Specification clause

Pegler Proflow 1600 Pressure Independent Control Valve (PICV)

1.0 product overview and features

The Proflow 1600 Pressure Independent Control Valve (PICV) series is designed for the automatic balancing of sections of pipe work and equipment in HVAC applications.

By incorporating a combined pressure independent flow limiter and control valve the valve operates independently of changes in system pressure, in water-based HVAC systems.

key features

Manufactured from DZR brass with built in, full bore bypass and line isolation function.
Clear setting indication, with or without an actuator fitted. PN16 rating.

specification clause

The Pressure Independent Control Valve (PICV) for line-sizes DN15 to DN25, shall be a DZR brass, PN16 rated, “Dynamic” valve.
The PICV shall offer close flow-control with a hysteresis of 5.0% to 7.7% and shall incorporate an M30 x 2.5mm actuator mount with 100% BMS valve override authority.
The PICV shall incorporate a built-in “fast-flush” full-bore integrated flushing bypass and an integral inline isolation valve that are separate from the dynamic PICV cartridge.
The bypass & dynamic functions shall be individually selectable and independently lockable via a rotating quarter turn action. The selected function shall be visible on the rotation sleeve.
The PICV set point shall be permanently visible with the actuator mounted.
The PICV shall be available with numerous connection options for heat-free pipework installation.

1.1 tube compatibility

valve type	end connection specification
Screwed female parallel	female parallel thread end-ISO228:2003 (formerly BS2779/ISO R228/1) pipe threads where pressure tight joints are not made on the threads
VSH XPress*	VSH XPress end suitable for use with copper tube to BS EN1057 (R250 temper, R290 temper), carbon steel in accordance with (EN10335-2) DIN2394/NEN1982 and stainless steel 316 system tube
VSH XPress union*	VSH XPress end suitable for use with copper tube to BS EN1057 (R250 temper, R290 temper), carbon steel in accordance with (EN10335-2) DIN2394/NEN1982 and stainless steel 316 system tube

*Connection ends only supplied, and fitting mounted by Pegler on to these valves

1.2 technical performance specification

size range

thread ends – ½" to 1" female (ISO R228/1) G
VSH XPress ends - 15mm to 28mm (M-profile)

materials

Valve housing	DR brass (CW-511L)
Cartridge	Polyphenylene Sulphide (PPS)
Shuttle	Polyphthalamide (PPA)
Sleeve	Polyphthalamide (PPA)
Cap	DR Brass (CW511L)
Clamp	DR Brass (CW511L)
Seals	EPDM
Measuring P/T plug	Brass
Screws	Steel (AISI 304)
Pins	Steel (alloy steel)
Indicator	Stainless Steel (AISI 304)
Locking peg	Polyoxymethylene (POM)

pressure ratings

Valves must be installed in a piping system where the normal pressure and temperature does not exceed the stated rating of the valve. The maximum allowable pressure in valves as specified in the standards is for non-shock conditions. Water hammer and impact should also be avoided.

If system testing will subject the valve to pressures in excess of the working pressure, this should be within the "shell test pressure for the body" to a maximum of 1.5 times the PN rating of the valve and conducted with the valve fully opened.

It may be hazardous to use these valves outside of their specified pressure and temperature limitations and for applications for which they have not been designed.

Type	Temperature range	Pressure at min working temperature	Pressure at max working temperature
threaded	-10°C to 90°C	16	16
VSH XPress	-10°C to 90°C	16	16

NB. Where valves have been factory adapted with end connectors for VSH XPress installations their performance is limited to lowest pressure/temperature rating of either the valve or the connector.

operating pressure range

Pressure range (kPa)	DN15			DN20		DN25
	LF	SF	HF	SF	HF	SF
30- 400	± 8%	± 8%	± 7%	± 3%	± 5%	± 5%

isolation function

Maximum static pressure 10 bar.

This feature is designed for temporary isolation and maintenance purposes only. It is recommended that a maximum differential pressure of 6 bar is not exceeded between the inlet and outlet of the valve when transitioning between functions.

PED category

Sound Engineering Practice (SEP)

valve flow range

Valve size	l/h	l/s
DN15 (low flow)	65 - 129	0.018 - 0.036
DN15 (standard flow)	101 - 525	0.028 - 0.146
DN15 (high flow)	280 - 1,029	0.078 - 0.286
DN20 (standard flow)	338 - 828	0.094 - 0.231
DN20 (high flow)	788 - 1,620	0.220 - 0.450

2.0 installation

All pipe connections made to the product must be carried out in accordance with the guide offered for the connection type utilised.

Details on the jointing methods for threaded, VSH Xpress, VSH Tectite and VSH PowerPress can be found on the Pegler website.

Threaded https://www.pegler.co.uk/MEDIA/DownloadAttributes/CC_008/97561337_Pegler_Valve_threaded_connections_installation_instructions.pdf

XPress https://www.pegler.co.uk/MEDIA/Downloads/CC_012/51609533_VSH_XPress_installation_instructions.pdf

2.1 operation

bypass

The valve is supplied in the bypass position to ensure that a system flush can be undertaken, following installation in accordance with BSRIA guidelines. Due to the unique built in bypass feature the system can be flushed and back flushed without any risk to the product.

It is important to ensure that the valve is not moved from the bypass position before the system flush has been completed.

isolation

Due to the built-in isolation feature, there is no requirement for an isolation valve to be installed with this product to provide means of service/maintenance.

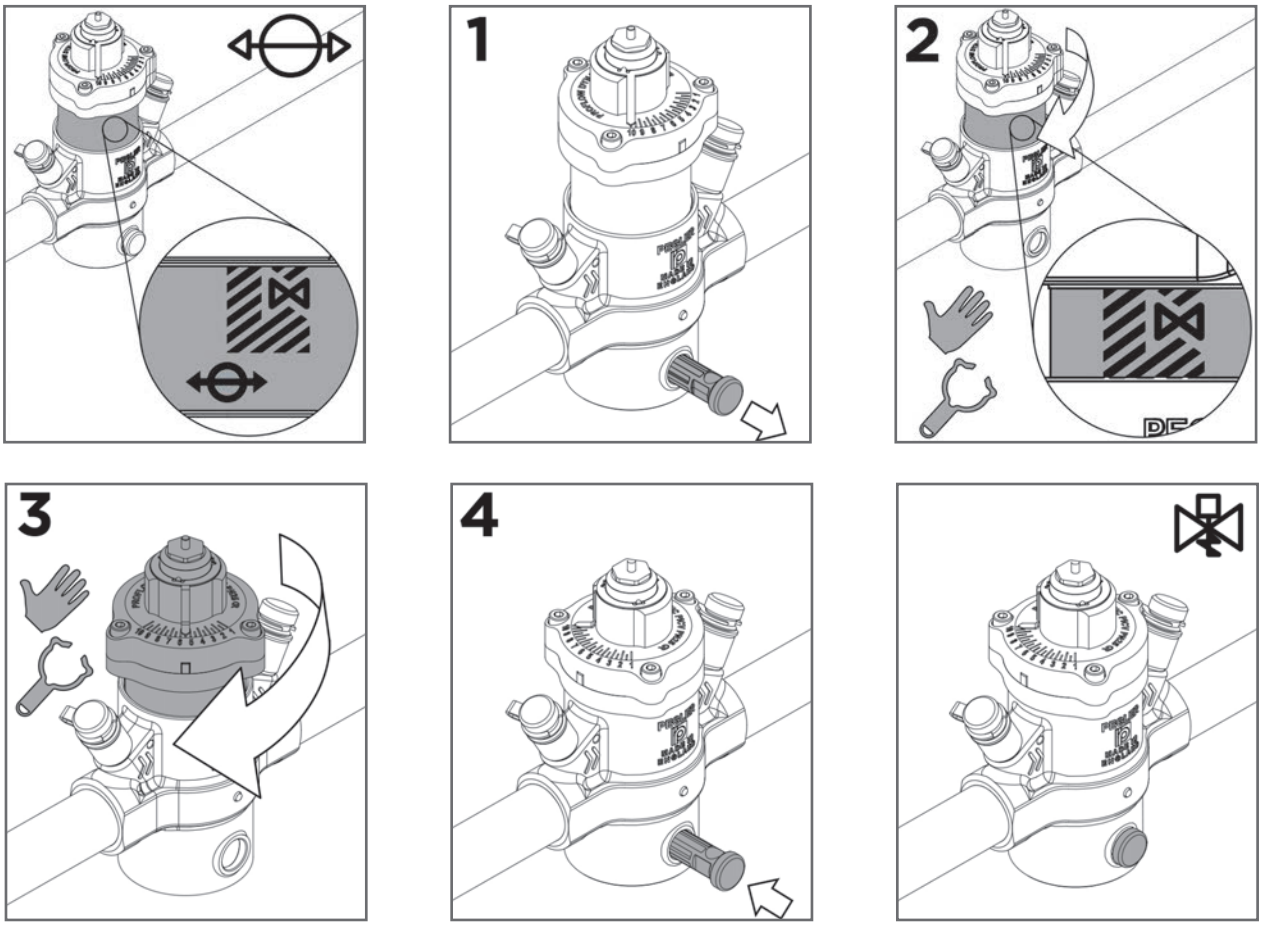
dynamic

As the valve is supplied in the bypass mode to support full bore flushing/backflushing it is important to ensure that the dynamic mode of the product is engaged prior to commencing commissioning.

This can be done by removing the pin and rotating the head through the isolation setting into the dynamic position.

In order to transition the valve between each of the three mode the locking pin can be removed, and the valve centre rotated clockwise until the isolation point is reached, as indicated by the symbol on the valve. Further clockwise rotation will then engage the dynamic function of the valve.

Ensure that valve is fully rotated, to it's stop, in either bypass or dynamic mode prior to attempting to insert the locking pin.

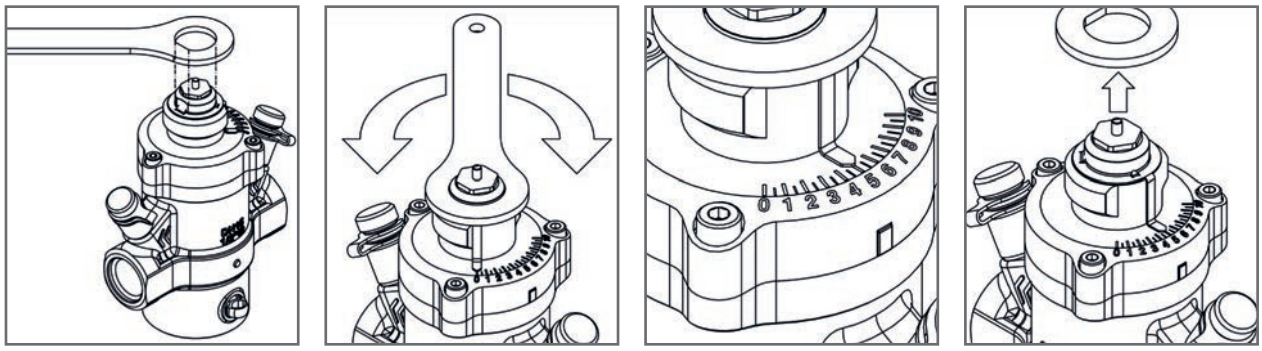


setting

Before setting the maximum flow rates on the valves ensure that the pump is set to its maximum capacity and all valves in the system are fully opened.

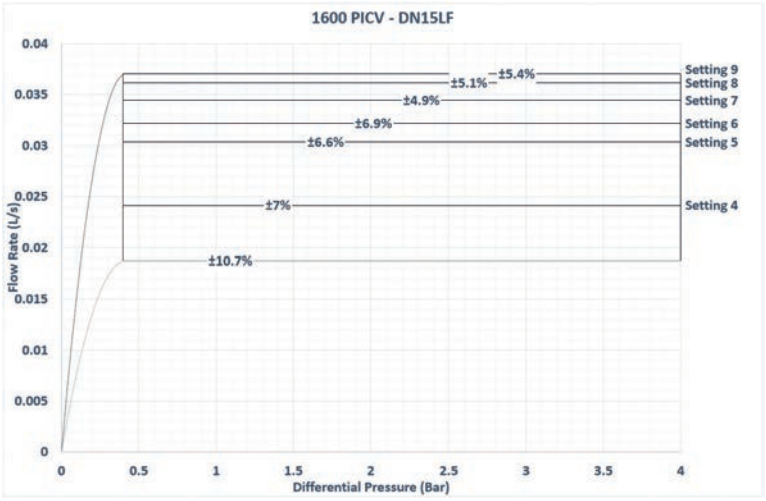
Make sure that the differential pressure across each valve does not exceed the range specified in the product data.

The valve is easily adjusted by rotating the spindle head to achieve the desired setting. The indicator on valve is read against the marking on the brass housing on the valve. Each marking on the scale indicates 10%.

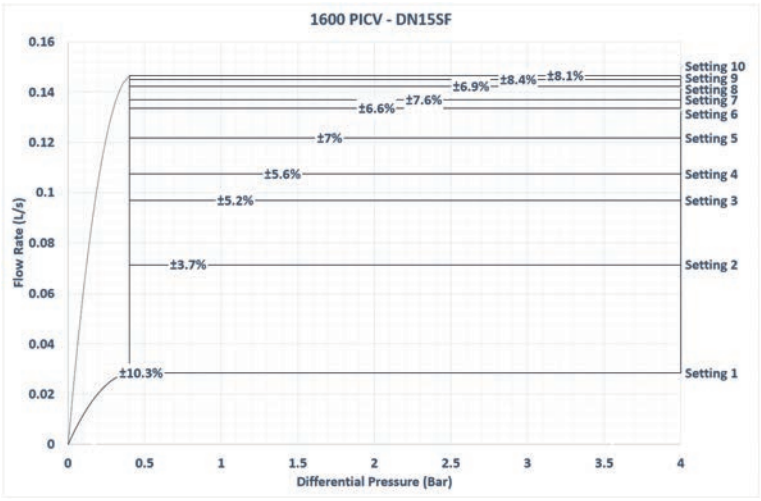


The Proflow dynamic 1600 series valves can also be pre-set by referencing the design flow rate against a flow diagram.

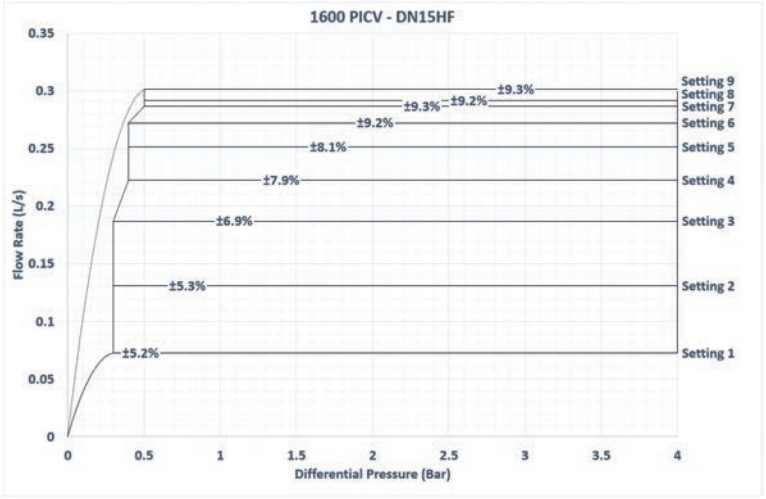
1600 PICV - DN15 (LF)



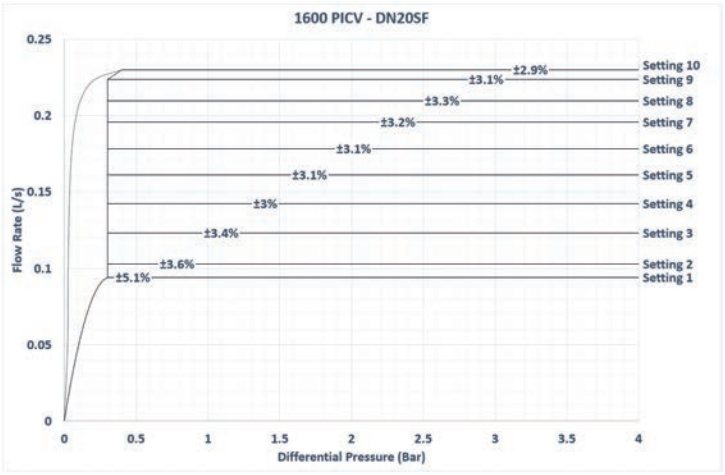
1600 PICV - DN15 (SF)



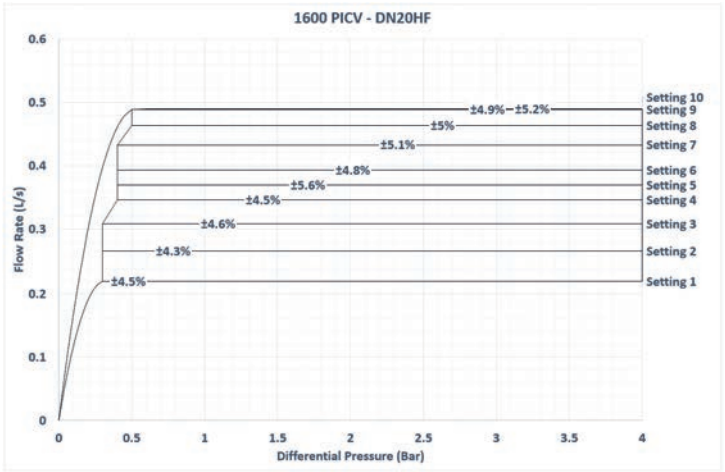
1600 PICV - DN15 (HF)



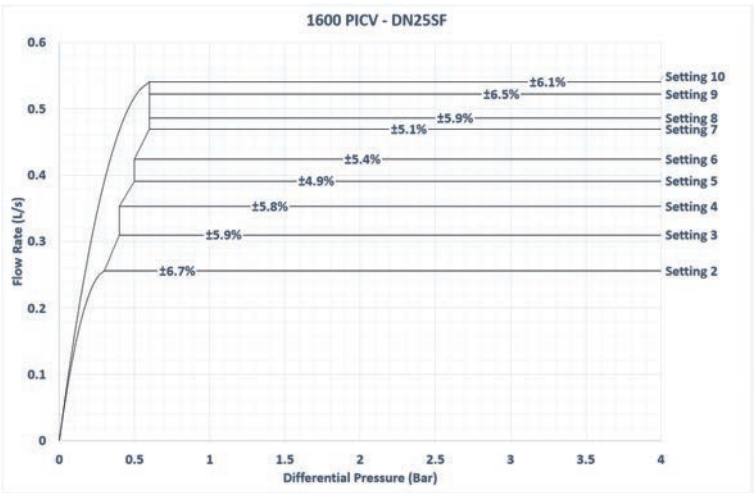
1600 PICV - DN20 (SF)



1600 PICV - DN20 (HF)



1600 PICV - DN25 (SF)



Confirmation of the flow rate can also be gained by connecting an electronic commissioning meter or flow meter via the built-in test points.

2.2

electrical continuity

All metallic pipework should comply with the equipotential bonding requirements of the current edition of the IEE wiring regulations (BS7671:2001). After all plumbing work has been completed continuity checks are to be conducted by a qualified electrician in accordance with the regulations.

2.3 heat free

The Proflow dynamic 1600 Series offers heat free jointing across its whole range with threaded, and VSH XPress connection technology. These valve connections must not be brazed.

2.4 insulation

For all Proflow dynamic 1600 Series valves, it is recommended that you adhere to the insulation requirements as specified by the Water Supply (Water Fittings Regulations 1999), ensuring at all times that access for valve operation is taken into consideration.

2.5 valve selection

Valves must be properly selected for their intended services conditions. Provided it is installed correctly and receives adequate preventative maintenance it should give years of trouble-free service.

They must be compatible with the system design, pressure and temperature requirements and must be suitable for the fluids that they are intended to carry. Interactions between metals in the pipe system must be considered as part of the valve selection.

2.6 location / end of line service

To ensure ease of operation, adjustment, maintenance and repair, valve siting should be decided during the system design phase.
1600 Proflow dynamic valves are not suitable for end-of-line service.
Ensure that good quality, close fitting tools are used.
Avoid tightening to such an extent that the female end becomes permanently deformed.
Valves must not be over tightened.
Use suitable hangers close to both ends of the valve in order to remove stresses transmitted by the pipe.

For adapted variants of the Proflow dynamic 1600 Series please refer to the appropriate data pages of the catalogues.

3.0 testing

1/2" to 1" - each product shall be pneumatically tested at 6 bar (90psig) for 5 sec. There shall be no signs of visible leakage from the body / cap joint, surfaces or seals.

After testing the valves shall be left fully 'open'.

type testing

These tests shall be carried out at Pegler Limited on a sample basis in accordance with BS6001.

	1/2" to 1"
a) Hydrostatic body test	24 bar
b) Hydraulic seat test	17.6 bar
c) Pneumatic body test	6 bar
d) Pneumatic seat test	6 bar

3.1 certification

Not applicable

3.2 additives

For information on additives compatible with VSH XPress, VSH Tectite and VSH PowerPress systems visit www.pegler.co.uk/en/brochures/bulletins. It is strongly recommended to consult a commissioning engineer in conjunction with the manufacturer prior to their use.

4.0 storage

Valves should be stored off the ground in a clean, dry, indoor area. Where desiccant bags are included these should be changed after a period of six months.

Pegler valves are supplied in appropriate packaging to give adequate protection from damage.

When Pegler valves are fitted to pressure equipment or assemblies, suitable protective devices may be required.

Pegler valves with adapted ends for Press fitting are packed in plastic bags to protect the connection ends. The valves should not be removed until the time of assembly in order to protect the connections and avoid contamination of the "O" ring and lubricants.

5.0 warranty

Products are subject to a 2 year guarantee that is between Pegler and the final purchaser of the product. The guarantee is subject to proof of purchase being supplied. This guarantee does not affect any statutory rights the consumer may have in law. The guarantee covers manufacturing or material defects and does not cover parts subject to normal wear and tear. This product range has been designed for the use in commercial applications and therefore the guarantee is subject to the product being properly selected for their intended service conditions. The guarantee is not applicable where the product is fitted contrary to the conditions in the fitting instructions. This is reinforced where valves are covered by the European Pressure Equipment Directive (PED97/23/EC) where Installation, Operating and Maintenance Instructions are supplied with each product and/or carton.

Provided it is installed correctly and receives adequate preventative maintenance it should give years of trouble-free service.

Abusive behaviour and accidental damage to the product are not covered by this guarantee.

The extent of this liability is limited to the cost of the replacement of the defective item and not to fitting or consequential damages.

terms and conditions

Full terms and conditions can be found on the Pegler website at www.pegler.co.uk

6.0 contact details

technical department

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