

CVS Series EU Globe Style Control Valves

Designs EUD and EUT-2

Introduction

The CVS Series EU Control Valve is a globe style, single port valve which uses a balanced plug, cage guided design with push down to close action.

The CVS Series EU valve provides excellent flow control for on/off service or throttling applications, in steam, liquid or gas service. Both designs utilize metal to metal seating, Design EUD has the seat ring bolted into the valve body using cap screws, Design EUT-2 seat ring is threaded into the cage.

Design EUD:

Intended for use in general control applications over a wide variety of high temperature and pressure drops. This design uses two graphite piston rings in between the plug and cage.

Design EUT-2:

The CVS EUT-2 design utilizes composition seating for applications which require tight shutoff requirements and higher temperature limits.



Standard Flow Direction is down for Anti Cavitation Cages, and up for Noise Abatement Cages.

Flow characteristics are Linear or Equal Percent.

Available in size 12, 16, and 20 Inch. End connections are Raised Face, Ring Type Joint and Butt weld, in Class 150, 300 or 600. Consistent with ASME B16.34-latest edition.

Body and Bonnet Material is - LCC, WCC, WC9 steel, or CF8M (316 Stainless Steel). Additional material selection may be available upon request.

Sour Service capability.

Optional NACE MRO175/ISO 15156-2009

SPECIFICATIONS

Valve Sizes:

Design EUT-2 and EUD: 12, 16, and 20 Inch

End Connections:

Flanged end connections consistent with ASME B16.34-latest edition

Class 150, 300, 600. Raised Face (RF), Ring Type Joint (RTJ), Buttweld (BW)

Maximum Inlet pressure ratings consistent with ASME B16.34

Shutoff Classifications:

ANSI/FCI 70-2, IEC 60534-4

Design EUT-2 – Class IV, standard with metal seating; Class V with soft metal seating

Design EUD – Class III, standard. (Optional Class IV and V)

Flow Direction and Characteristics:

Flow direction is down for standard and Anti Cav cages.

Flow direction is up for Noise Abatement cages.

For standard cages, available flow characteristics are Linear and Equal Percent.

Noise Abatement and Anti Cav cage flow characteristic is Linear.

Approximate Shipping Weights

End Connection		Approx. Weight	
Size	Type	lb	kg
12	RF	3100	1410
	RTJ		
	BW	2700	1220
16	RF	5600	2540
	RTJ		
	BW	5000	2270
20	RF	11500	5220
	RTJ		
	BW	10600	4810

Valve Body and Bonnet Materials:

LCC steel, WCC steel, WC9 Steel, or CF8M

stainless steel. Other materials may be available upon request. Contact a CVS Controls Representative for more information.

Valve Plug Travel:

4 through 14.88 Inches

FLOW COEFFICIENTS

LINEAR

CVS EUD, and EUT-2: Class 150, 300, and 600 – Linear Flow Down

Design	Size	Port Dia		Travel		Style	Flow	Valve Opening – Total Travel - Percent											
		In	mm	In	mm			Min	10	20	30	40	50	60	70	80	90	100	F _L
EUD EUT-2	12	11	279.4	4	102	SNC	Cv	40	155	300	450	610	770	940	1100	1250	1390	1500	0.88
							Kv	34.6	134	260	389	528	666	813	952	1081	1202	1298	-
							Xt	0.391	0.609	0.678	0.676	0.645	0.654	0.693	0.746	0.789	0.799	0.792	-
		11	279.4	5	127	SNC	Cv	40	190	375	570	770	980	1180	1360	1500	1570	1570	0.88
							Kv	34.6	164	324	493	666	848	1021	1176	1298	1358	1358	-
							Xt	0.391	0.644	0.683	0.644	0.654	0.704	0.769	0.805	0.792	0.775	0.818	-
EUD EUT-2	16	14.75	374.7	4	102	SNC	Cv	46	270	520	790	1080	1380	1690	1980	2240	2540	2630	0.88
							Kv	39.8	234	450	683	934	1194	1462	1713	1938	2119	2275	-
							Xt	0.391	0.643	0.684	0.667	0.645	0.650	0.664	0.694	0.721	0.749	0.755	-
		14.75	374.7	5	127	SNC	Cv	46	335	650	1000	1380	1770	2120	2410	2630	2780	2860	0.88
							Kv	39.8	290	562	865	1194	1531	1834	2085	2275	2405	2474	-
							Xt	0.391	0.650	0.677	0.652	0.650	0.666	0.709	0.745	0.755	0.739	0.763	-
EUD	20	18.25	436.6	8	203	SND	Cv	56	315	625	920	1230	1570	1920	2260	2530	2800	3010	0.89
							Kv	48.4	272	541	796	1064	1358	1661	1955	2188	2422	2604	-
							Xt	0.391	0.655	0.653	0.673	0.671	0.649	0.650	0.650	0.663	0.667	0.684	-
		18.25	436.6	10.88	276	SND	Cv	56	255	670	1030	1460	1930	2370	2780	3100	3390	3650	0.89
							Kv	48.4	221	580	891	1263	1669	2050	2405	2682	2932	3157	-
							Xt	0.391	0.648	0.656	0.681	0.656	0.649	0.653	0.667	0.690	0.719	0.733	-
	18.25	436.6	14.88	378	LND	Cv	56	375	865	1370	1940	2460	2910	3330	3700	4000	4220	0.89	
						Kv	48.4	324	748	1185	1678	2128	2517	2880	3201	3460	3650	-	
						Xt	0.391	0.651	0.674	0.668	0.651	0.661	0.676	0.707	0.736	0.755	0.748	-	
EUT-2	20	19.75	501.7	8	203	SND	Cv	60	340	675	990	1340	1710	2110	2420	2720	2960	3180	0.89
							Kv	51.9	294	584	856	1159	1479	1825	2093	2353	2560	2751	-
							Xt	0.391	0.654	0.664	0.682	0.668	0.656	0.647	0.659	0.665	0.681	0.694	-
		19.75	501.7	10.88	276	SND	Cv	60	465	905	1370	1880	2360	2760	3080	3350	3610	3830	0.89
							Kv	51.9	402	783	1185	1626	2041	2387	2664	2898	3123	3313	-
							Xt	0.391	0.650	0.673	0.665	0.654	0.657	0.669	0.685	0.711	0.726	0.742	-
	19.75	501.7	14.88	378	LND	Cv	60	410	935	1500	2130	2650	3070	3510	3870	4150	4340	0.89	
						Kv	51.9	355	809	1298	1842	2292	2656	3036	3348	3590	3754	-	
						Xt	0.391	0.648	0.678	0.659	0.648	0.661	0.690	0.718	0.749	0.753	0.737	-	

SNC – Short Neck Cast Windows
 SND – Short Neck Drilled Windows
 LND – Long Neck Drilled Windows

FLOW COEFFICIENTS

EQUAL PERCENT

CVS EUD, and EUT-2: Class 150, 300, and 600 – Equal Percent Flow Down

Design	Size	Port Dia		Travel		Style	Flow	Valve Opening – Total Travel - Percent											
		In	mm	In	mm			Min	10	20	30	40	50	60	70	80	90	100	F _L
EUD EUT-2	12	11	279.4	4	102	SNC	Cv	21	37.0	68.6	99.4	135	183	261	366	502	669	873	0.78
							Kv	18.2	32.0	59.3	86.0	117	158	226	317	434	579	755	-
							Xt	0.391	0.750	0.739	0.728	0.698	0.656	0.604	0.574	0.574	0.593	0.625	-
		11	279.4	5	127	SNC	Cv	21	46.2	83.6	123	183	280	424	618	873	1190	1380	0.78
							Kv	18.2	40.0	72.3	106	158	242	367	535	755	1029	1194	-
							Xt	0.391	0.750	0.737	0.715	0.656	0.595	0.570	0.578	0.625	0.692	0.804	-
EUD EUT-2	16	14.75	374.7	4	102	SNC	Cv	23	49.0	87.0	130	188	274	426	640	915	1250	1630	0.78
							Kv	19.9	42.4	75.3	112	163	237	368	554	791	1081	1410	-
							Xt	0.391	0.625	0.634	0.668	0.673	0.643	0.591	0.575	0.577	0.593	0.621	-
		14.75	374.7	5	127	SNC	Cv	23	58.1	106	166	274	464	758	1150	1630	2210	2540	0.78
							Kv	19.9	50.3	91.7	144	237	401	656	995	1410	1912	2197	-
							Xt	0.391	0.613	0.647	0.689	0.643	0.585	0.565	0.589	0.621	0.623	0.685	-
EUD	20	18.25	436.6	8	203	SND	Cv	25	67.5	113	174	282	439	726	1170	1700	2200	2680	0.80
							Kv	24.6	58.4	97.7	151	244	380	628	1012	1471	1903	2318	-
							Xt	0.391	0.677	0.624	0.647	0.681	0.645	0.584	0.566	0.585	0.602	0.621	-
		18.25	436.6	10.88	276	SND	Cv	25	76.8	132	204	333	535	880	1390	2000	2570	3250	0.80
							Kv	21.6	66.4	114	176	288	463	761	1202	1730	2223	2811	-
							Xt	0.391	0.657	0.633	0.666	0.670	0.616	0.580	0.573	0.597	0.622	0.628	-
	18.25	436.6	14.88	378	LND	Cv	25	86.4	154	241	396	658	1080	1660	2360	3140	3760	0.80	
						Kv	21.6	74.7	133	208	343	569	934	1436	2041	2716	3252	-	
						Xt	0.391	0.629	0.643	0.678	0.653	0.595	0.566	0.581	0.613	0.624	0.658	-	
EUT-2	20	19.75	501.7	8	203	SND	Cv	30	69.8	117	180	293	460	759	1220	1760	2280	2800	0.80
							Kv	25.9	60.4	101	156	253	398	657	1055	1522	1972	2422	-
							Xt	0.391	0.673	0.628	0.656	0.681	0.638	0.584	0.566	0.591	0.608	0.623	-
		19.75	501.7	10.88	276	SND	Cv	30	79.3	137	213	348	562	924	1450	2080	2700	3410	0.80
							Kv	25.9	68.6	119	184	301	486	799	1254	1799	2336	2950	-
							Xt	0.391	0.651	0.636	0.665	0.659	0.613	0.578	0.576	0.603	0.621	0.627	-
	19.75	501.7	14.88	378	LND	Cv	30	88.6	160	250	412	693	1130	1730	2460	3300	3860	0.80	
						Kv	25.9	76.6	138	216	356	599	977	1496	2128	2855	3339	-	
						Xt	0.391	0.620	0.645	0.686	0.651	0.590	0.569	0.587	0.616	0.621	0.677	-	

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Port Diameters

CVS Design EUT-2: Class 150, 300, 600

Size	Trim	Port Diameter	
		Inches	mm
12	Linear, Equal Percent, Noise Abatement A, B, C and Anti Cav III	11.00	279.4
	Noise Abatement D	10.00	254
16	Anti Cav III	14.75	374.7
	Noise Abatement A, B, C	16.25	412.8
	Noise Abatement D	14.00	355.6
20	Anti Cav III	18.25	463.6
	Noise Abatement A, B, C	19.75	501.7
	Noise Abatement D	17.00	431.8

CVS Design EUD: Class 150, 300, 600

Size	Trim	Port Diameter	
		Inches	mm
12	Linear, Equal Percent, Noise Abatement A, B, C and Anti Cav III	11.00	279.4
	Noise Abatement D	10.00	254
16	Linear, Equal Percent, Anti Cav III	14.75	374.7
	Noise Abatement A, B, C	14.00	355.6
	Noise Abatement D	14.00	355.6
20	Linear, Equal Percent, Anti Cav III	18.25	463.6
	Noise Abatement A, B, C	17.00	431.8
	Noise Abatement D	17.00	431.8