# Operation

**Domestic Hot Water Mode**

To be able to supply hot water, the selector switch (34 fig. 6) must be in either on or position. This will be confirmed by the green indicator light ○ (38 fig. 6).

The hot water temperature in the mini cylinder can be adjusted between 40°C and 60°C using control knob (36 fig 6).

When a tap or shower is turned on and the flow of mains water is above 2 litres per min., it will activate the DHW flow switch 30 fig 7 and allow the 3 way valve (15 fig. 7) to move to the DHW position. The pump can now circulate primary water heated by the main heat exchanger through the secondary heat exchanger.

The safety solenoid (3a fig. 7) and the first stage solenoid (3b fig. 7) open together to allow gas to the burner. The ignition sequence begins and a continuous high speed spark ignites the gas. As soon as a flame is detected the orange indicator bulb (39 fig. 6) will light and the second stage solenoid (3c fig. 7) opens to allow the full gas rate. If a flame is not detected, after 8 seconds, the safety solenoid and the first stage solenoids close and shut off the gas. The red lockout indicator bulb (40 fig. 6) will light.

Over 2 l/min, the domestic hot water temperature is controlled by the hot water control thermistor (32 fig. 7) and the heating control thermistor (14 fig. 7), but

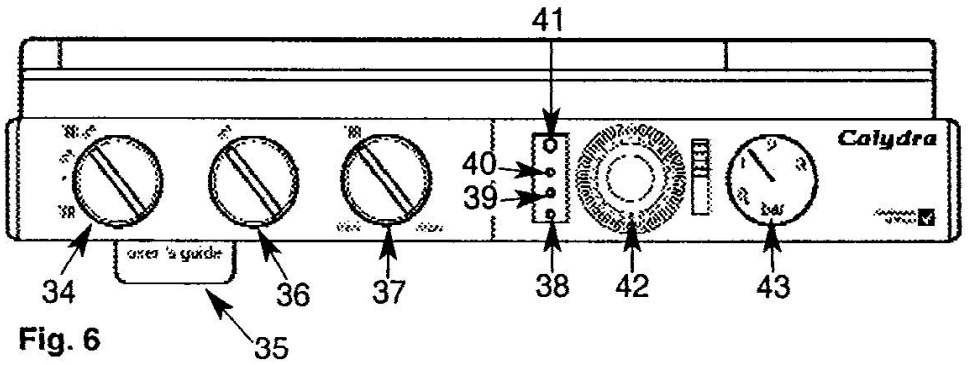

**Fig. 6**

dependant upon to the position of the DHW temperature adjustment knob (36 fig. 6). This system anticipates the changes of temperature in the secondary heat exchanger and ensures accurate temperature regulation.

When the tap is closed the burner is extinguished and the pump runs on for 10 seconds (unless the mini cylinder thermistor is calling for heat, in which case the burner will remain on at a low rate and the pump will continue running until the mini cylinder thermistor is satisfied). The boiler will now stay in the hot water mode for 30 seconds to be ready for a subsequent draw off (this can be set to 3 minutes if required. See Maintenance and Service Guide).

Priority is given to a demand for hot water. This will interrupt the central heating for the duration of hot water delivery or recovery of the mini cylinder.

When the boiler has been in standby in Hot Water Mode for some time or when drawing DHW at flow rates of less than 2 l/min the temperature in the mini cylinder will eventually decrease and the

# Operation (continued)

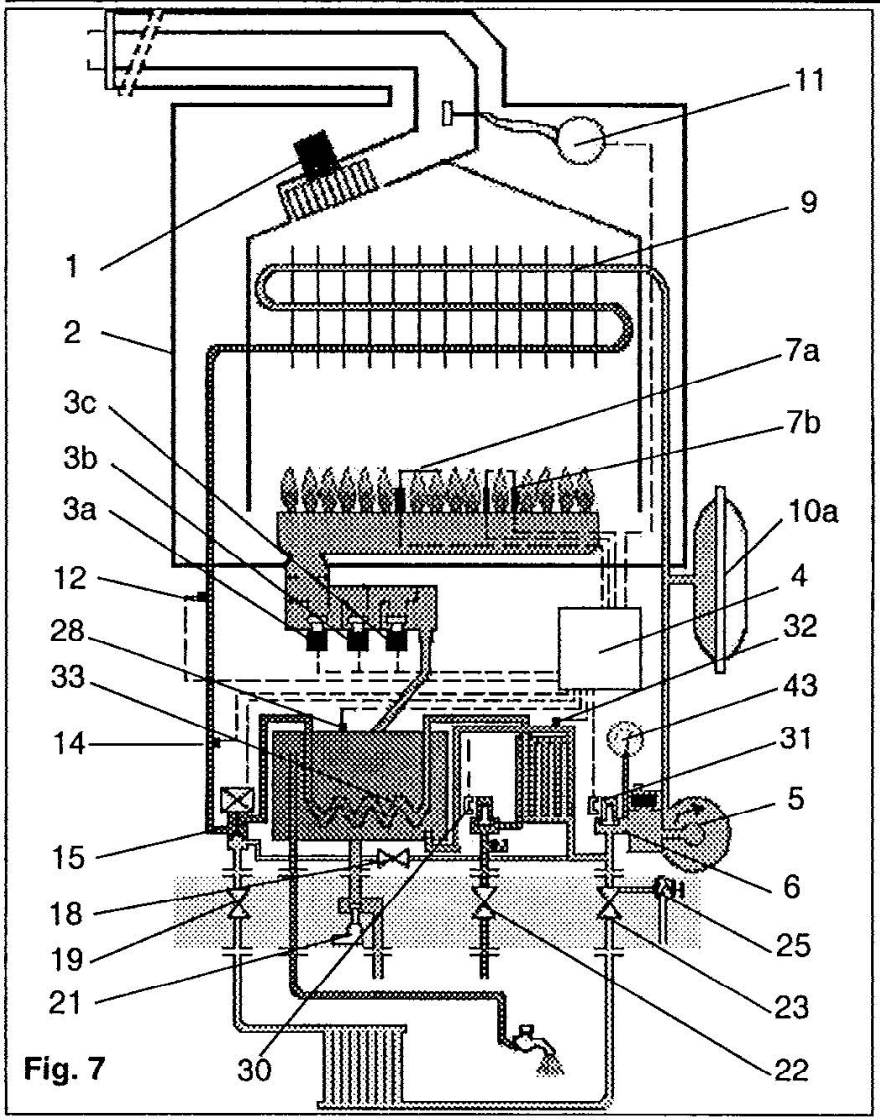


Fig. 7

TSS® control thermistor will call for heat. Bringing the pump and burners to operate, this is quite normal.

The 3 way valve (15 fig. 7) will move to the domestic hot water position. The hot water from the primary circuit is then diverted to heat the mini cylinder via the coil and the secondary heat exchanger.

The safety solenoid (3a fig. 7) and the first stage solenoid (3b fig. 7) open together to allow a low rate of gas to the burner.

The ignition sequence begins and a continuous high speed spark ignites the gas. As soon as a flame is detected the orange indicator bulb (39 fig. 6) will light and the burner will remain on low rate until the TSS® control thermistor (28 fig. 7) is satisfied. If a flame is not detected, after 8 seconds, the security and first stage solenoids close and shut off the gas.

The red lockout indicator bulb (40 fig. 6) will light.

The hot water flow temperature is controlled by the primary circuit control thermistor (14 fig. 7).

When the cylinder thermistor is satisfied, the burner is extinguished and the pump remains running for 10 seconds at low speed.

The boiler will now stay in the hot water mode for 30 sec. (this can be set to 3 minutes if required. See Maintenance and Service Guide).

Priority is given to a demand for hot water or reheating the mini cylinder.

# Operation (continued)

**Central Heating Mode**

To be able to supply heating, the selector switch (34 fig. 6) must be in (heating and hot water position) or (heating only position).This will be confirmed by the green indicator light ○ (38 fig. 6).
When there is a demand for heating (either from a room thermostat, the built-in clock or an external programmer) and the boiler temperature control is calling for heat.
The pump starts and at a flow rate of 4 ltr/min the central heating flow switch operates allowing the ignition sequence to begin.
The safety solenoid (3a fig. 7) and the first stage solenoid (3b fig. 7) open together to allow gas to the burner.
The ignition sequence begins and a continuous high speed spark ignites the gas.
As soon as a flame is detected the orange indicator bulb (39 fig. 6) will light.
After 45 seconds the second stage solenoid (3c fig. 7) opens to allow the full gas rate.
If a flame is not detected, after 8 seconds, the security solenoid closes and shuts off the gas.
The red lockout indicator bulb (40 fig. 6) will light.
The central heating flow temperature is controlled by the heating control thermistor (14 fig. 7).

The boiler has been designed to minimise cycling and will not attempt to relight for at least 3 minutes after the heating control thermistor has been satisfied (this can be set to 30 seconds if required. See Maintenance and Service Guide).
When the built-in clock, room thermostat and external programmer are satisfied, the burner will switch off and the pump will remain running for a further 3 minutes. (this can also be set to 30 seconds if required. See Maintenance and Service Guide).

**NB** It is possible to override the 3 minute delay by pressing the RESET button (41 fig. 6).