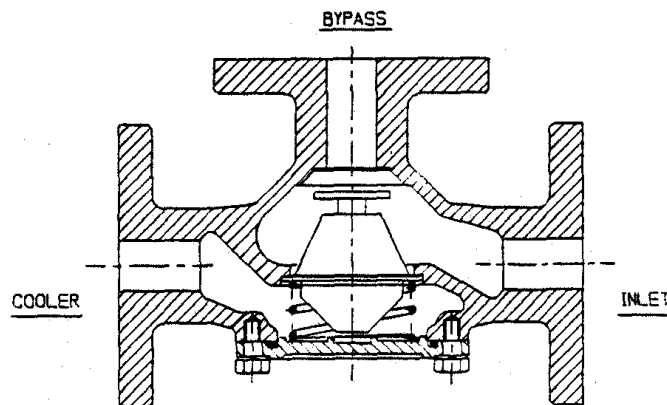


TEMPERATURE CONTROL SYSTEMS

Direct Operated (15-25mm Linear)



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The following Walton Instruction Manuals are available:

| | |
|---|-----------------|
| Direct Operated (Rotary) | MANUAL\DIRECT01 |
| Direct Operated (25mm Linear) | MANUAL\DIRECT02 |
| Direct Operated (Twin) | MANUAL\DIRECT03 |
| Direct Operated (Rotary) Fail - Safe | MANUAL\DIRECT04 |
| Direct Operated (15-25mm Linear) | MANUAL\DIRECT05 |
| Pneumatically Operated | MANUAL\PNEU01 |
| Electrically Operated (Series 500 Actuator) | MANUAL\ELEC01 |
| Electrically Operated (Series 3000 Actuator) | MANUAL\ELEC02 |
| Electrically Operated (Special Integral Function) | MANUAL\ELEC03 |
| Gas Operated (Rotary) | MANUAL\GAS01 |
| Gas Operated (Linear) | MANUAL\GAS02 |

System Design

The system should be designed so that sufficient cooling is obtainable with less than full flow to the cooler and the valve will maintain a steady control temperature with partial flow through both "COOLER" and "BYPASS". This control temperature should be mid-way in the element range.

General Description

This 3-way valve may be used for very low flow rates in either mixing or diverting applications. The body can be supplied flanged (Fig.01/DIRECT) or with threaded ports (Fig.02/DIRECT).

The three ports of the valve body (1) are arranged in a "T" configuration with the "INLET" and "COOLER" ports in-line.

Manual control and fail-safe mechanism are **not** a feature of this valve. The valve(s) will fail to "BYPASS".

The valve is operated by a temperature sensitive element assembly (wax-filled). Figs. 01/DIRECT and 02/DIRECT show cross-sectional views of the valve assembly in the "cold" position. The element assembly (7) is held in place by a retaining spring (6).

Operation

Assuming that the valve is installed as a mixer, fluid entering the "BYPASS" port passes into the upper section of the valve body. At this stage the "BYPASS" closure disc, integral with the element assembly (7), is in the open position away from the valve body seating. This allows flow through to the "INLET" port and out to the system.

As the fluid temperature increases and reaches the lower temperature of the element range, the

element (5) will begin to extend. This movement opens the "COOLER" seat within the element assembly (7) and begins to allow fluid from the "COOLER" port to mix with fluid from the "BYPASS" port. At the same time the "BYPASS" closure disc will have moved towards the internal seat to close off some of the flow from the "BYPASS" port.

If the temperature continues to rise to the upper temperature of the element range the incoming fluid through the "BYPASS" will be closed off and full flow will be allowed via the "COOLER" port.

As the temperature reduces the element retracts with the aid of an internal return spring.

There is no way of adjusting the temperature control of this valve. The element assemblies used are of the fixed temperature range type.

Installation

This compact valve can be mounted in any attitude. Sufficient space should be provided to allow removal of the cover (2) and withdrawal of the element assembly. A minimum withdrawal distance of 70mm should be allowed.

Maintenance

To inspect or change the element assembly, the cover (2) and cover seal (3) are removed by unscrewing the 6 screws (4). The element assembly (7) and retaining spring (6) can then be withdrawn.

We recommend that a new cover seal (3) is fitted each time the cover is removed. It is important when replacing any item to ensure that all parts are clean and free from damage foreign matter.

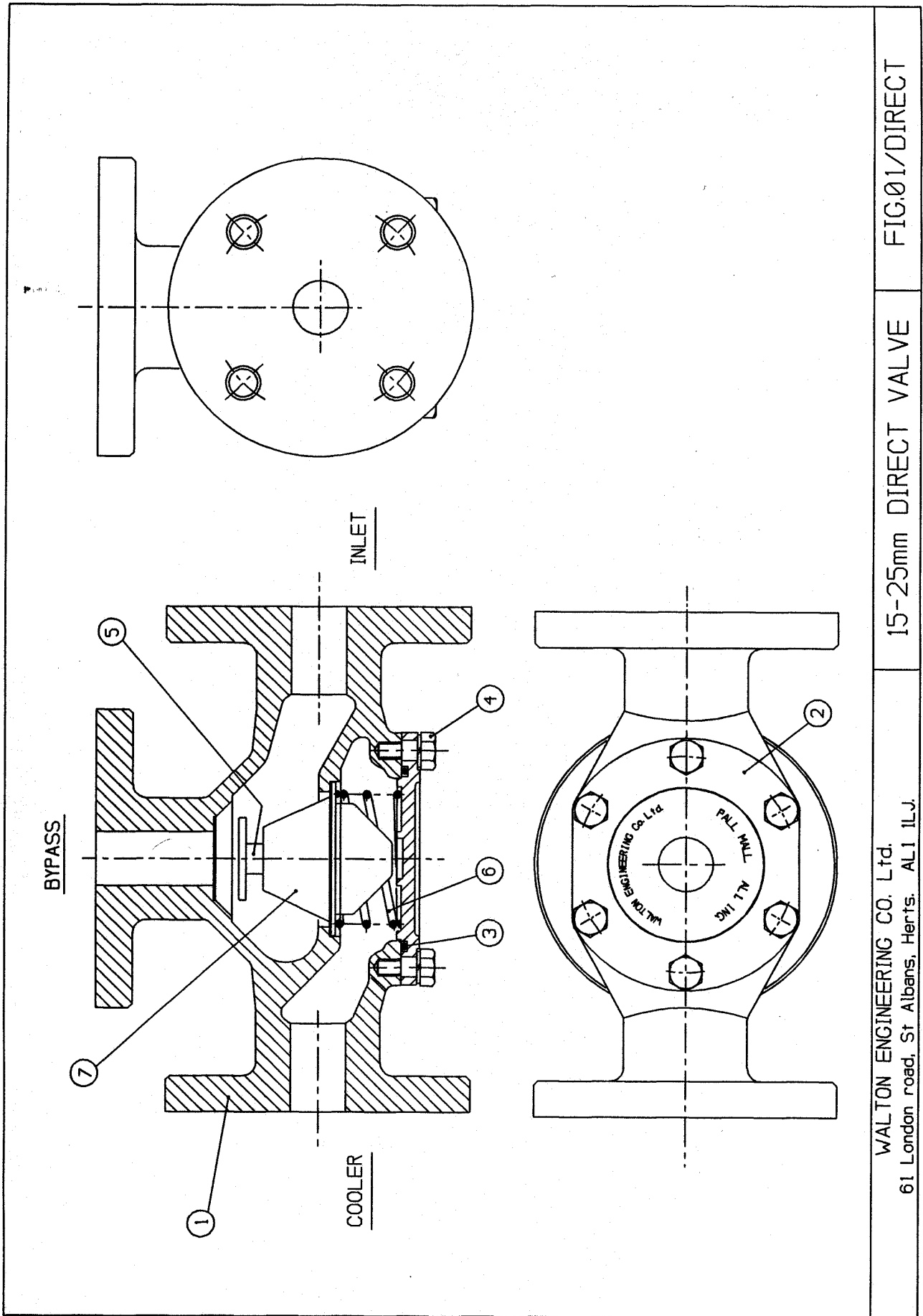


FIG.01/DIRECT

15-25mm DIRECT VALVE

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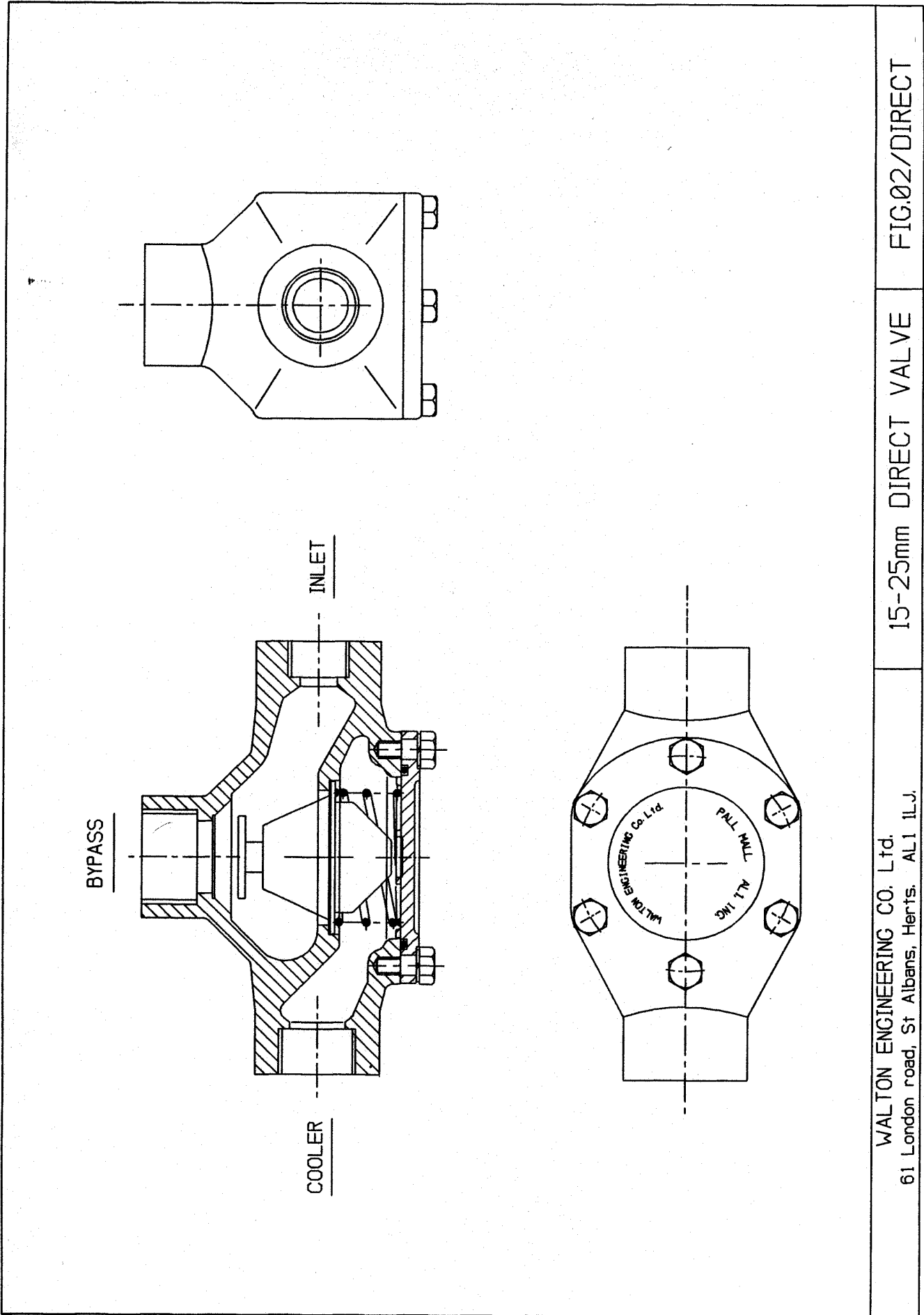


FIG.02/DIRECT

15-25mm DIRECT VALVE

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