

Understanding pressure reducing and sustaining valves

Modernisation of Newry and Nuntin Irrigation Networks.

What is a Pressure Reducing and Sustaining Valve (PRSV)? Can I connect one to my outlet on the Newry or Nuntin Pipeline?

Irrigation pipeline systems must be designed and constructed carefully to ensure they are safe and reliable for the pressure which may be present in the system. As outlets open and close throughout a connected pipeline system, this causes pressure fluctuations. In some cases, if these fluctuations are not controlled, it can result in damage to the system.

Prior to designing the Southern Tinamba pipeline in 2016, Southern Rural Water conducted research with comparable, rural water supply utilities in Australia to ensure our customers receive the most reliable, robust, and cost-effective system.

The consistent response was that gravity systems offer reliable water flow and don't entail the running costs of a pumped system. However, the pressure will fluctuate because the water flow is gravity-fed.

Pumped pipeline systems, on the other hand, manage pressure fluctuation through variable speed pumps and the use of a PRSV.

The Newry and Nuntin irrigation pipeline systems have been designed and constructed as gravity-fed systems to operate safely and reliably with fluctuating pressure to supply a consistent flow rate.

What does all this mean for customers?

When the Newry and Nuntin pipelines are completed, customers will receive a far more reliable and consistent flow rate from an automated outlet on the pipeline. Flow rate is monitored by an electromagnetic meter, and a valve in the new outlet automatically adjusts depending on overall demand in the pipeline system to maintain the required flow. Although the flow rate remains constant, the pressure will fluctuate.

If the new outlet provides irrigation water into an on-farm channel (delver), there are no on-farm implications with fluctuating pressure and there is no need for on-farm PRSVs.

If the new outlet is connected into any sort of on-farm pipeline, (examples: pipe and risers, fixed or travelling irrigators), then the variations in pressure need to be considered by a farm irrigation designer. We can provide the range of pressures likely to be encountered and farm irrigation designers can design the on-farm system accordingly. This may involve the installation of on-farm PRSVs, other specialist equipment or different types of pipe.

Southern Rural Water needs to approve any assets connected downstream of the automated customer outlet, including a PRSV. These assets are the responsibility of the customer. Pumps are not to be directly connected to pipes that are connected to a customer's outlet.

We strongly recommend customers follow the advice of farm irrigation designers. This will ensure the on-farm systems operate safely, reliably and meet their intended service life.



srw@srw.com.au



1300 139 510



www.srw.com.au



**Southern
Rural Water**