

COMPLETE LINE



  
**VCW**

TECNOLOGIA EM RETENÇÃO DE FLUXOS

[www.vcwvalvulas.com.br](http://www.vcwvalvulas.com.br)

# FAST CHECK VALVE

Project developed to minimize and remedy serious problems in pumping systems because of dangerous water hammer and/or operational failure of the traditional design check valve. It stands out the absence of induced vibrations to the system, noise, vibration during the operating phase and disc closure; high sealing ability in closed position; low pressure drop and low internal friction.

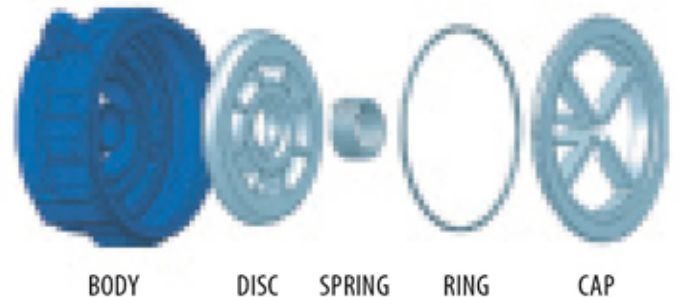
## CHARACTERISTICS

- ✓ Wafer Type: DN 50mm (2") – 500mm (20")
- ✓ Flanged Type: DN 600mm (24") – 1200mm (48")
- ✓ Body Material: Ductil iron, carbon steel, stainless steel, others.
- ✓ Disc Material: Integrally in Polyurethane
- ✓ Pressure rating: PN10 – PN40 / 150# / 300#
- ✓ Installation: NBR 7675 | ANSI | AWWA | others



## PRINCIPLE OF OPERATION

Axial displacement valve that has a very fast close between 0,01 and 0,05 seconds. One piece circular disc valve with hydrodynamic profile running in flow direction allows the valve to operate in horizontal, vertical or inclined position. It stands out the absence of induced vibrations to the system, noise, vibration during the operating phase and disc closure; high sealing ability in closed position, low pressure drop and low internal friction.



## Fluid Behavior



## APPLICATIONS

### Pumping Stations

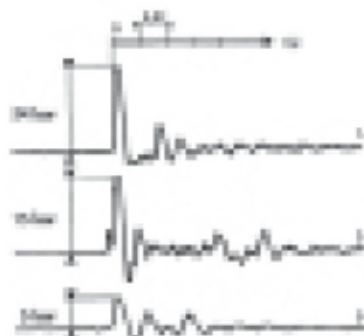
• Water Market, Mining, Steel Mill, Pulp and Paper. All described constructive peculiarities of Nozzle Non Slam Check Valve lead to its excellent hydraulic behavior and place it as a definitive technical solution of pumping stations problems due to water hammer.

Fields of application are: *Potable water / water supply systems / untreated water / water carried after grillage and treatment plant / hydraulic circuits in industrial processes and petro chemistry.*

## EXCELLENT DYNAMIC RESPONSE

Overpressure record example, carried out in tests during the closure of several types of check valves operating under the same conditions (net pressure: 5 bar).

- 1- Single Disc check valve
- 2- Dual Disc check valve
- 3- Fast check valve



## ADVANTAGES

Low friction / no maintenance / absence of mechanical parts / durability and operational safety / silent operation / high-tech design / lower closing time in order to limit overpressure due to water hammer / absence of vibration and ability to operate at maximum opening position even with low flow velocities / absence of violent shock in the disc at closing / light disc with small inertia / short operating travel, limited to 1/10 nominal diameter / disc material in polyurethane to absorb shocks / optimized flow passage hydraulic profile / water hammer with high overpressure values elimination / tightness in closed position / working in all installation positions.



## FLOW FACTOR (KV, CV)

DN (mm)	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000	1200
Inches	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	32"	36"	40"	48"
Kv	171	266	417	602	762	1186	1704	2312	3067	4003	4830	6937	13091	12170	21378	19319	38451

## PRESSURE DROP VCW = MCA

Simplified formula

$$\Delta p = p^* \left[ \frac{Q}{K_v} \right]^2$$

Where:

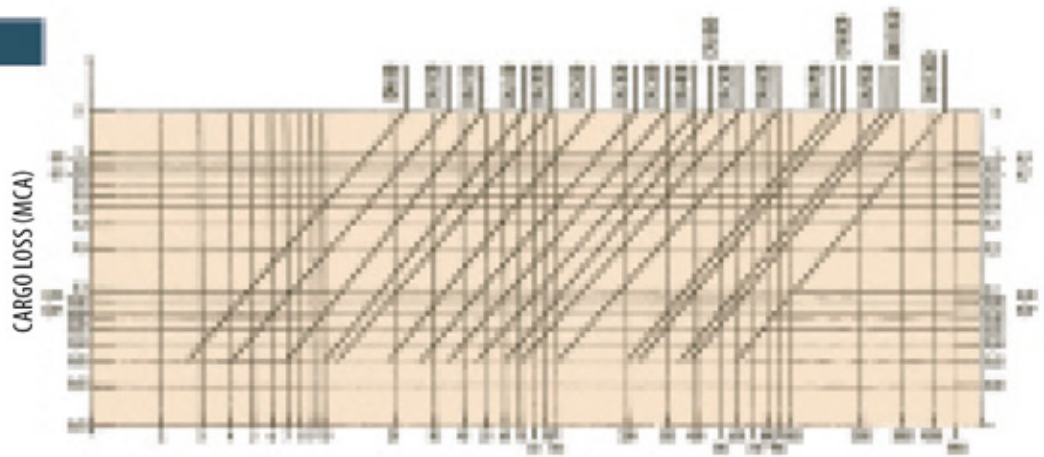
$\Delta p$ : Pressure drop in bar

$p^*$ : water density, ( $p=1$ )

$Q$ : flow in m<sup>3</sup>/h

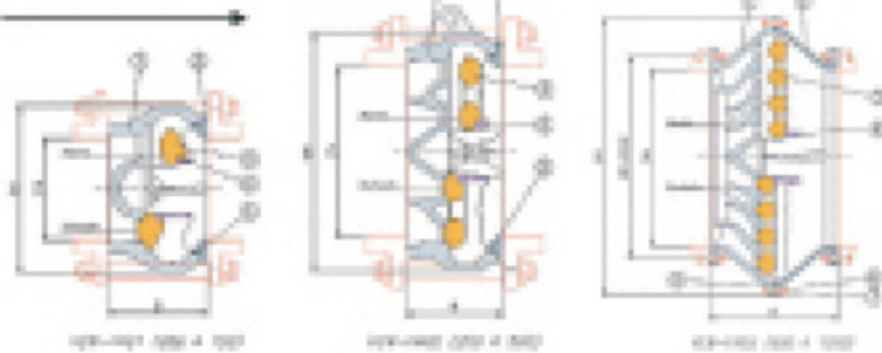
$K_v$ : flow coefficient in m<sup>3</sup>/h

10 mc.a = 1 bar = 100 kPa



FLOW RATE = L / S

Flow Direction

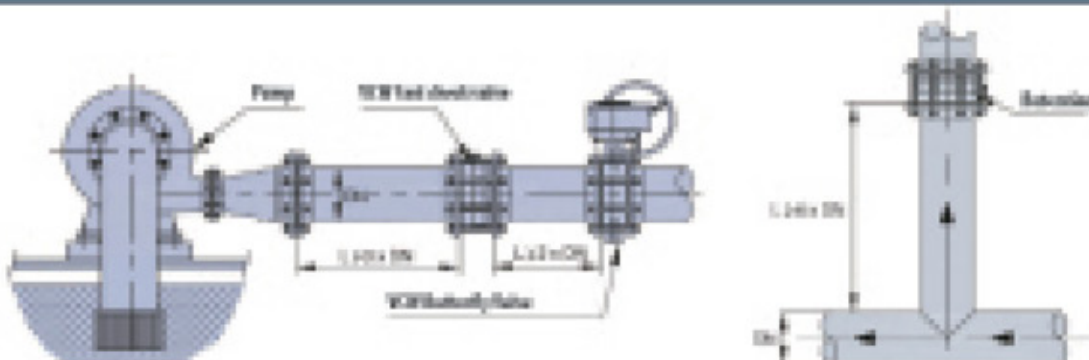


DN	A	B	WEIGHT/KG
50 (2")	91	56	1
80 (3")	142	80	2
100 (4")	174	100	6
150 (6")	246	150	17
200 (8")	290	127	22
250 (10")	352	146	35
300 (12")	398	181	50
350 (14")	460	222	80
400 (16")	520	232	100
450 (18")	554	260	135
500 (20")	626	292	180
600 (24")	920	435	500
700 (28")	1120	500	800
800 (32")	1180	515	1000
900 (36")	1480	710	1700
1000 (40")	1500	730	1900
1200 (48")	1890	900	3400

<b>1 - BODY</b>	Monobloc body with shaped concentric rings used as disc seat	ASTM-A 536/GG25/GGG40
<b>2 - CAP</b>	Monobloc type cap with central guide for spring and reinforcing blades	ASTM-A 536/GG25/GGG40
<b>3 - DISC</b>	Circular disc with hydrodynamic profile	POLYURETHANE
<b>4 - SPRING</b>	Compression helical spring	AISI 302
<b>5 - RING</b>	Rubber o' ring used in body and cap linkage	SYNTHETIC RUBBER
<b>6 - BOLT</b>	Hexagonal bolt for body and cap linkage	CARBON STEEL
<b>7 - NUT</b>	Hexagonal nut for body and cap linkage	CARBON STEEL

NOTE: DIMENSION IN MM

## INSTALLATION RECOMMENDATION






**TECNOLOGIA EM RETENÇÃO DE FLUXOS**

Rua Yashica, 487 – Jd. Gonçalves

CEP - 18016-440 - Sorocaba/SP

 + 55 (15) 3238-5300

[vendas@vcwvalvulas.com.br](mailto:vendas@vcwvalvulas.com.br)

[www.vcwvalvulas.com.br](http://www.vcwvalvulas.com.br)