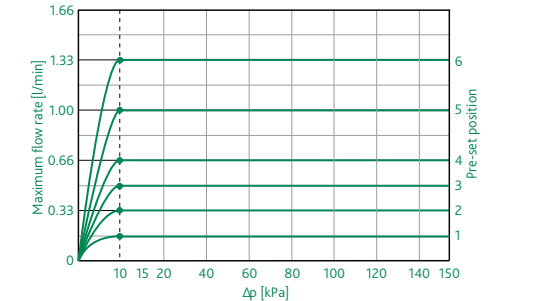


### Pre-setting the flow rates - low flow valve

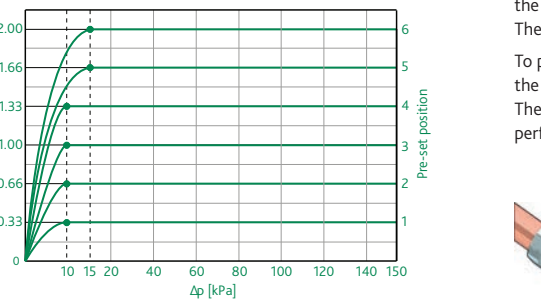
Corresponding to each pre-setting value (1-2-3-4-5-6) there is a hydraulic flow characteristic for the valve without a controller



Set position	1	2	3	4	5	6
Max flow rate - l/m	0.16	0.33	0.5	0.66	1.00	1.33
Flow rate at 2K - l/m	0.16	0.33	0.50	0.66	0.92	1.16

### Pre-setting the flow rates

Corresponding to each pre-setting value (1-2-3-4-5-6) there is a hydraulic flow characteristic for the valve without a controller



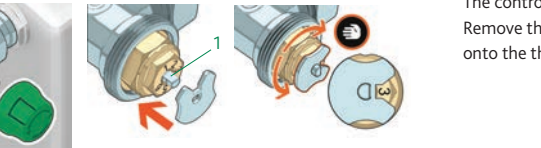
Set position	1	2	3	4	5	6
Max flow rate - l/m	0.33	0.66	1	1.33	1.66	2*
Flow rate at 2K - l/m	0.33	0.66	0.92	1.17	1.33	1.5

10 kPa < Δp < 150 kPa: \*15 kPa < Δp < 150 kPa

### Pre-setting the flow rate

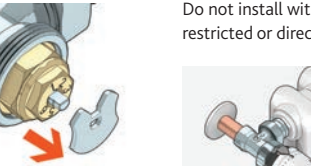
Remove the isolation cap of the valve.  
The reference of the setting position is defined by the orientation of the flat side surface (1) of the control stem.  
The valve is supplied with the factory setting in position 6.

To pre-set the flow rate, position the shaped locking nut (supplied in the pack) and turn the control stem to select the desired position.  
The selected pre-setting number (for example 3) must appear perfectly in the centre of the window..



### Pre-setting the flow rate

Remove the adjustment nut and install the isolation cap.  
If the isolation cap is fully tightened, the valve is closed.



### Fitting the thermostatic controller

Before fitting the thermostatic controller turn the knob to position 5.  
The control head must be installed in horizontal position.

Remove the isolation cap and screw the knurled ring of the controller onto the thread of the body, do not over tighten.



### Do not install

Do not install with the controller vertical, were the air flow is restricted or direct sunlight which may give a false reading.



### Potential problems

There are two possible problems which may arise if the valve fitted with the thermostatic controller is fitted incorrectly.

### Flow in opposite direction

The presence of vibrations, similar to hammering, are due to the fact that the fluid is passing through the valve in the opposite direction to that indicated by the arrow on the body.  
To overcome this problem it is sufficient to re-install the valve with the correct flow direction.

### Excessive differential pressure

The presence of a sound or hissing during the modulation phase is due to the valve being subjected to an excessive differential pressure.  
To overcome this problem it is sufficient to keep the pressure of the system under control, installing devices such as variable-speed pumps combined with differential pressure regulators, or by using differential by-pass valves.

### Lockshield valve

The lockshield valve must be installed on the return from the radiator and usually in the bottom connection.

The valve when used with DYNAMICAL® thermostatic radiator is used fully open or closed to isolate the radiator.

To operate the valve pull the cover from the body and using a suitably sized Allen key rotate the disk clockwise to close and isolate or anticlockwise to open the valve.

When completed click the cover back into position on the body.

### Cleaning the Valve

The thermostatic valve body, thermostatic controller and lockshield body and cover should be cleaned using a mild soap solution.

**Do not use abrasive pads, bleach or solvents etc. as they will cause damage to the surfaces.**

**Please ensure these instructions and the isolation cap is left with the valve for the user.**

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Installation & Operating Instructions

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**105 DYNAMICAL®**  
twin pack inc. low flow



The DYNAMICAL® valve allows the automatic dynamic balancing of the flow of thermal medium into the radiator of two-pipe heating systems.

The device, in conjunction with a thermostatic or electronic control, combines dynamic balancing and flow rate control in a single component.

The lockshield valve on the flow return from the radiator provides isolation and additional regulation if required.

Technical drawing of a 3-way valve assembly. The drawing includes a side view of the valve with a handle, a top view of the valve body, and a detail of the handle mechanism.

Medium:	water, glycol solution
Max. percentage of glycol:	30%
Max $\Delta p$ with control fitted:	1.5 bar
Maximum working pressure:	10 bar
Operating range $\Delta p$ :	low flow
	10-150 kPa (pos. 1-6)
	10-150 kPa (pos. 1-4)
	15-150 kPa (pos. 5-6)
Working temperature range:	5 – 95°C
Factory setting:	6
$\Delta p$ :	differential pressure

In the case of long periods of absence specially during winter, the thermostatic control head to the frost protection position corresponding to a room temperature of not less than 7°C. During summer however it is advisable to set the thermostat to the No 5 setting, which means the valve is fully open.

Thoroughly flush the system to remove debris from the system which may prevent the valves from operating and isolating correctly. Assembly and dis-assembly of the valve should always be carried out while the system is cold and not under pressure. Install according to the flow direction indicated by the arrow on each valve body.



The thermostatic radiator valve must be installed on the flow to the radiator preferably at the top of the radiator with the thermostatic controller horizontal with the lockshield valve installed on the return from the radiator at the bottom of the radiator.

