

KVD Viscous Damper

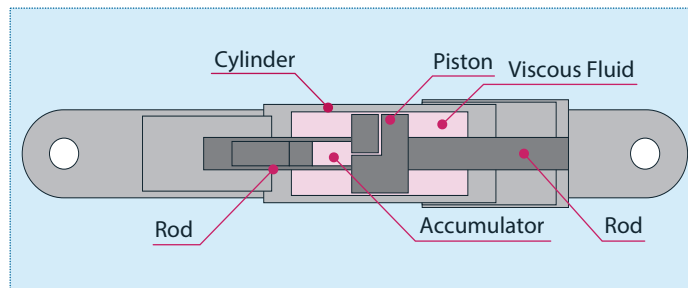


Application range

- Applicable for a wide range of bridges
- For both new construction and anti-seismic reinforcement for existing bridges

Function

Seismic energy absorption and dissipation by the viscous resistance



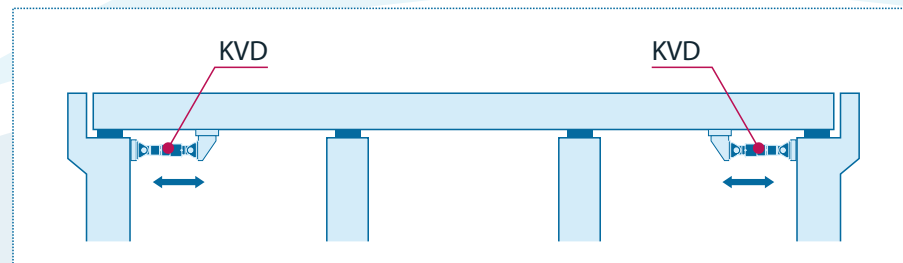
High Durability

- Durability achieved by using almost ageless silicone fluid with viscosity
- Prevention of inner pressure changes with the accumulator

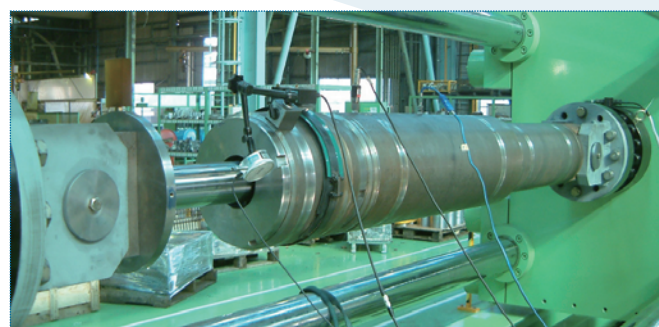
Low cost and Size Line-up

- A broad line-up of KV Dampers
- Damping force up to 2,000 kN

Application Examples



Location Example of KVD



Each KVD is being tested before supplied to customers



Site Installation (PC Bridge)



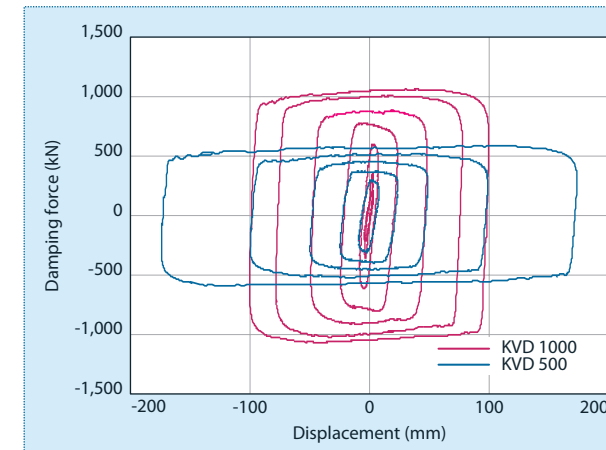
Site Installation (Steel Bridge)



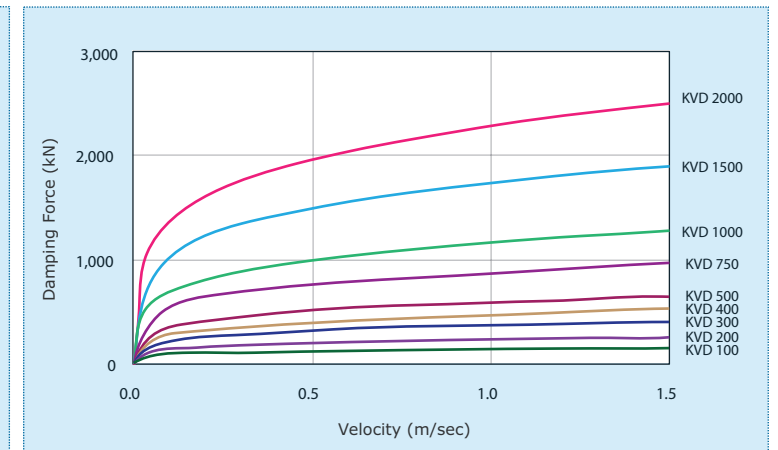
Site Installation (PC Bridge)

Performance

The hysteresis curve of KVDs and thier response characteristics can be seen below.

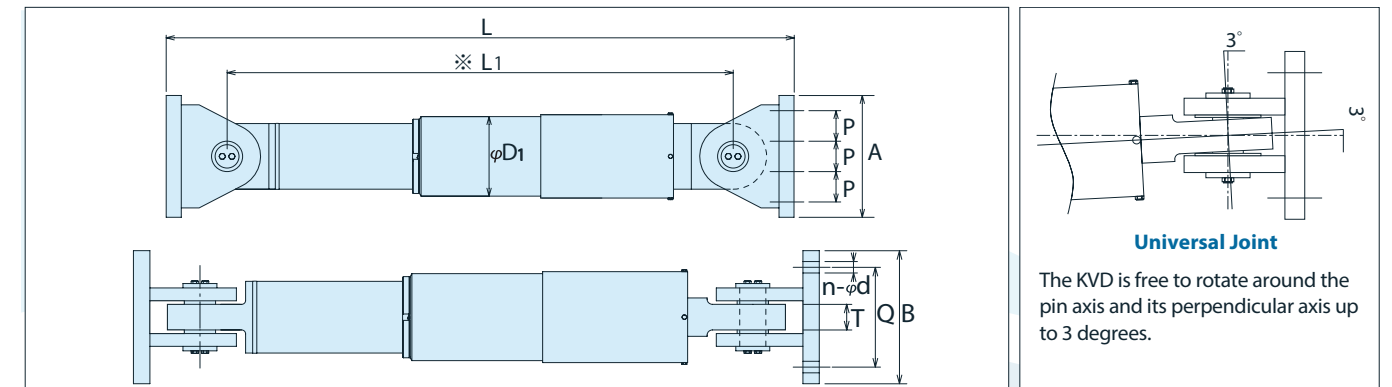


Hysteresis curve (Frequency : 1Hz sine waves)



Velocity-Damping Force curves

Structure



Universal Joint

The KVD is free to rotate around the pin axis and its perpendicular axis up to 3 degrees.

Type	D1 (mm)	T (mm)	A,B (mm)	P (mm)	Q (mm)	n	d (mm)	L (mm) Stroke ±100(mm)	L (mm) Stroke ±150(mm)	L (mm) Stroke ±200(mm)	L (mm) Stroke ±250(mm)	L (mm) Stroke ±300(mm)	L (mm) Stroke ±350(mm)	L1 (mm) ※
KVD100	165	50	300	220	220	4	26	1470	1720	1970	2220	2470	2720	L-240
KVD200	165	50	320	80	240	8	26	1470	1720	1970	2220	2470	2720	L-240
KVD300	185	60	340	90	270	8	30	1550	1800	2050	2300	2550	2800	L-280
KVD400	185	68	360	90	270	8	33	1550	1800	2050	2300	2550	2800	L-280
KVD500	242	68	400	100	300	8	36	1725	1975	2225	2475	2725	2975	L-350
KVD750	299	95	480	120	360	8	42	2045	2295	2545	2795	3045	3295	L-510
KVD1000	340	105	520	130	390	8	45	2130	2380	2630	2880	3130	3380	L-510
KVD1500	406	110	540	135	405	8	48	2370	2620	2870	3120	3370	3620	L-540
KVD2000	426	120	680	150	450	8	52	2640	2890	3140	3390	3640	3890	L-620

Dimensions for KVD

Simple Structural Analysis

KVD's damping resistance is determined by the equation: $F = C V^\alpha$, where C =damping coefficient, V =velocity, and α =arithmetic exponent=0.22. An analysis is made by using a bilinear model. The resulting hysteresis curves have rectangular shape. (see the hysteresis curves above).



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