



Bellows seal valves are used in applications where a hermetic tightness is essential in order to prevent any possible leakage of process fluid into the atmosphere, where the fluid is particularly hazardous (poisonous, aggressive, radioactive). FLUITEK ORSENIGO VALVES is specialised in gate valves with bellows seals, in particular in the manufacturing of:

- Valves of large diameter (eg. 48" gate) normally for low pressure applications (typically class 300 ANSI)
- Valves of medium-small diameter (eg from 1/2" to 12") normally for high pressure applications (class 600, 900, 1500, 2500 ANSI)

In both cases the construction of the bellows and its assembly system to other components of the valve are essential, in particular for the resistance of the bellows which is subjected to fluid working pressure on the external side.



Materials used are all grades normally required by the various services: cast or forged carbon steel, low alloy steel, austenitic steel (AISI 316L, AISI 321) or nickel alloys (INCONEL 600, INCONEL 718). Bellows are hydroformed to shape. Bellows materials are usually AISI 316L, INCONEL 625, INCONEL 718). FLUITEK ORSENIGO VALVES bellows seal valves are always supplied with a packing system (stem packing) for safety secondary seal.

FLUITEK ORSENIGO VALVES bellows seal valves are also tested in-house for fugitive emissions. The test standard is ISO 15848 that requires the valve to be pressurised with helium gas. The Gate valve is pressurised at about 150 Bar. For example the valve is then open-close cycled at room temperature 250 times total and 250 times total at 400°C. Helium leakages are detected with an appropriate helium gas leak detector called sniffer.

Leakages are checked at body-to-bonnet joint at emergency stem packing system. The packing system test is done by creating a vacuum around the area. Leakages rates are less than 10 at minus six measuring units for packing system and 50 parts per million for body to bonnet joint. The test qualifies bellow seal gate valves with similar construction for all pressure classes below the tested one and stem dimensions that are not less than half or above double of the valve tested.



A typical example are the gate valves,
class 900 ASME, with cast body.
Other dimensions available per customer request.

CHARACTERISTICS - ANSI 900#					
Nominal Size [inches]	Pressure Class	Bore Diameter [mm]	Face to face [mm]	From center line to top[mm]	Total weight [kg]
3"	900	72	381	940	125
4"	900	98	457	1370	261
6"	900	146	610	1750	620
8"	900	190	737	2150	900
10"	900	238	838	2470	1100
12"	900	282	965	2880	1500