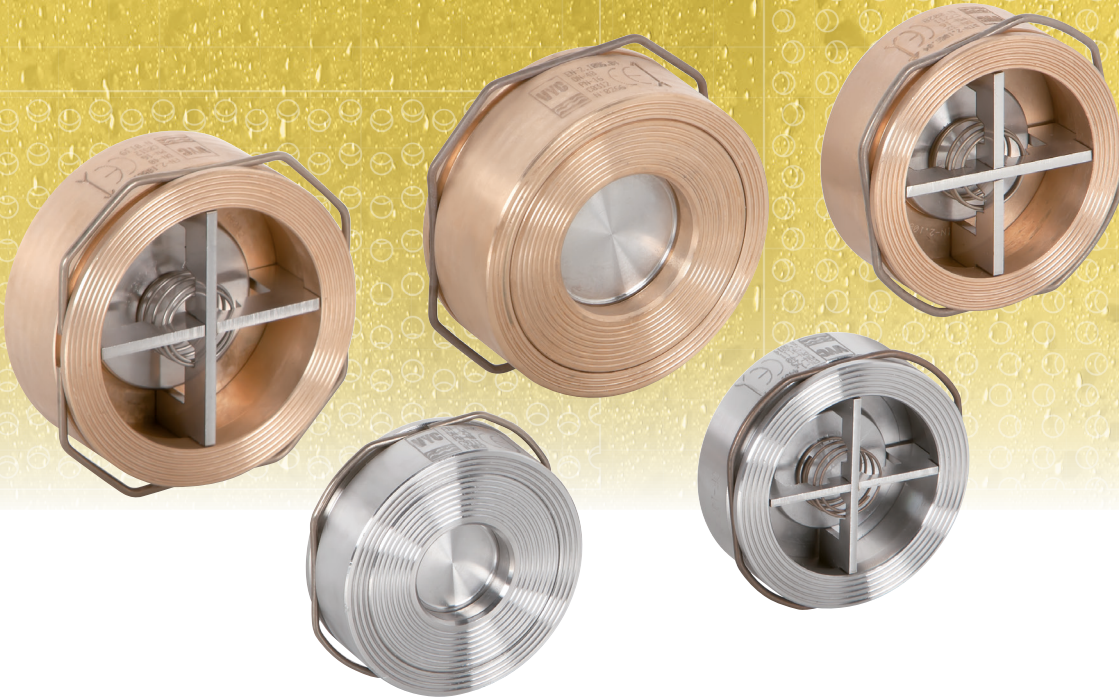




# Disc check valve

Mod. 170 | EN ASME/ANSI



## Operation

The disc check valve works by the action of the pressure of the fluid, allowing it to pass downstream and preventing it from flowing back upstream. They are unidirectional valves that open in the direction of flow and close in the opposite direction of flow by the action of the spring incorporated.

It incorporates a centring ring for placement between EN flanges (PN-6, 10, 16, 25 and 40) and ASME flanges (class 150 and 300).

## Regulation

- PED 2014/68/UE
- UNE EN 16767
- UNE EN 558 serie básica 49
- UNE EN 12516-2
- UNE EN 12516-4
- UNE EN 12266-1

## Specifications

### Size

- DN-15 to DN-100

### Temperature range

- -60 °C to +400 °C

### Applications

- Gas, steam and liquids

### Materials

- Carbon steel
- Stainless steel
- Bronze

### Maximum pressure

- Up to 40 bar

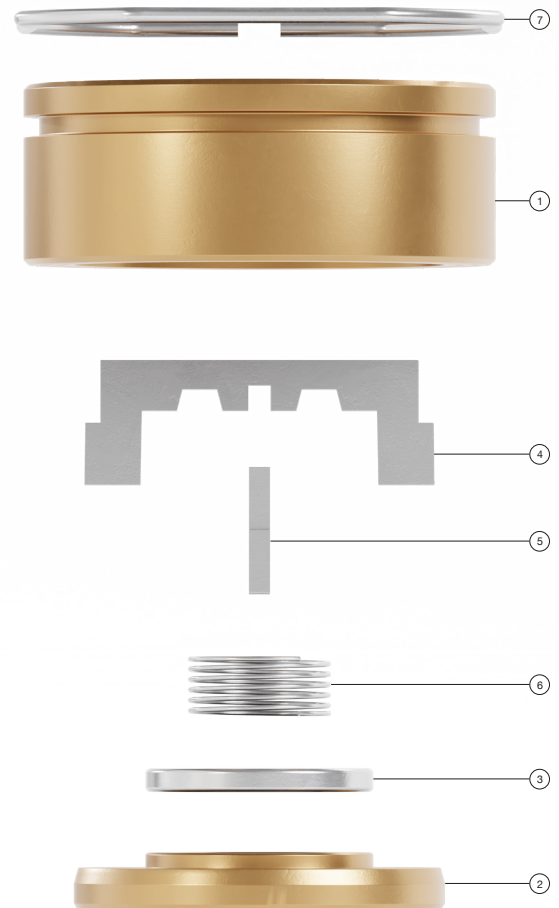
## Certification



N°. PIECE	PIECE	MATERIAL											
		BRONZE				CARBON STEEL				STAINLESS STEEL			
1	Body	Bronze (DIN-2.1086.04)				Carbon steel (EN-1.0580)				Stainless steel (EN-1.4401)			
2	Seating	Bronze (DIN-2.1086.04)				Stainless steel (EN-1.4028)				Stainless steel (EN-1.4401)			
3	Sealing disc	Stainless steel (EN-1.4401)				Stainless steel (EN-1.4401)				Stainless steel (EN-1.4401)			
4,5	Spring press	Stainless steel (EN-1.4401)				Stainless steel (EN-1.4401)				Stainless steel (EN-1.4401)			
6	Spring	Stainless steel (EN-1.4571)				Stainless steel (EN-1.4571)				Stainless steel (EN-1.4571)			
7	Centering ring	Stainless steel (EN-1.4310)				Stainless steel (EN-1.4310)				Stainless steel (EN-1.4310)			
DN		15 to 100											
PN		16				40				40			
OPERATING CONDITIONS	PRESSURE [bar]	16	13,5	8	7	40	35	28	21	38,1	30,2	25,8	23,5
	TS [°C]	100	200	250	260	120	200	300	400 <sup>(1)</sup>	100	200	300	400 <sup>(1)</sup>
	ts [°C]	-10				-10				-60			



Isometric view DN-15

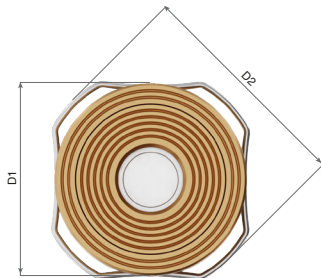


Exploded view DN-15

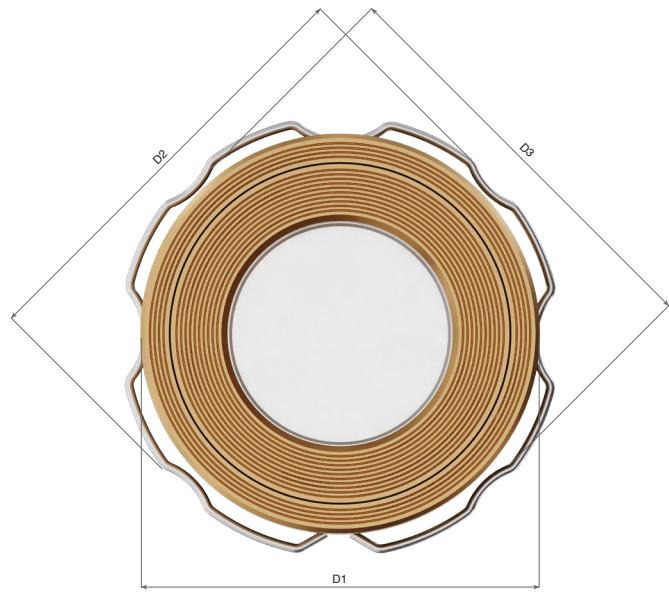
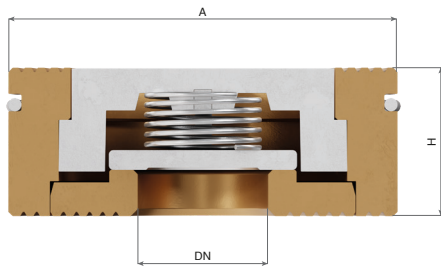
(1) For temperatures over 300 °C only without spring or with special spring, on request.



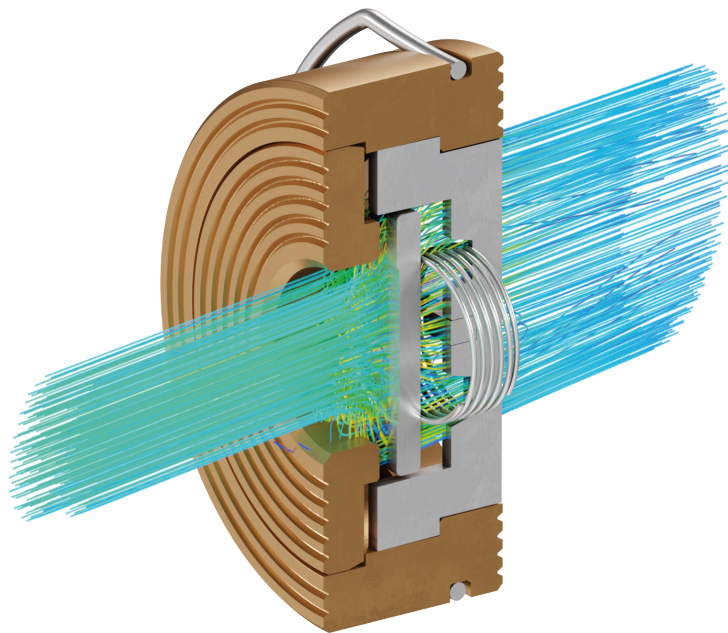
DN		15	20	25	32	40	50	65	80	100		
										RING I	RING II	RING III
H [mm]		17	20	22	28	32	40	46	50	60	–	–
A [mm]		44,5	54,5	64,5	75	84		117	133	153	–	–
D1 [mm]		44,5	54,5	64,5	75	84	97,5	117	133	153	–	–
D2 [mm]		52	65,5	72	83	93,5		127	154	168,5	192	178
D3 [mm]		–	–	–	–	–	97,5	–	142,5	162,5	176	173
WEIGHT [kg]	BRONZE	0,14	0,24	0,35	0,56	0,82	1,10	2,15	2,90	4,02		
	CARBON STEEL	0,11	0,21	0,30	0,51	0,75	1,05	1,92	2,70	3,90		
	STAINLESS STEEL	0,11	0,21	0,30	0,51	0,75	1,05	1,92	2,70	3,90		
CODE	BRONZE 2003-170	5021	5341	5101	5141	5121	5201	5221	5301	5401		
	CARBON STEEL 2003-170	8024	8344	8104	8144	8124	8204	8224	8304	8404		
	STAINLESS STEEL 2003-170	8022	8342	8102	8142	8122	8202	8222	8302	8402		



**DN-15 to 65**

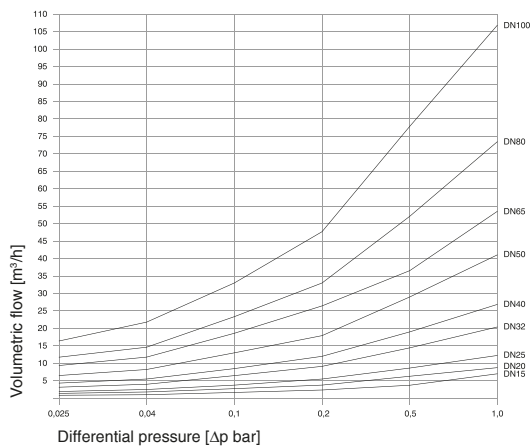


**DN-80 to 100**



**Fluid dynamics**

DIRECTION OF FLUID FLOW	OPENING PRESSURE [mbar]				FLOW COEFFICIENT	
	WITHOUT SPRING	WITH SPRING			Kv [m³/h] ΔP = 1 bar	Cv [US gpm] ΔP = 1 psi
	▲	▲	▶	▼		
DN-15	2,51	22,00	20,50	17,00	5,27	6,10
DN-20	2,38	21,90	20,50	17,10	8,88	10,26
DN-25	1,96	21,50	20,50	17,50	12,18	14,09
DN-32	3,70	23,20	20,50	15,80	20,31	23,49
DN-40	4,00	23,50	20,50	15,50	26,89	31,09
DN-50	4,11	23,60	20,50	15,40	41,15	47,58
DN-65	4,95	24,40	20,50	14,60	58,64	67,81
DN-80	5,64	25,10	20,50	13,90	73,55	85,04
DN-100	6,81	26,30	20,50	12,70	106,92	123,62



### Load losses

The attached diagram shows the pressure drop curves for water at 20 °C. Values are based on spring loaded valves installed horizontally. In the case of vertical flow direction, the variations are practically negligible. To determine the pressure drop of other fluids, calculate the equivalent flow rate of these fluids to water.

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

Q<sub>A</sub> = Equivalent flow rate in water in m<sup>3</sup> /h.

ρ = Density of the fluid at service conditions in kg/m<sup>3</sup>.

Q = Density of the fluid at service conditions in m<sup>3</sup>/h.

	Δp [bar]					
	0,025	0,04	0,1	0,2	0,5	1,0
	m <sup>3</sup> /h					
15	0,81	1,02	1,6	2,31	3,70	5,27
20	1,37	1,76	2,78	3,95	6,25	8,88
25	1,91	2,47	3,88	5,47	8,61	12,18
32	3,22	4,08	6,45	9,14	14,41	20,31
40	4,31	5,41	8,55	12,05	19,02	26,89
50	6,54	8,29	13,09	18,44	29,03	41,15
65	9,33	11,83	18,63	26,31	41,47	58,64
80	11,70	14,77	23,33	33,04	52,16	73,55
100	16,43	21,71	33,05	47,63	77,76	106,92

### Depending on demand

- Possibility of manufacturing in other types of material, for special working conditions (high temperatures, fluids, etc.).
- The sealing disc can be equipped with seals made of PTFE (Teflon), Silicone rubber, Fluoroelastomer (Viton), etc.

### Specifications

- Minimal pressure loss.
- Avoids water hammer when closing at zero pressure point, remaining completely watertight when the fluid is reversed.
- Easy assembly in any position depending on the direction of flow. Springless only in vertical upward direction.
- The valves are provided with a single centring ring for placement between flanges according to EN 1092-1/2/3 (PN-6, 10, 16, 25 and 40), and ASME B16.5 (Class 150 and 300).

