



NeroValves GmbH

Industrial Valves: DIN · API · ASME

Nero Non Return check valve with hydraulic damping System

Nero Non-return check valves with hydraulic Damping System

Performance:

Operation of Nero NON Return Check Valve complies with that of any usual check valve
The Flow keeps the double offset valve disc in open position.
The degree of the opening depends on the flow velocity.
When the flow is interrupted, the disc closes preventing flow reversal.

Design:

- Reliable design.
- Eccentric disc operation.
- Body seat ring made of corrosion resistant steel.
- Disc seat ring is corrosion resistant steel with seal for reliable sealing.
- Possibility for installation of weight and lever on both sides.
- Low weight for short length of the valves.
- Maintenance free.
- Rugged body with disc suitable for fluid flow
- Disc and shaft are connected by key.
- Seat ring rolled into the body.

Face to face according to DIN EN 558-1, series 14 (DIN 3202- F4)

Flanges according to DIN 1092-2 (DIN 2501)

Material: Ductile Iron or Welded Steel

Size: DN 200 - DN 2000 mm

Pressure rating: PN 6 up to PN 25 bars

Coating: all casting parts are coated with electrostatic epoxy powder with a minimum thickness 250 µm.



Subject to alternation

We reserve the right to make any technical modification. We are not responsible for any error in printing.

Nero Valves GmbH

Mörfelden – Walldorf / Germany

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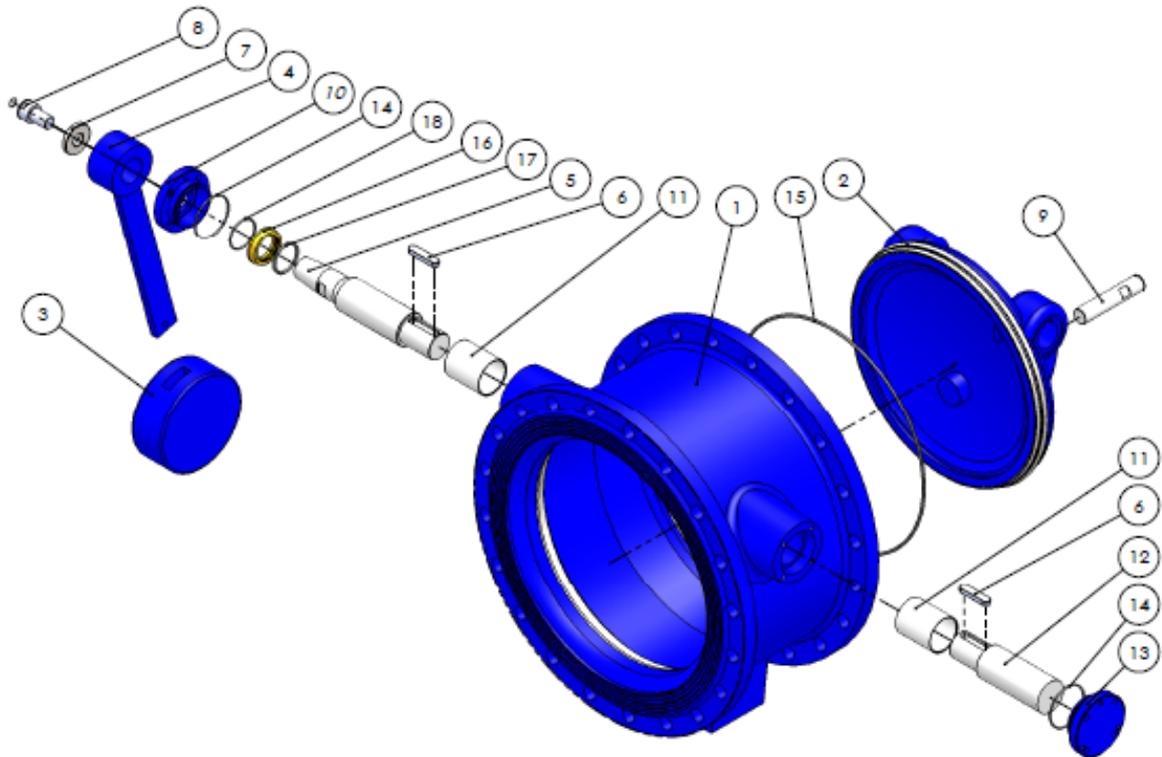
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Nero Non Return check valve with hydraulic damping System

Nero Non-return check valves with Lever and Counterweight & damping System

Thoroughly developed design



Materials:

Item	Description	Material
1.	Body	Ductile Iron GGG 400-10/ Steel RSt 52-3
2.	Seat	Stainless steel X20Cr13 (Austenitic CrNi Steel)
3.	Weight lever	Steel RST37-2
4.	Weight	cast iron
5.	Shaft lever end	Stainless steel 1.4021(Ferritic chrome steel
6.	Key	Stainless steel 1.4301
7.	Washer	Stainless steel A2
8.	Hex socket head screw	Galvanized steel
9.	Stopper	Stainless steel 1.4021(Ferritic chrome steel
10.	Bearing Cover (open)	Steel
11.	Bearing bushes	PTFE
12.	Shaft free end	Stainless steel 1.4021(Ferritic chrome steel
13.	Bearing Cover (close)	Steel
14.	O-ring	NBR / EPDM
15.	O-ring	NBR / EPDM
16.	Sealing ring	Brass
17.	O-ring	NBR / EPDM
18.	O-ring	NBR / EPDM

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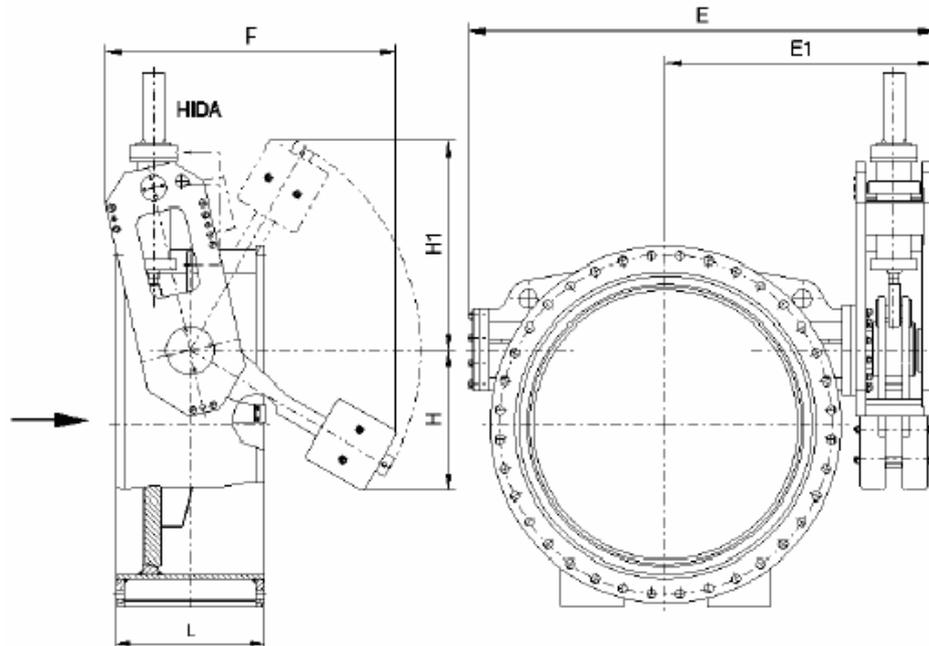
Nero Non Return check valve with hydraulic damping System

Nero Non-return check valves with hydraulic Damping System

Non-return valves with counter weight can be equipped with hydraulic damping system for adjusting the Closing time. With the damping system the opening and closing time can be reduced, and the water hammer Effect can be prevented by reducing the damping time.

The installation In Vertical or Horizontal is possible:

Hydraulic damping actuator –in Vertical position with one hydraulic Damping Actuator



Dimensions PN10:

DN	L	E	E1	F	H	H1	L1	L2	
200	230	530	290	275	185	265	115	530	
250	250	650	360	325	175	271	125	530	
300	270	711	391	664	256	380	135	535	
350	290	766	416	425	248	388	145	530	
400	310	875	495	480	361	523	155	831	
450	330	910	520	650	352	432	165	831	
500	350	960	590	570	342	542	175	831	
600	390	1030	590	545	318	566	195	831	
700	430	1210	640	750	350	640	215	1030	
800	470	1410	760	880	401	731	235	1030	
900	510	1540	820	1055	522	892	255	1030	
1000	550	1765	975	1000	504	910	225	1030	
1200	630	1895	1100	1080	442	1042	315	1030	
1400		Dimension 1400 – 2000 On REQUEST							
1600									
1800									
2000									

Other dimension and pressure on request

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Nero Non Return check valve with hydraulic damping System

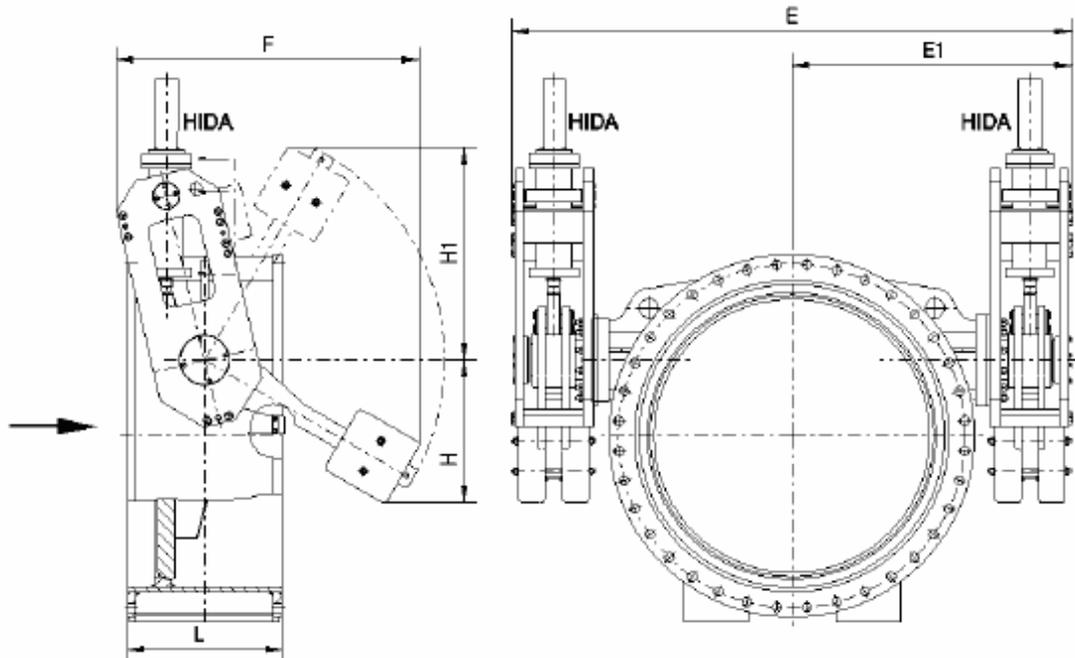
Nero Non-return valves with hydraulic damping system

Non-return valves with counter weight can be equipped with hydraulic damping system for adjusting the Closing time

With the damping system the opening and closing time can reduced, and the water hammer Effect can be prevented by reducing the damping time.

The installation In Vertical or Horizontal is possible:

Hydraulic damping actuator –in Vertical position with two hydraulic Damping



Dimensions PN16:

DN	L	E	E1	F	H	H1	L1	L2	
200	230	530	290	275	185	265	115	530	
250	250	650	360	325	175	271	125	530	
300	270	711	391	664	256	380	135	535	
350	290	766	416	425	248	388	145	530	
400	310	875	495	480	361	523	155	831	
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Application: To provide non-slam performance in places where water return through the valve is permitted. A flow control valve can adjust the opening and closing speed of non-return valve disc.

Application examples:

- Water supply line with pumps installed in parallel

When the pump is turned off and the flow direction reversed, the valve closes, and if the valve does not have a damping mechanism; the resultant force could damage the system. In this case, the Reverse pressure would be equal to the pump pressure.

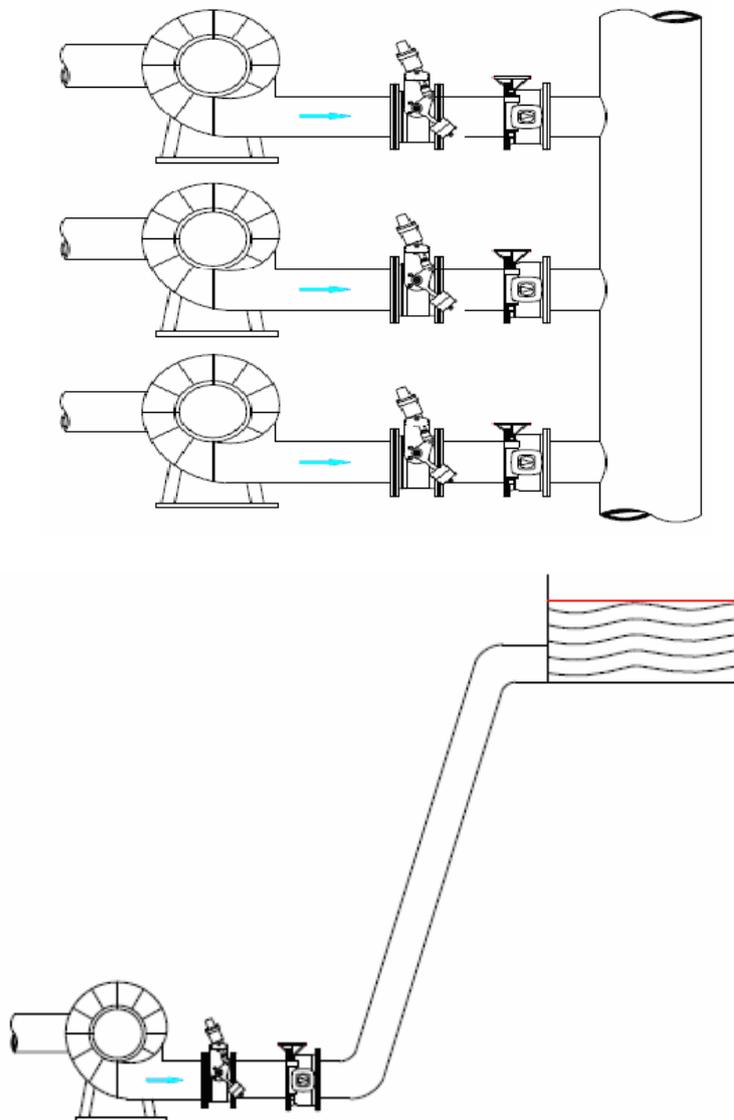
- Water supply line with long pipe and high elevation

Pumping to high elevation

Quick change in flow direction which results in extensive force

In this situation the amount of reverse

Pressure on the closed disk is caused by the amount of water column.



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Order for Butterfly Check valve **with one hydraulic Damping Actuator** and **With two hydraulic Damping Actuator** should contain return pressure DP as well as requested.

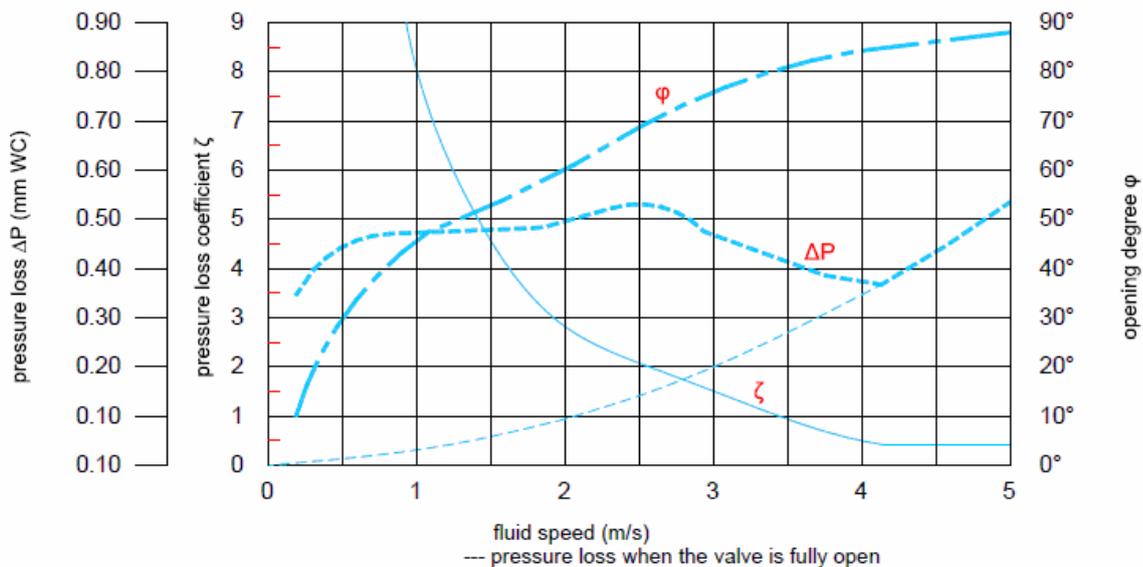
Closing time for quick and slow movement of dashpot

The table below shows data for diameter, return pressure and type and number of dashpot Actuators

DN	ΔP	Dashpot actuator		ΔP	Dashpot actuator	
		HIDA	pieces		HIDA	Pieces
200	14.6	63	1	25	63	1
250	12.5	63	1	25	63	1
300	8.5	63	1	20	63	1
350	5.4	90	1	16	90	1
400	3.6	90	1	12	90	1
450	4.5	90	1	12	90	2
500	3.3	125	1	10	90	2
600	3.2	125	1	10	125	2
700	3.1	125	1	10	125	2
800	2.9	125	1	10	125	2
900	2.9	125	1	10	125	2
100	2.9	125	1	10	140	2
1200	2.6	125	2	5	140	2
1400	2.2	125	2	4	140	2

For greater or smaller return • P, there should be a special request

Illustration of tilting disc with counter weight of DN 400 and PN 10 installed in horizontal position. Due to geometrical similarity, this graph could also be used for other valve sizes.



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