

INFRA VALVE

**Zero Velocity Valve (PSLC)
CL 10 / CL 15 & CL 20 Rating
Up to 2000 mm Dia**

Surge Protection / Water Hammer Control



Innovative Flow Control Solution



Shree Krishna Industries

Manufacturers of all types of valves & fittings

An ISO 9001/2015 Company

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Zero Velocity Valve (Proportional Spring Loaded Check Valve)



Size Range 100mm to 2000mm
 Availability Barrel End
 Flanged End
 Extended Barrel End
 Materials Cast Iron / M.S. IS 2062

INFRA Zero Velocity Valve consists of a spring loaded closing disc for stopping reverse flow in case of failure of pumps, enclosed in an outer shell. A well designed dome is located in back of disc to streamline the flow in routine operation. Disc is mounted on a central shaft and is further supported by guide rods. Valve is provided with a by-pass arrangement. Valves are generally supplied with barrel ends but can also be flanged, if so desired. The springs are designed in such a manner that the valve remains full open when 25% of designed velocity is achieved. In case of closure of pump, disc starts closing in relation to decrease of velocity and fully closes when velocity drops near to zero. Thus upstream water column is prevented from creating water hammer wave. By-pass arrangement keeps pressure balance on both sides of disc. It also prevents creation of vacuum in downstream side.

Features

* Zero velocity valve is featured self actuating * It does not required any external energy for actuation of the valve. Zero velocity valve * can be installed at remote location. * The valves are cost effective than many salutation. * Robust and versatile in usage for any kind of mains. * Resistant to corrosion since zinc rich epoxy painting * Provided with foot / saddle for safe handling during transit and for easy & fast installation.

Zero velocity valve called as water hammer arrester

The principal behind the design of this valve is to arrest the forward moving water column at zero movement i.e. when its velocity is zero and before any return velocity is established. The valve fitted in a pipeline consists of an outer shell and an inner fixed dome leaving a streamlined annular passage for water. A closing disc is mounted on center and a peripheral guide bar is held at the close position by compressed springs when there is no flow of water. One or multi nos. (depends upon he size of valve) bypass arrangement (not less than 10% of nominal bore area) connects the upstream and downstream side of disc. The springs are so designed that the disc remains in fully open position for velocity of water equal to 25% of the designed maximum velocity in the pipe line. The main advantages of ZERO VELOCITY VALVES are :- I) Controlled closing characteristics II) Low head loss due to streamlined design.

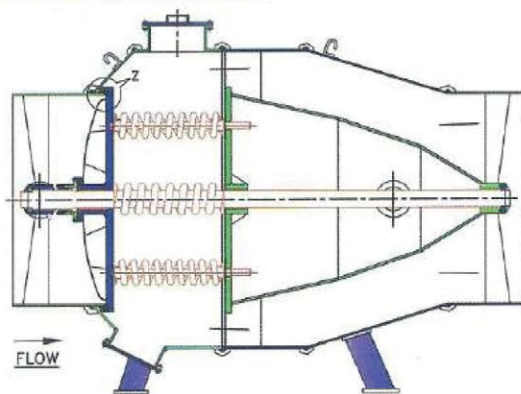
Purpose of Zero velocity valve

Zero velocity valves are developed to eliminate water hammer problems. In common practices swing check valves are installed on the pump discharged end. Theoretically, swing check valve close quickly when the pump is shut of but actually not quick enough to prevent reversal velocity of flow. The flap of the swing check valves will slam against its body seat and will cause noise Vibration pipe stressing and seat damaging.

Application & Location of Zero velocity valve

Zero velocity valves has function to problem or limiting water surge after power failure. Locations of the valves have therefore to be based on the results of the analysis of water column separation. Zero velocity valves are so placed that the entire length of water column is suitably divided in spite of different gradients and undulations. More than one valve may be required in such cases. Zero velocity can be mounted in any position i.e. horizontal, vertical or inclined pumping main as well as gravity main, due to the center guided spring assisted design. This eliminates the problems arising from installing a valve WRONG orientation or necessity of changing existing lines to accommodate the valves design. Inventory requirement are reduced because one valve design can be used in a wide variety of application, regardless of the valve's in the line (when the valve is used vertical download flow position, a heavier spring is simply substituted to compensate for the weight of the disc and shaft.

Functional Configuration



MATERIAL SPECIFICATION

COMPONENT	MATERIALS
1. INLET BARREL AND CONE	C.I. / M.S. FAB
2. OUTLET BARREL AND CONE	C.I. / M.S. FAB
3. CENTRAL DOME	C.I. / M.S. FAB
4. CENTRAL DISC	C.I. / M.S. FAB
5. ANTI ROTATION GUIDE ROD	S.S. AISI-410
6. CENTRAL SHAFT	S.S. 410 or Cladded
7. SEAT RING	S.S. AISI-304
8. DISC SEAL	EPDM/NITRILE Rubber
9. SPRINGS	SPRING STEEL
10. INSP. OPENING	C.I. / M.S. FAB
11. STRUTS	C.I. / M.S. FAB
12. MOUNTING FEET	M.S. FAB
13. BY-PASS WITH VALVE	C.I./C.S GATE VALVE

Size, material construction and pressure rating :

Size 100 to 300mm NB	Material of Construction			
	Cast Iron (IS:210)	Carbon Steel (IS:2062)		
Shell/Seat Test Pressure	PN 10/ PN 16	CLASS-10	CLASS-15	CLASS-20
Size 350 to 2000mm NB	Material of Construction			
	Carbon Steel (IS:2062)			
Shell/Seat Test Pressure	CLASS-10	CLASS-15	CLASS-20	CLASS-25