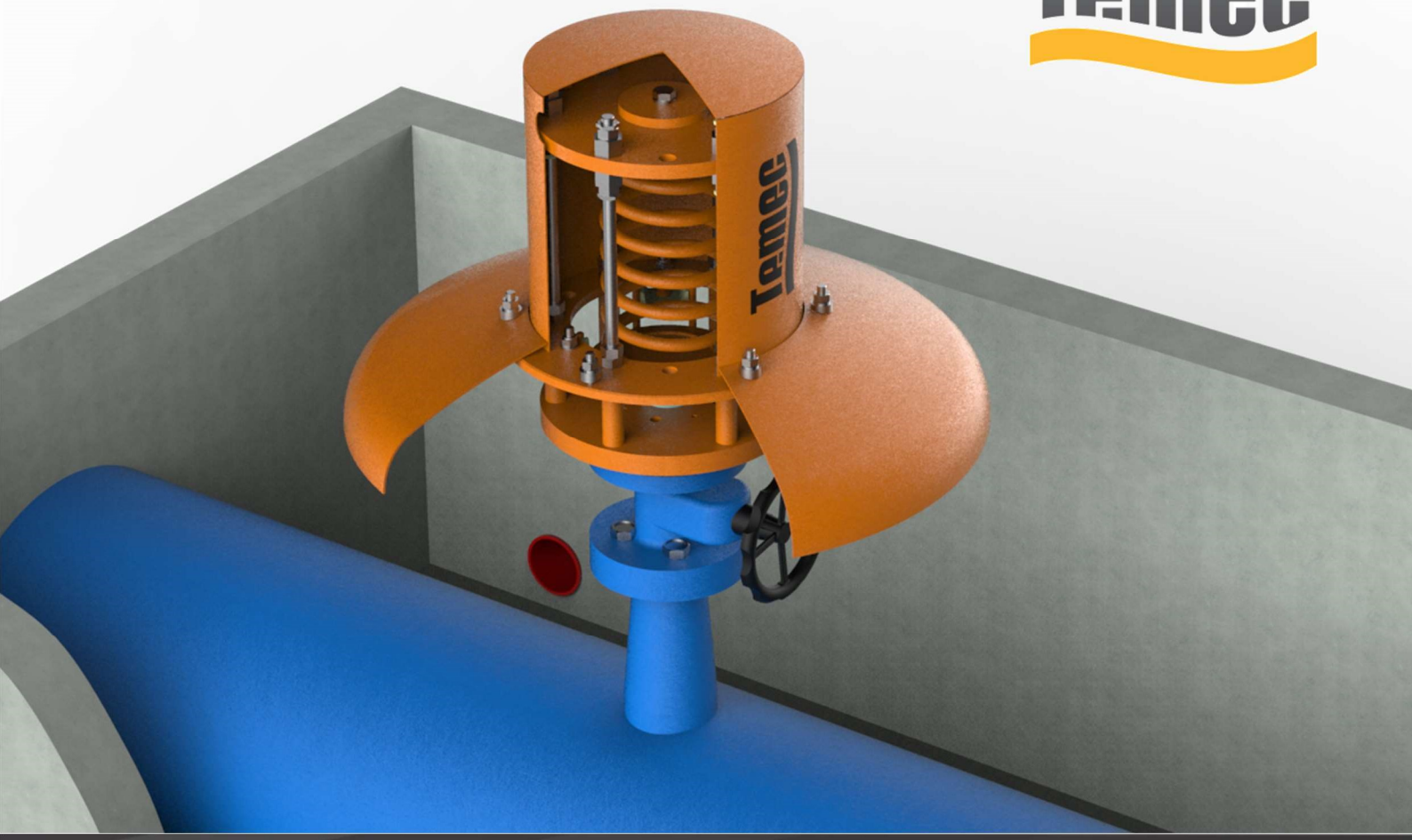


QUICK RELIEF VALVE

Spring operated valve to prevent over-pressures

- Reliable
- Accurate
- Metal-metal seal

FUNCTION

This safety valve automatically and instantly evacuates a flow of water when the pressure at that point exceeds its set value.

In this way, it is possible to protect the pipeline against overpressures due to water hammers and transients in pressurized networks by quick closures.

APLICATIONS

- Pump Stations
- Hydroelectric plants
- Pressurized netwoks

DESCRIPTION

The TEMEC Quick Relief Valve, based on the same principle as our Self-Centering Disk Valves (see our TEMEC-H-PR02.0 catalog), has the following features:

- No guides
- Negligible inertia of elements
- Metal to metal sealing
- Low pressure decrement ($P_{max} - P_{opening}$)
- Compact dimensions
- Splash protection hood

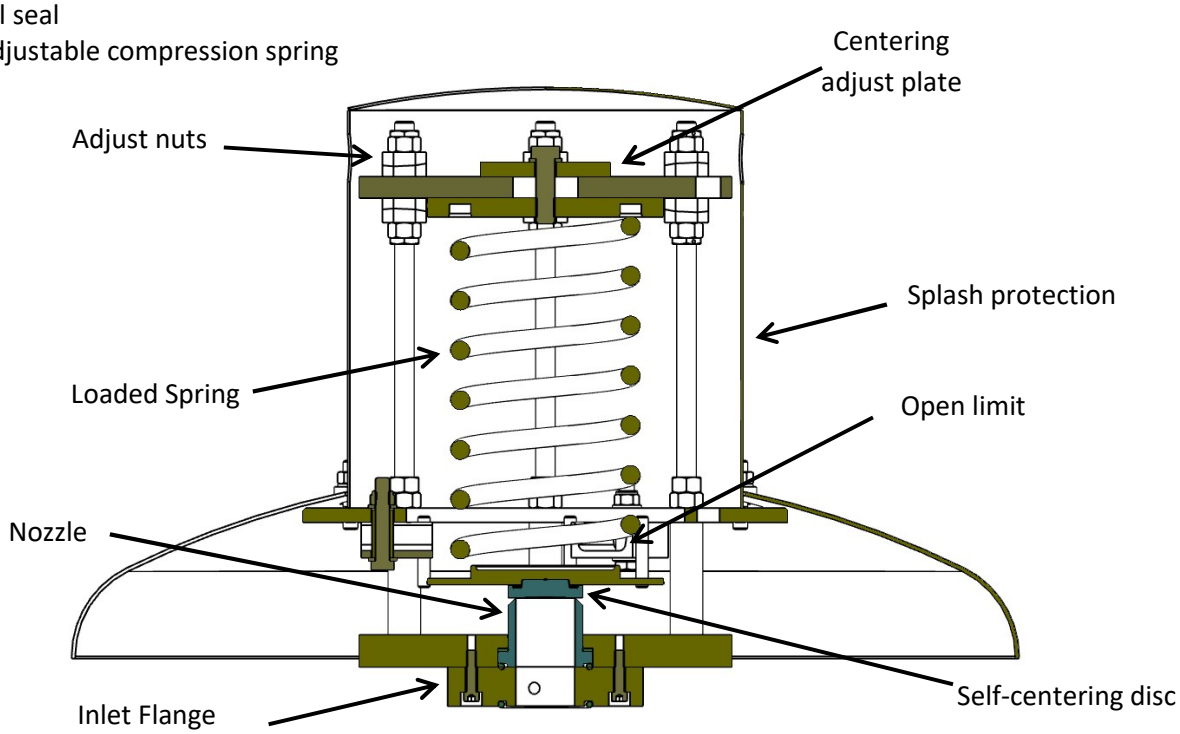
Many pilot operated relief valves available on the market do not achieve the same degree of safety and facility of regulation, due to factors such as

- High inertia
- Friction problems
- Embedding between its moving parts
- Cavitation troubles during operation
- Difficulty or impossibility to regulate the discharge pressure accurately.

PARTS

The valve essentially consists of:

- A fixed outlet with a special profiled nozzle
- A mobile self-centering disk with a metal-to-metal seal
- An adjustable compression spring



SELECTION

The maximum flow rate to be evacuated will be a data to be provided by the designer, being able to estimate in a first approximation as the nominal flow rate of the pipe or as the maximum variation of flow rate that can occur in a time interval of L/500 seconds, being "L" the length of the pipe section to be protected.

The following graph shows a summary of the main characteristics of the available valves. The dashed lines show the opening pressure, and the continuous lines show the pressure at which the valve is 100% open. These are the result of combining nozzles of DN 50, 80, 125 and 200 mm in diameter with different types of springs (single or double).

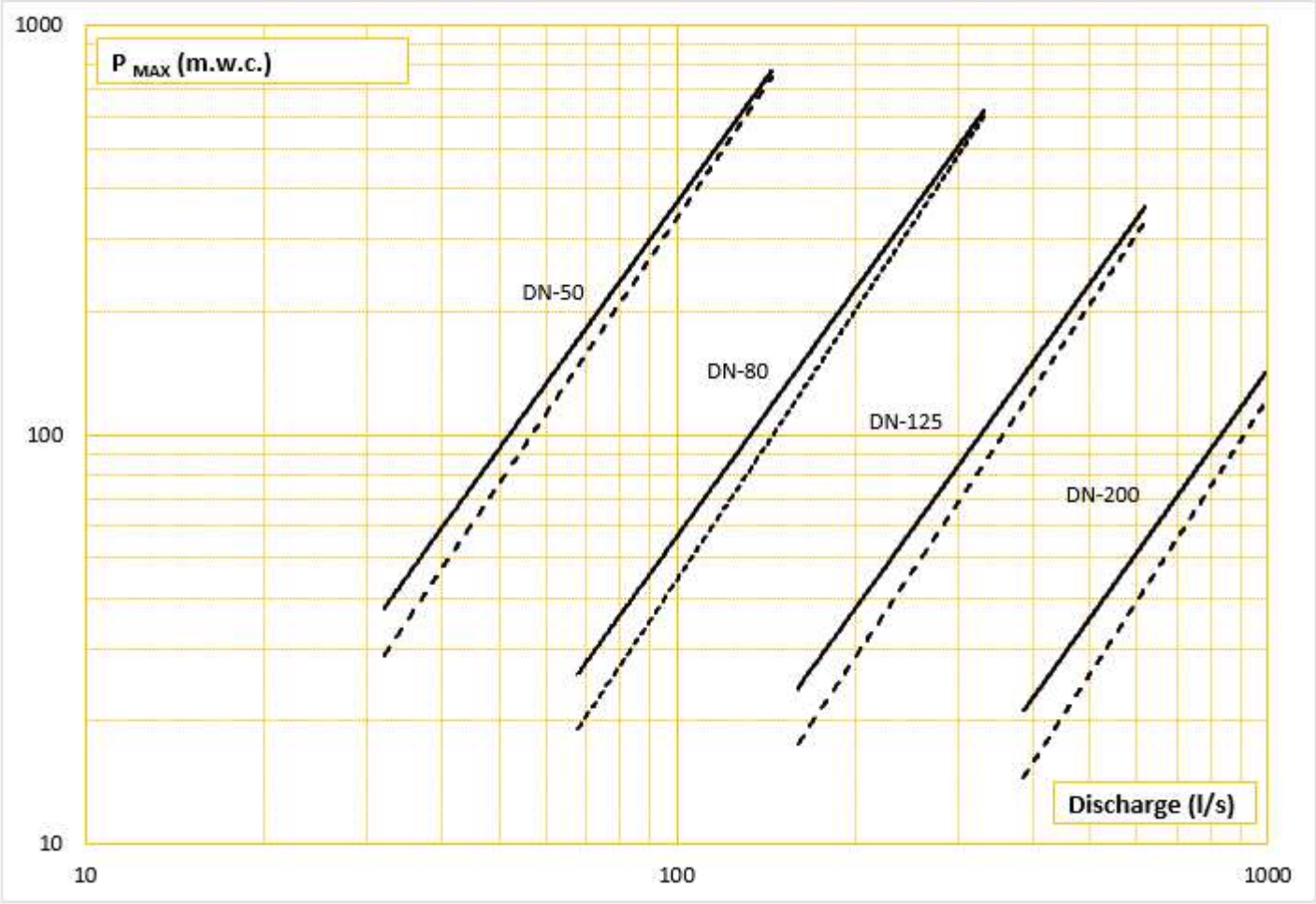
If the flow to be discharged exceeds the possibilities of the selected valve or if the pressure increment is greater than desired, two or more valves can be placed in parallel.

The discharged flow is 0 until the pressure in the pipe does not achieve the opening pressure P_0, which is set at the factory with the compression of the spring, slightly above the working pressure of the network.

The valve is fully open when the pressure P_A is reached and at that time the flow rate discharged will be Q_A

The difference between P_A and P_0 is constant in each type of valve and spring combination, while the evacuated flow is a function of Q_A and the square root of the relationship between installation P_A and maximum valve design P_A.

The minimum sealing pressure P_0 of each valve coincides with the maximum pressure of the valve with the softest spring, in order to cover the whole range of pressures.



INSTALATION

In order to allow satisfactory operation and convenient maintenance of the valve, it is necessary that it be installed in a place that has the following characteristics:

- Connection to the pipeline by a converging pipe conveniently anchored and equipped with a point for pressure sensor and/or manometer
- Perfectly leveled connecting flange
- Maneuverable gate valve under any circumstances
- Access to equipment for assembly, disassembly and maintenance
- Discharged water evacuation collector

SITUATIONS TO BE CONSIDERED

The relief valves are supplied calibrated on our test bank at the pressure P_0 specified in the purchase order.

The line must be equipped with all the air venting devices to avoid the presence of air near the relief valve.

The TEMEC quick relief valves are compatible with other elements that attenuate transients (flywheels, low inertia and quick closing check valves that do not cause water hammer, gear reducers on shut-off valves, etc.).

CONCLUSIONS

These valves, with a simple hydraulic conception, provide safety to the installations against overpressures generated by transients in operations, pump stops and others.

The TEMEC quick relief valves with self-centering disc valve and compression spring are a useful, economical and effective device to protect pressurized networks

DISTRIBUTOR
SOBEK
Metalmecánica S.L.
NIF: B-88447966
Calle Miguel Álgel Asturias 1A bajo B - 28050 - Madrid