



# Pressure Regulation in Irrigation Systems

## About Hort360

Hort360 is the horticulture BMP program, designed to give production horticulture growers a 360-degree view of their farm operations.

Hort360 assists growers to identify potential risks and off-farm impacts of their practices, capitalise on business opportunities and highlight unnecessary farm expenses. It is a whole of farm business approach, and it's being embraced by growers and horticulture stakeholders throughout Queensland.

## Pressure Regulation in Irrigation Systems

- Pressure regulation is required to protect the irrigation system and keep it running efficiently
- There are a number of devices available to help achieve uniformity and flow
- The functions are pressure regulation and sustainment, pressure compensation, and pressure relief

Controlling the pressure in an irrigation system is important to prevent pressure drops and spikes, and to make sure that the water is being distributed evenly. Devices such as regulators, compensators and control valves can help. This fact sheet will not cover what may be required for your irrigation system but will contain some terminology and information to explain the differences.

### Pressure Regulation and Sustainment

Pressure regulation reduces higher and varying upstream pressures to constant, lower pressures downstream. It must be able to maintain the set pressure and respond quickly to changes. Usually this is achieved using pressure regulating control valves and inline hose regulators.

Pressure sustaining valves are usually found downstream of a self-cleaning filter, to allow them to function properly by applying backpressure.

### Pressure Compensation

An important component for irrigation uniformity is pressure compensation. It does the opposite to a pressure regulator and makes sure a consistent amount of water comes out of the emitter, even if the input pressure is varying. They have a rubber diaphragm which will have a pressure operating range which needs to be taken into consideration.

### Pressure Relief

An important safety feature of any irrigation system is a pressure relief valve. These are in place to let water out of the system when the pressure reaches a certain value. They prevent accidental pressure bursts and gives visual cues if there are issues in the system. Pressure spikes can be caused by rapid closing of valves, clogged filters, and high-water velocity. They are usually located at pump stations, low points, and other pressure sensitive areas.



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