



In-line thermostatic mixing valves



Pegler Yorkshire

*Unrivalled quality, innovation,
customer service and long-term
value for money*

As part of the global Aalberts Industries NV Group, Pegler Yorkshire is one of Britain's largest and most respected manufacturers of innovative market-leading products for today's ever more demanding and diverse plumbing and heating industries.

Behind every one of the company's very extensive portfolio of famous brand names are two unparalleled key benefits: more than two hundred years of priceless expertise and experience combined with continuous investment in research, development, new technology, advanced production facilities and, of course, in people dedicated to the task.

Hence Pegler Yorkshire's ability to not only sustain but to build upon a reputation the world over for exceptional quality, performance, reliability and whole-life value for money.

Increasingly, Pegler Yorkshire's substantial resources are also focused on developing solutions which, where possible, address crucial environmental issues such as saving water and reducing energy consumption at every opportunity.

So when you purchase or specify any of our tried and trusted products, you are acquiring far more than a means of simply doing a job. You are guaranteeing a job very well done every time.

And all backed by impeccable customer service, training and technical support, with comprehensive warranties and long term parts availability.

Standards

At Pegler Yorkshire we are dedicated to designing, developing and manufacturing products of the highest quality. We are members of numerous standards committees and take an active part in their development. Our products, where applicable, comply with the relevant British, European and International standards. Whatever the latest developments, we guarantee that our products will always meet the latest and highest standards.



Trade bodies

Pegler Yorkshire is pleased to be associated with several influential organisations within the industry.



Choosing the best possible solution for the job is critical where the issue concerned is as important as helping to prevent scalding.

Offering full compliance with all Regulations and Best Practice, the comprehensive Prestex range of in-line Thermostatic Mixing Valves (TMVs) combines high quality manufacture and top-of-the range performance with remarkable ease of installation and servicing. Prestex in-line TMVs are the ideal choice for eliminating the risk of scalding in healthcare, public and educational buildings, commercial and domestic projects. They are WRAS approved as suitable for sinks, wash basins, baths, bidets, single point showers, hair wash sprays and domestic hot water systems.

Independently tested and approved to BuildCert TMV2 and TMV3 schemes gives added security when specifying.



All of our TMVs are supplied with the following features as standard:

- *Simplicity of installation and servicing*
- *Sensibly priced to offer best value*
- *BuildCert TMV2 and TMV3 scheme third party approvals*
- *TMV3 models fully compliant with NHS Model Engineering Specification D08*
- *Choice of standard, easy to service union connections or 90° angle valve combination*
- *Factory pre-set but easy to adjust to suit site conditions*
- *Complete with internal strainers and non-return valves*
- *Laser-etched bar code on body (below) provides unique record of product traceability*



- *Inlets and outlets protected by plastic caps (above) to prevent contamination of the element and the valve lubricant*



- *Screw-fixed, tamper-proof cap (above) to prevent unauthorised adjustment of the valve temperature setting*
- *Each carton is security sealed to avoid stock contamination and provide better audit control*
- *Chrome finish for easy cleaning.*

P402, P402UA

In-line thermostatic mixing valves

Prestex in-line mixing valves are designed to eliminate the risk of scalding and are suitable for use in a wide range of public, health care, social, commercial and domestic applications.



Features

- Suitable for sinks, wash basins, bath, bidets, single point showers, hair wash sprays and domestic hot water systems
- Simple to install and service
- Temperature pre-set to 43°C, but easily adjustable on site
- WRAS approved for a wide variety of uses
- Complies with NHS Model Engineering Specification D08
- Choice of standard, easy to service union connections or 90° angle valve combination
- 15mm and 22mm sizes.



P404, P404UA

In-line thermostatic mixing valves

Prestex in-line mixing valves are designed to eliminate the risk of scalding and are suitable for use in a wide range of public, health care, social, commercial and domestic applications.



Features

- Suitable for sinks, wash basins, bath, bidets, single point showers, hair wash sprays and domestic hot water systems
- Simple to install and service
- Temperature pre-set to 43°C, but easily adjustable on site
- WRAS approved for a wide variety of uses
- Choice of standard, easy to service union connections or 90° angle valve combination
- 15mm and 22mm sizes.



It's Pegler Yorkshire's policy to provide a range of products and services which meet, or exceed, the requirements of our customers in respect of quality, cost and delivery.

Approvals



These products have been certified by WRAS and are audited periodically.

TMVA



Thermostatic Mixing Valve
Manufacturers Association

TMVA is a representative trade body for UK companies within European standards activities. It plays a key part in promoting the safety of hot water systems. As part of the TMVA membership we offer a comprehensive range of thermo-static products approved under the BuildCert scheme.



- **BuildCert Scheme**
- Independent third party testing and approval scheme.



- **BuildCert TMV2 Scheme** – certifies Type 2 Thermostatic Mixing Valves for the domestic market. For use in hot water systems in domestic premises
- Complies with EN 1111 : 1999 and EN 1287 : 1999.



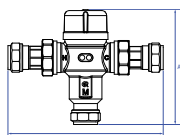
- **BuildCert TMV3 Scheme** – certifies Type 3 Thermostatic Mixing Valves manufactured to meet the highest specification required by the NHS Estates D08 standard for Mixing Valves within healthcare premises in the United Kingdom
- Complies with BS7942.



In-line thermostatic mixing valves

In line mixing valves are designed to eliminate the risk of scalding and are suitable for use in a wide range of applications.

P402/P402UA

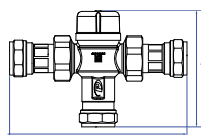


P402 In-line thermostatic mixing valve 15mm*

All ends compression. Copper x copper

Size	Finish	A	B	Order code
15mm	Chrome plate	102	137	5A1101

Flow chart: Fig. 2, page 11

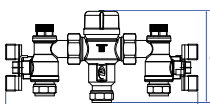


P402 In-line thermostatic mixing valve 22mm*

All ends compression. Copper x copper

Size	Finish	A	B	Order code
22mm	Chrome plate	103	156	5A1102

Flow chart: Fig. 2, page 11

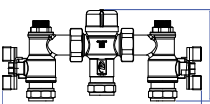


P402UA In-line thermostatic mixing valve 15mm*

All ends compression. Copper x copper. With angle valves

Size	Finish	A	B	Order code
15mm	Chrome plate	102	212	5A1103

Flow chart: Fig. 2, page 11



P402UA In-line thermostatic mixing valve 22mm*

All ends compression. Copper x copper. With angle valves

Size	Finish	A	B	Order code
22mm	Chrome plate	103	240	5A1104

Flow chart: Fig. 2, page 11

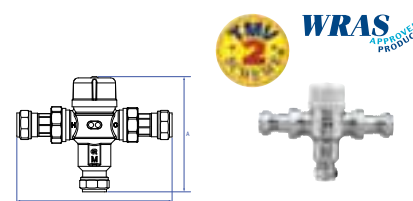
P404/P404UA

P404 In-line thermostatic mixing valve 15mm*

All ends compression. Copper x copper

Size	Finish	A	B	Order code
15mm	Chrome plate	102	137	5A1105

Flow chart: Fig. 1, page 11

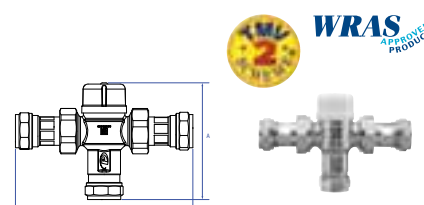


P404 In-line thermostatic mixing valve 22mm*

All ends compression. Copper x copper

Size	Finish	A	B	Order code
22mm	Chrome plate	103	156	5A1106

Flow chart: Fig. 1, page 11

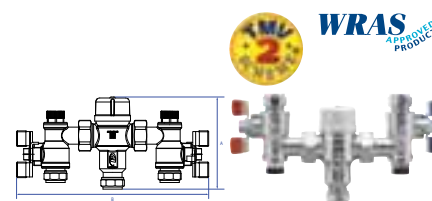


P404UA In-line thermostatic mixing valve 15mm*

All ends compression. Copper x copper. With angle valves

Size	Finish	A	B	Order code
15mm	Chrome plate	102	212	5A1107

Flow chart: Fig. 1, page 11

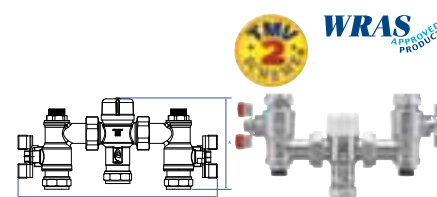


P404UA In-line thermostatic mixing valve 22mm*

All ends compression. Copper x copper. With angle valves

Size	Finish	A	B	Order code
22mm	Chrome plate	103	240	5A1108

Flow chart: Fig. 1, page 11



Prestex P402 and P402UA TMV3 range: General specification

	P402	P402UA
Materials	DZR Brass	DZR Brass
Surface finish	Chrome plated	Chrome plated
Water connections 15mm & 22mm	Compression all ends Wafer strainers Single non-return valves on inlets	Compression all ends 90° angle valves with: Single non-return valves Mesh strainer Test point plugs Isolating valves

Technical specification

P402 & P402UA	<i>General operating parameters</i>	<i>TMV3 approved parameters</i>
Minimum mixed temperature	30°C	38°C
Maximum mixed temperature	50°C	46°C
Maximum temperature deviation	+/- 2°C	+/- 2°C
Maximum hot inlet temperature	85°C	65°C
Maximum hot/cold cold/hot inlet pressure ratio	5 to 1	N/A
Maximum static pressure	12 bar	10 bar
Minimum dynamic flow pressure	0.1 bar	0.2 bar
Minimum hot inlet to mixed outlet temperature differential	10°C	10°C
Flow with 0.2 bar differential pressure loss	9.0L/M	9.0L/M
Flow 1.0 bar differential pressure loss	18L/M	18L/M

Approvals

**THE PRESTEX P402/P402UA HAS BEEN APPROVED BY WRAS
FOR THE FOLLOWING USES:**

<i>Code</i>	<i>Operating Range</i>	<i>Size</i>	<i>Application</i>	<i>Max temp</i>
HP-B	High pressure	15mm, 22mm	Bidet	38°C
HP-S	High pressure	15mm, 22mm	Shower	41°C
HP-W	High Pressure	15mm, 22mm	Washbasin	41°C
HP-T44	High pressure	22mm	Bath	44°C
HP-T46	High pressure	22mm	Bath	46°C (assisted)
LP-B	Low pressure	15mm, 22mm	Bidet	38°C
LP-S	Low pressure	15mm, 22mm	Shower	41°C
LP-W	Low pressure	15mm, 22mm	Washbasin	41°C

Installation conditions

**UNDER THE TERMS OF THE BUILD CERT TMV3 SCHEME THE VALVE
MUST BE INSTALLED UNDER THE FOLLOWING CONDITIONS:**

<i>Operating Pressure Range</i>	<i>Low Pressure</i>	<i>High Pressure</i>
Maximum static pressure (bar)	10	10
Flow pressure, hot and cold (bar)	0.2 – 1	1 – 5
Hot supply temperature (°C)	52 – 65	52 – 65
Cold supply temperature (°C)	5 – 20	5 – 20

Prestex P404 and P404UA TMV2 range: General specification

	P404	P404UA
Materials	DZR Brass	DZR Brass
Surface finish	Chrome plated	Chrome plated
Water connections 15mm & 22mm	Compression all ends Wafer strainers Single non-return valves on inlets	Compression all ends 90° angle valves with: Single non-return valves Mesh strainer Test point plugs Isolating valves

Technical specification

P404 & P404UA	BS EN 1287 : 1999	BS EN 1111 : 1999
Maximum static pressure (bar)	10.0	10.0
Supply pressure hot and cold (bar)	0.1 – 1.0	1.0 – 5.0
Hot supply (°C)	55 – 65	55 – 65
Cold supply (°C)	Maximum 25	Maximum 25
Mixed water temperature (°C)	Maximum 46	Maximum 46

Approvals

P404 & P404UA	BS EN 1287 : 1999 Low pressure 0.1 – 1 bar	BS EN 1111 : 1999 High pressure 1 – 5 bar
Bidet	✓	✓
Shower	✓	✓
Washbasin	✓	✓
Tub	✗	✓
Bath fill (ISO46 Cold Isolation Test at 46°C)	✗	✓

Installation conditions

P404 & P404UA CONDITIONS OF NORMAL USE:		
Operating pressure range	Low pressure	High pressure
Maximum static pressure (bar)	10	10
Flow pressure, hot and cold (bar)	0.1 to 1	1 to 5
Hot supply temperature (°C)	55 to 65	55 to 65
Cold supply temperature (°C)	≤ 25	≤ 25

The temperature differential for MIXING VALVE must be 10°C

These products are certified under the BuildCert TMV3 and TMV2 schemes and have been independently tested by an approved testing laboratory WRc-NSF and is a Water Regulations Advisory Scheme (WRAS) approved product and listed in the Water Fittings and Materials Directory.



Pressures

Pressure at the valve inlets must be within the 5:1 ratio under flow conditions. The size and layout of pipework and in-line fittings must take this into consideration. Optimum performance is achieved with equal pressure.

- Minimum Working Pressure 0,1 bar
- Maximum Working Pressure 5 bar
- Maximum Static Pressure 10 bar
- Minimum Flow Rate 5 L/min

See Table 1 for conditions of normal use.

Water regulations

MIXING VALVES must be installed in accordance with local Water Authority Water Regulations (Water Supply (Water Fittings) Regulations 1999). Your attention is therefore drawn to any installation requirements which may be applicable.

This product is fitted with a WRAS approved listed single check valve cartridge for both the hot and cold supplies to the valve. If supplying a submerged outlet additional protection will be required.

Isolating valves

Isolation valves must be installed on the hot and cold connectors.

Strainers

Strainers must be installed on the hot and cold inlet connections as provided.

Adjustment and commissioning

The thermostatic controller is supplied factory pre-set at 43°C. However, installation conditions will dictate that the product be adjusted on site. To adjust the temperature supply remove the plastic cap on top of the valve and adjust with a close fitting spanner.

- To increase the temperature turn anti-clockwise
- To decrease the temperature turn clockwise
- To set the valve to a maximum recommended mixed water temperature, see table below.

APPLICATION	MIXED WATER TEMPERATURE °C
Shower	41°C
Washbasin	41°C
Bidet	38°C
Bath	44°C

The temperatures and pressures must be stabilised and checked before commissioning (allow mixed water to flow for 1 minute prior final setting). All parameters must be in accordance with TABLE 1 above.

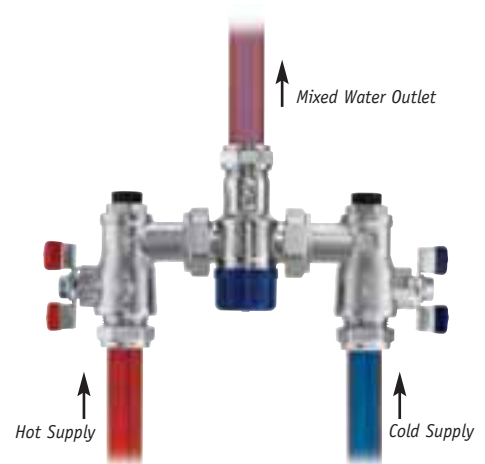
Note: After adjustment replace the cap to prevent tampering. This valve must not be used to mix water above a temperature of 46°C. **Hot water can burn and it is strongly recommended that both comfort and safety levels are considered when selecting a set temperature.**

Installation

Prestex in-line thermostatic mixing valves are fitted with internal strainers but where debris is a particular problem we recommend the fitting of serviceable external strainers. They can be fitted in any orientation provided the hot and cold supplies are connected as marked on the valve body (C = cold supply – blue, H = hot supply – red).

The Prestex TMV range is supplied with compression connections for copper tube.

Thermostatic mixing valves are temperature sensitive devices and must not be subjected to extreme temperatures, either hot or cold, in use or installation.



Note: We would recommend the fitting of full bore servicing valves on the inlet supplies to aid any future isolation requirements. To ensure proper performance of the mixing valves, they should always be fully open during operation. Isolation valves should be installed as close as practicable to the mixing valve inlets. The UA versions are supplied complete with both strainers and full bore isolating valves.

In-service testing

The purpose of in-service tests is to regularly monitor and record the performance of the thermostatic mixing valve. Deterioration in performance can indicate the need for service work on the valve and/or the water supplies.

The normal service frequency is one year for TMV2 valves but site conditions may mean that the service checks should be undertaken more frequently. It is recommended that the service procedure in the NHS Document D08 is followed for all TMV3 approved valves.

Maximum continuous temperatures during testing should not exceed the following values:

- Bidet 40°C
- Shower 43°C
- Washbasin 43°C
- Bath 44°C
- Bath 46°C (for assisted bathing)

If it is found to be impossible to obtain the correct setting point a service is required. Prestex in-line thermostatic mixing valves should not normally require part replacement. However a full range of spares is available on request and is detailed in the fitting instructions included with each product.

Maintenance

Since the installed supply conditions are likely to be different from those applied in the laboratory tests, it is appropriate, at commissioning, to carry out some simple checks and tests on each mixing valve to provide a performance reference point for future in-service tests. For further information on service tests and maintenance refer to the installation instructions.

Fig. 1: TMV2 In-line mixing valves

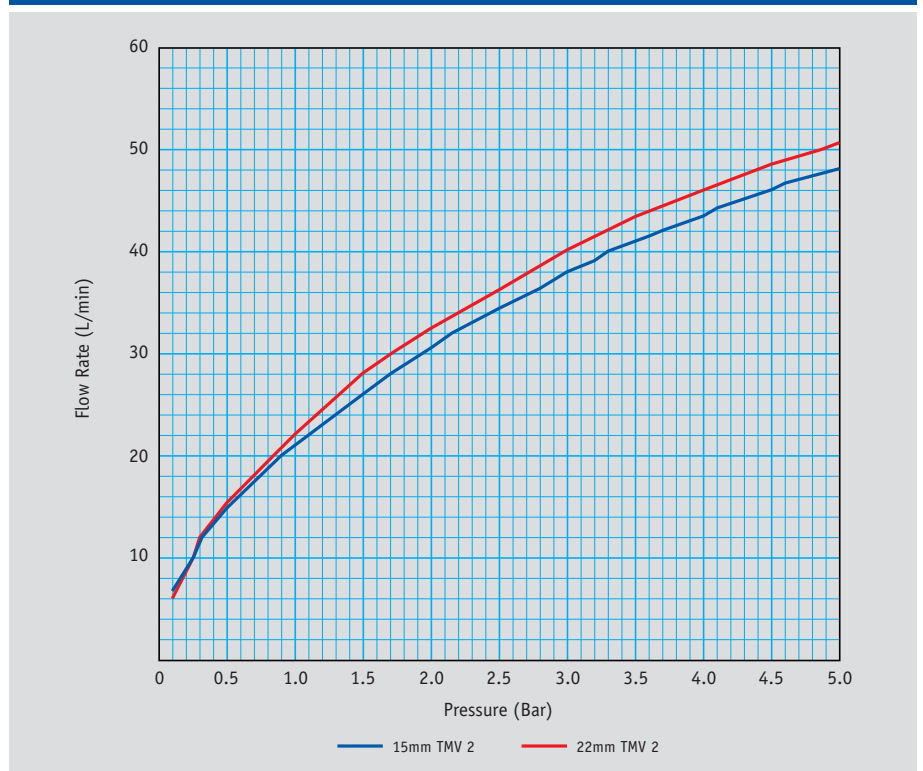
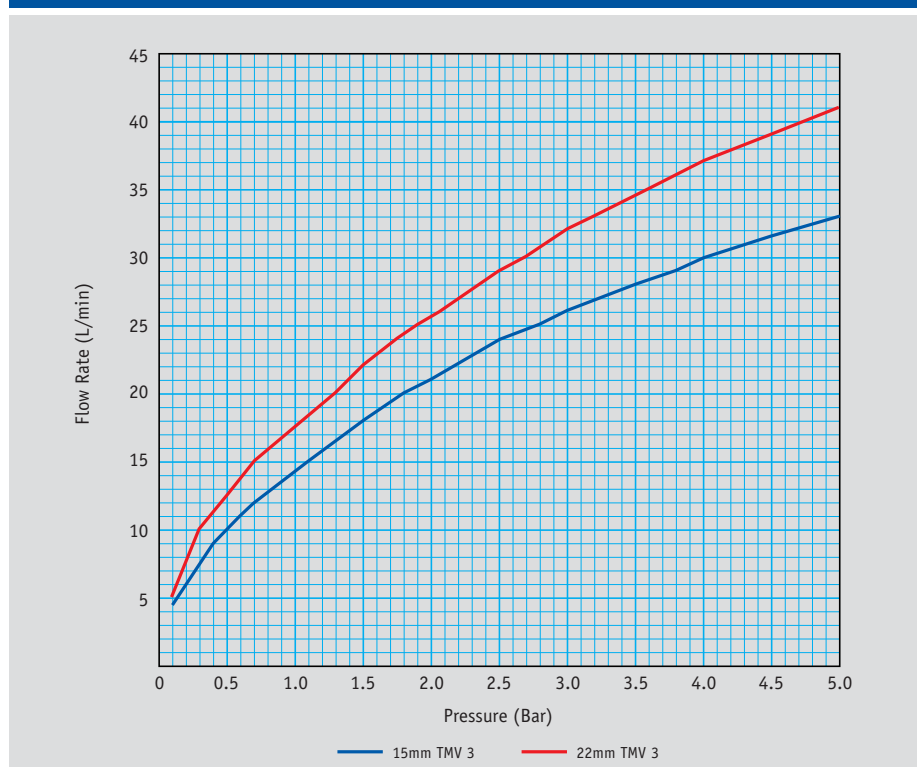


Fig. 2: TMV3 In-line mixing valves



Product selection criteria

ENVIRONMENT	APPLIANCE	IS A TMV:			VALVE TYPE?	REFERENCE DOCUMENTS
		REQUIRED BY LEGISLATION OR AUTHORITATIVE GUIDANCE?	RECOMMENDED BY LEGISLATION OR AUTHORITATIVE GUIDANCE?	SUGGESTED BEST PRACTICE?		
Private dwelling	Bath			yes	TMV2	
	Basin			yes	TMV2	
	Shower			yes	TMV2	
Housing association dwelling	Bath		yes		TMV2	Housing Corp Standard (1.2.1.33a)
	Basin			yes	TMV2	
	Shower			yes	TMV2	
Housing association dwelling for the elderly	Bath	yes			TMV2	Housing Corp Standard (1.2.1.58 and 1.2.1.59)
	Basin	yes			TMV2	
	Shower	yes			TMV2	
Hotel	Bath			yes	TMV2	Guidance to the Water Regulations (G18.5)
	Basin			yes	TMV2	
	Shower			yes	TMV2	
NHS nursing home	Bath		yes		TMV3	NHS Health Guidance Note, Care Standards Act 2000, Care Homes Regulation 2001, D08
	Basin		yes		TMV3	
	Shower		yes		TMV3	
Private nursing home	Bath		yes		TMV3	Guidance to the Water Regulations (G18.6), Care Standards Act 2000, Care Homes Regulations 2001, HSE Care Homes Guidance
	Basin		yes		TMV3	
	Shower		yes		TMV3	
Young persons' care home	Bath	yes			TMV3	DoH National Minimum Standards Children's homes Regulations, Care Standards Act 2000, Care Homes Regulations 2001, HSE Care Homes Guidance
	Basin	yes			TMV3	
	Shower	yes			TMV3	
Schools, including nursery	Bath		yes		TMV2	Building Bulletin 87, 2nd edition, The School Premises Regulations/ National Minimum Care Standards section 25.8
	Shower	yes			TMV2	
	Bath	yes, but 43°C max			TMV2	
Schools for the severely disabled including nursery	Bath		yes		TMV3	Building Bulletin 87 2nd edition, The Schools Premises Regulations, if residential, Care Standards Act
	Shower	yes			TMV3	
	Bath	yes, but 43°C max			TMV3	
NHS hospital	Bath	yes			TMV3	NHS Health Guidance Note, D08
	Basin	yes			TMV3	
	Shower	yes			TMV3	
Private hospital	Bath		yes		TMV3	Guidance to the Water Regulations (G18.6)
	Basin		yes		TMV3	
	Shower		yes		TMV3	

Housing Corp Standard

Housing Corporation, Scheme Development Standards, 5th Edition, Housing Corporation 2003.

D08

Model engineering specifications D08
Thermostatic mixing valves (healthcare premises), NHS Estates, 1997.

Building Bulletin 87 2nd edition

School Building and Design Unit Department for Education and Skills. Building Bulletin 87 2nd edition, Guidelines for environmental design in schools. DfES 2003, London.

Guidance to the Water Regulations

Department for Environment, Food & Rural Affairs, *Water Supply (Water Supply (Water Fittings) Regulations 1999 Guidance Document relating to Schedule 1: Fluid Categories and Schedule 2: Requirements for Water Fittings*. DEFRA 1999, London.

**DoH National Minimum Standards
Children's homes Regulations**

Department of Health, National Minimum Standards Children's homes Regulations.

**National minimum care Standards
Section 25.8****NHS Health Guidance Note**

National Health Service Guidance note, Safe hot water and surface temperatures.

HSE Care Homes Guidance

Health and Safety Executive, Health and Safety in care homes, HSG 220, HSE 2001.

Care Standards Act 2000**Care Homes Regulations 2001****Children's Home Regulations 2001**

Prestex 402 HF3 In-line Mixing Valve

Features

- Thermostatic mixing valve
- Compact T-shaped design
- Chrome plated gunmetal body
- Conforms to BS7942
- WRAS approved
- 22mm compression connections
- High flow rate for bath fill
- BuildCert TMV3 scheme approved (NHS D08) BC 3210907



Prestex 410 Group Mixing Valve

Features

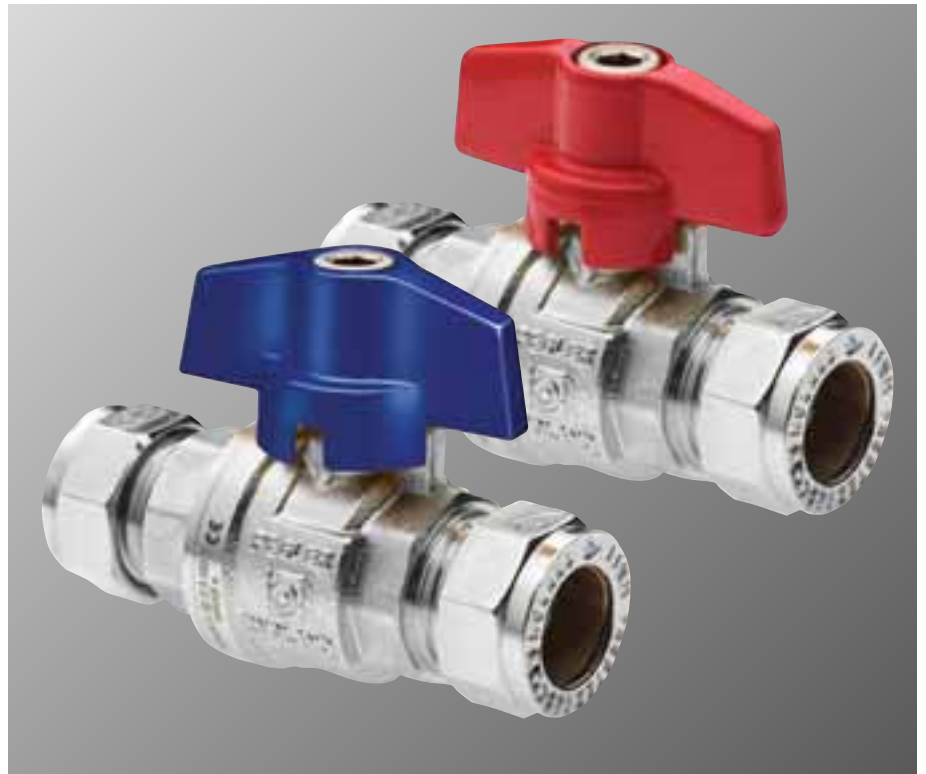
- Thermostatic mixing valve
- Chrome plated brass body
- 22mm compression connections



Prestex PB300 Full Bore Quarter Turn Ball Valves

Features

- 15mm – 28mm sizes
- All sizes rated PN16
- Blow out and vandal-proof assembly
- P.T.F.E. (Teflon) ball seals
- Viton 'O' ring seals
- Prestex compression ends to EN 1254/2
- Red 'T' handle as standard with optional blue 'T' handle for cold water applications



Prestex PRV-2 Pressure Reducing Valves

Features

- 15mm or 22mm compression connections
- DZR body
- Drop tight seal
- Compact easy set design
- 0-25bar inlet pressure range
- Two gauge connection points
- WRAS approved





Pegler Yorkshire

Our brands:



UK Sales

Free Phone: 0800 156 0010
Free Fax: 0808 156 1011
Email: uk.sales@pegleryorkshire.co.uk

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Tel: +44 (0) 1302 855 656
Fax: +44 (0) 1302 730 513
Email: export@pegleryorkshire.co.uk

Technical Help

Free Phone: 0800 156 0050
Free Fax: 0808 156 1012
Email: tech.help@pegleryorkshire.co.uk

Brochure Hotline

Free Phone: 0800 156 0020
Free Fax: 0808 156 1011
Email: info@pegleryorkshire.co.uk

www.pegleryorkshire.co.uk

Pegler Yorkshire Group Limited

St. Catherine's Avenue, Doncaster,
South Yorkshire, DN4 8DF, England.
Tel: 0844 243 4400 Fax: 0844 243 9870

Registered in England Company No. 00401507
Registered Office: Haigh Park Road, Stourton, Leeds,
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LIT.REF: 880134.04.09

