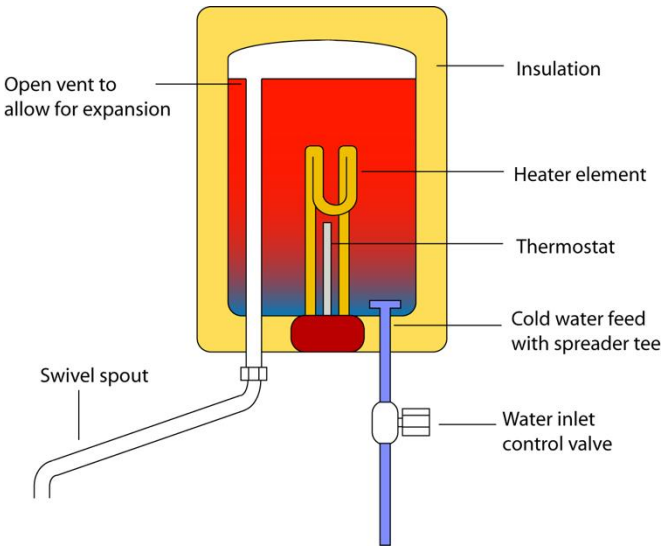
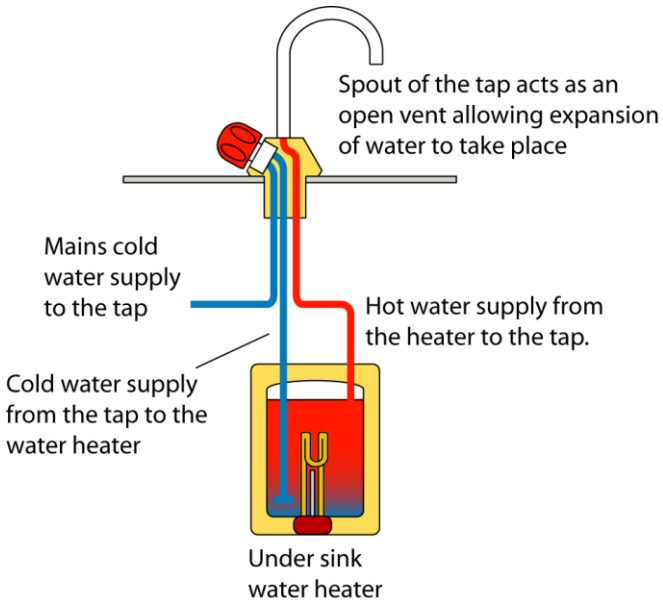


The over sink storage water heater

1 Over sink point of use storage water heaters

– usually inlet controlled, these have a swivel spout to direct the water to where it is needed. One unusual feature of this type of heater is their tendency to drip water from the spout. This only occurs when the water is being heated and stops when the water has reached its set temperature. It is a safety feature because the spout acts as a vent and releases the expanded water when it is heated. It prevents the heater from being over-pressurised due to the water heating up and expanding. These heaters MUST be inlet controlled to allow the outlet to vent out the expanded water.



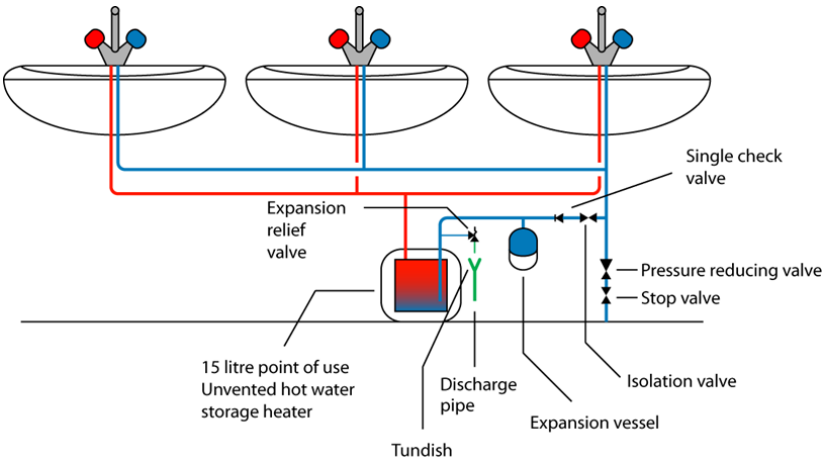
The under sink storage water heater

2 Under sink point of use storage water heaters –

Similar to the over sink type but fitted below the appliance rather than above it. They can be sited in cupboards below kitchen sinks in offices and factories and small dwellings. These are inlet controlled through a special tap that allows the heater to be vented through the tap spout (see the diagram left).

3 Unvented under sink point of use storage water heaters –

These are fitted directly to the mains cold supply pipework and deliver hot water at or near to mains cold water pressure. They store less than 15 litres of hot water so are not subject to the Building Regulations enforcement. The expansion of water that occurs can be taken up within the pipework providing the size of the pipework is sufficient to accommodate it. If not, then a small expansion vessel must be fitted (see the diagram left).



The unvented under sink storage water heater

Like larger Unvented Hot Water Storage Units, these small unvented

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storage heaters require certain controls both safety and functional:

- A pressure reducing valve to limit the water pressure to the water heater.
- A single check valve to prevent hot water from expanding back through the cold water supply as this would constitute contamination of the cold water supply.
- An expansion vessel to allow water to expand within the system without causing creating excessive pressure problems.
- An expansion relief valve to protect the heater in the event of expansion vessel failure and excessive pressure.
- Discharge pipework to remove any water, which may be very hot, away from the location of the heater.

Note: Unvented hot water storage systems are covered at Level 3

AC1.2 State the factors that need to be considered when the type of hot water system is selected for use in a building

When choosing a hot water system, there are certain factors that must be considered:

Quantity and usage of hot water required

The amount of hot water is based on the number of people living at the property. The more people there are, the more hot water will be needed.

Distance of outlet from hot water source

The Water Supply (water fittings) Regulations gives a maximum distance that hot water pipework can be run without the need for a secondary return pipe work system. The longer the distance from the hot water source to the tap, the greater is the risk of wastage of water simply because the water in the run of pipe is cold and therefore of no use in hot water system and in most cases, the occupier will simply run this to drain while they wait for the hot water to arrive. In these cases, only systems that can incorporate a secondary return pipe work system should be considered. That excludes most systems that supply instantaneous hot water. This subject continues in the next heading.

Need for a secondary circulation system

When a hot tap is turned on, there is a certain amount of cold water that is always drawn off before the hot water arrives at the tap. This is called a dead leg. If the hot water takes longer than 30 seconds to reach the tap, then a secondary circulation system is required to circulate the hot water from the source to the tap and back again.

Secondary circulation is required if the length of the hot water draw-off to the taps exceeds the distances shown in the table below: