



A joint reliance

MODEL 550

# Surge anticipator Valve



The Model 550 Surge Anticipator Valve is indispensable for protecting pumps, pumping equipment and all applicable pipelines from dangerous pressure surges caused by rapid changes of flow velocity within a pipeline.

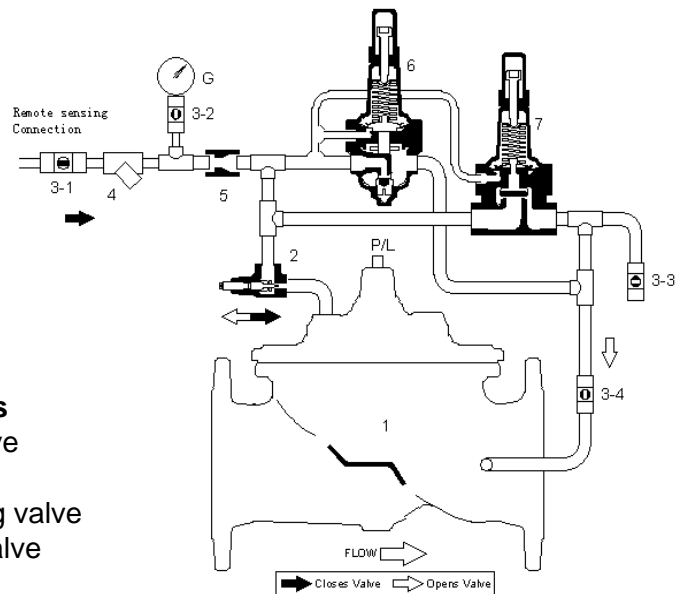
When pumping systems are started and stopped gradually, harmful surges do not occur. However, should a power failure take place, the abrupt stopping of the pump can cause dangerous surges in the system which could result in severe equipment damage. Power failure to a pump will usually result in a down surge in pressure, followed by an up surge in pressure. The surge control valve opens on the initial low pressure wave, diverting the returning high pressure wave from the system. In effect, the valve has anticipated the returning high pressure wave and is open to dissipate the damage causing surge. The valve will then close slowly without generating any further pressure surges.

### Standard Features

1. Main valve
2. Needle valve
3. Ball valve
4. Strainer
5. Restriction
6. Lower pressure relief pilot
7. High pressure relief pilot

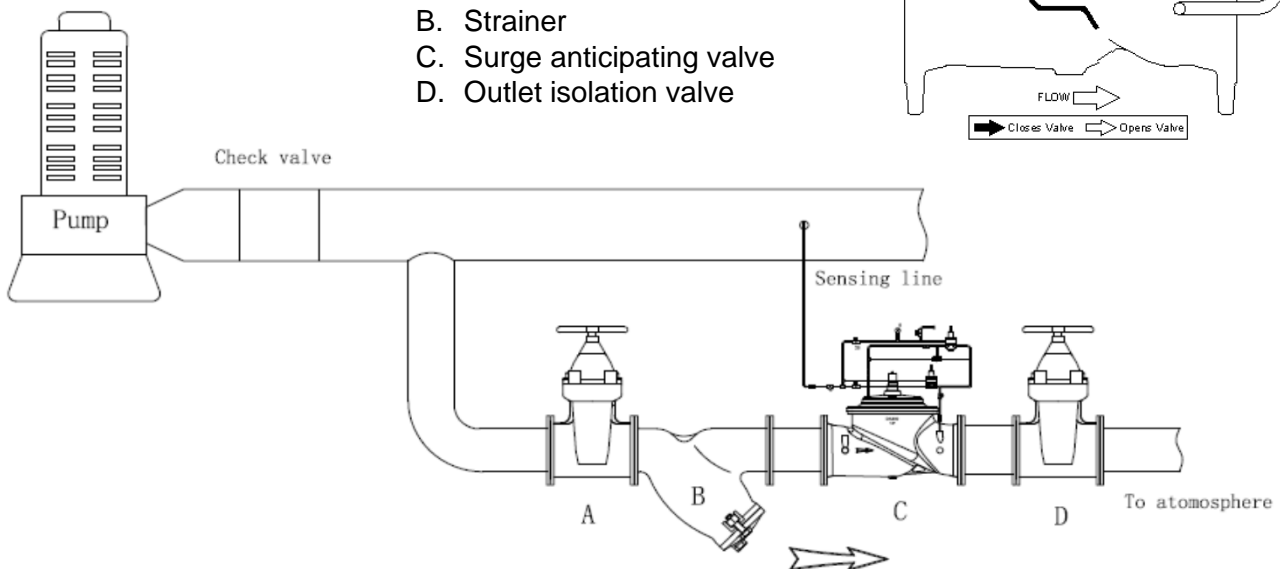
### Optional Features

- B. Ball valve
- G Pressure Gauge
- P Position indicator
- L Limit switch



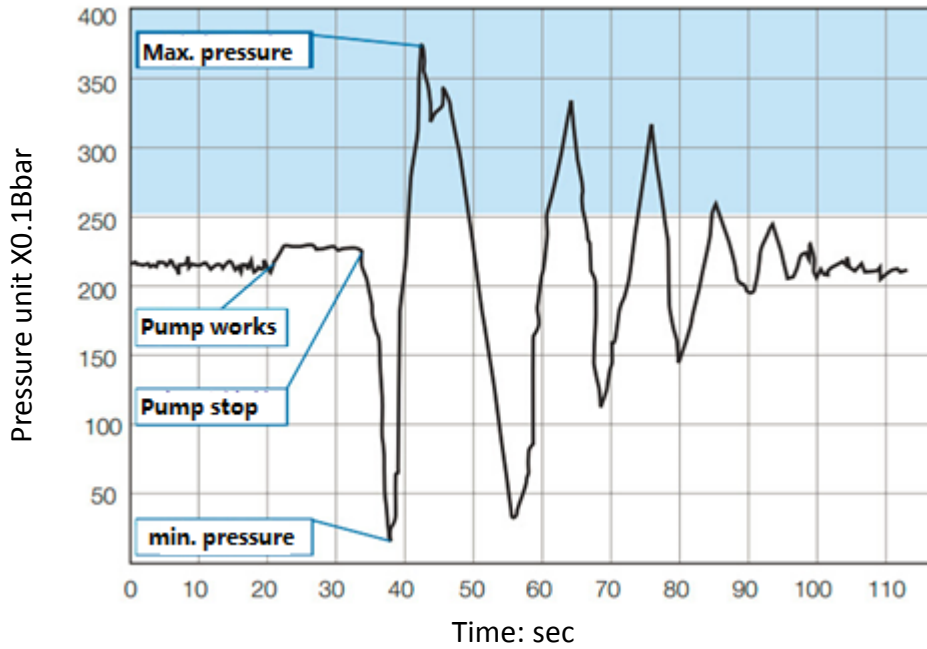
### Typical Applications

- A. Inlet isolation valve
- B. Strainer
- C. Surge anticipating valve
- D. Outlet isolation valve

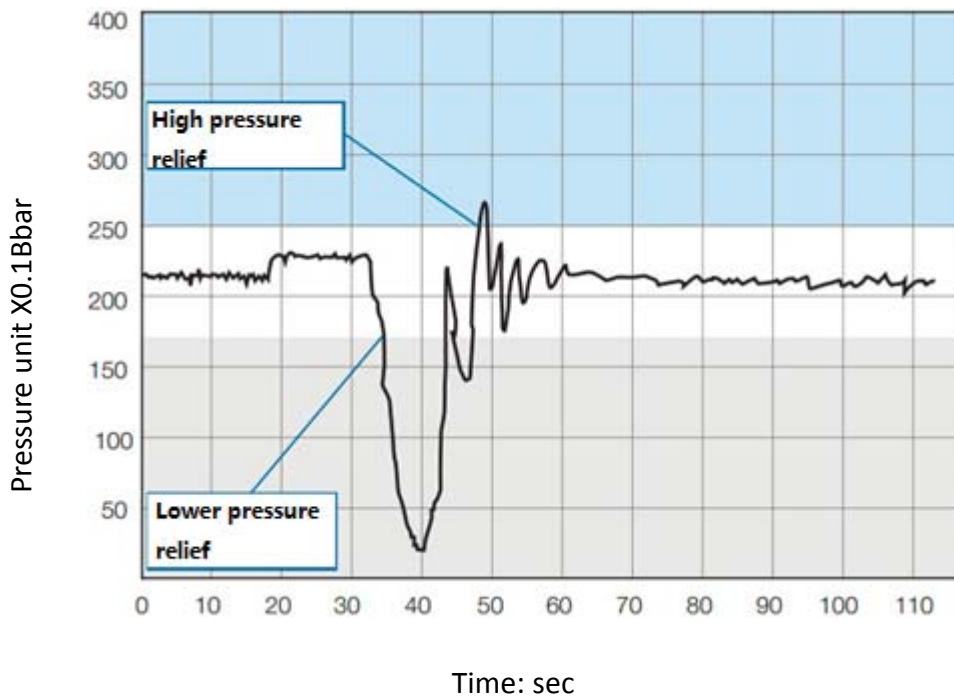


## Pressure compared without & with surge anticipating valve

A. Without surge anticipating valve

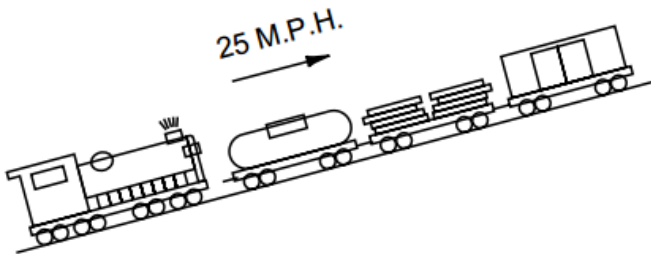


B. With surge anticipating valve, surge decreased

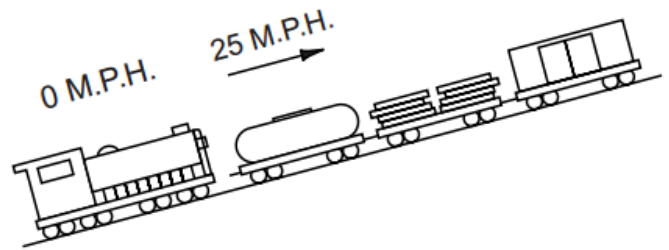


## Surge simulation

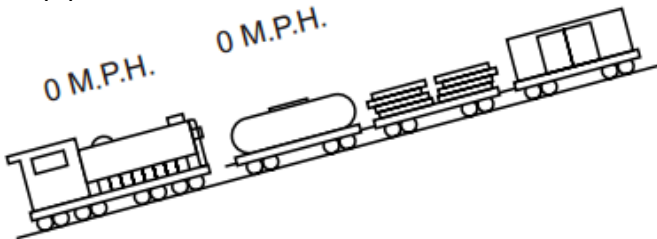
Pump works normally



Pump stop, flow keeps going forward because of moment, the pressure in pipeline just behind pump drops, cause lower pressure relief pilot to open, and the surge anticipating opens, which is called "anticipating"

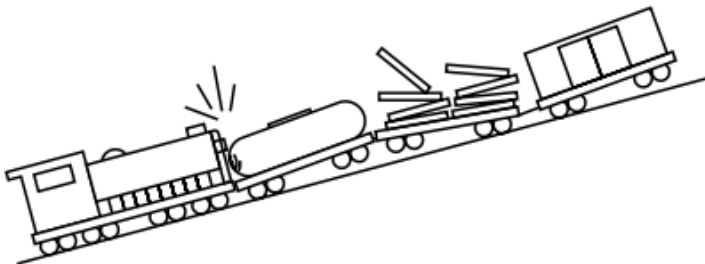


Pump stop for a while, moment energy run out and flow keep still instantaneously, because of friction and resistance of flow rate in pipeline.



After pump stops, flow come back, surge happens, the pressure in pipeline behind pump rises, cause high pressure relief pilot open, main valve keep open.

Surge destroy the equipments and pipeline



The function of surge anticipating valve is to release the surge to another way (atmosphere)

