

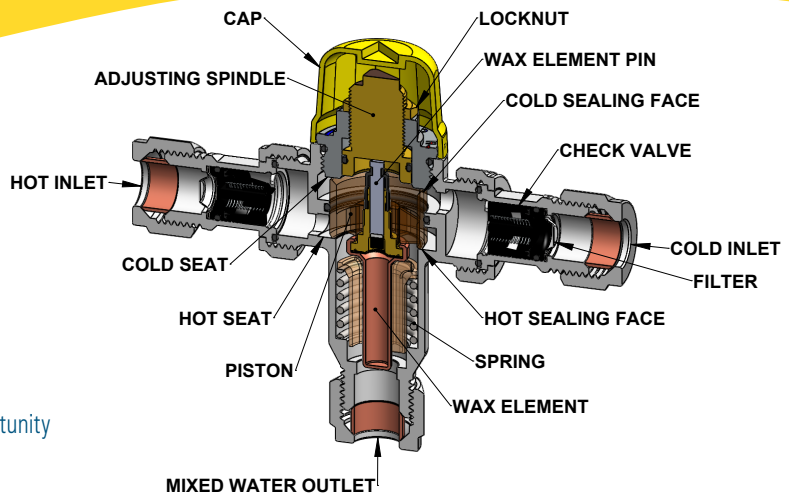
"Have you flushed your lines lately?"

It's an old catch phrase but the number one cause of tempering valve (TVA) issues in the field.

Hi, I'm Pete the plumber from AVG and I would like to take this opportunity to try and de mystify the operation and some service issues with the **Tempering Valve (TVA)**. If you take a look at the cut away drawing you will agree that there are a lot of components packed into a relatively small and compact valve body. The heart of this safety valve is a very clever bit of high tech wax technology, "**the wax element**".

The installation of the TVA is very straight forward and must be carried out by an authorized person in accordance with AS/NZS 3500 and in conjunction with the manufacturers instructions. Wait here it comes "**have you flushed your lines?**". It's very important to take care not to allow foreign matter, sand, grit or copper or plastic swarf into the tube or pipe work during the installation process. This is where it is necessary to flush out any foreign matter before the pipe work is connected.

If this step is missed out of the installation process, operational issues can raise their ugly head. "**I can't adjust the TVA hot enough**", "**I can't adjust the TVA cool enough**" or "**the valve doesn't fail safe with a cold water isolation**". These are all common complaints caused by **foreign matter caught** up in the TVA mechanism. See pictures below.



How does a TVA work?

The operation of the TVA begins when a hot tap is opened. Hot water from the water heater enters the TVA via the hot water inlet to the valve, through the mesh filter and check valve past the piston and hot water seat and flows past the wax element and out of the mixed water outlet to the opened hot water tap.

When the hot water heats up the wax element the wax in the wax element expands and pushes the wax element pin against the adjusting spindle. This in turn pushes the TVA piston which is spring loaded, away from the cold seat of the valve. This allows the cold water to enter through the cold water inlet, through the mesh filter and check valve past the cold seat and through the piston and mix with the hot water to give tempered hot water at the tap.

It's the plumbers responsibility to set the TVA mixed water temperature to no more than 50°C at the closest hot water tap using a thermometer. By turning the adjusting spindle, the mixed water temperature can be adjusted, turning the spindle clockwise will reduce the temperature.



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