



### Equalizing Devices

In double seated gate valves it is necessary to provide a means in design to prevent over pressurization due to thermal expansion of trapped fluids inside the valve body. This expansion can cause pressures that exceed the valve materials' strength causing excessive leakage or actuator failure. The over pressurization can be avoided with an internal hole or an external equalizing pipe which makes the valve unidirectional.

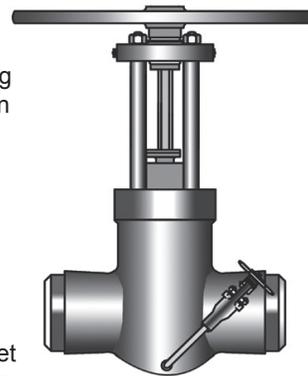
Other solutions are as follows:

### Equalizing pipe with isolation valve or equalizing by pass .

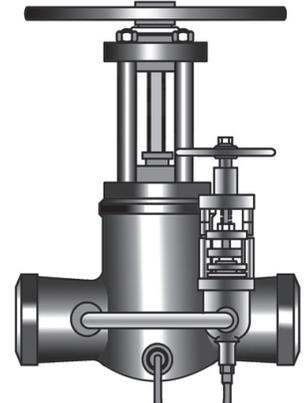
- The equalizing pipe connects the valve's center cavity to the inlet end of the valve allowing fluid displacement. The isolation valve in the equalizing pipe is kept open during normal operating conditions. The isolation valve is closed when required for hydrostatic testing or other reason.

A combined by pass with equalizing pipe can also be installed to permit the pressure relief in center cavity even with by pass closed.

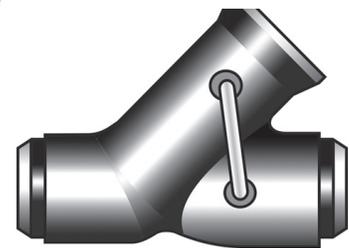
**“Y” Stop Check Valves & “Y” Lift Check Valves** are provided with an equalizing pipe connecting the area above the disc to the valve outlet. The equalizing pipe eliminates any pressure build up over the disc allowing the higher pressure below to fully open the disc. This full disc lift reduces pressure drop and the required minimum flow to fully open the valve.



Equalizing pipe with isolation valve

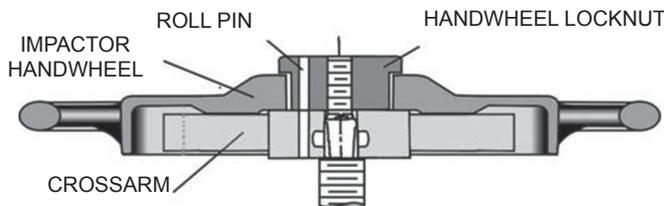


Equalizing By pass

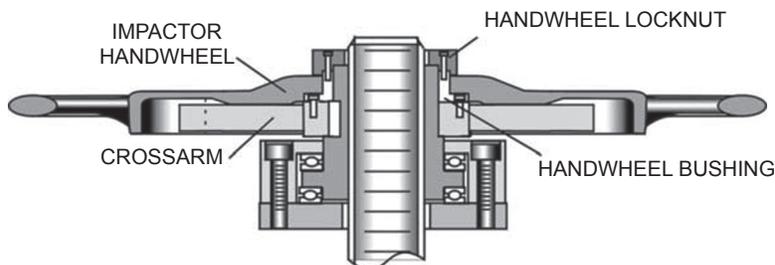


Equalizing pipe

## Impactor Handwheel



For rotary stem



For non rotary stem

### Impactor Handwheel

Larger size valves (mainly the Globe & Stop Check Valves) require an impactor handwheel, when a bevel gear actuator is not required. The impactor handwheel permits one or two men to develop several thousand ft.-lbs. of torque for final valve closure. Up to ten times the torque obtained by an ordinary handwheel.