EIMEX ALL STAINLESS STEEL SOLAR +ELECTRIC (HYBRID) WATER HEATER

What is a solar water heater

A DEVICE WHICH PROVIDES HOT WATER FOR BATHING, WASHING, CLEANING ETC USING SOLAR ENERGY.

How does it work?

SOLAR WATER HEATER INCLUDES TWO MAIN COMPONENTS.

1) EVACUATED TUBES
2) WATER TANK

How does it work?

1) EVACUATED TUBES: ABSORBS SOLAR ENERGY AND CONVERTS IT TO USABLE HEAT. A VACUUM BETWEEN THE TWO GLASS LAYERS INSULATES AGAINST HEAT LOSS. WITHIN EACH SOLAR EVACUATED TUBE, 3 SYSTEMS ARE USED TO ENSURE THE MOST EFFECTIVE HEAT ABSORPTION. THIS INCLUDED A AL-N/AI (ALUMINUM NITRATE) LAYER BUT ALSO A SECOND ALUMINUM LAYER AS WELL AS A THIRD COPPER LAYER. THE ADDED LAYERS CONDUCT HEAT BETTER AND ALSO STABILIZE THE COATING ALLOWING FOR A MUCH LONGER LIFESPAN OF 20 YEAR OR GREATER.

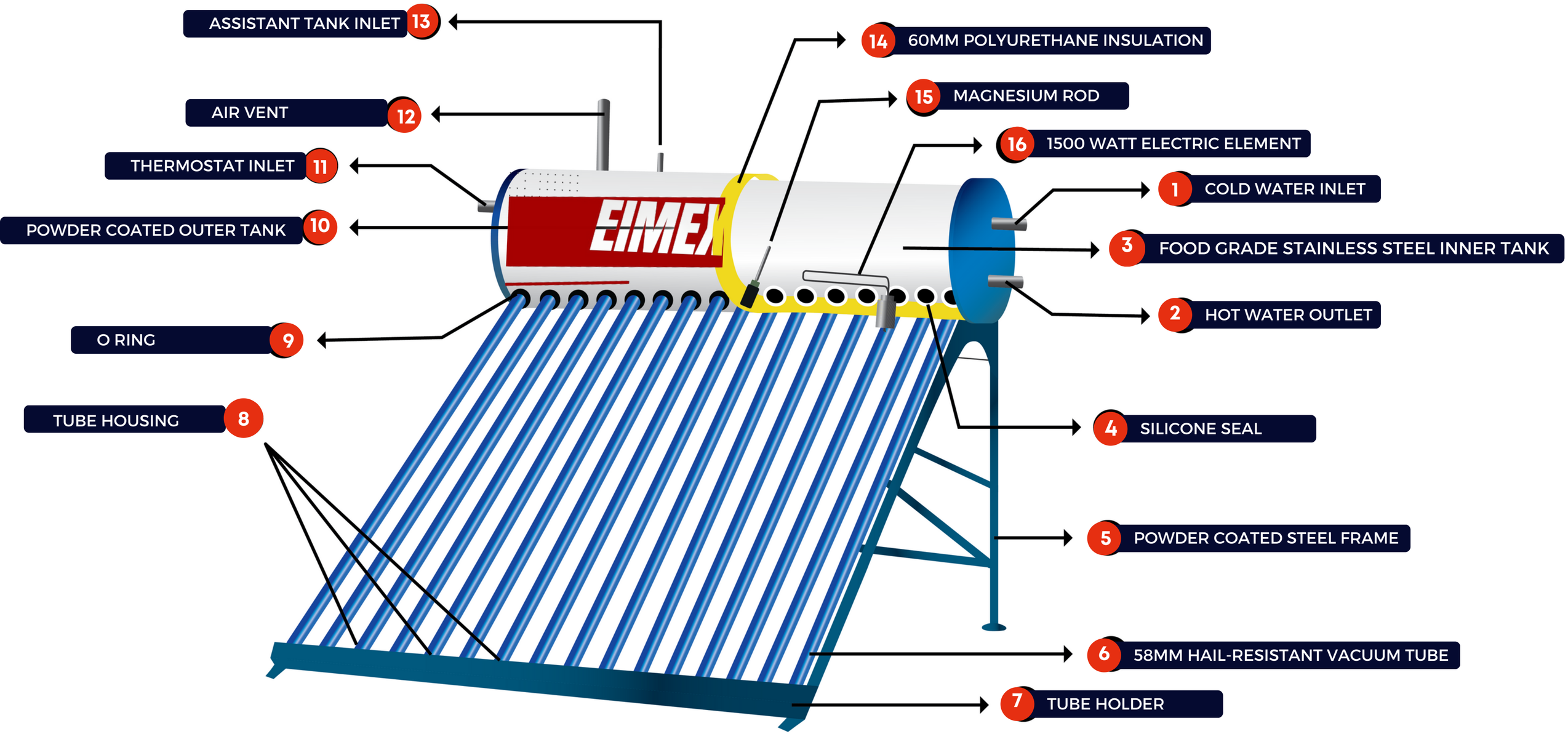
How does it work?

2. WATER TANK: CONSISTS OF 3 LAYERS;

1. INNER TANK: MADE UP OF STAINLESS STEEL
2. A 60 MM POLY URETHANE GUN-FILLED INSULATION.
3. OUTER TANK: MADE UP OF STAINLESS STEEL.

THE WATER TANK STORES AND RETAINS WATER TEMPERATURE OVERNIGHT A HOME SOLAR WATER HEATER IS A VERY SIMPLE AND MAINTENANCE-FREE WAY TO IMMEDIATELY REDUCE YOUR MONTHLY ENERGY COST. IN A SOLAR WATER HEATER, COLD WATER FLOWS INTO THE BOTTOM OF THE SOLAR VACUUM TUBES AND CONVECTION DRIVES THE MOVEMENT OF THE WATER AROUND THE SYSTEM. WHEN THE WATER GETS HEATED THROUGH VACUUM TUBES, IT RISES TO THE TOP OF THE TANK. THE COLDER WATER FALLS BACK DOWN THE EVACUATED TUBE WHERE THE PROCESS CAN START AGAIN. THE EVACUATED TUBES ARE VERY EFFICIENT AT TRAPPING HEAT FROM THE SUN AND TRANSFERRING IT TO THE WATER.

SOLAR WATER HEATER'S MAIN COMPONENTS.



SPECIFICATIONS

1. STORAGE TANK

- **Capacity**: 150, 200 & 300 Liter
- **Material of Inner Tank**: ≥ 0.4mm Thick food-grade Stainless Steel with anti-scaling Provision
- **Material of Outer Tank**: ≥ 0.3 mm Stainless Steel
- **Tank insulating layer**: Polyurethane Foamed, Thickness minimum 60 mm
- **Inlet and Outlet Holes**: G-3/4 & 1/2 inch

SPECIFICATIONS

2. VACCUM TUBES

- **Length**: 1800mm± 2mm
- **Outer tube diameter**: 58mm±2mm
- **Inner tube diameter**: 47±2mm
- **Glass Thickness**:1.6mm± 2mm
- **Material**: Borosilicate Glass 3.3
- **Efficiency**: 93% to 95%
- **The Innertube comes with an anti-scaling provision.**

SPECIFICATIONS

3. SUPPORT FRAME (BRACKET)

- **Material**: Stainless Steel
- **Thickness**: Minimum 1.2 mm
- **Frame Angle**: 45 degrees
- **Average Life**: At least 15-20 years.

HYBRID

Clouds & Rain, unfortunately, does not allow solar radiations to pass through and hence water does not heat up!

But don't worry, our units are hybrid and they come with a fitted 1500 watt electric element which runs as per your requirement and is easily operated through the controller.

This 1500 Watt all Stainless steel electric element raises the temperature at the speed of 10 °C per hour by only consuming 1.5 units of electricity*

*TESTED ON 200 LITER UNIT

HYBRID

MAGNESIUM ANODE

Of the many parts and components used in modern water heaters, the anode rod might just be one of the most important. Without this piece, the internals of water heaters would wear down a lot more quickly.

Water heaters are susceptible to rust and corrosion because of the materials used to construct them and how these materials react to water. Water is naturally acidic, and the steel used to make the tanks undergoes the rusting and corroding process when it comes in contact with oxygen or moisture. The heating aspect may make your water nice and hot, but this heat speeds up the corrosion process. The anode rod is a piece designed to slow down corrosion and rusting in water heaters. The rod is made of magnesium, which wears out faster than steel. When water corrodes the magnesium, the anode rod releases electrons into the tank which form a protective barrier around the steel of the tank.

The service life of an anode rod can vary depending on the temperature of the water in the tank, how much water is used, the quality of the water heater, and the composition (hardness vs. softness) of the water. Keeping up with your regular water heater maintenance will help extend the life of the rod as well as the whole system.

MAGNESIUM ANODE / SACRIFICIAL ROD

SMART IOT BASED CONTROLLER

The controller is considered the brain of a solar geyser. The controller's main job is to sense temperature and water level and manage water filling & Electric Heating.

It has a user-friendly digital interface from where you can set the temperature, get current time, temperature and water level readings and malfunctioning issues.

This Smart Controller has 3 Operation modes

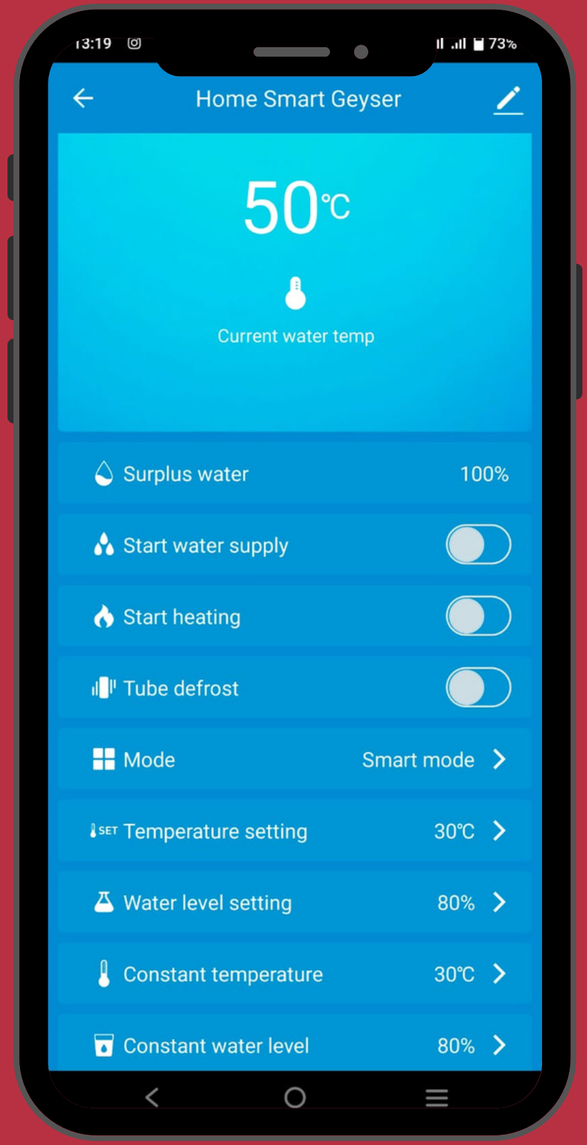
1. **MANUAL** - On the basis of need, the user can manually press buttons to open or cancel water filling or heating.

2. **TIMING** - User can set three individual times for water filling and water heating as per requirement.

3. **INTELLIGENT** - Controller automatically controls water inlet and water temperature.

CONTROLLER

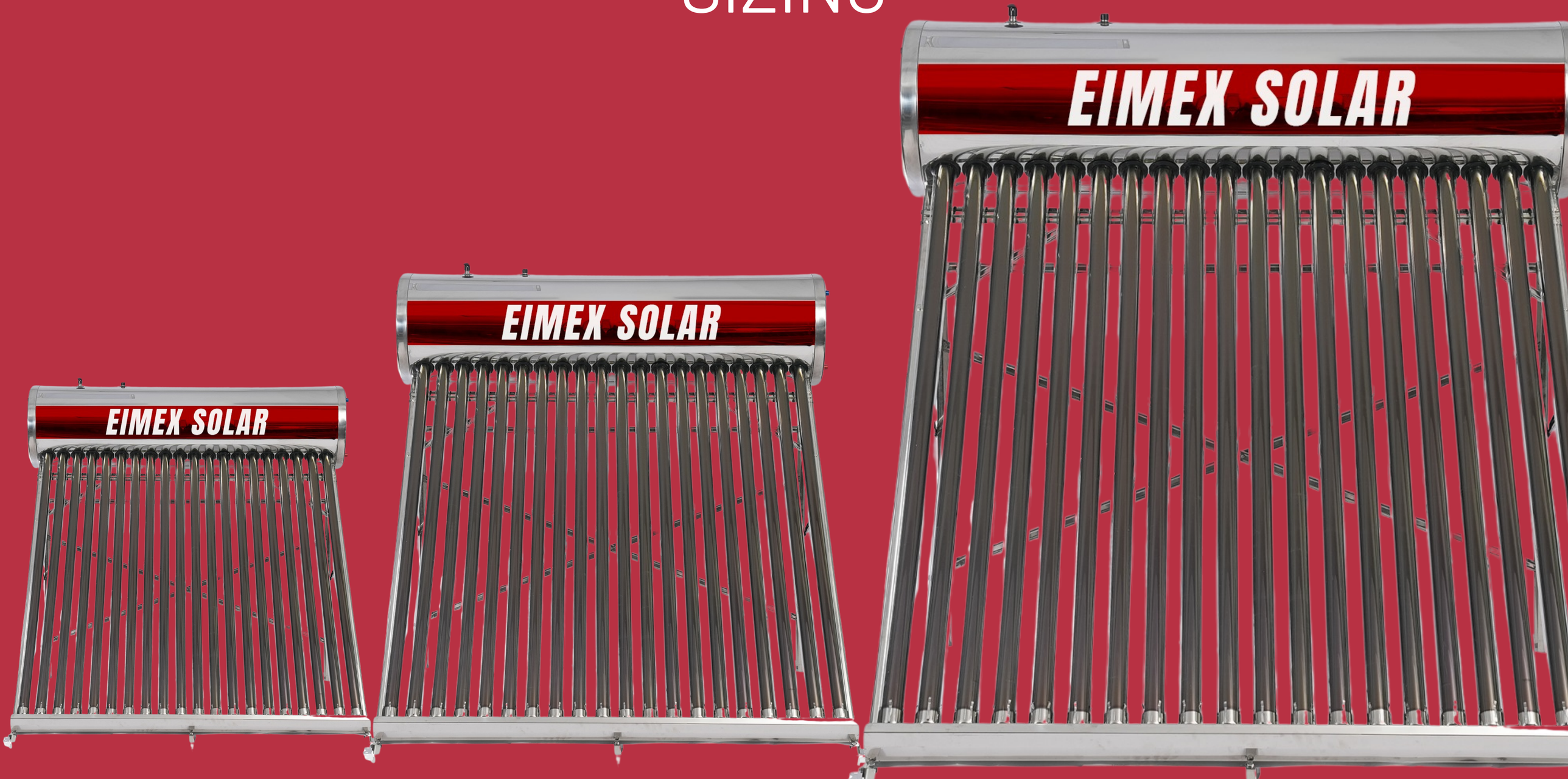
CONTROLLER'S PHONE INTERFACE



OTHER CONTROLLER FUNCTIONS

TEMPERATURE CONTROLLED WATER FILL
TUBE BURST PROTECTION
CONSTANT TEMPERATURE HEATING
POWER FAILURE MEMORY
OVERFLOW PROTECTION
WATER LEVEL /QUALITY ADAPTATION
OVERLOAD PROTECTION

SIZING



SIZING

The rule of thumb for storage tank size is based on an average of 50 LITERS of hot water per person per day

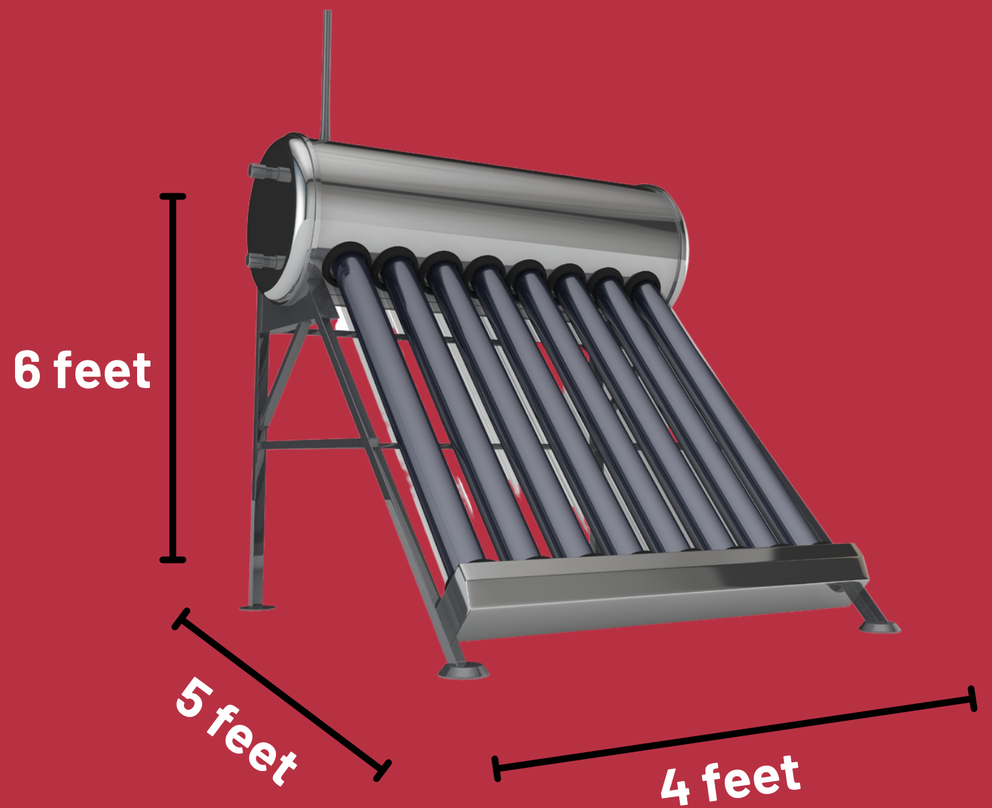
Our Solar Water Heaters are available in 3 sizes to cater to all families.

150 liters for a family of 3
200 liters for a family of 4
300 liters for a family of 6

Multiple units can be combined together to cater to bigger requirements.

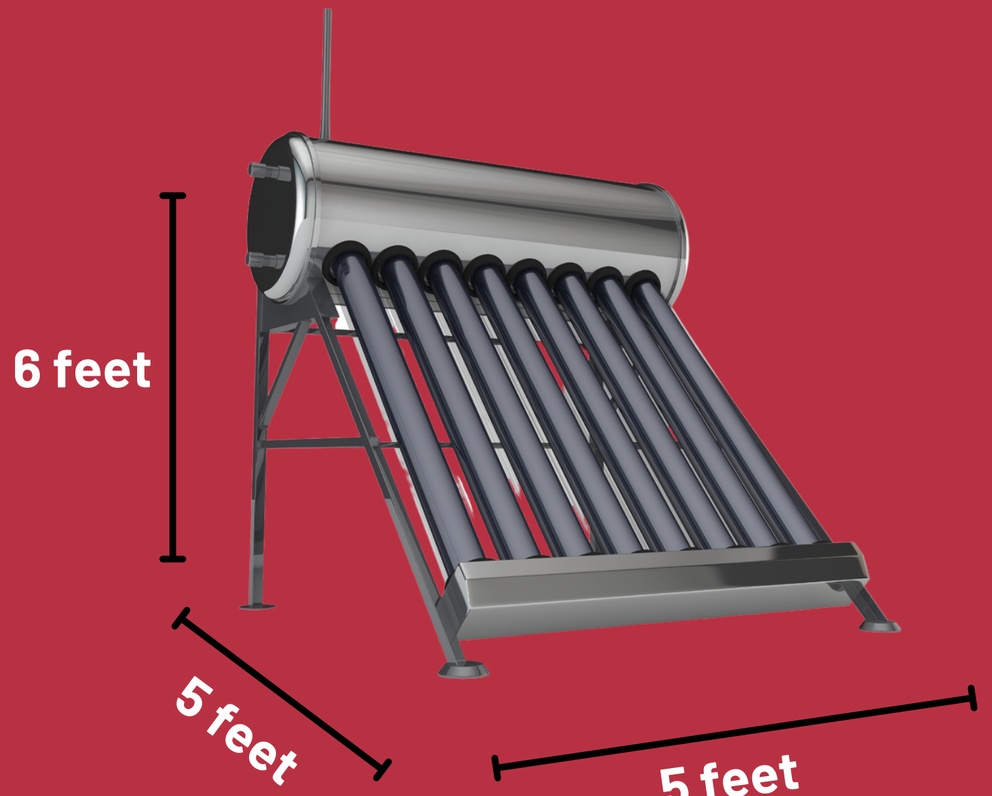
150 LITERS

WATER CAPACITY: 150 LITERS
NUMBER OF TUBES: 15
SIZE : 4 FEET X 5 FEET X 6 FEET (APPROX)



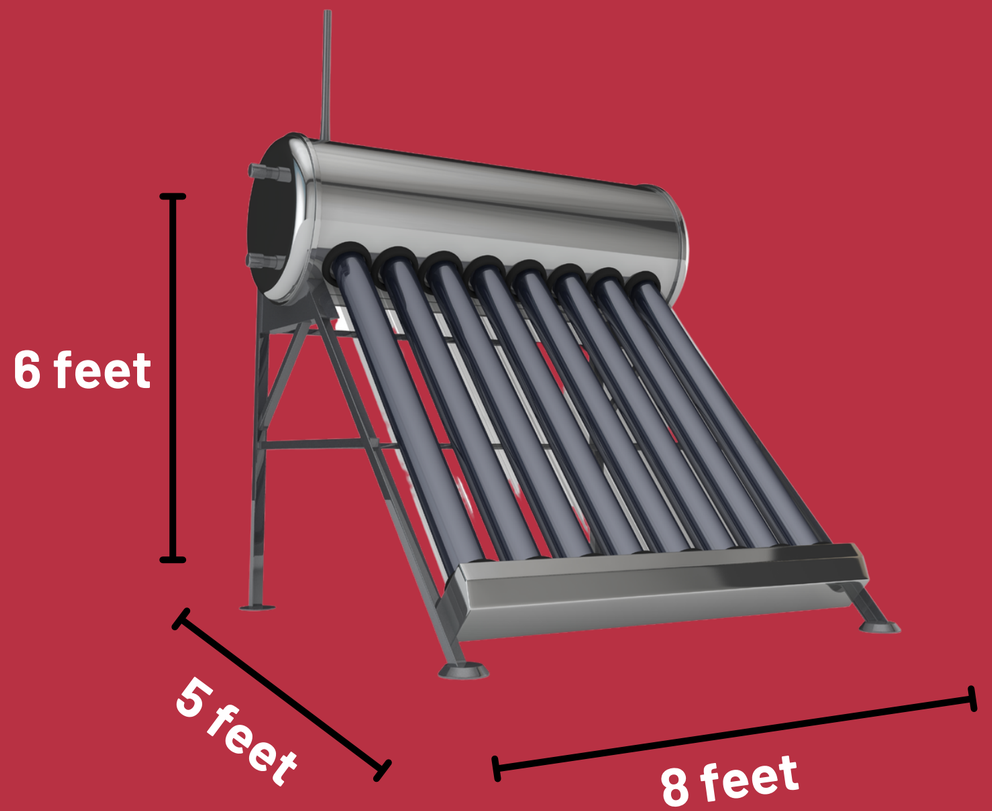
200 LITERS

WATER CAPACITY: 200 LITERS
NUMBER OF TUBES: 20
SIZE : 5 FEET X 5 FEET X 6 FEET (APPROX)

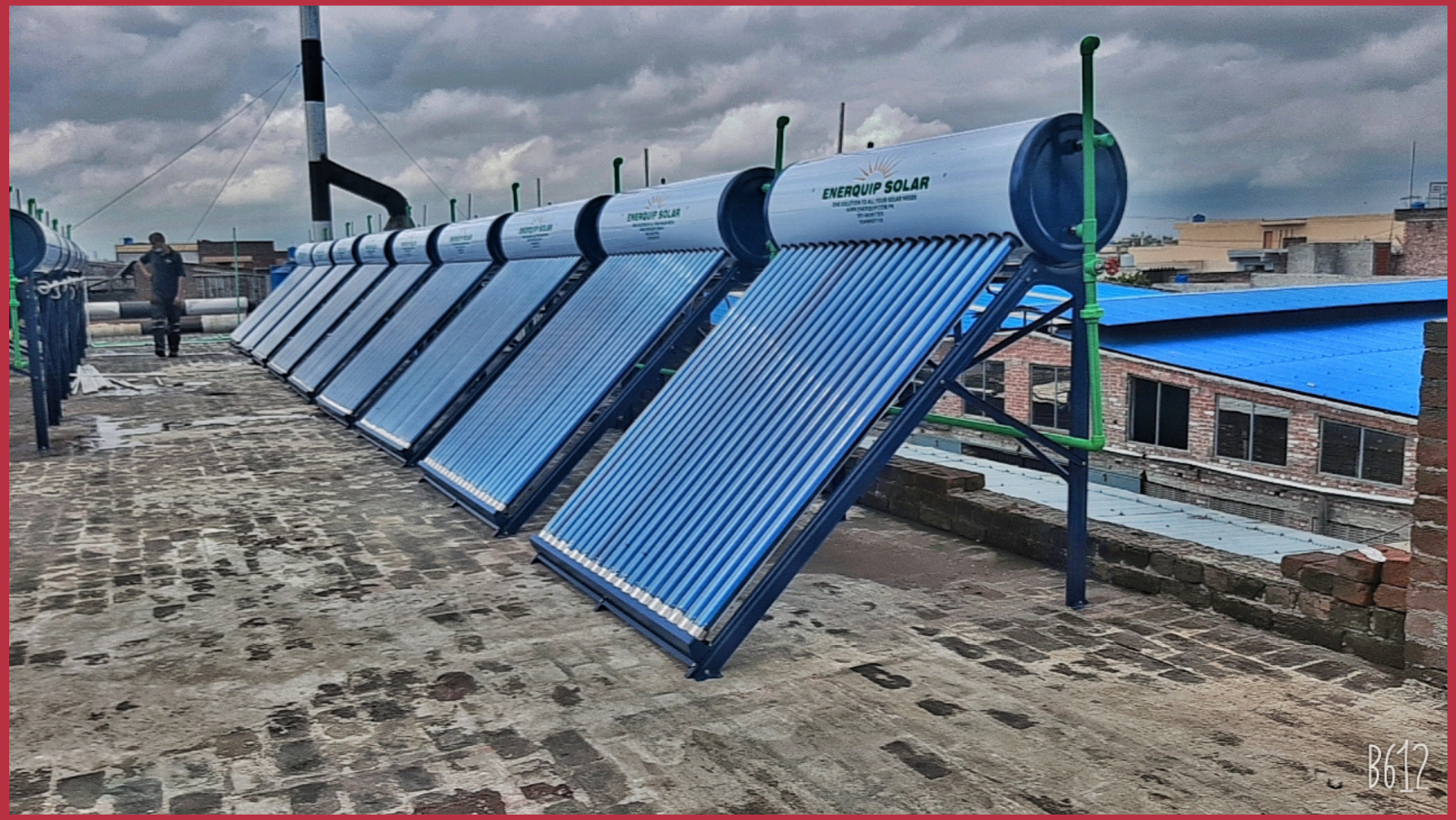


300 LITERS

WATER CAPACITY: 300 LITERS
NUMBER OF TUBES: 30
SIZE : 8 FEET X 5 FEET X 6 FEET (APPROX)



MULTIPLE UNITS COMBINED TOGETHER FOR BIGGER REQUIREMENTS



SOLAR WATER HEATER INSTALLATION, USAGE & SAFETY GUIDELINES

Prior to installation, inspect the site. It should be free from any type of shadow be it of a tree or any man-made structure.

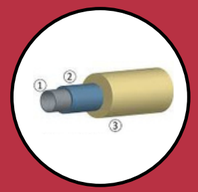
Air vent arrangement/Air breather pipe is must for all the system and it has to be placed at proper level, otherwise it may damage the system and for which the company will not take any liability.

If the main water tank is below or at the same height to that of the solar water heater a separate 100 GLN plastic tank should be placed above the solar water heater or a small electric pump should be installed which can be controlled by the digital controller.

The installation spot should be selected such that as to minimize the piping length. Longer piping means more wastage of hot water in the piping system.

Glass tube Collector must be cool while filling the Solar system with water; otherwise it will lead to glass tube breakage. Fill the solar water heater in morning/evening/night. Do not fill in Sunlight.

Use only recommended size of pipes for external-hot-water piping.



Use insulated metal pipe or CPVC pipe only for pipingfor external-hot-water distribution.

The backup electrical system consisting of heater & thermo-state & should be installed by trained electrician with proper earthling arrangement.

All the support structure of tank and collector has to be properly grouted; it protects the system against high velocity wind and physical disturbance.

If you are installing system on the temporary roof, make sure that roof can support the weight of the system filled with water.

SOLAR WATER HEATER INSTALLATION, USAGE & SAFETY GUIDELINES

A good quality non return valve must be installed in the outlet.

Do not use hot water after 10 AM in extreme winters; otherwise you will not get hot water on next day morning.

Do not touch projected pipe of Solar System Tank, Collector, out let, Air Vent, with bare hand as it can be very hot and can burn your skin.

Always keep solar system filled with water.

Air vent pipe must be installed in all non Pressurized System and make sure that it must be open to atmosphere. Closed Air vent can cause pressurization of the tank and cause the tank to deform and the tube to break.

Keep children way from the solar water heater.

Collector/Tube should be placed facing south/Sun only. 180 degrees

Do not use hot water from solar water heater for drinking purpose.

Please take precautionary measures while opening and connecting hot water pipe.

The electrical back-up element should be installed by trained electrician along with circuit breaker (ELCB) to prevent accident.

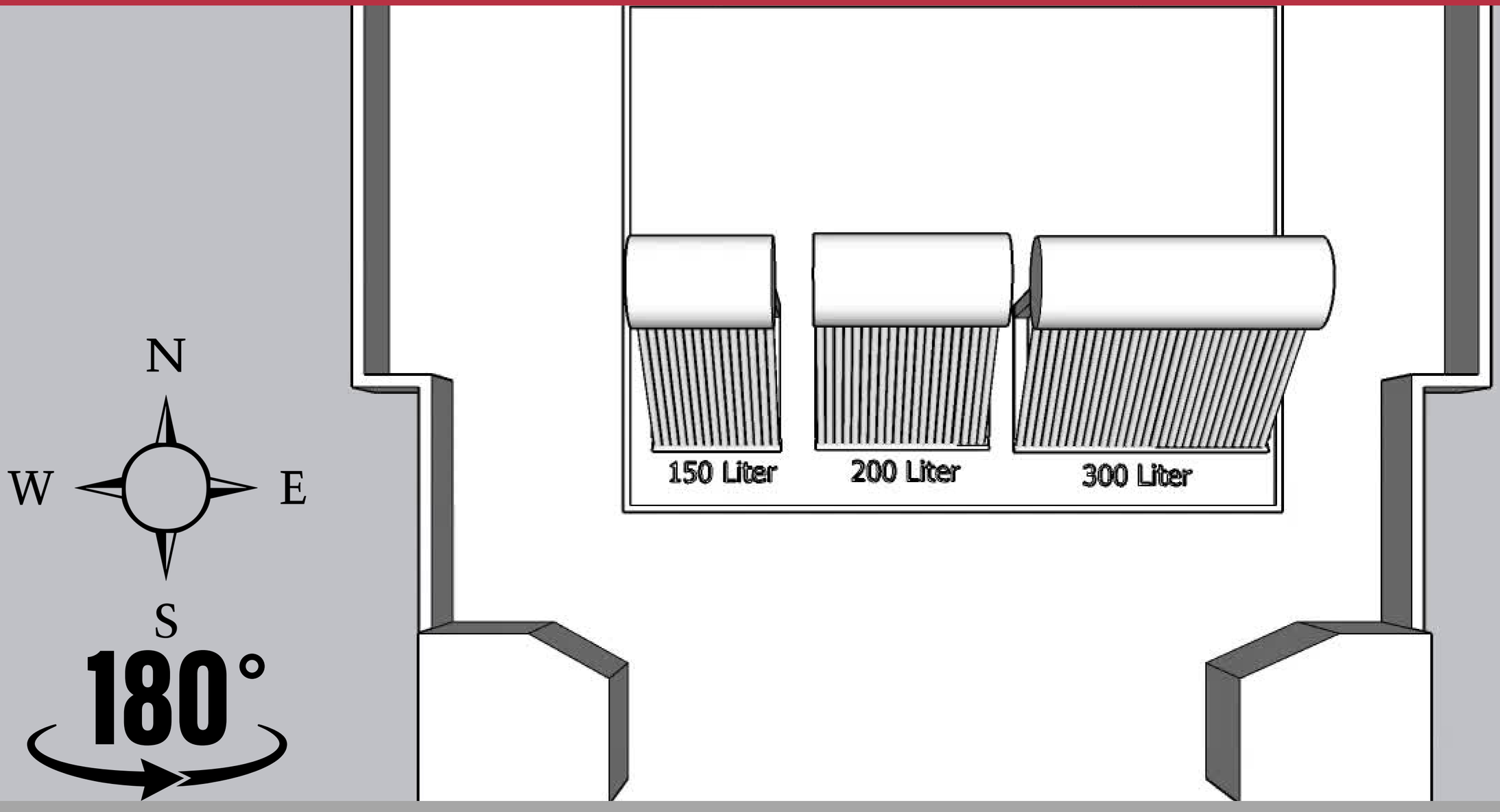
This is a non-pressurized solar water heater which must never be used with a pressure motor. However, a seperate pressure motor can be installed at outlet only.

Proper insulation of outlet piping/hot water piping can save reduce heat losses and increase efficiency of the system.

When using the Solar water heater for the first time, use it 24 hours after filling of water.

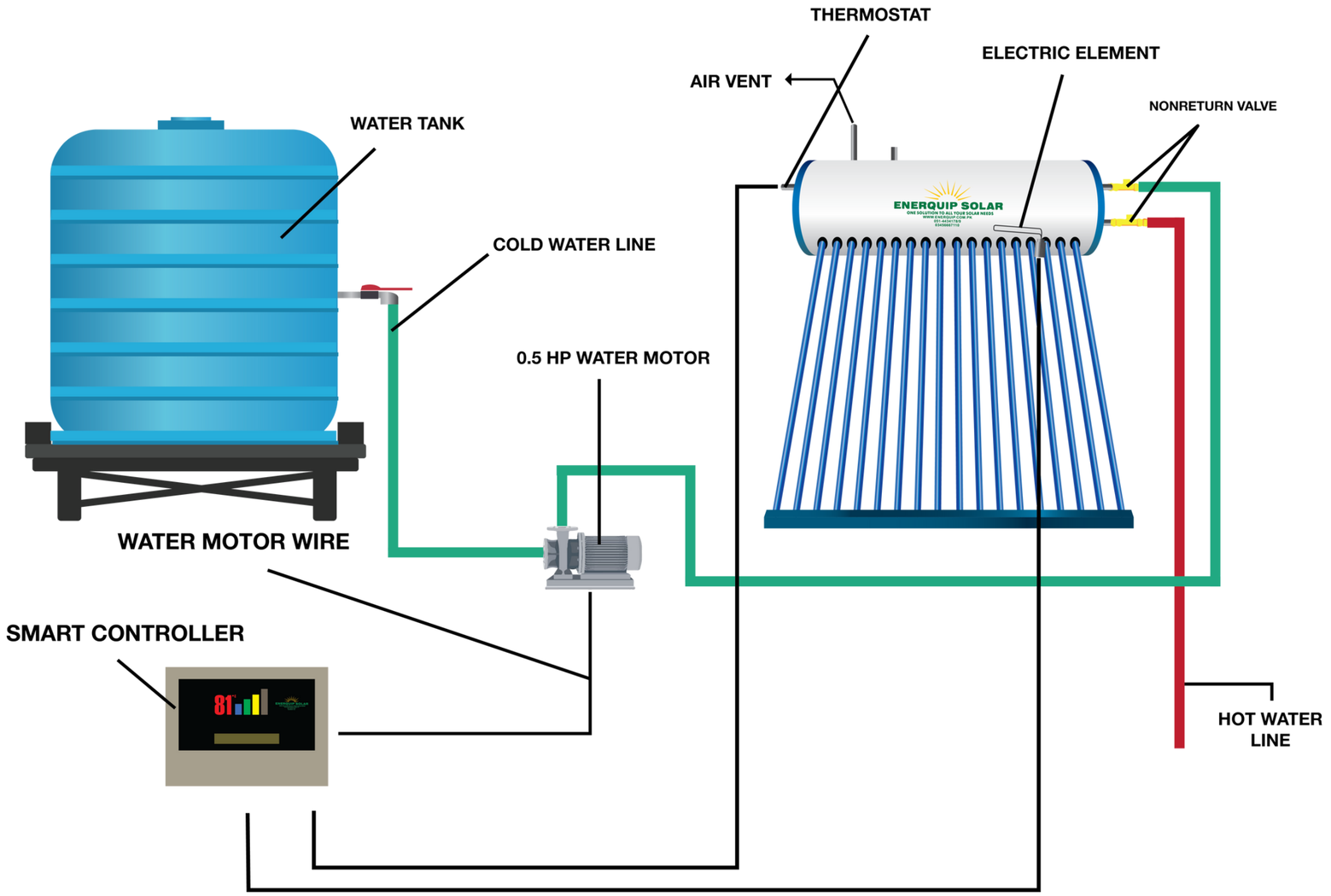
Always keep solar tube/collector clean for best result of solar water heater.

PLACEMENT

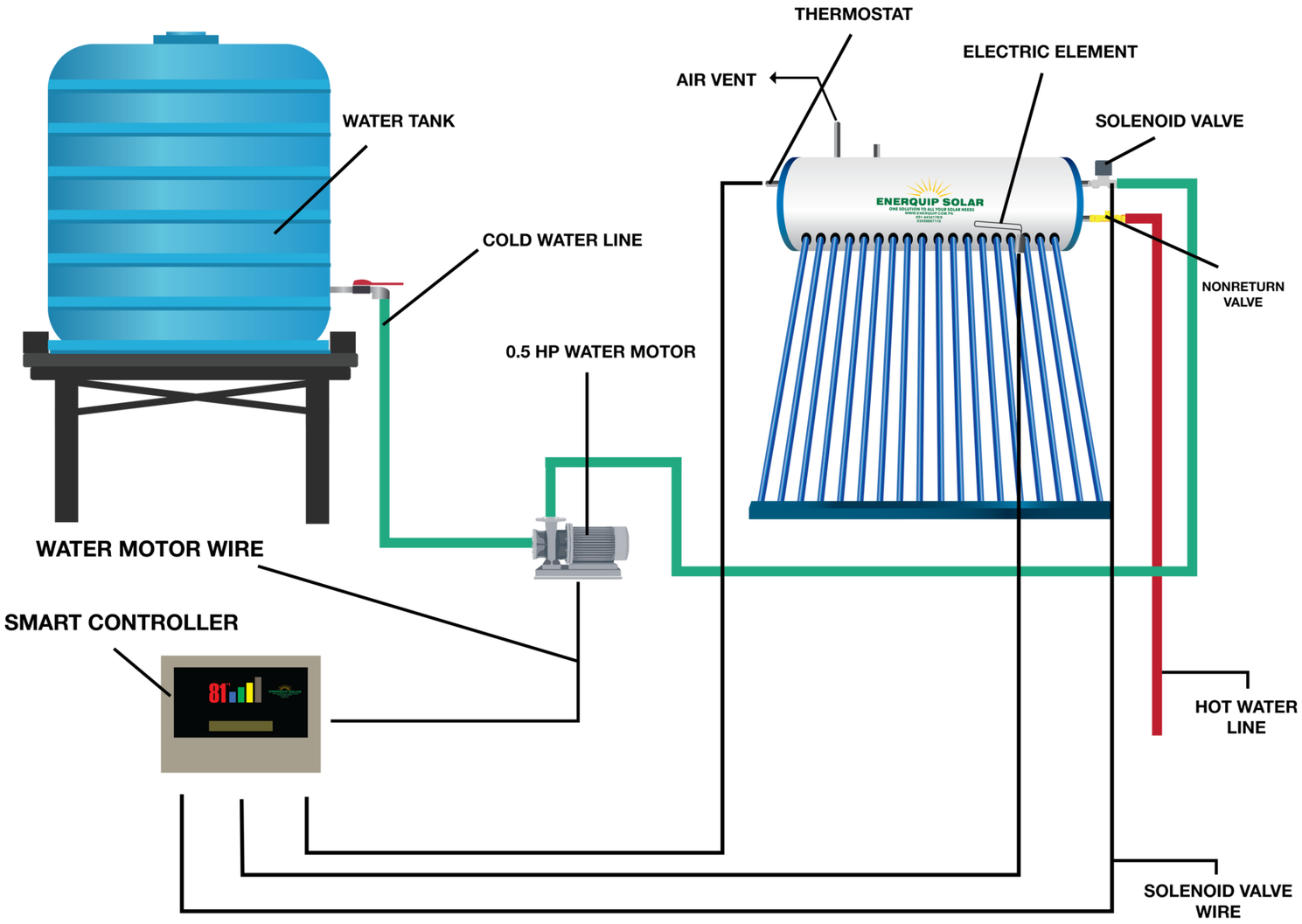


PLACEMENT

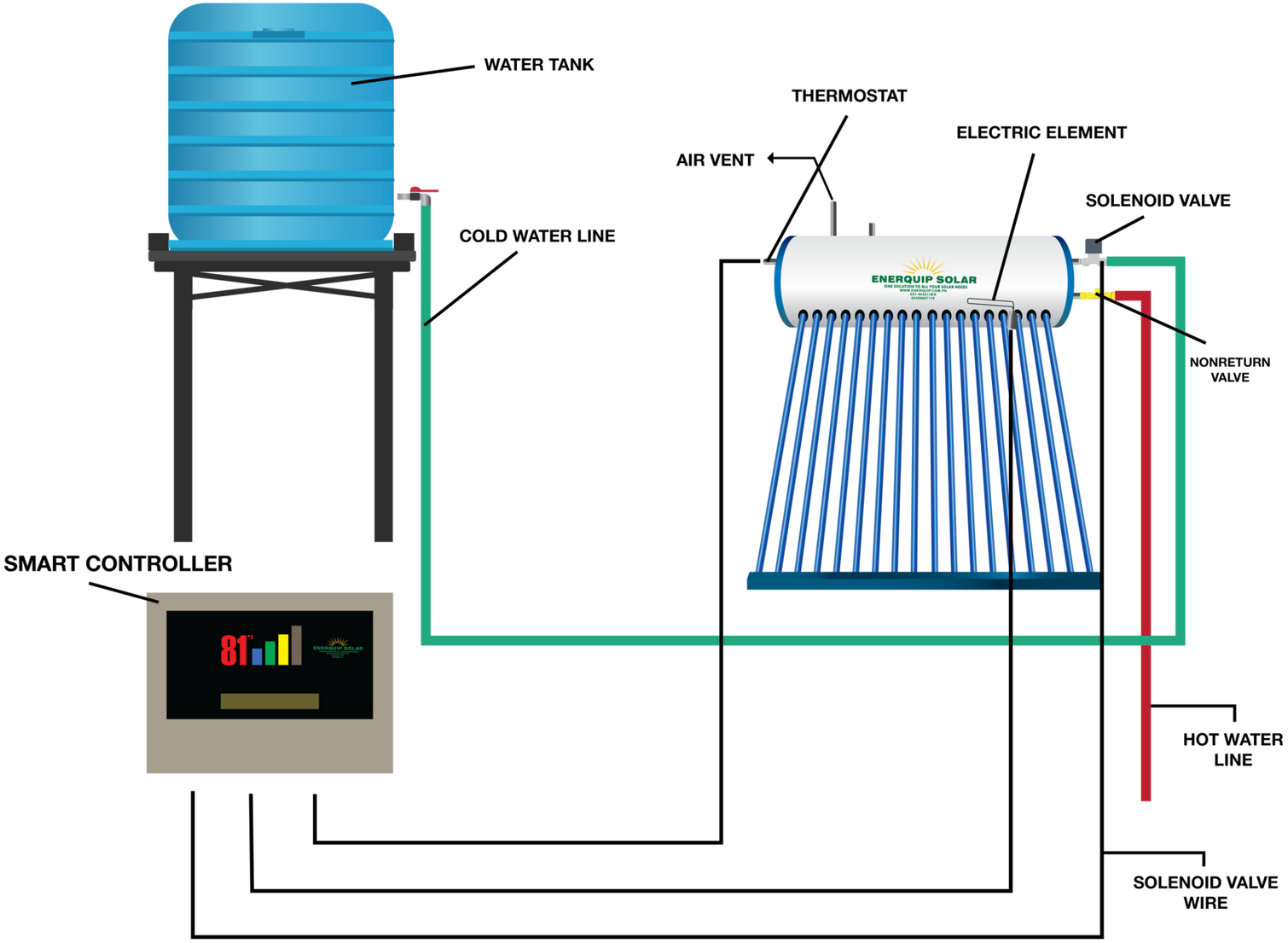
MAIN WATER TANK & SOLAR WATER HEATER AT SAME LEVEL



MAIN WATER TANK SLIGHTY ABOVE SOLAR WATER HEATER



MAIN WATER TANK ABOVE SOLAR WATER HEATER



MAINTENANCE

Regular and periodic maintenance is important for durable service life of any equipment. Solar water heater systems too need regular periodic maintenance for satisfactory service out of it.

MAINTENANCE

1. Top glass cover is required to be cleaned periodically to allow the solar radiation to reach the absorber surface.

2. Look for any sign of leakages in the system, in the collector, tank, and plumbing joints, and have these rectified early. Leaving leakages, unattended in insulated piping, results in corrosion of the pipes or tank.

3. Check for the back-up elements/ thermostats every year before winter period and have these replaced if gone bad.

4. Check for physical conditions of supports. These may be required to paint periodically to avoid corrosion.

5. If water quality is bad and unsuitable for tank material, the tank may start leaking. Check for any leakages and report for changes/replacements.

6. Check for any construction in the neighborhood which is causing a shadow on the solar system, the system may need to be shifted to shadow free location.

FREQUENTLY ASKED QUESTIONS

FAQ

1 DOES SOLAR WATER HEATING SYSTEM WORK ON CLOUDY DAYS?

Solar water heating is done by the energy received from the Sun. If the energy input is reduced or cut off by clouds the heating of water is reduced. All solar systems have backup heating devices for meeting these contingencies. In most solar water heating systems, the hot water heated on the previous day is used in the morning of the next day. It will be known by the evening if heating during the day has not taken place, and auxiliary heating can be switched on for heating in the night.

FREQUENTLY ASKED QUESTIONS

FAQ

2 WHAT IS THE LIFE OF THE SOLAR WATER HEATING SYSTEM?

The solar water heaters are generally expected to last 15-20 Years, but solar water heating systems installed in 83-84 are still functional in most of the places. If water quality is not a problem we can expect solar water heating systems to last easily for 30-40 years. Some preventive maintenance for protection of exposed surfaces and pumps, valves, back- up systems and plumbing etc. may be required, as for other systems in a building.

FREQUENTLY ASKED QUESTIONS

FAQ

3 DOES THE OUTPUT FROM SOLAR WATER HEATING SYSTEM DECREASE WITH AGE?

The output from the Solar Water heating system may marginally decrease over a period of time but the decrease is normally not very large.

FREQUENTLY ASKED QUESTIONS

FAQ

4 WHAT ARE THE REGULAR MAINTENANCE REQUIREMENTS?

The surface of the collector must be periodically cleaned to remove dust from the top surface to get optimum output from the system. Occasional observation of the solar water heating system to eliminate any plumbing leakages may help. The exposed metal surfaces may be examined for any damage to paint etc. after monsoon period to avoid further damage. Some rubber or plastic components may not last beyond 10 years and may require replacement. Auxiliary heating elements also do not last through the life of the SolarWater Heating system and require replacement at times.

FREQUENTLY ASKED QUESTIONS

FAQ

5 IS IT NECESSARY TO HAVE A SOUTH FACING SHADOW FREE AREA FOR INSTALLATION OF SOLAR SYSTEM?

Solar systems perform best in winter when installed facing south at optimum angle. The variation by 15 degrees to east or west does not affect the output significantly.

SPECIAL INSTRUCTIONS FOR EXTREME WINTERS

EnerQuip Solar water heater collects thermal energy from the sun and uses it to heat water via its three target vacuum tubes.

Winters in Northern Pakistan is harsh and the performance of the solar water is often affected due to lesser peak sun hours (5-6 hours during December/January) and many overcast and foggy days and that is why every solar water heater supplied comes with a conventional electric element which is smartly controlled by the digital controller to ensure that your hot water needs continue to be met.

The 1500 Watt electric element if used for one hour/day consumes 1.5 units and if used for one month for 1 hour/day consumes 45 units and raises the temperature by 10-12 C per hour.

SPECIAL INSTRUCTIONS FOR EXTREME WINTERS

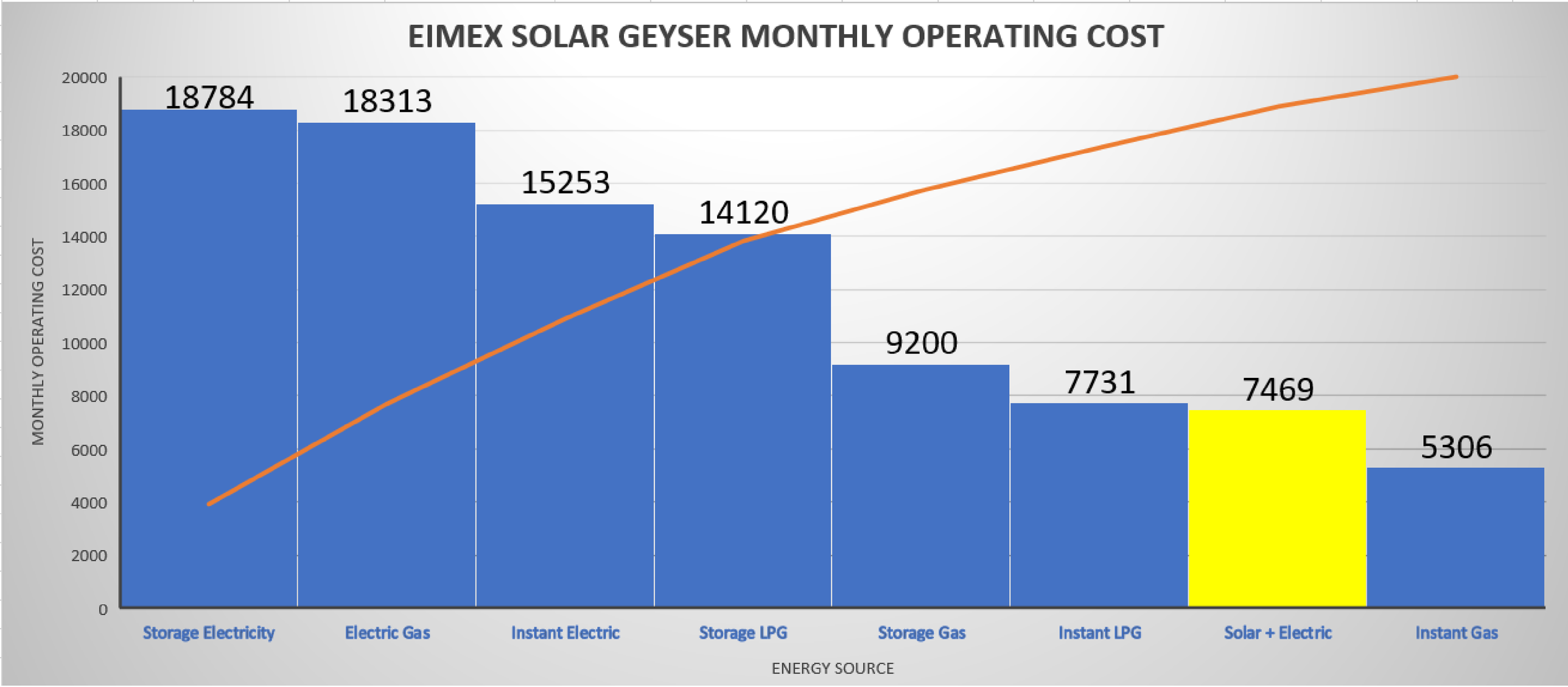
Apart from the above, the solar water heater can be smartly used in Extreme Winter days by following the below-stated instructions;

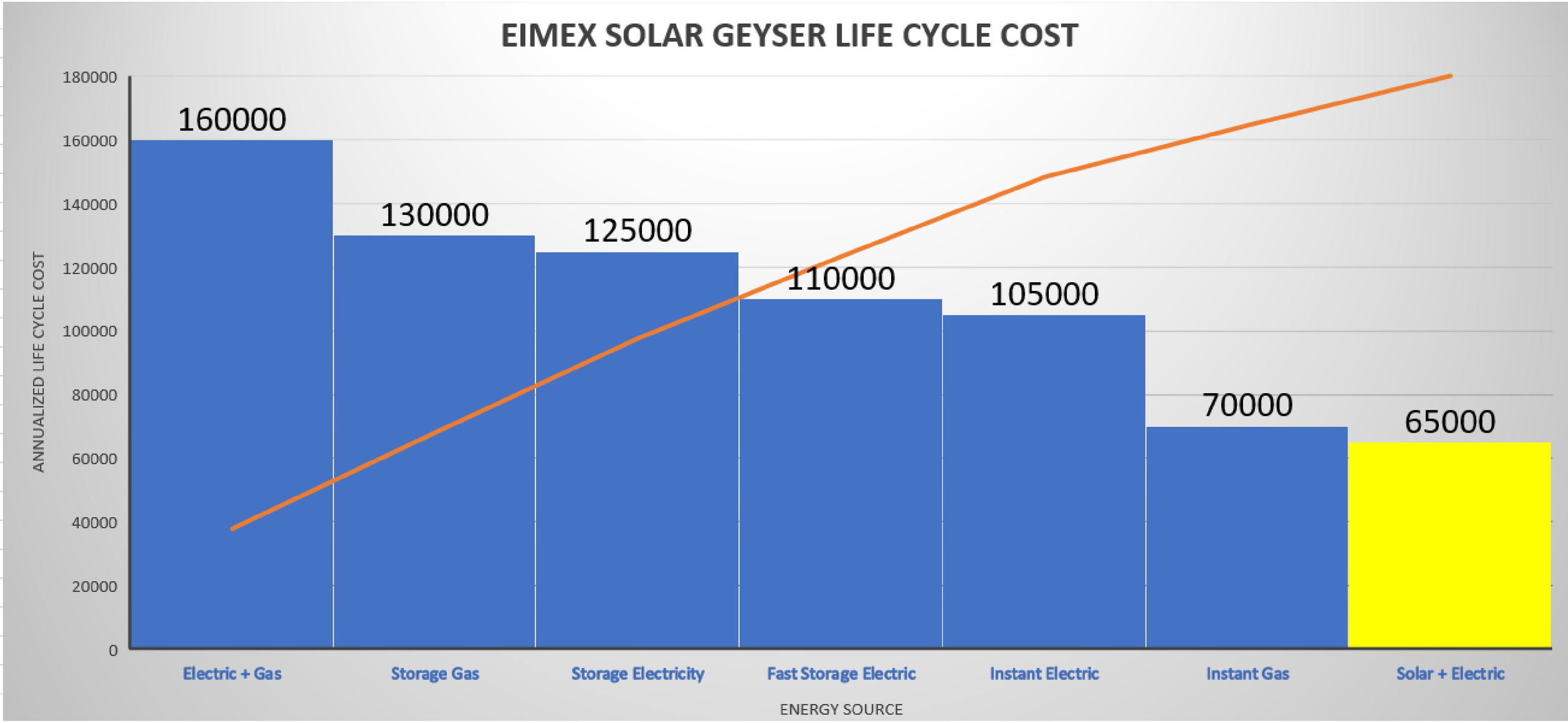
1. Most of hot water is wasted in long length of pipes that runs around the house. When you turn of the tap the hot water that is still in the pipe gets wasted. Therefore when the plumber is connecting the water pipes with the solar water heater ask the plumber to make such a connection that allows you to temporarily restrict the supply of the hot water to one bathroom closest to the solar water heater only.

2. Do NOT use hot water from solar water heater for washing cloths and dishes in Extreme Winter Months.

3. Use water buckets to wash yourself instead of long showers as this will help save water.

ADVANTAGES


EIMEX SOLAR GEYSER MONTHLY OPERATING COST
MONTHLY OPERATING COST
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
18784
18313
15253
14120
9200
7731
7469
5306
Storage Electricity
Electric Gas
Instant Electric
Storage LPG
Storage Gas
Instant LPG
Solar + Electric
Instant Gas
ENERGY SOURCE


EIMEX SOLAR GEYSER LIFE CYCLE COST
ANNUALIZED LIFE CYCLE COST
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
160000
130000
125000
110000
105000
70000
65000
Electric + Gas
Storage Gas
Storage Electricity
Fast Storage Electric
Instant Electric
Instant Gas
Solar + Electric
ENERGY SOURCE

ADVANTAGES

1. Solar hot water systems lessen bills on electricity and gas
2. The heating system has a low maintenance cost
3. Solar heating systems are environmentally friendly
4. It’s easy to install and maintain
5. Provides access to a renewable source of energy
6. The average life expectancy of solar water heating systems is 20 years.

DISADVANTAGES OF GAS GEYSERS

DISADVANTAGES OF GAS HOT WATER SYSTEMS

1. Problems may arise during power cuts and blackouts

2. Contribute to carbon emissions on the environment

3. You need to heat up 35 gallons even if you need less and the remaining will go cold due to poor insulation.

3. Along with the initial cost, one has to bear the monthly heating cost too

4. Need continuous checking and maintenance

5. Have a shorter lifespan compared to solar heaters

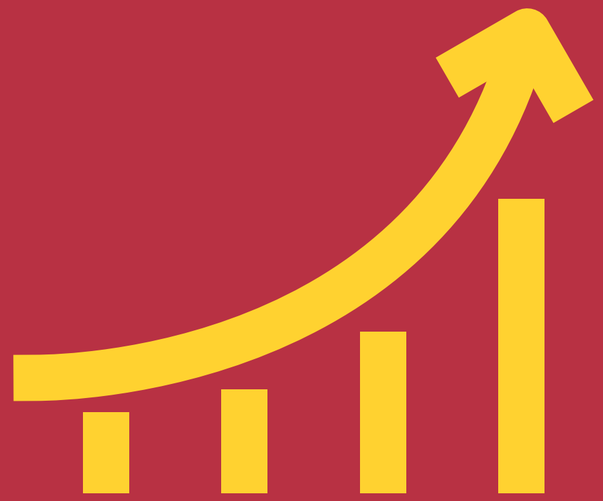
6. The constant threat of mishap due to the presence of volatile gases

DISADVANTAGES OF ELECTRIC GEYSERS

DISADVANTAGES OF ELECTRIC GEYSERS

1. The major concern is its impact on fossil fuels. Electric heaters are major contributors to the depletion of fossil fuels.
2. There is a possibility of short-circuit with the cables and cords involved, which can be dangerous for the user.
3. Along with the initial cost, one has to bear the monthly heating cost too. Electric water heaters are the reason for 25% of the utility bills in most houses.
4. The lifespan of these electric heaters is restricted to 15 years. Very rarely do they work at their best after 15 years.

SALES RECORD



MAJOR CLIENTS INCLUDE BUT ARE NOT LIMITED TO

1. SNGPL: Supplied and installed over 2600 units
2. Balochistan Government: Supplied over 200 units
3. HUBCO: Supplied and installed over 42 x 300 Liter units
4. Darson Industries: 18 x 200-liter units
5. Faysal Dyeing unit: 7 x 300-liter units
6. H.E. Mr. Imran Khan, EX -Prime Minister of the Islamic Republic of Pakistan.
7. H.E. Mr. Raheel Shareef, EX -COAS Islamic Republic of Pakistan.
8. Mr. Azad Chaiwala - a renowned entrepreneur
9. And over 5000 others

CUSTOMER REVIEWS

Asad Kazmi
3 reviews

★★★★★ an hour ago NEW

Brilliant. Work perfectly! Highly Recommended.

Shayan supports very well too and without delay.

Once again, I am very happy that I took the decision and went to Solar Route. And brilliant support.

Location: Valencia Town Lahore.

Reply 1

Dr-Saeed Abbas recommends **EnerQuip Solar**.
6 December 2021 ·

I got this geyser installed aprox 3 weeks ago and i have to say IT WORKS WONDERS, i sometimes even have to mix cold water into it because it gets so hot 💯 recommend it to everyone

1 1 comment

Aftab Ahmad recommends **EnerQuip Solar**.
22 December 2021 ·

We installed Enerquip Solar Geyser two weeks ago at our Madrissa in Morgah Rawalpindi and it is working perfectly.
Recommended!

Hajira Owais recommends **EnerQuip Solar**.
17 December 2021 ·

Exteremely satisfied with the equipment...Well done...

EnerQuip Solar

Adnan Gul recommends **EnerQuip Solar**.
31 October 2021 ·

I'm using solar geyser for over a year now and it has really helped solve my energy issue. With raising gas prices, It's economical solution in the long run. I highly recommend Enerquip solar services.

Sahir Khan recommends **EnerQuip Solar**.
17 December 2021 ·

I am using EnerQuip Solar geyser for industrial purpose i am very much satisfied from efficiency and quality.
Thanks.

EnerQuip Solar 1 share

Iram Akhtar recommends **EnerQuip Solar**.
24 December 2021 ·

Asalam alakum Team Enerquip...I am really thankful to Allah SWT first and then u,,, for providing me this awesome facility of solar geyser.....I am cherishing it every day with lots of comfort....JAZAK ALLAH KHAIRUN.🌷🌷🌷🌷

1 1 comment

Adeem Randhawa recommends **EnerQuip Solar**.
24 February ·

EnerQuip Solar Geyser is highly recommended given the gas load shedding. These are highly efficient geysers and they come with a digital controller which makes these geysers easy to operate.

EnerQuip Solar 2 comments 1 share