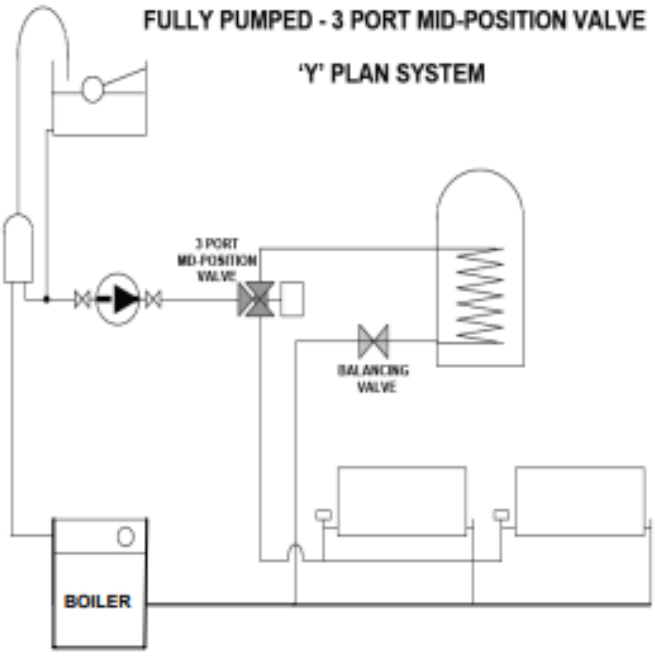
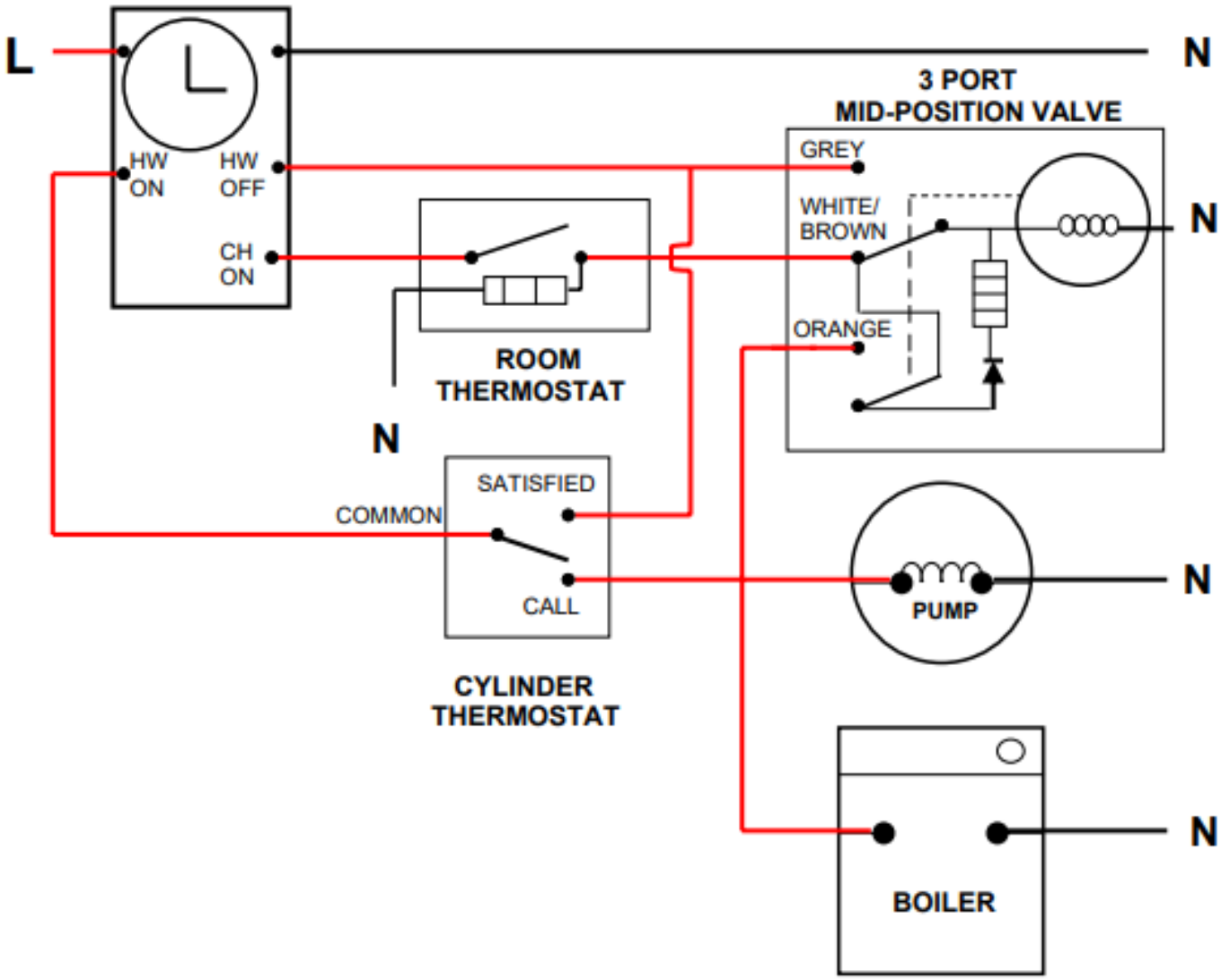
Y Plan Wiring Support Guide



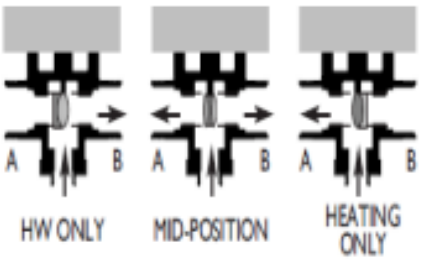


Y-PLAN Fully Pumped – Mid-position Valve (cont.)

System Description

Used to control fully pumped heating systems with the use of a 3 port Mid-position Valve.
With this type of system the customer can control demands having:- Water Only, Heating Only or both Heating and Hot Water together. Each demand having its own control / temperature device to maintain customer set requirements to achieve satisfactory heating conditions.

Valve Operation



With no voltage to the mid-position valve (de-energised) the valve sits in its hot water position with the Hot Water port (B) Open and the Central Heating port (A) Closed. When both demands are required with cylinder and room thermostats calling for heat the valve moves to its mid position allowing primary water to flow to both radiator and hot water circuits at the same time. On Heating demand only (or hot water satisfied) with the programmer and room thermostat calling for heat, the valve moves fully to its heating only position closing off the Hot Water circuit, the pump and boiler operate and circulate primary water to the heating circuit only.

Hot Water Demand.

230Vac demand from the programmer or clock is sent to the "Common" on the Cylinder Thermostat. Cylinder thermostat calling for heat (Mid position valve in its rest position-port B open).230Vac from the Cylinder Thermostat "Call" connection is passed to the Boiler and Pump. Boiler and Pump operate giving primary heat through the Hot Water circuit .
Hot Water reaches temperature - Cylinder thermostat changes over from "Call" to "Satisfied" Boiler and Pump lose voltage and stop. 230Vac is now sent from the Cylinder thermostat "Satisfied" connection to the Grey wire at the Mid– position valve (awaiting any heating demand if required)
Hot Water turned Off at Programmer - Boiler and Pump not operating. 230Vac is sent from the programmer HW "Off" connection to the Grey wire at the Mid-position valve (awaiting any heating Demand if required).

Heating Demand.

230Vac demand from the programmer or clock is sent to the "Common" on the Room Thermostat. Providing there is a demand from the Room Thermostat the "Calling" connection of the Room thermostat will supply the Mid-position valves White (or Brown) wire, which will energise the mid-position valve and move the valve into its Heating position (port A). Due to there being no Hot Water demand the 230Vac at the Grey wire of the valve will now allow the valve to continue to operate fully closing off the Hot water port (B) and supplying 230Vac to the Orange wire of the valve, which in turn feeds the Boiler and Pump causing them to operate giving primary heat to the heating circuit only..
Heating Reaches temperature - When the demand or room thermostat temperature is satisfied, power is removed from the pump and boiler and also the Mid-position will always rest in its last operating position after demand/s.

Hot Water & Heating Demand.

230Vac demand from the programmer or clock is sent to the "Common" on the Room Thermostat and also "Common" on the Cylinder Thermostat. Both Thermostats call for heat with 230Vac from the Cylinder Thermostat (as above) supplying 230Vac to the Pump and Boiler. The Room Thermostat "Calling" connection will supply the mid-position valves White (or Brown) wire which will energise the valve and move the valve into its mid-position, (port A&B open) allowing primary water to circulate to both the heating and hot water circuits.

Note: On some appliances the Pump could be wired directly from the appliance to allow pump overrun if required.