



Energy Save Table

Quench can save up to 87% energy

Formula: It takes 1 Calorie to heat 1 gram (0.0353oz) of water to 1°C (33.8°F). No matter the energy source eg; electricity, gas, solar etc. the formula remains the same.

1 Calorie is 0.001 162 222 Watt-hour.

Example: The amount of energy in the shower water depends on the water inlet temperature and the flow rate.

Conventional shower - If the inlet water temperature (water entering the hot water heating system that supplies the shower) is at 20°C (68°F) and the shower water is at 40°C (104°F) this equates to a 20°C (68°F) temperature rise. At a flow rate of 10 lpm (2.5 gpm) = 10,000g/min of water, this equates to 200,000 cal/min = 232Wh/min or 1.16kWh for a 5 minute shower.

Quench Shower - If the inlet water temperature (water from the reservoir entering Quench's hot water heating system, supplying the shower) is at 35°C (95°F) and the shower water is at 40°C (104°F) this equates to a 5°C (41°F) temperature rise. At a flow rate of 10 lpm (2.5gpm) = 10,000g/min of water, this equates to 50,000 cal/min = 58Wh/min or 0.29kWh for a 5 minute shower.

Conclusion - Based upon the above calculations the Quench shower operating in Auto-Mode represents an energy saving of around 75%. If the inlet water temperature supplying the conventional shower was at 1°C (33.8°F) then the energy saving operating the Quench Shower in Auto-Mode could be around 87%.

The above **conventional shower** inlet water temperature is based upon mild climate conditions with an ambient air temperature of around 20°C (68°F). For colder climates, winter conditions, the inlet water temperature may be significantly lower in temperature and therefore more energy will be consumed in order to raise the water temperature and therefore, in comparison, the Quench Shower operation will result in even greater energy saving.

Conventional Shower temperature (°) (inlet water temp)	Shower water temperature (°)	Temp rise (°)	Flow rate	Energy consumed
1°C (33.8°F)	40°C (104°F)	39°C (102.2°F)	10lpm (2.5gpm)	390,000 cal/min
5°C (41°F)	40°C (104°F)	35°C (95°F)	10lpm (2.5gpm)	350,000 cal/min
10°C (50°F)	40°C (104°F)	30°C (86°F)	10lpm (2.5gpm)	300,000 cal/min
15°C (59°F)	40°C (104°F)	25°C (77°F)	10lpm (2.5gpm)	250,000 cal/min
20°C (68°F)	40°C (104°F)	20°C (68°F)	10lpm (2.5gpm)	200,000 cal/min
25°C (77°F)	40°C (104°F)	15°C (59°F)	10lpm (2.5gpm)	150,000 cal/min

Quench Shower inlet water temp (°) from reservoir	Shower water temperature (°)	Temp rise (°)	Flow rate	Energy consumed
33°C (33.8°F)	40°C (104°F)	7°C (44.6°F)	10lpm (2.5gpm)	70,000 cal/min
34°C (41°F)	40°C (104°F)	6°C (42.8°F)	10lpm (2.5gpm)	60,000 cal/min
35°C (50°F)	40°C (104°F)	5°C (41°F)	10lpm (2.5gpm)	50,000 cal/min
36°C (59°F)	40°C (104°F)	4°C (39.2°F)	10lpm (2.5gpm)	40,000 cal/min

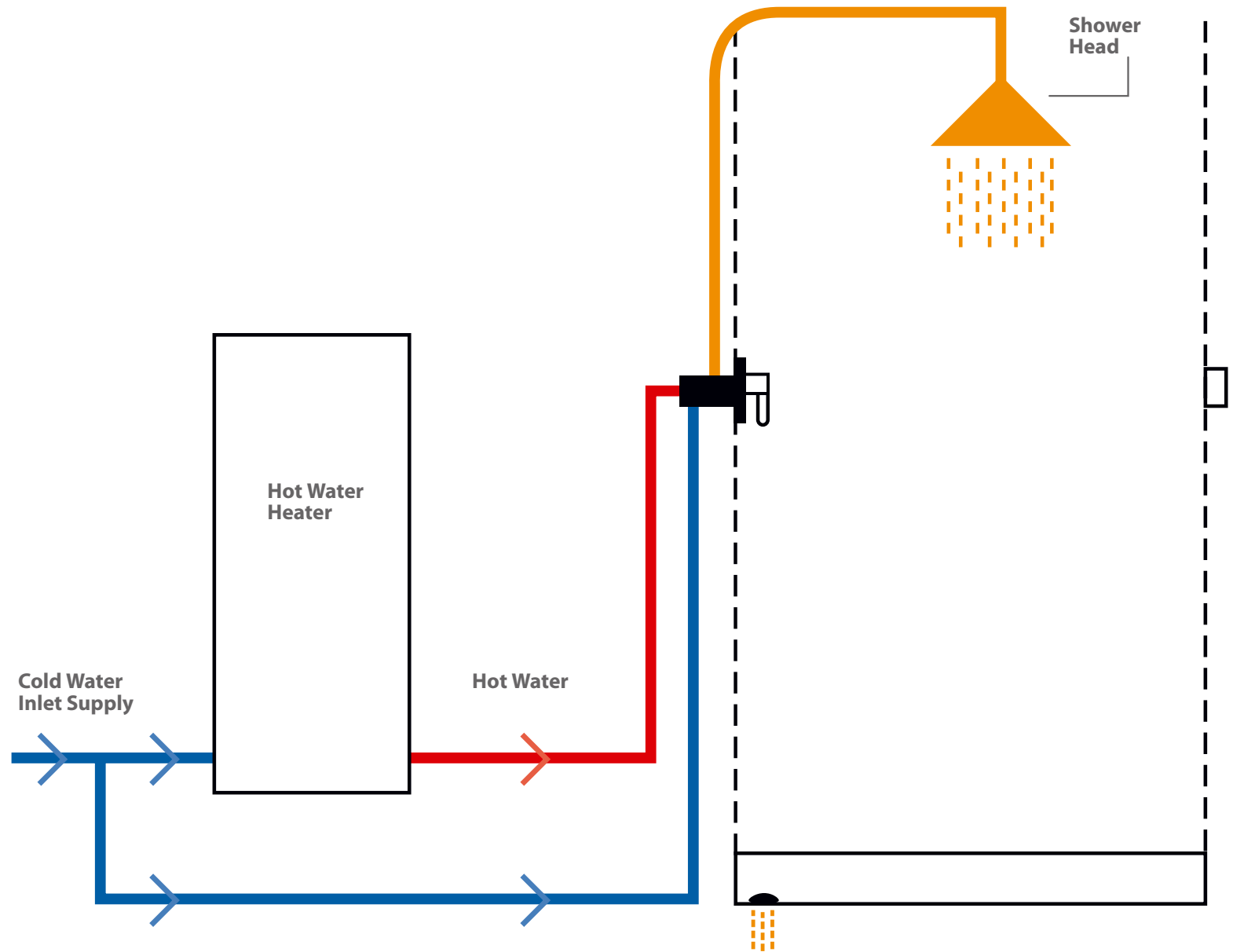
IMPORTANT: The above calculations are to be used as a guide only and may vary due to ambient temperatures, pipe insulation and installation conditions. The calculations represent energy values and do not represent monetary values or savings.



Conventional shower plumbing / heating circuit

The inlet water (cold) enters the water heater and is then raised in temperature for shower use. The inlet water temperature may be anywhere from 1°C (33.8°F) and therefore the water heating process can consume considerable energy.

(Refer to Quench Energy Saving table.)



SAVING WATER. SAVING ENERGY.

www.quenchshowers.com



Quench Shower plumbing/heating circuit

Recirculated water is temperature controlled / maintained by Quench's unique heating system. Pre-heated water is recirculated and therefore minimal energy is consumed.
(Refer to Quench Energy Saving table.)

