

SELF-CENTERING DISC VALVES®

- Level control
- Water discharge restitution and control
- Energy dissipation



Self-Centering Disc Valves® are trademark

The hooded Self-Centering Disc Valve®, completes our equipment line, fitting the current needs of applied hydraulic and remote management techniques for adduction and irrigation systems.

The Self-Centering Disc Valve® differs from typical valves due to:

- No friction losses ⇒ good sensitivity;
- Cavitation free ⇒ wear resistant;

- Extensive range of types and dimensions ⇒ broad application field;
- Sealing ⇒ perfectly tight in closed position.

Principle:

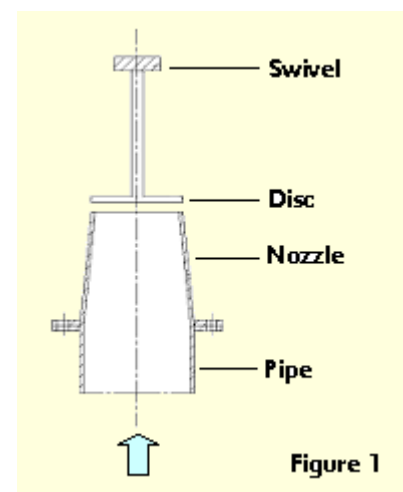
The Self-Centering Disc Valve® is placed at the end of a pressure pipeline inside a reservoir. The principle of its closing system is based on the following fact: if we expose to the water jet a flat disc jointly with a rod, articulated in its upper side (figure 1), the disc floats, centers itself and remain in stable position without any external intervention (except the reaction of his articulated attachment) producing a radial jet spreading. This equilibrium is perfectly stable, in fact, when it is displaced from its equilibrium position, the disc is subjected to a back force that is proportional to deviation and the jet pressure.

If, an effort is made to place the disc close to the nozzle the disc continues perfectly self-centered, but the discharge section is reduced progressively

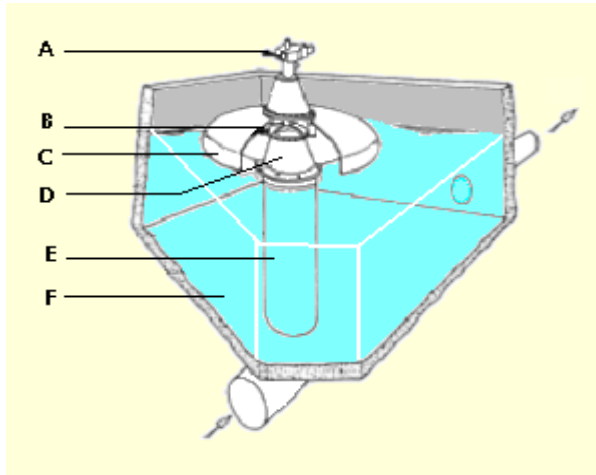
by limiting its flow until it stops completely when the disc close the nozzle.

A hood fitted to the valve body deiverts the radial jet downwards to facilitate energy dissipation.

When the opening and closing disc operation is assured by an electrical actuator and if it is needed to control the discharge accurately, an electronic regulator may control this operation.



Installation principle:



- A Operation mechanism
- B Self-centering disc
- C Deflector hood
- D Convergent body (nozzle)
- E Pipe
- F Stilling basin

Dimensions and characteristics

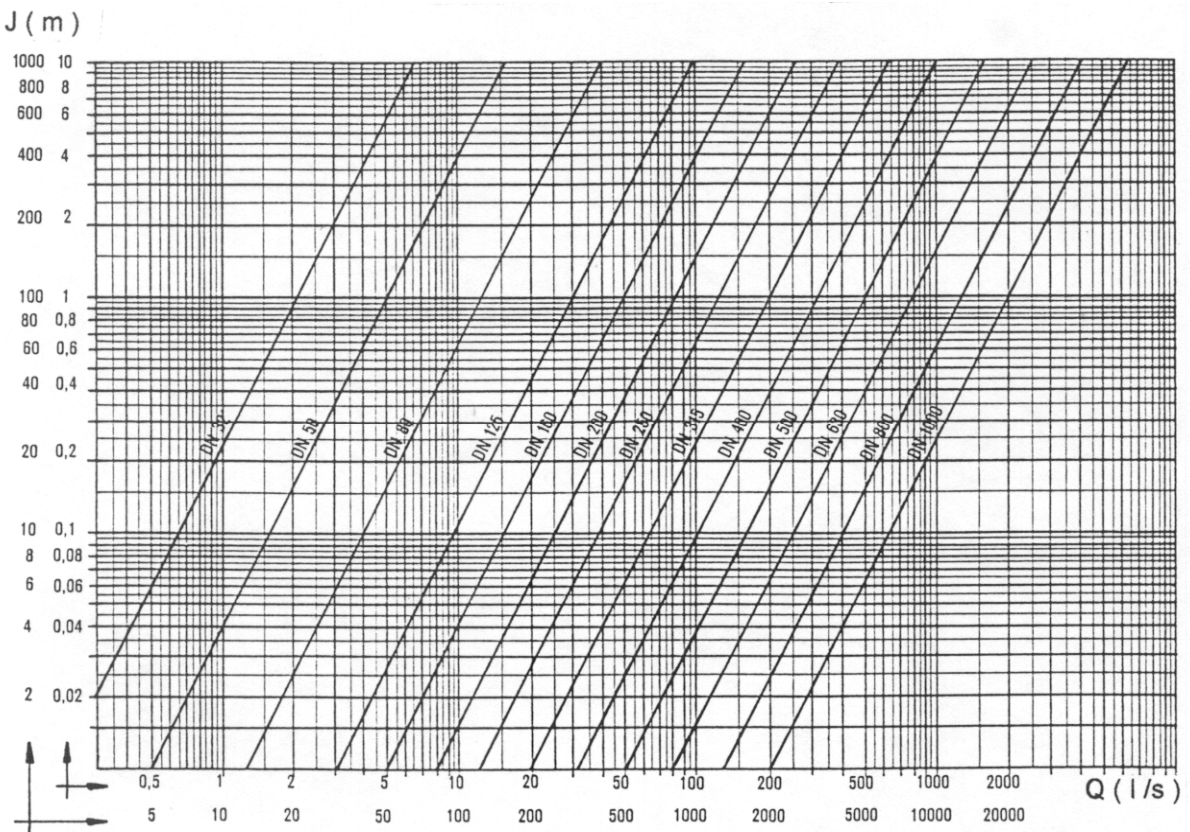
The Self-Centering Disc Valve® is defined by:

- Nominal nozzle diameter \varnothing (DN) and nominal pressure PN;

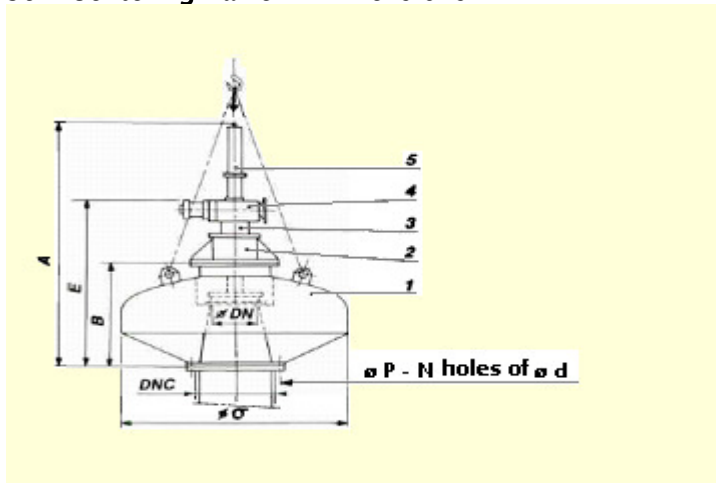
- Maximum hydrostatic head (H_s) relative zero discharge;
- Operation mechanism type (manual or electric, hydraulic, or pneumatic actuator).

The chart below allows to size the valve in function of the desired flow and available head that should be equal or higher than the head loss J shown in the graph.

Chart of minimum head losses:



Self-Centering Valve* – Dimensions



- 1 Body
- 2 Support
- 3 Stem nut box
- 4 Actuator (electric)
- 5 Position transmitter (optional)

Dimensions in mm

Type Ø DN	Hood Ø O	Hs mca	A	B	DNC	N	Ø d	Ø P	E	Weight Kg
32	250	0 to 250	860	146	50	4	19	125	345	33
50	300	0 to 100	915	186	80	8	18	160	400	40
		100 to 250	915	186	80	8	18	160	400	40
80	400	0 to 100	980	225	125	8	19	210	460	47
	500	100 to 160	990	240	125	8	19	210	470	55
	550	160 to 250	1000	250	125	8	27	220	480	82
125	650	0 to 100	1130	350	200	8	23	295	610	105
	750	100 to 160	1170	390	200	8 + 4	22 M20	295	650	117
	900	160 to 250	1190	390	200	8 + 4	27 M24	310	670	258
160	800	0 to 100	1240	435	250	8 + 4	22 M20	350	720	135
	1000	100 to 160	1270	450	250	8 + 4	27 M24	355	755	285
	1200	160 to 250	1300	475	250	8 + 4	30 M27	370	780	388
200	1000	0 to 60	1360	520	300	8 + 4	22 M20	400	840	220
	1200	60 to 100	1400	550	300	8 + 4	27 M24	410	880	400
250	1300	0 to 32	1600	680	400	16	27	515	1080	410
	1300	32 to 100	1550	680	400	16	27	515	1030	487
	1500	100 to 160	1700	760	400	16	27	515	1180	798
315	1600	0 to 25	1780	870	500	16 + 4	27 M24	620	1270	660
		25 to 60	1800	870	500	16 + 4	27 M24	620	1285	798
		60 to 100	1850	870	500	16 + 4	27 M24	620	1335	798

Dimensions in mm

Type Ø DN	Hood Ø O	Hs mca	A	B	DNC	N	Ø d	Ø P	E	Weight Kg
400	2000	0 to 16	1925	925	630	16 + 4	30 M27	725	1410	985
		16 to 40	1915	925	630	16 + 4	30 M27	725	1400	1065
		40 to 80	1955	925	630	16 + 4	30 M27	725	1440	1125
		80 à 100	1990	925	630	16 + 4	30 M27	725	1470	1300
500	2500	0 to 25	2610	1300	800	24	34	950	1850	2070
		25 to 50	2650	1300	800	24	34	950	1885	2125
		50 to 100	2680	1300	800	24	34	950	1920	2300
630	3000	0 to 32	2880	1440	1000	24 + 4	37 M33	1160	2120	3315
		32 to 64	2915	1440	1000	24 + 4	37 M33	1160	2150	3490
		64 to 80	2940	1440	1000	24 + 4	37 M33	1160	2180	3500
800	3000	0 to 20	2915	1440	1200	32	40	950	2120	3315
		20 to 40	2940	1440	1200	32	40	950	2150	3490
		40 to 50	2880	1440	1200	32	40	950	2180	3500
1000	3000	0 to 12	2915	1440	1600	40	49	1160	2120	3315
		12 to 25	2940	1440	1600	40	49	1160	2150	3490
		25 to 32	2880	1440	1600	40	49	1160	2180	3500

Flanges according to ISO 2531 (NBR7675) or other upon request.

An installation example:

The Self-Centering Disc Valve® associated to a controller / regulator permits control of the following parameters:

- Upstream water pressure or level;
- Downstream water level;
- Flow discharge;
- One of the parameters above with the limitation of another parameter.

The controller / regulator may be connected to a central command station by means of cables or telecontrol.

Flow control scheme

