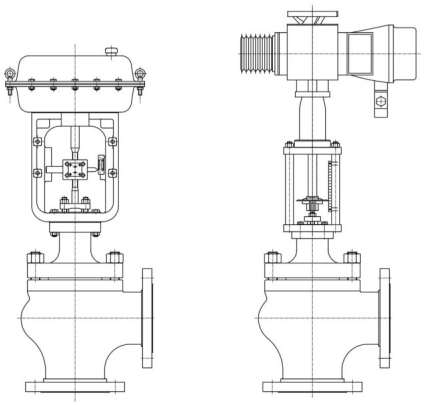
MCV200 Series High-Performance Control Valve

MCV-212 Angle Cage-Guided Double-Seat Control Valve

The MCV200 Series high-performance control valve features an advanced body design, compact construction, high flow capacity and low pressure-drop loss. The trim adopts a standardized modular design, allowing trim assemblies of different configurations and Cv values to be quickly combined, installed, removed or replaced to meet different to meet fluid-control requirements under various operating conditions, providing convenience for valve operation, online maintenance, functional expansion and upgrading. MCV-222 The angle cage-guided double-seat control valve is a high-performance severe-service valve with high allowable differential pressure. Seat shutoff performance complies with GB/T4213-2008 and ASME B16.104-1998. It is suitable for services requiring good dynamic stability and low noise, including variable ambient-temperature, high-temperature and high-differential-pressure fluid-control conditions.

□ Pneumatic control valves are fitted with M810 multi-spring pneumatic diaphragm actuators. Compact, lightweight, highly linear and easy to install. With a direct-acting actuator, the valve is air-to-close; with a reverse-acting actuator, it is air-to-open.

□ Electric control valves are fitted with 2SA3 series electric actuators based on Siemens licensed technology. The F-2SB35 series accurately executes control commands and is an ideal drive for remote, centralized and automatic valve control, Suitable for control of various regulating valves.



□ Main Sizes and Technical Specifications

● Nominal Size and Cv

Nominal Size (mm)		40			50			65			80		
Seat Diameter (mm)		25	32	40	32	40	50	40	50	65	50	65	80
Rated Cv	High Accuracy	10	17	24	17	24	44	24	44	68	44	68	99
	High Capacity	30			50			85			125		
Rated Stroke (mm)		25						40					

Nominal Size (mm)		100			125			150			200		
Seat Diameter (mm)		65	80	100	80	100	125	100	125	150	125	150	200
Rated Cv	High Accuracy	68	99	175	99	175	275	175	275	360	275	360	640
	High Capacity	200			320			420			700		
Rated Stroke (mm)		40			50						75		

● Main Technical Specifications

Leakage Class	Class IV, V (optional), VI (soft seat) - GB/T 4213-2008 / ASME B16.104-1998
Flow Characteristic	Equal Percentage (%) Linear (L)
Rangeability	50:1, 75:1 (optional)
Pressure Class	PN16 25 40 63 100; ANSI Class 150 300 600
Flange Standard	GB/T 9113–2000 HG/T 20592–2009 HG/T 20615–2009(ASME B16.5–2009) JB/T 79–1994
Flange Facing	Raised Face (RF) Male-and-Female Face (MFM) Ring-Type Joint (RJ) Socket-Weld Connection (SW) BW

□ Valve Construction and Features

● Body Type: MCV200 Series high-performance angle single-seat cast globe body.

○ S-shaped streamlined flow passage provides low pressure loss and high flow capacity.

○ Face-to-face dimensions comply with IEC 60534-3-1-2001 and ASME B16.10-2009.

○ Trim is interchangeable with the same-size MCV100 Series valve.

● Bonnet: separate bonnet, stud-bolted compression design.

○ Standard-temperature bonnet: -20°C to +230°C

○ Extended bonnet: -40°C to +350°C

○ Heat-dissipation bonnet: +350°C to +566°C

● Trim Type: Pressure-balanced cage-guided double-seat construction.

○ Sleeve-type seat provides good concentricity, stable plug guidance and high control accuracy.

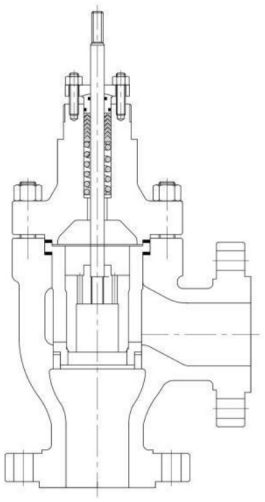
○ Snap-in sleeve seat provides high positioning accuracy and reliable sealing.

○ Cage directly clamps the seat, making assembly, maintenance and disassembly easy.

○ High flow coefficient and wide control range.

○ Seating surfaces are hardfaced with wear-resistant alloy for high-temperature and high-pressure service and long service life.

○ Pressure-balanced construction is suitable for severe-service, high-differential-pressure and high-temperature fluid control.



Valve Construction Drawing

□ Allowable Differential Pressure

● Air-to-Close, Metal Seat

Actuator	Supply Pressure (MPa)	Spring Range (MPa)	Allowable Differential Pressure (MPa)							
			Seat Diameter (mm)							
			40	50	65	80	100	125	150	200
M812D	0.14	0.02–0.10	0.97	0.76	0.65	0.53	0.41	–	–	–
	0.28	0.04–0.20	4.82	3.73	3.23	2.69	2.04	–	–	–
	0.40	0.08–0.24	9.81	9.81	9.68	8.07	6.16	–	–	–
M813D	0.14	0.02–0.10	1.72	1.34	1.15	0.95	0.72	0.61	0.51	–
	0.28	0.04–0.20	8.53	6.57	5.69	4.78	3.63	2.98	2.56	–
	0.40	0.08–0.24	9.81	9.81	9.81	9.81	9.81	8.75	7.71	–
M814D	0.14	0.02–0.10	–	–	1.98	1.64	1.26	1.06	0.88	0.72
	0.28	0.04–0.20	–	–	9.81	8.23	6.24	5.32	4.41	3.63
	0.40	0.08–0.24	–	–	9.81	9.81	9.81	9.81	9.81	9.81
M815D	0.14	0.02–0.10	–	–	–	–	3.86	3.24	2.66	2.17
	0.28	0.04–0.20	–	–	–	–	9.81	9.58	7.82	6.38
	0.40	0.08–0.24	–	–	–	–	9.81	9.81	9.81	9.81

● Air-to-Open, Metal Seat

Actuator	Supply Pressure (MPa)	Spring Range (MPa)	Allowable Differential Pressure (MPa)							
			Seat Diameter (mm)							
			40	50	65	80	100	125	150	200
M812R	0.25	0.04–0.20	0.97	0.76	0.65	0.53	0.41	–	–	–
	0.3	0.08–0.24	4.82	3.73	3.23	2.69	2.04	–	–	–
	0.4	0.16–0.32	9.81	9.81	9.68	8.07	6.16	–	–	–
M813R	0.25	0.04–0.20	1.72	1.34	1.15	0.95	0.72	0.61	0.51	–
	0.3	0.08–0.24	8.53	6.57	5.69	4.78	3.63	2.98	2.56	–
	0.4	0.16–0.32	9.81	9.81	9.81	9.81	9.81	8.75	7.71	–
M814R	0.25	0.04–0.20	–	–	1.98	1.64	1.26	1.06	0.88	0.72
	0.3	0.08–0.24	–	–	9.81	8.23	6.24	5.32	4.41	3.63
	0.4	0.16–0.32	–	–	9.81	9.81	9.81	9.81	9.81	9.81
M815R	0.25	0.04–0.20	–	–	–	–	3.86	3.24	2.66	2.17
	0.3	0.08–0.24	–	–	–	–	9.81	9.58	7.82	6.38
	0.4	0.16–0.32	–	–	–	–	9.81	9.81	9.81	9.81

● F-2SB35 Series Electric Type, Metal Seat

Actuator Model	Allowable Differential Pressure (MPa)							
	Seat Diameter (mm)							
	40	50	65	80	100	125	150	200
F–2SB3510	10.0	9.80	8.33	7.00	–	–	–	–
F–2SB3511	10.0	10.0	10.0	10.0	10.0	6.04	5.03	4.11
F–2SB3512	–	–	–	–	10.0	10.0	10.0	8.22

● 361L Electric Type, Metal Seat

Actuator Model	Allowable Differential Pressure (MPa)							
	Seat Diameter (mm)							
	40	50	65	80	100	125	150	200
361LSA–08	0.42	0.34	0.26	–	–	–	–	–
361LSA–20	2.52	2.11	1.66	–	–	–	–	–
361LSB–30	4.52	3.79	2.99	1.66	1.39	1.08	–	–
361LSB–50	8.52	7.15	5.65	3.14	2.63	2.04	1.54	1.33
361LSC–65	–	9.67	7.65	4.25	3.56	2.76	2.08	1.80
361LSC–99	–	–	9.81	6.84	5.73	4.45	3.88	2.90
361LSC–160	–	–	–	9.81	9.45	7.35	6.07	4.78
361LSC–260	–	–	–	–	9.81	9.81	9.70	7.91

□ Face-to-Face Dimension L

mm

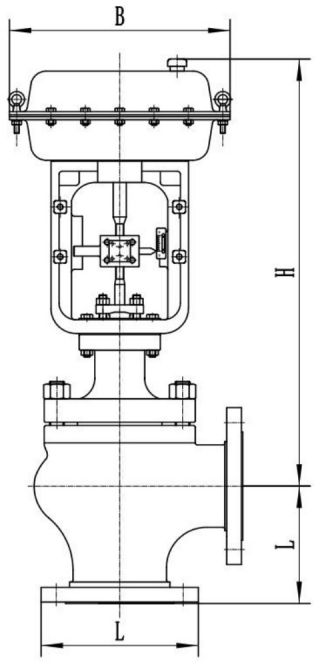
Nominal Size (mm)		25	32	40	50	65	80	100	125	150	200
L	ANSI150RF.PN1.6 MPa	95	105	111	127	138	149	176	203	226	272
	ANSI300RF.PN4.0 MPa	105	111	118	134	146	159	184	212	237	284
	ANSI600RF.PN6.3 MPa	111	120	126	143	156	169	197	226	254	305
	ANSI150RJ	105	111	118	134	145	156	183	208	232	278
	ANSI300RJ	111	120	124	142	154	167	192	222	245	292
	ANSI600RJ	111	120	126	145	157	170	199	235	256	307
	ANSI150 SW BW	111	120	126	143	156	169	197	222	237	284
	ANSI300 600SW BW	111	120	126	143	156	169	197	226	254	305

□ Overall Dimensions

• Pneumatic Valve Overall Dimensions

mm

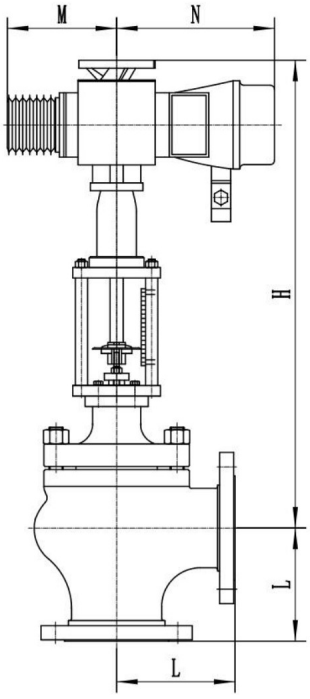
Nominal Size (mm)	Actuator	H		B
		Standard-Temperature Type	Heat-Dissipation Type	
25	M812	447	587	267
	M813	539	679	350
32	M812	482	632	267
	M813	575	725	350
40	M812	537	697	267
	M813	586	746	350
50	M812	540	710	267
	M813	589	759	350
65	M813	677	857	350
	M814	817	997	470
80	M813	705	895	350
	M814	816	1006	470
100	M813	722	922	350
	M814	833	1033	470
125	M813	760	990	350
	M814	887	1117	470
150	M813	760	990	350
	M814	887	1117	470
200	M814	1022	1282	470
	M815	1165	1425	580



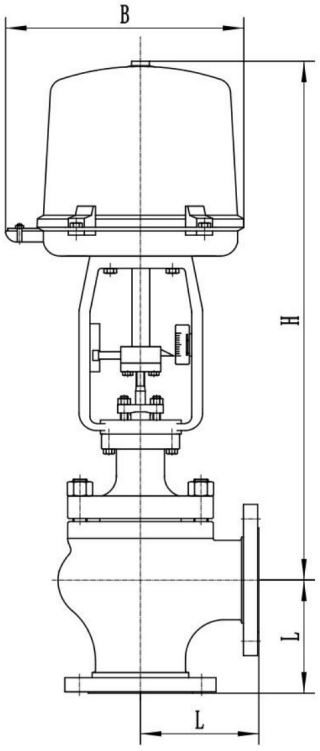
Outline Drawing with M810 Pneumatic Actuator

● Electric Valve Overall Dimensions (F-2SB35 Series Electric Type) mm

Nominal Size mm	F-2SB35 Series					361L Type			
	Actuator	H		M	N	Actuator	H		B
		Standard-Temperature Type	Heat-Dissipation Type				Standard-Temperature Type	Heat-Dissipation Type	
25	F–2SB3510	733	893	249	360	361LSA–20	495	635	225
32	F–2SB3510	759	919	249	360	361LSA–20	530	680	225
40	F–2SB3510	790	950	249	360	361LSA–20	565	725	225
50	F–2SB3510	795	965	249	360	361LSA–20	690	860	225
65	F–2SB3511	850	1030	249	360	361LSB–30	760	940	255
80	F–2SB3511	855	1045	249	360	361LSB–50	780	970	255
100	F–2SB3511	870	1070	249	360	361LSB–50	805	1005	255
125	F–2SB3511	910	1140	249	360	361LSC–65	1035	1265	310
150	F–2SB3512	915	1145	249	360	361LSC–65	1035	1265	310
200	F–2SB3512	1180	1410	249	360	361LSC–99	1135	1365	310



Outline Drawing with F-2SB35 Electric Actuator



Outline Drawing with 361L Electric Actuator

□ Complete Valve Weight

● Pneumatic Valve Weight

kg

Nominal Size (mm)	Actuator	PN16 ANSI150		PN40 ANSI300		PN63 ANSI600	
		Standard-Temperature Type	Heat-Dissipation Type	Standard-Temperature Type	Heat-Dissipation Type	Standard-Temperature Type	Heat-Dissipation Type
25	M812	3	25	24	26	26	28
	M813	31	33	32	34	34	36
32	M812	28	31	30	33	32	35
	M813	36	39	38	41	40	43
40	M812	31	34	36	39	44	47
	M813	43	46	48	51	56	59
50	M812	37	40	42	45	47	50
	M813	49	52	54	57	59	62
65	M813	55	59	60	64	77	81
	M814	86	90	91	95	108	112
80	M813	65	71	75	81	87	103
	M814	96	102	106	112	128	134
100	M813	75	85	90	100	125	135
	M814	106	116	121	131	156	166
125	M813	97	107	115	125	150	160
	M814	145	155	172	182	216	231
150	M813	157	172	187	202	237	252
	M814	188	203	218	233	243	268
200	M814	268	288	318	338	438	458

● Electric Valve Weight

kg

Nominal Size (mm)	Actuator	PN16 ANSI150		PN40 ANSI300		PN63 ANSI600	
		Standard-Temperature Type	Heat-Dissipation Type	Standard-Temperature Type	Heat-Dissipation Type	Standard-Temperature Type	Heat-Dissipation Type
25	F–2SB3510	45	47	51	54	53	56
	361LSA–08	20	22	26	29	28	31
32	F–2SB3510	50	53	56	59	58	61
	361LSA–20	25	28	31	34	33	36
40	F–2SB3510	53	56	58	61	66	69
	361LSA–20	28	31	33	36	41	44
50	F–2SB3510	59	62	64	67	69	72
	361LSA–20	34	37	39	42	44	47
65	F–2SB3511	62	66	67	71	84	88
	361LSB–50	46	50	51	55	68	72
80	F–2SB3511	72	78	82	88	104	110
	361LSB–50	56	62	66	72	88	94
100	F–2SB3511	82	92	97	107	132	142
	361LSB–50	66	76	81	91	116	126
125	F–2SB3511	108	118	135	145	218	233
	361LSC–65	126	136	153	161	236	251
150	F–2SB3512	165	180	195	210	245	260
	361LSC–65	182	197	212	227	262	277
200	F–2SB3512	242	262	292	312	412	432
	361LSC–99	257	277	307	327	427	447

□ Accessory Configuration

- Positioner
- Air Filter Regulator
- Limit Switch
- Volume Booster
- Solenoid Valve
- Valve Position Transmitter
- Lock-Up Valve
- Handwheel Operator

□ Selection and Ordering Information

Provide the following information when requesting selection assistance or ordering:

- Valve name and model
- Nominal size, seat size / flow coefficient Cv
- Pressure class, connection type and flange standard
- Body material, trim material and whether hardening treatment is required
- Plug type and flow characteristic
- Actuator type and supply pressure
- Electric actuator operating voltage and signal
- Required valve position upon signal failure or air-supply failure
- Medium name and properties; whether suspended solids or particles are present
- Medium density and temperature
- Normal, maximum and minimum flow rates
- Medium pressure; valve inlet and outlet pressures at fully open and fully closed positions
- Accessory requirements, signal and explosion-proof requirements
- Special requirements such as oil-free, copper-free and water-free construction
- Special inspection requirements, material inspection, NDE, etc.