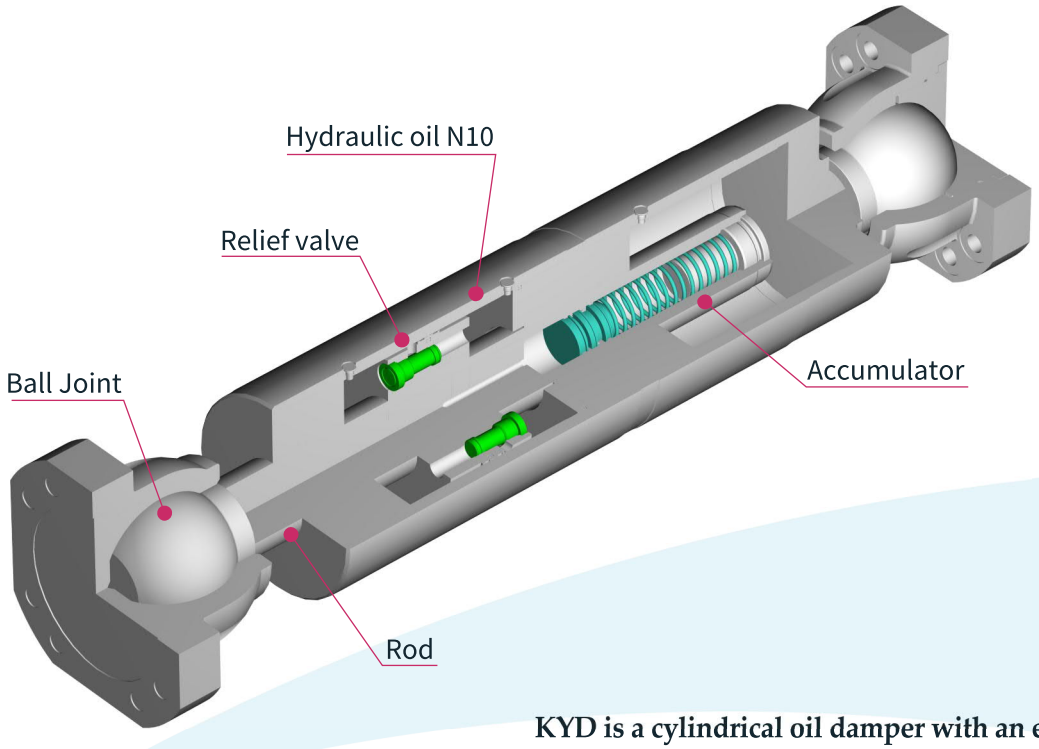
KYD

Vibration Control Oil Damper

Kawakin

KYD *Kawakin Vibration Control Oil Damper*

KYD is an oil damper that dissipates seismic energy and provides superior seismic protection to building structures.



KYD is a cylindrical oil damper with an extensive track record in Japan, that reduces story drifts and prevents structural damage during seismic and wind vibrations. Its accumulator, special rubber sealings, and low working pressure, prevent oil leaking and provide a stable performance despite changes in temperature.

Stability

The bilinear damping force – velocity relationship together with its built-in accumulator, ensure a stable damping response when the device is subjected to both small vibrations and large earthquakes.

High efficiency

The double rod structure of KYD provides the damper the same hysteretic response during expansion and contraction. Moreover, the highly viscous fluid stored in the inner chambers greatly reduces the temperature dependency of the device.

Structural analysis

Thanks to its bilinear damping force-velocity relationship and negligible temperature dependence, it is possible to obtain highly reliable results from structural analysis by using a simple damper model.

Reliability


評　定　書

KYD has been certified by The Center for Better Living, a public institution established by the Ministry of Land, Infrastructure, and Transport of Japan. This certificate confirms the reliable, highly effective, and stable performance that KYD vibration control damper exhibits.

Specifications and Performance

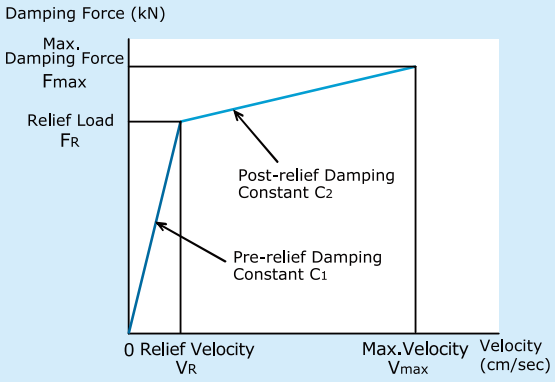
» Standard Specifications

		Unit	Tolerance
Maximum Damping Force		kN	±15%
Maximum Velocity		Cm/sec	-
Damping Coefficient	Primary Damping Constant (C_1)	kN·sec/cm	±15%
	Secondary Damping Constant (C_2)		

»Environmental Condition of use

Outside Air Temperature	-10℃ ～ +60℃

Within this temperature range, the variation of the damping ratio is within ±10% with regard to its value at 20°C



Damping Force vs. Velocity

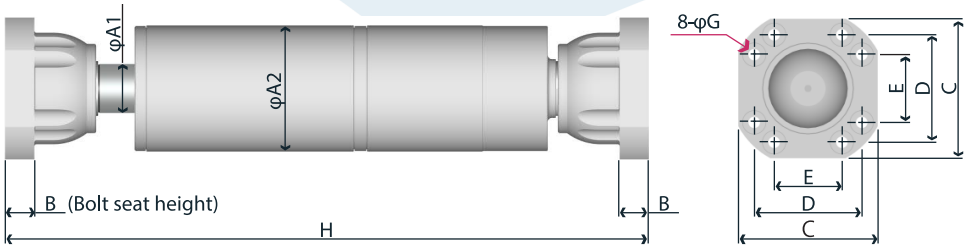
» Standard Performance

Standard Name: KYD –Max. Damping Force –Stroke

Standard Name	Max. Damping Force Fmax (kN)	Max. Velocity Vmax (cm/sec)	Damping Constant		Relief	
			C_1 (kN·sec/cm)	C_2 (kN·sec/cm)	Load F_R (kN)	Velocity V_R (cm/sec)
KYD500***-B1	500	30	187.5	3.6	400	2.1
KYD500***-B2			125.0	3.7		3.2
KYD500***-B3			62.5	4.2		6.4
KYD1000***-B1	1000		375.0	7.2	800	2.1
KYD1000***-B2			250.0	7.5		3.2
KYD1000***-B3			125.0	8.5		6.4
KYD1500***-B1	1500		562.5	10.8	1200	2.1
KYD1500***-B2			375.0	11.2		3.2
KYD1500***-B3			187.0	12.7		6.4
KYD2000***-B1	2000		750.0	14.4	1600	2.1
KYD2000***-B2			500.0	14.9		3.2
KYD2000***-B3			250.0	16.9		6.4

Please contact us for relief velocities and strokes different from our standard lineup.

Standard dimensions



Type	Stroke (mm)	H (Length at installation) (mm)	* (Length at max. contraction) (mm)	Weight (kg)	φA1 (mm)	φA2 (mm)	Mounting members					Stiffness (kN/cm) 【Reference】
							B (Screw seating surface height) (mm)	C (mm)	D (mm)	E (mm)	φ G (mm)	
KYD500	±80	1200	1120	198	70	190.7	40.5	245	195	100	18	1400
	±100	1260	1160	201								1200
KYD1000	±80	1400	1320	473	110	273.1	62.5	340	270	170	26	2900
	±100	1460	1360	478								2300
KYD1500	±80	1590	1510	661	120	310.0	70.5	350	270	170	29	4300
	±100	1650	1550	680								3400
KYD2000	±80	1670	1590	859	150	355.6	70.5	350	270	170	29	5800
	±100	1730	1630	875								4600

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Issued 11/2022