Piston check valve

Model 179

EN ASME/FNPT ASME/SW

For liquids, gases and steam.
For use in hydraulic, pneumatic, heating and steam systems, chemical and food industries, etc.

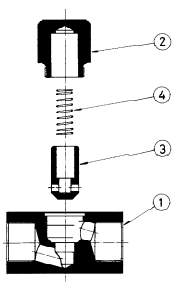
In accordance with the requirements of directive 97/23/EC.
EC valve verification certified by: TÜV Internacional Grupo TÜV Rheinland, S.L. EC 0035.
Final product verification EC examination (Module D) certified by: TÜV Internacional Grupo TÜV Rheinland, S.L.
In compliance with the ATEX 94/9/CE directive “Protective equipment and systems for use in potentially explosive atmospheres”.

Specifications

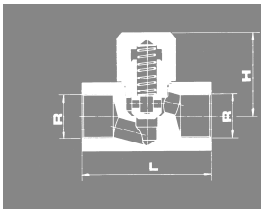
— Spring operated piston closure.
— Reduced pitch.
— Avoids ram shock when closing at zero pressure, remaining completely watertight at the time of fluid reversion.
— Highly tightness, exceeding the requirements of EN 12266-1.
— Easily assembled in any position in accordance with the direction of the fluid flow. Without spring only for horizontal mounting.
— Fully constructed from laminated bars.

IMPORTANT
Depending on demand:
— Possibility of manufacture in other types of material, for use in special working conditions (high temperatures, fluids, etc.).
— Other connections.
— O-ring gasket closure.

N°. PIECE	PIECE	MATERIAL											
		BRASS			CARBON STEEL				STAINLESS STEEL				
1	Body	Brass (EN-CW617N)			Carbon steel (EN-1.1191)				Stainless steel (EN-1.4401)				
2	Cap	Brass (EN-CW617N)			Carbon steel (EN-1.1191)				Stainless steel (EN-1.4401)				
3	Piston	Stainless steel (EN-1.4401)			Stainless steel (EN-1.4401)				Stainless steel (EN-1.4401)				
4	Spring	Stainless steel (EN-1.4571)			Stainless steel (EN-1.4571)				Stainless steel (EN-1.4571)				
DN		1/4" to 2" (GAS, NPT or SW)											
PN		200			250				250				
OPERATING CONDITIONS	PRESSURE IN bar	200	175	34	250	211	180	167	250	207	170	164	
	MAXIMUM TEMP. IN °C	120	150	200	120	300	350 (1)	400 (1)	120	200	350 (1)	400 (1)	
	MINIMUM TEMP. IN °C	- 60			- 10				- 60				



(1) For temperatures exceeding 300°C without spring only or depending on demand, with special spring.



R			1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
CONNECTIONS			Whitworth gas-tight cylindrical female thread ISO 228/1 1978 (DIN-259)							
			NPT thread ANSI - B 2.1							
			Socket welding ends SW ANSI - B 16.11							
H			34	39	48	55	62	64	82	85
L			50	55	65	75	90	95	100	112
REDUCED PITCH Ø			6,00	8,00	9,50	11,50	15,00	17,00	21,00	25,00
WEIGHT IN Kgs.	BRASS		0,31	0,47	0,92	0,95	2,21	2,66	3,82	6,43
	CARBON STEEL		0,29	0,44	0,78	0,88	2,05	2,47	3,56	6,16
	STAINLEES STEEL		0,29	0,44	0,79	0,90	2,07	2,50	3,61	6,24
	BRASS 2003-179.	GAS	0041	0381	0021	0341	0101	0141	0121	0201
		NPT	00411	03811	00211	03411	01011	01411	01211	
	CARBON STEEL 2003-179.	GAS	0044	0384	0024	0344	0104	0144	0124	0204
		NPT	00441	03841	00241	03441	01041	01441	01241	02041
		SW	00442	03842	00242	03442	01042	01442	01242	02042
	STAINLESS STEEL 2003-179.	GAS	0042	0382	0022	0342	0102	0142	0122	0202
		NPT	00421	03821	00221	03421	01021	01421	01221	02021
		SW	00422	03822	00222	03422	01022	01422	01222	02022

		OPENING PRESSURE IN mbar				FLOW COEFFICIENT				
						Kv m^3/h ΔP = 1 bar	Cv US gpm ΔP = 1 Psi = 0,07 bar			
		WITHOUT SPRING	WITH SPRING			WITH SPRING	WITHOUT SPRING	WITH SPRING		
DIRECTION OF FLUID FLOW						(1)	(2)	(2)	(3)	
DN	1/4"	34,10	49,60	79,10	10,90	0,51	1,72	1,15	—	0,59
	3/8"	35,50	51,00	81,50	10,50	1,05	3,04	2,46	—	1,22
	1/2"	34,80	51,00	80,80	11,20	1,22	4,67	3,05	—	1,42
	3/4"	32,80	44,00	76,80	10,20	2,08	6,90	5,33	—	2,41
	1"	34,60	54,10	80,40	11,20	4,39	13,80	10,84	—	5,09
	1 1/4"	34,80	55,40	86,90	11,10	5,19	20,22	13,47	—	6,02
	1 1/2"	35,00	55,90	82,00	11,00	7,82	30,89	15,06	—	9,07
	2"	34,00	56,00	76,10	10,40	10,67	37,13	29,21	—	12,38

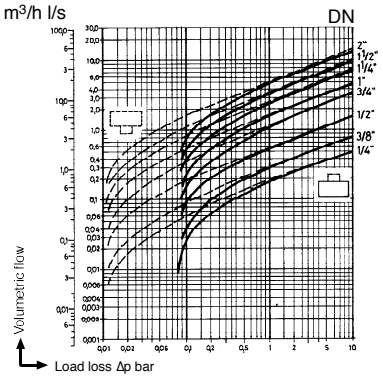
(1) For other mounting positions, with or without spring, the flow coefficient varies by ± 2%.
(2) Flow coefficient for orientation. The volumetric flows which cause loss of pressure to 0,07 bar = 1 Psi are in unstable areas (See diagram of pressure loss).
(3) Opening pressures are greater then 0,007 bar = 1 Psi. The Cv coefficient cannot be determined.

Load losses

The adjoining diagram reflects the load loss curves for water at 20°C. Values are based on valves without springs and installed horizontally. In order to determine other fluids load losses, calculate the flow of these equivalent to water.

$$Q_A = \sqrt{\frac{\varrho}{1.000}} \cdot Q$$

Q_A = Flow equivalent to water in m^3/h.
ϱ = Fluid density in operating conditions in Kg/m^3.
Q = Fluid flow in operating conditions in m^3/h.



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