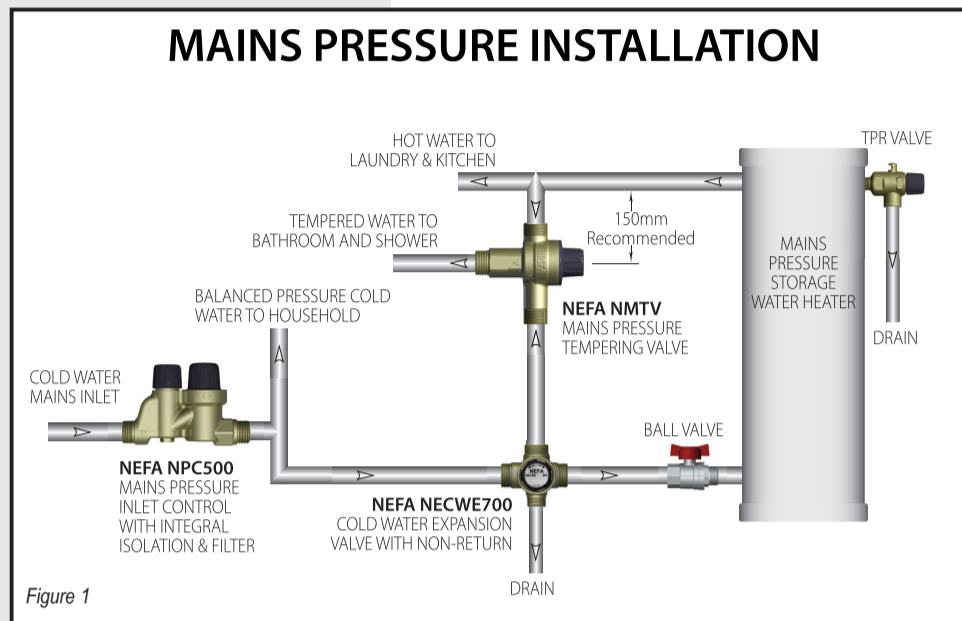
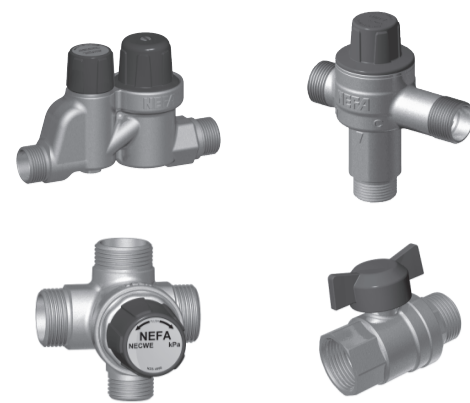


**MAINS PRESSURE
INSTALLATION DIAGRAM**



NEFA
BY METHVEN

**Complete valve set for
mains pressure installation**

Contents:

NPC500
500kPa Mains Pressure
Inlet Control Valve
(pressure limiting valve
with inlet isolation and filter)

NMTV
Mains Pressure
Temperature Limiting Valve

NECWE700
700kPa Cold Water Expansion Valve
(with non-return valve)

BV78820
20mm M/F Ball Valve

- DR brass construction
- Superior flow rate
- Simple installation
- Pressure adjustable
- Meets requirements of NZBC G12
- Conforms to NZS:4608 and NZS:4617



**MAINS PRESSURE
INSTALLATION PACK**

Warranty Statement

Where Methven tapware or valving (tapware) is purchased for use or on-sale in the context of any business, Methven undertakes to either repair or replace (at its option) that tapware if it is discovered that such tapware contains a material defect, which arose in the course of manufacture.

This undertaking shall not apply if:

1. The defect is brought to Methven's attention later than 2 years after the date of purchase, where the defect relates to washers, "O" rings, lip and other seals and powder coating, or 5 years where the defect relates to any other tapware componentry. All single lever ceramic disc cartridges specified for mains pressure only use, has a lifetime warranty.
2. There is a failure by any person to follow Methven's installation instructions or the tapware is used other than in accordance with Methven's specifications.
3. Evidence cannot be produced which confirms that the relevant tapware was purchased from a Methven authorised distributor.
4. Repair work is performed on the relevant tapware by a person other than Methven, its authorised service agents or any plumber who has not received authorisation prior to proceeding with the work.

Conditions:

Proof of purchase details (such as invoice or receipt) will be required to claim under this warranty. Lifetime warranties are applicable, where mains pressure use only has been specified, on ceramic disc cartridges and will result in replacement of defective parts. The above undertaking from Methven shall also apply to any purchaser of Methven tapware who is a "Consumer" under the Consumer Guarantees Act 1993, in addition to any other right or remedy which such person may have under that Act. Methven shall in no way be liable to the purchaser or user of any tapware, for any loss, damage (direct, indirect or consequential), cost or expense suffered or incurred by that person, otherwise than as provided in the above provisions, or as provided under the Consumer Guarantees Act 1993.

METHVEN

Designed, distributed and warranted
by Methven Limited,
Private Bag 19996, Avondale, Auckland, NZ.

For product assistance, technical and sales
enquiries contact Methven Limited
Ph: 0800 804 222
Fax: 0800 805 222

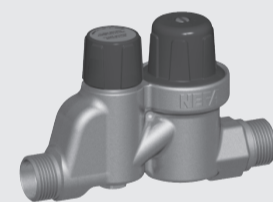
Part No: 285044 Issue B

NPC500 - 4-in-1 PRESSURE LIMITING VALVE



SERVICING

- To remove and clean the filter:
 1. Turn the isolation control clockwise to the **closed** position.
 2. Unscrew the filter cap.
 3. Withdraw the filter and clean it.
 To reassemble, reverse the above procedure. Care should be taken not to damage the filter.
- The filter should be checked and cleaned at minimum 12 month intervals.



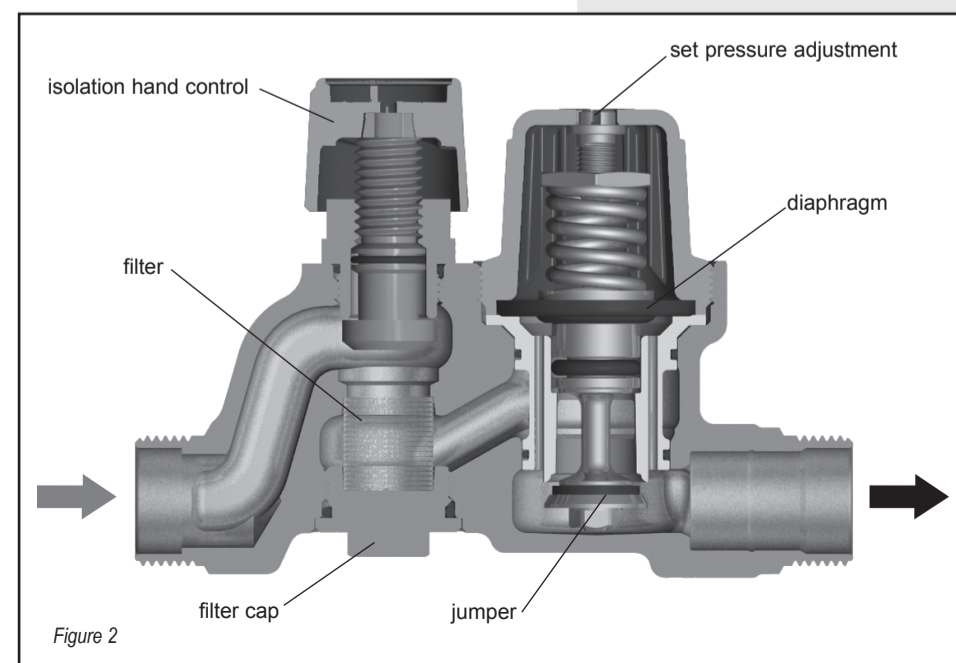
SPECIFICATIONS

- 20mm (3/4" BSP) male inlet & outlet
- Conforms to BIA G12 and NZS 4608
- Factory set outlet pressure 500 kPa
- Maximum inlet pressure 2000kPa
- Set pressure adjustable 100kPa to 600kPa.
- Flow rate of 112 l/min on 20mm pipework at 700kPa supply pressure.
- Overall length 145mm, main body diameter 53mm
- Maximum temperature 65°C
- The date of manufacture is marked on the indicator disc on the hand control. The date is represented by a five digit number. The first two digits indicate the year and the last three digits indicate the day.

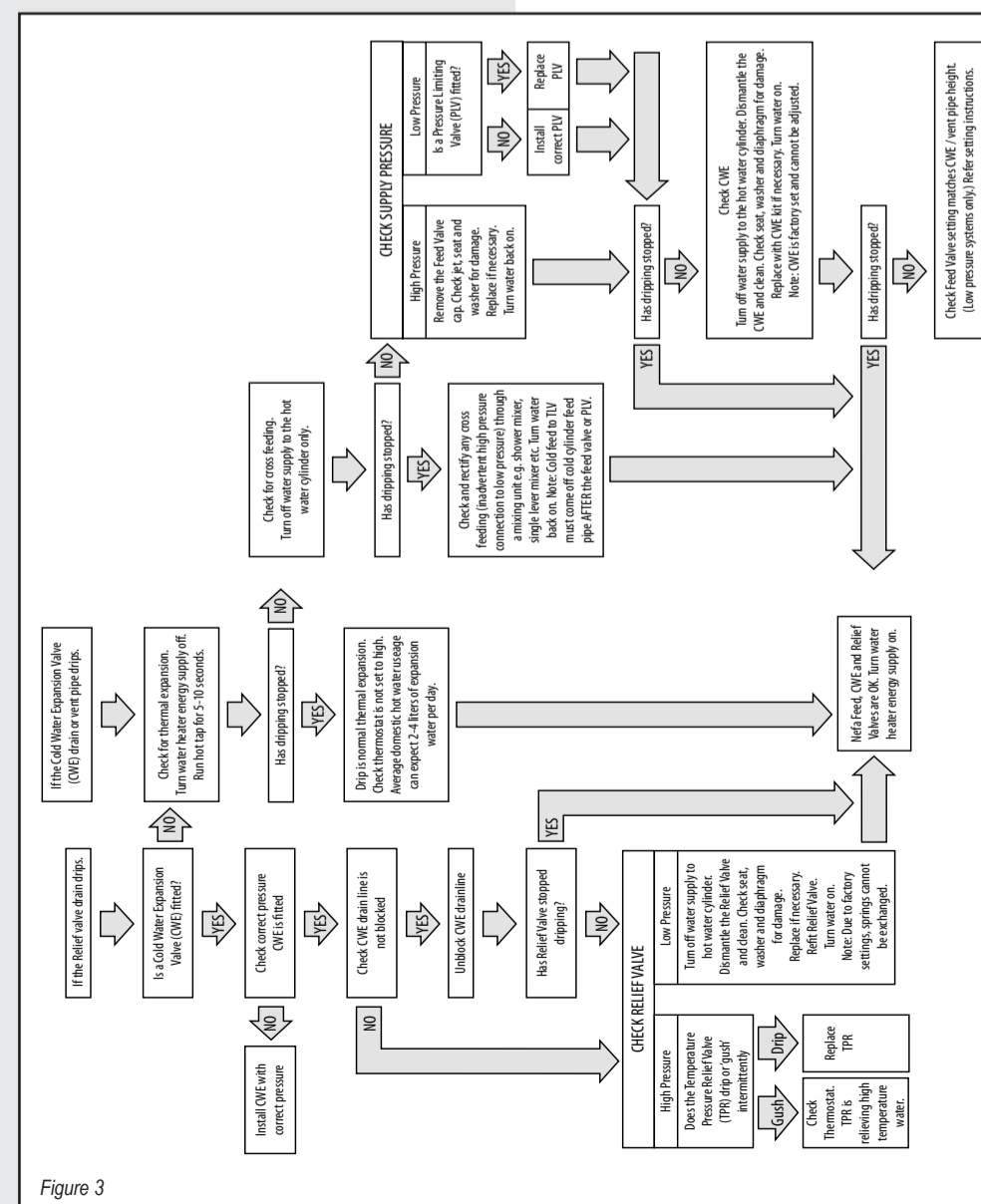
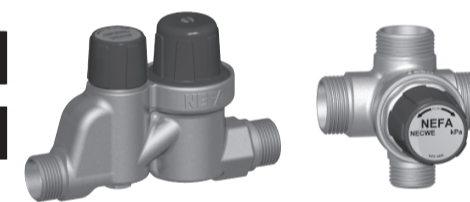
PRESSURE ADJUSTMENT

- The NPC500 is supplied factory set to 500kPa. If required, the set pressure can be increased or decreased (minimum 100kPa, maximum 600kPa) by using a screwdriver to rotate the adjusting screw in the direction indicated on the pressure cap. To increase the set pressure turn the screwdriver clockwise (+). To decrease the set pressure turn the screwdriver anticlockwise (-).

VALVE SCHEMATIC



**TROUBLESHOOTING FOR
NEFA HOT WATER SYSTEMS**



INSTALLATION

- NEFA valves should always be installed by a qualified plumber in accordance with the NEFA installation instructions. The installation must also conform to the requirements of the Building Code and the Department of Building and Housing's approved document G12 Water Supplies and must also comply with Local Authority requirements.
- A NEFA NPC500, Mains Pressure Inlet Control Valve should be installed in the main water supply at point of entry. This will provide a point of isolation, a filtered water supply and balanced water pressure to the whole house, protecting tapware and appliances from excessive pressure.
- The valve should be installed where it can be easily accessed, and where water from servicing the filter will not cause damage.
- Always check for the correct flow direction through valves as indicated by markings on the valve and fitting instructions.
- The NEFA Mains Pressure Inlet Control Valve can be installed in any orientation; the recommended orientation is with the filter plug facing down to allow foreign particles to fall away when the filter is removed for cleaning.
- Valves must not be installed in the ground or in situation where it could be subject to freezing.
- Never expose valves to a naked flame or heat. Heat will destroy the seals and the sealing parts of the valve.
- Never allow thread sealing tape to extend over the end of threads, excess tape may be cut free when making connections and affect the function of the valve.
- Always flush pipes before connecting valves.

NMTV - TEMPERATURE LIMITING VALVE

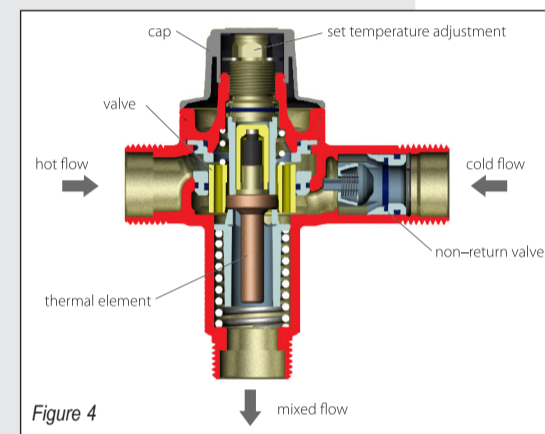
SPECIFICATIONS

- Connections: 20mm (3/4" BSP) male
- Recommended outlet temperature range: 45°C to 55°C²
- Factory setting (must be commissioned on site): 55°C nominal
- Accuracy of mixed outlet temperature: ± 3°C
- Cold water supply: 5°C to 25°C
- Hot water supply: 60°C to 90°C¹
- Hot water / mixed water temperature differential: 15°C minimum
- Supply pressure – static: 1600kPa maximum
- Supply pressure – dynamic: 200kPa min - 500kPa max
- Maximum permitted pressure variations at either inlet: ± 10% maximum^{4,5}
- Pressure supply differential – dynamic (at time of commissioning): 3:1 maximum³
- Minimum flow rate: 4 litres/minute

Notes:

1. The NZ Building Code Approved Document G12 clause 6.14 states that water shall be stored at not less than 60°C to inhibit the growth of legionella bacteria. To obtain good tempering valve response the cylinder thermostat should be set at a minimum of 65°C.
2. The valve can be set as low as 35°C or as high as 58°C, depending on site conditions. The temperatures are outside the optimum working range of the valve and the requirements of G12.
3. The maximum ratio permitted between supply pressures, under dynamic flow operation. It is recommended at time of commissioning that hot and cold pressures be as equal as possible.
4. The maximum permitted pressure variation in either supply from commissioning pressures in order to maintain the outlet temperature to ±3°C.
5. Note: Steps should be taken to eliminate any causes of rapid changes in supply pressures, as this may result in an outlet temperature spike greater than ±3°C from commissioned temperature. If a spike occurs it may take a few seconds for the temperature to stabilise back to within ±3°C.

VALVE SCHEMATIC



IMPORTANT

SCALDS FROM HOT WATER

The following aims to provide information on the risk of hot water scalds at different water temperatures and contact time.

The seriousness of a hot water scald burn is directly dependent on the temperature of the liquid and the length of contact time.

Medical research has demonstrated that there is a significant difference in the time that it takes to get a serious, third degree scald at different temperatures. A third degree burn is one that goes through the full thickness of skin and is likely to require surgery.

For water temperatures less than 50°C, there is a substantial safe contact time before third degree burns occur. At 50°C the safe contact time for an adult and a child is 5 minutes. At higher temperatures, the safe contact time, particularly for children and the elderly, is substantially reduced (as shown in Figure 6) below.

Children and elderly people are more likely to suffer injury than any other age group because their skin tends to be softer, they are also more susceptible to falls and are less likely to be able to protect themselves.

- Extract from AS 4032.2

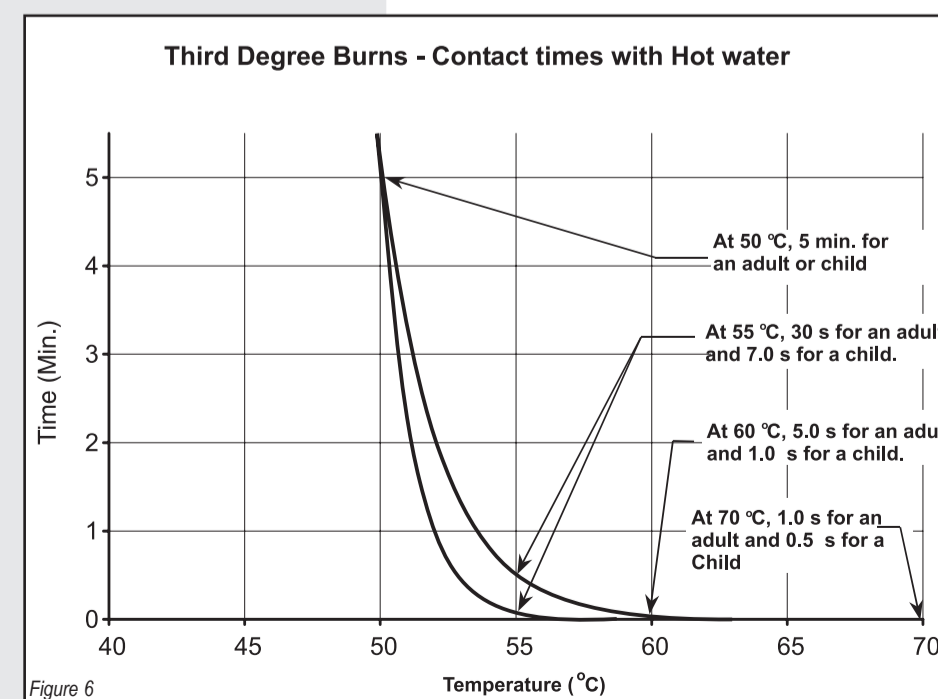


Figure 6

INSTALLATION

- Nefa valves should always be installed by a qualified plumber in accordance with the Nefa installation instructions. The installation must also conform to the requirements of the Building Code and the Department of Building and Housing's approved document G12 Water Supplies and must also comply with Local Authority requirements.
- A separate un-tempered hot water line to the kitchen and laundry is recommended.
- Do not install an NMTV directly onto a hot water cylinder. It is recommended that the valve be installed as close to the hot water source as possible. For optimum performance install with a 150mm thermosiphon between the cylinder outlet and hot inlet. (Ref Figure 1).
- If installed at an outlet fixture, 1m of pipe must be installed between the NMTV and the outlet.
- Strainers are essential to prevent debris entering the NMTV that could prevent it working effectively. **All NMTV installations should have line strainers fitted.** It is recommended that a Nefa NPC500 valve (with filter/strainer) is installed upstream of the cold inlet.
- Always flush pipes before connecting valves.
- The use of excessive thread sealant (liquid, tape or any other form) must be avoided as this may cause the valve to fail.
- Never expose valves to a torch flame or heat. Heat will destroy the seals and sealing parts.
- Never expose valves to freezing conditions. If installed where freezing conditions may occur, then suitable insulation must be used to prevent damage to the valve.

Once installed, **EVERY** valve must be commissioned. Measure the hot water temperature at the outlet closest to the NMTV. A thermometer must be used. Adjust the set temperature of the tempering valve to deliver the correct water temperature. 45°C for early childhood centres, schools, rest homes, institutions for people with psychiatric or physical disabilities, hospitals, and 55°C for all other buildings

OPERATION

- The Nefa NMTV is designed to accurately provide safe controlled temperature water for outlets primarily used for personal hygiene. The NMTV will maintain the outlet mixed temperature to ±3°C from set temperature.
- The NMTV will effectively mix to 55°C when supplied with 60°C hot water.
- If the cold water supply to the valve fails then the valve will automatically shut off the hot water supply preventing scalding. 15°C differential between the hot inlet water temperature and outlet set temperature is required to ensure effective hot water shut off.
- Optimum performance of the valve is obtained when the hot and cold dynamic (flowing) supply pressures are equal. Static supply pressures (non-flowing) will not give a true indication of dynamic pressures.
- In a domestic installation it is recommended that one Nefa pressure limiting valve is used at the property boundary to limit pressure to the whole site.
- In commercial installations where inlet pressures may be unbalanced it is recommended that separate Nefa pressure limiting valves be fitted to both inlets of the NMTV for optimum performance.
- Not to be used on steam supplied systems.
- Not to be used on low pressure systems.

TROUBLESHOOTING FOR THE NMTV

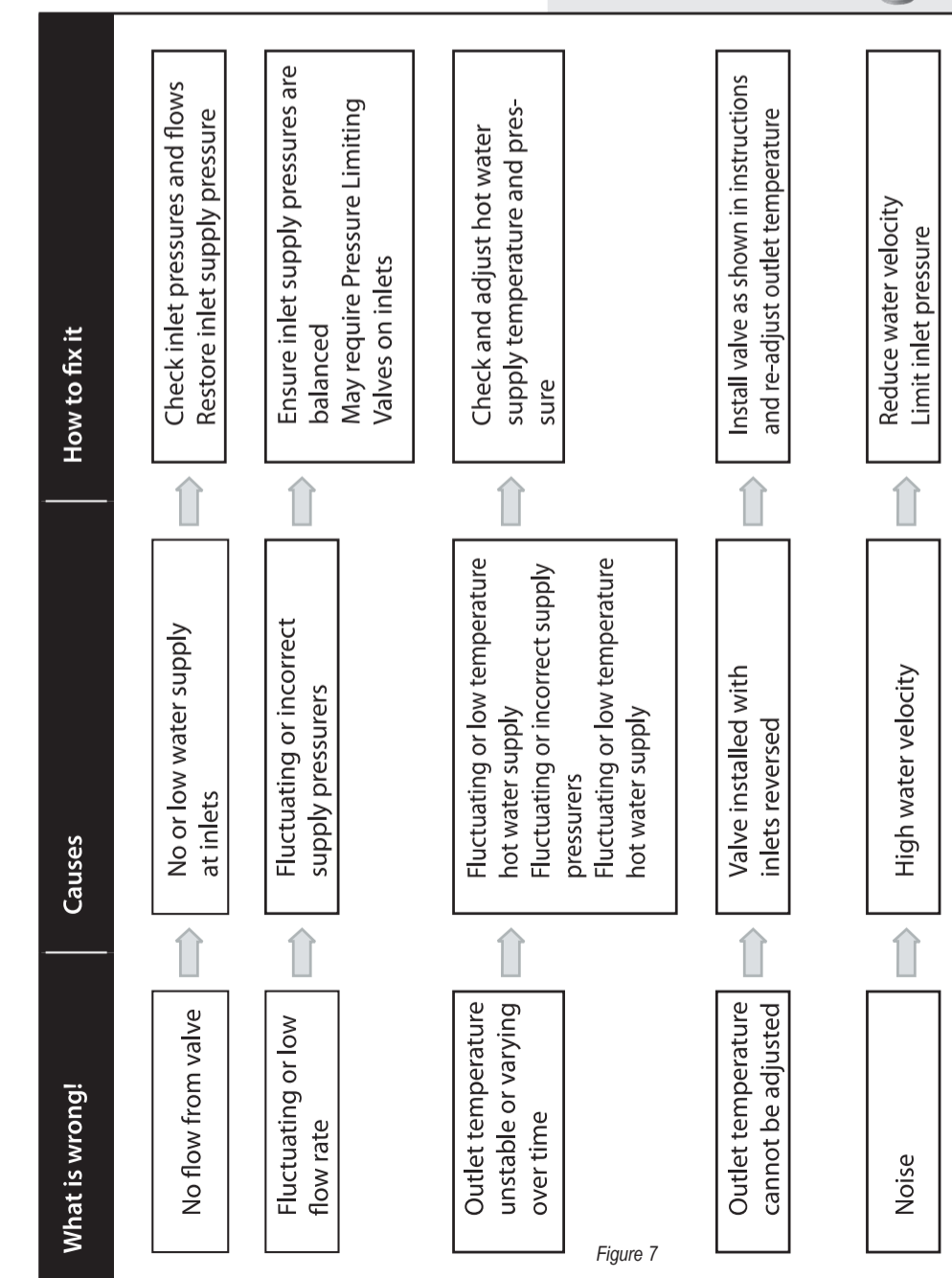


Figure 7

VALVE ADJUSTMENT

- Before setting the valve, ensure the hot water source is switched on and supplying water within the specified hot water temperature limits. It is recommended the water heater, if controlled by an adjustable thermostat should be set to the required 15°C differential temperature necessary for thermal shut off.
- Allow the water to flow 1-2 minutes to ensure the mixed water temperature has stabilised.
- A thermometer must be used to test the hot water at the nearest outlet to the installed valve to ensure the correct mixed water temperature is supplied. Test at a flow rate of not less than 4 litres/minute.
- Using the adjusting tool supplied, simply rotate the spindle shown in the direction (H) hot or (C) cold as indicated on the tool until the required set temperature is achieved.
- Once the set temperature has been reached and tested with a thermometer the cap must be snapped back onto the valve to protect the spindle from accidental adjustment, damage or debris.

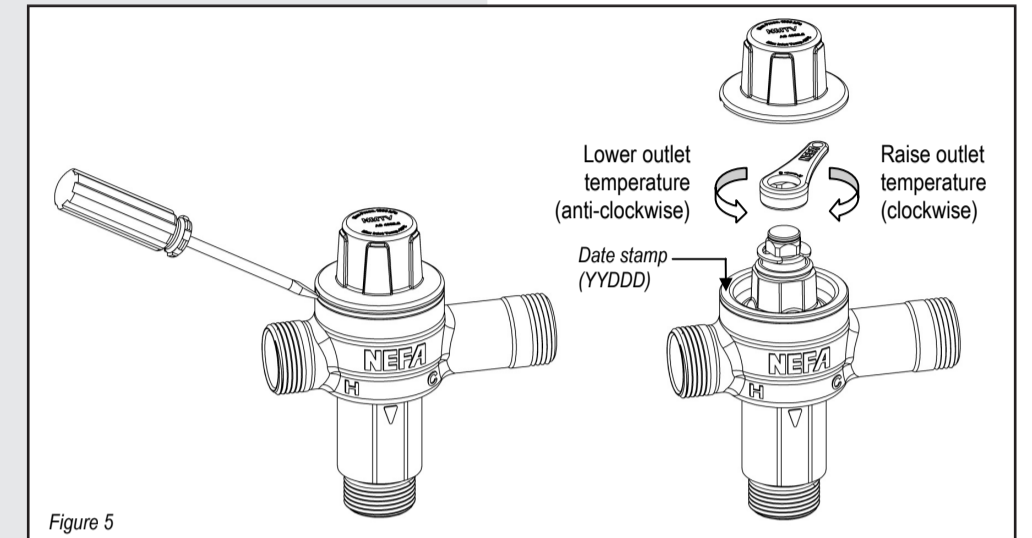


Figure 5

SERVICING & CHECKING

- It is recommended the Nefa Tempering Valve be checked annually by a registered plumber to ensure correct functionality of the valve.
- Where the water supply is of poor quality or any other supply variations are likely, it may be necessary to check the Nefa valve at more frequent intervals.
- This valve is a safety valve and cannot be serviced. If the valve fails to operate it is to be replaced. No attempt should be made to dismantle the valve. Any attempt to dismantle the valve (other than adjustment cap) will void all warranties.

NECWE700 - COLD WATER EXPANSION VALVE

SPECIFICATIONS

- 20mm (3/4" BSP) male on inlet, outlet and TLV outlet
- 15mm drain pipe connection
- Factory set for 700kPa
- Conforms to NZS 4608
- Stainless steel valve seat
- Integral non-return

INSTALLATION

- Valves should always be fitted by a qualified plumber according to BIA G12 or NZS 4607.
- Drain connection should always point vertically downwards, with the TLV outlet pointing upwards.
- CWE drain lines must fall continuously to a point where the outlet cannot be obstructed or blocked and where expansion and other vented water will not cause a hazard.
- CWE drain lines should not exceed 3 metres in length and should include no more than three 90° bends.
- Install with direction of flow on body in line with arrow on valve body.

VALVE SCHEMATIC

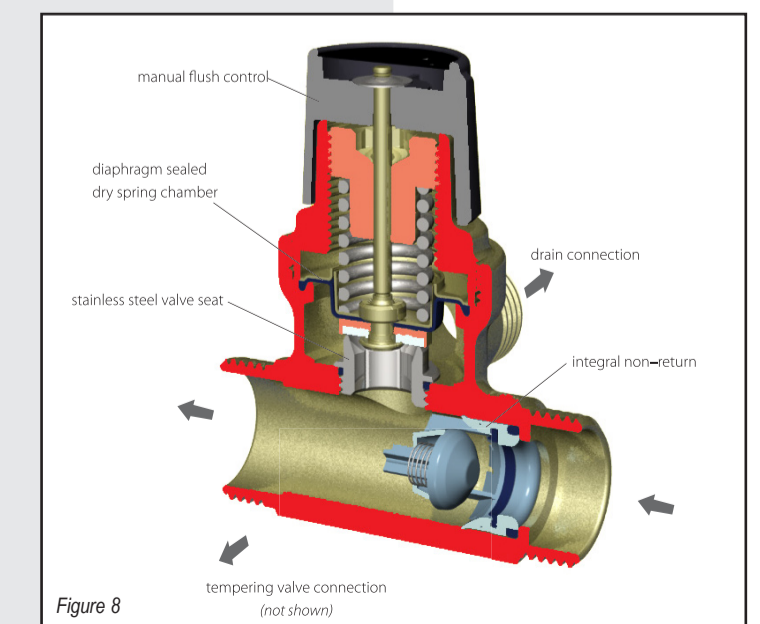


Figure 8