Central Unvented Water Heater Schematic Notes

1. The combined Pressure Limiting Valve, Line Strainer and Check Valve serves the following purposes;
   - The Pressure Limiting Valve ensures that the water pressure from the mains side never exceeds the 3.5 bar (approx 50 p.s.i.) that the valve is set at. If the water pressure from the mains side were to be allowed to exceed this it could cause the Expansion Relief Valve to 'nuisance operate'.
   - The Line Strainer filters out any grit or debris that may come in with the mains water. Grit and debris can get into the safety valves and affect their functioning.
   - The Check Valve is a one-way valve that allows water to enter the system from the mains, but not return back into it. This is an anti-contamination measure to protect the mains supply.
   - This Valve also incorporates an optional connection port for a cold water supply to the building. If the cold water for the domestic taps etc. is taken from this part it ensures that a balanced hot and cold water supply is maintained throughout the property. If not used it can be blanked off.

2. The Expansion Relief Valve is set to relieve the pressure in the system if it exceeds the 6 bar (approx 90 p.s.i) that it is set at. Normally this will only occur if the expansion vessel develops a fault or looses some of its air charge, or if all 3 of the temperature-operated safety devices fail at the same time.

3. The Expansion Relief Valve can be directly connected to the Combined Pressure Relief Valve/Line Strainer/Check Valve or installed separately, but it must always be sited between the Combined Valve and the Cylinder. A drain is connected to the Expansion Relief Valve to take away any water that does exit the valve should it operate. The drain discharges to an outside position via the Tundish (See 6 below).

4. The Expansion Vessel is designed to take up the expansion of the water that is created by heating. The increased volume of the water when heated is taken up by the compression of the air in the Expansion Vessel and then released into the system on cooling. The water increases in volume by about 4% when heated from 10°C to 65°C. The main purpose of the expansion vessel is to ensure that the Expansion Relief Valve doesn't operate every time the water goes through a heating cycle, as this would contravene the Water Regulations by 'wasting water knowingly'.

   The Expansion Vessel should be positioned at a high level and connected to a 'T'-piece plumbed into the 15mm pipe on the cold water side of the system, between the Expansion Relief Valve and the Cylinder. If the Expansion Vessel can be above the cylinder it minimises the footprint of the installation.

5. The Temperature and Pressure Relief Valve (15mm) is designed to be both a back-up in case of failure of the Expansion Relief Valve and/or in case of a failure of the High-Limit Thermostat. The T&P Valve is located on the top of the Cylinder (and in Atlantic's case, combined with the hot outlet connection pipe) as this is where the temperature of the water will be at its highest. A drain is connected to the T&P Valve to take away any water should the valve operate. The drain discharges to an outside position via the Tundish (see 6 below).

6. The Tundish is a funnel that collects any water that is discharged from either of the 2 safety valves, before it goes to an outside position. It gives a visible means of identifying that something is amiss with either of the valves or the system itself. The Building Regulations section G3 (P3 in Scotland) specify the installation requirements for water heater installation, including the sizing and material of the discharge pipes, the positioning of the Tundish and the location of the drain pipe.

7. The Drain Cock is supplied loose. It is used to drain down the cylinder should it be necessary at any time and must be fitted at a point below the bottom level of the cylinder.

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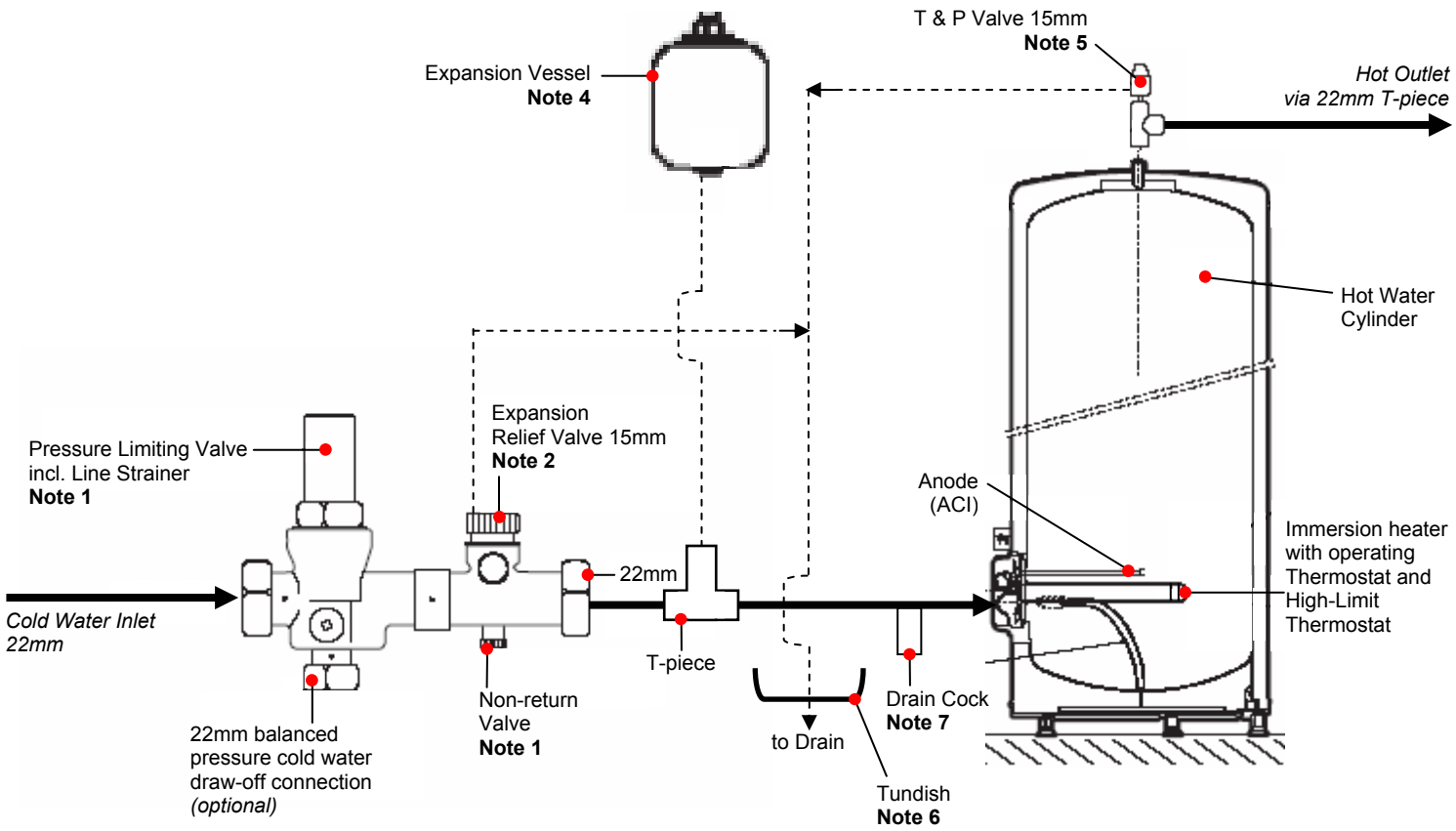
Schematic Diagram of Atlantic Central Unvented Water Heater Installation

(Not To Scale)



Notes: *Refer to adjoining Central Unvented Water Heater Schematic Notes*