WATER SERVICES

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WATER SUPPLY OPERATION SYSTEM

PNEUMATIC BOOSTING

- In the pneumatic boosting system, a cushion of air under pressure is maintained in the top of a pressure vessel
- When a tap is opened the air is able to expand by forcing the water out of the cylinder and through the pipe work
- This process can continue until the water level drops to a predetermined point, when the pumps will be switched on to raise the level again
- Drinking water is drawn off from the pressure vessel, although the drinking water can be supplied direct to lower floors where the mains pressure is sufficient


FLOJET
FLOJET

HIGH RISE BUILDING- BOOSTED COLD SYSTEM

- For medium and high rise buildings there is often insufficient mains pressure to supply water directly to the upper floor
- Boosting by pumps from a break tank is therefore usually necessary and several more of these tanks may be required as the building rises-depending on the pump capacity
- A break pressure cistern is also required on the down services to limit the head or pressure on the lower fitting to max of 30m (approx. 30kPa)
- Drink water header pipe or storage vessel supplies drinking water to the upper floors
- As this empties and the water reaches a predetermined low level, the pipe line switch engages the duty pump
- A float switch in the break tank protects the pump

HIGH RISE BUILDING- BOOSTED COLD SYSTEM

- As an alternative to the drinking water header pipe. An auto-pneumatic cylinder may be used
- Compressed air in the cylinder forces water up to the float valves and drinking water outlets on the upper floor
- As the cylinder empties a low pressure switch engage the duty pump
- When the pump has replenished the cylinder, a high pressure switch disengages the pump
- In the time some air is absorbed by the water
- As this occurs, a float switch detects the high water level in the cylinder and activities on air compressor to regulate the correct number of air
- Break pressure cisterns may be supplied either from the storage cistern at roof level or from the rising main

BACKFLOW PROTECTION SECONDARY BACKFLOW PROTECTION

BACKFLOW/ BACK SIPHONAGE PREVENTION

Domestic Sanitary Appliances

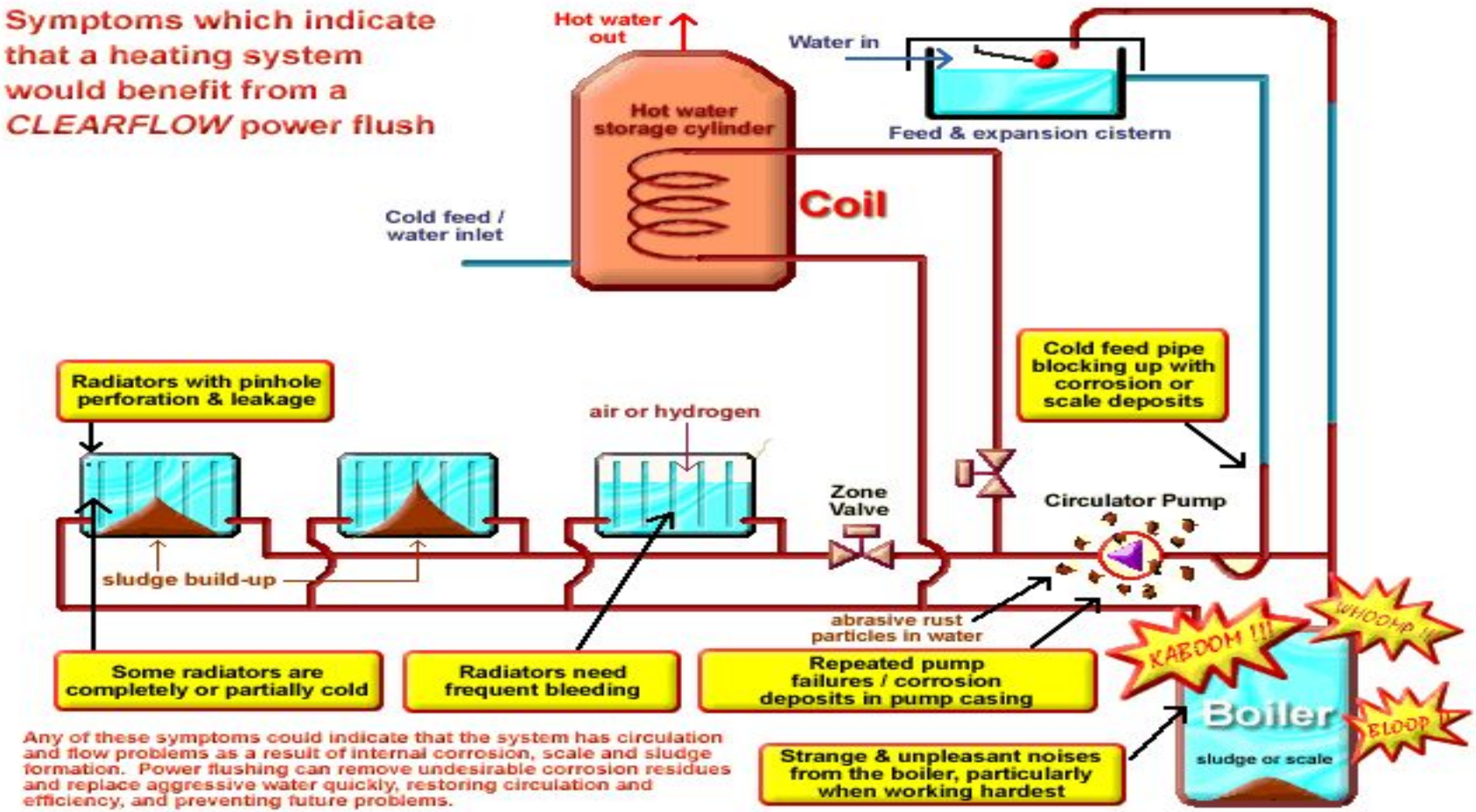
- All drinkable water supplies must be protected against pollution by back siphonage
- Protection is effected by leaving sufficient space or air gap between the lowest point of the control device
- There must be an air gap between tap discharge and the appliance spill over level

DELAYED ACTION FLOAT VALVE

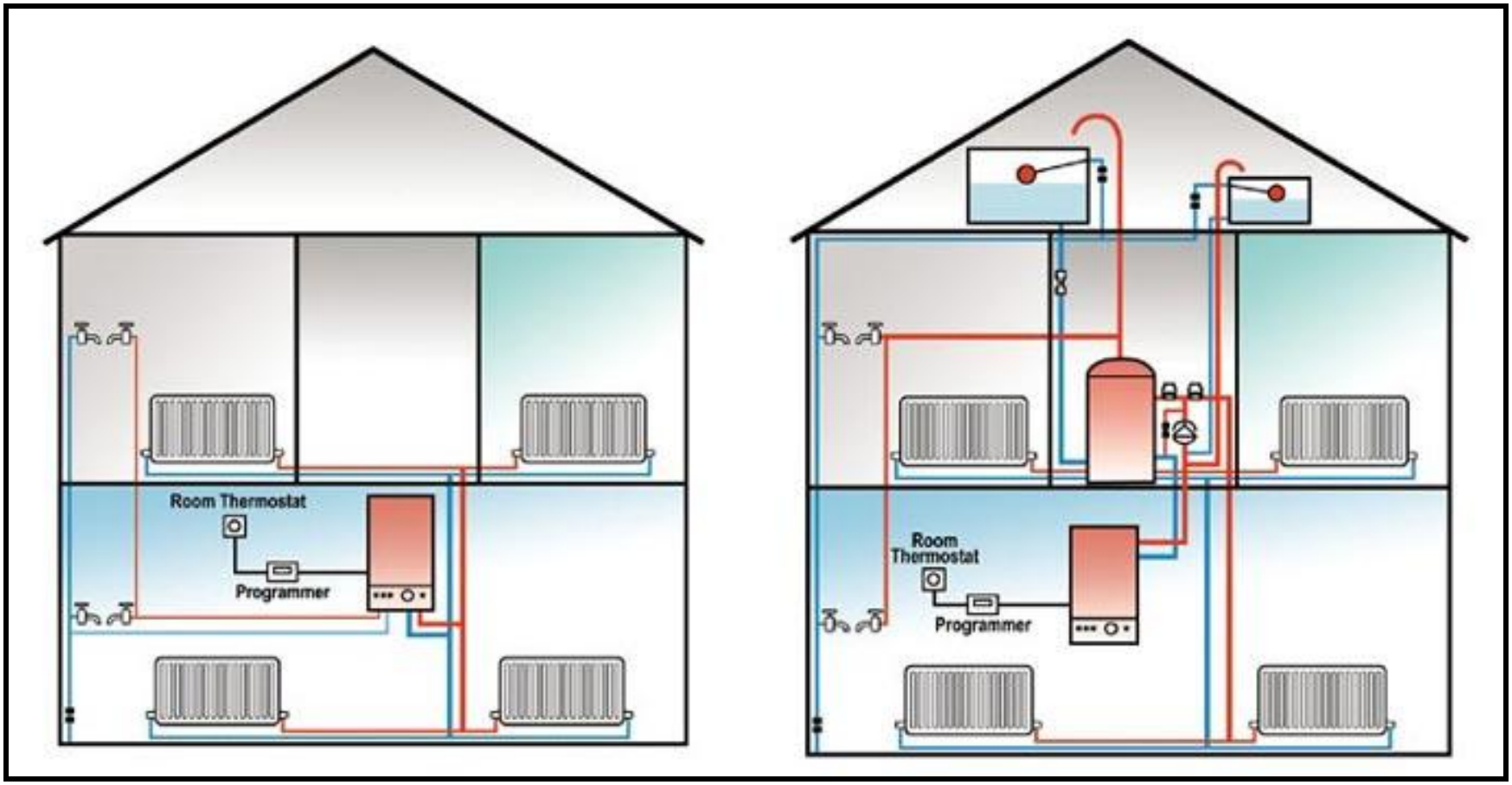
- If normal float valve are used to regulate cistern water supply from an auto-pneumatic cylinder and pump activity will be frequent and uneconomic
- Therefore, to regulate activity and deliveries to the cistern, a delayed action float valve mechanism is fitted to the storage cistern

HOT WATER SERVICES

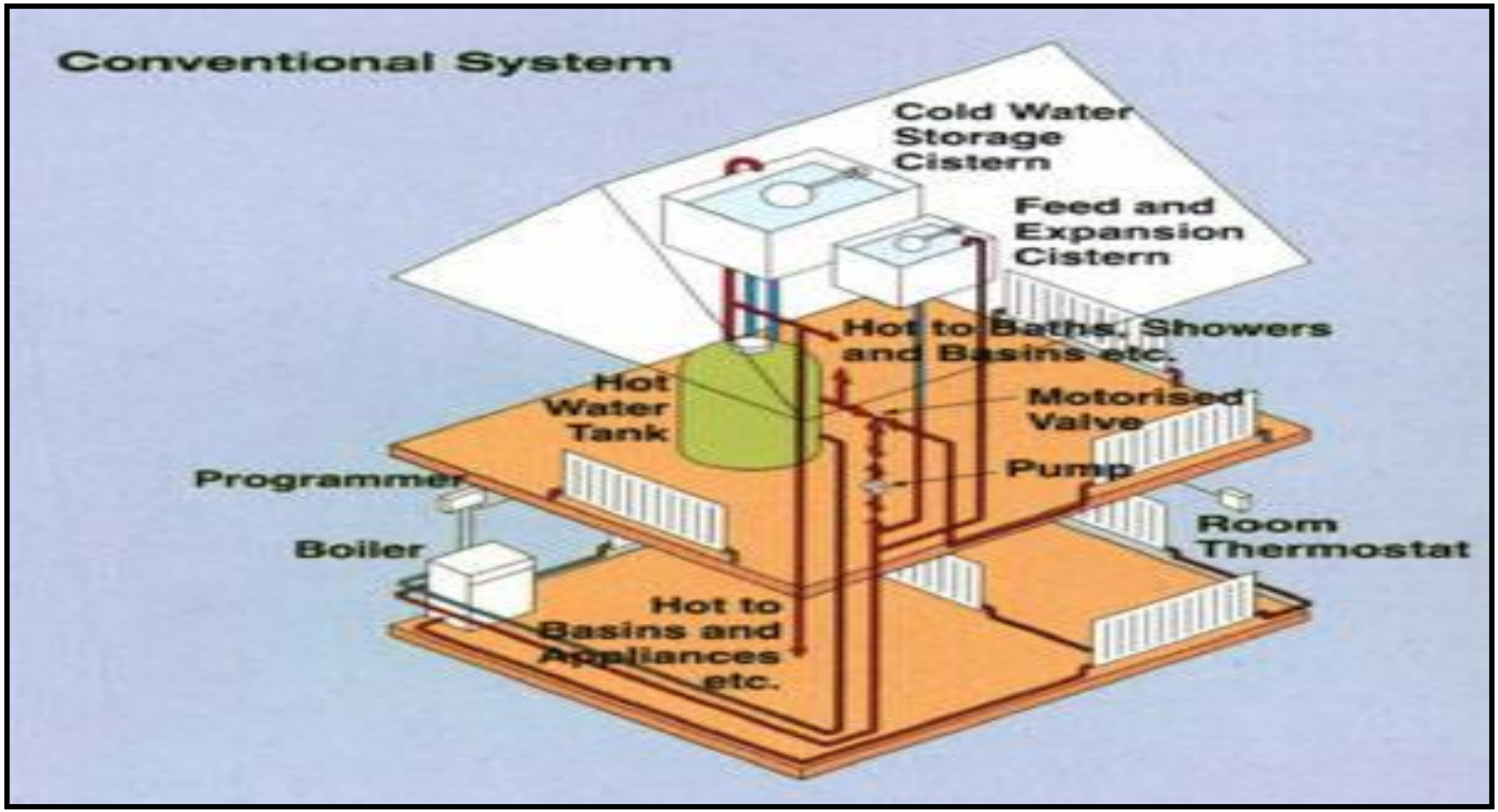
A CENTRAL HEATING SYSTEM



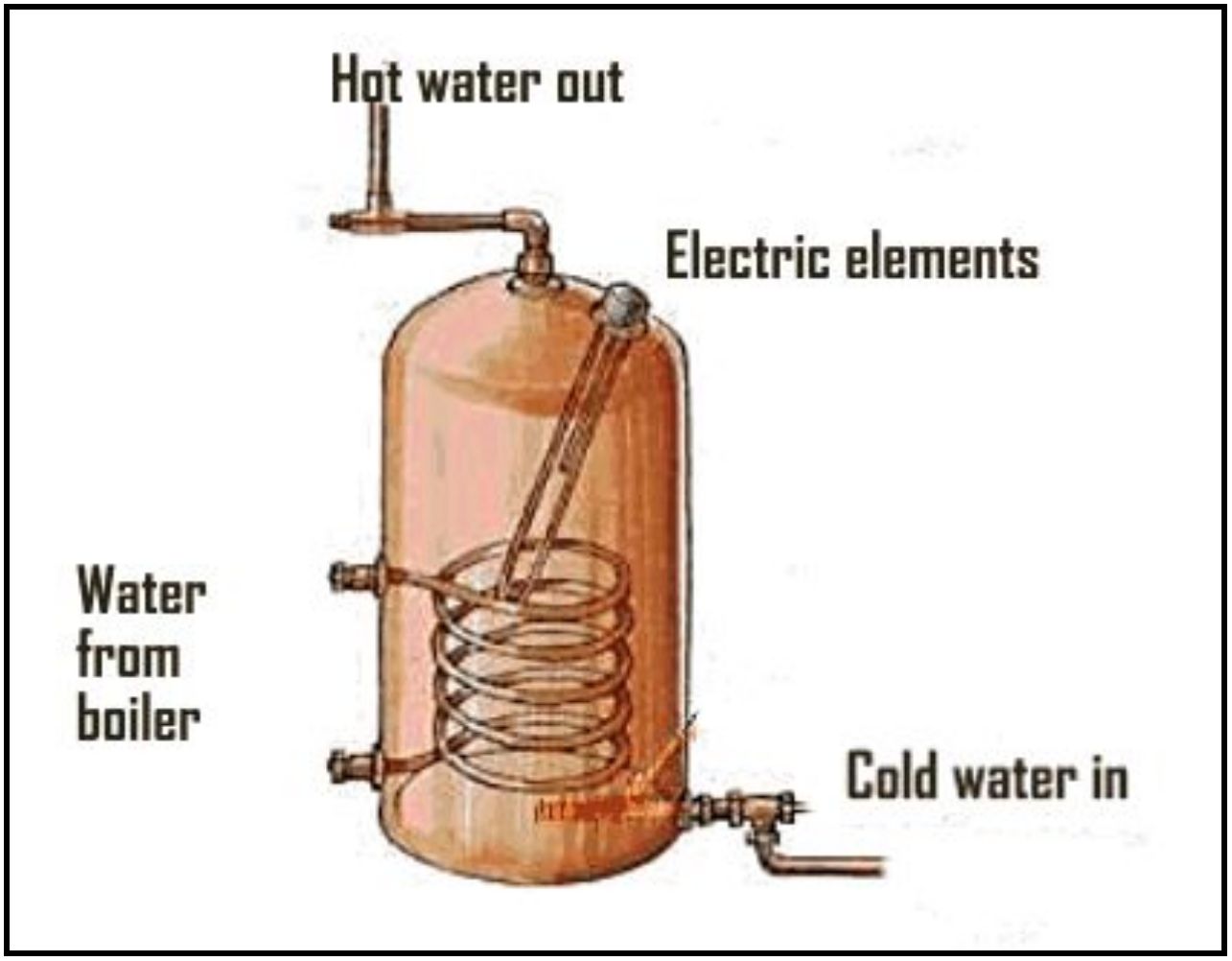
DIRECT CENTRAL HEATING



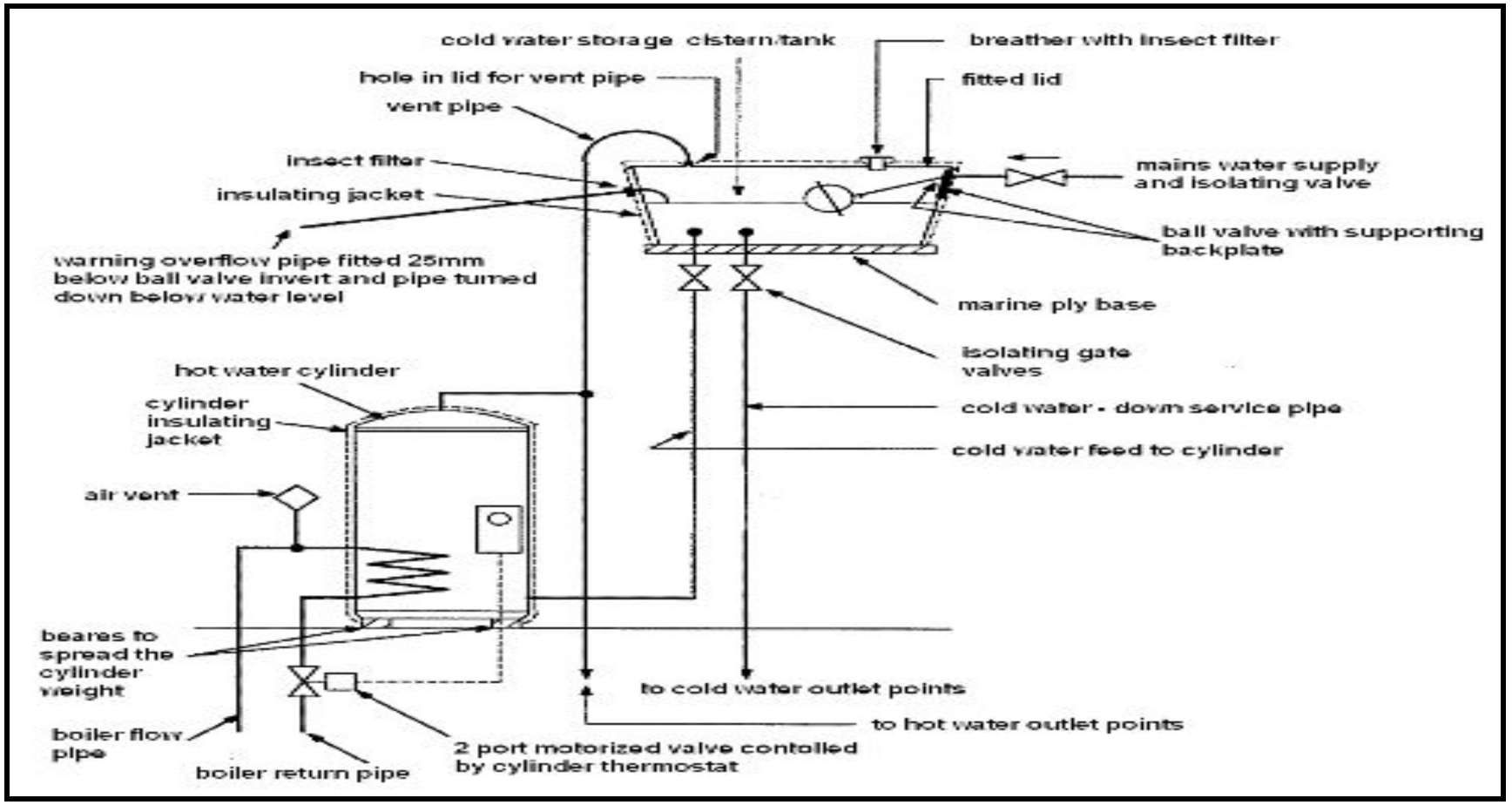
CONVENTIONAL SYSTEM



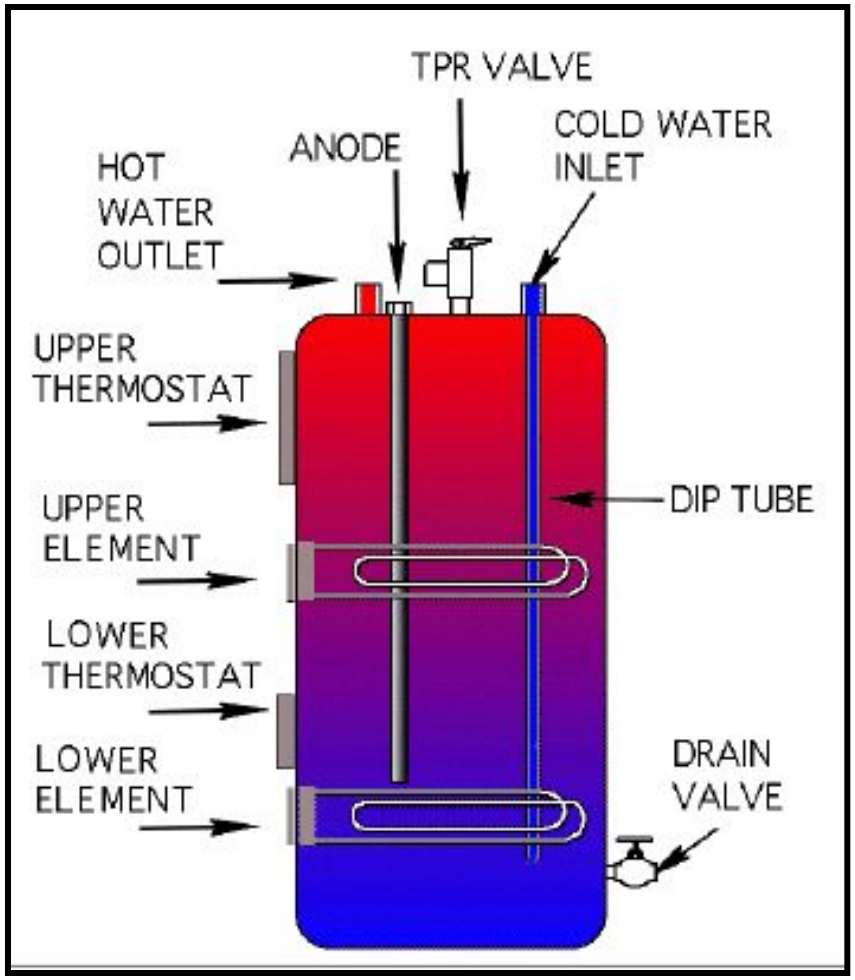
HOT WATER CYLINDERS



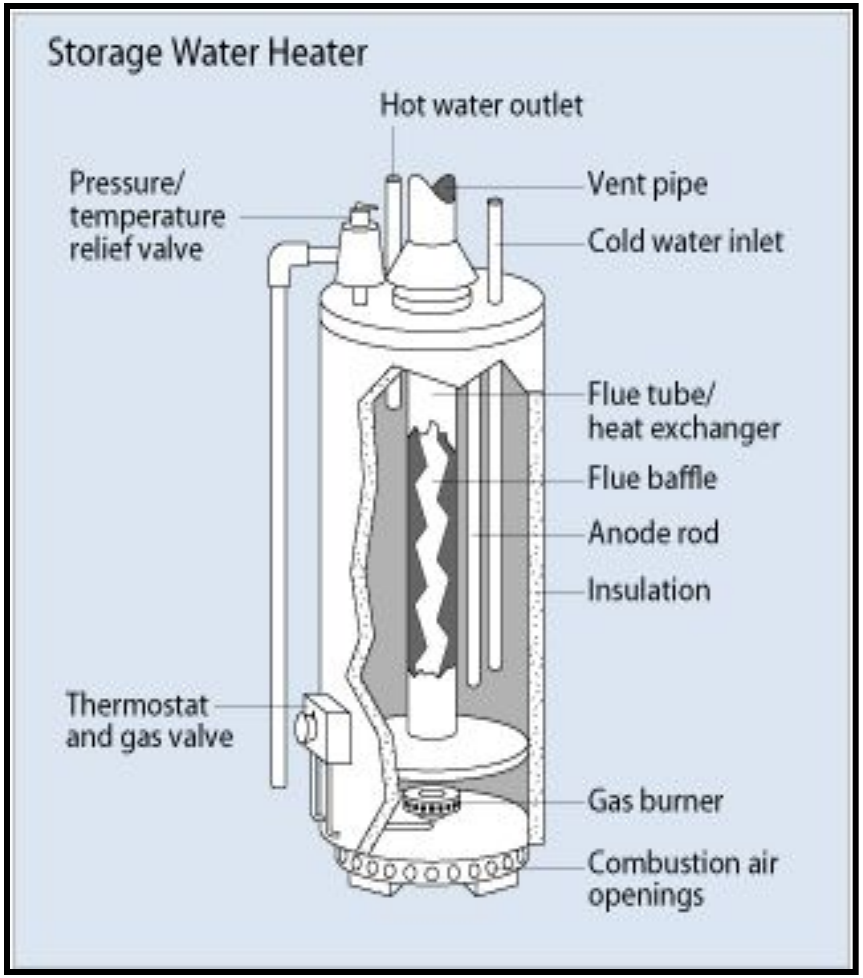
INDIRECT CENTRAL HEATING



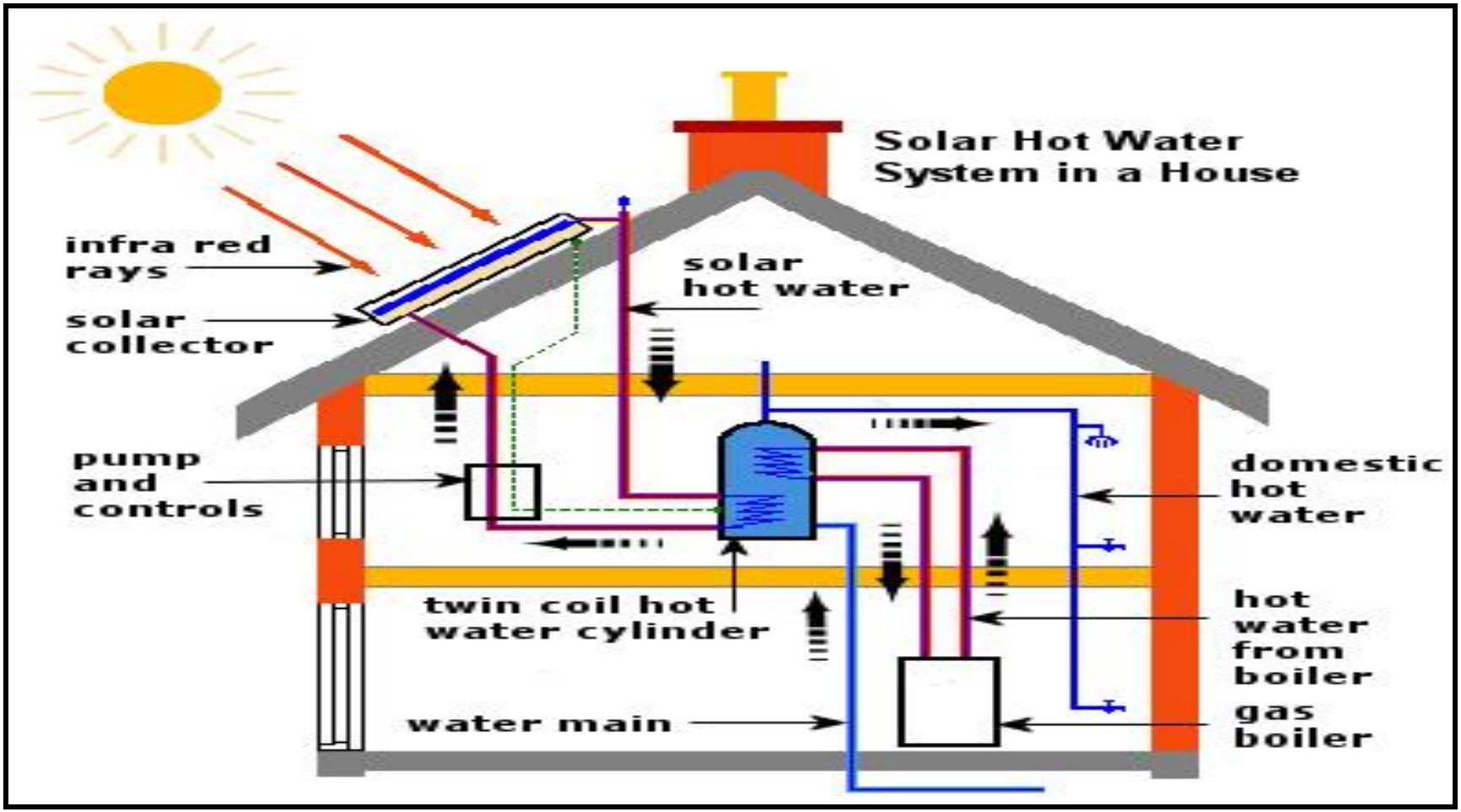
INDIVIDUAL SYSTEM 1: ELECTRICAL WATER HEATER



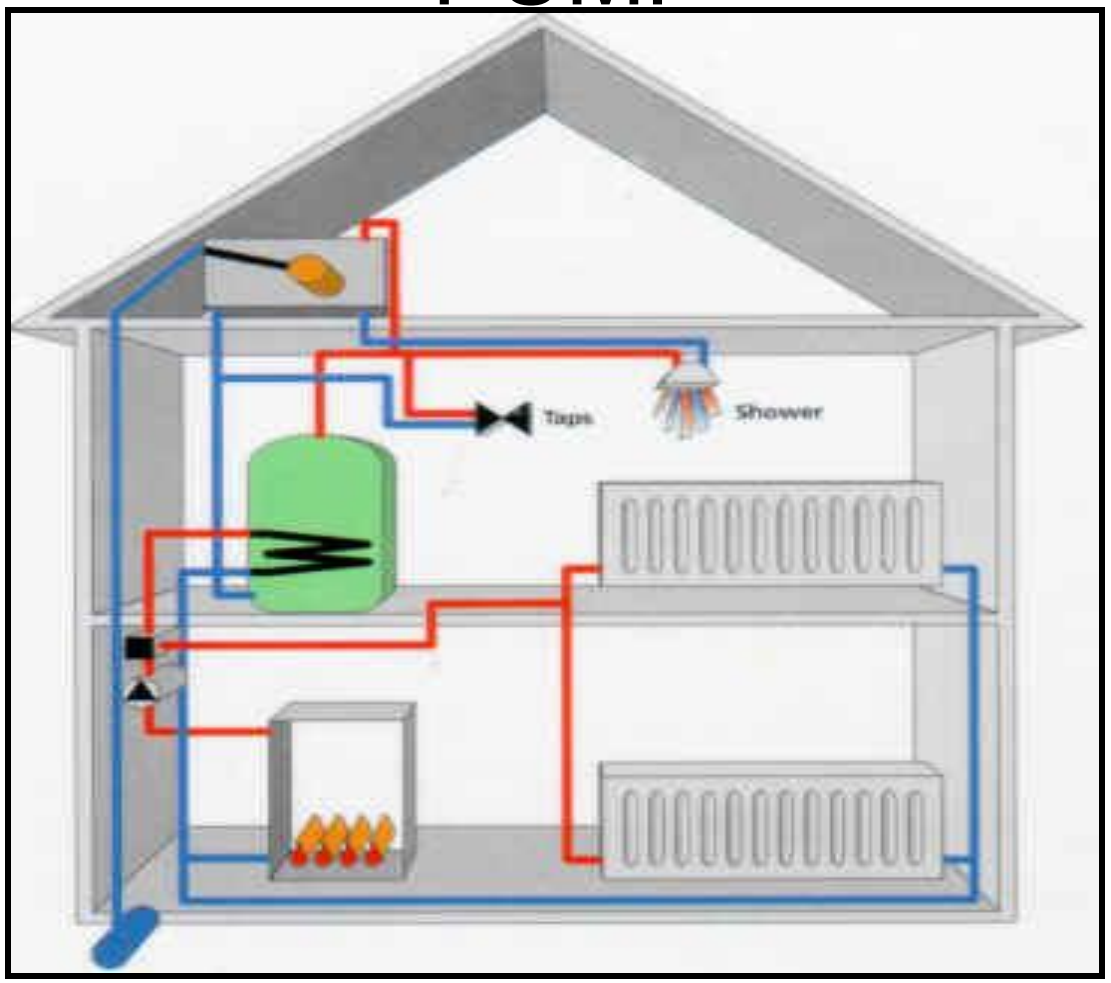
INDIVIDUAL SYSTEM 2: GAS WATER HEATER

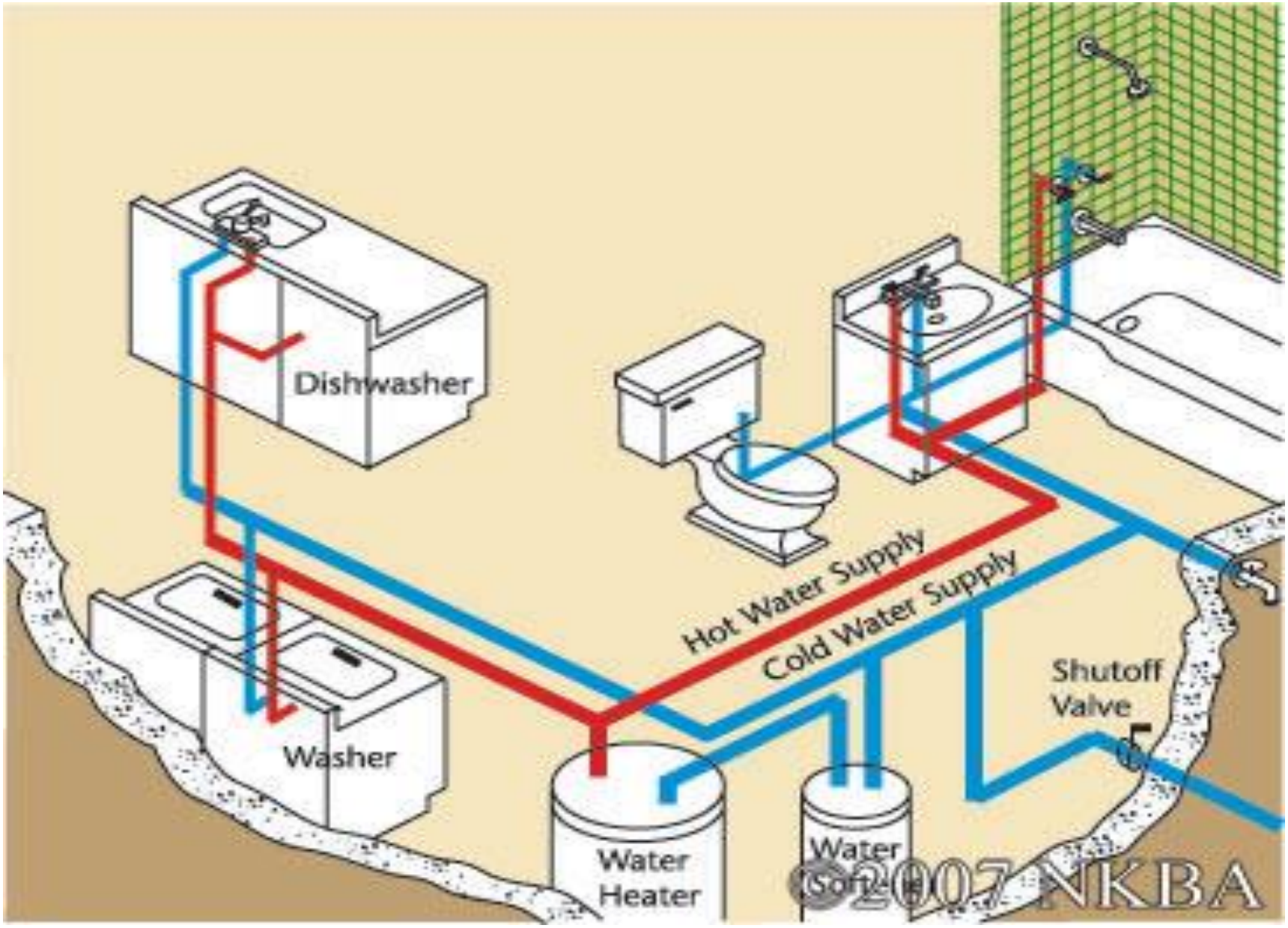


SOLAR HOT WATER SYSTEM IN HOUSE



UN PRESSURISED HOT & COLD WATER PLUMBING WITH SHOWER PUMP




Dishwasher
Hot Water Supply
Cold Water Supply
Shutoff Valve
Washer
Water Heater
Water Soft
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THE END