

FLOW CONTROLLERS EXPLAINED

FRANK IAPOZZUTO SHEDS LIGHT ON FLOW CONTROLLERS AND DESCRIBES THE MYRIAD BENEFITS THESE CLEVER LITTLE DEVICES POSSESS.

Flow controllers, flow restriction devices, FRDs, “annoying bits of plastic are said to muck up the shower pressure”... Whatever you want to call them; flow controllers have been a critical part of tap and shower design for many years, particularly since the introduction of the government initiated WELS (Water Efficiency Labelling and Standards Scheme) in 2005.

Statistics provided on the WELS website (www.waterrating.gov.au) suggest that by utilising more efficient products (in both energy use and water use); Australians could save more than a billion dollars between now and 2021. Water efficient shower usage alone is predicted to provide up to one third of the water savings, providing cost savings in the delivery and removal (sewage) of water.

Flow controllers provide the obvious benefit of being able to limit or control the overall flow of water through a tap or shower. The flow rate from an unrestricted tap or shower (such as a bath spout) in excess of 20 litres per minute can be reduced to as low as 2-4 litres per minute for taps or 4.5-7 litres per minute for showers. In some cases, the consumers may not be happy with these reductions and choose to remove the flow controllers. This is often done without consideration of the other advantages of flow controllers in the overall domestic water system.

Some of the flow controller’s additional capabilities include the capacity to regulate pressure through a system. A flow controller, when correctly designed into a shower for example will ensure a constant flow rate of say 7 litres per minute, across a wide range of pressures (typically between 150 and 350 kPa). This will ensure that changes in flow are not experienced by the user (of the shower) when someone else in the house turns on another tap or flushes a toilet.

The effects of removing flow controllers from plumbing fixtures expands if you take a step back and look at it from a broader perspective. Housing trends are showing an increase in high density living in which could expose issues with the capacity of our water infrastructure networks. Flow controllers

help to ensure that the local water pressure in the mains does not reduce to levels below what engineers had intended.

Flow controllers are able to regulate water flow and water pressure through a tap or shower by utilising a dynamic O-ring (dynamic in that it is able to deform and change during operation at different conditions) housed in a plastic body. As the pressure at the flow controller increases (typically resulting in an increase in flow for an unrestricted system), the O-ring deforms outwards across the body. This reduces

the flow through the flow controller due to the reduction in the fluid waterway. The entire flow controller assembly is usually about the size of a 5c piece, and can be located at a number of positions in a tap or shower system – the location being critical to the performance of the flow controller in the product.

Some of the common faults that occur with a flow controller include blockage by debris (in particular plumbers’ tape), loss of performance due to extreme conditions such as excessive pressure (greater than 500 kPa) and incorrect installation as they only work properly in one direction.

Mechanical endurance testing is conducted on all models of flow controllers, meaning that when

used correctly, they are able to maintain performance for the life of the product they are fitted to.

In terms of sourcing products with flow controllers, don’t be tempted to remove these items to increase your flow rates. Simply, choose what is right for your application. It is also worth noting that some products are specifically designed and engineered to operate at a given flow rate – the flow rate it is supplied at. Most manufacturers also supply products, released in varying star ratings to accommodate different consumers. Choose what’s right for you, cost conscious or luxury?

Whichever product you choose, ensure that it is fitted with a flow controller. It will always be better for your client’s back pocket and the environment. ■

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