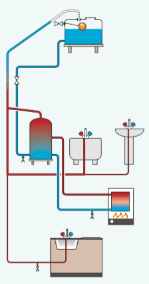
Unit 113: Plumbing, heating and ventilation

# Worksheet 10: Hot water system knowledge check (tutor)

Complete the tasks in this worksheet individually.

1. Identify the two hot water systems below:

A close up of a map

Description automatically generatedA B

System A: Direct open vented hot water system

System B: Indirect open vented hot water system

1. What temperature should hot water within an indirect hot water storage cylinder be stored at?
2. 35–45⁰C
3. 40–55⁰C
4. 55–60⁰C
5. 60–65⁰C
6. What type of pump should be used on a secondary return?

A bronze pump should be used on a secondary circuit. The bronze pump (or similar manufacturer’s alternative) uses a pump impellor which is not corroded by the oxygen in the water.

1. What is the purpose of an open vent pipe on a hot water system?
2. To keep the system at atmospheric pressure and release any excess pressure
3. To allow expansion to reach the storage cistern
4. To feed water into the system and provide ‘head pressure’
5. To discharge water to a drain when the temperature is too high
6. Identify the item in the image below:

**A close up of a sign

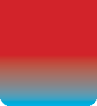
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OPEN

1. Pressure reducing valve
2. Two-port valve
3. Check valve
4. Float operated valve
5. Where might the item in the image above be used within a hot water system? Explain your answer:

This could be fitted to the primary circuit to allow temperature control of the hot water cylinder of a calorifier.

1. What type of hot water appliance is shown in the image below?



Mains cold water supply to the tap

Hot water supply from the heater to the tap

Cold water supply from the tap to the water heater

Undersink water heater

Vented under sink heater

1. List three methods of supplying hot water within a large commercial building:

Any suitable answers, but as an example:

1: Indirect centralised storage system with calorifier

2: Localised gas fired hot water storage units

3: Centralised unvented hot water system with plate heat exchangers



1. What is shown in the image opposite?
2. Heat exchanger plates
3. Immersion heater
4. Strainers
5. What type of system is shown in the image below?



Expansion vessel

Expansion relief valve Temperature relief valve



Mains cold water supply

Discharge pipework

Isolation valve

In-line strainer

Pressure-reducing valve

Balanced cold connection

Single check valve

Tundish

Unvented hot water storage system

1. List 3 safety devices that must be fitted to an unvented hot water storage vessel:

1: Control thermostat

2: High limit thermostat (ECO)

3: Temperature relief valve

1. Label the connections on the image below:

A: Hot water draw off

B: Immersion heater connection

C: Primary flow

D: Primary return

E: Cold feed