

6.4 CHECK VALVES ECV 50 - 600

6.4.1 GENERAL

Function

The ECV is a check valve to avoid unwanted back flow in a pipe.

Applications

In water supply systems (distribution, treatment etc.), irrigation, heating systems, ship building, industrial processes (liquids and gases).

Temperature indication: EPDM to 110 °C
 NBR to 90 °C

Pipe connection

The ECV check valve has been designed for installation in flanged piping systems (PN 10, PN 16, etc.). Other flange connections on request.

The flangeless wafer type body shall be clamped between two flanges with flat or raised faces (welding neck or slip on flanges). Suitable gaskets shall be used for sealing between valve and flanges.



6.4.2 DESIGN

The ECV is a self acting pivoting check valve of the double disc wafer type. The valve is maintenance free. The design is compact and space saving.

The ECV check valve has a superior closing response prior to flow reversal. The corrosion resistant springs are designed to quickly close the valve at zero flow to prevent undesirable pressure surges. In the closed position the valve is tight shut off. It opens automatically when the flow starts again.

The elastomer seat is bonded to the body casting. It is out of the flow path thus ensuring extended seal life. Spherical profiling of the seat ensures positive shut-off even at low pressures and the area adjacent to the seat is also protected by the same elastomer material.

Attention paid to the streamlining of the flow path is paramount if good flow characteristics are to be achieved.

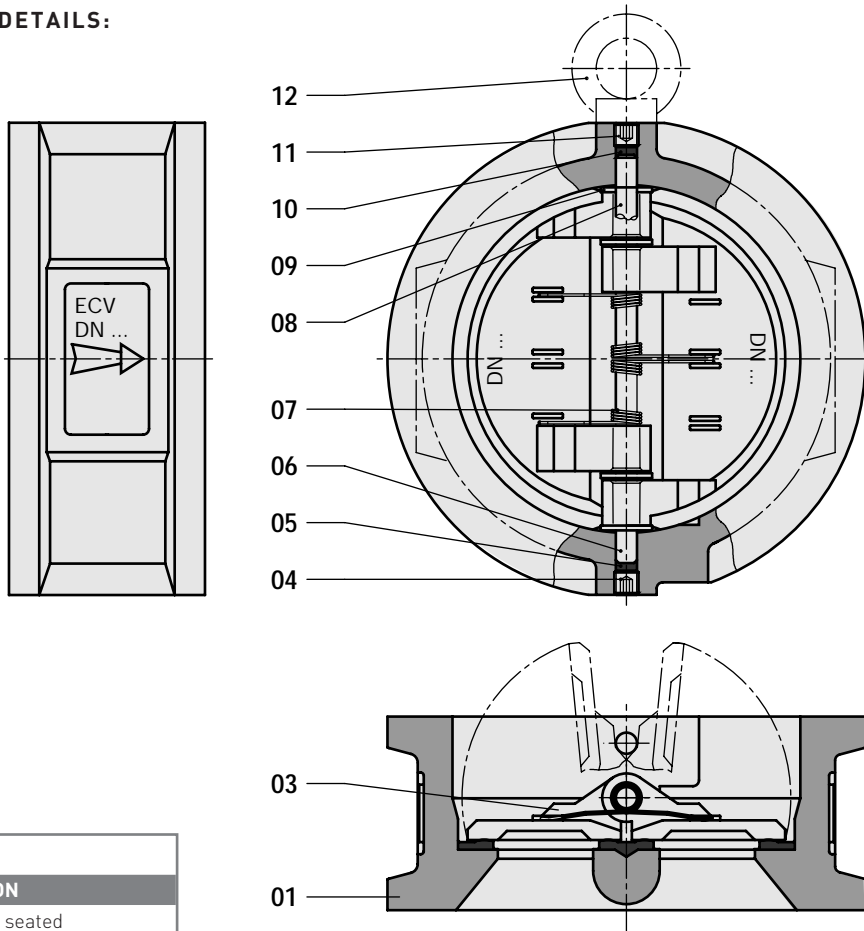
The saving of energy costs by selecting a Wouter Witzel Eurovalve check valve may be several times the initial cost of the valve (ask Wouter Witzel Eurovalve for an energy calculation).

The use of these design features together with careful material selection makes the ECV a product with a high reliability and a low operating costs.

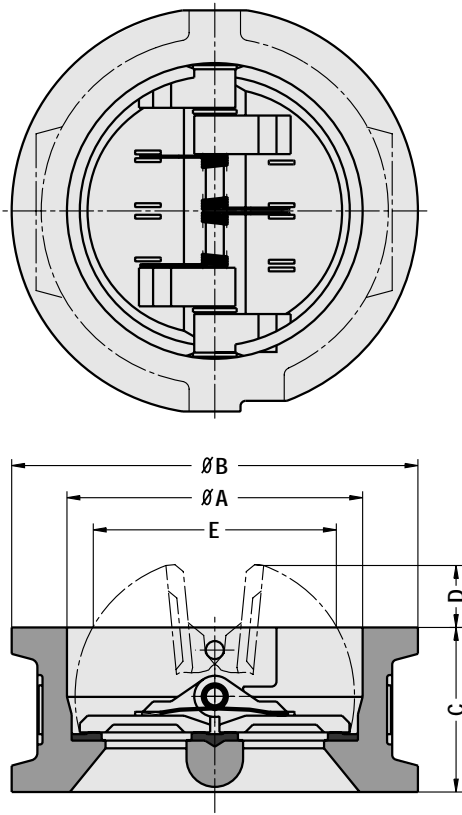
Specification:

Body type	Flangeless wafer
Function	Back flow prevention
Installation	Clamping between flanges
Flange connections*	PN 10 / 16 / ANSI Class 150 (other connections on request)
Valve shut off pressure	Between 0,2 and 16 bar
Pressure differential to open	0,02 bar minimum
Leakage rate	ISO 5208, Rate A (uni-directional tight shut off)
Face to Face dimension	ISO 5752 / EN 558, basis series 16 (wafer long)
Available type approvals*	PED, BV, CSS, CRS, LRS, GL, NKK, RINa, RMRS, GOSST, Stoomwezen
Body and trim materials*	See material table

* Needs to be specified when ordering

CONSTRUCTION DETAILS:**PARTS LIST:**

ITEM	DESCRIPTION
01	body rubber seated
03	disc
04	plug
05	sealing ring
06	shaft
07	spring
08	stop pin
09	ring
10	seal
11	plug
12	lifting eye bolt (\geq DN 250/10")



DIMENSIONS:

DN	NPS	A	B*	C	D	E	±kg
50	2	67	100	43	8	41	1.3
65	2½	84	118	46	14	59	1.8
80	3	100	140	64	16	69	3.5
100	4	115	158	64	25	90	4.5
125	5	135	188	70	34	110	6.5
150	6	160	212	76	43	136	8.5
200	8	210	268	89	61	185	13
250	10	256	325	114	72	225	24
300	12	306	375	114	97	278	36
350	14	356	430	127	122	331	45
400	16	406	475	140	147	381	60
450	18	466	554	152	152	428	85
500	20	486	620	152	159	428	105
600	24	600	733	178	216	570	150

*) Note: Dimension B is given for PN 16 flanges and may be different for other flange connections.

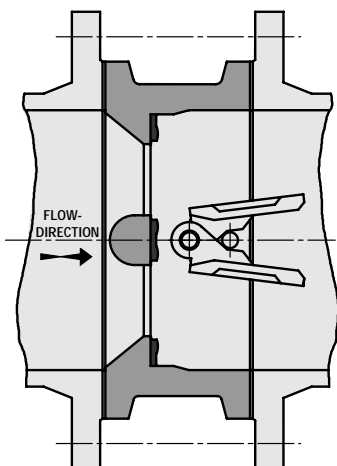
6.4.3 INSTALLATION

The ECV check valve has been designed for steady flow conditions and can be installed in horizontal and vertical pipelines.

The valve must not be installed in pipelines with pulsating flow or near to reciprocating pumps.

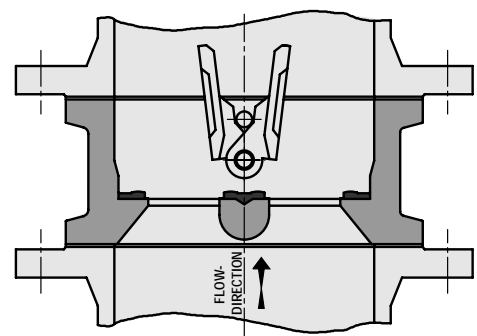
The instructions shown below must be adhered to.

Installation in a horizontal pipeline:



The disc shaft must be in the **vertical** position.
Note: Additional pressure drop can be expected due to the weight of the discs.

Installation in a vertical pipeline:



As standard the valve must be installed with flow up.

6.4.4 MATERIALS

The ECV is available in different materials as shown in the following tables. The selection is mainly based on the corrosive properties of the fluid(s). Inconel springs have a longer life time specially in chloride containing fluids eg sea water.

Part	Material	Material standards		
Body	Cast iron (DN 50 - 200/2"-8")	GG 25, DIN 1691	<i>cl., ASTM A126</i>	<i>GJL 250, EN 1561</i>
	Ductile cast iron ($\geq 250/10''$)	GGG 40, DIN 1693	<i>60-40-18, ASTM A395</i>	<i>GJS 400-15, EN 1563</i>
	Aluminium bronze:	G-CuAl10Ni, DIN 1714	<i>C95800, ASTM B148</i>	<i>AB2, BS 1400</i>
Disc	Aluminium bronze:	G-CuAl10Ni, DIN 1714	<i>C95800, ASTM B148</i>	<i>AB2, BS 1400</i>
Shaft / stop pin	Stainless steel:	X5CrNiMo 17 12 2	<i>AISI 316</i>	<i>316S16, BS 970</i>
Spring	Stainless steel:	X5CrNiMo 17 12 2	<i>AISI 316</i>	<i>316S16, BS 970</i>
	Inconel:	<i>NiCrMo9Nb, DIN 17744</i>	<i>UNS N06625, ASTM B446</i>	<i>NA 21, BS 3076</i>
Seat	Rubber:	EPDM, NBR, FPM		

Note: The material standards printed in italics are comparable with the supplied materials.

External and internal coating for grey and ductile cast iron bodies:			
Code	Coating	Colour	Use
PUR	Polyurethane coating	Orange	Indoor and outside exposure. Light and normal circumstances
	Thickness 80 μ	RAL 2000	
EP-W-2	Epoxy coating	Grey	Potable water systems
	Thickness 350 μ	RAL 7038	

Remark: Polyurethane coating is also available in the colours: blue / RAL 5017, red / RAL 3000 or grey / RAL 7000. Other coatings on request.