# APEX® VALVES

Quality System

Quality Endorsed Company

ISO 9001 Lic 4886

# PLUMBING

Proudly made in New Zealand

NZ MADE

APEX® VALVES

EDITION 9

*Buy the Best!*

APEX VALVES

Quality Endorsed Company ISO 9001 Lic 4886


Apex Valves is a privately owned company manufacturing a comprehensive range of Control valves for low and high pressure hot water and filtration systems for over 25 Years.

In addition, Apex Valves produces an extensive range of Float and Reservoir Valves for the agriculture sector.

We are proud to be accredited with the internationally recognised ISO 9001 Quality Certification. Apex employ a dedicated in-house Research & Development team designing valves specifically for NZ conditions, with representation on the Executive of The Plumbers & Distributors Association of NZ and the Australian WS 026 Standards Committee.

In addition we manufacture a range of valves for markets in Australia, U.K, USA and South Africa with a range of products designed and manufactured to comply with Australian Watermark Standards.

We provide 100% back up and support for all products and are committed to being a progressive, responsible manufacturer, producing high quality, innovative products that are internationally recognised.

**www.apexvalves.co.nz**



NZ MADE APEX VALVES

**Focused on designing and manufacturing the best valves for New Zealand Plumbing**

# CONTENTS

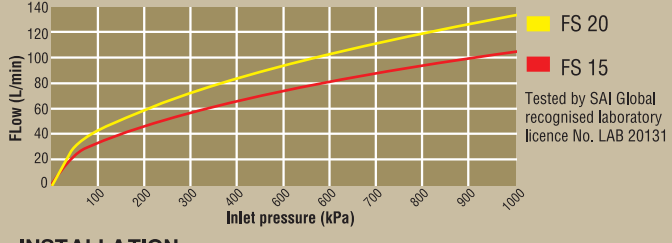
# FILTER STOP & NON-RETURN (3 IN 1) 15/20mm

## APPLICATION
- Low and high (mains) pressure systems.
- Any application where filter, non-return and isolating valve are required.

## FEATURES/BENEFITS
- Compact 3in1 valve - filter; isolation and non-return with high flow rates.
- No tools are required to service the valve, all servicing done with supply on.
- N.Z Forged, high quality, corrosion resistant DR brass body.
- Machined, assembled and 100% tested in N.Z.

## SPECIFICATIONS
- **FS15** Inlet: 15mm, 1/2" BSP (male)
  Outlet: 15mm, 1/2" BSP (female)
  Length: 86mm
- **FS20** Inlet: 20mm, 3/4" BSP (male)
  Outlet: 20mm, 3/4" BSP (male)
  Length: 88mm
- 60 mesh (250 micron), stainless steel filter
- Maximum inlet pressure and temperature
  Plastic Cap: 1000 kPa and 40°C
  Brass Cap: 1600 kPa and 99°C

## FLOW GRAPH




Tested by SAI Global recognised laboratory licence No. LAB 20131

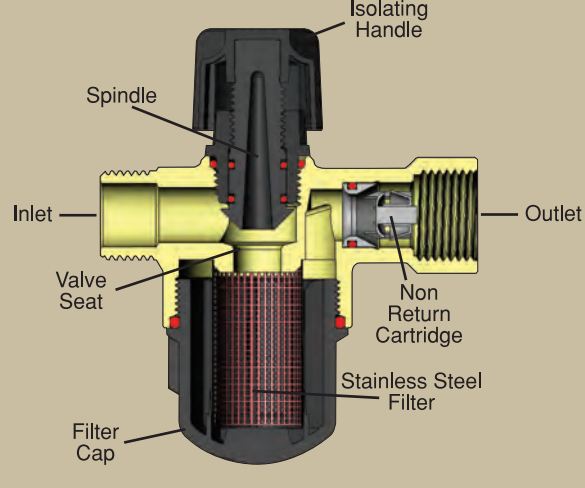
## INSTALLATION
- Refer page 22 for installation guide.
- Can be installed in any orientation but is best with filter cap down for ease of cleaning.
- Do NOT install in the ground.
- Do NOT apply heat near the valve during installation.

## SERVICING
1. Turn handle clockwise to close valve.
2. Remove filter bowl, by hand.
3. Remove and clean filter.
4. Refit filter, filter cap (hand tighten only) and turn on fully.

## STANDARDS
- Complies with NZ Building Code G12 (2001)
- Complies with NZS 4608:1992
- NZ Patent No. 230940, Aust Patent No. 625338


FS 15


**FS BC 20**
**(Hot Water Option)**




## PRODUCT CODES

| | |
|---|---|
| **FS15** | 15mm |
| **FS20** | 20mm |
| **FSBC15** | 15mm Brass Cap- Hotwater Valve |
| **FSBC20** | 20mm Brass Cap- Hotwater Valve |

# PRESSURE REDUCING VALVE (FEED VALVE)

## APPLICATION

- Low and medium pressure hot water systems.

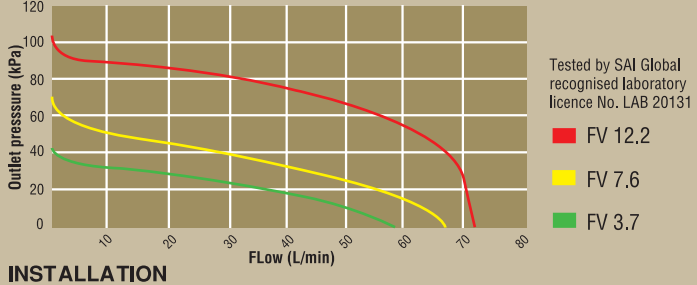
## FEATURES/BENEFITS

- Pressure compensated to give constant outlet pressure regardless of inlet pressure.
- Silicone rubber diaphragm and washer – no heat loop required.
- N.Z Forged, high quality, corrosion resistant DR brass body.
- Machined, assembled and 100% tested in N.Z.
- One-piece forged brass fork with no water paths – no leaks!

## SPECIFICATIONS

- Inlet: 15mm, 1/2" BSP (male)
- Outlet: 20mm, 3/4" BSP (male)
- Length: 138mm.
- Set pressures: FV3.7 - 35 kPa
  FV7.6 - 65 kPa
  FV12.2 - 110 kPa
- Adjustable pressure range:
  FV3.7 & FV7.6 - 15 to 100 kPa
  FV12.2 - 50 to 150 kPa
- Maximum inlet pressure: 2000 kPa
- Maximum temperature: Plastic cap 40°C
  Brass cap 80°C - hot water valve

## FLOW GRAPH

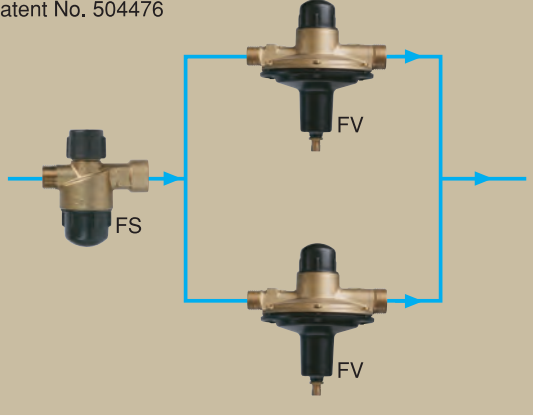



## INSTALLATION

- Refer page 22 for installation guide.
- Can be installed in any orientation.
- Do NOT install in the ground.
- Do NOT apply heat near valve during installation.
- Valve may require adjustment on site. To increase pressure turn adjusting screw clockwise (1 1/2 turns = 1 metre head).
- Valve must be either valve vented or open vented.
- **For increased flow rates or inlet pressure below 200 kPa, two valves in parallel may be required, doubling the flow. * See diagram below.**

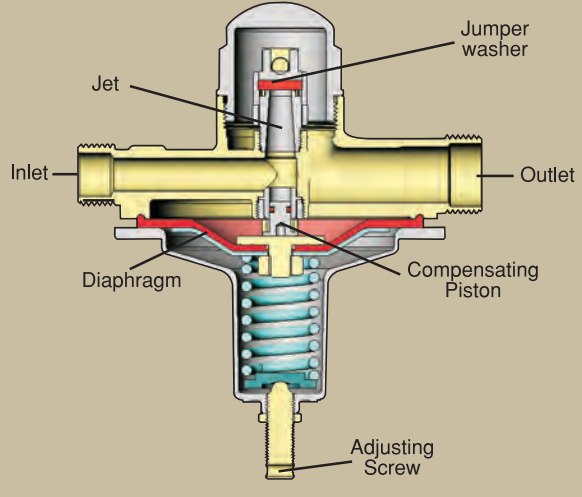
## STANDARDS

- Complies with NZ Building Code G12 (2001)
- Complies with NZS 4608:1992
- Patent No. 504476





FV




## PRODUCT CODES

| | |
|---|---|
| **FV3.7** | |
| **FV7.6** | |
| **FV12.2** | |
| **MP7.6** | Matched Pair (FV7.6 & RV7.6) |
| **MP12.2** | Matched Pair (FV12.2 & RV12.2) |
| **HFV3.7** | Hot Water Feed Valve (Brass Cap) |
| **HFV7.6** | Hot Water Feed Valve (Brass Cap) |
| **HFV12.2** | Hot Water Feed Valve (Brass Cap) |

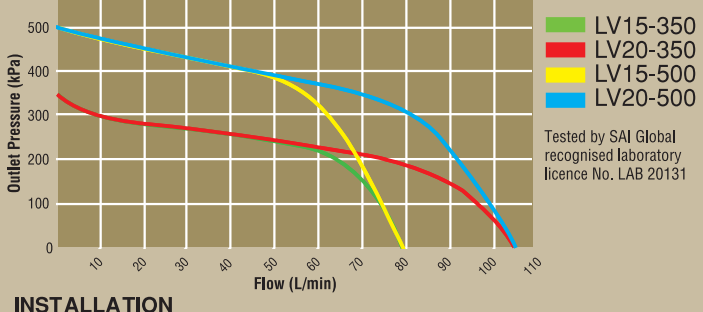
# PRESSURE LIMITING VALVE 15/20mm

## APPLICATION
- High (mains) pressure systems.

## FEATURES/BENEFITS
- Pressure compensated to give constant outlet pressure regardless of inlet pressure.
- Extremely high flow rates up to 135 l/m @ 700 kPa inlet pressure.
- No tools required to service valve, all valve seats and piston are contained in the easily replaceable cartridge. (VALVE CARTRIDGE DOES NOT NEED REASSEMBLING to clean filter).
- Removal of cartridge will not affect the set pressures – all valve seats are contained within the cartridge.
- Valve is adjustable 200 – 600 kPa simply with Philips screw driver.
- No pipe unions, no leaks.
- N.Z Forged, high quality, corrosion resistant DR brass body.
- Machined, assembled, and 100% tested in NZ.

## SPECIFICATIONS
- **LV15** Inlet: 15mm, 1/2" BSP (male)
  Outlet: 20mm, 3/4" BSP (male)
- **LV20** Inlet: 20mm, 3/4" BSP (female)
  Outlet: 20mm, 3/4" BSP (male)
- **LVT15** Inlet: 15mm, 1/2" BSP (male)
  Outlet: 20mm, 3/4" BSP (male)
  Takeoff: 20mm, 3/4" BSP (male)
- **LVT20** Inlet: 20mm, 3/4" BSP (female)
  Outlet: 20mm, 3/4" BSP (male)
  Takeoff: 20mm, 3/4" BSP (male)
- Length: 80mm (all models)
- Maximum inlet pressure: 2000 kPa
- Maximum temperature: 65°C
- Integral 60 mesh (250 micron) filter.

## FLOW GRAPH




## INSTALLATION
- Refer page 22 for installation guide.
- Do NOT install Limiting Valve in the ground.
- Do NOT apply heat near valve during installation.
- Install so that both hot and cold supplies are balanced.
- Can be installed in any orientation. For outdoor application, cartridge must be at bottom.
- Must be installed with correct Expansion Valve.
- To adjust outlet pressure remove blue cap at end of cartridge, insert large Philips screw driver , turn adjusting screw clockwise to increase (1 turn = 60 kPa).

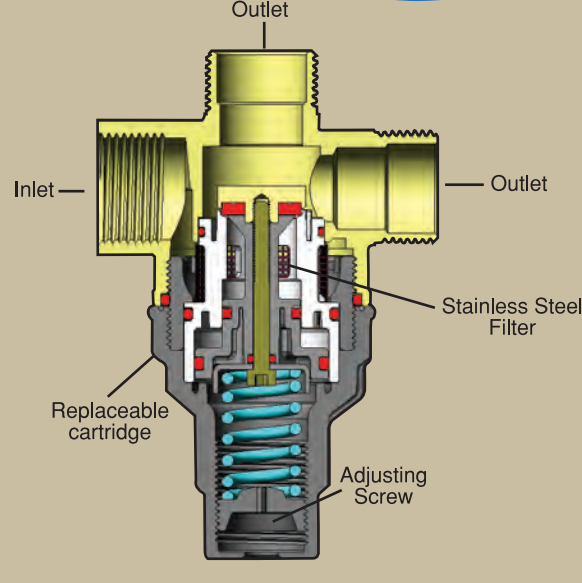
## SERVICING
- Filter must be cleaned regularly.

## STANDARDS
- Complies with NZ Building Code G12 (2001)
- Complies with NZS 4608:1992
- Patent No. 562340
- Cartridge Watermarked AS1357.2 LICWMKA 02596


LV 15

WaterMark
AS1357.2
LIC WMKA02596


LVT 20




## PRODUCT CODES

| | | |
|---|---|---|
| **LV15-350** | 350 kPa | (Use with EVT500) |
| **LV15-500** | 500 kPa | (Use with EVT700) |
| **LV20-350** | 350 kPa | (Use with EVT500) |
| **LV20-500** | 500 kPa | (Use with EVT700) |
| **LVT15-350** | 350 kPa | (Use with EVT500) |
| **LVT15-500** | 500 kPa | (Use with EVT700) |
| **LVT20-350** | 350 kPa | (Use with EVT500) |
| **LVT20-500** | 500 kPa | (Use with EVT700) |

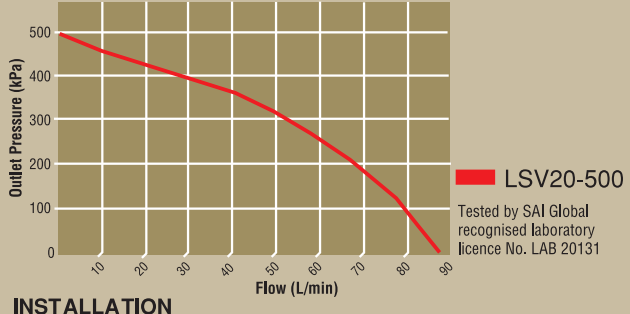
# PRESSURE LIMITING STOP VALVE 20mm

## APPLICATION
- High (mains) pressure systems.

## FEATURES/BENEFITS
- Compact 4 in1 Valve - Limiting, Isolation, Non- return and Filter all in one.
- Pressure compensated to give constant outlet pressure regardless of inlet pressure.
- Extremely high flow rates up to 135 l/m @ 700 kPa inlet pressure.
- No tools required to service valve, all valve seats and piston are contained in the easily replaceable cartridge (VALVE DOES NOT NEED REASSEMBLING to clean filter).
- Removal of cartridge will not affect the set pressures - all valve seats are contained within the cartridge.
- Valve is adjustable 200-600 kPa simply with Philips screw driver.
- Can be installed outside (with cartridge down).
- Machined, assembled, and 100% tested in NZ.
- N.Z Forged, high quality, corrosion resistant DR brass body.
- No pipe unions, no leaks.

## SPECIFICATIONS
- **LSV20** Inlet: 20mm, 3/4" BSP (male)
  Outlet: 20mm, 3/4" BSP (male)
- Length: 140mm
- Maximum inlet pressure: 2000 kPa
- Maximum temperature: 65°C
- Integral 60 mesh (250 micron) filter.

## FLOW GRAPH



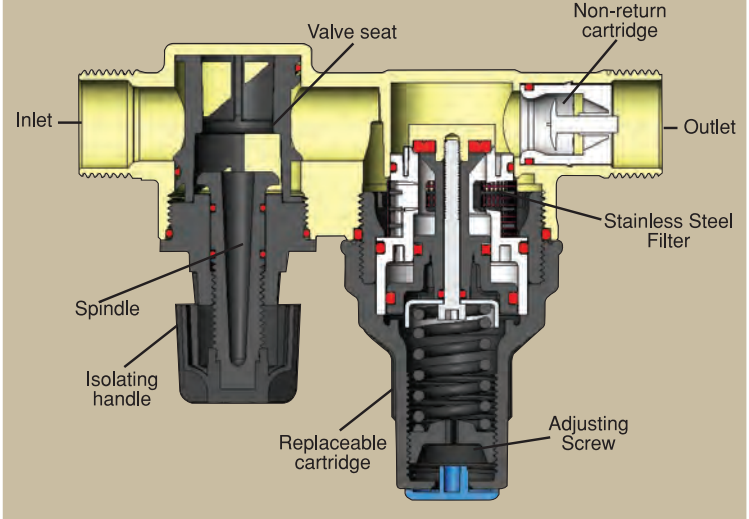

## INSTALLATION
- Refer page 22 for installation guide.
- Do NOT install Limiting Valve in the ground.
- Do NOT apply heat near valve during installation.
- Install so that both hot and cold supplies are balanced.
- Can be installed in any orientation. For external application, cartridge must be at bottom.
- Must be installed with correct Expansion Valve.
- To adjust outlet pressure remove blue cap at end of cartridge, insert large Philips screw driver, turn adjusting screw clockwise to increase (1 turn = 60 kPa).

## SERVICING
- Filter must be cleaned regularly

## STANDARDS
- Complies with NZ Building Code G12 (2001)
- Complies with NZS 4607:1989
- Valves manufactured to NZS 4608:1992
- Cartridge Watermarked AS1357.2 LICWMKA 02596

WaterMark
AS1357.2
LIC WMKA02596


LSV 20




## PRODUCT CODES

| | | |
|---|---|---|
| **LSV20-350** | 350 kPa | (Use with EVT500) |
| **LSV20-500** | 500 kPa | (Use with EVT700) |

# LIMITING STOP VALVE HOT, 20mm

**APPLICATION**
- Protection for High (mains) Pressure hot water systems. Retrofit solution for existing hot systems.

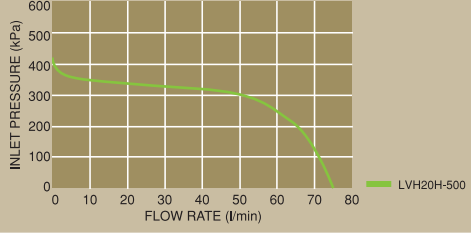
**FEATURES/BENEFITS**
- Limiting, Isolation, and Filter all in one.
- Designed to protect systems running hot water up to 80°C
- Pressure compensated to give constant outlet pressure regardless of inlet pressure.
- Factory set at 500 kPa outlet pressure (Fully compensated).
- Machined, assembled, and 100% tested in NZ.
- Precision machined from DR Brass (including filter cap & isolation bonnet).

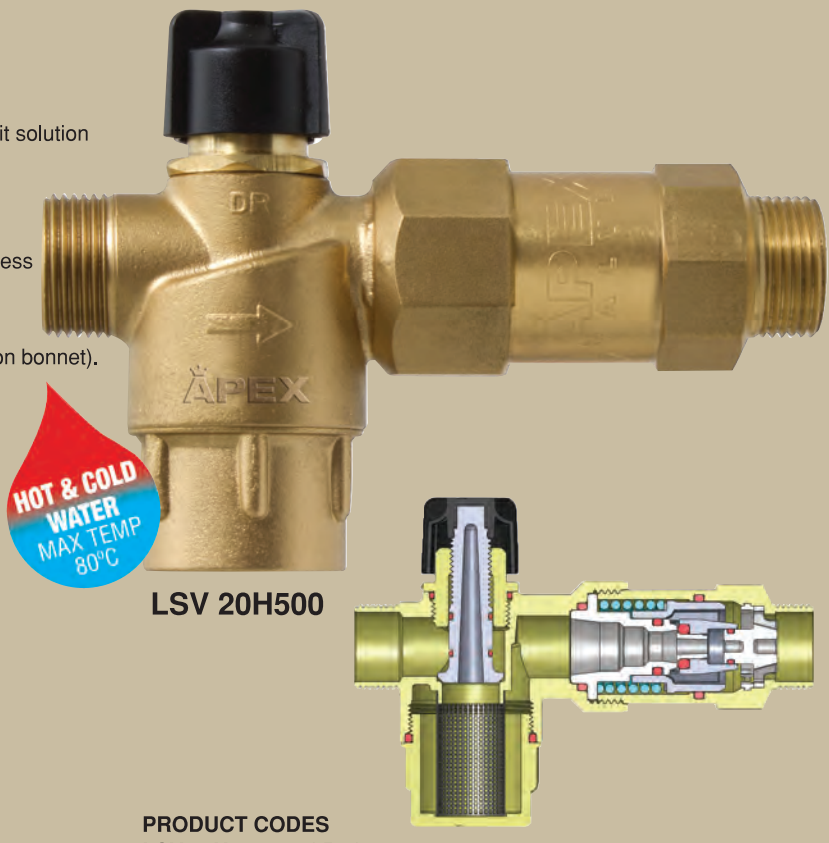
**SPECIFICATIONS**
**LSV 2OH500**

| | |
|---|---|
| Inlet 20mm, | 3/4" BSP(male) |
| Outlet 25mm, | 3/4" BSP(male) |
| Length | 140mm |

- Maximum inlet pressure 2000 kPa
- Outlet Pressure 500 kPa
- Maximum Temperature 80°C
- Flow Rate 75 litres/minute
- Integral 60 mesh (250 micron) filter

**FLOW GRAPH**




**LSV 20H500**

**PRODUCT CODES**
**LSV 20H500** 500 kPa hot water valve

# PRESSURE LIMITING VALVE HOT, 20mm

**APPLICATION**
- Protection for High (mains) Pressure hot water systems & ring mains. Compact in-line retrofit solution for balancing domestic cold systems.

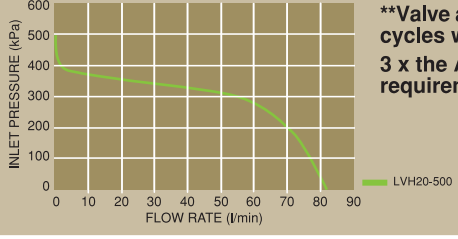
**FEATURES/BENEFITS**
- Designed to protect systems running hot water up to 80°C.
- Pressure compensated to give constant outlet pressure regardless of inlet pressure.
- Factory set at 500 kPa outlet pressure (Fully compensated).
- Machined, assembled, and 100% tested in NZ.
- Precision machined from Extruded DR Brass.
- Compact design.
- Endurance tested to Australian Standards (50,000 cycles and retested)**.
- Field tested in high use commercial hot water application.
- Watermarked

**SPECIFICATIONS**
**LSV 2O 500**

| | |
|---|---|
| Inlet 20mm, | 3/4" BSP(male) |
| Outlet 25mm, | 3/4" BSP(male) |
| Length | 90mm |

- Maximum inlet pressure 2000 kPa
- Outlet Pressure 500 kPa
- Maximum Temperature 80°C
- Flow Rate 80 litres/minute

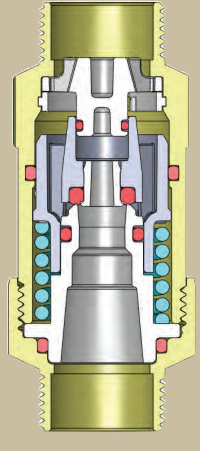
**FLOW GRAPH**




****Valve actually tested to 150,000 cycles without failure.**

**3 x the Australian standards requirement.**

WaterMark
AS1357.2
LIC WMKA02596

**LVH 20 500**

**PRODUCT CODES**
**LVH 20 500** 500 kPa hot water valve

# LIMITING VALVE 25/32mm

## APPLICATION
- For extremely high flow, high demand mains pressure systems e.g. large homes, multi storey apartments and commercial applications.

## FEATURES/BENEFITS
- Extremely high flow rates - 250 litres a minute.
- Pressure compensated to give constant outlet pressure regardless of inlet pressure.
- Twin adjustable (200- 600 kPa), replaceable cartridges for easy servicing.
- All valve seats are contained in the cartridges - no need to remove valve body from system.
- Can be installed in any orientation, for external application a cap is provided to protect cartridge.
- N.Z Forged, high quality, corrosion resistant DR brass body.
- Machined, assembled and 100% tested in NZ.
- No unions, no leaks.

## SPECIFICATIONS
**LV25**

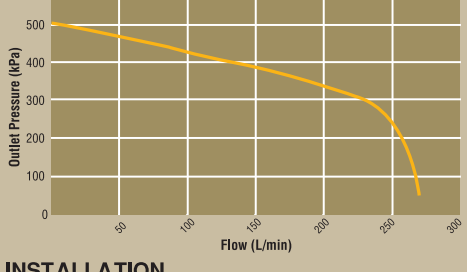
| | |
|---|---|
| Inlet 25mm, | 1" BSP(male) |
| Outlet 25mm, | 1" BSP(male) |
| Length | 110mm |
| Height | 190mm |

**LV32**

| | |
|---|---|
| Inlet 32mm, | 1¼" BSP(male) |
| Outlet 32mm, | 1¼" BSP(male) |
| Length | 110mm |
| Height | 190mm |

- Maximum inlet pressure 2000 kPa
- Maximum inlet temperature 65°C
- Twin, integral 60 mesh (250 micron) strainers

## FLOW GRAPH



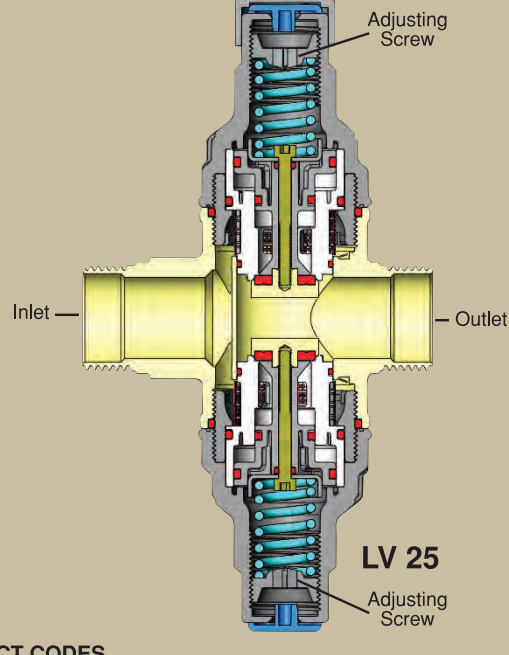

LV25-500/LV32-500

Tested by SAI Global recognised laboratory licence No. LAB 20131

## INSTALLATION
- Do NOT install Limiting Valve in the ground.
- Do NOT apply heat near valve during installation.
- Install so that both hot and cold supplies are balanced.
- Can be installed in any orientation. For outdoor application, fit dust cap to top cartridge.
- Must be installed with correct Expansion Valve.
- To adjust outlet pressure remove blue cap at end of cartridge, insert large Philips screw driver , turn adjusting screw clockwise to increase (1 turn = 60 kPa).

## STANDARDS
- Patent No. 577660
- Complies with NZ building code G12 (2001)
- Complies with NZS 4608
- Cartridges Watermark approved to AS1357.2 Lic. No. WMKA02596

## SERVICING
- Filter must be cleaned regularly.


## PRODUCT CODES
**LV25** 25mm (1" BSP) 500 kPa
**LV32** 32mm (1¼" BSP) 500 kPa

# HONEYWELL BRAUKMAN PRESSURE LIMITING VALVE 40/50mm

**APPLICATION**
- High pressure systems.

**FEATURES/BENEFITS**
- Pressures easily adjusted by simply loosening screw and turning knob.
- Corrosion resistant DR (dezincification resistant) Brass with spring located outside the flow.
- Integral filter and optimized flow path around the valve seat - valve is not sensitive to debris.
- High quality synthetic valve seat - not sensitive to scaling .
- Filter can be replaced and cleaned without removing valve from pipe work.
- Constructed and noise resistance tested to German DVGW and UK WRc guidelines.
- Can be used for water, other non-aggressive liquids, compressed air and for Nitrogen.
- Complete with test ports for pressure gauge.
- Hot water conversion available to maximum 70°C (with brass filter bowl fitted).

**SPECIFICATIONS**

| | | |
|---|---|---|
| **SIZES : 40mm :** | Inlet | 40mm male, 1 1/2" BSP unions |
| | Outlet | 40mm male, 1 1/2" BSP unions |
| | Length | 225mm |
| | Height | 300mm |
| **50mm :** | Inlet | 50mm male, 2" BSP unions |
| | Outlet | 50mm male, 2" BSP unions |
| | Length | 255mm |
| | Height | 300mm |

- Outlet pressure factory set to: 400 kPa
- Adjustable outlet pressure: 150 - 600 kPa
- Maximum inlet pressure: 2500 kPa
- Maximum temperature: 40°C
- Sizes to 200mm available on request.

**STANDARDS**
- WRc - UK
- DVGW - Germany
- Complies with NZ Building Code G12 (2001)


LV

**PRODUCT CODES**

| | | |
|---|---|---|
| **LV40** | D06F-1 1/2 A | 40mm |
| **LV50** | D06F-2A | 50mm |
| **GHPH** | Gauge 0-1600 kPa | (refer page 21) |

# COLD WATER EXPANSION VALVE 25/35mm

**APPLICATION**
- High pressure systems.

**FEATURES/BENEFITS**
- Energy saving valve – relieves cold water rather than hot, saving electricity.
- Forged, high quality, corrosion resistant DR brass body.

**SPECIFICATIONS**
- **EV25** Inlet: 25mm, 1" BSP (female)
  Outlet: 32mm, 1 1/4" BSP (female)
- **EV32** Inlet: 32mm, 1 1/4" BSP (female)
  Outlet: 40mm, 1 1/2" BSP (female)
- Outlet pressure factory set to 800 kPa.
- Kilowatt rating EV25 - 250kW
  EV32 - 2200kW
- Maximum temperature: 90°C
- DR (Dezincification Resistant) brass.
- Made in Germany.

**STANDARDS**
- TRD 721
- Complies with NZ Building Code G12 (2001)

EV

**PRODUCT CODES**

| APEX CODES | HONEYWELL CODES |
|---|---|
| **EV25-800** 800 kPa | **SM 152-1AB** |
| **EV32-800** 800 kPa | **SM 152-1** 1/4 **AB** |

# COLD WATER EXPANSION VALVES 20mm

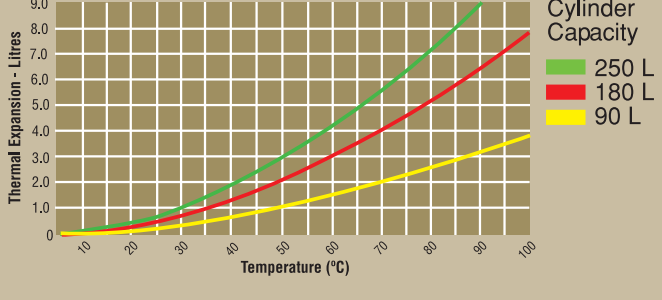
## APPLICATION
- Low, medium, and high (mains) pressure hot water systems.

## FEATURES/BENEFITS
- Energy saving valve - relieves cold water rather than hot, saving electricity.
- Flushing lever/handle to clear foreign matter from valve seat, can also be used as cylinder drain.
- Silicone rubber washers and non- corrosive valve seat materials mean long life – no heat loop required.
- Failsafe against cylinder over pressure.
- Special factory settings between 75 and 750 kPa available on request.
- N.Z Forged, high quality, corrosion resistant DR brass body.
- Machined, assembled, and 100% tested in NZ.

## SPECIFICATIONS
- Inlet/Outlet/Takeoff: 20mm, 3/4" BSP (male)
- Drain: 15mm, 1/2" BSP (male)
- Lengths: EVT Low Pressure 62mm
  EVT High Pressure 70mm
- Pressure settings: 75, 120, 500 and 700 kPa
- Maximum temperature: 99°C
- Kilowatt rating- 20kw

## INSTALLATION
- Refer page 22 for installation guide.
- If 1.0 metre min head can't be achieved between EVT and RV use EVT underbench model (See page 15 underbench Packs).
- May be installed in any orientation provided drain falls continuously to outlet.
- Pressure Limiting or Pressure Reducing valve must be fitted (see table page 24).

## THERMAL EXPANSION
Under normal conditions, a 180 litre hot water cylinder when heated from cold to 65°C will expel 3.6 litres (12.6 metres of 20mm copper pipe) of water due to thermal expansion. The amount of expansion will vary depending on the volume of hot water used and cylinder capacity.

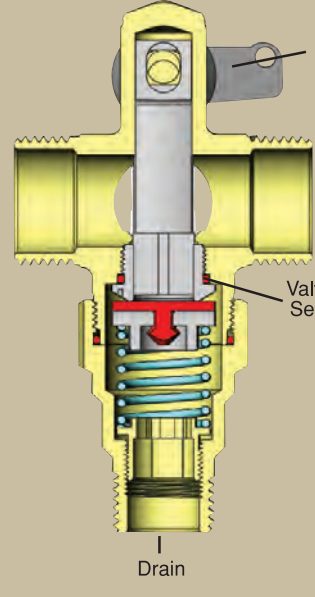


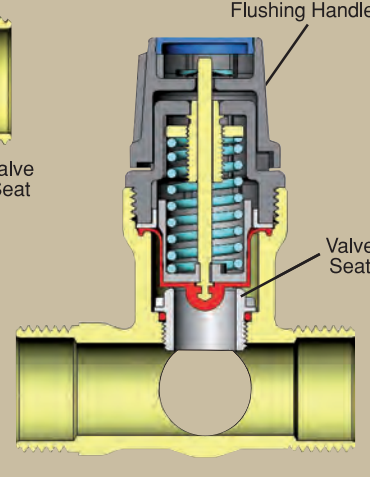

## ACCESSORIES
- Non-return (mains pressure only): To prevent cross-connection of hot water to cold water supply.
- Cap: Should second take off not be required.

## STANDARDS
- Complies with NZ Building Code G12 (2001)
- Complies with NZS 4607:1989
- Valve manufactured to NZS 4608:1992

EVT
Low Pressure

EVT
High Pressure




## PRODUCT CODES

| | | |
|---|---|---|
| **Low Pressure** | | |
| **EVT7.6** | 75 kPa | (Use with FV 7.6) |
| **EVT12.2** | 120 kPa | (Use with FV 12.2) |
| **High Pressure** | | |
| **EVT500** | 500 kPa | (Use with 350 kPa Limiting Valve) |
| **EVT700** | 700 kPa | (Use with 500 kPa Limiting Valve) |

# PRESSURE RELIEF VALVE

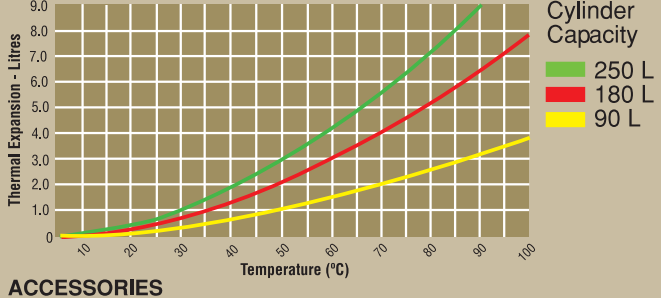
## APPLICATION
- Low and medium pressure hot water systems.
- Pressure systems for marine applications.

## FEATURES/BENEFITS
- NZ forged, high quality, corrosion resistant DR brass body.
- Silicone Rubber seals able to withstand 99°C.
- Two simple parts easily unscrew to clean seats and seals, no body screws.
- Unique vacuum break provided means valve retro fits all other similar relief valves at replacement.
- Vacuum relief means failsafe against over pressure and implosion.

## SPECIFICATIONS
- Inlet: 20mm, 3/4" BSP (male)
- Outlet: 15mm, 1/2" BSP (male)
- Length: 80mm (valve)
  115mm (c/w Vacuum Break)
- Standard pressure settings: 37, 75 and 120 kPa
- Special settings up to 415 kPa (60psi)
- Maximum temperature: 99°C
- Kilowatt rating- 12kW

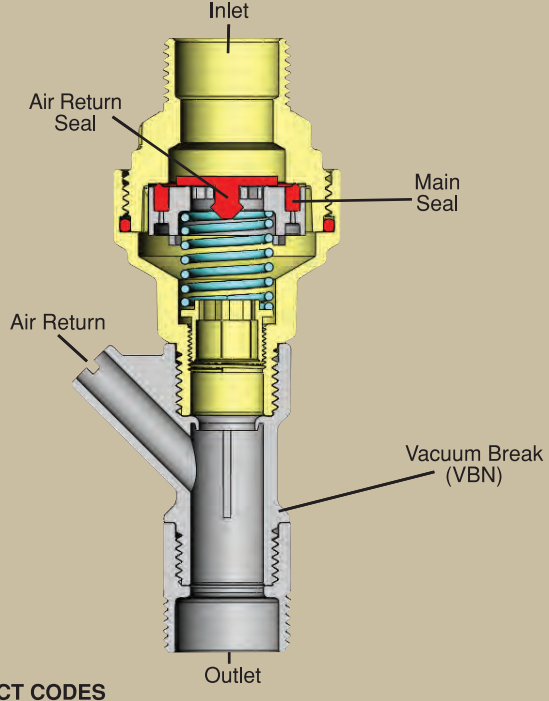
## INSTALLATION
- Refer page 22 for installation guide.
- Install approximately 1 metre above Pressure Reducing and Cold Water Expansion Valves.
- May be installed vertically or horizontally. (Provided vacuum break is used)
- Provide 150mm heat trap (refer page 22).
- Do NOT apply heat near valve during installation.

## THERMAL EXPANSION
Under normal conditions, a 180 litre hot water cylinder when heated from cold to 65°C will expel 3.6 litres(12.6 metres of 20mm copper pipe) of water due to thermal expansion. The amount of expansion will vary depending on the volume of hot water used and cylinder capacity.




## ACCESSORIES
- VBN Vacuum Break.
- 15mm F to 20mm M reducer.

## STANDARDS
- Complies with NZ Building Code G12 (2001)
- Complies with NZS 4608:1992
- NZ Patent No. 209613


## PRODUCT CODES

| | |
|---|---|
| **RV3.7** | 37 kPa. |
| **RV7.6** | 75 kPa. |
| **RV12.2** | 120 kPa. |
| **RVHP** | Settings up to 415 kPa (60psi) on request for marine cylinders (See page 23) |

# TEMPERING VALVES 15/20mm

## APPLICATION
- High and low pressure hot water systems.

## FEATURES/BENEFITS
- Extremely High flow rates (20 l/m at only 2 m head) make the valve (TV20) suitable to both low and high pressure installations.
- Valve can be installed in any orientation.
- Failsafe shutdown - in the event of failure of hot and cold supplies.
- Tamperproof cap-less call outs for readjustment by plumber (TV20TP).
- N.Z Forged, high quality, corrosion resistant DR brass body.
- Machined, assembled and 100% tested in NZ.
- Advanced temperature control - ideal for direct connection to a sanitary fixture e.g. hand basin (TV15P).

## SPECIFICATIONS
- Sizes :

| | | | |
|---|---|---|---|
| TV15, TV15P | Inlets | 15mm male, 1/2" BSP | |
| | Outlet | 15mm male, 1/2" BSP | |
| TV20 | Inlets | 20mm male, 3/4" BSP | |
| | Outlet | 20mm male, 3/4" BSP | |
| TV12 | Inlet cold | 12mm | John Guest fitting |
| | Inlet hot | 15mm, | 1/2" BSP |
| | Outlet | 12mm, | John Guest fitting |

- Length:

| | |
|---|---|
| TV15 | 110mm |
| TV15P | 110mm |
| TV20, TV20P | 105mm |
| TV12 | 110mm |

- Factory set to give 55°C outlet. Can be adjusted from 35°C to 60°C.
- Maximum inlet temperature 99°C.
- Stored water temperature must be at least 10°C above the Tempering valve setting and over 60°C (G12).
- Inlet water pressures:

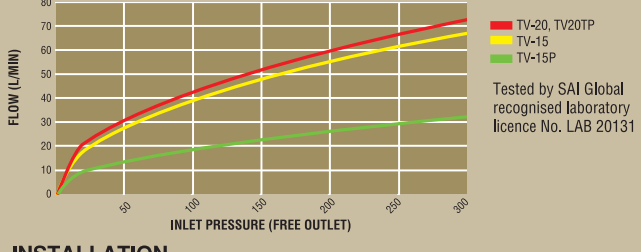
| | |
|---|---|
| TV15, TV15P | 30 to 1000 kPa (3m head) |
| TV20, TV20D, TV20TP | 20 to 1000 kPa (2m head) |

- Flow rates:

| | |
|---|---|
| TV15 | 20 L/min at 30 kPa inlet pressure |
| TV15P | 9 L/min at 30 kPa inlet pressure |
| TV20, TV20D, TV20TP | 20 L/min at 20 kPa inlet pressure |

- Operating Pressure:
  Balanced hot and cold pressure. For unequal water pressure of up to 5:1 (Cold to Hot), non-return must be fitted to hot inlet.

## FLOW GRAPH




Tested by SAI Global recognised laboratory licence No. LAB 20131

## INSTALLATION
- Refer page 22 for installation guide.
- Valve must be fitted by a qualified plumber.
- Installation must comply with local authority requirements.
- Valve may be installed in any orientation.
- Flush pipes prior to fitting.
- Valve must be protected by a line strainer.
- Non-return valves are required at hot and cold inlets in Ring Main Installations.
- Connections are H (hot inlet), C (cold inlet) and OUT (mixed temperature outlet).
- Do not apply heat near valve during installation - this may damage the mechanism.
- Do NOT install valve directly into outlet of cylinder.
- 1 m MIN copper pipe length from cylinder to tempering valve,THIS IS A MANDATORY REQUIREMENT OF G12.

## TEMPERATURE ADJUSTMENT
Refer to page 11.

## STANDARDS
- Complies with NZ Building Code G12 (2001)
- Complies with NZS 4617:1989
- NZ Patent No. 517764, Aust. Patent No. 2003200856 RSA. Patent No. 2003/1992


TV20


TV15P


TV20TP

## PRODUCT CODES

| | | |
|---|---|---|
| **TV15** | 15mm | (Non-return on both inlets) |
| **TV15P** | 15mm | Point of use Tempering Valve |
| **TV20** | 20mm | |
| **TV20D** | 20mm | Ring main installation (Non-return on both inlets) |
| **TV20TP** | 20mm | Tamper proof |
| **TV12** | 15mm | BSP Hot |
| | 12mm | John Guest Speed Fit cold and Mix |

# TEMPERING VALVE 25mm

## APPLICATION

Extremely high flow rate makes the TV 25 suitable for low pressure systems e.g. header tanks, open vented and low head systems. Also suitable for high demand mains pressure systems.

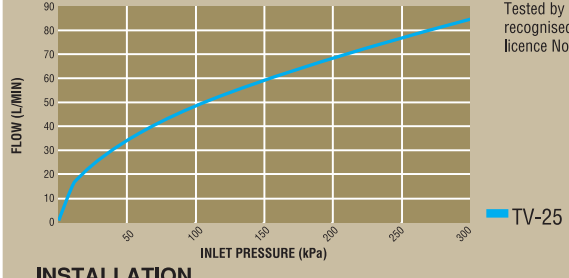
## FEATURES/BENEFITS

- NZ forged, high quality, corrosion resistant, DR brass body.
- Machined, assembled and 100% tested in NZ.
- Extremely high flow rates - Up to 90 litres a minute.
- Integral non-returns mean valve is ideal in ring main installations.
- No pipe unions, no leaks.

## SPECIFICATION

- Inlet 25mm, 1" BSP (male)
- Outlet 25mm, 1" BSP (male)
- Length 135 mm
- Height 105 mm
- Inlet water pressures 20 to 1600 kPa.
- Flow rates:
  TV25 25 L/min at 20 kPa inlet pressure
- Outlet temperature adjustable from 35°C to 60°C.
- Maximum inlet temperature 99°C.
- Stored water temperature must be at least 10°C above the Tempering valve setting and over 60°C (G12).
- Integral hot and cold non return valves.
- Operates with unequal water pressure up to 5:1 ratio (cold:hot).

## FLOW GRAPH




Tested by SAI Global recognised laboratory licence No. LAB 20131

## INSTALLATION

- Refer page 22 for installation guide.
- Valve must be fitted by a qualified plumber.
- Installation must comply with local authority requirements.
- Valve may be installed in any orientation.
- Flush pipes prior to fitting.
- Valve must be protected by a line strainer.
- Connections are H (hot inlet), C (cold inlet) and OUT (mixed temperature outlet).
- Do not apply heat near valve during installation - this may damage the mechanism.
- Do NOT install valve directly into outlet of cylinder.
- 1 m MIN copper pipe length from cylinder to tempering valve, THIS IS A MANDATORY REQUIREMENT OF G12.

## TEMPERATURE ADJUSTMENT

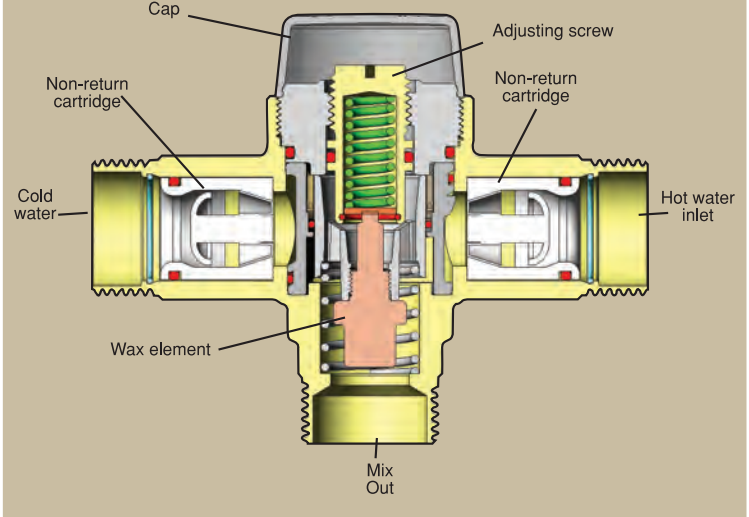
Remove cap. Use screwdriver to adjust to desired temperature. To increase, turn anti-clockwise (H).To decrease, turn clockwise (C). Replace cap. Maximum delivered hot water temperature at any sanitary fixture used for personal hygiene shall not exceed 55°C.

For childhood centres, schools, old peoples homes, hospitals and institutions for people with psychiatric or physical disabilities, outlet must be set to max 45°C.

## STANDARDS

- Complies with NZ Building Code G12 (2001)
- Complies with NZS 4617
- NZ Patent No. 517764, Aust. Patent No. 2003200856 RSA. Patent No. 2003/1992


TV25




## PRODUCT CODES

| | |
|---|---|
| **TV25** | 25mm (Non-return on both inlets) |

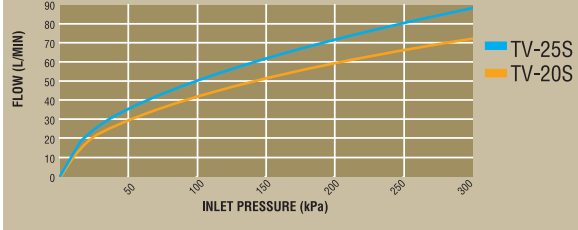
# TEMPERING VALVES SOLAR 20/25mm

## APPLICATION
- High and low pressure hot water systems.

## FEATURES/BENEFITS
- Able to withstand 110°C (constant), ideal for solar and wetback installations.
- Extremely high flow rates make it suitable for both high and low pressure systems - 20 l/m @ 2 metre head.
- NZ forged, high quality, corrosion resistant DR brass body.
- Machined, assembled and 100% tested in NZ.
- Dual non-returns - ideal for unequal pressures.
- Failsafe shutdown - in the event of failure of hot or cold supplies.

## SPECIFICATIONS
- Length: TV20S 130mm Length: TV25S 135mm
- Factory set to give 55°C outlet. Can be adjusted from 35°C to 60°C.
- Maximum inlet temperature 110°C.
- Stored water temperature must be at least 10°C above the Tempering valve setting and above 60°C (G12).
- Inlet water pressures:
  TV20S 20 kPa (2m head) to 1000 kPa.
  TV25S 20 kPa (2m head) to 1600 kPa.
- Flow rates:
  TV20S 20 L/min at 20 kPa inlet pressure.
  TV25S 25 L/min at 20 kPa inlet pressure.
- Max. pressure imbalance between the hot & cold supplies 5:1.

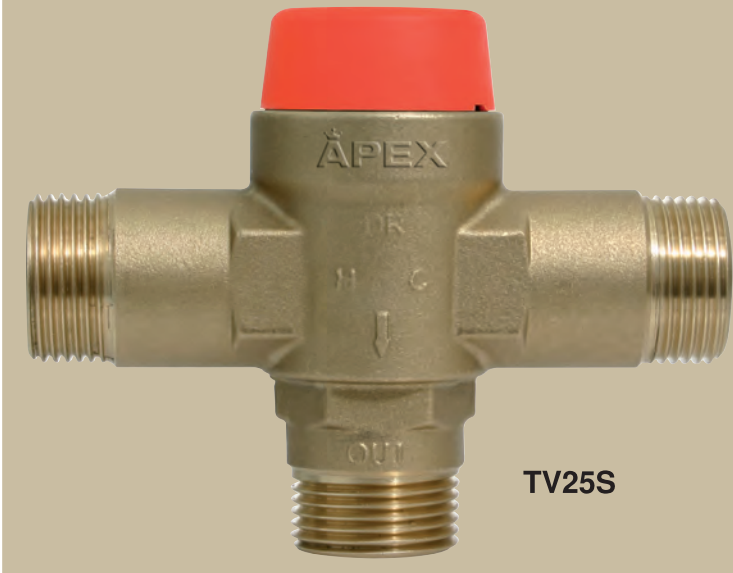
## FLOW GRAPH



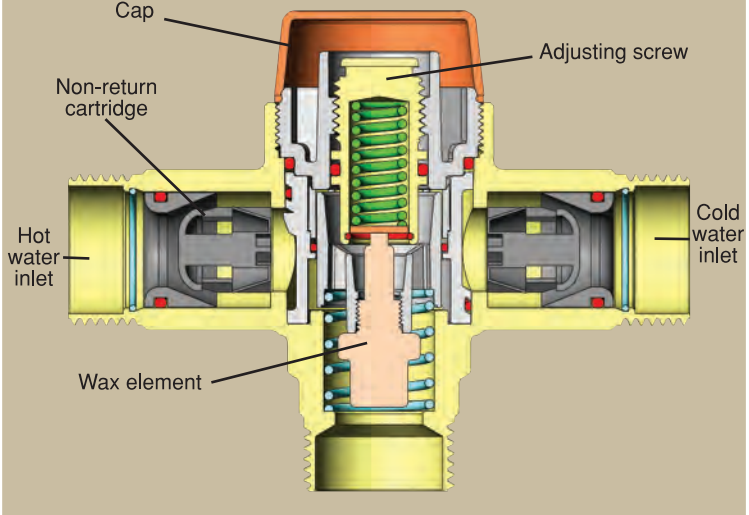

## INSTALLATION
- Refer page 22 for installation guide.
- Valve must be fitted by a qualified plumber.
- Installation must comply with local authority requirements.
- Valve may be installed in any orientation.
- Flush pipes prior to fitting.
- Valve must be protected by a line strainer.
- Connections are H (hot inlet), C (cold inlet) and OUT (mixed temperature outlet).
- Do not apply heat near valve during installation - this may damage the mechanism.
- Do NOT install valve directly into outlet of cylinder.
- 1 m MIN copper pipe length from cylinder to tempering valve, THIS IS A MANDATORY REQUIREMENT OF G12.

## TEMPERATURE ADJUSTMENT
Remove cap. Use screwdriver to adjust to desired temperature.
To increase, turn anti-clockwise (H).To decrease, turn clockwise (C).
Replace cap. Maximum delivered hot water temperature at any sanitary fixture used for personal hygiene shall not exceed 55°C.
For childhood centres, schools, old peoples homes, hospitals and institutions for people with psychiatric or physical disabilities, outlet must be set to max 45°C.

## STANDARDS
- Complies with NZ Building Code G12 (2001)
- Complies with NZS 4617:1989
- NZ Patent No. 517764, Aust. Patent No. 2003200856
  RSA. Patent No. 2003/1992




**TV25S**




## PRODUCT CODES

| | |
|---|---|
| **TV20S** | 20mm Solar Valve |
| **TV25S** | 25mm Solar Valve |

# THERMOSTATIC MIXING VALVE

## APPLICATION

Where water temperature control must be precise or water is required to be at safe skin contact temperature e.g. childhood centre, schools, old peoples homes, hospitals and institutions for people with psychiatric or physical disabilities.

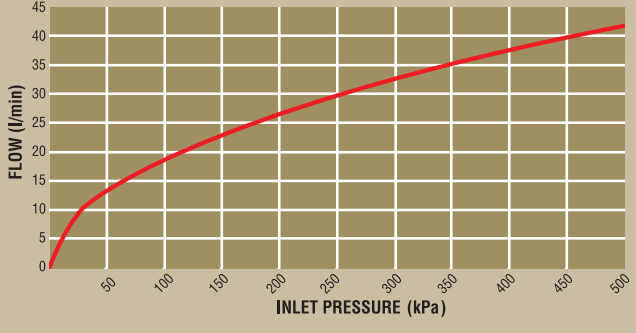
## FEATURES/BENEFITS

- Fail safe shutdown, controls temperature, factory set to 45°C.
- Outlet temperature adjustable 35°C to 60°C.
- High Flow rate, 40l/min at 500 kPa.
- NZ forged, high quality, corrosion resistant, DR brass body nickel plated.
- Integral non-returns means valve is ideal in ring main installations.
- TMV 20 has internal chamfer to suit compression fittings-no union required.
- TMV 20BV comes with right angle ball valves for easy testing, maintenance or replacement.
- TMV 20 & TMV 20BV both have integral, 250 micron/60 mesh filters to ensure no debris enters the valve.

## SPECIFICATIONS

- TMV 20 strainers (60 mesh, 250 micron).
- TMV 20BV strainers (60 mesh, 250 micron) & isolating valves.
- Factory set to 45°C
- Min. setting 35°C
- Inlet water pressures 50 to 1600 kPa
- Outlet temperature adjustable from 35°C to 60°C
- Maximum inlet temperature 99°C
- Stored water temperature must be at least 10°C above the thermostatic valve setting and above 60°C (G12).
- Min. differential between hot supply and set temperature 10°C.
- Max. supply pressure 1600 kPa static, 500 kPa dynamic.
- Flow rate 40l/min at 500 kPa
- Max. pressure imbalance between the hot & cold supplies 5:1.

## FLOW GRAPH




TMV 20 & TMV 20BV

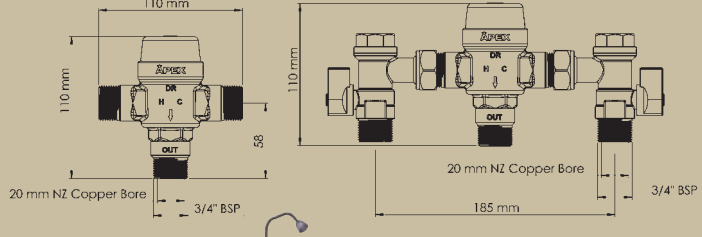
Tested by SAI Global recognised laboratory licence No. LAB 20131

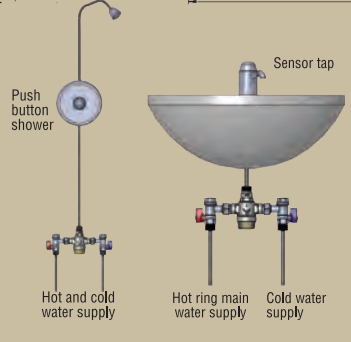
## STANDARDS

- Complies with NZBC Clause G12 (2001)
- Complies with NZS 4617: 1989
- Complies with BS7942


TMV 20

TMV 20BV




## PRODUCT CODES

| | |
|---|---|
| **TMV 20** | 20mm Thermostatic Mixing Valve |
| **TMV 20 BV** | 20mm Thermostatic Mixing Valve with right angle ball valves |

# VALVE PACKS

## LOW PRESSURE

**APPLICATION**

- Low pressure hot water systems.

**SPECIFICATIONS**

- **VP3.7** includes: Filterstop (FS15), Pressure Reducing Valve (FV3.7), Tempering Valve (TV20), MF Ball Valve 20mm (BV) and Socket.
- **VP3.7 Solar** includes:Filterstop (FS15), Pressure Reducing Valve (FV3.7), Tempering Valve Solar (TV20S), MF Ball Valve 20mm (BV) and Socket.
- **VP75** includes: Filterstop (FS15), Pressure Reducing Valve (FV7.6), Cold Water Expansion (EVT7.6), Tempering Valve (TV20), Pressure Relief (RV7.6), MF Ball Valve 20mm (BV), Vacuum Break and Socket.
- **VP120** includes: Filterstop (FS15), Pressure Reducing Valve (FV12.2), Cold Water Expansion (EVT12.2), Tempering Valve (TV20), Pressure Relief (RV12.2), MF Ball Valve 20mm (BV), Vacuum Break and Socket.
- **VP75U/VP120U**Underbench packs as per VP75 and VP120 except Pressure Reducing and Cold Water Expansion Valve settings preset to ensure correct operation within confined space.
- Ball Valve and TV20 not included in Under Bench Pack.

**STANDARDS**

- Complies with NZBC Clause G12 (2001)
- Complies with NZS 4617: 1989


**VP75**

**PRODUCT CODES**

| | | |
|---|---|---|
| **VP3.7** | 3.7m | Open vented |
| **VP3.7 Solar** | 3.7m | Open vented- Solar |
| **VP75** | 7.6m | Valve vented |
| **VP75U** | 7.6m | Underbench valve vented |
| **VP120** | 12.2m | Valve vented |
| **VP120U** | 12.2m | Underbench valve vented |

## HIGH (MAINS) PRESSURE 15/20mm

**APPLICATION**

- High (mains) pressure hot water systems.

**SPECIFICATION**

- **VP15 500 Includes:** Filterstop (FS15), Pressure Limiting Valve with take-off (LVT15-500), Cold Water Expansion Valve (EVT-700), Tempering Valve (TV20), MF Ball Valve 20mm (BV), Non-Return 20mm (NR), Cap and Socket
- **VP20 500 Includes:** Filterstop (FS20), Pressure Limiting Valve with take-off (LVT20- 500), Cold Water Expansion Valve (EVT- 700), Tempering Valve (TV20), MF Ball Valve 20mm (BV), Non-Return 20mm (NR), Cap and Socket.

**STANDARDS**

- Complies with NZBC Clause G12 (2001)
- Complies with NZS 4617: 1989


**VP20 500**

**PRODUCT CODES**

| | |
|---|---|
| **VP15 500** | 15mm, 500 kPa |
| **VP20 500** | 20mm, 500 kPa |

# COMBI PACKS 15/20/25mm

## APPLICATION

- High pressure hot water systems and solar.

## SPECIFICATIONS

- **CP15** includes: Pressure Limiting Valve with take off (LVT15- 500), Cold Water Expansion Valve (EVT 700), Tempering Valve (TV20), 1 x MF Ball Valve 15mm, 1 x MF Ball Valve 20mm, Non-Return 20mm (NR), Cap and Socket.
- **CP20** includes: Pressure Limiting Stop Valve (LSV20 500), Cold Water Expansion Valve (EVT 700), Tempering Valve (TV20), 1 x MF Ball Valve 20mm, Non-Return 20mm (NR), and Socket.
- **CP20T** includes: Pressure Limiting Valve with take-off (LVT20- 500), Cold Water Expansion Valve (EVT 700), Tempering Valve (TV20), 1 x MM Ball Valve 20mm, 1 x MF Ball Valve 20mm, Non-Return 20mm (NR), Cap and Socket.
- **CP20P Pump Pack** includes: Filterstop (FS20), Cold Water Expansion Valve (EVT 700), Tempering Valve (TV20), 1x MF Ball Valve 20mm, Non-Return 20mm (NR) and Socket.
- **CP20M Manifold Pack** includes: Pressure Limiting Valve (LVT20-500), Cold Water Expansion Valve (EVT 700), Tempering Valve (TV20), 1x MM Ball Valve 20mm, 1x MF Ball Valve 20mm, Non-Return 20mm (NR), 100mm Crox Connector, Cap and Socket.
- **CP20S Solar Pack** includes: Pressure Limiting Stop Valve (LSV20 500), Cold Water Expansion Valve (EVT 700), SolarTempering Valve (TV20S), 1 x MF Ball Valve 20mm, Non-Return 20mm (NR), and Socket.
- **CP25** Includes: Pressure Limiting Valve (LV25-500), Cold Water Expansion Valve Honeywell (EV25-800),Tempering Valve (TV25), 2 x MF Ball Valves (BV25mm) , Non-Return 25mm(NR25).

## STANDARDS

- Complies with NZ Building Code G12 (2001)
- Complies with NZS 4607:1989

## PRODUCT CODES

| | |
|---|---|
| **CP15** | 15mm, 500 kPa or 350 kPa |
| **CP20** | 20mm, 500 kPa or 350 kPa |
| **CP20M** | 20mm, 500 kPa or 350 kPa Manifold included |
| **CP20P** | 20mm, Pump Pack - no Limiting Valve |
| **CP20S** | 20mm, 500 kPa or 350 kPa Solar |
| **CP20T** | 20mm, 500 kPa or 350 kPa -Limiting Valve with Take-off |
| **CP25** | 25mm, 500 kPa or 350 kPa |


CP25


CP15


CP20


CP20S


CP20P

# FiltaMate

## PRESSURE LIMITING VALVE

### APPLICATION

- High pressure systems to protect downstream components eg. Water filters, drink dispensers, ice makers, coffee machines and reverse osmosis machines.

### FEATURES/BENEFITS

- The FM(Brass version)is precision machined from high quality N.Z. DR brass and nickel plated.
- Dual checks (FM, FMP, FMP 3/8, FMBP, FM 1/2) prevent backflow making the valve ideal for reverse osmosis units, fridges with ice makers and coffee machines.
- The Filtamate protects water filters by limiting water pressure to the filter (avoiding costly water damage in the house).
- FMP (acetyl plastic version) has quick and simple John Guest fittings for speedy install.

### SPECIFICATIONS

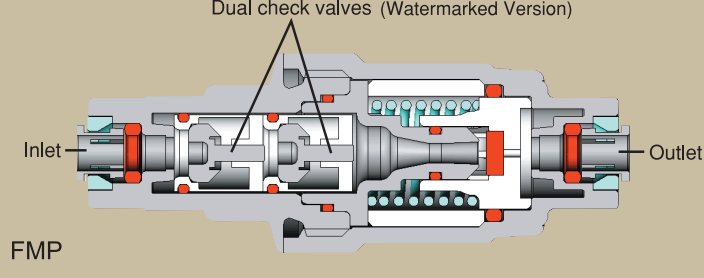
- **FM** Inlet: 15mm, 1/2" BSP (female)
  Outlet: 8mm, 1/4" BSP (female)
  Length: 97mm
- **FMP 3/8** Inlet: 3/8" John Guest connector
  Outlet: 3/8" John Guest connector
  Length: 110mm
- **FMP** Inlet: 1/4" John Guest connector
  Outlet: 1/4" John Guest connector
  Length: 98mm
- Flow rate: 14 L/min at 700 kPa inlet pressure
- Outlet pressures: 350 and 600 kPa ± 10% @ 1000kPa inlet pressure.
- Pressure ratio: 10:1 (for every 10 kPa increase in inlet pressure above 1000 kPa, the outlet pressure will increase by 1kPa).
- Maximum inlet pressure: 1600 kPa
- Maximum temperature: 40°C FMP, 60°C FM
- Minimum temperature: 1°C
- Integral Dual Check Valves (Except FMP350NZ, FM12 and FMSC12).
- FMP supplied with fixing clip and screw.
- FMP Acetyl plastic.

WaterMark
AS1357.2
Lic 02596
AS/NZS 2845.1
Lic 21876

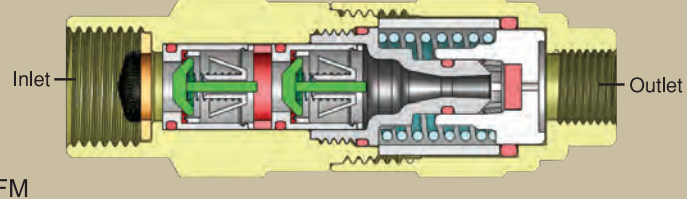

FM


FMP 3/8


FMP




FMP




FM

### PRODUCT CODES

| | |
|---|---|
| **FM 350** | 350 kPa Brass/Nickel Plated with dual check valves |
| **FM 600** | 600 kPa Brass/Nickel Plated with dual check valves |
| **FMP 350** | 350 kPa with dual check valves |
| **FMP 600** | 600 kPa with dual check valves |
| **FMP 350 3/8** | 350 kPa with dual check valves |
| **FMP 600 3/8** | 600 kPa with dual check valve |
| **FMP 350NZ** | 350 kPa without dual check valves |

# FiltaMate

## PRESSURE LIMITING VALVE (Cont'd)

### SPECIFICATIONS

- **FMBP** Inlet: 15mm, 1/2" BSP (female)
  Outlet: 1/4" John Guest connector
  Length: 98mm
- **FM 1/2** Inlet: 15mm, 1/2" BSP (female)
  Outlet: 15mm, 1/2" BSP (female)
  Length: 100mm
- **FM 1/2 F&M** Inlet: 15mm, 1/2" BSP (female)
  Outlet: 15mm, 1/2" BSP (male)
  Length: 100mm
- **FM12** Inlet: 15mm, 1/2" BSP (female)
  Outlet: 12mm John Guest connector
  Length: 84mm
- **FMSC12** Inlet: 15mm, 1/2" BSP (female)
  Outlet: 12mm John Guest connector
  Length: 107mm

Flow rate: 14 L/min at 700 kPa inlet pressure
Outlet pressures: 350 and 600 kPa ± 10% @1000kPa inlet pressure
Pressure ratio: 10:1 (for every 10 kPa increase in inlet pressure above 1000 kPa, the outlet pressure will increase by 1 kPa).
Maximum inlet pressure: 1600 kPa
Maximum temperature: 40°C, 60°C FM 1/2
Minimum temperature: 1°C

### INSTALLATION

- Installation must be carried out by a Qualified Plumber.
- All pipe work must be flushed prior to installation.
- Do NOT apply heat near valve during installation.
- Must be fitted downstream of approved isolating valve.
- Must be installed in the direction as indicated by the flow arrow.
- Must be protected by a line strainer – See (www.apexvalves.co.nz/plumbing/filtamate/pressure_limiting.html) for specifications.
- Must be installed according to local regulations.
- May be fitted in any orientation.
- Warranty is limited to any fault found in a valve due to poor workmanship or materials that is returned to Apex Valves Ltd within 2 years from the date of manufacture.
- **If thermal expansion (due to heating or cooling) or back pressure can occur downstream, an expansion valve must be fitted to relieve the excessive pressure build up.**

### SERVICING

- The Filtamate® valve opens and closes automatically every time water is drawn through it. As it is a mechanical device we recommend that it is replaced every 5 years, or sooner in high usage installations.

### STANDARDS

- Complies with NZ Building Code G12 (2001)
- Complies with NZS 4608:1992
- Australian Watermark Approval AS1357.2 LIC. 02596 (Except FMSC12)
- Australian Watermark Approval AS2845.1 LIC. 21876 (FM; FM 1/2 and FMBP only)
- Australian Watermark Approval AS 1357.2 LIC. 02596, AS/NZS 2845.1 LIC. 21876 (FM,FM1/2 and FMBP only)

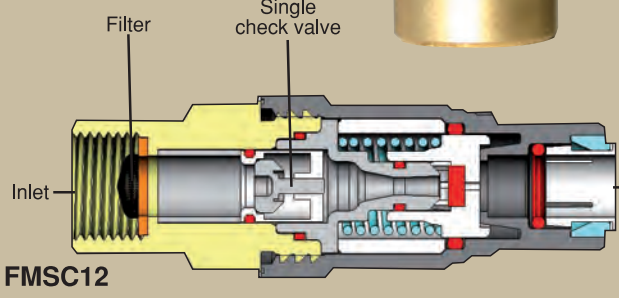

FMBP


FM 1/2
(available in female, female or female,male)

WaterMark
AS1357.2
Lic 02596
AS/NZS 2845.1
Lic 21876


FM12


FMSC12




FMSC12

### PRODUCT CODES

| | |
|---|---|
| **FM350 1/2** | 350 kPa Brass |
| **FM350 1/2 F&M** | 350 kPa Brass (female, male) |
| **FM600 1/2** | 600 kPa Brass |
| **FMBP 350** | 350 kPa Brass/Plastic with dual check valves |
| **FM12 350** | 350 kPa Brass/Plastic (No check) |
| **FMSC12 350** | 350 kPa Brass/Plastic (Includes single check valve) |

# RainAid 20mm

## APPLICATION

The RainAid® valve is designed to be connected to the mains water supply on a rainwater collection tank. It will provide a backup supply of water in the event of demand exceeding rain supply.

## STANDARDS

- Watermark approved

## PATENTS

- New Zealand patent No. 535912
- Australian Class No. 736446
- Australian Class II Patent No. 1025211
- RSA Patent No. 98/8777

## FEATURES/BENEFITS

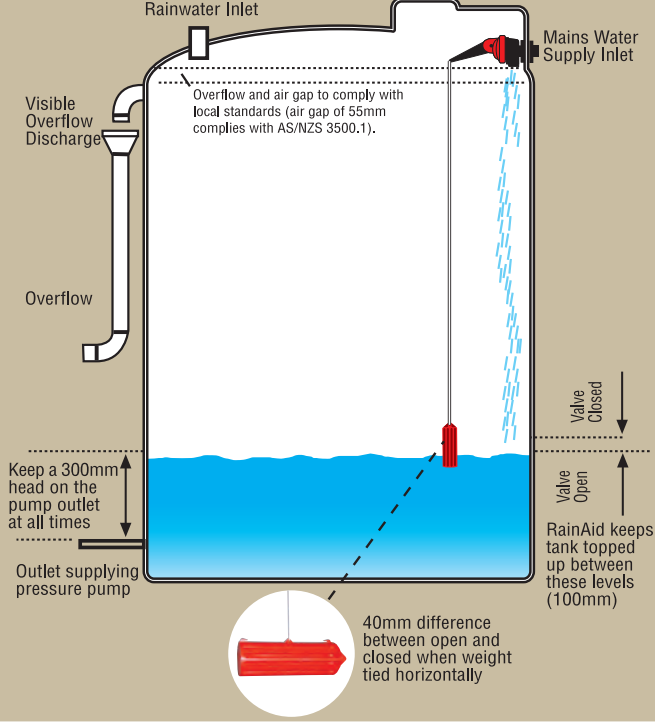
- Under normal conditions, rainwater will fill the tank. If the rainwater level drops below a pre-set level, the RainAid® valve will open to maintain the water level using the mains water supply.
- The rainwater tank is used to supply water to non potable outlets such as the toilets, laundry and garden. There is a 100mm differential between the open and closed positions of the RainAid® Valve.

## SPECIFICATIONS

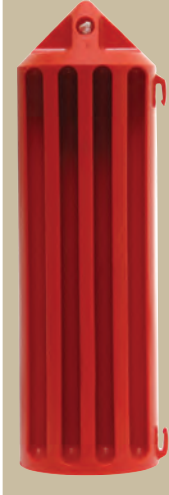
- Inlet 20mm 3/4" BSP (male).
- Cold mains pressure water connection.
- Working Pressure: 55-1200 kPa (8-175 psi).
- Maximum water temperature 60°C.
- Minimum water temperature 1°C.
- Supplied with inlet strainer.

## INSTALLATION

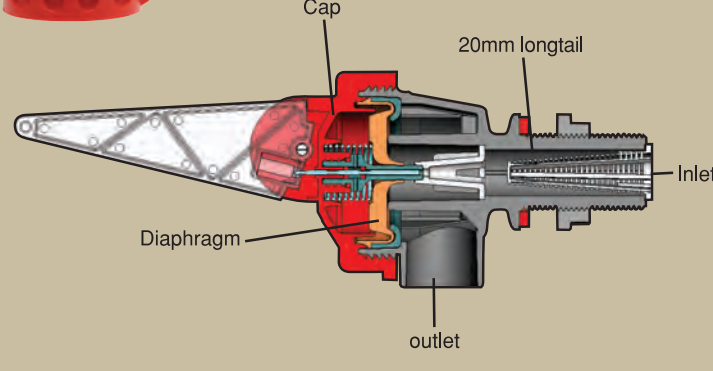
- Valve must be installed horizontally.
- Do not install on an angle.
- Do not restrict inlet water flow.
- Not to be modified.
- Not to be used in dual purpose tanks used for stormwater detention.
- Warranty is limited to any fault found in a valve due to poor workmanship or materials that is returned to Apex Valves Ltd within 2 years from the date of manufacture.
- N.B Some Australian states stipulate a minimum water level that must be maintained for fire fighting purposes.
- **Overflow and air gap to comply with local standards (air gap of 55mm complies with AS/NZS 3500.1).**




WaterMark
AS 1910
Lic. 20368



40mm difference between open and closed when weight tied horizontally




## PRODUCT CODES

**RA20**

**RA2L** 2 L/min

## NOTE

*For full range see www.apexvalves.co.nz*

# NON-RETURN VALVES

**APPLICATION**
To prevent the reverse flow of water.

**STANDARDS**
- Complies with NZ Building Code G12 (2001)
- Complies with NZS 4608:1992

**SPECIFICATIONS**
- **NR15** 15mm BSP (male/male)
- **NR20** 20mm BSP (male/female)
- **NR20S** 20mm BSP (male/female)
- Maximum pressure: 1600 kPa
- Maximum temperature: 65°C NR15,20
  110°C NR20S
- DR (Dezincification Resistant) brass.

NR 15 NR20 NR20S

**PRODUCT CODES**

| | |
|---|---|
| **NR15** | 15mm |
| **NR20** | 20mm |
| **NR20S** | 20mm (Solar) |

# VACUUM BREAKS

**APPLICATION**
- Air gap for hot water systems.
- For combined or over length drains, refer page 22.

**STANDARDS**
- Complies with NZS 4608:1992.
- WRc (UK) approved Certificate No. 1001007 (not VBN).

**SPECIFICATIONS**
- Safeguards cylinders in the event of a blocked drain.
- Provides visual check of power and water waste from thermostat or valve malfunction (not VBN).
- SVB & RAVB - 20mm air gap.
- VBN has 15mm F inlet.
- VBN has 15 & 20mm outlet options.
- VBN may be installed horizontally or vertically.
- Acetyl plastic.

Notes:
1. First number inlet size, second number outlet size.
2. M= Male thread, F= Female thread.
3. Some models may be subject to minimum order quantities.

SVB RAVB VBN

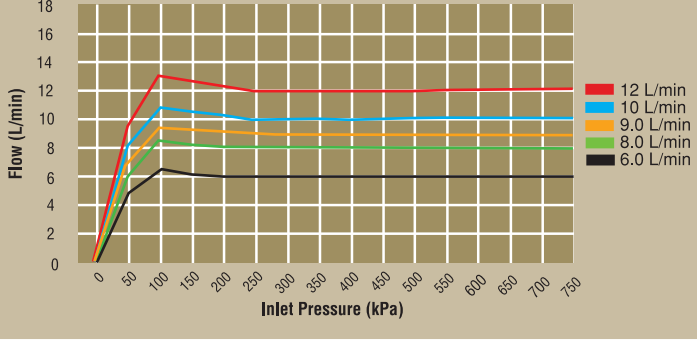
**PRODUCT CODES**

| | |
|---|---|
| **SVB 15F 20M** | **RAVB 15M 20F** |
| **SVB 15F 22M** | **RAVB 20M 20F** |
| **SVB 15M 20M** | **RAVB 20M 25F** |
| **SVB 15M 22M** | |
| **SVB 20M 20F** | **VBN 15M 15F** |
| **SVB 20M 25F** | |
| **SVB 22M 25F** | |

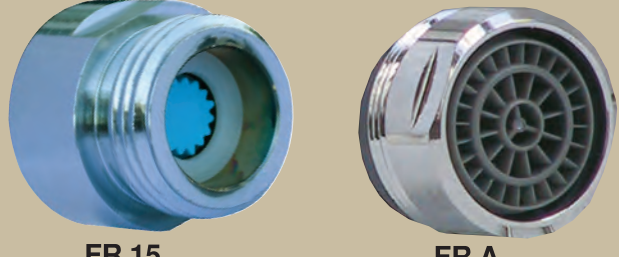
# FLOW REGULATORS

**APPLICATION**
- To reduce water use.

**SPECIFICATIONS**
- **FR 15** Inlet 15mm BSP (female)
  Outlet 15mm BSP (male)
  Length: 22mm
- **FR A** Inlet: M24 x 1 (male)
- Replaces most single lever tapware aerators, remove insert for perlator type.
- Maximum inlet pressure: 1000 kPa
- Maximum temperature: 65°C
- Flow graph:




FLOW



FR 15 FR A

(Must only be installed on flat faced sealing surface)

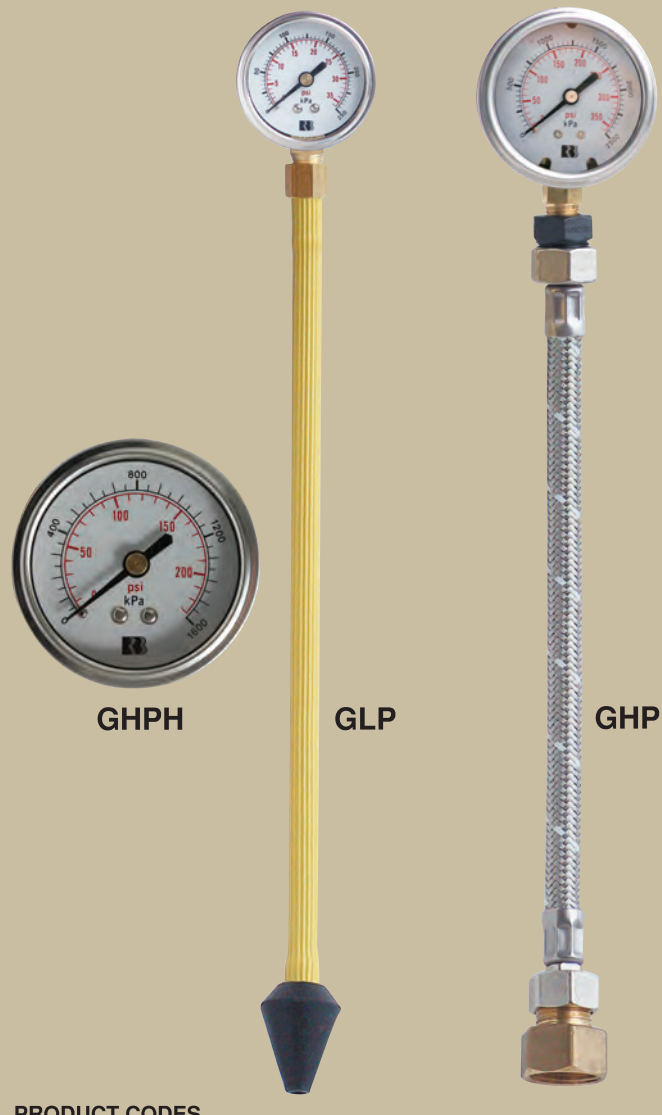
**PRODUCT CODES**

| | | |
|---|---|---|
| **FR 15-6** | 6.0 L/min | Black |
| **FR 15-8** | 8.0 L/min | White |
| **FR 15-9** | 9.0 L/min | Orange |
| **FR 15-10** | 10.0 L/min | Blue |
| **FR 15-12** | 12.0 L/min | Red |
| **Aerator/Perlator Type** | | |
| **FR A-8** | 8.0 L/min | White |

# PRESSURE GAUGES

**APPLICATION**
Pressure testing of high and low pressure plumbing systems.

**SPECIFICATIONS**
- **GHP:** 0 - 2500 kPa (367 psi) pressure range.
  Supplied with 15mm and 20mm female connectors.
  Oil filled.
- **GLP:** 0 - 250 kPa (35 psi) pressure range.
  Supplied with tapered rubber plug.
- **GHPH:** For Honeywell Braukmann Pressure Limiting Valves.
  0 - 1600 kPa (232 psi) pressure range.
  Back entry.

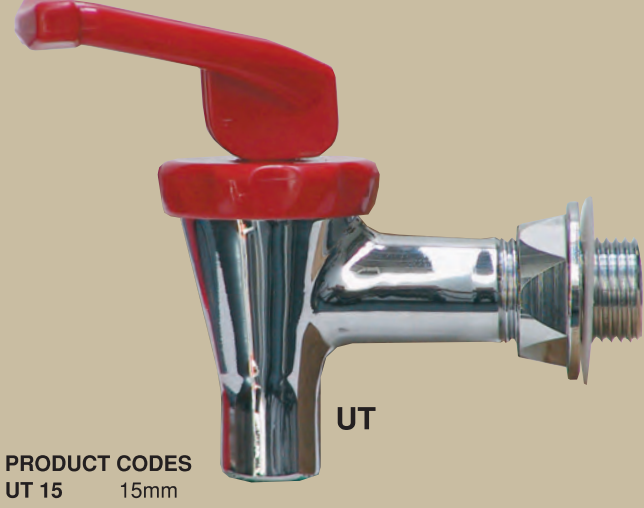



**PRODUCT CODES**
**GHP Gauge** High pressure
**GLP Gauge** Low pressure
**GHPH Gauge** High pressure (for Honeywell Limiting Valve)

# URN TAP

**APPLICATION**
Tap for dispensing boiling water.

**SPECIFICATIONS**
- Length: 75mm
- Silicone rubber diaphragm.
- Locknut to conceal inlet thread.
- Nylon washer.
- Chrome plated finish.
- Maximum temperature 100°C.
- 1year warranty.
- DR (Dezincification Resistant) brass.




**PRODUCT CODES**
**UT 15** 15mm

# Installation to comply with NZBC Clause G12 (2001) or NZS 4607:1989.

- Valves must NOT be installed in ground.
- Valves must be installed in a position where reasonable access is provided for maintenance and/or replacement.
- **Caution:** do not apply heat near valves during installation.

### DRAIN LINES

- **IMPORTANT:** TAPS, VALVES OR OTHER SHUT-OFF DEVICES MUST NOT BE INSTALLED IN THE RELIEF OR EXPANSION DRAIN LINES.
- Drain line should be copper, they should fall continuously from the valve outlet and be of the shortest possible length.
- The discharge end of the drain line must be positioned so as any discharge will be visible, but not cause damage or a nuisance.
- Drain lines must not be smaller than the outlet of the valve to which they are connected.

***NOTE:***

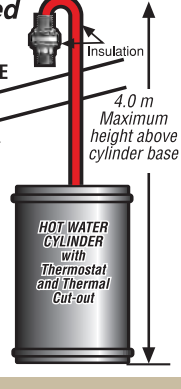
* *R.V and E.V drains may be combined provided discharge is via a minimum airbreak of 25mm. Drain must have a minimum size of 20mm diameter and be one size larger than the largest relief valve outlet. (Refer diagrams)*

** *1.0m minimum copper pipe length from cylinder to Tempering Valve and 250mm vertical heat trap to Tempering valve. (As per G12)*

! *If the drain exceeds a factor of 12 as a combination of length in metres and no. of bends (e.g.7 metres & 5 bends=12 ) a SVB vacuum break must be fitted as per G12 (see pg.20)*

## LOW PRESSURE

***Open Vented conversion to Valve Vented***




To improve hot water service when an exhaust pipe is already fitted.

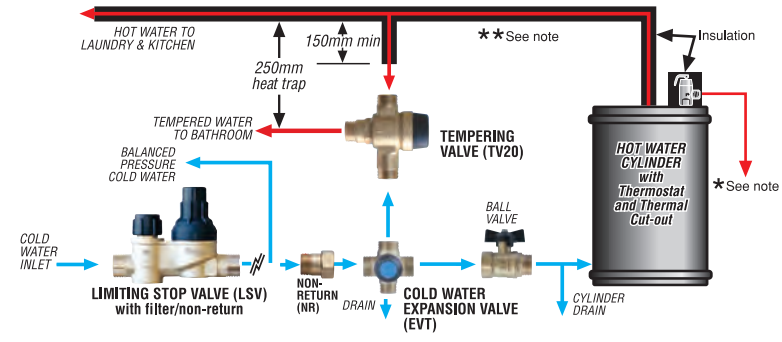
**Note:** Do not use in wetback installation and in frost areas.

***Inlet Valves required as for Valve Vented.***

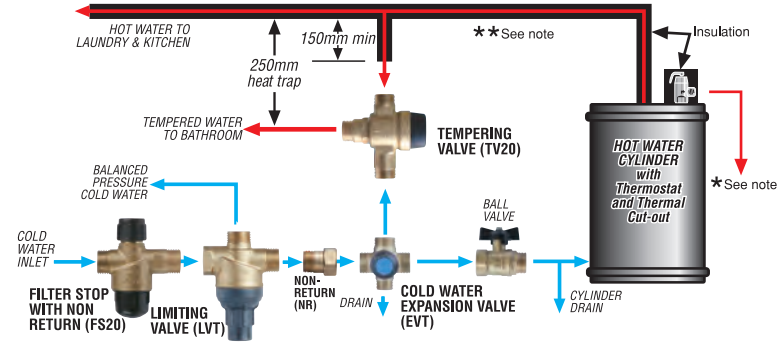
### RECOMMENDED

- In frost areas fitting an EVT7.6 can protect cylinders in the event of exhaust pipe freezing.
- To protect tapware and appliances from excessive high pressure it is recommended to install Apex LV at point of entry to the household.

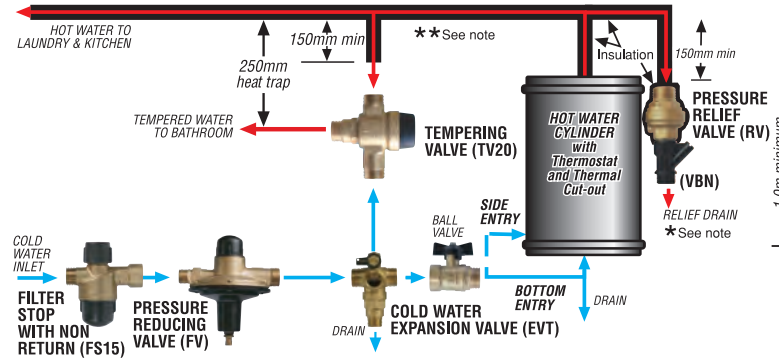
## HIGH PRESSURE - Valve Vented CP20



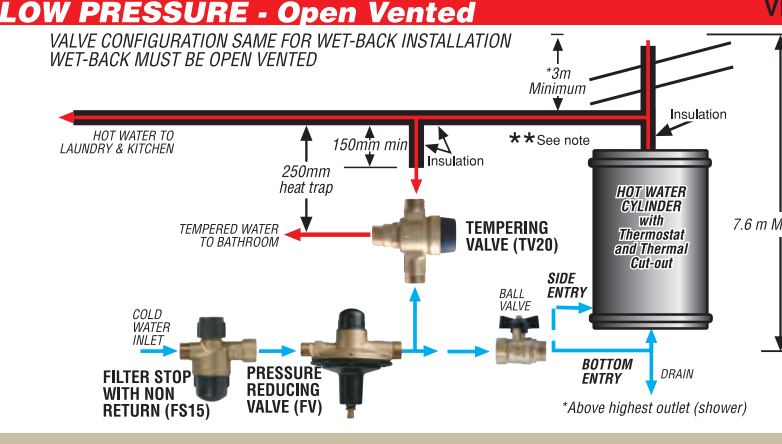

## HIGH PRESSURE - Valve Vented VP20 500




## LOW PRESSURE - Valve Vented VP75



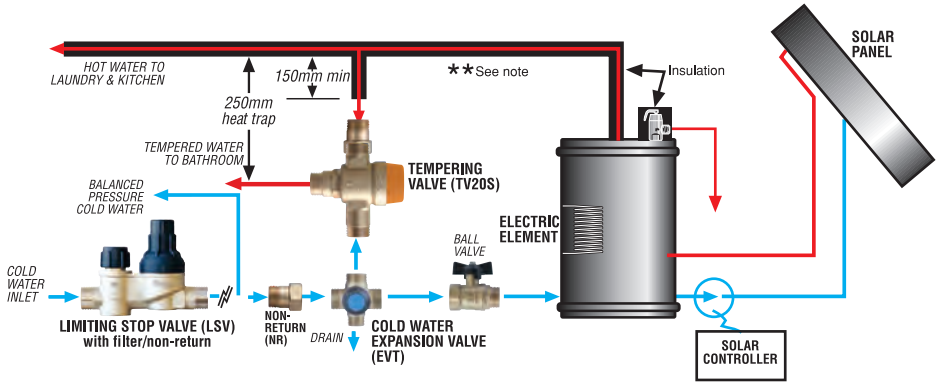

## LOW PRESSURE - Open Vented VP3.7



**PRODUCT CODES**
Limiting Stop Valve (LSV), Non-return (NR), Cold water expansion valve (EVT)and Tempering Valve Solar (TV20S).
See CP20S Page 16.

## OPEN LOOP SOLAR INSTALLATION

CP20S

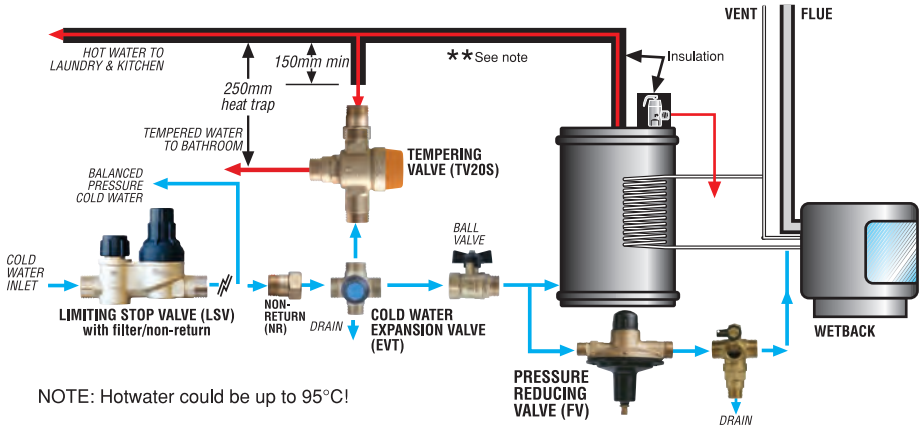



NOTE: Hotwater could be up to 95°C!

**PRODUCT CODES**
Limiting Stop Valve (LSV), Non-return (NR), Cold water expansion valve (EVT),Tempering Valve Solar(TV20S) and Pressure Reducing Valve(FV), Cold water expansion valve (EVT 7.6).
See CP20S, FV, and EVT 7.6.

RECOMMENDED:
In frost areas fitting an EVT 7.6 can protect wetback system and FV.

## MAINS PRESSURE, WETBACK INSTALLATION




NOTE: Hotwater could be up to 95°C!

**PRODUCT CODES**
RVHP Relief Valve RVHP xxx (xxx = setting required and units - kPa or psi).
Tempering Valve, Solar TV20S (high temperature)
Non-return valve NR20.

***NOTE:***

*Apex marine relief valves are available at settings up to 415 kPa (60 psi).*

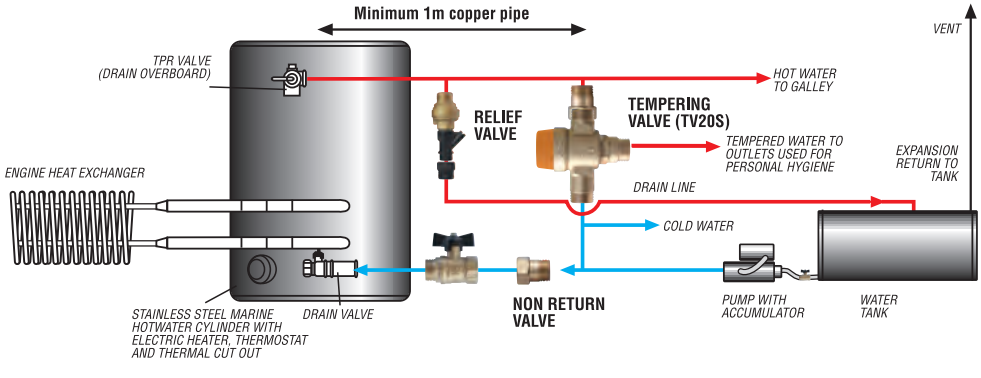
*It is important that the relief valve is set about 70 kPa (10 psi) above the pump outlet pressure.*

*The TPR valve and maximum cylinder working pressures must be greater than the relief valve setting.*

*The TPR drain is plumbed overboard, otherwise if the valve discharges the complete contents of the hot water cylinder,due to an overheating fault, the cold water tank could be damaged.*

*Drain lines must have fall and be piped in half hard copper pipe. On alloy hulls, take precautions to prevent electrolysis.*
*If the water tank is not vented, run the drain line to waste.*

## MARINE HOTWATER CYLINDER INSTALLATION



# STANDARD PRESSURE SETTINGS AND CONVERSION TABLES

## LOW PRESSURE - up to 120 kPa

| FV PRESSURE REDUCING VALVE | EVT EXPANSION VALVE | RV RELIEF VALVE | TAG COLOUR |
|---|---|---|---|
| 37 (kPa) | N/A | OPEN VENTED | |
| 65 | 75 | 75 | |
| 110 | 120 | 120 | |

## HIGH PRESSURE - above 120 kPa

| LV PRESSURE LIMITING VALVE | EVT EXPANSION VALVE | TPR TEMPERATURE PRESSURE RELIEF VALVE | TAG COLOUR |
|---|---|---|---|
| 350 (kPa) | 500 | 850/1000/1400 | |
| 500 | 700 | 850/1000/1400 | |

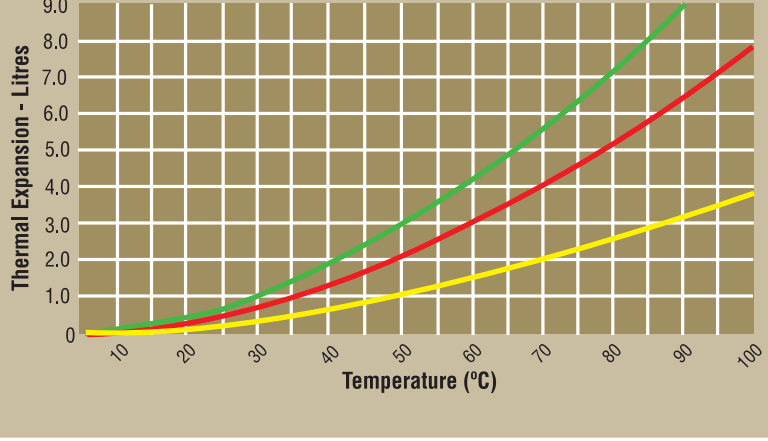
| kPa | BAR | METRE HEAD | FOOT HEAD | P.S.I. |
|---|---|---|---|---|
| 5 | 0.05 | 0.5 | 1.7 | 0.7 |
| 10 | 0.1 | 1.0 | 3.3 | 1.5 |
| 20 | 0.2 | 2.0 | 6.7 | 2.9 |
| 30 | 0.3 | 3.1 | 10.0 | 4.4 |
| 37 | 0.37 | 3.77 | 12.4 | 5.4 |
| 40 | 0.4 | 4.1 | 13.4 | 5.8 |
| 50 | 0.5 | 5.1 | 16.7 | 7.3 |
| 60 | 0.6 | 6.1 | 20.1 | 8.7 |
| 70 | 0.7 | 7.1 | 23.4 | 10.2 |
| 75 | 0.75 | 7.65 | 25.1 | 10.9 |
| 80 | 0.8 | 8.2 | 26.8 | 11.6 |
| 90 | 0.9 | 9.2 | 30.1 | 13.1 |
| 100 | 1.0 | 10.2 | 33.5 | 14.5 |
| 120 | 1.2 | 12.2 | 40.1 | 17.4 |

| kPa | BAR | METRE HEAD | FOOT HEAD | P.S.I. |
|---|---|---|---|---|
| 200 | 2.0 | 20.4 | 66.9 | 29.0 |
| 300 | 3.0 | 30.6 | 100.4 | 43.5 |
| 350 | 3.5 | 35.7 | 117.1 | 50.8 |
| 400 | 4.0 | 40.8 | 133.8 | 58.0 |
| 500 | 5.0 | 51.0 | 167.3 | 72.5 |
| 600 | 6.0 | 61.2 | 200.7 | 87.1 |
| 700 | 7.0 | 71.4 | 234.2 | 101.5 |
| 800 | 8.0 | 81.6 | 267.6 | 116.1 |
| 900 | 9.0 | 91.8 | 301.0 | 130.6 |
| 1000 | 10.0 | 102.0 | 334.6 | 145.0 |

1 P.S.I = 6.89 kPa (7 nominal)
1 bar = 100 kPa
1 kPa = 0.145 P.S.I.

# THERMAL EXPANSION

Under normal conditions, a 180 litre hot water cylinder when heated from cold to 65°C will expel 3.6 litres (12.6m of 20mm DIA copper pipe) of water due to thermal expansion. The amount of expansion will vary depending on the volume of hot water used and cylinder capacity. A normal domestic system expells approximately 10L/day.

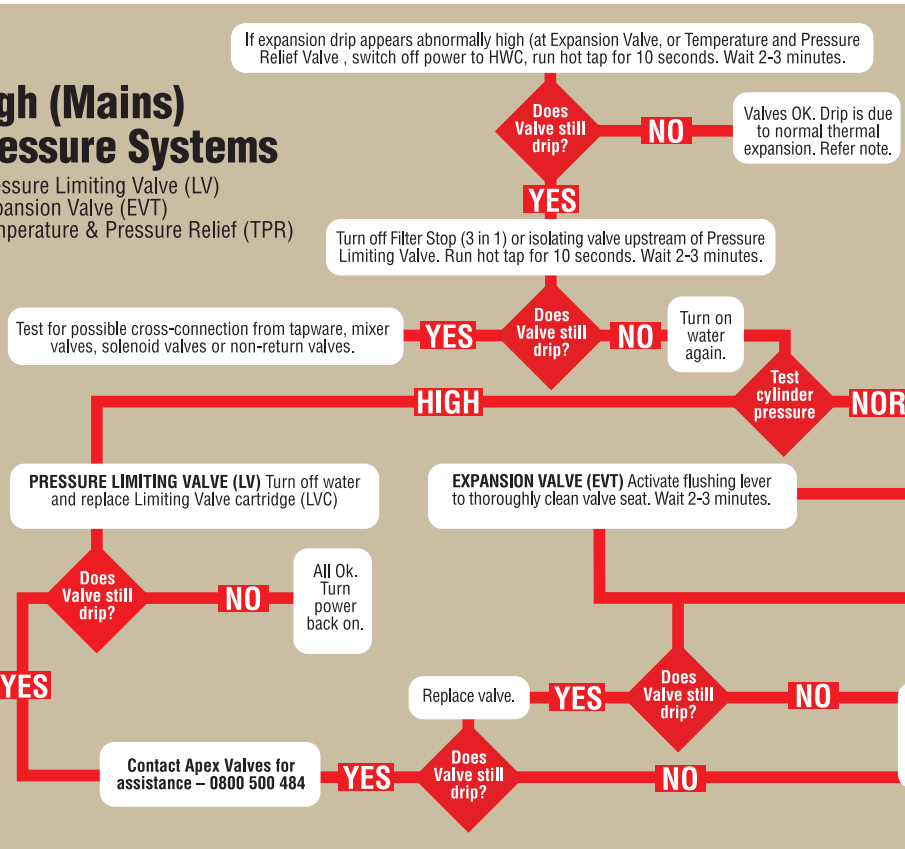



Cylinder Capacity
250 L
180 L
90 L

• Normal bucket holds 10 litres

# High (Mains) Pressure Systems

- Pressure Limiting Valve (LV)
- Expansion Valve (EVT)
- Temperature & Pressure Relief (TPR)

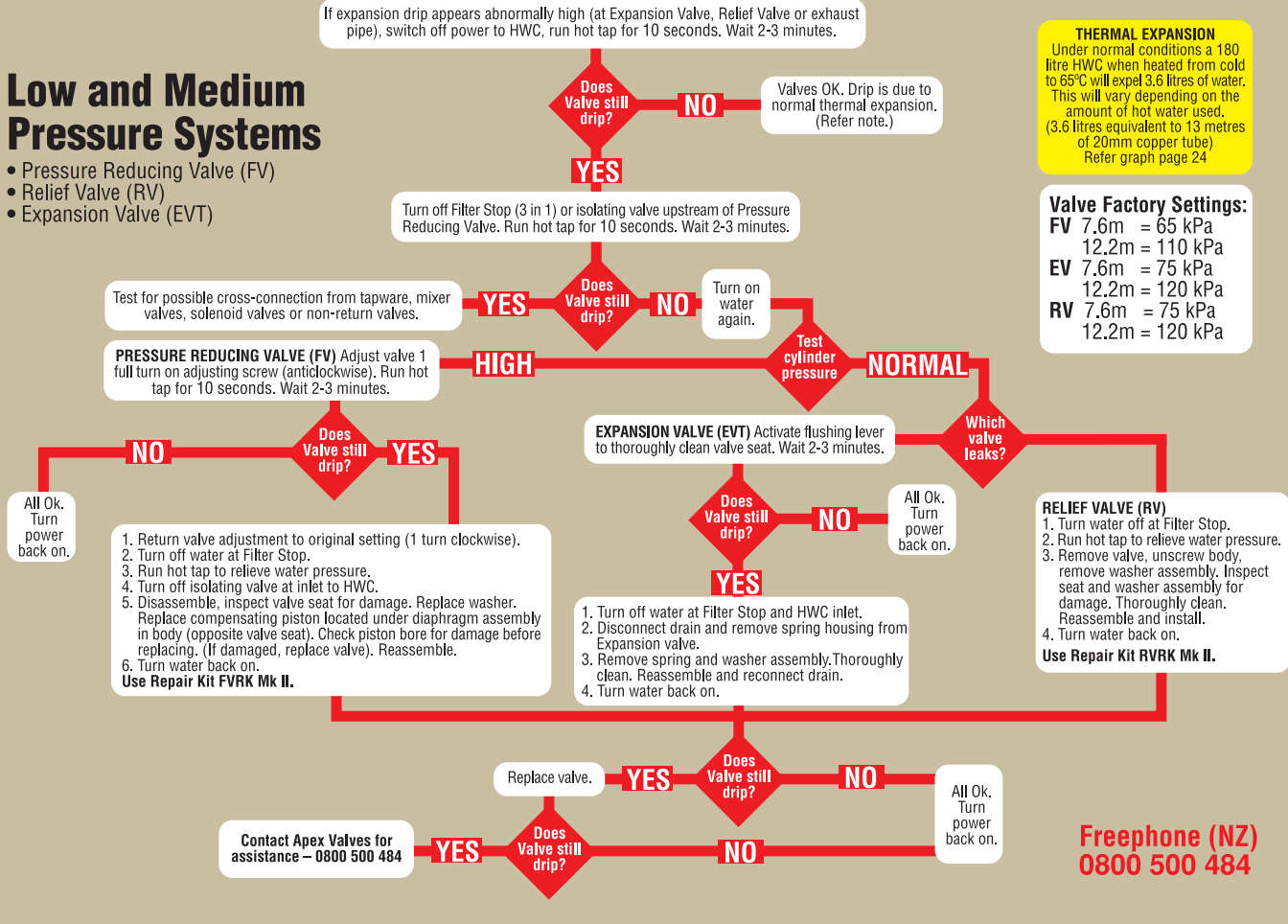



**THERMAL EXPANSION**
Under normal conditions a 180 litre HWC when heated from cold to 65°C will expel 3.6 litres of water. This may vary depending on the amount of hot water used.
Refer graph page 24

**Valve Factory Settings:**
**LV** 500 or 350 kPa
**EVT** 700 or 500 kPa
**TPR** 1000 kPa or 1400 kPa
*(TPR supplied with hot water cylinder)*

# Low and Medium Pressure Systems

- Pressure Reducing Valve (FV)
- Relief Valve (RV)
- Expansion Valve (EVT)




**THERMAL EXPANSION**
Under normal conditions a 180 litre HWC when heated from cold to 65°C will expel 3.6 litres of water. This will vary depending on the amount of hot water used. (3.6 litres equivalent to 13 metres of 20mm copper tube)
Refer graph page 24

**Valve Factory Settings:**
**FV** 7.6m = 65 kPa
12.2m = 110 kPa
**EV** 7.6m = 75 kPa
12.2m = 120 kPa
**RV** 7.6m = 75 kPa
12.2m = 120 kPa

**Freephone (NZ)**
**0800 500 484**

## WARRANTY (NZ ONLY)

Apex Valves warranty is limited to any fault found in a new valve due to poor workmanship or materials that is returned to Apex Valves Ltd within five (5)* years from the date of manufacture unless otherwise stated. This warranty meets the durability requirements as specified in NZ Building Code Clause B2, Table 1.

**The warranty does NOT apply if faults arise due to the following causes:**

1. Faulty operation due to foreign matter in the water supply.
2. Installation of valves to impure or deleterious water supplies that contain excessive dissolved salts or chemicals.
3. Installation that does not comply with NZ Building Code G12, NZS 4607:1989, any other relevant approved Standard, or Manufacturers instructions and recommendations.
4. Abuse or mutilation of a valve during installation or in an attempt to repair or replace the valve.
5. Installation of a valve in an application where its intended use is not that for which the valve was designed without the prior written consent of Apex Valves Limited.
6. Failure due to a lack of maintenance.

Apex Valves Limited shall in no way be liable for any loss, damage (direct, indirect or consequential), cost or expense incurred other than those rights a consumer has under the Consumer Guarantees Act 1993.

Note: Apex Valves Limited reserve the right at any time to modify any valve specifications.

*Rainaid and Filtamate warranteed for 2 years.

**For all technical drawings and specifications refer to:**
**www.apexvalves.co.nz**


**MANUFACTURER:**

APEX VALVES

Rosebank, Auckland, NZ, 367 Rosebank Rd, Avondale, NZ
Phone: 09 828 3123, Fax: 09 828 3505,
NZ Nationwide Freephone: 0800 500 484
Email: sales@apexvalves.co.nz www.apexvalves.co.nz

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