on a flat slightly pitched surface, such as concrete or fabricated slab. This will allow proper drainage of condensation and rain water from the base of the unit. If possible, the slab should be placed at the same level or slightly higher than the filter system/equipment.
4. Ensure that all high voltage circuits are disconnected before commencing heat pump installation.
5. Ensure that an electric shock protection device, like ELCB, is incorporated in the electric circuit before giving power supply to the heat pump water heater.
6. Ensure that the heater is properly earthed.
7. Ensure that the system is Protected with a lightning Arrester.
8. In order to prevent electrical shock in case of leakage from unit, install the heat pump according to electrical standard.
9. Do not interrupt the voltage supply to the heat pump frequently as this may result a shorter life expectancy of the heat pump.
10. When installing over current protection, ensure that the correct current rating is met for this specific installation.

## NORMAL INLET WATER QUALITY STANDARDS

Sl. No.	Description	Desirable Limit
1	pH	6.5 - 8.5
2	Total Hardness	300 ppm (maximum)
3	Alkalinity	200 ppm (maximum)
4	Total Dissolved Solids	500 ppm (maximum)
5	Chloride	200 mg/L (maximum)

### MAINTENANCE INSTRUCTIONS:

Though the maintenance required for this product is minimal, the customer is advised that a little bit of care (a few easy-to-do jobs) is required to maintain the high level of performance and life of the system. This is so, especially since this product is destined to be left unattended in the open air, through out it's life.

Item	Maintenance procedure	Maintenance schedule
Heat Pump	Follow Clean in Place Procedure	Once every 6 months
Electric wiring	Check earthing and continuity	Once every 3 months
Plumbing	Check for leakages	Once every 6 months
Valves	Check for smooth functioning	Once every 3 months
Y - Filter	Clean & remove debris	Once every 3 months

## Terms and conditions

### The warranty does not cover

1. Damages / defect(s) of any nature resulting from repairs effected by unauthorized persons, improper selection of model / capacity or misuse of any kind.
2. Any parts of the system which are replaced / repaired.
3. Accessories external to the original equipment.
4. Damage(s) due to improper selection of accessories external to the original equipment.
5. Damage(s) due to improper plumbing, civil and electrical work.
6. Damage(s) resulting from exceeding the maximum permissible water pressure as specified by V-Guard.
7. Heat loss resulting from not insulating the outlet plumbing properly and / or not providing a horizontal NRV at the inlet.
8. In order to prevent electrical shock in case of leakage from unit, install the heat pump according to electrical standard.
9. Do not interrupt the voltage supply to the heat pump frequently as this may result a shorter life expectancy of the heat pump.
10. When installing over current protection, ensure that the correct current rating is met for this specific installation.
11. Damage(s) resulting from natural calamities such as storm, heavy rain, hail stone falling, earth quake, fire etc.
12. Corrosion of the pipes inside the Heat Pump due to hard water  
\*\* Refer normal inlet water quality standards on page no 8.

### The warranty is void

1. If the installation of the system is not in accordance with the installation / plumbing instructions specified by V-Guard.
2. If the installation / repairs / replacements are carried out by unauthorised persons.
3. If the system is shifted to a new location from the location at which the system was originally installed by authorised direct marketing associates / dealer of the company.
4. If modifications/alterations are made by unauthorised persons.
5. Warranty does not cover if the system is connected to the water supply which does not meet the inlet water quality standards mentioned in page no 8 of this Instruction manual.

Due to continuous improvement and development of the product, specifications mentioned in this manual is subjected to change without notice

## PRODUCT DISPOSAL INSTRUCTION

Material categories	Instruction
Metals (Stainless steel, Aluminium, Galvanized iron, Mild steel, Brass, copper)	The materials shall be disposed through authorized recycler in order to protect environment at the time of product final disposal.
Paper (Carton box, Corrugated buffer, Instruction Manual, sticker)	
PUF	
Rockwool	
Rubber	
Thermocol	
Plastics	
Glass	

Plastic Waste EPR Reg. No.: BO-13-000-07-AAACV5492Q-22



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SCAN TO AVAIL THE  
**DIGITAL**  
**WARRANTY**  
BY REGISTERING YOUR  
PRODUCT ONLINE



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CIN: L31200KL1996PLC010010