DANFLO Surge Relief Valves

DANFLO Surge Relief Valves are engineered to track unabated surge-wave pressure transients-open quickly, then closes without slamming shut. The “speed of response” in surge valves is defined as the ability of the valve/valves to relieve peak wave surge flow in the time stated in a hydraulic transient surge analysis. Although this time varies with each application, timed responses of 100 milliseconds or less are not unusual. DANFLO surge relief valves meet these criteria.

DANFLO surge valve operation is simple. The cavity behind the valve plug is filled with nitrogen gas to affect proper relief set pressure of the valve. This cavity loading force seats the valve and opposes the force generated by line pressure in front of the valve. The valve remains closed until surge wave pressure exceeds the force behind the plug (set pressure). The DANFLO surge valve then opens quickly to track the unabated surge wave. The closing cycle responds directly to pressure decay in the upstream piping in front of the DANFLO surge valve.

A M&J Valve DANFLO surge relief system consists of the appropriate quantity of specific sizes of gas-loaded valves to handle requested flow conditions. High flow coefficients (Cv) of DANFLO surge valves usually mean fewer and/or smaller size valves to meet user requirements.

Operation at recommended settings provides flow reserve for protection against surges larger than expected. Problems such as nitrogen loss through permeable elements, valve failure due to tube splits caused by contaminant flow, or tubes taking a permanent set which prevents valve operation- are all eliminated with the DANFLO design.