

# **User Manual Book Electric Storage Water Heater**

## **Tondo Series**

ES 30VD, ES 50VD, ES 80VD  
ES 100VD

## **Disteso Series**

ES 30HD, ES 50HD, ES 80HD  
ES 100HD

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This manual book explains everything you need to know about your new product. Please contact our Customer Care should you need further assistance through [www.modena.com](http://www.modena.com).

# PART 1: IMPORTANT SAFETY INFORMATION

## General Remark

The installation and maintenance has to be done by qualified professionals or authorized technicians of MODENA. MODENA is not responsible for any damage or malfunction caused by wrong installation or the failure of following instructions that are included in this manual book. For more information regarding to installation and maintenance guidelines in details, please refer to below chapters.

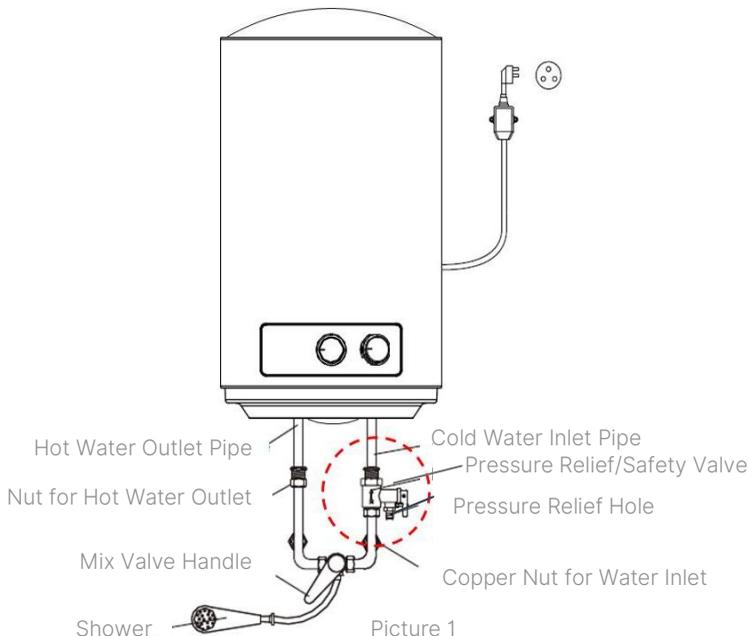
## Caution

Before installing this electric storage water heater, check and ensure that the power socket is properly functional and reliably grounded. Otherwise, the electrical storage water heater cannot be installed and used. Do not use an extension cord if there is a problem with the power socket. Incorrect installation and use of this water heater may result in serious injuries and loss of property.

## Special Caution

- If the supply cord is damaged, it must be replaced by MODENA technicians, MODENA service agent or similarly qualified persons in order to avoid a hazard.
- The power socket must be earthed (grounded) reliably. The rated current of the socket should not be lower than 16A. The power socket and the power plug should be kept dry to prevent electrical leakage.
- The installation height of the power socket should not be lower than 1.8 m.
- The wall in which the electrical storage water heater is installed should be able to bear the twice bigger load than the weight of this water heater filled fully with water without distortion and cracks. Otherwise, other strengthening measures should be adopted.

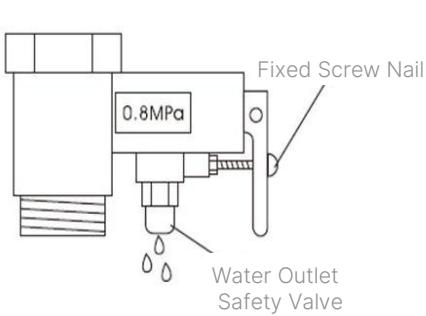
- The pressure relief valve that is attached with the water heater must be installed at the cold water inlet of this appliance (see Picture 1), and make sure it is not exposed in the foggy. The water may be out-flowed from the pressure relief valve, so the outflow pipe must be opened wide towards the air. The pressure relief valve needs to be checked and cleaned regularly to avoid blockage.



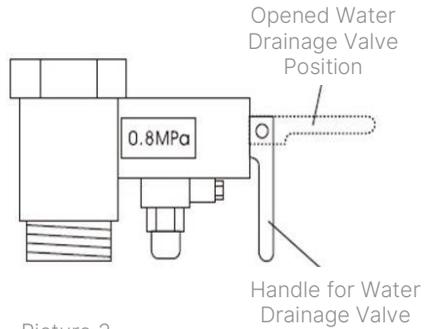
- When using this water heater for the first time (or for the first use after maintenance), this heater cannot be switched on until it has been filled fully with water. When filling the water, at least one of the outlet valves of the water heater must be opened to exhaust the air. This valve can be closed after the water heater has been filled fully with water.
- This appliance (water heater) is not intended to be used by persons with special needs for their physical, sensory or mental capabilities, or lack of experience and knowledge (including children), unless they have been given the supervision or instructions concerning the use of the appliance by a person who

responsible for their safety. Children should be supervised to ensure that they are not playing with this water heater.

- During the heating process, there may be drops of water dripping from the pressure relief hole, and this is a normal case. If there is an over-leaking, please contact **MODENA** Customer Care for repair. This pressure relief hole should not, under any circumstances, be blocked; otherwise, the water heater may be damaged, even resulting on accidents.
- The drainage pipe that is connected to the pressure relief hole must be kept sloping downwards.
- Since the water temperature inside the heating tank can reach up to 75°C, the hot water must not be directly flowed to human skin at the initial use. Adjust the water temperature in accordance to human skin endurance to avoid scalding.
- If the flexible power supply cord is damaged, the special power cord provided by **MODENA** must be selected, and replaced by **MODENA** maintenance personnel (technician).
- If any parts and components of this electrical storage water heater are damaged please contact **MODENA** Customer Care for repair.
- In order to avoid a hazard due to inadvertent resetting of the thermal cut-out, this appliance must be not supplied through an external switching device, such as a timer, or connected to a circuit that is regularly switched on and off by the utility.
- For the correct operation of the appliance, it is necessary to pay attention that the maximum inlet water pressure is 0.8 MPa, and the minimum inlet water pressure is 0.015 MPa.
- When the water pressure is over 0.8 MPa, this will be automatically activated the safety valve, and the water may drip from the discharge pipe of the pressure-relief device (see Picture 2). Therefore, this pipe must be left open towards the air (atmosphere). The pressure-relief device should be operated / activated regularly to remove limestone deposits and to avoid blockage in the pipes.
- Draining away the water inside the inner tank can be done from the pressure relief valve. Twist off the thread screw of the pressure relief valve and lift the handle of the drainage pipe valve upwards (Picture 3). Every drainage pipe that connected to the pressure-relief device has to be installed in a continuously downward direction and in a frost-free environment.



Picture 2



Picture 3

## PART 2: PRODUCT INTRODUCTION

### Nomenclature (The Terms to Classified Product Types and Names)

ES XXVD, ES XXHD

ES = the product code of the electric storage water heater;

XX = the capacity of the water heater (L);

VD, HD = the series of the water heater

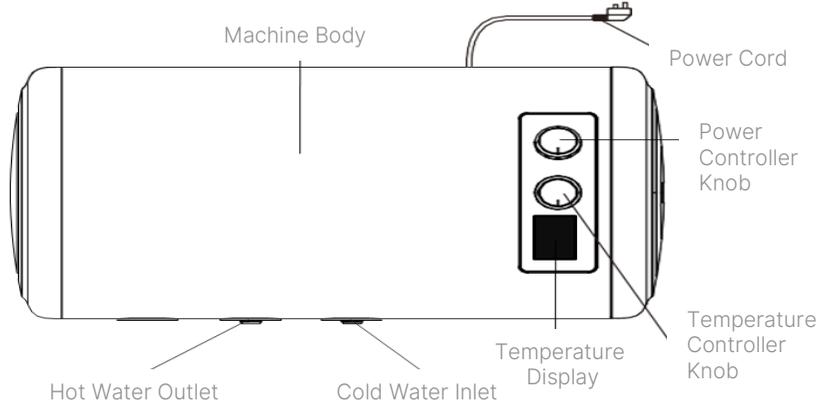
### Technical Performance Parameters

<b>Rated Volume</b>	30 L, 50 L, 80 L, 100 L		
<b>Rated Voltage</b>	220-240 ~	<b>Rated Power</b>	1200 W/ 1200 W/ 1200 W/ 1500 W
<b>Rated Pressure</b>	0.8 MPa	<b>Rated Frequency</b>	50Hz
<b>Rated Water Temperature</b>	75 °C	<b>Heating Efficiency</b>	>90%
<b>Water-proof Degree</b>	IPX4	<b>Structure Mode</b>	Hermetically Closed Type Water Storage Style

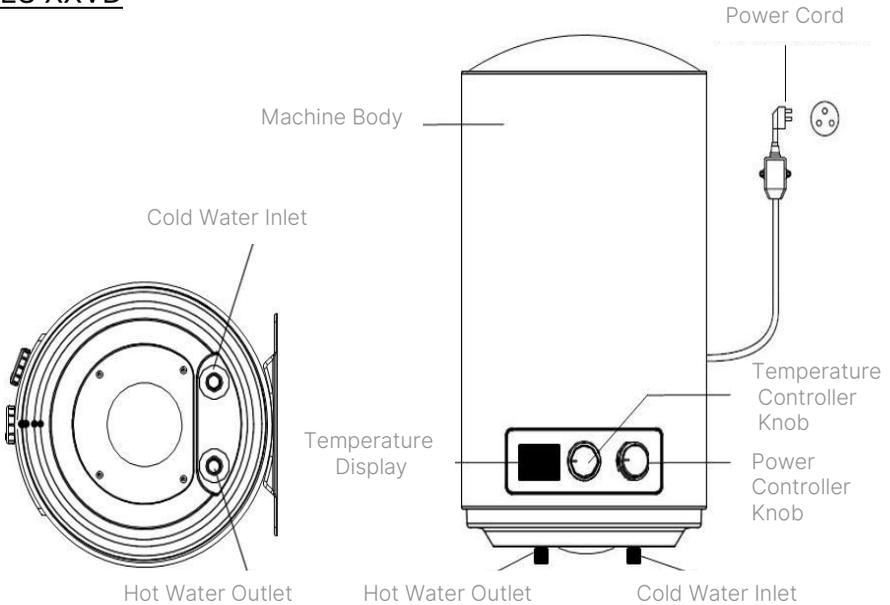
Picture 4

# Brief Introduction of Product Structure

## ES XXHD



## ES XXVD



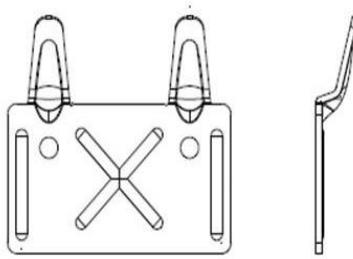
Picture 5

\* The features and product specifications depend on the product type

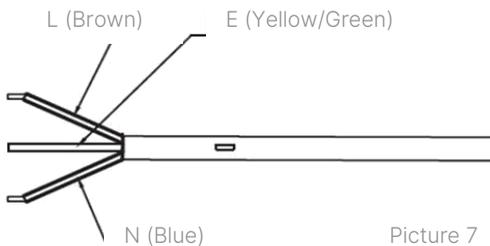
## PART 3: INSTALLATION

### Installation Instruction

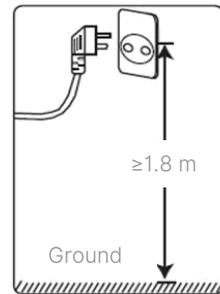
- This electric storage water heater shall be installed on a solid wall. If the strength of the wall cannot bear the load equal to two times of the total weight of the water heater filled fully with water, it is then necessary to install a special support. In case of the hollow bricks wall, ensure to fill it with concrete cement completely, and use anchor fastener bolt (expansion bolt) in case of the hebel wall.
- Before determined the location of the holes for the bolt, make sure that the right side of the water heater has more than 200 mm (0.2 m) distance from the floor (ground), so that there is a space for the repair process (if necessary).
- After selecting a proper location for the bolts holes, install the bracket to a solid wall.
- Methods of installation : on the wall that is strong enough, drill 2 holes with a diameter of 8 mm, the distance between one hole to another is 62 mm, and the hole depth is approximately 45 mm. Use the anchor fastener bolt that provided along with this appliance for securing the bracket firmly in the wall (see Picture 6)
- Align the slots on the back of the water heater with the projections of the bracket, and then, mount the water heater on the bracket. Thereafter, slide the water heater gently towards the bottom side of the bracket to be locked.
- The power supply must have good quality and adopts the mono-phase tri-pole that complies with the corresponding standard. Also, the power supply must suitable with the *ground* line where it must be installed properly in a high position and not easily splashed by water.
- Install the power plug to the power socket on the wall. The power supply for this appliance must be around 220 V. It is recommended to place the power socket on the right above the water heater. The height of the socket to the ground should not be less than 1.8 m (see Picture 7). If there is problem on the power cord, the cord should be replaced by MODENA agents or qualified person who is able to do the replacement and repair so as to ensure the safety.



Picture 6



Picture 7

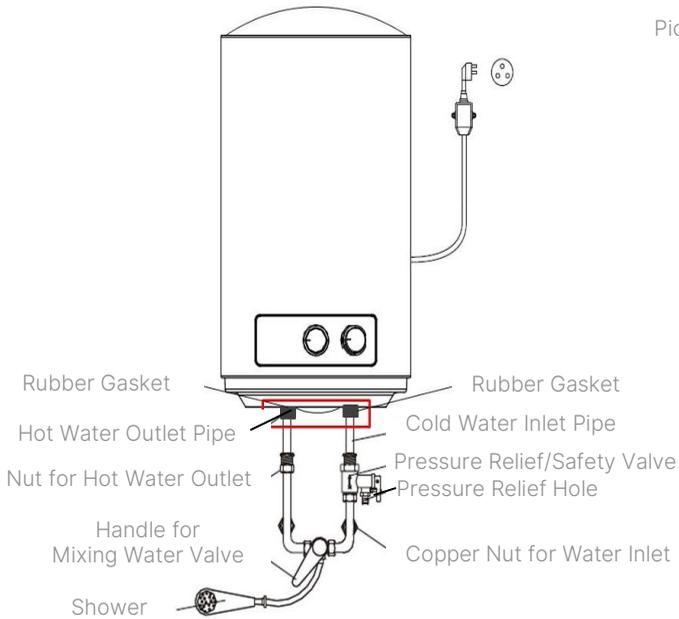


- If the size of the bathroom is too small, the water heater can be installed at another place. However, the water heater should be installed closely to the stand-point of hot water use (bathroom) to optimize the heat of the water.

## Plumbing Connection

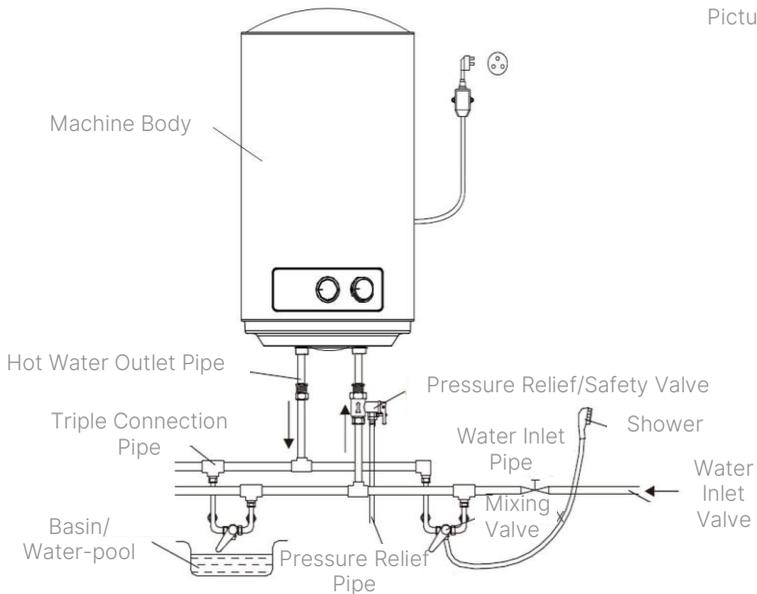
- The dimension of each used pipe is G1/2 ("BSP 1/2"). The maximum and minimum pressures of the water inlet should use Pa (Bar) as the unit.
- Connect the pressure relief valve to this water heater on its water inlet.
- In order to avoid leakage when connecting the plumbing, the rubber seal gaskets that provided with this water heater must be added at the end of the threads to ensure the connection is leak-proof (see Picture 8).

Picture 8



- If the users want to utilize a multi-way supply system, refer to the method shown in Picture 9 for connection of the plumbing.

Picture 9



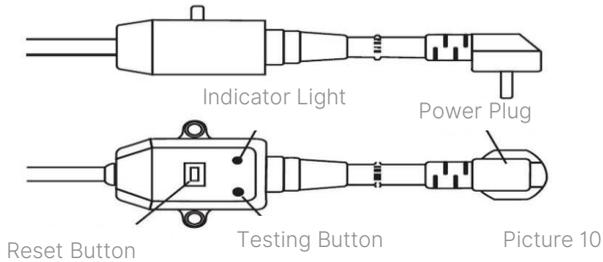
## NOTE

Please be sure to use the accessories provided by MODENA to install this electric storage water heater. This electric storage water heater cannot be hung on the bracket until it has been confirmed to be firm and reliable. Otherwise, this water heater may drop off from the wall, resulting to its damage, even serious accidents of injury to the user.

## PART 4: HOW TO USE

### Operating Procedure

- Check all the piping connection to avoid the leakage before turning on this electric storage water heater.
- Open one of the outlet valves of the water heater, then, open the inlet valve to get the water heater filled with water.
- When the water flows out of the outlet pipe, it implies that the water heater has been filled fully with water, and the outlet valve can be closed.
- Make sure that the tank is fully filled up with water; otherwise, it will damage the heating elements.
- During normal operation, the water inlet valve should always kept open.
- Insert the power plug into the power socket and check the reliability of the leakage protection device (ELCB). Press the testing button, the indicator light on the power plug should be off, and the reset button should bounce up; then push down the reset button, the indicator light will turns on to verify that the leakage protection works well (see Picture 10). If the reset button cannot be pressed during the use, the leakage protection device (ELCB) might be error or fails to work; If the reset button is pressed down and bounce up again, then it shows that the power circuit leaks or the power supply is disconnected.



- If the indicator lights turn on, the thermostat will automatically control the temperature. When water temperature inside the heater has reached the set point, water heater will switch off automatically. When water temperature falls below the set point, water heater will be turned on automatically to restore the heating.

## Operating the Water Heater



- Rotate the knob according to the marking (indicator) to increase or decrease the temperature setting.
- Rotate the power controller knob to the position I, II, or III, and the water heating process starts.
- The water heater needs to be turned on for a certain period of time to reach the desired (set) temperature.
- During the heating process, it is normal to see the slight drip at the safety valve. Please do not cover the hole of the safety valve outlet.
- Connect the outlet hole to a drainage pipe. The water may drip from the drainage pipe of the safety valve; therefore, this pipe must be exposed to the atmosphere (air)
- The safety valve has to be operated regularly (preferably at least every six months) to remove the limestone deposit and to ensure that it is not blocked.

## Function Introduction

- Display function: displays the actual temperature and the temperature setting.
- Heating function: within 30°C to 75°C to set the heating temperature.
- Safety function: with anti-dry protection, overheat protection to keep safe when using.

## Product Features

- Super tank (Single Weld Line) with Titanium Porcelain Enamel coating which is rut-proof, erosion-proof, higher efficiency and having a longer life span.
- Energy saving with minimum heat loss. The water temperature is able to be maintained up to 48 hours after the power is switched off.

# PART 5: MAINTENANCE

## General Instruction

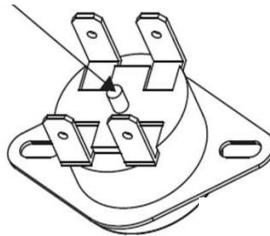
### **WARNING!**

Do cut off the power supply before do the water heater maintenance to avoid the danger of electric shock.

- Check the power plug and the power socket as often as possible. Electrical contact must be secured and also must be provided proper grounding The power plug and the power socket must not heat excessively.
- If the water heater is not used for a long time, especially in regions with low air temperature (below 0 °C), it is necessary to drain the water from the heating tank to prevent damage of the water heater due to the water-freezing in the internal tank. Refer to the “Important Safety Information” part in this manual book for the method of draining away the water from the internal tank

- To make the water heater operation durable, it is recommended to regularly clean the internal tank and remove deposits in the heating element of the water heater. Also, check the condition of the magnesium anode (whether fully decomposed or not), and if necessary, replace it with a new one in case of full decomposition. Tank cleaning frequency depends on the hardness of the water in each location where this water heater is applied. Cleaning must be performed by MODENA or special maintenance services.
- The water heater is equipped with a thermal switch, which cuts off the power supply of the heating element upon overheating or the absence of water in the tank. If the water heater is connected to the power supply (electricity), but the water is not heated and the indicator does not light up, then the thermal switch was off or not switched on. To reset the water heater to the normal operating condition, it is necessary to:
  1. De-energize the water heater. Remove the plate of the front cover (upside).
  2. Press the button that is located at the center of the thermal switch, (see Picture 12).
  3. If the button is not pressed and there is no clicking, wait until the thermal switch cools down to the initial temperature.

Manual Reset Button



Picture 12

### **WARNING!**

Non-professionals are not allowed to disassemble the thermal switch to do the reset. Please contact professionals of MODENA to maintain this electric storage water heater. Otherwise, MODENA will not take responsibility of any accidents.

## **Tank Cleaning**

After having been used in a long time, the tank of the water heater will have the dirt in it and therefore must be cleaned according to these steps:

1. Turn off the power supply.
2. Close the cold water valve.
3. Open the hot water valve.
4. Open the pressure relief valve (if used).
5. Flush / rinse the tank with cold water.
6. Repeat this process several times until the tank is completely clean.

## **Safety Valve Cleaning**

Safety valves should be cleaned regularly to prevent any dirt that clogs the valve:

1. Remove the safety valve, then clean and wash it.
2. Check if the parts of the valve are still able to move well.
3. After cleaning the valve, install the safety valve back to its position by first giving the seal tape around the end of valve.
4. Fill the water heater with water after the pipes are refitted.

## **Magnesium Anode**

Magnesium Anodes functions to neutralize the corrosive substances in the water and will run out in a certain time depending on the corrosive properties of the water. If the water has good enough quality (PAM), magnesium anode should be replaced within 2 (two) years. If the water quality is not good, magnesium anodes should be replaced 1 (one) year. To replace the magnesium anodes, contact **MODENA** Customer Care.

## Heating Element

If the water contains lime (mud), the heating element cannot function properly (slow heat) because it was covered by a crust of lime (mud). Therefore, the heating element must be cleaned of each year. Contact MODENA Customer Care for cleaning.

## PART 6: TROUBLESHOOTING

Check the things below before contacting MODENA Customer Care in the moment of operation disturbance:

Problem	Possible Cause	Recommended Action
Heating indicator light is off.	Failures on the temperature controller.	Contact MODENA Customer Care for repair.
Power indicator light is off.	<ol style="list-style-type: none"> <li>1. Power source is not connected or badly connected</li> <li>2. Indicator light is damaged</li> <li>3. Overheating sensor is activated.</li> </ol>	Contact MODENA Customer Care for repair.
No water flows out from hot water outlet.	<ol style="list-style-type: none"> <li>1. Water supply is cut off</li> <li>2. Water pressure is too low</li> <li>3. Water Inlet valve is not opened.</li> </ol>	<ol style="list-style-type: none"> <li>1. Wait for the restoration of water supply.</li> <li>2. Use the water heater again when the water pressure is increased.</li> <li>3. Open the water inlet valve of.</li> </ol>
Water is not warm enough.	<ol style="list-style-type: none"> <li>1. Heating element is not active.</li> <li>2. Temperature controller is malfunction.</li> <li>3. No power supply to the water heater.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace the heating element and contact MODENA Customer Care for repair.</li> <li>2. Contact MODENA Customer Care for repair.</li> <li>3. Check the power supply.</li> </ol>

Problem	Possible Cause	Recommended Action
Water temperature is too high.	Failures on the temperature control system.	Contact MODENA Customer Care for repair.
Water leak	<ol style="list-style-type: none"> <li>1. Trouble on the seal for each connected pipes.</li> <li>2. Leaking at the piping connection</li> <li>3. Leaking at the gasket</li> </ol>	<ol style="list-style-type: none"> <li>1. Seal up the piping connection.</li> <li>2. Tighten the connection.</li> <li>3. Tighten the element or replace the gasket and Contact Customer Care for repair.</li> </ol>

## PART 7: DISPOSAL OF USED PRODUCT



This symbol on the product or in its packaging indicates that this product must not be treated as household waste. Instead, it should be taken to the appropriate waste collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by the inappropriate waste handling of this product. For more detailed information about the recycling of this product, please contact your local council or your household waste disposal service

## PART 8: SPECIFICATIONS

Model	ES 100VD	ES 80VD	ES 50VD	ES 30VD
Type	Tank (Storage)			
Installation	Vertical			
Heat Source	Electricity			
Heating Tank Material	Stainless Steel			
Heating Tank Coating	Titanium Porcelain Enamel			
Temperature Setting	Yes			
Power Selection	Yes			
Temperature Display	Yes			
Electric Safety (ELCB)	Yes			
Overpressure Safety	Yes			
Thermostat	Double			
Grounding Terminal	Yes			
Anti-Rust	Magnihealth*			
Capacity	100 L	80 L	50 L	30 L
Power	500/1000/ 1500 W	400/800/ 1200 W	400/800/ 1200 W	400/800/ 1200 W
Water Pressure	0.015 - 0.8 MPa			
Water Pipe Diameter	0.5 Inch			
Temperature	Max 75°C			
Insulation Material	PUF (Polyurethane)			
Product Dimension	410 x 410 x 1110 mm	410 x 410 x 920 mm	410 x 410 x 675 mm	340 x 340 x 620 mm
Product Weight	29.2 kg	25 kg	17.5 kg	14 kg

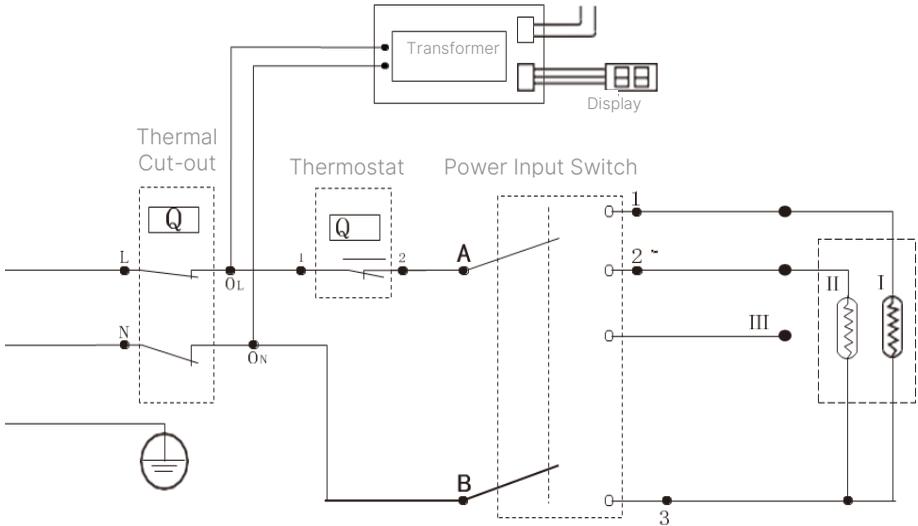
Specifications of this appliance may change without notice to improve the quality of the product. Pictures in this manual are schematic and may not match your product exactly. Values stated on the machine labels or in the documentation accompanying it are obtained in laboratory in accordance with the relevant standards. Depending on operational and environmental conditions of the appliance, values may vary.

<b>Model</b>	<b>ES 100HD</b>	<b>ES 80HD</b>	<b>ES 50HD</b>	<b>ES 30HD</b>
Type	Tank (Storage)			
Installation	Vertical			
Heat Source	Electricity			
Heating Tank Material	Stainless Steel			
Heating Tank Coating	Titanium Porcelain Enamel			
Temperature Setting	Yes			
Power Selection	Yes			
Temperature Display	Yes			
Electric Safety (ELCB)	Yes			
Overpressure Safety	Yes			
Thermostat	Double			
Grounding Terminal	Yes			
Anti-Rust	Magnihealth <sup>®</sup>			
Capacity	100 L	80 L	50 L	30 L
Power	500/1000/ 1500 W	500/1000/ 1500 W	500/1000/ 1500 W	500/1000/ 1500 W
Water Pressure	0.015 - 0.8 MPa			
Water Pipe Diameter	0.5 Inchi			
Temperature	Max 75°C			
Insulation Material	PUF (Polyurethane)			
Product Dimension	1095 x 410 x 410 mm	918 x 410 x 410 mm	910 x 340 x 340 mm	650 x 340 x 340 mm
Product Weight	31 kg	25 kg	19 kg	13.6 kg

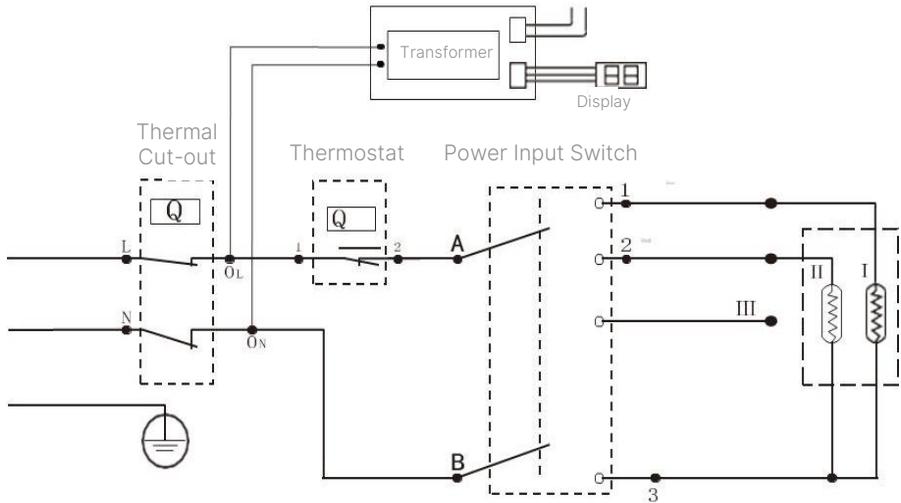
Specifications of this appliance may change without notice to improve the quality of the product. Pictures in this manual are schematic and may not match your product exactly. Values stated on the machine labels or in the documentation accompanying it are obtained in laboratory in accordance with the relevant standards. Depending on operational and environmental conditions of the appliance, values may vary.

# APPENDIX: WIRING DIAGRAM

## ES XXHD



## ES XXVD



Picture 13

