

EQUILIBRIUM FLANGED FLOATING BALL VALVE CSA ATHENA PN10/16

Body in ductile cast iron with three ways, allowing the installation both with an angle or a globe pattern, containing an interchangeable sealing seat and piston in stainless steel and a guiding bush in bronze.

Mobile block composed of the main shaft, obturator, gasket retainer and piston featuring a unique self-cleaning technology (pat. pending) to reduce the accumulation of dirt and maintenance operations.

The lever mechanism, in zinc-plated or stainless steel, is obtained from a double rod (single rod for DN 40/50/65) which, by means of pivots, puts the shaft in communication with the float which imparts the movement allowing the opening or closing of the valve. A large float in stainless steel AISI 304/316 is connected to the lever mechanism by means of a stainless steel pipe, onto which it exerts a vertical force.

The valves modulates and throttle the inflow proportionally to the consumption, accuracy and perfect water-tightness is guaranteed also with low pressure values.

Thanks to the upstream pressure balanced seat the movement of the obturator and valve performance is not affected by upstream pressure fluctuations, transient and unwanted surges are therefore avoided.

Compatible with drinking water thanks to the French agreement ACS.



- Size :** DN32 to DN300
- Connection :** Flanged PN10/16 or Female BSP
- Min Temperature :** +0°C
- Max Temperature :** +60°C
- Max Pressure :** 16 Bars
- Specifications :** Stainless steel settable compensator
Straight or angle output
Rotating shaft with an angle of 45° or 90°

Materials : Ductile iron GJS-450-10 and AISI 304 float

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SPECIFICATIONS :

- Stainless steel settable compensator
- Self-cleaning piston technology allowing high performance
- Ductile iron body 3 ways allowing a straight or an angle output
- AISI 304 float
- Rotating shaft with angle of 45° or 90°
- Epoxy painting blue color RAL 5005

USE :

- Water distribution and watering
- Min and max Temperature Ts : 0°C to + 60°C
- Max pressure Ps : 16 bars
- Check the floating ball valve can move correctly after installation
- Do not cut the compensator

FLOW COEFFICIENT Kvs (in m³ / h) :

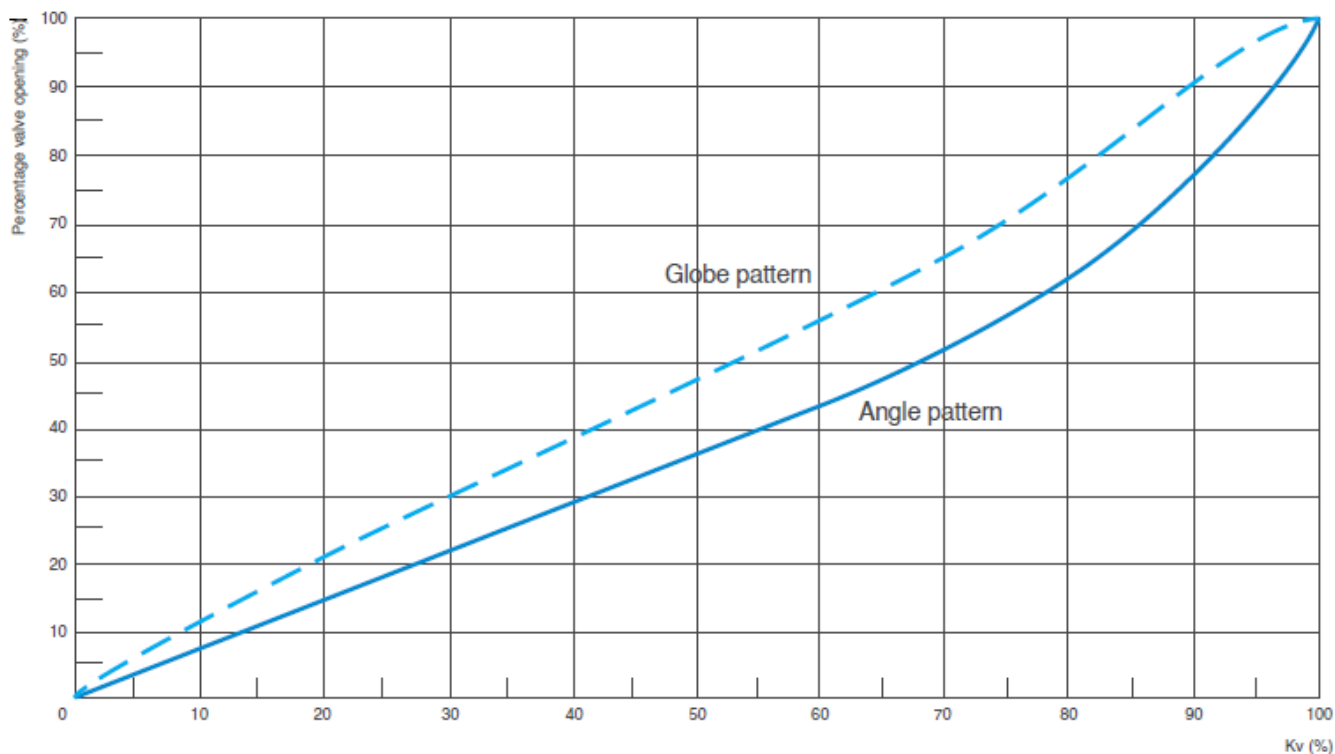
- Angle pattern :

DN	40	50	65	80	100	125	150	200	250	300
Kvs (m ³ / h)	21.6	21.6	46.8	68.4	108	155	245	360	648	1008

- Globe pattern :

DN	40	50	65	80	100	125	150	200	250	300
Kvs (m ³ / h)	21.6	21.6	46.8	68.4	108	155	245	360	648	1008

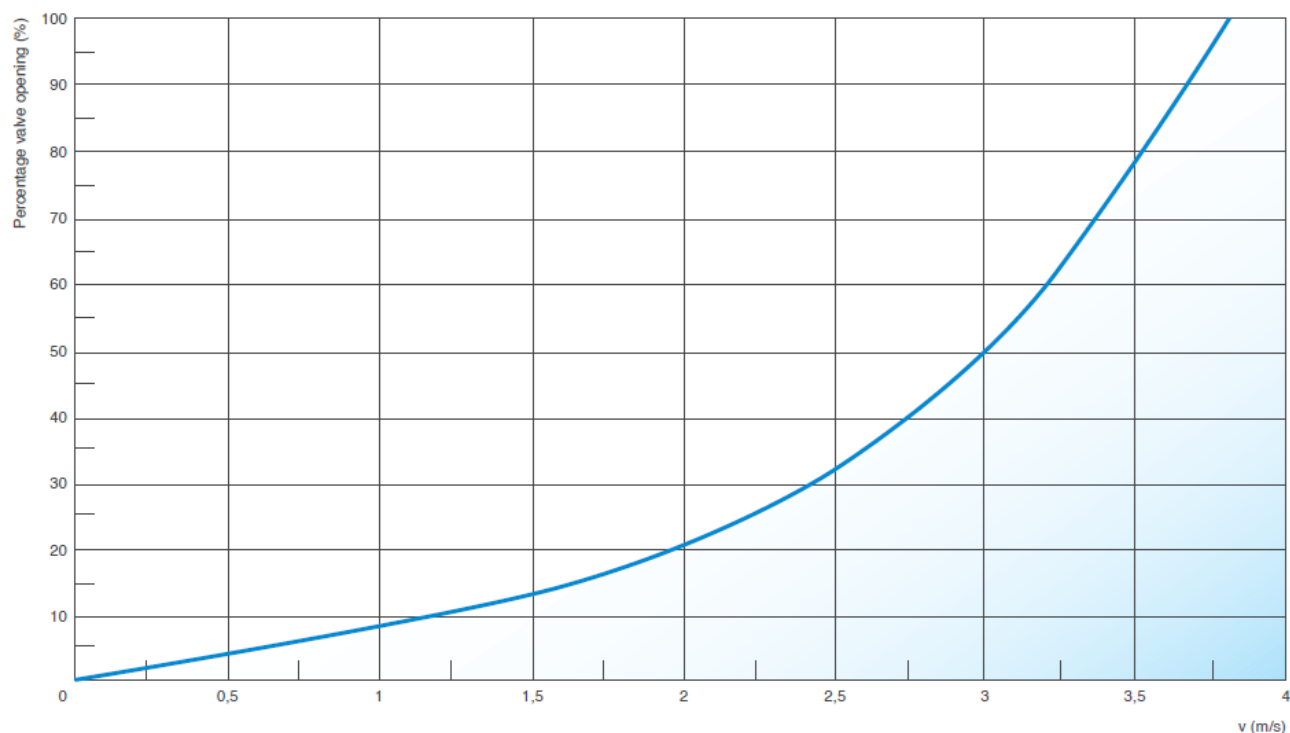
The following chart shows the opening percentage of Athena valves versus the Kv.



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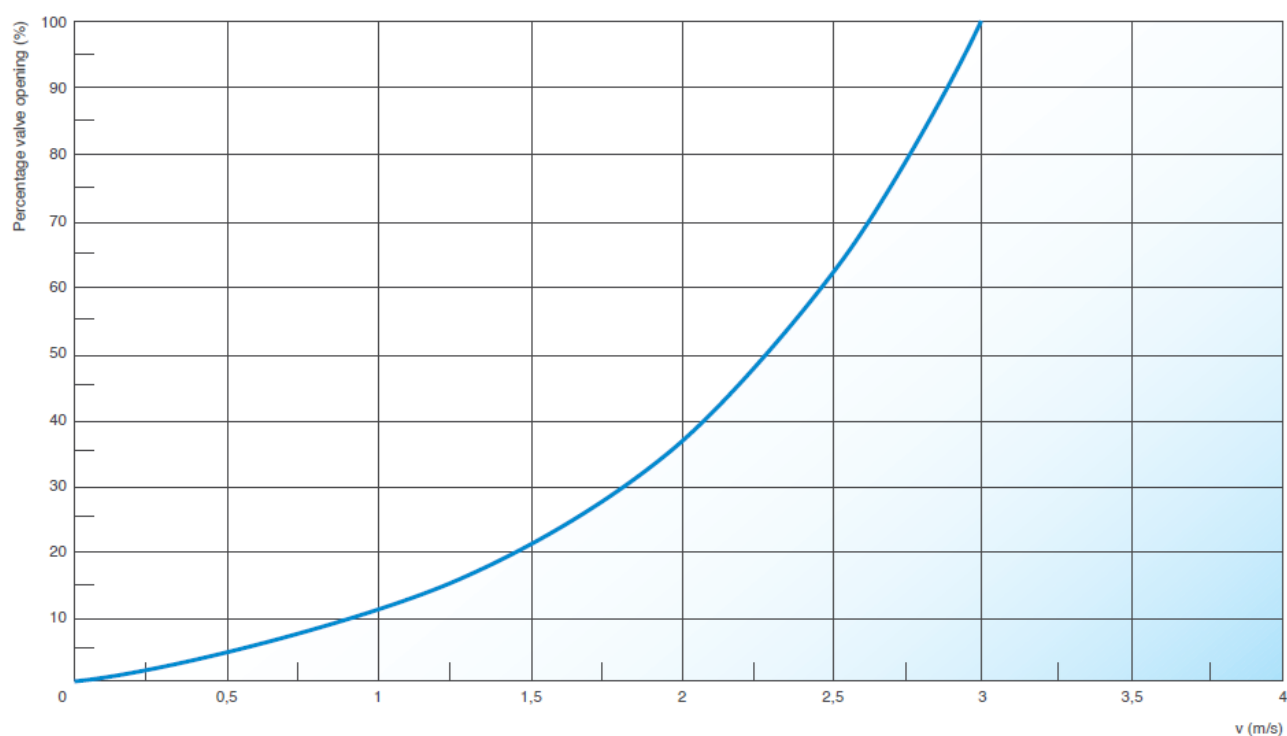
Velocity chart to opening - Angle pattern

- The following chart shows the maximum recommended velocity, versus opening percentage, to avoid cavitation.



Velocity chart to opening - Globe pattern

- The following chart shows the maximum recommended velocity, versus opening percentage, to avoid cavitation.



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RECOMMENDED FLOW RATE :

The following chart shows the recommended flow rate for the proper sizing of Athena valves.

Output	DN	1"	40	50	65	80	100	125	150	200	250	300
Angle	Min flow rate (l/s)	0.1	0.3		0.5	0.8	1.2	1.9	2.7	4.8	7.4	11
Globe		-	0.4		0.7	1.1	1.6	2.5	3.6	6.3	9.9	15
Angle	Max flow rate (l/s)	1.9	6.4		10	16	25	40	58	103	161	233
Globe		-	5.1		8.6	13	20	31	45	81	127	183
Angle	Emergency flow (l/s)	2.4	7.8		13	20	31	49	70	125	196	282
Globe		-	6.4		10	16	25	40	58	103	161	233

RANGE :

- Equilibrium flanged floating ball valve PN10/16 from DN50 to DN150, PN16 from DN200 to DN300 **Ref. 492**

REPAIRABILITY (GASKETS KIT) :

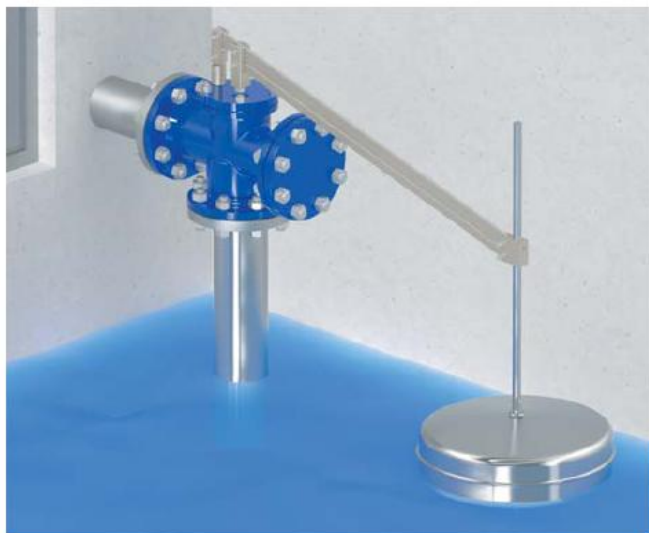


DN	50	65	80	100	125	150	200
Ref.	9850186	9850187	9850188	9850189	9850190	9850191	9850192

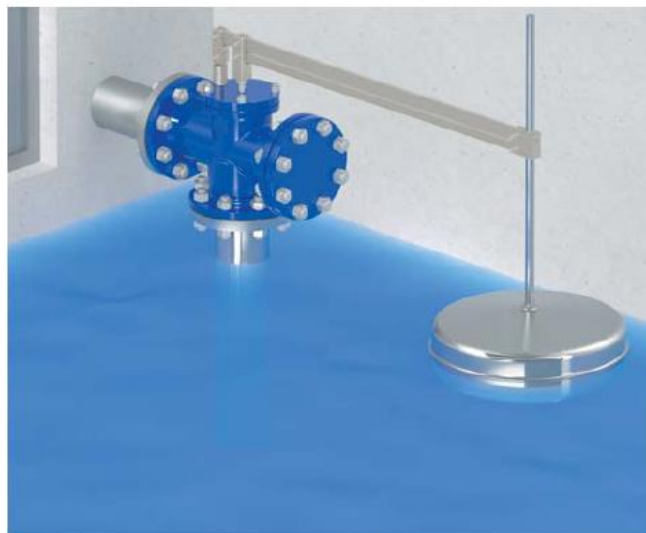
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Operating principle - Angle pattern installation

Athena ball float valve is the best solution for a constant maximum level control balancing the inflow and outflow demand. Driven by a large float in stainless steel the valve closes drip-tight at the maximum level, and modulates to maintain it as soon as it drops due to consumptions.



CLOSED VALVE



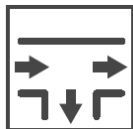
OPENED VALVE

When water level reaches the maximum operating point levers are perfectly horizontally aligned and the valve closes thanks to the upward force exerted by the float.

As the reservoir level drops the valve opens proportionally through the levers, receiving a downward force from the float, to increase the filling rate.

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OPTIONAL :



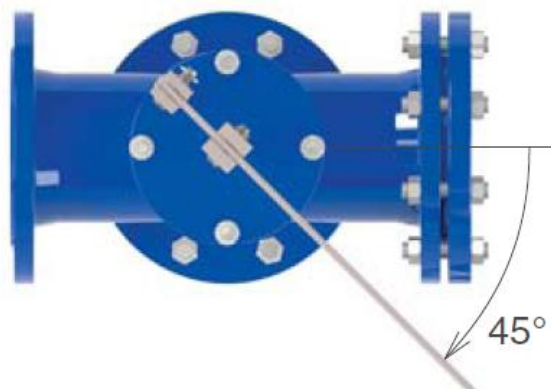
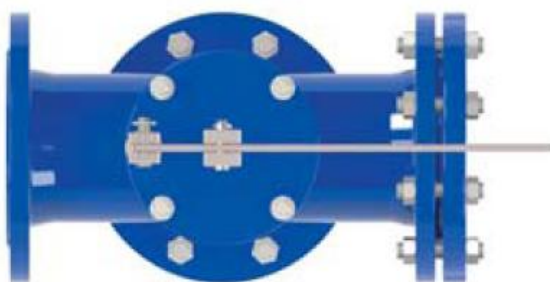
- **Installation.** Athena has been designed with a 3 ways body for an angle installation or a straight one, just with fixing the blind flange on the desired output.



- **Anti freezing device.** On request the valve is provided with a 3/8"G threaded outlet, which can be used as an anti-freezing device, simply by replacing the tap with a drainage ball valve discharging directly into the tank. During the winter season, when the temperature drops consistently, the partial opening of the drainage port will create a flow circulation avoiding frost and possible damages related to it..



- **Rotating shaft,** lever mechanism is normally aligned with the valve stem. It is possible to turn it on the installation with an angle of 45° or 90°, to belong to the installation requirements.



INSTALLATION :



Make sure that the supply pipe has the flanges drilled according to the requested PN and that ATHENA is installed horizontally, properly fixed and sustained

Gate valves and filters have to be installed to allow for maintenance operations, and to prevent dirt from reaching the internal components of the valve.

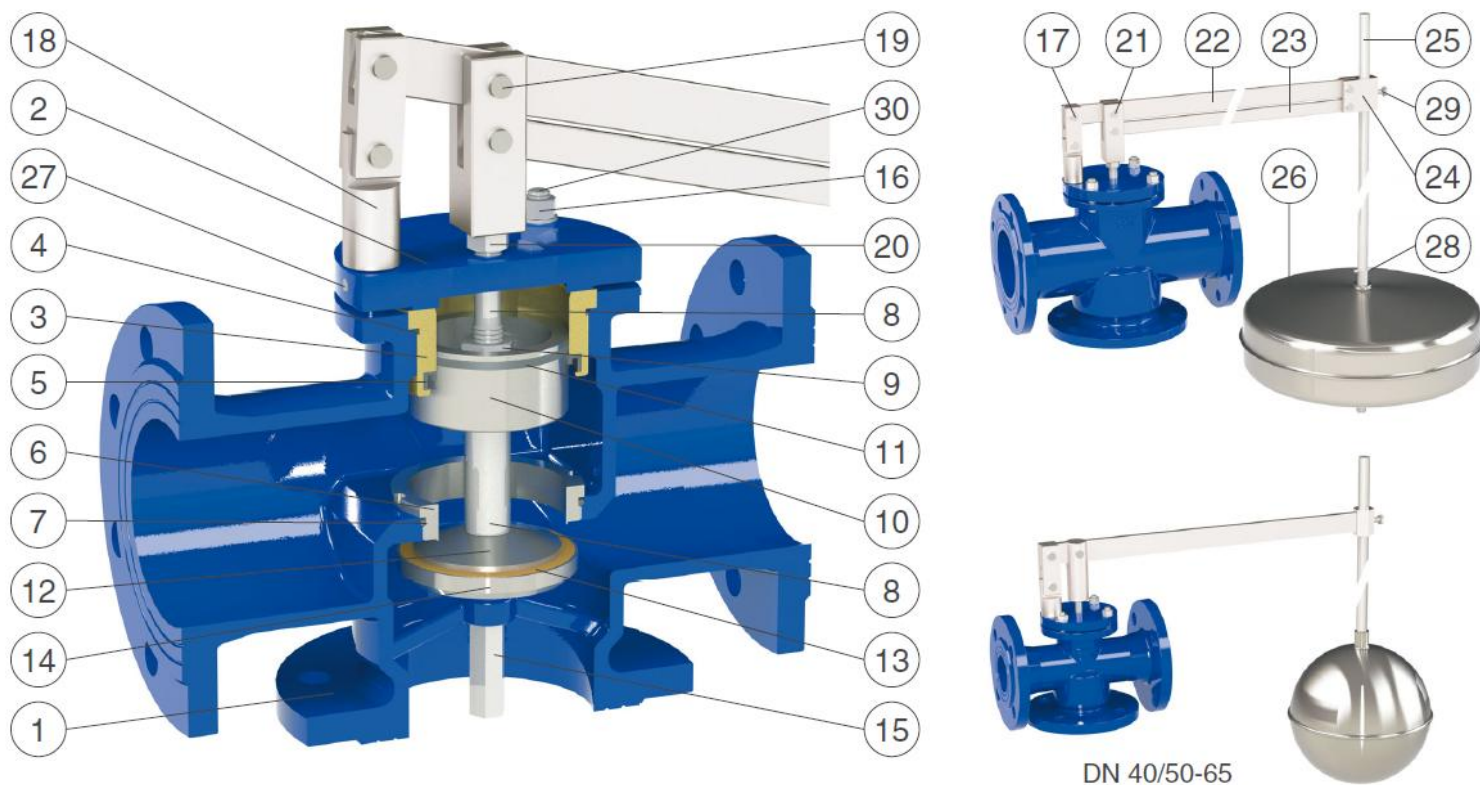
Position the valve in a place which is easy to reach and wide enough for maintenance and control purposes.

Observe the overflow level and make sure that the outlet flange remains always above it, this is to avoid back-flow.

In case of excessive Δp , to avoid cavitation and possible damages to the valve, a direct acting pressure reducing valve CSA VRCD series should be installed.

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MATERIALS FLANGED TYPES :



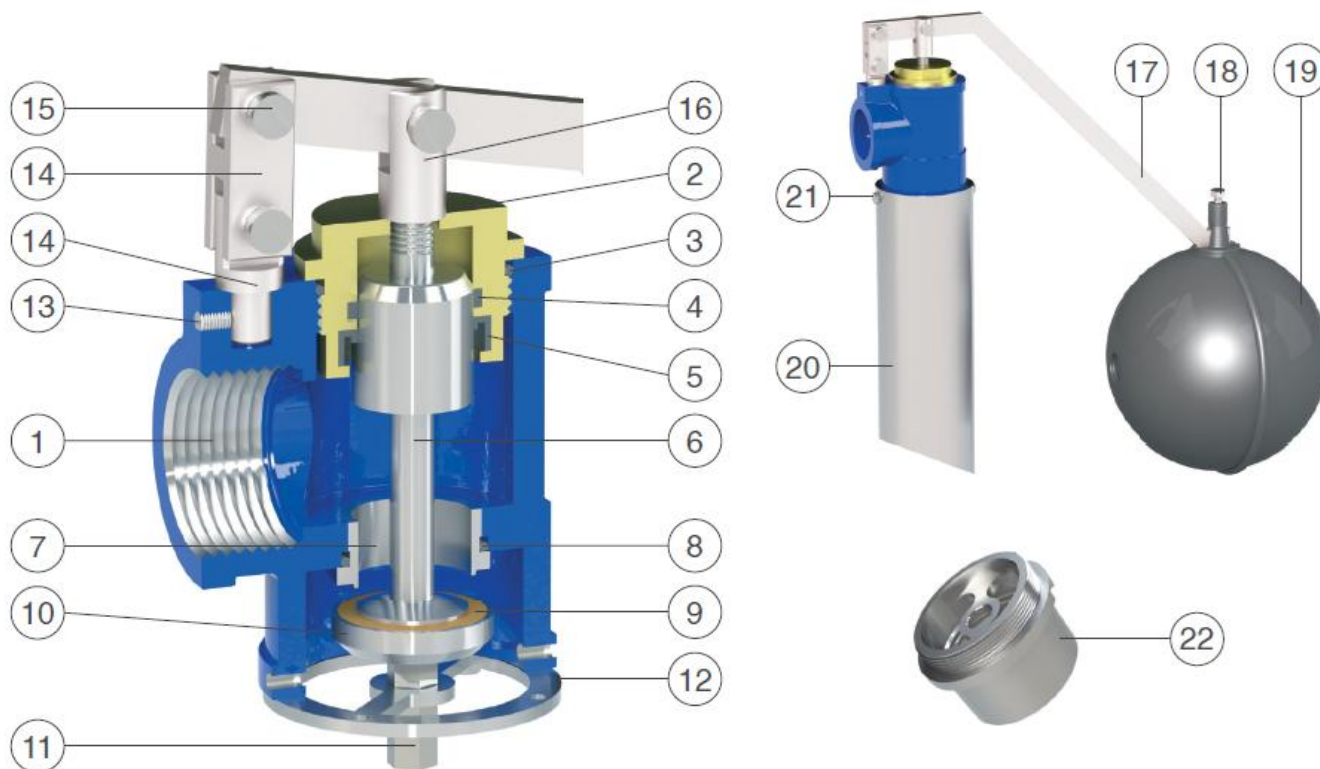
DN 40/50-65

Item	Designation	Materials
1	Body	Ductile iron EN GJS 450-10
2	Bonnet	Painted steel
3	Guiding bushing	Bronze (steel for DN250-300)
4	O ring	NBR
5	Lip gasket	
6	Seat	AISI 304
7	O ring	NBR
8	Guiding shaft	AISI 303
9	Locking nut	AISI 304
10	Piston	AISI 303
11	Guiding ring	PTFE
12	Counter-seat	AISI 303 (steel for DN250-300)
13	Flat gasket	NBR
14	Obturator	AISI 303 (AISI 304 for DN250-300)
15	Tightening nut	AISI 303

Item	Designation	Materials
16	Bolting	AISI 304
17	Upper coupling	Zinc-plated steel
18	Lower coupling	
19	Pivots	AISI 303
20	Blocking nut	AISI 304
21	Shaft pivot	Zinc-plated steel
22	Upper lever	
23	Lower lever (from DN80 to DN300)	
24	Float coupling (from DN80 to DN300)	AISI 304
25	Float rod	
26	Float	
27	Cap (screw for from DN150 to 300)	
28	Pin	
29	Screw	
30	Stud (from DN150 to 300)	

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MATERIALS THREADED TYPES :

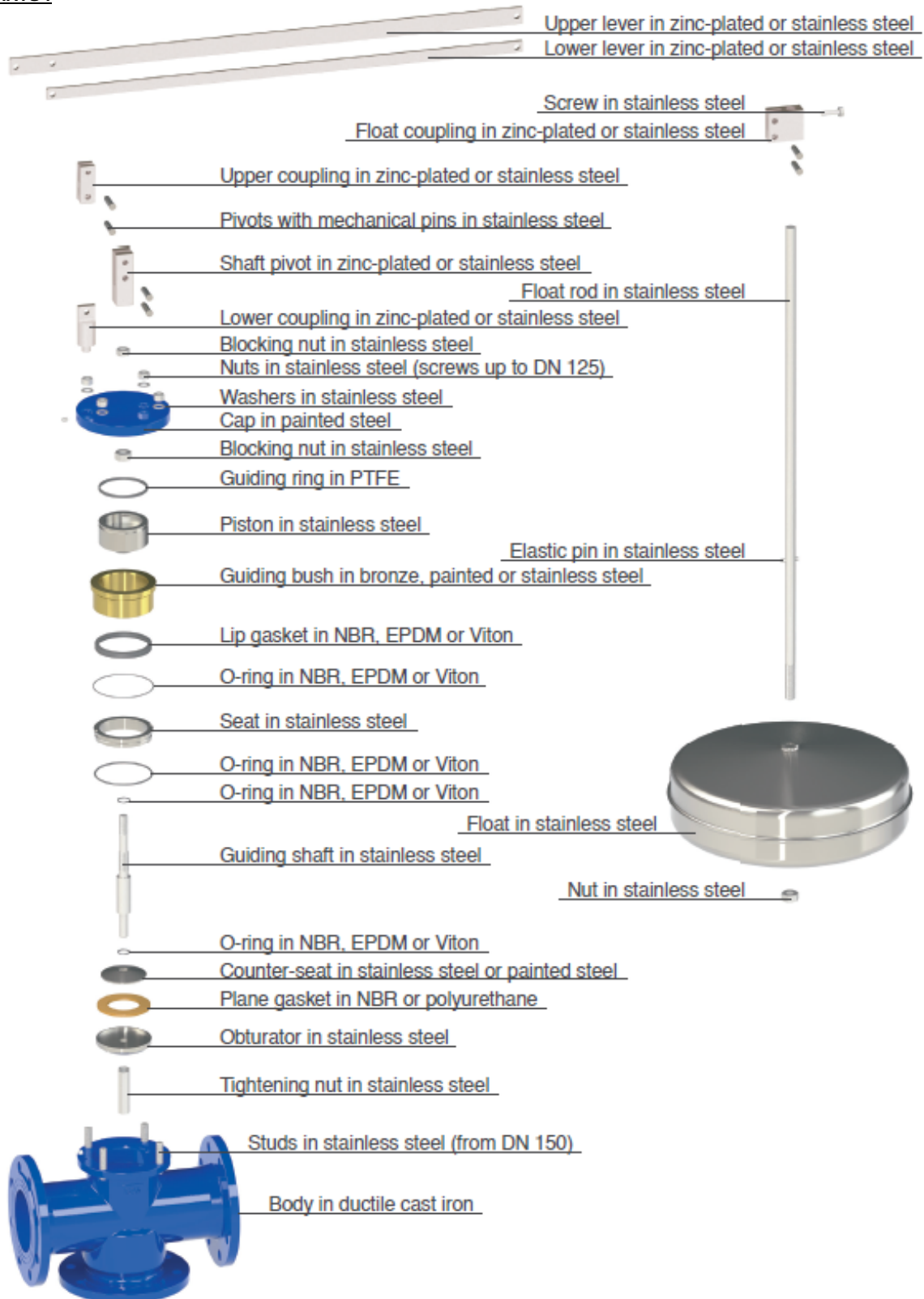


Item	Designation	Materials
1	Body	Ductile iron EN GJS 450-10
2	Bonnet	Painted steel
3	O ring	NBR
4	Guiding ring	PTFE
5	Lip gasket	NBR
6	Piston with shaft	AISI 303
7	Seat	
8	O ring	
9	Flat gasket	NBR
10	Obturator	
11	Tightening nut	AISI 303
12	Counter seat	
13	Cap	AISI 304
14	Upper and lower coupling	
15	Pivots	AISI 303

Item	Designation	Materials
16	Shaft coupling	Zinc-plated steel
17	Float lever	
18	Screw	
19	Float	Polyethylene or stainless steel
20	Conveying pipe (optional)	AISI 304
21	Screw (optional)	
22	Threaded output	

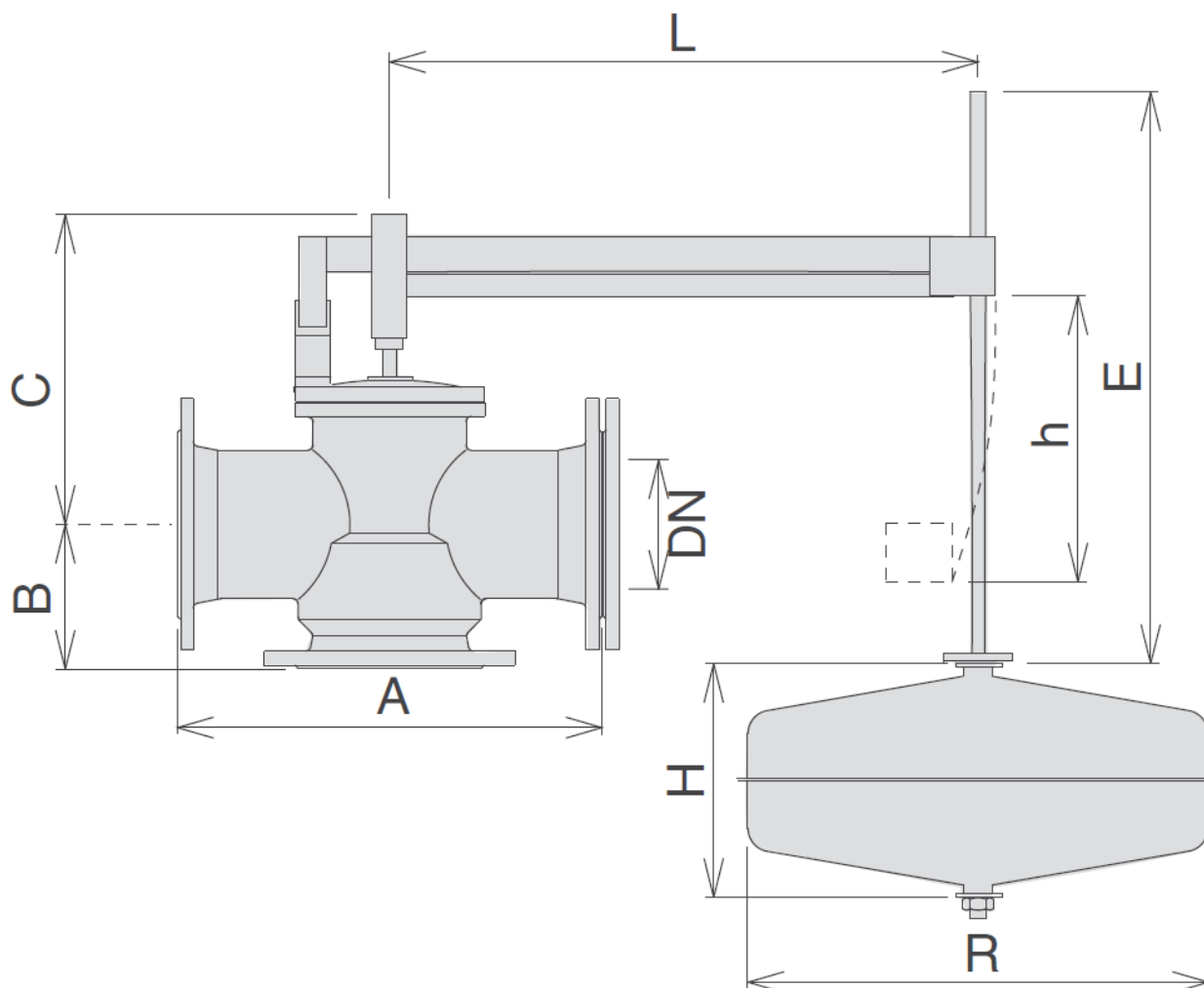
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SPARE PARTS :



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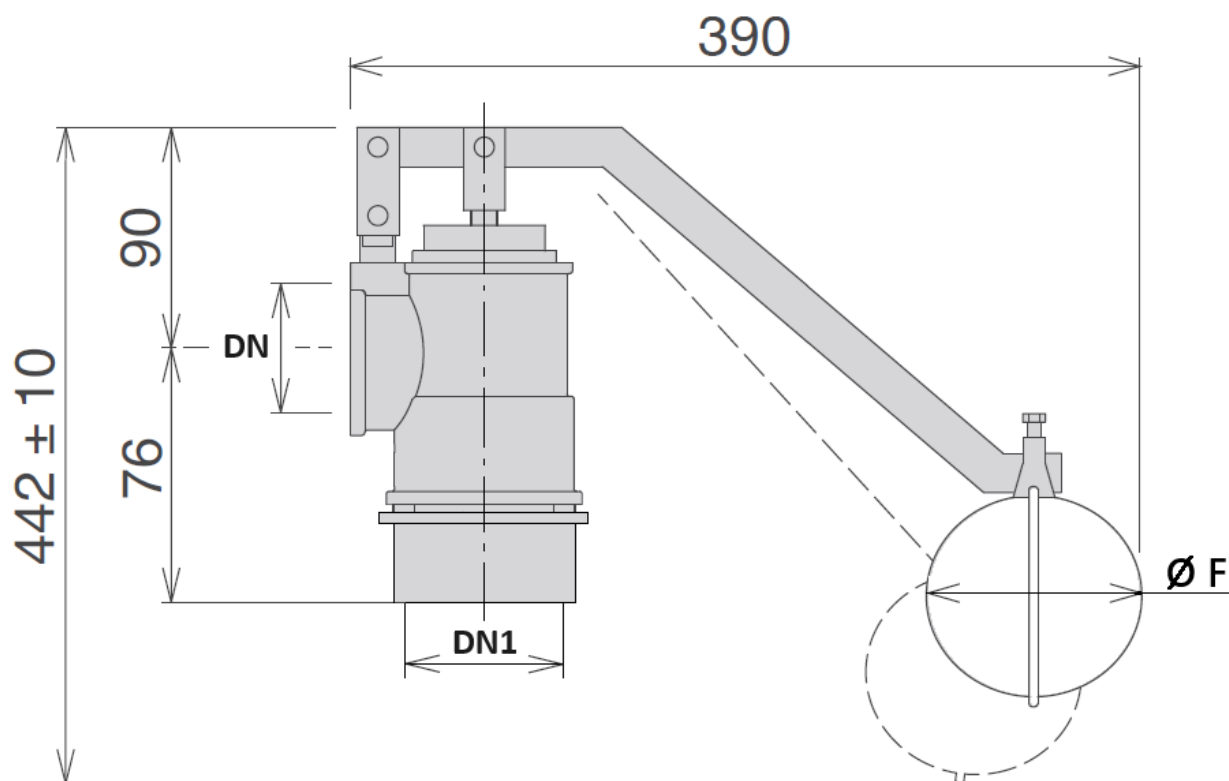
SIZE FLANGES TYPES (in mm) :



DN	40	50	65	80	100	125	150	200	250	300
A	230	230	290	310	350	400	480	600	730	850
B	82.5	82.5	92.5	100	125	125	162	183	273	300
C	183	183	197	230	250	250	371	420	540	620
E	525			600			540		945	1042
L	600			830			1000		1220	1400
H	Ø220			200	180		250		300	400
R				300	400				500	
h	145		205	250	220	221	400	300	510	615
Weight (Kg)	21		26	33	41	49	79	118	215	250
Ref.	492040	492050	492065	492080	492100	492125	492150	492200	492250	492300

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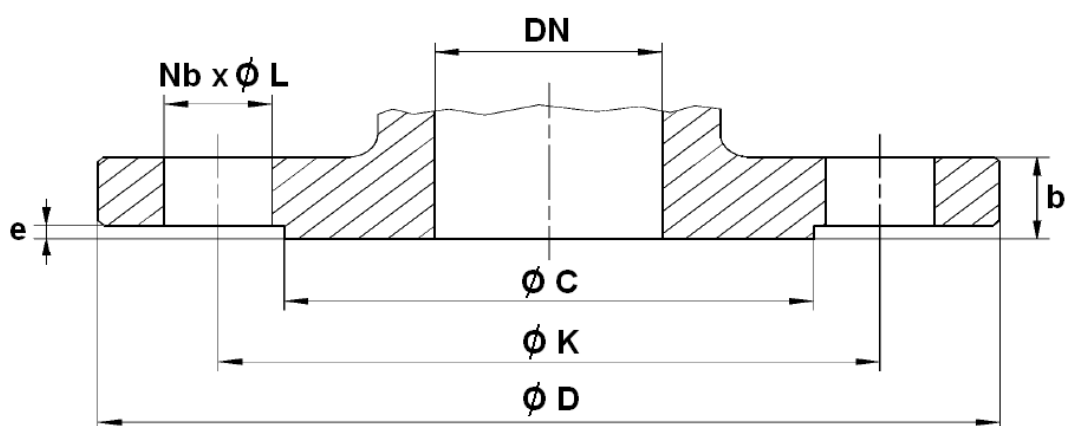
SIZE THREADED TYPES (in mm) :



DN	1"			
DN1	1"1/4	1"1/2	1"1/4	1"1/2
Ø F	180			
Weight (Kg)	2.8	3.4	3.1	3.7
Float	Polyethylene		Stainless steel	
Ref.	492067	492068	492167	492168

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FLANGES SIZE (in mm) :



PN	PN10/16							PN16		
DN	40	50	65	80	100	125	150	200	250	300
Ø C	84	99	118	132	156	184	211	266	319	370
Ø D	165		185	200	220	250	285	340	405	460
Ø K	110	125	145	160	180	210	240	295	355	410
Nb x Ø L	4 x 18			8 x 18			8 x 22	12 x 22	12 x 26	
b	19							20	22	24.5
e	3									4

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STANDARDS :

- Manufacturer certified ISO 9001 : 2015
- DIRECTIVE 2014/68/EU : Products excluded from directive (Article 1, § 2.b)
- Designing according to EN 1074/5
- French water agreement **A.C.S. N° 23 ACC NY 433**
- English water certification **WRAS**
- Flanges R.F. according to EN 1092-2 PN10/16
- Length according to EN 558 series 1 (DIN 3201-1 F1) excepted for DN40

ADVICE : Our opinion and our advice are not guaranteed and SFERACO shall not be liable for the consequences of damages.
The customer must check the right choice of the products with the real service conditions.

INSTALLATION INSTRUCTIONS

GENERAL GUIDELINES :

- Ensure that the valves to be used are appropriate for the conditions of the installation (type of fluid, pressure and temperature).
- Ensure that the valves installed according to actual norms.
- Ensure there are no external articles which could perturb the functioning of the valve. The compensator must move freely
- When installing with outside opened tank, ensure that no external articles could perturb the functioning of the valve or block the compensator.

INSTALLATION INSTRUCTIONS :

- **Before installing the valves, clean and remove any objects from the pipes** (in particular bits of sealing and metal) which could obstruct and block the valves.
- When installing with outside opened tank, provide a protection for the ball and the compensator to avoid problems with external articles. This protection should be opened at the top and at its bottom so that it doesn't involve the reel high of the fluid. The protection height should be at least equal to the compensator movement height. The compensator and the ball must not touch the protection.
- The compensator must not be cutted.
- To avoid a blocking of the compensator, a regular check is necessary.