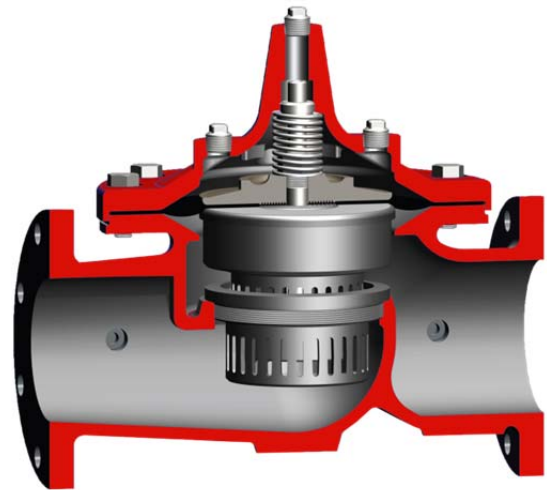


### ► Simple, Reliable and Accurate

#### ► CLA-VAL SERIES 100 Main Function

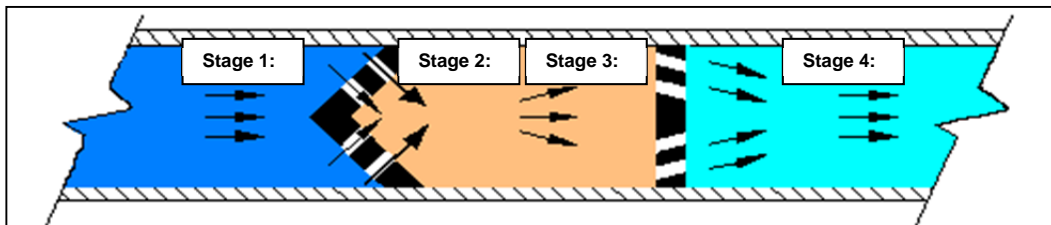
High pressure drop or excessive flow application will cause high noise and vibration due to excessive kinetic energy. The CLA-VAL 100-01KO Anti-Cavitation Valve is specially designed to prevent cavitation damage and to minimize hydrodynamic noise and vibration in case of severe applications.



#### ► CLA-VAL 100-01KO Principle of Operation

The CLA-VAL 100-01KO Anti-Cavitation Valve assembly is ideal for applications where a large pressure drop is required and space is limited. Pressure drop is achieved through the valve assembly rather than a downstream orifice assembly (or series of orifice assemblies). Tests at CLA-VAL have demonstrated that noise due to cavitation action is reduced when the Anti-Cavitation features described in this document are used. The CLA-VAL 100-01KO Anti-Cavitation Valve also incorporates features not used in conventional orifice plate assemblies. These features and the principal of operation are described in the illustrations and dialog below.

The principal of operation is similar to a series of orifice plates. A large pressure drop is achieved with a series of restrictions. The below diagram uses an orifice plate analogy to describe how a large pressure drop is achieved through the CLA-VAL 100-01KO Anti-Cavitation Valve.



#### **Stage 1:**

High pressure is reduced as it passes through the first restriction (chevron shaped orifice plate). This stage is equivalent to flow passing through the slots of the seat on the Anti-Cavitation Valve.

#### **Stage 2:**

Flow through the first restriction is directed towards the center of the pipe. An additional pressure drop is created as the flow converges. Any cavitation occurs in this converging area. On the Anti-Cavitation valves flow converges in the central chamber of the seat.

#### **Stage 3:**

Pressure is dropped further as it passes through the second orifice plate. The flow area through both orifice plates is the same. This feature allows pressure to recover in the inner chamber and helps minimize the potential for cavitation in the area between the orifice plates. This series of controlled pressure drops is designed to minimize or prevent cavitation damage as flow passes through the system. By creating a series of small pressure drops the potential for a fluid vapor condition (cavitation) is minimized.

The flow area through the slots of the seat and disc guide are matched in this same manner. The flow area through the slots is approximately 50% of the flow area of a standard valve seat.

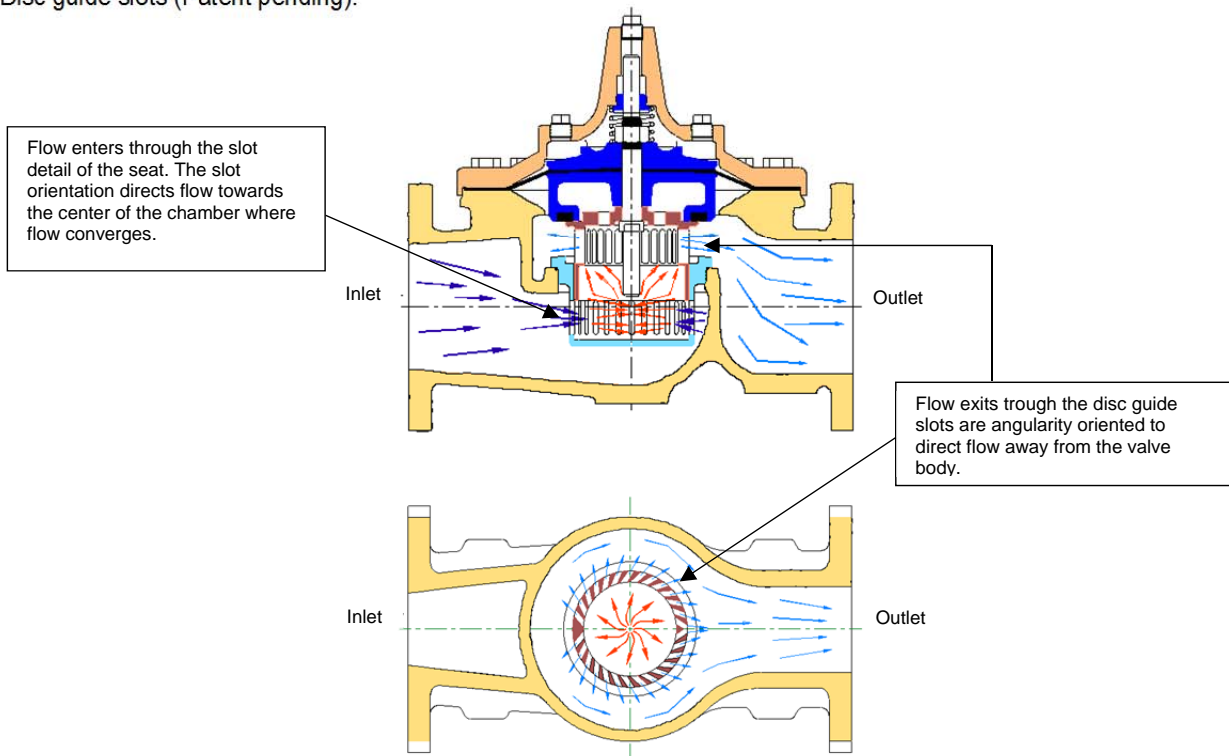
#### **Stage 4:**

Flow passing through the second orifice plate is directed away from pressure boundary surfaces. Cavitation bubbles collapse in the fluid further reducing the chances of cavitation damage to components.

The angles slots in the disc guide are designed to direct flow away from the pressure boundary of the valve body.

### ▶ CLA-VAL 100-01KO What is it?

- Radial slot design.
- Seat slots.
- Disc guide slots (Patent pending).



### ▶ CLA-VAL 100-01KO High Performance

- Virtually cavitation free operation.
- Retrofit to standard style HYTROL Valves (AE/GE type).
- Reduces noise and vibration.
- 316 Stainless steel trim standard.
- Service without valve removal from line.
- Drip - tight, positive sealing.
- High pressure differentials.



### ▶ More Information

Documents #		
Type	Size	No.
Component Datasheet	AE / GE / NGE	HYC001TT
Valve Selection	-	-
Dimensions	NGE	000122DE-1
Dimensions	GE	000122DE-2
Dimensions	AE	000122DE-3
Pressure Ratings & Materials	-	-

### ▶ Other Functions: Please Contact CLA-VAL

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