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Delan 德兰调节阀

DELAN MA600 SERIES

Delan 德兰调节阀

DELAN MA600 SERIES

Delan®

MA600 Series

General Control Valves

Application

- Main Steam System
- Condensate System
- HP Heater Drain System
- LP Heater Drain System
- Open-type Circulating Cooling Water System
- Auxiliary Steam System
- Heater Drain System
- Feed Water System
- petroleum & chemical system

- Varity of Trim Materials Optional
- Modular Design, Quick Maintenance
- The standard cage comes in three different flow characteristics
  - Quick Opening
  - Linear
  - Equal Percentage

Delan 德兰调节阀

DELAN MA600 SERIES

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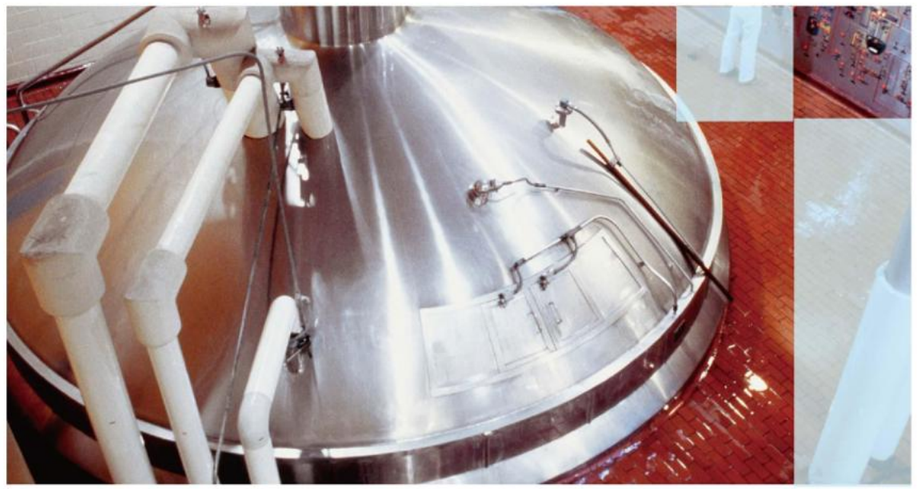


Valve characteristics

Valve Plug Stability
Rugged cage guiding provides increased valve plug stability which reduces vibration and mechanical noise.

Higher Flow Capacity
Streamlined flow passages, low resistance, provide excellent capacity and flow.

Balanced Valve Plug Construction
Plug & cage composes of pressure-balanced structure, high-precision and control range-ability, also suitable for high differential pressure condition.

High-Temperature Capability with Class IV or Class V Shutoff.
Use of multiple graphite piston rings permits Class IV shutoff up to 593°C
Use of C-seal trim permits Class V shut off up to 593°C

Actuator
Pneumatic diaphragm & cylinder piston double action actuator, compact structure and larger output force

Economic Operation
Increased wear resistance provided by standard hardened stainless steel trim means longer service life.

Economic Maintenance
Modular design of trim, easy maintenance

Anatomical Drawing

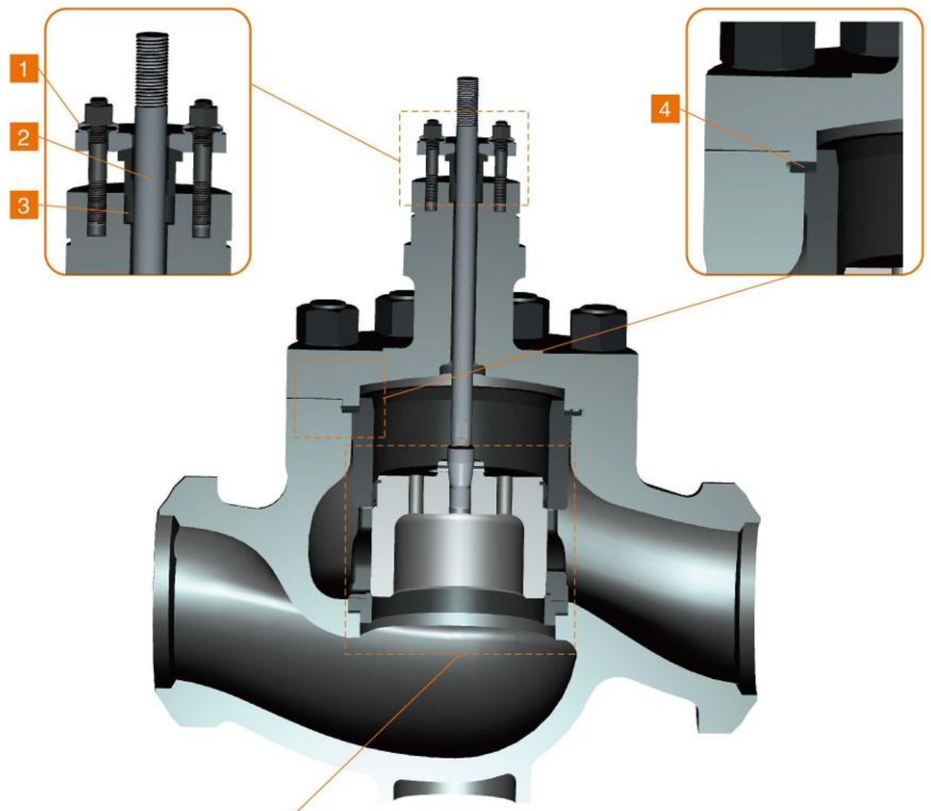
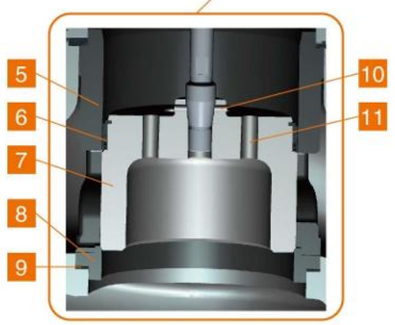


Figure 1: Globe Type Control Valve Sectional View



No	Part Name	
1	Double Disc Spring	
2	Stem	
3	Packing	PTEF V-ring packing or graphite packing can be used
4	Middle Flange Gasket	Flexible graphite and wire guarantee reliable sealing
5	Cage	
6	Valve Seal (optional)	1. Elastic energy storage ring 2. C-seal ring
7	Balanced Plug	
8	Replaceable Seat	No welding or grinding required. The inspection, maintenance, and replacement of valve cores are fast and convenient.
9	Seat Gasket	
10	Cone Plus Pin	
11	Balance Hole	

Typical Application

Table 1. Size Range

Nominal Diameter													
NPS	In	1	1-1/2	2	2-1/2	3	4	6	8	10	12	14	16
DN	mm	25	40	50	65	80	100	150	200	250	300	350	400

Table 2. Shutoff Classification & Temperature Range

Valve Size	Port Diameter		Cage Style	ANSI Leakage Class
NPS	mm	NPS		
1"	26	1.024		
1-1/2"	26	1.024		
2"	58	2.283		
2-1/2"	73	2.875		
3"	88	3.465		
4"	58	2.283	E%	**II,III Class :** Standard single graphite piston rings permit class II, III shutoff up to 593℃
	113	4.449	Linear	
6"	113	4.449	Fast Opening	**IV Class :** with multiple graphite piston rings up to 593℃ with elastic energy storage ring up to 232℃
	178	7.008	Noise Reduction	
8"	178	7.008	Anti-cavitation	**V Class :** with c-seal metal plug seal up to 593℃ with elastic energy storage ring up to 232℃
	198	7.795		
10"	198	7.795		
	248	9.764		
12"	248	9.764		
	278	10.945		
14"	278	10.945		
	348	13.7		
16"	348	13.7		
	374	14.724		

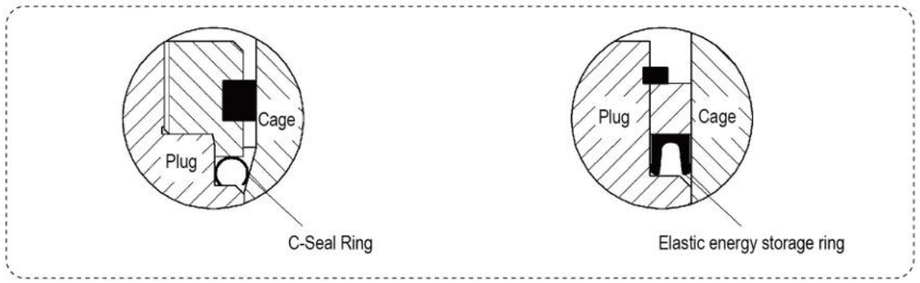


Figure 2: Valve Trim Sealing System

Table 3. Pressure Rating Range

Pressure Rating Range			
ANSI CLASS	150lb	300lb	600lb
GB/T9112-9124	1.6Mpa、2.0Mpa	4.0Mpa、5.0Mpa	6.3Mpa、10Mpa、11Mpa

Table 4. Available Constructions

Valve Size Inch	Valve body material and end connection style			
	Carbon steel, alloy steel, or stainless steel valve body			
	RF/RTJ Flanged			Butt-welding
	CL150	CL300	CL600	
1、1-1/2、2、2-1/2 3、4、6、8、10、12、14、16	◇	◇	◇	◇

◇ Available Construction

End connection style abbreviations：RF–Raised Face，RTJ–Ring Type Joint

Sealing valve parts

With C-seal trim, a balanced valve can achieve high-temperature, class V shutoff. Because the C-seal plug seal is formed from metal, a valve equipped in processes with a fluid temperature of up to 593℃

Packing system

- **Graphite Packing System**

  For a superior stem seal in applications that are not environment–sensitive

- **PTFE Packing System**

  Adopted live–loaded and unique packing–ring arrangements for long–term provide long packing life and reliability (consistent sealing performance)

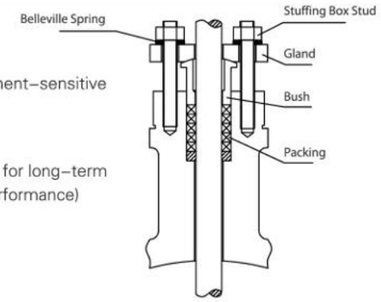


Figure 3: Packing System

Table 5. Typical Combinations of Metal Trim Parts

Combinations of Valve Trim No	Plug	Seat	Cage	Seal Ring	Stem	Note
1	CA15	410	CA15	"Elastic energy storage ring C-seal ring"	410	Normal working condition, main body WCB standard
2	CF3M	316L	CF3M	"Elastic energy storage ring C-seal ring"	316L	"Corrosive condition, main body CF8M standard"
3	CF8	304	CF8	"Elastic energy storage ring C-seal ring"	304	"Oxidizing condition, main body CF8 standard"
4	CF3M Sealing surface overlay welding	316L Sealing surface overlay welding	CF3M	"Elastic energy storage ring C-seal ring"	316L	Strong corrosion, there is a certain pressure difference condition
5	CF8 Sealing surface overlay welding	304 Sealing surface overlay welding	CF8	"Elastic energy storage ring C-seal ring"	304	Strong oxidation type, there is a certain pressure difference condition
6	CF3M Sealing and guiding surfaces overlay welding	CF3M Sealing surface overlay welding	630	"Elastic energy storage ring C-seal ring"	630	Special working condition
7	CF3M Sealing and guiding surfaces overlay welding	Stellite6	Stellite6	"Elastic energy storage ring C-seal ring"	630	Special working condition
8	WC9 Sealing and guiding surfaces overlay welding	F22 Sealing surface overlay welding	WC9	"Elastic energy storage ring C-seal ring"	660	High temperature conditions above 400° C

Note: This component combination is suitable for noise reduction and anti-cavitation valves

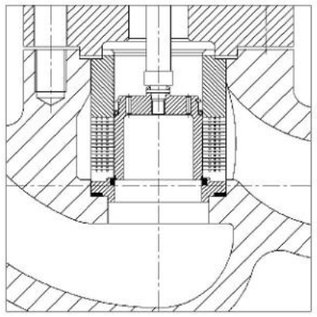


Figure 4: Noise reduction, Anti-cavitation type trim structure

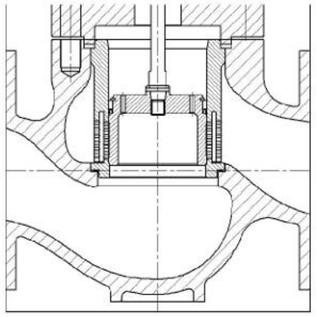


Figure 5: Anti-aircraft type trim structure

Table 6. All other parts materials

Parts		Material	
Seat Gasket		Flexible Graphite+316	
		A182 F6a	410
		A638 660	660
		A182 F316H、A182 F316L	316L、316H
		A182 F304、A182 F304L	304、304L
Bonnet		WCB/WCC	WCB/WCC
		WC6	WC6
		WC9	WC9
		CF8M、CF8	304、304L
		CF3M、CF3	316L、316H
Packing Seat		A276 410	410
Packing		Inlet V PTFE	
		Vermiculite	
		High Performance Flexible Graphite Clip Garlock	
Locking Nut		A105	
Gland		316L、304、410	
Gland Flange		410	
Body - Bonnet Bolt	Stud	A193 B16	4135
		A193 B8	304
		A193 B7	4130
	Nut	A194 7	4135
		A194 8	304
		A194 2H	1045
Middle Flange Gasket		Flexible Graphite+316	
Gland-Bush Bolt	Stud	A193 B7	4130
	Nut	Al94 2H	1045

Table 7. Bonnet Selection Guidelines

Bonnet Style	Packing Material	In-Body Process Temperature Limits
		℃
Plain	PTFE V-ring	—28~250
	Graphite ribbon/filament	—28~593
Extension	PTFE V-ring	—196~250
	Graphite ribbon/filament	—102~593

Table8.Metal Trim Part Material for Compliance with NACE MR0175 (Sour Service) Specifications

Body	Plug	Cage	Seat Ring	Stem, Gland, Packing Washer, Stuffing Box Ring, Pin and Bush
CF8M	A182 F316	A182 F316 With electroless nicked coating (ENC)	A182 F316	A182 F316
WCB	A182 F6a+stellite	A182 F6a With electroless nicked coating (ENC)	A182 F6a	A182 F6a

Table 9.Bolting Materials and Temperature ranges for Bolting Compliance with NACE MR0175

Valve body material		Bolting materia	Temperature Capabilities	
			℃	
			Min.	Max.
Non–exposed bolting (standard)				
WCB	Stud	Steel SA-193-B7	-48	427
CF8M	Nut	Steel SA-193-2H		
Exposed bolting (optional) No derating of valve required				
WCB	Stud	Steel SA-193-B7M	-48	427
CF8M	Nut	Steel SA-193-2HM		

Outline dimensions

Table 10. Globe Control Valve Dimension

Valve Size		A						G（MAX）
		Flange			BW	PN16-40	PN63-100	
mm	inches	150lb	300lb	600lb	150lb、300lb、600lb			Globe Type
25	1"	184	197	210	210	160	230	60
40	1-1/2"	222	235	251	251	200	260	71
50	2"	254	267	286	286	230	300	78
65	2-1/2"	276	292	311	311	290	340	90
80	3"	298	318	337	337	310	380	97
100	4"	352	368	394	394	350	430	129
150	6"	451	473	508	508	480	550	162
200	8"	543	568	610	610	600	650	191
250	10"	673	708	752	752	730	775	250
300	12"	737	775	819	819	850	900	292
350	14"	889	927	972	972	980	1025	327
400	16"	1016	1057	1108	1108	1100	1150	370

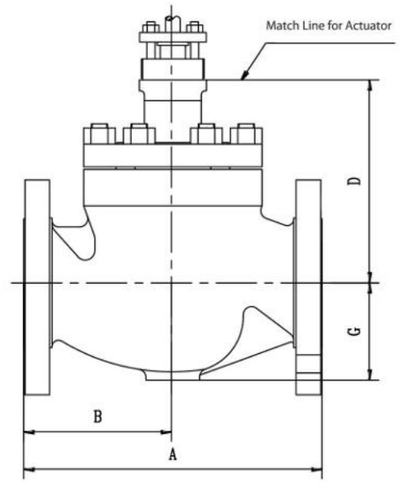


Figure 6: Globe Type Valve Dimension

Table 11. Globe Control Valve Dimension

Valve Size NPS	D (Plain Bonnet)					D (Ext. Bonnet)				
	Stem Diameter					Stem Diameter				
	mm					mm				
	12	14	16	20	26	12	14	16	20	26
1"	113	---	---	---	---	312	---	---	---	---
1-1/2"	---	---	164	---	---	---	---	346	---	---
2"	160	---	---	---	---	333	---	---	---	---
2-1/2"	---	216	---	---	---	---	406	---	---	---
3"	---	216	---	---	---	---	406	---	---	---
4"	---	230	---	---	---	---	462	---	---	---
6"	---	---	---	330	---	---	---	---	526	---
8"	---	---	---	475	---	---	---	---	621	---
10"	---	---	---	475	---	---	---	---	713	---
12"	---	---	---	505	---	---	---	---	745	---
14"	---	---	---	---	535	---	---	---	---	775
16"	---	---	---	---	663	---	---	---	---	816

Table 12. Angle Type Dimension

Valve Size NPS	DD						
	Plain Bonnet				Ext. Bonnet		
	Stem Diameter						
	mm						
	10	14	20	26	10	14	20
1	111	133	- - -	- - -	197	235	- - -
2	98	121	- - -	- - -	184	223	- - -
3	- - -	149	146	- - -	- - -	251	256
4	- - -	140	137	- - -	- - -	241	246
6	- - -	144	141	187	- - -	246	251

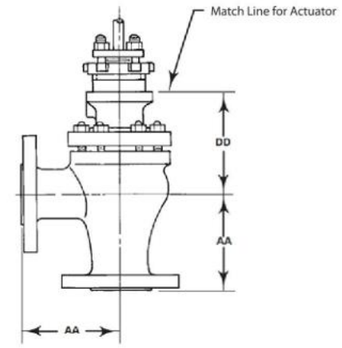


Figure 7: Angle Type Valve Dimension

Table 13. Angle Type Dimension

Valve Size NPS	AA					
	CL150		CL300		CL600	
	End Connection Style					
	RF	RTJ	RF	RTJ	BW、RF	RTJ
	mm					
1	92	98	98	105	105	105
2	127	133	133	141	143	144
3	149	156	159	167	168	170
4	176	183	184	197	197	198
6	225	232	237	244	254	256

End connection style abbreviations: BW — Butt welding FF — Flat Faced RF — Raised Face
RTJ — Ring Type Joint

Coefficient

Table 14. Angle Type Control Valve—Quick Open Cage (Flow Down)

Quick Opening Characteristic														
Valve Size	Port Diameter	Maximum Travel	Flow Coefficient	Valve Open-Percent of Total Valve										F_L
NPS	mm	mm		10	20	30	40	50	60	70	80	90	100	
1	33	19	Cv	4.96	8.94	12.66	15.69	18.12	20.23	21.72	22.70	23.11	23.22	0.86
			Kv	4.28	7.72	10.94	13.55	15.65	17.47	18.75	19.60	19.96	20.05	---
2	48	19	Cv	8.46	16.47	25.20	34.97	43.65	51.28	57.29	61.57	64.85	68.18	0.72
			Kv	7.31	14.22	21.76	30.20	37.69	44.28	49.47	53.17	56.00	58.88	---
	33	19	Cv	5.72	9.73	14.57	20.88	28.34	36.02	42.26	46.93	50.40	53.37	0.58
			Kv	4.94	8.40	12.58	18.03	24.48	31.11	36.49	40.52	43.52	46.09	---
3	73	29	Cv	23.26	45.34	74.73	103.90	127.81	142.46	153.16	165.08	173.97	176.99	0.73
			Kv	20.09	39.15	64.53	89.73	110.37	123.03	132.26	142.56	150.23	152.84	---
	48	19	Cv	7.64	14.99	24.72	36.25	47.33	58.95	70.19	80.02	89.95	98.35	0.57
			Kv	6.60	12.94	21.34	31.31	40.87	50.91	60.62	69.10	77.67	84.93	---
4	88	38	Cv	21.56	44.55	74.78	113.09	150.30	173.93	190.37	204.21	222.18	226.59	0.69
			Kv	18.62	38.47	64.57	97.66	129.79	150.20	164.40	176.34	191.86	195.67	---
	60	29	Cv	13.96	27.22	44.68	64.04	84.07	103.03	119.21	132.97	143.49	154.29	0.58
			Kv	12.05	23.50	38.58	55.31	72.60	88.97	102.95	114.82	123.91	133.24	---
6	113	51	Cv	38.42	81.17	144.95	210.54	269.93	319.44	366.09	404.80	418.14	420.19	0.68
			Kv	33.18	70.09	125.17	181.81	233.10	275.86	316.14	349.56	361.09	362.86	---
	73	38	Cv	23.00	45.49	71.99	105.22	137.10	168.49	194.74	211.47	234.33	239.08	0.56
			Kv	19.86	39.28	62.17	90.86	118.40	145.50	168.17	182.62	202.36	206.46	---

Table15. Angle Type Control Valve—Linear Cage (Flow Down)

Linear characteristic														
Valve Size	Port Diameter	Maximum Travel	Flow Coefficient	Valve Open-Percent of Total Valve										F_L
NPS	mm	mm		10	20	30	40	50	60	70	80	90	100	
1	33	19	Cv	2.62	5.00	7.89	10.31	12.58	14.72	16.55	18.48	19.92	21.23	0.86
			Kv	2.26	4.32	6.81	8.90	10.87	12.71	14.29	15.96	17.20	18.33	---
2	48	19	Cv	3.64	6.68	10.89	15.50	20.34	25.90	31.88	38.51	45.15	51.87	0.79
			Kv	3.14	5.77	9.40	13.38	17.57	22.36	27.53	33.25	38.99	44.79	---
	33	19	Cv	2.85	5.30	8.36	11.65	15.18	18.65	22.63	28.59	34.54	39.60	0.64
			Kv	2.46	4.58	7.22	10.06	13.11	16.11	19.54	24.69	29.83	34.20	---
3	73	29	Cv	9.93	23.08	37.42	52.15	67.18	83.08	98.27	119.69	135.97	149.26	0.77
			Kv	8.57	19.93	32.32	45.04	58.02	71.74	84.86	103.36	117.42	128.90	---
	48	19	Cv	3.25	6.23	10.22	14.80	19.05	24.39	30.98	38.85	46.67	56.35	0.71
			Kv	2.81	5.38	8.82	12.78	16.45	21.06	26.75	33.55	40.30	48.66	---
4	88	38	Cv	12.23	30.58	52.02	74.92	99.59	123.42	143.23	165.16	183.96	201.46	0.75
			Kv	10.56	26.41	44.93	64.69	86.01	106.58	123.69	142.63	158.86	173.97	---
	60	29	Cv	6.44	14.80	24.44	35.58	48.66	62.28	76.60	91.47	106.65	119.66	0.64
			Kv	5.56	12.78	21.11	30.72	42.02	53.78	66.15	78.99	92.10	103.33	---
6	113	51	Cv	24.63	51.47	80.29	108.48	140.66	171.97	209.42	252.80	297.93	336.09	0.75
			Kv	21.27	44.45	69.33	93.68	121.47	148.51	180.84	218.31	257.28	290.23	---
	73	38	Cv	10.26	24.22	39.83	55.50	73.68	91.86	112.04	134.30	162.54	187.63	0.65
			Kv	8.86	20.92	34.39	47.93	63.63	79.32	96.75	115.97	140.36	162.03	---

Table16. Angle Type Control Valve—Equal Percentage Cage (Flow Down)

Equal Percentage characteristic														
Valve Size	Port Diameter	Maximum Travel	Flow Coefficient	Valve Open-Percent of Total Valve										F_L
NPS	mm	mm		10	20	30	40	50	60	70	80	90	100	
1	33	19	Cv	0.98	1.44	2.00	2.61	3.78	5.48	7.92	11.24	15.02	17.93	0.90
			Kv	0.85	1.24	1.73	2.25	3.26	4.73	6.84	9.70	12.97	15.48	---
2	48	19	Cv	1.39	2.30	3.42	4.90	7.32	11.24	17.41	25.90	36.55	46.58	0.80
			Kv	1.20	1.98	2.95	4.24	6.32	9.71	15.03	22.37	31.56	40.23	---
	33	19	Cv	0.76	1.23	1.78	2.47	3.66	5.46	8.31	12.90	19.13	26.74	0.73
			Kv	0.66	1.07	1.54	2.13	3.16	4.71	7.17	11.14	16.52	23.10	---
3	73	29	Cv	4.24	7.70	11.64	15.98	23.30	35.22	54.54	82.49	112.34	145.31	0.75
			Kv	3.67	6.65	10.05	13.80	20.12	30.42	47.10	71.23	97.02	125.49	---
	48	19	Cv	1.26	2.20	3.36	4.85	7.31	11.45	17.61	25.85	37.00	48.83	0.75
			Kv	1.09	1.90	2.90	4.19	6.32	9.89	15.20	22.32	31.95	42.17	---
4	88	38	Cv	2.23	0.45	7.22	10.92	17.21	27.63	46.02	75.16	107.78	147.20	0.78
			Kv	1.93	0.39	6.23	9.43	14.87	23.86	39.74	64.91	93.07	127.12	---
	60	29	Cv	2.16	3.55	5.23	7.50	11.32	17.19	26.68	40.24	60.54	83.68	0.71
			Kv	1.87	3.07	4.52	6.48	9.78	14.84	23.04	34.75	52.28	72.27	---
6	113	51	Cv	5.34	10.66	17.42	29.80	49.95	81.75	131.02	198.46	266.86	324.89	0.72
			Kv	4.61	9.21	15.05	25.73	43.13	70.60	113.15	171.38	230.45	280.56	---
	73	38	Cv	1.27	3.60	6.97	10.67	16.84	26.61	41.82	65.32	98.36	141.82	0.71
			Kv	1.10	3.11	6.02	9.22	14.54	22.98	36.12	56.41	84.94	122.47	---

Table17. Angle Type Control Valve—Noise Reduction Trim (Flow Up)

Linear characteristic											
Valve Size	Port Diameter	Maximum Travel	Flow Coefficient	Valve Open-Percent of Total Valve									
NPS	mm	mm		10	20	30	40	50	60	70	80	90	100
1	33	19	Cv	2.09	5.12	8.15	11.37	14.15	16.00	18.83	20.75	22.20	23.15
			Kv	1.81	4.42	7.04	9.82	12.22	13.82	16.26	17.92	19.17	19.99
2	48	19	Cv	4.81	10.57	19.10	27.04	33.43	38.98	44.10	48.47	51.83	54.12
			Kv	4.15	9.12	16.50	23.35	28.86	33.66	38.08	41.86	44.76	46.74
3	73	29	Cv	11.93	29.31	46.59	65.03	80.89	91.67	108.13	119.30	127.38	132.78
			Kv	10.30	25.31	40.24	56.16	69.85	79.16	93.38	103.02	110.00	114.66
4	88	38	Cv	16.19	41.43	64.97	87.76	108.51	128.32	146.20	161.71	176.34	187.64
			Kv	13.98	35.78	56.11	75.79	93.70	110.81	126.25	139.64	152.28	162.03
6	113	51	Cv	27.85	68.25	107.99	151.00	187.74	211.90	250.53	274.46	297.86	308.44
			Kv	24.05	58.94	93.25	130.40	162.12	182.99	216.35	237.01	257.22	266.35

Table18. Globe Control Valve CL125-600—Quick Open Cage (Flow Down)

Valve Size	Port Diameter	Maximum Travel	Flow Coefficient	Valve Open-Percent of Total Valve										F_L
NPS	mm	mm		10	20	30	40	50	60	70	80	90	100	
1	33	19	Cv	3.08	5.32	7.87	10.49	12.80	14.42	16.29	17.93	19.17	19.87	0.81
			Kv	2.66	4.60	6.80	9.06	11.06	12.45	14.07	15.48	16.56	17.16	---
1-1/2	33	19	Cv	2.81	5.47	8.74	12.12	15.00	17.86	20.36	23.16	25.75	28.32	0.88
			Kv	2.43	4.73	7.55	10.47	12.95	15.42	17.58	20.00	22.24	24.45	---
	48	19	Cv	4.08	7.55	11.41	15.26	19.78	24.53	29.24	33.49	36.05	37.98	0.79
			Kv	3.53	6.52	9.85	13.17	17.08	21.19	25.25	28.92	31.14	32.80	---
2	33	19	Cv	3.42	6.11	9.53	12.81	15.90	19.04	21.81	24.83	28.35	32.16	0.84
			Kv	2.95	5.28	8.23	11.06	13.73	16.44	18.83	21.44	24.48	27.78	---
	58	29	Cv	7.58	15.47	23.92	32.20	40.42	50.25	60.11	66.04	68.00	70.70	0.74
			Kv	6.54	13.36	20.66	27.80	34.91	43.39	51.91	57.03	58.72	61.06	---
2-1/2	48	19	Cv	3.94	7.82	11.88	16.13	20.43	25.97	32.45	39.91	47.54	55.26	0.81
			Kv	3.40	6.76	10.26	13.93	17.65	22.43	28.02	34.46	41.05	47.72	---
	73	38	Cv	9.00	20.86	34.21	47.77	60.80	71.80	80.28	90.11	98.56	103.88	0.78
			Kv	7.77	18.01	29.54	41.25	52.51	62.00	69.32	77.82	85.12	89.71	---
3	58	29	Cv	7.79	16.25	25.73	36.21	47.41	59.14	71.43	82.45	91.73	98.71	0.82
			Kv	6.72	14.04	22.22	31.27	40.94	51.07	61.68	71.20	79.21	85.25	---
	88	38	Cv	13.97	31.65	50.34	67.99	85.47	101.81	113.51	128.73	137.46	142.93	0.79
			Kv	12.06	27.33	43.47	58.71	73.81	87.92	98.02	111.17	118.70	123.43	---
4	73	38	Cv	9.39	21.82	35.73	49.85	63.37	74.84	84.61	94.42	103.60	109.41	0.81
			Kv	8.11	18.85	30.86	43.05	54.72	64.62	73.06	81.54	89.46	94.48	---
	113	51	Cv	22.46	48.45	75.11	100.82	122.99	146.71	175.34	195.35	214.79	228.75	0.79
			Kv	19.39	41.84	64.86	87.06	106.21	126.69	151.41	168.69	185.49	197.54	---
6	113	51	Cv	16.09	37.37	63.31	89.99	118.99	150.58	186.44	236.18	278.78	310.16	0.85
			Kv	13.90	32.28	54.67	77.71	102.75	130.03	161.00	203.96	240.74	267.84	---
	178	51	Cv	44.87	103.26	164.93	218.98	268.71	316.27	355.20	388.65	403.64	419.80	0.81
			Kv	38.75	89.17	142.43	189.10	232.05	273.12	306.73	335.62	348.57	362.52	---
8	203	51	Cv	58.34	124.39	198.36	275.52	351.89	430.13	508.61	563.41	617.12	662.73	0.84
			Kv	50.38	107.41	171.29	237.93	303.88	371.45	439.21	486.54	532.92	572.30	---
	203	76	Cv	88.38	200.64	313.04	425.83	530.86	618.18	684.63	735.09	767.69	818.47	0.84
			Kv	76.32	173.27	270.33	367.73	458.43	533.83	591.22	634.80	662.95	706.79	---
10	203	76	Cv	93.13	194.45	305.36	410.53	516.26	598.84	663.98	708.84	741.68	790.72	0.80
			Kv	80.43	167.92	263.69	354.52	445.82	517.14	573.39	612.12	640.49	682.83	---
	248	102	Cv	148.96	287.73	431.46	584.64	737.75	901.49	1051.13	1200.59	1341.93	1443.27	0.79
			Kv	128.64	248.47	372.59	504.87	637.09	778.49	907.71	1036.78	1158.84	1246.35	---
12	248	102	Cv	149.78	289.22	432.05	588.88	741.30	903.16	1063.66	1201.81	1343.68	1452.28	0.85
			Kv	129.34	249.76	373.10	508.53	640.15	779.93	918.53	1037.83	1160.34	1254.13	---
	278	127	Cv	184.18	361.15	549.40	743.96	946.31	1136.40	1313.58	1442.72	1518.65	1518.54	0.85
			Kv	159.05	311.88	474.44	642.46	817.19	981.35	1134.35	1245.87	1311.45	1311.34	---
14	278	127	Cv	203.68	404.53	609.68	823.70	1053.38	1261.05	1459.08	1613.54	1686.94	1969.44	0.82
			Kv	175.89	349.34	526.50	711.31	909.65	1088.99	1260.00	1393.39	1456.77	1700.72	---
	348	127	Cv	277.31	532.42	808.44	1106.42	1409.72	1735.05	2019.56	2283.82	2515.35	2699.56	0.84
			Kv	239.48	459.77	698.13	955.46	1217.37	1498.32	1744.01	1972.21	2172.15	2331.22	---
16	348	127	Cv	280.03	543.18	824.49	1124.74	1429.74	1763.80	2068.95	2331.69	2543.55	2747.43	0.83
			Kv	241.82	469.06	712.00	971.27	1234.66	1523.14	1786.65	2013.55	2196.50	2372.57	---
	378	127	Cv	324.62	627.36	964.21	1338.39	1716.58	2041.35	2327.97	2536.61	2692.26	2765.54	0.85
			Kv	280.33	541.76	832.66	1155.77	1482.37	1762.82	2010.33	2190.51	2324.92	2388.21	---

Table19. Globe Control Valve CL125-600 Equal Percentage Cage (Flow Down)

Valve Size	Port Diameter	Maximum Travel	Flow Coefficient	Valve Open-Percent of Total Valve										F_L
NPS	mm	mm		10	20	30	40	50	60	70	80	90	100	
1	33	19	Cv	0.76	1.49	2.12	2.80	4.05	5.54	7.54	10.52	13.54	16.68	0.85
			Kv	0.66	1.29	1.83	2.42	3.50	4.79	6.51	9.08	11.69	14.40	---
1-1/2	33	19	Cv	1.08	1.51	2.15	3.00	4.14	5.98	8.71	12.64	17.59	22.39	0.88
			Kv	0.93	1.31	1.85	2.59	3.57	5.16	7.52	10.92	15.19	19.33	---
	48	19	Cv	1.47	2.53	3.73	5.23	7.20	10.81	16.76	23.53	29.69	34.41	0.81
			Kv	1.27	2.18	3.22	4.51	6.22	9.34	14.47	20.32	25.64	29.72	---
2	33	19	Cv	0.89	1.37	2.02	2.74	3.95	5.61	8.30	12.40	17.91	23.53	0.85
			Kv	0.77	1.18	1.74	2.37	3.41	4.84	7.17	10.71	15.46	20.32	---
	58	29	Cv	1.60	2.82	4.49	6.74	10.42	15.92	24.60	36.09	49.05	57.35	0.82
			Kv	1.38	2.43	3.87	5.82	9.00	13.75	21.25	31.16	42.35	49.53	---
2-1/2	48	19	Cv	1.52	2.48	3.67	5.26	7.41	11.14	17.48	25.78	34.01	42.25	0.86
			Kv	1.31	2.14	3.17	4.55	6.40	9.62	15.10	22.26	29.37	36.48	---
	73	38	Cv	3.30	6.88	10.48	14.56	21.62	32.43	47.27	68.43	86.67	96.15	0.81
			Kv	2.85	5.94	9.05	12.57	18.67	28.01	40.82	59.09	74.84	83.03	---
3	58	29	Cv	1.69	3.01	4.60	6.80	10.38	16.38	26.92	40.11	55.79	68.57	0.84
			Kv	1.46	2.60	3.97	5.87	8.96	14.15	23.25	34.64	48.18	59.21	---
	88	38	Cv	4.15	7.29	10.49	16.49	26.28	42.09	63.84	93.63	116.00	131.51	0.79
			Kv	3.58	6.29	9.06	14.24	22.70	36.35	55.13	80.86	100.18	113.57	---
4	73	38	Cv	3.68	7.36	11.00	16.33	24.51	36.73	58.21	82.97	101.19	108.57	0.86
			Kv	3.18	6.36	9.50	14.10	21.16	31.72	50.27	71.65	87.38	93.76	---
	113	51	Cv	5.67	11.25	17.72	29.05	47.92	77.14	120.45	165.56	198.68	217.16	0.79
			Kv	4.90	9.71	15.31	25.08	41.38	66.62	104.02	142.97	171.57	187.53	---
6	113	51	Cv	5.23	9.73	15.24	25.70	43.71	68.54	107.40	163.88	224.71	263.31	0.85
			Kv	4.51	8.40	13.16	22.19	37.74	59.19	92.75	141.52	194.05	227.38	---
	178	51	Cv	12.40	24.98	41.85	65.36	100.55	156.14	231.82	305.61	355.32	381.07	0.82
			Kv	10.71	21.57	36.14	56.44	86.83	134.83	200.19	263.91	306.84	329.08	---
8	203	51	Cv	17.84	36.82	56.23	83.47	125.46	183.12	259.06	359.17	459.56	545.94	0.82
			Kv	15.41	31.79	48.56	72.08	108.34	158.14	223.71	310.17	396.86	471.45	---
	203	76	Cv	26.04	55.80	101.63	182.31	297.24	462.66	586.40	673.87	737.15	791.32	0.83
			Kv	22.49	48.19	87.76	157.43	256.68	399.53	506.39	581.92	636.57	683.35	---
10	203	76	Cv	25.30	54.59	98.32	176.43	288.03	447.83	567.49	648.09	709.07	768.20	0.85
			Kv	21.85	47.14	84.90	152.36	248.73	386.73	490.06	559.66	612.32	663.38	---
	248	102	Cv	31.38	60.70	107.44	193.05	312.31	488.78	616.89	710.53	781.76	840.09	0.87
			Kv	27.10	52.42	92.78	166.71	269.70	422.09	532.72	613.58	675.09	725.47	---
12	248	102	Cv	35.56	65.93	95.92	130.79	177.14	251.88	354.14	483.35	645.14	844.43	0.75
			Kv	30.71	56.94	82.83	112.95	152.97	217.51	305.82	417.40	557.12	729.22	---
	278	127	Cv	44.66	80.35	118.42	175.93	270.42	409.70	593.43	842.41	1146.40	1325.93	0.75
			Kv	38.57	69.39	102.27	151.93	233.52	353.80	512.46	727.47	989.99	1145.01	---
14	278	127	Cv	49.66	90.13	132.20	195.89	299.38	457.09	660.42	938.62	1277.09	1488.52	0.90
			Kv	42.89	77.83	114.17	169.17	258.54	394.72	570.31	810.55	1102.84	1285.42	---
	348	127	Cv	56.93	100.56	150.13	216.68	317.16	576.17	862.28	1240.47	1690.41	2194.12	0.89
			Kv	49.16	86.84	129.64	187.12	273.89	497.56	744.63	1071.21	1459.76	1894.75	---
16	348	127	Cv	58.22	103.40	154.25	224.97	328.48	590.62	888.19	1272.63	1742.10	2261.04	0.85
			Kv	50.28	89.29	133.21	194.28	283.66	510.03	767.00	1098.99	1504.40	1952.54	---
	378	127	Cv	56.20	101.79	160.23	264.82	449.63	730.94	1112.23	1573.06	2127.80	2441.51	0.76
			Kv	48.54	87.90	138.37	228.69	388.28	631.21	960.48	1358.43	1837.48	2108.39	---

Table20. Globe Control Valve CL125-600—Quick Open Cage (Flow Down)

Quick Opening Characteristic													
Valve Size	Port Diameter	Maximum Travel	Flow Coefficient	Valve Opening Percentage of Total Travel										F_L
NPS	mm	mm		10	20	30	40	50	60	70	80	90	100	
1	33	19	Cv	4.67	9.04	12.97	16.38	18.18	19.68	20.39	20.95	21.05	21.22	0.78
			Kv	4.04	7.81	11.20	14.14	15.70	16.99	17.61	18.09	18.18	18.32	---
1-1/2	33	19	Cv	4.88	9.63	14.14	19.36	23.08	24.88	25.24	26.44	27.72	28.79	0.85
			Kv	4.21	8.31	12.21	16.72	19.93	21.49	21.80	22.83	23.94	24.87	---
	48	19	Cv	7.53	13.93	19.88	25.96	30.78	35.15	37.83	40.02	41.22	42.36	0.76
			Kv	6.50	12.03	17.17	22.42	26.58	30.36	32.67	34.56	35.60	36.58	---
2	33	19	Cv	4.61	9.28	14.42	19.42	24.92	28.37	30.09	30.04	30.09	30.00	0.84
			Kv	3.98	8.01	12.45	16.77	21.52	24.50	25.98	25.94	25.99	25.90	---
	58	29	Cv	12.88	25.75	38.56	49.71	60.79	67.80	71.38	73.08	74.20	75.01	0.74
			Kv	11.13	22.24	33.30	42.93	52.49	58.55	61.64	63.11	64.08	64.78	---
2-1/2	48	19	Cv	7.56	14.63	22.03	29.97	38.50	46.76	53.04	57.97	64.01	68.81	0.83
			Kv	6.52	12.64	19.03	25.88	33.25	40.38	45.80	50.06	55.27	59.42	---
	73	38	Cv	20.09	38.13	56.95	71.89	81.64	93.38	99.00	102.75	104.45	104.70	0.78
			Kv	17.35	32.93	49.18	62.08	70.50	80.64	85.49	88.73	90.20	90.42	---
3	58	29	Cv	15.33	30.75	45.49	58.62	71.76	80.71	84.54	86.03	87.67	88.72	0.83
			Kv	13.24	26.55	39.28	50.62	61.97	69.70	73.00	74.29	75.71	76.61	---
	88	38	Cv	26.12	50.42	75.50	96.01	119.18	135.44	143.39	148.40	152.53	155.36	0.74
			Kv	22.55	43.54	65.20	82.91	102.92	116.96	123.83	128.15	131.71	134.16	---
4	73	38	Cv	24.07	45.41	67.34	85.52	97.46	112.38	118.28	122.71	123.93	125.16	0.86
			Kv	20.79	39.21	58.15	73.85	84.16	97.05	102.14	105.97	107.02	108.08	---
	113	51	Cv	36.24	72.38	120.93	157.44	185.85	212.35	230.04	238.08	243.45	241.84	0.76
			Kv	31.30	62.50	104.43	135.96	160.49	183.38	198.65	205.60	210.23	208.85	---
6	113	51	Cv	50.54	97.75	145.20	191.34	238.18	273.15	300.08	316.34	331.74	344.19	0.84
			Kv	43.64	84.42	125.39	165.23	205.68	235.88	259.14	273.17	286.48	297.23	---
	178	51	Cv	71.06	144.86	223.21	294.08	341.55	373.92	403.17	425.74	434.53	444.75	0.79
			Kv	61.36	125.10	192.76	253.96	294.95	322.90	348.16	367.65	375.24	384.07	---
8	203	51	Cv	77.32	182.02	279.59	376.51	463.49	532.91	593.74	633.63	679.47	715.57	0.84
			Kv	66.77	157.18	241.44	325.13	400.25	460.20	512.73	547.18	586.76	617.94	---
	203	76	Cv	130.89	279.88	420.15	532.75	619.20	682.28	733.32	779.22	812.50	830.59	0.82
			Kv	113.03	241.69	362.82	460.06	534.72	589.19	633.26	672.90	701.64	717.26	---
10	203	76	Cv	136.80	283.00	423.90	536.80	621.81	685.23	738.24	787.77	818.37	838.78	0.80
			Kv	118.13	244.38	366.07	463.56	536.97	591.73	637.51	680.29	706.71	724.33	---
	248	102	Cv	181.89	451.47	763.52	872.04	953.14	1013.48	1049.40	1089.79	1131.02	1146.82	0.79
			Kv	157.07	389.87	659.34	753.06	823.09	875.20	906.22	941.10	976.71	990.34	---
12	248	102	Cv	202.62	503.73	850.98	966.89	1059.90	1124.36	1172.37	1213.39	1244.85	1277.88	0.79
			Kv	174.98	435.00	734.87	834.97	915.29	970.95	1012.41	1047.83	1075.00	1103.52	---
	278	127	Cv	241.79	629.81	926.68	1076.13	1271.05	1491.79	1556.11	1590.23	1627.75	1646.29	0.80
			Kv	208.80	543.87	800.25	929.30	1097.63	1288.25	1343.79	1373.25	1405.66	1421.67	---
14	278	127	Cv	246.24	636.91	934.73	1088.08	1280.82	1514.69	1569.45	1574.49	1646.24	1664.11	0.80
			Kv	212.64	550.01	807.20	939.62	1106.06	1308.02	1355.31	1359.66	1421.62	1437.06	---
	348	127	Cv	292.27	847.94	1335.81	1712.83	2019.18	2081.18	2133.04	2160.15	2207.22	2214.17	0.78
			Kv	252.39	732.25	1153.55	1479.13	1743.68	1797.22	1842.00	1865.42	1906.06	1912.06	---
16	348	127	Cv	300.60	877.23	1369.36	1772.04	2078.93	2142.94	2194.30	2229.17	2254.19	2294.28	0.80
			Kv	259.58	757.53	1182.52	1530.26	1795.28	1850.56	1894.90	1925.02	1946.62	1981.24	---
	378	127	Cv	301.80	875.26	1369.65	1757.29	2067.19	2133.94	2189.24	2241.91	2261.66	2282.05	0.83
			Kv	260.62	755.84	1182.77	1517.52	1785.14	1842.78	1890.53	1936.02	1953.07	1970.68	---

Table21. Globe Control Valve CL150-600—Noise Reduction Cage（Flow Down)

Linear Characteristic											
Valve Size	Port Diameter	Maximum Travel	Flow Coefficient	Valve Opening Percentage of Total Travel									
NPS	mm	mm		10	20	30	40	50	60	70	80	90	100
1	33	19	Cv	3.18	7.10	11.56	13.76	14.40	14.73	15.23	15.50	15.86	16.25
			Kv	2.74	6.13	9.99	11.88	12.43	12.72	13.15	13.39	13.70	14.03
1-1/2	48	19	Cv	2.53	7.19	13.48	20.04	22.35	23.42	23.98	24.53	25.09	25.72
			Kv	2.18	6.21	11.64	17.30	19.30	20.23	20.71	21.18	21.67	22.21
	33	19	Cv	3.02	7.13	12.59	17.93	19.97	20.67	21.11	22.19	23.02	24.20
			Kv	2.61	6.16	10.87	15.48	17.24	17.85	18.23	19.16	19.88	20.90
2	58	29	Cv	7.03	18.55	33.53	40.82	43.98	45.17	45.29	45.50	45.35	46.16
			Kv	6.07	16.02	28.96	35.25	37.98	39.01	39.11	39.29	39.16	39.86
	33	19	Cv	2.77	6.58	11.29	17.76	22.67	27.02	29.80	32.28	33.92	35.31
			Kv	2.39	5.68	9.75	15.34	19.58	23.34	25.73	27.88	29.30	30.49
2-1/2	73	38	Cv	11.75	31.37	47.98	52.58	54.08	57.74	61.74	65.46	68.95	71.49
			Kv	10.15	27.09	41.43	45.41	46.70	49.86	53.31	56.53	59.55	61.74
	48	19	Cv	2.99	8.05	14.37	21.70	28.90	34.77	39.97	44.79	48.54	51.74
			Kv	2.59	6.95	12.41	18.74	24.96	30.03	34.52	38.68	41.92	44.68
3	88	38	Cv	15.86	38.78	68.37	84.75	88.81	87.83	87.40	89.68	91.79	95.66
			Kv	13.70	33.49	59.04	73.19	76.69	75.84	75.48	77.45	79.27	82.61
	58	29	Cv	7.89	18.48	32.00	45.75	58.57	69.27	79.12	86.58	94.34	99.74
			Kv	6.81	15.96	27.63	39.51	50.58	59.82	68.32	74.76	81.47	86.13
4	73	38	Cv	13.09	31.29	52.52	72.93	91.05	108.29	122.77	136.20	147.94	154.87
			Kv	11.30	27.02	45.36	62.98	78.62	93.51	106.02	117.61	127.75	133.74
	113	51	Cv	32.71	74.07	112.32	130.81	132.30	132.77	136.37	144.41	151.11	163.83
			Kv	28.24	63.97	97.00	112.96	114.25	114.65	117.77	124.70	130.49	141.48
6	113	51	Cv	14.63	34.87	58.18	80.86	101.17	119.76	136.78	151.33	163.93	172.16
			Kv	12.63	30.12	50.24	69.83	87.36	103.42	118.12	130.68	141.56	148.67
	178	51	Cv	53.76	120.06	189.60	237.16	261.53	277.03	287.61	298.40	310.56	326.41
			Kv	46.43	103.68	163.73	204.80	225.84	239.23	248.37	257.68	268.18	281.88
8	203	51	Cv	96.77	217.76	325.26	419.53	482.46	561.46	615.67	632.89	634.37	660.37
			Kv	83.56	188.05	280.88	362.29	416.63	484.85	531.67	546.53	547.82	570.27
	203	76	Cv	137.26	291.23	413.35	523.45	589.37	631.73	644.87	663.37	673.74	701.90
			Kv	118.53	251.49	356.95	452.03	508.95	545.53	556.89	572.86	581.81	606.13
10	248	102	Cv	151.31	323.65	455.63	580.94	652.60	696.81	716.89	732.29	749.76	774.79
			Kv	130.66	279.49	393.47	501.68	563.56	601.74	619.08	632.37	647.46	669.07
12	278	127	Cv	199.13	456.25	678.80	883.21	1087.26	1266.70	1403.18	1483.39	1546.19	1575.18
			Kv	171.96	394.00	586.18	762.70	938.91	1093.87	1211.72	1280.99	1335.23	1360.26
	248	102	Cv	173.66	369.87	525.21	667.00	746.96	801.85	819.65	845.49	862.47	894.86
			Kv	149.96	319.40	453.55	575.99	645.05	692.44	707.82	730.13	744.79	772.76
14	278	127	Cv	218.67	502.97	753.64	970.08	1198.57	1394.17	1549.10	1639.77	1699.57	1742.71
			Kv	188.83	434.34	650.81	837.72	1035.04	1203.94	1337.73	1416.04	1467.68	1504.93
16	378	127	Cv	265.69	577.43	877.37	1139.29	1380.24	1576.24	1756.57	1917.08	2044.24	2156.03
			Kv	229.43	498.64	757.66	983.84	1191.92	1361.18	1516.90	1655.51	1765.32	1861.86

Table22. Globe Control Valve CL125-600—Anti-cavitation Cage(Flow Up)

Linear Characteristic													
Valve Size	Port Diameter	Maximum Travel	Flow Coefficient	Valve Opening Percentage of Total Travel									
NPS	mm	mm		10	20	30	40	50	60	70	80	90	100
1	33	19	Cv	2.31	3.96	5.91	7.85	9.56	10.81	12.22	13.38	14.39	14.83
			Kv	1.99	3.42	5.10	6.78	8.25	9.33	10.55	11.56	12.43	12.81
1-1/2	48	19	Cv	3.24	5.98	9.01	12.16	15.67	19.47	23.15	26.65	28.56	29.99
			Kv	2.80	5.17	7.78	10.51	13.53	16.81	19.99	23.01	24.66	25.90
	58	29	Cv	5.94	12.04	18.74	25.16	31.84	39.17	46.88	51.46	52.94	54.63
			Kv	5.13	10.39	16.18	21.73	27.49	33.83	40.48	44.44	45.71	47.18
2	73	38	Cv	7.16	16.44	27.10	37.84	48.11	56.44	64.13	71.17	78.25	82.84
			Kv	6.18	14.20	23.41	32.68	41.54	48.74	55.38	61.46	67.58	71.54
	88	38	Cv	10.96	25.00	39.47	54.47	66.60	79.73	89.58	101.09	107.33	112.33
			Kv	9.47	21.59	34.09	47.04	57.51	68.85	77.36	87.30	92.68	97.01
2-1/2	73	38	Cv	7.88	15.96	24.82	33.20	41.91	51.68	61.77	67.80	70.55	72.82
			Kv	6.80	13.78	21.43	28.67	36.19	44.62	53.35	58.55	60.92	62.88
	113	51	Cv	17.49	37.86	58.94	79.17	95.18	114.95	136.62	152.26	167.40	177.20
			Kv	15.10	32.70	50.90	68.37	82.19	99.27	117.98	131.48	144.56	153.02
6	113	51	Cv	18.32	39.59	61.73	83.07	100.19	119.86	142.42	161.00	175.64	186.81
			Kv	15.82	34.19	53.31	71.74	86.52	103.50	122.99	139.04	151.68	161.32
	178	51	Cv	34.85	81.16	128.92	173.19	210.05	247.12	277.77	302.74	317.65	329.00
			Kv	30.10	70.08	111.33	149.56	181.39	213.40	239.87	261.43	274.31	284.11
8	203	51	Cv	38.67	89.17	142.76	190.29	231.40	271.69	303.89	334.00	349.33	362.06
			Kv	33.39	77.01	123.28	164.33	199.83	234.62	262.43	288.43	301.66	312.66
	203	76	Cv	69.69	157.99	246.14	333.19	418.28	484.10	541.15	575.78	604.38	640.14
			Kv	60.18	136.44	212.56	287.72	361.21	418.05	467.31	497.22	521.92	552.80
10	203	76	Cv	73.06	164.51	259.59	350.51	440.47	511.68	570.14	607.80	633.96	673.95
			Kv	63.09	142.06	224.17	302.69	380.38	441.86	492.35	524.87	547.46	582.00
	248	102	Cv	38.76	99.21	175.14	282.21	388.43	495.87	582.48	651.52	715.86	757.40
			Kv	33.47	85.67	151.25	243.70	335.43	428.21	503.00	562.63	618.18	654.06
12	248	102	Cv	40.42	104.64	184.09	294.89	406.15	520.10	616.30	687.94	752.40	796.60
			Kv	34.91	90.36	158.97	254.66	350.74	449.13	532.21	594.07	649.74	687.91
	278	127	Cv	53.52	136.74	242.54	395.03	536.25	685.35	805.26	884.98	954.69	1029.23
			Kv	46.21	118.09	209.44	341.13	463.08	591.84	695.38	764.23	824.43	888.80
14	278	127	Cv	55.84	143.79	254.07	411.12	565.35	724.05	842.62	933.33	1008.58	1082.71
			Kv	48.22	124.17	219.40	355.03	488.21	625.26	727.65	805.98	870.97	934.98
	348	127	Cv	70.93	191.07	441.92	636.43	842.30	1058.05	1235.61	1411.05	1524.85	1714.87
			Kv	61.25	165.00	381.63	549.60	727.37	913.69	1067.02	1218.53	1316.80	1480.89
16	348	127	Cv	73.95	201.12	465.09	670.94	884.48	1107.38	1302.54	1479.13	1604.60	1797.93
			Kv	63.86	173.68	401.63	579.40	763.80	956.28	1124.82	1277.32	1385.66	1552.62
	378	127	Cv	101.45	262.22	450.40	724.62	1001.65	1273.23	1501.49	1671.07	1824.86	1956.16
			Kv	87.61	226.44	388.95	625.75	864.98	1099.51	1296.62	1443.07	1575.87	1689.25

Pneumatic Actuator

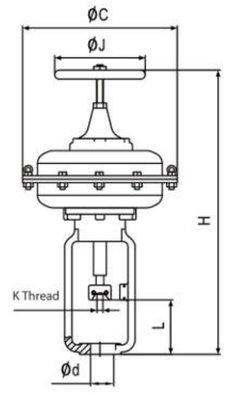


Figure 8. DL Series Actuator

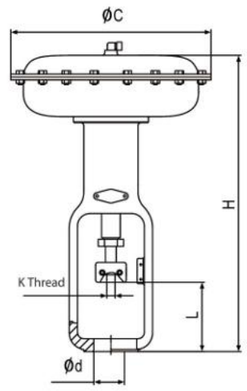


Figure 9. 857/867 Series Actuator

DL Series Actuator Technical Data Sheet

Model	Max Travel (mm)	Nominal Effective Diaphragm Area (cm^2)	Spring Range (Kpa)	Material Temperature Capabilities (℃)	L (mm)	Without Hand-wheel H(mm)	Top-mounted Hand-wheel H(mm)	Top-mounted Hand-wheel øJ(mm)	Φd (mm)	K Thread	ΦC (mm)	Weight (kg) Without Hand-wheel	Weight (kg) Top-mounted Hand-wheel
DL A/B 23	25	350	20～100	Ethylene-propylene rubber clip nylon -30～120 ℃	115	371	525	200	54	3/8"- 24UNF	285	15	20
DL A/B 34	40	560			177	470	675	200	71	1/2"- 20UNF	360	24	31
DL A/B 45	60	900			236	600	840	300	90	3/4"- 16UNF	470	42	49

857/867 Actuator Technical Data Sheet

Model	Max Travel (mm)	Nominal Effective Diaphragm Area (cm^2)	Spring Range (Kpa)	Material Temperature Capabilities (℃)	L(mm)		H (mm) Without Hand-wheel		H (mm) Top-mounted Hand-wheel		Φd (mm)	K Thread	ΦC (mm)	Weight (kg)	
					857	867	857	867	857	867				857	867
30	19	297	20～100 40～200	Nitrile synthetic rubber -40～+82 Silane synthetic rubber -54～+149 Fluorous rubber -18～+149	212.7	193.6	440	478	561	597	54	3/8"-24UNF	289	16	15
34	29	445			220.7	225.5	498	573	662	694	54	3/8"-24UNF	333	22	22
40	38	445			272.2	248.1	548	594	712	731	71	1/2"-20UNF	333	23	23
45	51	677			290.5	310.1	659	768	861	927	71	1/2"-20UNF	406	37	41
46	51	1006			290.5	310.1	656	748	858	907	71	1/2"-20UNF	473	49	55
50	51	677			354	325.4	722	784	924	943	90	3/4"-16UNF	406	42	43
60	51	1006			354	325.4	722	784	924	943	90	3/4"-16UNF	473	53	55
70	76	1419			406	375	840	933	1153	1219	90	3/4"-16UNF	536	107	115

Technical specifications

Configuration

- Globe type: Single-seat, Globe type control valve cage guiding balanced valve plug (Figure 1)
- Angle type: Angle type control valve, used in facilitating the tube or requesting body emission fluid situation

Valve Size(See Table 4)

End Connection Type

Steel & Stainless Steel Valve

- Flange Connection: 1~14", ANSI Class 150, 300, 600 RF or RTJ according to ASME B16.5
- Butt Weld Connection: 1~14", Pipe wall thickness sch.40 or sch.80, confirms to ASME B16.25

Max inlet pressure and temperature

Steel & Stainless Steel Valve

- Flange Connection: ANSI Class150, 300 and 600 according to ASME B16.34.
- Weld Connection: Confirms to 600# stipulation of ASME B16.34 standard.

Structure & Material

Plug & Metal-seat Parts (See Table 5)
All Other Parts (See Table 6)

Sealing Class and Temperature Range (See Table 3

Flow Characteristic

- Standard Cage: fast Opening, linear, equal percentage
- Noise reduction, anti- cavitation & aircraft type trim: linear

Flow Direction

- Globe or Angle Type: Standard Cage-Flow down
- Noise Reduction Type-Flow down
- Anti-cavitation Type-Flow up

Flow Coefficient

Refer to tables titled "coefficient" in this product brochure.

Size and Plug Travel (See Coefficient Table 14-Table 25)

Stem Diameter

- Globe Type(See Table 11)
- Angle Type(See Table 13)

Packing System

PTFE V-Ring & Graphite System (See Figure 3)

Approximate Weights(kg)

1″	16
1-1/2″	21
2″	43
2-1/2″	47
3″	61
4″	82
6″	164
8″	441
10″	536
12″	714
14″	1045
16″	1377

Other Options

- Body/Bonnet sealing connection type
- Bonnet can be extended according to the requirements of orders, suitable for deep freezing and high temperature applications.
- Applies to class V shutoff sealing valve trim