

- COMMISSIONING**
- The Crane TCV is factory set at 57°C, and should not require adjustment. However, if necessary, the set temperature can be adjusted as follows:
  - Ensure that the isolation valve (1) is fully open
  - Remove protective cover (2) as shown
  - Turn adjusting cap (3) clockwise to the dead stop (50°C) position. Then, re-open anti-clockwise to selected desired temperature.
  - Replace protective cap (2)
  - A security tab is provided on the protective cover (4) to enable securing of cover to prevent adjustment of temperature setting.

**INSTALLATION AND OPERATING INSTRUCTIONS**

- INSTALLATION**
- These instructions are issued as a guide only and do not cover all installed conditions – if unsure please contact our Technical Helpline before installation.
  - Crane Fluid Systems products are designed for installation and use within suitably designed systems reflecting CIBSE, BSRIA and HVAC guidelines. Particular care should be taken with regards to:
    - Accessibility to valve - for setting and measuring temperature
    - Joining – ensure that joints are clean and no debris enters the valve
    - Tube cutting – ensure that burrs are removed from cut pipe
    - Bracketting / supports – should be adequate for weight of valve and pipe
    - System cleanliness – the system should be clean and free from debris which could enter valve ports and reduce flow – we recommend that strainers are fitted to protect valves and other installed equipment.
  - The TCV must be installed in the return pipework
  - The valve must be installed so that the flow through the valve follows the flow direction arrow on the valve body
  - Valves should be installed in pipework of the same nominal diameter
  - Valves can be installed in any orientation
  - End connections are internal taper threaded to BSEN 10226-2

- LIMITS OF USE**
- On no account must these valves be used on any Group 1 liquids, Group 1 gases or Group 2 gases.
  - The fluid to be transported is limited to Group 2 liquids i.e. non-hazardous.
  - In accordance with the Pressure Equipment Directive – PED.
  - These installation, operating and maintenance instructions have been categorised in accordance with the Pressure Equipment Directive – PED.

**INSTALLATION AND OPERATING INSTRUCTIONS**



**THERMAL CIRCULATION VALVE (TCV)**

D2880 STANDARD FLOW – DN15 AND DN20  
D2890 LOW FLOW – DN15

**THE CRANE TCV**

- Is a self-acting temperature control valve designed to ensure that Domestic Hot Water Service (DHWS) systems always have a flow of water.
- Ensures that water in the system is maintained at a high temperature, so that legionella is unable to survive.
- Provides thermal balance across the system.
- Has temperature verification port as standard.
- Has integral isolating valve as standard.



**TECHNICAL**

- Adjustable control range: 50°C to 65°C
- Max recommended control range: 54°C to 60°C
- Factory pre-setting: 57°C
- Temperature for thermal disinfection: 70°C
- Max temperature: 90°C
- Control accuracy: +/- 2°C
- Pressure rating: PN16
- End connections are internal taper threaded to BSEN 10226-2



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FM311 ISO 9001

- Designed and manufactured under quality management systems in accordance with BS EN ISO 9001-2008

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CFS\_TCV\_0413  
10ML0ED16468N\_LV1

**ISOLATION**

To assist with maintenance of system, an integral isolation valve is provided on every TCV.

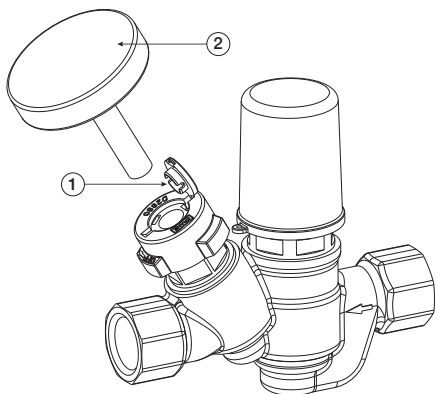
- During normal operation, the isolation valve must be fully open.
- To isolate, turn the handwheel clockwise until a firm stop is achieved.
- Re-open the valve by turning the handwheel anti-clockwise until a firm stop is achieved.

**TEMPERATURE VERIFICATION**

It is recommended that a log book is maintained on site with a record of temperatures for each valve listed, and that regular temperature checks are made and recorded.

To check temperature:

- Lift cap (1) in cover of isolation valve to gain access to thermometer recess
- Insert thermometer (2)
- Allow temperature to settle and then record temperature
- Remove thermometer (2) and re-fit cap (1)



**CAUTION**

The temperature probe will be hot and care should be taken to avoid burning / scalding.

**PERFORMANCE CHART**

The performance chart below indicates the shift in thermal reaction when the temperature set point of 57°C is altered.



**RANGE**

- D2880 Standard Flow - DN15 (Part No: 0EA08464V)
- D2880 Standard Flow - DN20 (Part No: 0EA08465W)
- D2890 Low Flow - DN15 (Part No: 0EA08463U)

**ACCESSORIES & SPARE PARTS**

- Thermometer for all sizes - (Part No: 0EA08466X)
- Protective Cap for all sizes - (Part No: 0EA08467Y)

**FLOW CHARTS**

The charts below show performance characteristics of each valve size at various temperatures.

- At initial installation and start up, and with system temperature below the valve set point of 57°C, the valves are fully open allowing a higher flow rate through the valves.
- As the system temperature increases, the valve will partially close until it reaches the set point of 57°C. At this temperature the valve will remain static, and slightly open to allow a continuous flow of fluid. This is critical to avoid dead-legs in system.
- Thermal disinfection is identified as a means of controlling Legionella in the HSE L8 Approved Code Of Practise (ACOP). Thermal disinfection is best achieved at higher temperatures and fully effective at 70°C. Our valves have been designed such that the flow through the valves increases during the disinfection.
- Graphs show the relationship between flow rate (l/s) and differential pressure (kPa) for the 3 operating positions of the TCV. As the TCV responds to a change in water temperature the flow coefficient (Kv) changes. The differential pressure created by an individual flow rate can be read off the graph using the relevant temperature line.

