Instant Tankless Water Heaters

Vaillant

AQUAGREEN SOLUTIONS

Hot Water Systems | Water Filtration

Tankless water heating technology

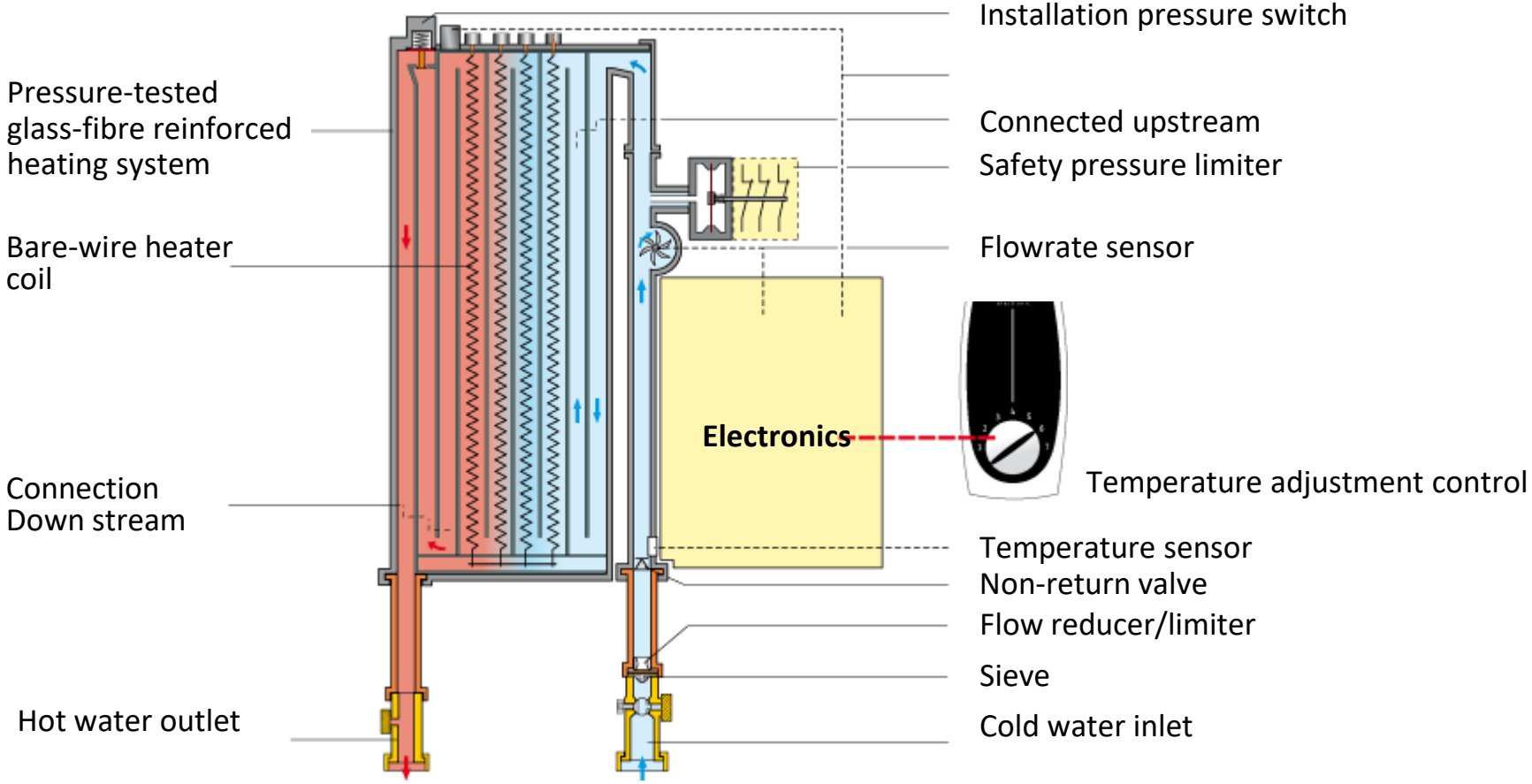
Tankless water heaters operate based on **bare wire heating technology**. The unit is **activated through the flow of water** and the bare wire heats the water instantly as it flows through the unit:

The outlet temperature is determined by the following three factors :

- **Flow rate (l/min)**
- **Cold water inlet temperature (°C)**
- **Appliance output (kw)**

The selection of the water heater model is therefore based on the flow rate of the shower/bath system to be used and the average low temperature of inlet water in the city/area where the unit is to be installed.

Tankless water heating technology



Energy Consumption Principle

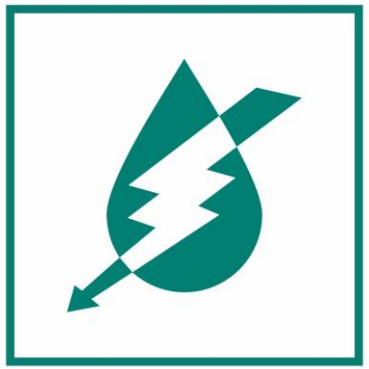
- Energy consumption, works **on Delta t principle**, where the unit only consumes as much energy as is required to heat water based on the flow rate of water from the ambient temperature of water (generally between 20 to 30 deg. celcius) to the desired temperature (generally 38 to 42 deg. celcius)

- Therefore energy consumption is higher in winter is higher since the ambient temperature of water is lower compared to the desired temperature and vice versa in summer.

- The average time an instant water heater is on vs. a storage unit is much lesser about 60-80% lower and hence for the same amount of hot water qty used the energy consumption is lower by upto 40%.

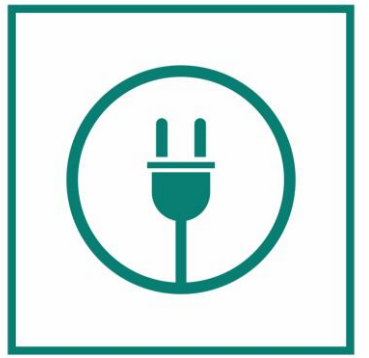
Benefits

SAVE TIME



SAVE ENERGY

SAVE SPACE



BE SAFE

Features

10 bar high
pressure resistant

Upto 40% water
and energy saving

Suitable for
hard water

Electronically
controlled

Child proof

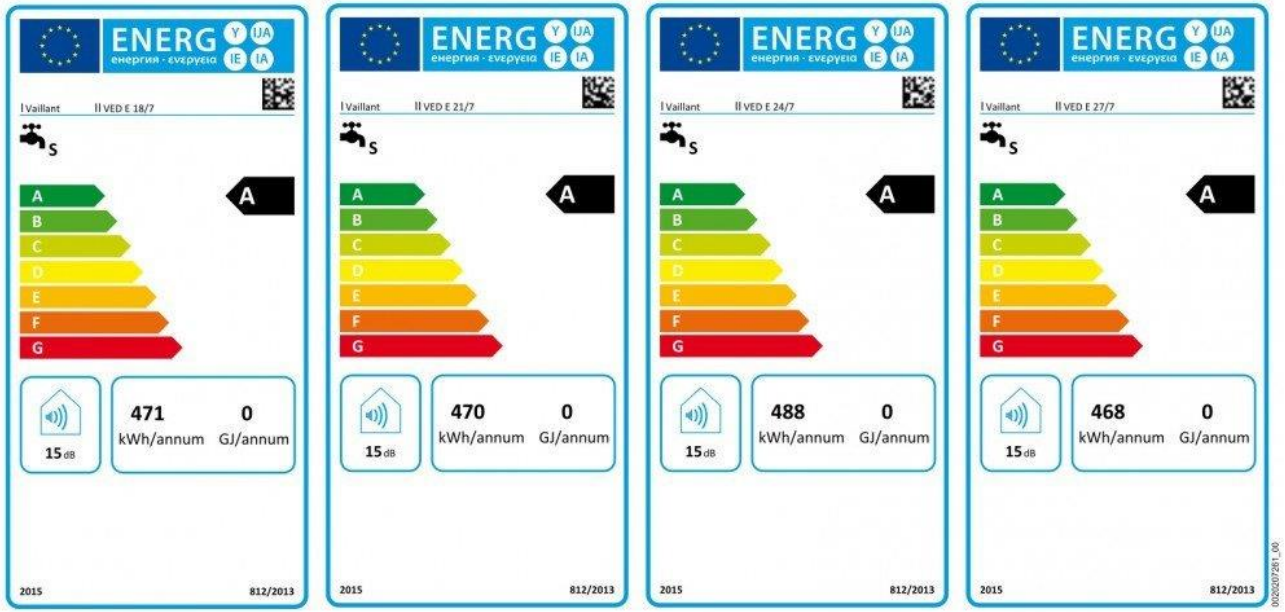
Shock proof

Energy Saving – How?

- Standby and Consumption losses
  - Time unit is on is only when water is required, so the lesser the unit is on the lesser the energy consumption
  - Delta t, heating technology means only as much energy is required to raise the temperature to the desired temperature
  - Energy use for only the water needed – need 1 litre - heat 1 litre

Energy Rating Label – A

Highest in Class in Germany/Europe



Applications in Residences

Bathtubs, basin and shower area

Bathtub, Jacuzzi and high flow showers

Wash basin and shower area

Application in Residences

Kitchen and Powder Room – Undersink application

Powder Room, Dining area wash basin

Kitchen

Other Applications

Many use cases

- Splash pools and Jacuzzis
- Commercial office spaces – office toilets
- Hotels – Mid segment 10-100 key hotels
- Spas and Gymnasiums
- Restaurants and Cafes
- Any other areas, where instant and continuous hot water is required

Tankless vs Storage vs Solar vs Heat Pump

How do water heating technologies compare

	Tankless	Electric Storage	Solar	Heat Pump
Type	De-centralised	De-centralised	Centralised	Centralised
Energy consumption	Upto 40 % compared to storage	Maximum	Minimum	Upto 75% compared to storage
Unlimited Hot Water supply	Yes	No	No, since it is effectively storage	No, since it is effectively storage
Space Saving	Yes	No	No	No
Time Saving	Yes	No	No	No
Investment	Low compared to Solar or Heat Pump	Lowest	High Investment due to plumbing and opportunity cost of space	High investment in technology and due to centralised plumbing and opportunity cost of space

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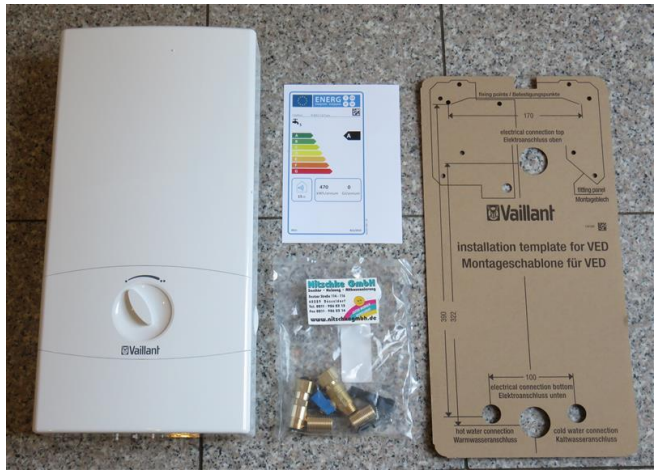
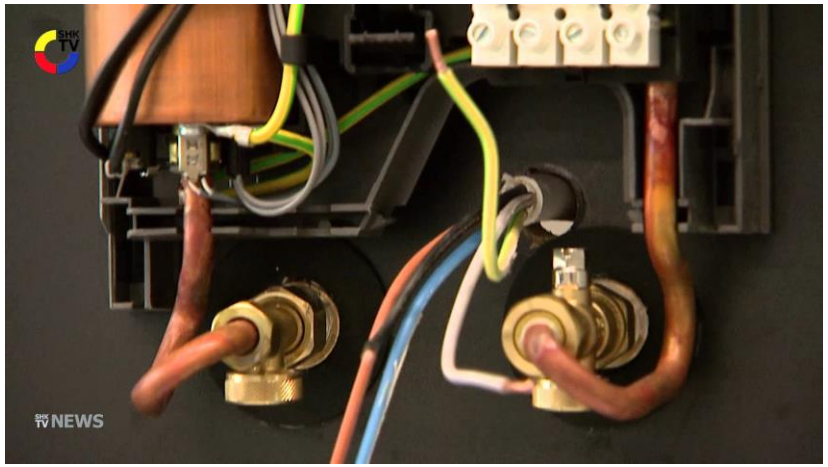
How is installation done?

Simple to install and easy to maintain

- Vertical installation under sink or above sink
- Preferable installation inside bathroom area to enable usage of functionality however, with adequate ventiliation
- Installation in the shaft also can be done with slightly higher temperature setting so that mixing can be done to suit every customer requirements
- Heater to be installed on a separate MCB connected directly to the water heater as shown below – no pin/socket required. Water heater activates on the the flow of water therefore no need to switch it on /off
- 100Mm distance between hot and cold line – preferred to have no exposed plumbing or wiring





Technical specifcations

Electrical wiring and MCB requirements

Rated Power in KW	Power Supply	Circuit breaker in Ampere (A)	Wire size in sq mm	Wire Core	Colour Code
27	3/PE - 400V - 50Hz	40	10	4 core	R Y B
24	3/PE - 400V - 50Hz	35	6	4 core	R Y B
21	3/PE - 400V - 50Hz	32	6	4 core	R Y B
18	3/PE - 400V - 50Hz	32	6	4 core	R Y B
13	3/PE - 400V - 50Hz	20	6	4 core	R Y B
11	3/PE - 400V - 50Hz	20	4	4 core	R Y B
8	1/N/PE -220/240V - 50 Hz	32	10	2 core	R B
6	1/N/PE -220/240V - 50 Hz	24	6	2 core	R B
4	1/N/PE -220/240V - 50 Hz	20	4	2 core	R B

FAQ

Let us clarify a few points

Q: Is there a minimum pressure required to activate the unit?

A: Yes , flow rates are between 1.5 to 3 litres depending on the unit, generally a pressure of 1- 1.5 bar should be enough. If this pressure does not exist then a pressure pump needs to be installed not only for the heater but also to deliver optimum showering for the client

Q: Can you have one heater for 2 bathrooms?

A: Yes, if the distances between bathrooms are not significant, however, a higher capacity unit must be recommended and the risk of lower flow rate exists if the showers are on at the exact same time. Therefore it has to be evaluated on a case by case basis.

Q: Can these water heaters be used as back up for solar?

Yes, in fact these heaters are the best back up for solar since they activate on flow of water and only activate if the set temperature from solar is not achieved, providing instant back up and energy saving at the same time

Q: Does Vaillant/tankless technology have BEE Star and ISI rating?

No, Vaillant /Tankless technology does not have any any Indian BEE energy ratings as the ratings as there is no standard currently for tankless water heaters. Vaillant/tankless water heaters doe not require BIS/ISI rating . Vaillant globally has various energy efficient ratings and is in compliance with IEC (European norms) which Indian standards are based upon, so no compromise on safety and energy

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www.aquagreensolutions.in

Aquagreen Solutions LLP,

MUMBAI
Raghuvanshi Mansion, 2nd floor
Raghuvanshi Mills Compound
Lower Parel
Mumbai 400013

PUNE
1st Floor, Raj Palace , Bhandarkar Road , Lane no 11 ,
Deccan Gymkhana , Maharashtra,
Pune 411004