

## 37D and 37DE Temperature Control Unit Installation and Maintenance Instructions

### Installation

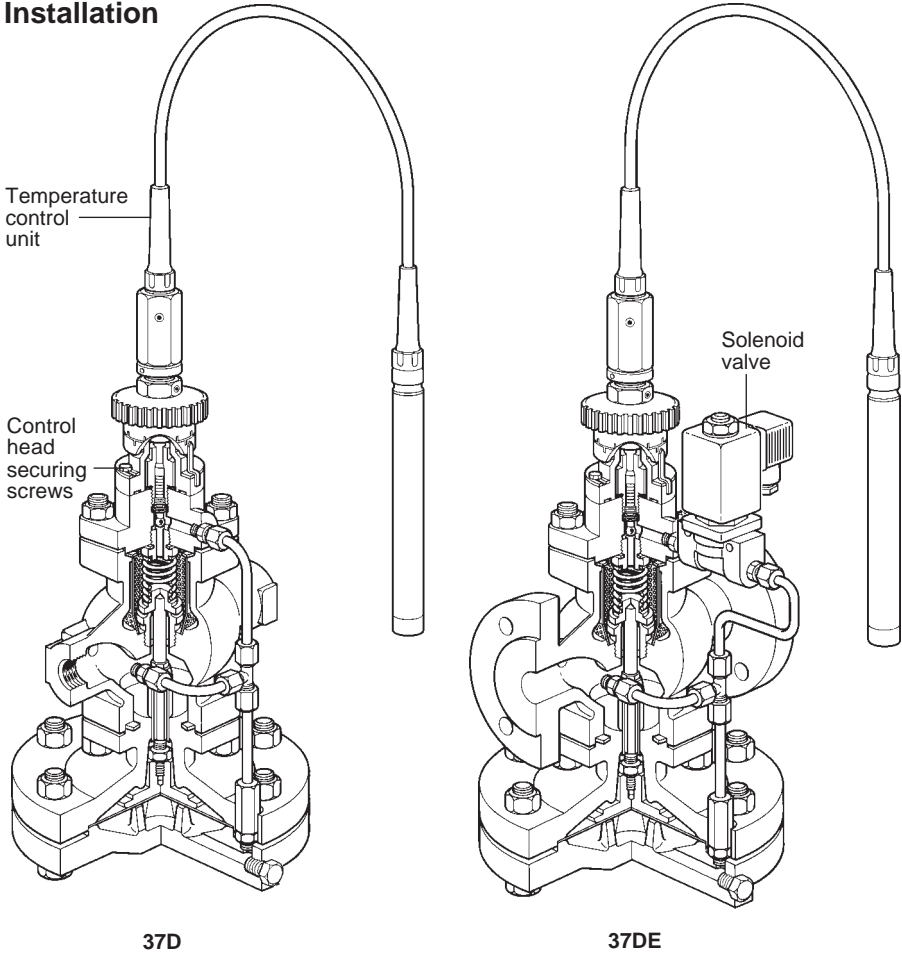


Fig. 1

## Supply (Fig.1)

### 37D

The 37D Spirax Sarco temperature control is supplied with the temperature control unit and valve packed separately, and should be assembled securing the control head to the valve by means of the three screws supplied.

The temperature control unit is fitted with a control system having a range most suitable for the temperature given on the order but it is not pre-set.

### 37DE

The 37DE Spirax Sarco temperature control is supplied as for the 37D but a solenoid operated valve is fitted in the pipe between the pilot valve and the main diaphragm chamber, thus in series with the normal pilot valve.

The purpose of the solenoid valve is to override the pilot valve thus causing the main valve to shut off. It can be controlled by any device capable of interrupting the supply of current to the solenoid coil such as a thermostat, pressure switch hand clock.

The solenoid is arranged to open the valve when the coil is energised so that whatever switching device is used it must be arranged to break the current to close the main valve. In this way the unit will always 'fail-safe' i.e. will close the main valve in the event of a failure in electrical supply.

## Temperature ranges

The temperature control system is available in five temperature ranges as follows:-

Range A	16°C to 49°C
Range B	38°C to 71°C
Range C	49°C to 82°C
Range D	71°C to 104°C
Range E	93°C to 127°C

## Sensor bulb

The type 37D control is fitted with a plain bulb as in Fig. 2, but as standard this bulb is supplied with an adaptor shown in Fig. 3, consisting of a union nipple (U), 'O' ring (V) and gland nut (W).

## Use of plain bulb

Where it is desired to use a plain bulb as in Fig. 2 the adaptor can be removed by unscrewing the gland nut (W) from the union nipple Fig. 3 and withdrawing each piece of the assembly separately over the bulb.

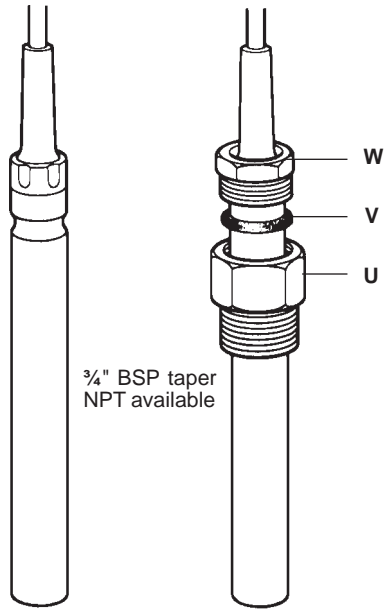


Fig. 2

Fig. 3

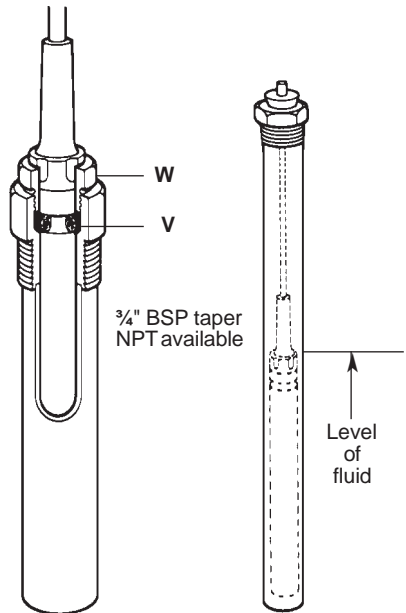


Fig. 4

Fig. 5

## Use of immersion bulb

Where it is desired, insert the bulb into a vessel under pressure. Unscrew the gland nut (W) from the union nipple (U). This will enable the union nipple to withdraw over the bulb.

The union nipple can now be screwed into the tapping provided at the temperature sensing point.

The union nipple is normally threaded  $\frac{3}{4}$ " BSP but may be  $\frac{3}{4}$ " NPT if specially ordered.

Insert the bulb through the union nipple (U) until the 'O' ring (V) seats in the union nipple as shown in Fig. 3 and screw home the gland nut (W) to compress the 'O' ring. The gland nut needs to be little more than finger tight. Do not overtighten otherwise damage to the 'O' ring will result.

## Pockets

In all cases where the temperature sensing point is in a fluid under pressure it is best to use a pocket so that the bulb can be withdrawn for servicing without draining down the plant.

Pockets must also be used where the medium being controlled would attack and destroy the material from which the bulb is constructed.

The top of the pocket is formed exactly as the union nipple and should be screwed into the tapping ( $\frac{3}{4}$ " BSP or  $\frac{3}{4}$ " NPT) provided at the temperature sensing point.

Insert the bulb into the pocket until the 'O' ring seats in the union nipple as Fig. 4, and screw home the gland nut (W) to compress the 'O' ring. The gland nut (W) will be little more than finger tight. Do not overtighten otherwise damage to the 'O' ring will result.

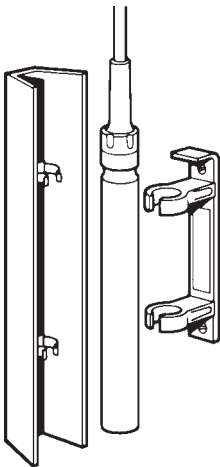


Fig. 6

## Extra long pockets

Where extra long pockets are used the plain bulb should be used and inserted the full length of the pocket.

A split bung is provided to seal the top of the pocket Fig. 5.

## Heat conduction

Where a bulb is used in a pocket the pocket should be filled with a heat conducting fluid, such as thin oil or water, to improve heat transfer.

Do not fill the extended pocket Fig. 5, above the level of the bulb.

## Wall mounting sensor

Where the type 37D control is to be used to control from room temperature the plain bulb Fig. 2 is used and a bracket and protective shield is provided Fig. 6.

It is essential that the sensor be fitted in such a position that it can sense the true room temperature and is not influenced by draughts. It is preferably fitted in the vertical position and can be fitted either with the capillary leading from top of the sensor or leading from the bottom.

Having decided on the sensor position fix the bracket to the wall making sure that it is fitted in such a way that the lug standing proud of the base will engage with the groove turned in the sensor.

After inserting the sensor in the clips, fit the external cover as in Fig. 7.

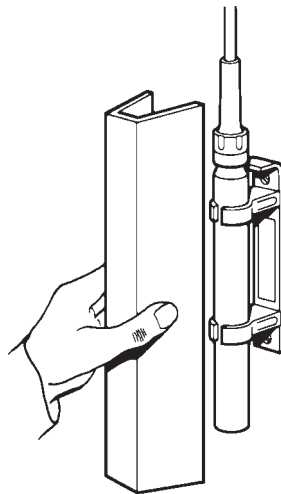


Fig. 7

