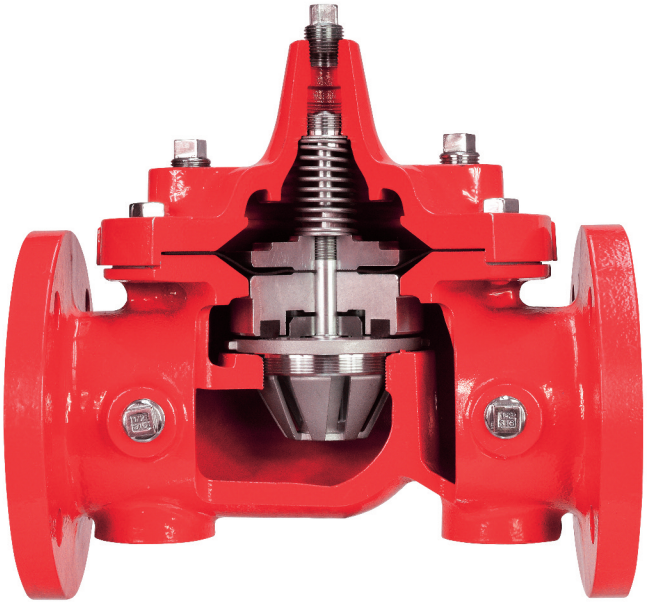
CLA-VAL™

KOL

Anti-Cavitation Seat



- **Cavitation Prevention**
- **Safety – Life Extender**
- **Noise Reduction**
- **UL Listed / FM Approved**
- **Meets NFPA-20 flow capacity requirement**

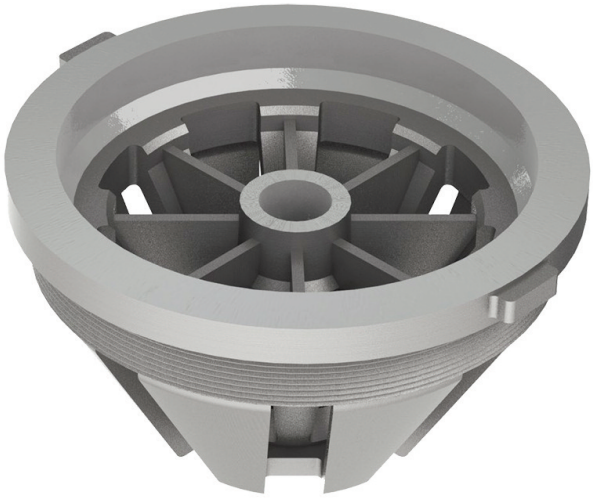
The Cla-Val KOL seat is designed to allow high pressure differential flow conditions, while reducing the damaging effects of cavitation. At NFPA-20 rated flow conditions, cavitation can have destructive effects on a valve body. The new, one-piece seat design reduces cavitation damage, noise and vibration, which will ultimately extend the life of a valve.

This product differs from most anti-cavitation devices in the market place as it achieves anti-cavitation properties entirely through a unique one-piece, dual stage seat design that is installed directly into the valve body.

The standard Cla-Val Fire Pump Relief Valve supplied with a KOL seat is UL Listed and FM approved, and is designed to relieve excess pressure in a fire protection system, while reducing the damaging effects of cavitation. The KOL seat is available in valve sizes 2” through 10”, in both globe and angle patterns. Size 3” through 8” seats are UL Listed and FM Approved.

Features & Benefits

- Ideal for applications with high pressure differentials
- Meets flow requirements set forth by applicable approval agencies
- Provides a safer work environment by preventing valve damage



Functional Data

Valve Size		Inches	2	3	4	6	8	10
		mm.	50	80	100	150	200	250
C_V Factor	Globe Pattern	Gal./Min. (gpm.)	40	71	138	275	503	750
		Litres/Sec. (l/s.)	9.6	17.1	33	66	121	180
Equivalent Length of Pipe	Globe Pattern	Feet (ft.)	93	223	243	538	681	955
		Meters (m.)	28	68	74	164	207	291
K Factor	Globe Pattern		10.2	15.7	12.3	16.0	14.3	16.0
Liquid Displaced from Cover Chamber When Valve Opens		U.S. Gal.	.03	.08	.17	.53	1.26	2.5
		Litres	.12	.30	.64	2.0	4.8	9.5

For assistance in selecting appropriate valve options or valves manufactured with special design requirements, please contact our Regional Sales Office or Factory.

C_V Factor

Formulas for computing C_V Factor, Flow (Q) and Pressure Drop ($\triangle P$):

$$C_V = \frac{Q}{\sqrt{\triangle P}} \qquad Q = C_V \sqrt{\triangle P} \qquad \triangle P = \left(\frac{Q}{C_V}\right)^2$$

K Factor (Resistance Coefficient)
The Value of K is calculated from the formula: $K = \frac{894 d^4}{C_V^2}$
(U.S. system units)

Equivalent Length of Pipe
Equivalent lengths of pipe (L) are determined from the formula: $L = \frac{K d}{12 f}$
(U.S. system units)

Fluid Velocity
Fluid velocity can be calculated from the following formula: $V = \frac{.4085\ Q}{d^2}$
(U.S. system units)

Where:

C_V = U.S. (gpm) @ 1 psi differential at 60° F water
or
= (l/s) @ 1 bar (14.5 PSIG) differential at 15° C water

d = inside pipe diameter of Schedule 40 Steel Pipe (inches)

f = friction factor for clean, new Schedule 40 pipe (dimensionless) (from Cameron Hydraulic Data, 18th Edition, P 3-119)

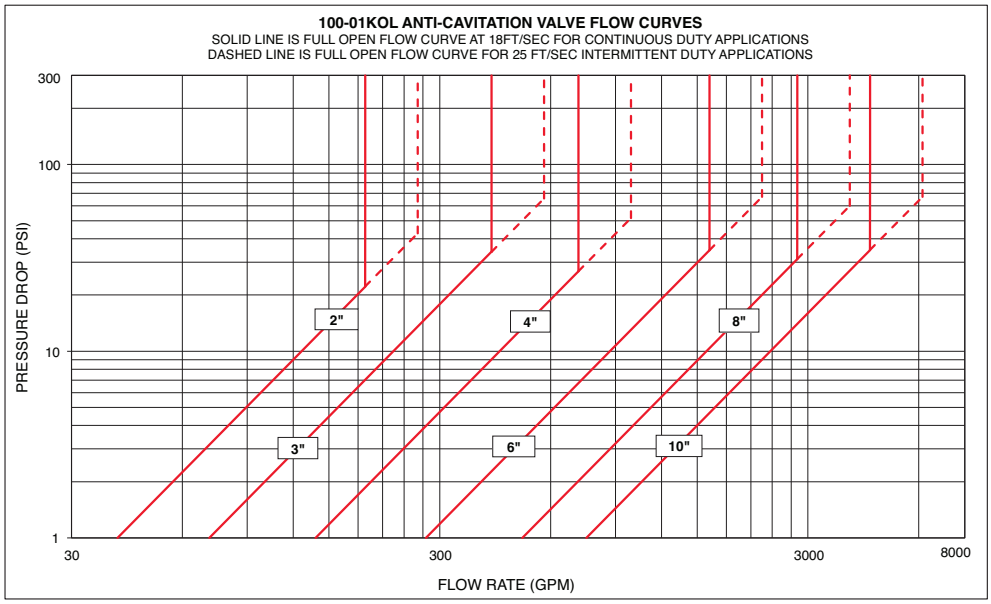
K = Resistance Coefficient (calculated)

L = Equivalent Length of Pipe (feet)

Q = Flow Rate in U.S. (gpm) or (l/s)

V = Fluid Velocity (feet per second) or (meters per second)

$\triangle P$ = Pressure Drop in (psi) or (bar)



Notes: On Operating Differential

1. For atmospheric discharge, the maximum inlet pressure cannot exceed 150 psi.
2. For pressure differentials greater than 300 psi the maximum flow velocity should not exceed 18 ft/sec.
3. Flow velocities greater than 25 ft/sec are not recommended.
4. Recommended minimum flow velocity is 1 ft/sec.
5. Consult factory for conditions exceeding these recommendations.

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