



Ratti Giampietro

Costruzione valvole e raccordi in acciaio inox dal 1970

After a thorough test concerning the needs within the various fields where technical application is carried out, e.g. the biotechnology and semi-conductor industries, as well as pharmaceutical, food and medical processes, the Ratti snc industry has projected a new diaphragm valve, which allows for clean and sterile handling of the fluid.

Through the research of an innovating internal design, a system has been carried out, it includes an option for an open and a closed valve, that is, internal inclined contact surfaces to drain the fluid.

This valve makes the cleaning process easy, thus foreseeing a minimization of empty volumes and the tinning of the fluid areas.

The valve is completely autoclavable, the body and the external parts are totally manufactured in AISI 316 L, while PTFE support bars file the handle and the diaphragm.

The valve is manufactured in the following dimensions: from 1/2" to 1.1/2", which include connections according to the BS-OD 4825 codes.

Whenever the pieces are traced for validation, the valve is laser identified, including the production series number, and it is furnished, upon request, with the chemical analysis certificates of the materials, as observed in code EN 10 204.1B, and in superficial finish checking.



ART. 061
DIM. 3/4"
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PATENT PENDING



Valve with PTFE diaphragm shutter, in AISI316L stainless steel body, used by pharmaceutical, biotech and food industries.

PTFE or stainless steel autoclavable handle.
Available from 1/2" to 1.1/2" THREE-CLAMP.



Body

Machined from solid compound, with welded connections, it has been optimally designed to minimize entrapment areas, polished (Ra 0,4) or satined (Ra 0,8).



Diaphragm

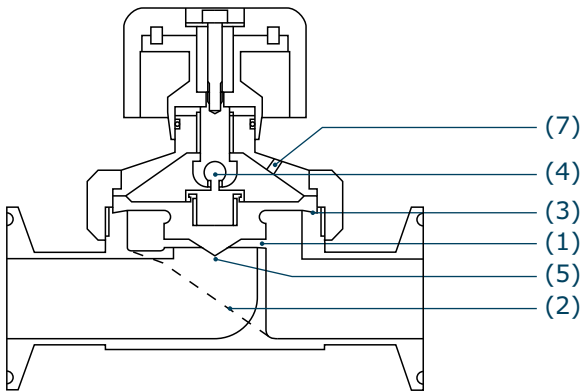
Manufactured from PTFE bar (politetrafluoroethylene), approved by the FDA for use in contact with food products.



Tie rod

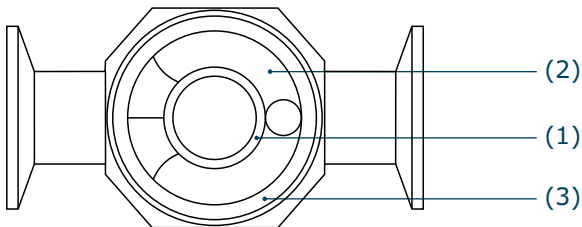
Available in AISI 316L steel, it is subjected to special treatment in order to reduce the possibility of seizing-ups and to increase its wearing resistance.

DIMENSION	1/2"	3/4"	1"	1.1/2"
ø TUBE	12,70	19,05	25,40	38,10
ø FLANGE	25,40	25,40	50,40	50,40
LENGTH	88,90	101,60	114,30	139,70



The opening and closing movements do not detect the areas which are away from the shutter,s contact surface, which however, is inclined and it allows the draining of the fluid outwards during the support movement and the tightness of the diaphragm on the work table shutting surface (1).

The internal chute allows the valve,s chamber to easily empty itself even during horizontal use (2). The inverse taper of the tightness surface in correlation with the diaphragm,s surface sustain allows for concentrated tightness on the internal edge, which is in contact with the product, it is secured by a strong and optimal compression, and it is performed by the external roller (3). In order to guarantee the maximum quality, the central body is totally machine-manufactured, using welded Tri-Clamp connections, available with internal finishing under 0.8Ra or 0.4 Ra.



The diaphragm is manufactured in PTFE, which is appropriately connected to the AISI316L traction-compression systems, therefore there is no possibility of by-passing, and it has a spherical conformation which makes the replacing maneuver easy (4). The runner in the shutter makes any eventual needs to regulate the fluid more precise (5).

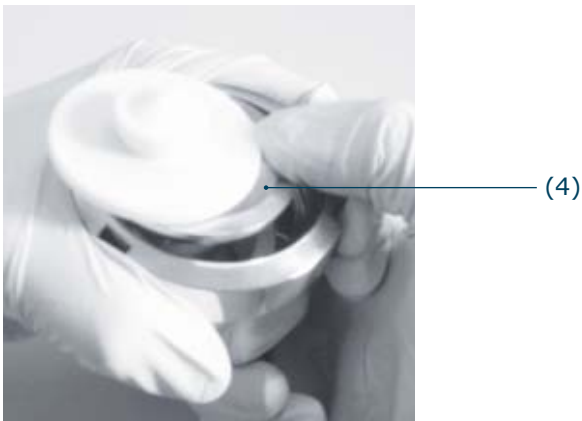
The manual control of the valve is carried out through an ISI316L or PTFE handle, while the automatic control is carried out through a single or double effect actuator, including an external shell and a piston, which are manufactured in AISI316L.

For precision regulation purposes, a manual, self-locking actuator is available; it includes 80 different positions, as well as a position indicator, which is available only for 1/2" and 3/4" (6).

The hole on the head-frame valve allows the external display of any possible cracks on the diaphragm (7).

The valve is able to work in both directions, it is available in two or three different features, and it also provides more additional variants based on the necessity of use: 1/2" to 1.1/2" for types A, B and C, in accordance with the BS-OD 4825 codes.

Maximum working precision recommended: 150 PSI.

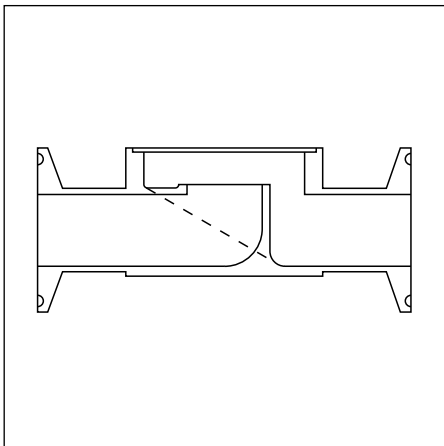


hydraulic characteristics

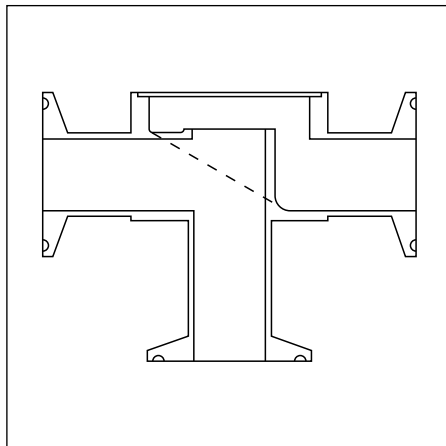
Hydraulic characteristics for capacity-loss of loads and of the cv coefficient, in accordance with four opening positions of the valves.

RATED DIAMETER	OPENING	CHARACTERISTIC EQUATION $\Delta p = k \cdot Q_w^n$ (con Δp in mbar e Q_w in l/s)	K_v (l/s con $\Delta p = 1$ bar)	C_v (US gallon/min)
	%			
1/2"	25	$\Delta p = 7927,6086 \cdot Q_w^{2,0362}$	0,362	0,420
	50	$\Delta p = 4546,32366 \cdot Q_w^{2,019384}$	0,472	0,548
	75	$\Delta p = 3837,81323 \cdot Q_w^{2,02509}$	0,515	0,597
	100	$\Delta p = 3570,22937 \cdot Q_w^{2,02961}$	0,534	0,620
3/4"	25	$\Delta p = 2826,21426 \cdot Q_w^{2,00098}$	0,595	0,690
	50	$\Delta p = 1613,13217 \cdot Q_w^{2,00278}$	0,788	0,914
	75	$\Delta p = 1050,64855 \cdot Q_w^{2,00212}$	0,976	1,132
	100	$\Delta p = 916,94085 \cdot Q_w^{2,01877}$	1,044	1,211
1"	25	$\Delta p = 1059,60324 \cdot Q_w^{2,02431}$	0,972	1,128
	50	$\Delta p = 390,99972 \cdot Q_w^{2,00014}$	1,599	1,855
	75	$\Delta p = 243,10154 \cdot Q_w^{2,00715}$	2,023	2,347
	100	$\Delta p = 189,75158 \cdot Q_w^{2,00155}$	2,294	2,661
1.1/2"	25	$\Delta p = 153,5007 \cdot Q_w^{2,08601}$	2,456	2,849
	50	$\Delta p = 78,20543 \cdot Q_w^{2,04348}$	3,480	4,037
	75	$\Delta p = 44,79001 \cdot Q_w^{2,04438}$	4,568	5,299
	100	$\Delta p = 34,68208 \cdot Q_w^{2,00486}$	5,348	6,204

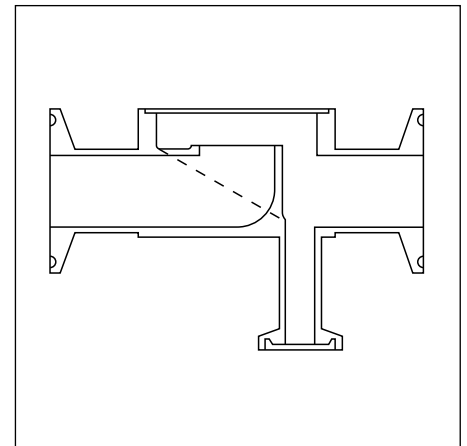
* The data reflected herein is totally indicative, and it refers to version A regarding the flow, as indicated on the external part of the valve,s body.



version A



version B



version C



Ratti Giampietro e C. snc

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