ADL APPENDAGES

REF. 495

DOWNSTREAM PRESSURE REDUCER STABILIZER VALVE CSA VRCD PN16

The CSA direct acting pressure reducing valve Mod. VRCD reduces and stabilizes the downstream pressure to a constant value, regardless of flow rate and upstream pressure variations. It can be used for water, air and fluids in general with a maximum working pressure of 16 bars.
Innovative self cleaning piston technology (patent pending) to improve performance reducing maintenance operations.
Mobile block composed of three components in gun metal/stainless steel obtained by CNC to ensure the maximum accuracy and sliding precision, this is to avoid friction and unexpected leakage.
Upstream/downstream pressure outlets for gauges.
Large expansion chamber to reduce noise and to provide an excellent resistance to cavitation.



Size :	DN50 to DN150
Connection :	Flanged PN10/16 RF
Min Temperature :	+0°C
Max Temperature :	+60°C
Max Pressure :	16 bars
Specifications :	Downstream pressure reducing, stabilizing control valve Output pressure adjustable from 1.5 to 6 bars Upstream/downstream pressure outlets for gauges
Materials :	Ductile iron body EN GJS-450-10

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SPECIFICATIONS :

- Respect the flow direction indicated by the arrow
- Self-cleaning piston technology
- Large expansion chamber to provide an excellent resistance to cavitation
- Upstream/downstream pressure outlets for gauges DN1/4" BSP (pressure gauges not included)
- Output pressure adjustable from 1.5 to 6 bars
- Epoxy painting blue color RAL 5005 using FBT technology

USE :

- Drinking water distribution, watering, cooling systems, fire protection networks
- Min Temperature Ts : +0°C
- Max Temperature Ts : +60°C
- Max Pressure Ps : 16 bars upstream
- Downstream pressure adjustable from 1.5 to 6 bars

FLOW COEFFICIENT Kvs (in m3 / h) :

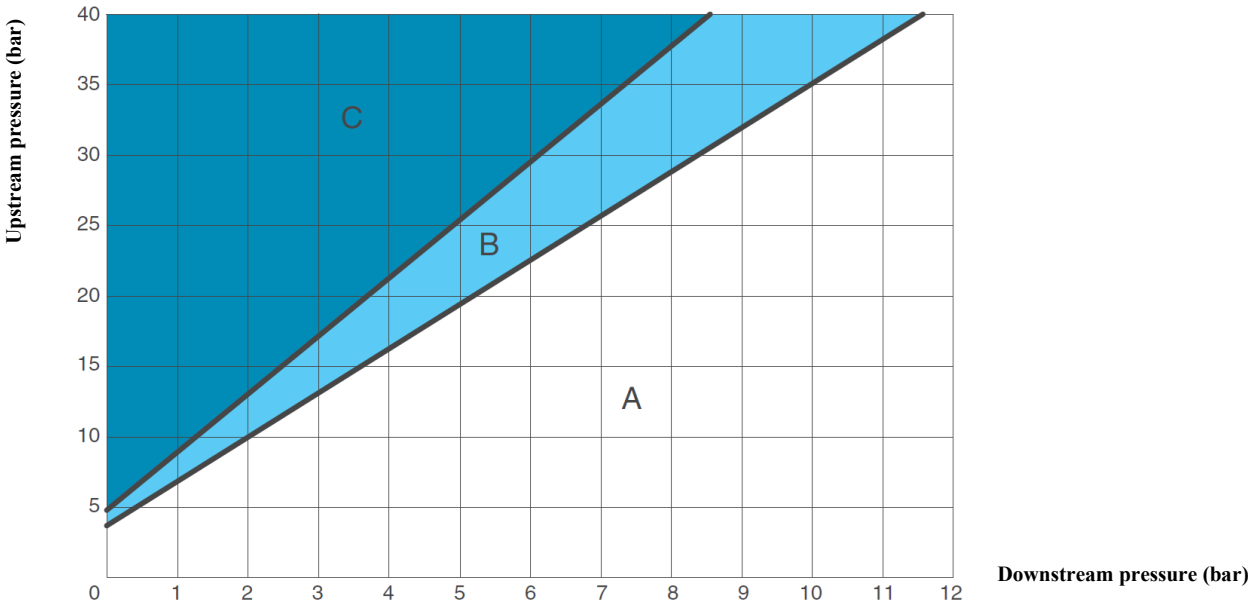
DN	50	65	80	100	125	150
Kvs (m3 / h)	20	47	72	116	147	172

RANGE :

- Downstream pressure reducer stabilizer valve VRCD flanged PN10/16 from DN50 to DN150, output from 1.5 to 6 bars **Ref.495**
- Pressure gauge Ø 63 with bottom connection DN1/4", range from 0/+6 Bars to 0/+40 bars **Ref.1613005 to 1613009**

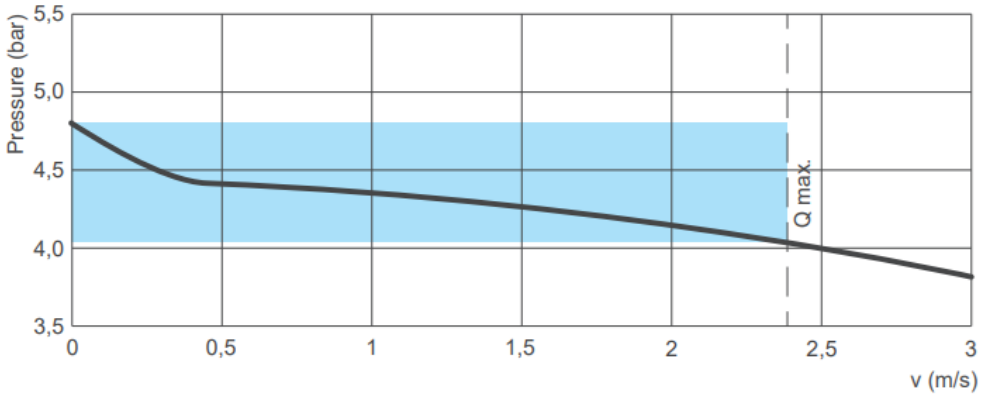
CAVITATION DIAGRAM :

Cavitation analysis is very important to prevent damage, vibrations and noise. In the diagram, the operating point obtained by the intersection of the upstream pressure (y-axis) and the downstream pressure (x-axis) corresponds to one of the following zones:
- A: recommended operating conditions
- B: cavitation limit zone
- C: cavitation zone



DOWNSTREAM PRESSURE REDUCER STABILIZER VALVE CSA VRCD PN16

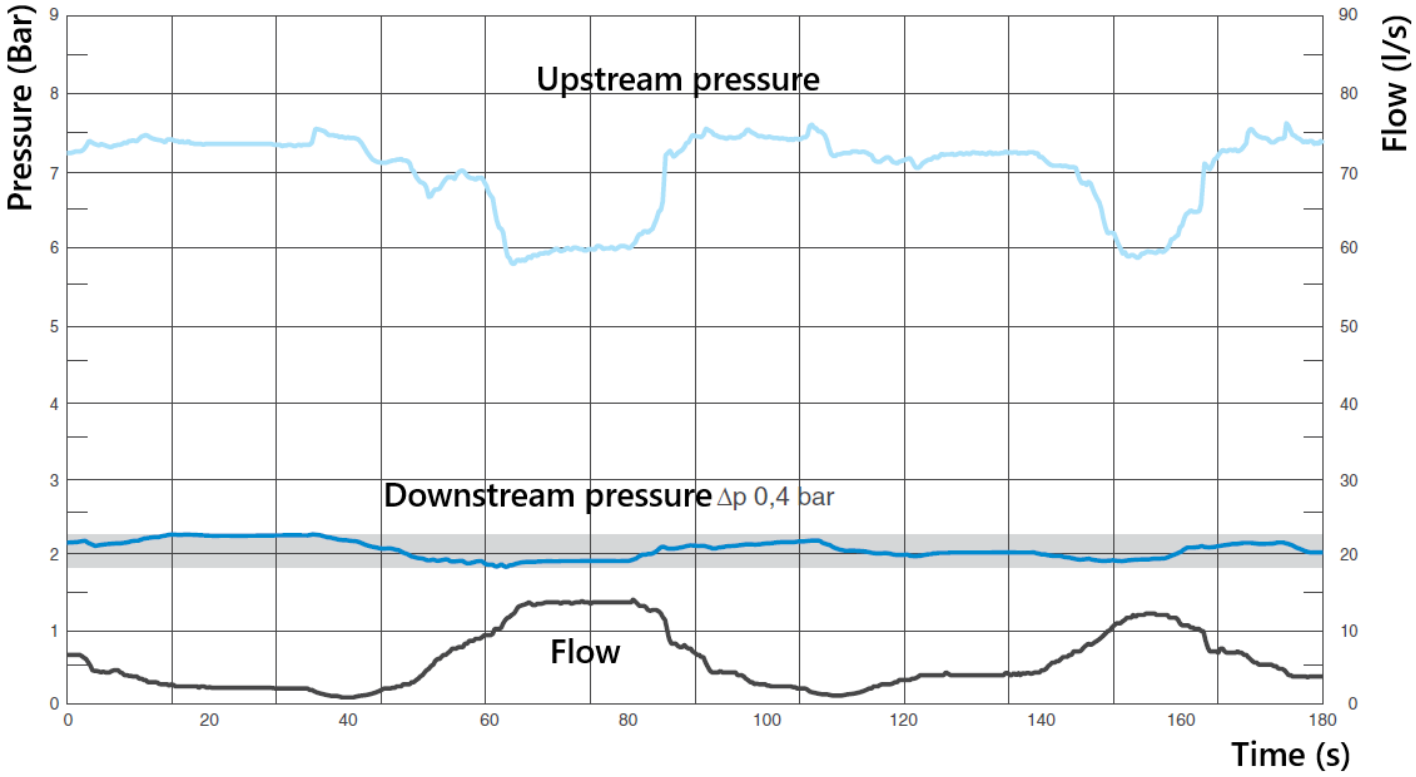
REDUCED PRESSURE FALLOFF :



The plot is showing the reduced pressure falloff that occurs through the valve when the flow increases. Ensure that the operating conditions fall on the area depicted in blue for the recommended fluid flow velocity through the valve.

REDUCING PRESSURE GRAPH :

Hydraulic results from the laboratory



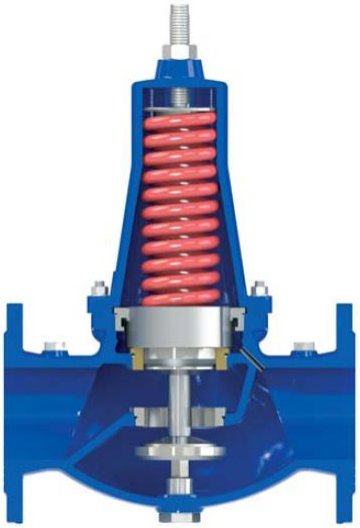
RECOMMENDED FLOW RATE :

DN	50	65	80	100	125	150
Flow rate min. (l/s)	0.3	0.5	0.8	1.2	1.8	2.6
Flow rate max. (l/s)	3.9	6.6	10	15	24	35

DOWNSTREAM PRESSURE REDUCER STABILIZER VALVE CSA VRCD PN16

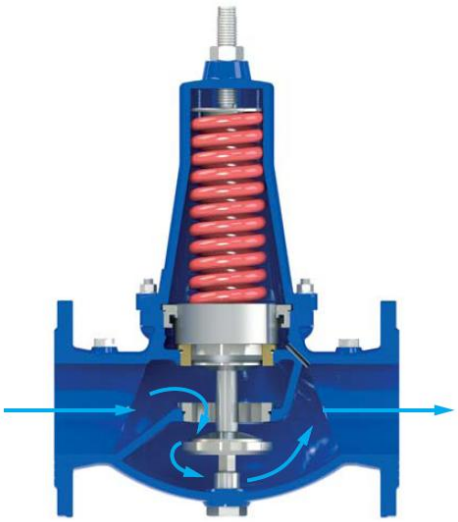
OPERATING PRINCIPLE :

The operating principle of VRCD is based on a piston sliding into two rings in stainless steel/bronze of different diameters. These rings, tightly connected to the body, form a watertight chamber also known as the compensation chamber which is necessary for the accuracy and stability of the valve.



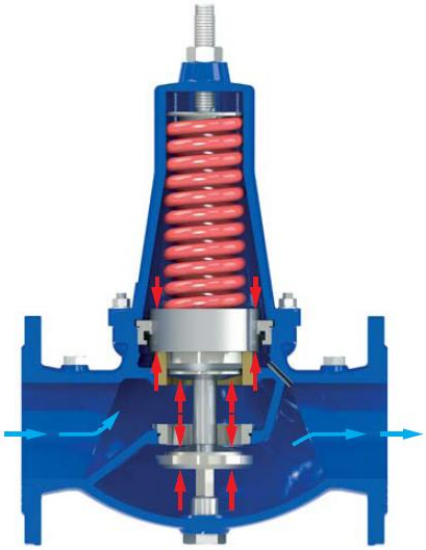
Valve normaly open

Without any pressure the VRCD is a normally open valve, where the piston is kept pushed down by the force of the spring located in the cover.



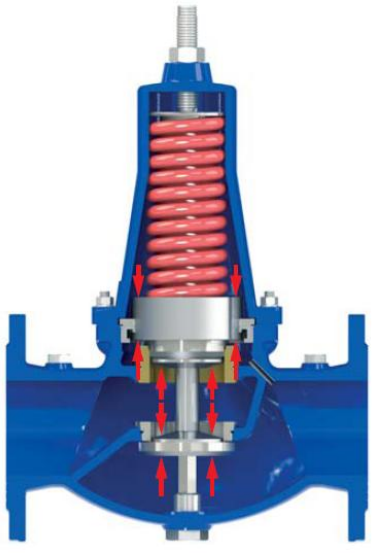
Valve fully open

During working conditions, should the downstream pressure drop below the valve's set point obtained by the compression of the spring, the VRCD will open completely allowing the full passage.



Valve modulating

Should the downstream pressure rise above the valve's set point the resultant of the force obtained by the downstream pressure, acting on the mobile block and the compensation chamber against the spring pushing downwards, will move the obturator produc- ing the required head loss to modulate and stabilize the downstream pressure.



Valve fully closed (static conditions)

Should the water supply be interrupted from downstream the system will work in static conditions, the VRCD will maintain and stabilize the required pressure even with no flow thanks to the pressure balanced technology and compensation chamber.

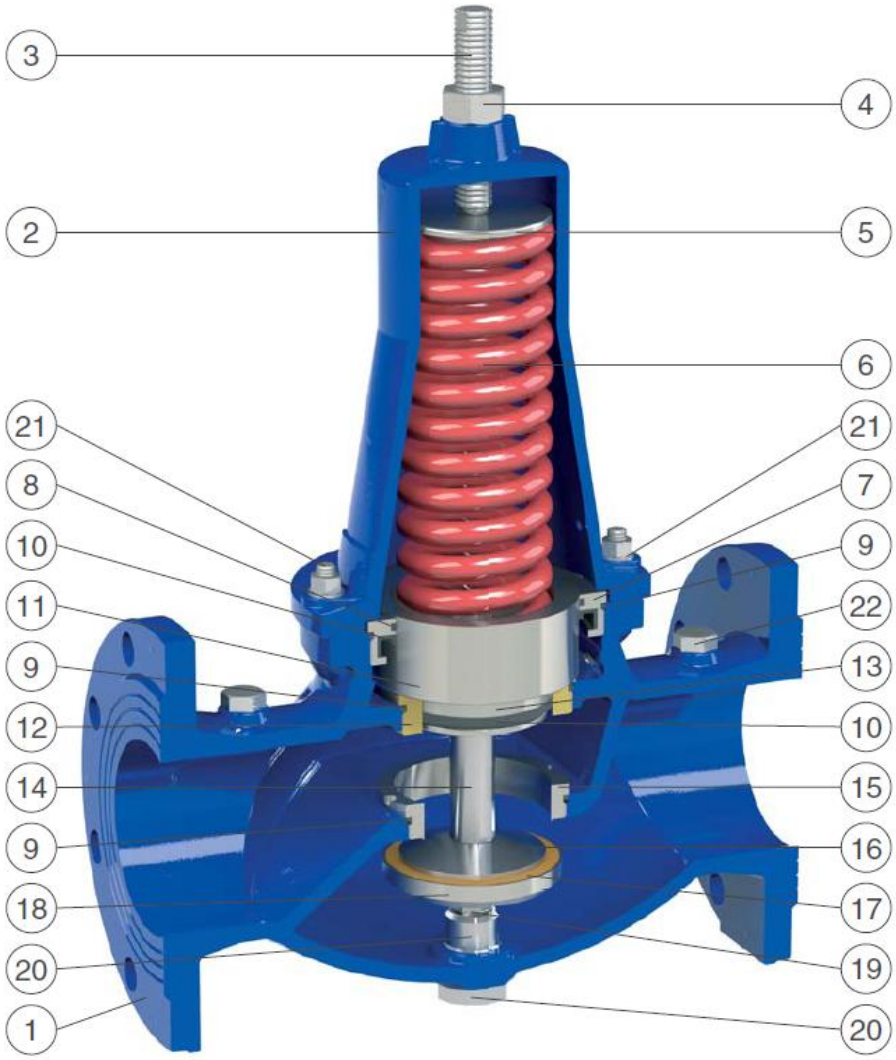
Gegevens ter indicatie, wijzigingen voorbehouden.

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MATERIALS :



Item	Designation	Materials
1	Body	Ductile iron EN GJS-450-10
2	Cap	
3	Driving screw	AISI 304
4	Nut	
5	Spring guide	AISI 303
6	Spring	Painted steel 52SiCrNi5
7	Main bush	AISI 304
8	Sliding ring	PTFE
9	O-rings	NBR
10	Gasket	
11	Upper piston	AISI 303 (Bronze DN125-150)

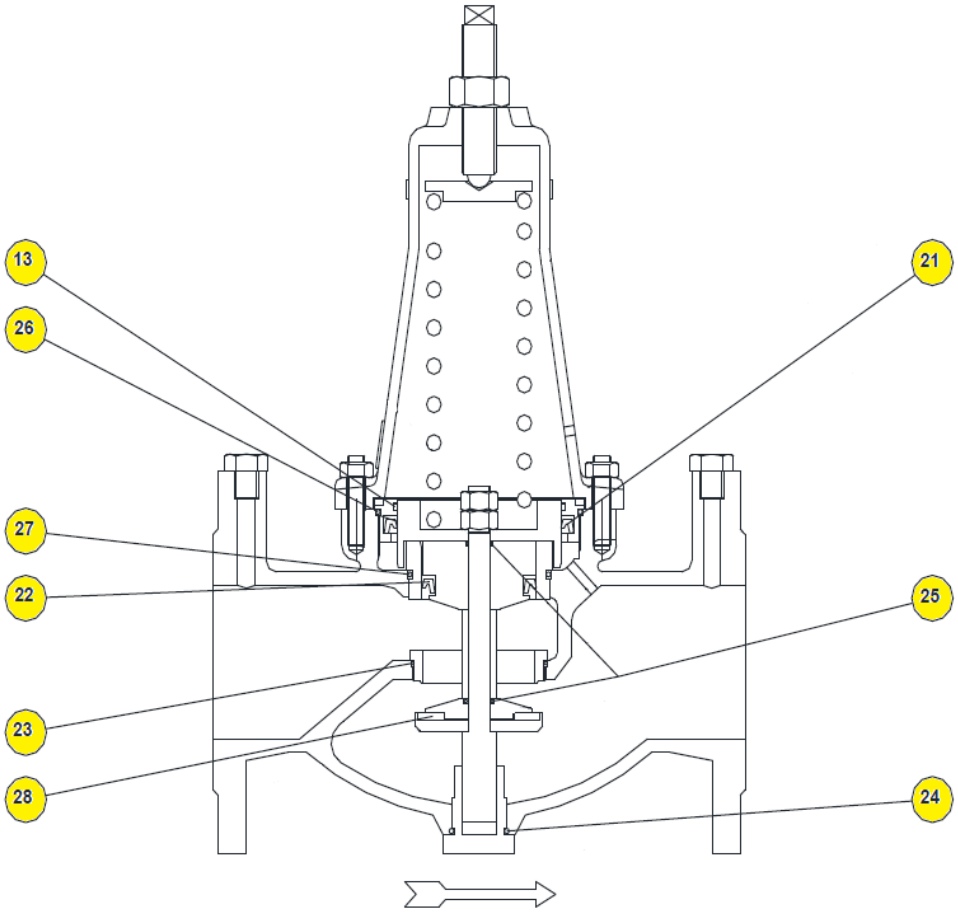
Item	Designation	Materials
12	Lower ring	Bronze CuSn5ZnPb5
13	Lower piston	AISI 303
14	Spacer	
15	Seat	AISI 304
16	Gasket support	AISI 303
17	Plane gasket	NBR (polyurethane DN25-40)
18	Gasket holder	AISI 303
19	Guilding shaft	
20	Driving tap	
21	Bolting	AISI 304
22	Taps for pressure gauges	AISI 316

Gegevens ter indicatie, wijzigingen voorbehouden.

DOWNSTREAM PRESSURE REDUCER STABILIZER VALVE CSA VRCD PN16

REPAIRABILITY :





Gaskets kit composition		
Item	**Designation**	**Materials**
13	Lower piston	PTFE
21	Gasket	NBR
22		
23	O-ring	
24		
25	Pair of O-ring	
26	O-ring	
27		
28	Plane gasket	

DN	Ref. Gaskets kit
50	9850180
65	9850181
80	9850182
100	9850183
125	9850184
150	9850185

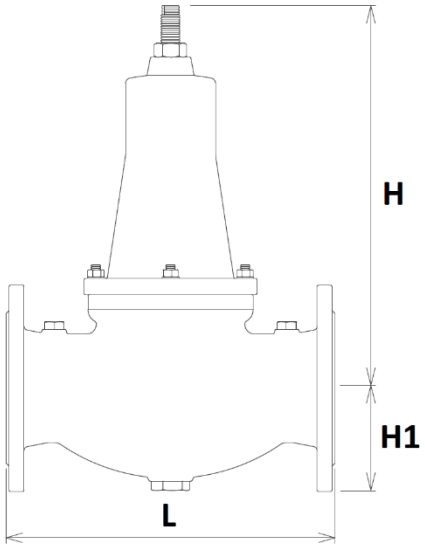
Gegevens ter indicatie, wijzigingen voorbehouden.

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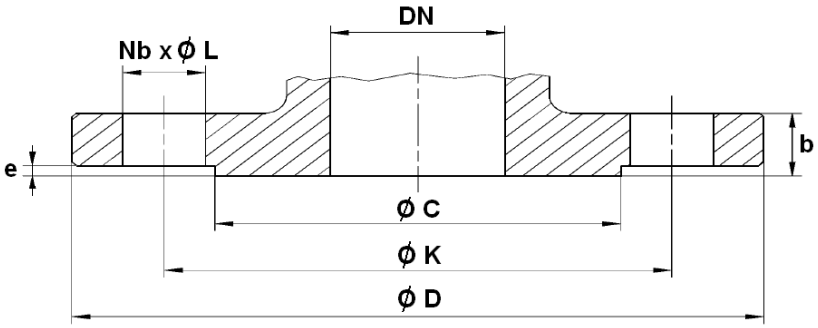
DOWNSTREAM PRESSURE REDUCER STABILIZER VALVE CSA VRCD PN16

SIZE (in mm) :



DN	50	65	80	100	125	150
L	230	290	310	350	400	480
H	280	320	350	420	590	690
H1	83	93	100	110	135	150
Weight (in Kg)	12	19	24	34	56	74
Ref.	495050	495065	495080	495100	495125	495150

FLANGES SIZE (in mm) :



DN	50	65	80	100	125	150
Ø C	99	118	132	156	184	211
Ø D	165	185	200	220	250	285
Ø K	125	145	160	180	210	240
Nb x Ø L	4 x 18		8 x 18			8 x 22
b	19					
e	3					

Gegevens ter indicatie, wijzigingen voorbehouden.

DOWNSTREAM PRESSURE REDUCER STABILIZER VALVE CSA VRCD PN16

INSTALLATION LAYOUT :

The installation layout of the CSA pressure reducer VRCD includes a filter upstream to prevent the entrance of debris, stones and particles likely to damage the internal components, and sectioning devices.
A by-pass line, with one more VRCD, is highly recommended to ensure water supply during maintenance.
CSA anti-slam combination air valves FOX AS series are needed before and after the installation as well as CSA pressure relief valve VSM downstream, to discharge possible increase in pressure.



The picture below shows the recommended installation layout of CSA direct acting pressure reducer CSA VRCD installed on a line for level control applications, in combination with equilibrium ball float valve ATHENA. The reason is to prevent cavitation and potential damages arising from high static values acting on it once the level has reached the maximum value, with the valve on its fully closed position.



Gegevens ter indicatie, wijzigingen voorbehouden.

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STANDARDS :

- Manufacturer certified ISO 9001 :2015
- DIRECTIVE 2014/68/EU : Products excluded from directive (Article 1, § 2b)
- Design according to EN1074/4
- French water agreement **A.C.S. N° 23 ACC NY 106**
- English water certification **WRAS**
- PN10/16 Flanges R.F. according to EN 1092-2
- Length according to EN 558 series 1 (DIN 3202 F1)

Gegevens ter indicatie, wijzigingen voorbehouden.