

Model 03 (Mixing Service) & 04 (Diverting Service) THREE-WAY TYPE CONTROL VALVES

Three-way type control valves are used for controlling the fluids mutually to three directional pipings, i.e., **mixing service (Model 03)** and **diverting service (Model 04)**.

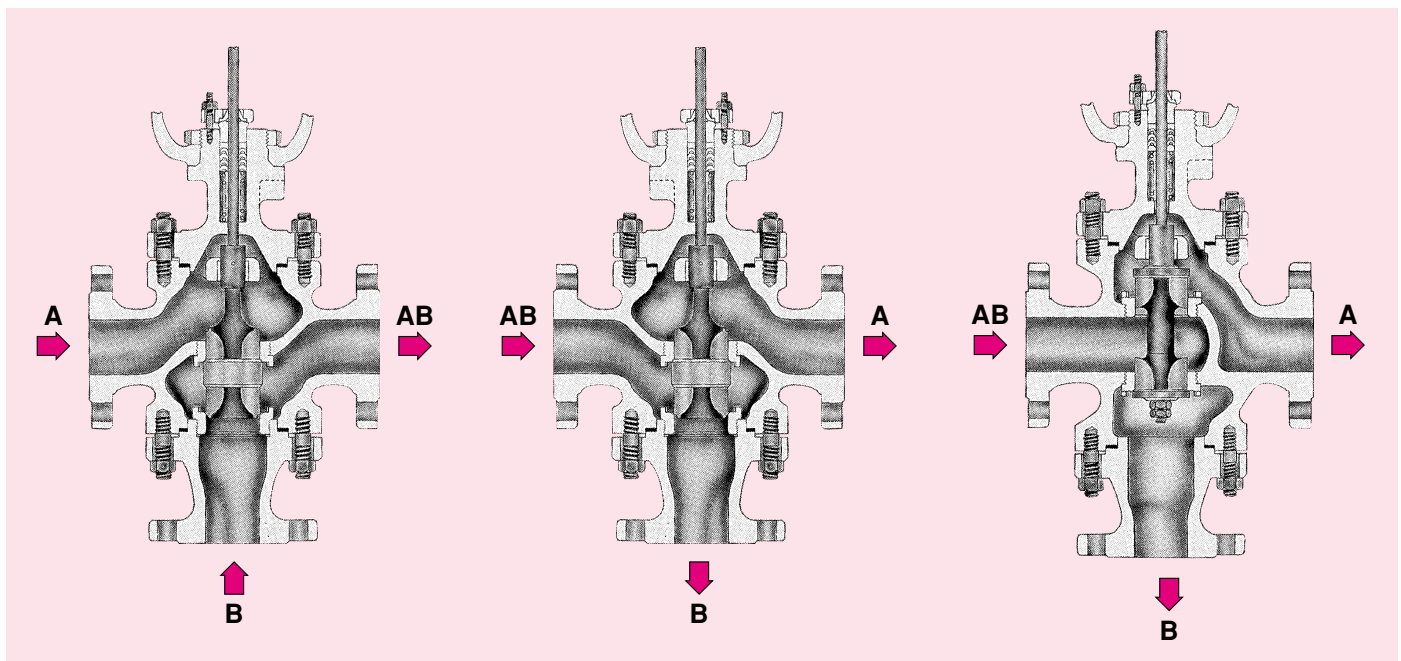
Model 03 valve body with valve size 65mm or smaller is applied to Model 04 diverting service.

The actuators are compactly designed multi-spring diaphragm operated type, and permit high thrust.

Model 03
(15A ~ 250A)

Model 04
(15A ~ 65A)

Model 04
(80A ~ 250A)



03
04

1. SPECIFICATIONS

Valve Type		Diaphragm operated three-way type control valve												
Valve Model No.		3803, 3804						2803, 2804						
VALVE BODY	Body Type	Model 03 mixing service, 04 diverting service, Globe type three-way												
	Valve Sizes <small>(note 6)</small>	(mm)	15	20	25	40	50	65	80	100	125	150	200	250
		(in.)	1/2	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8	10
	Pressure Rating	JIS 10K, 20K, 30K, 40K; ASME/JPI Class 150, 300, 600												
	End Connections	Flanged end : FF, RF, RJ, Male and female, Tongue and groove												
	Body Materials	A48 Cl.35, WCB, CF8, CF8M												
	Bonnet Type	Plain (-17 °C to +230 °C), Finned (-20 °C to under -17 °C, over +230 °C) Bellows seal (See page 3)												
	Gland Type	Bolted gland												
	Packing(Non Asbestos)	Braided packing, Molded packing												
	Gaskets(Non Asbestos)	Flat gasket, Serrated gasket												
	Guiding	Port guide												
	Seat Type	Single seated (one seat per one flow direction)												

03
04

VALVE BODY	Valve Plug Shapes	V-Port (V), Quik opening (Q)					
	Plug Characteristics	Linear, Quik opening					
	Trim Materials	SUS 316					
	Treatment of Trim	See page 3 "Main Materials"					
ACTUATOR	Actuator Type	Model 3800 Multi-spring type single acting diaphragm Actuator				Model 2800 Spring type single acting diaphragm Actuator	
	Actuator Sizes	N24	N28	N33S	N40	500S	650S
	Max. Stroke (mm)	25	38	38	65	65	65
	Supply Air Press.	120(1.2), 240(2.4), 280(2.8) kPaG(kgf/cm ² G)				120(1.2), 240(2.4), 280(2.8) kPaG(kgf/cm ² G)	
	Spring Range	20 ~ 100(0.2 ~ 1.0), 40 ~ 200(0.4 ~ 2.0) 80 ~ 200(0.8 ~ 2.0) kPaG(kgf/cm ² G)				20 ~ 100(0.2 ~ 1.0), 40 ~ 200(0.4 ~ 2.0) 60 ~ 220(0.6 ~ 2.2) kPaG(kgf/cm ² G)	
	Action	Direct action (DA), Reverse action (RA)					
	Materials	(Diaphragm) Cloth reinforced chloroprene rubber, (Yoke) FC200					
	Air Connection	Rc 1/4, Rc 3/8 (only 650S)					
	Ambient Temperature	-20 °C ~ +70 °C (※ -50 °C ~ -20 °C, +70 °C ~ +100 °C)				-30 °C ~ +70 °C (※ -50 °C ~ -30 °C, +70 °C ~ +100 °C)	
Painting Color	Silver, (No painting on stainless steal)						
VALVE CHARACTERISTICS AND PERFORMANCE (1)	Control Mode	Throttling control, On-off control					
	Valve Action	See page 4 [Service Configuration]					
	Applicable Press. Range	9.81 MPaG (100 kgf/cm ² G) or less (Pressure limit shall conform to the standard of material & pressure temperature rating)					
	Applicable Temp. Range	-20 °C ~ +300 °C (3)/(5) (Temperature limit shall conform to the standard of material & pressure temperature rating)					
	Allowable Differential Press.	See page 5 "Allowable Shut-off Pressure"					
	Rated Cv Value	See page 5 "Rated Cv Value"					
	Flow Characteristics	See page 5 "Flow Characteristics"					
	Inherent Rangeability	50 : 1					
	Allowable Seat leakage Rate	Metal Seat	V-Port	0.1 % of rated Cv (ANSI/FCI Class III), ※ 0.05 % of rated Cv			
			Quick Opening	0.05 % of rated Cv			
		Soft Seat	Quick Opening	0.01 % of rated Cv (ANSI/FCI Class IV), ※ 0.001 % of rated Cv			
Action Accuracy	Hysteresis Error (with Positioner)		Max. 2 % F.S.				
	Linearity (with Positioner)		Max. ± 2 % F.S.				
OPTIONS *	Valve Body	Jacket type, Special treatment for trim					
	Actuator	Handwheel (Top-mounted handwheel, Side-mounted handwheel) Travel stop, Diaphragm material Ethylene propylene rubber. Yoke material : SCPH2					
	Accessories	Pneumatic positioner (PA92A), Electro-pneumatic positioner (EA91A, EA90A, EA10S) Air filter regulator (MR2000), Limit switch, Solenoid valve, Booster relay. Speed controller, Lock up valve, Pneumatic operated valve.					
	Others	The High Pressure Gas Safety Low Certification, Oil Free, Water -Free, Sandproof, Dustproof, Anti-salt damage, Vacuum service, Cold district spec. Tropical district spec. External exposure bolt & nut S.S. Optional painting color.					

- [Notes]** (1) Valve performance is represented under the condition of standard packing (P4519 + V7010)
 (2) ※ Manufactured and mounted as option according to customer's request.
 (3) Do not exceed the maximum differential temperature 150 °C in each inlet fluid for mixing service.
 (4) For slurry service or high temperature service (over 300 °C) ※ contoured plug and ※ support guiding are provided (Model 03-P & 04-P).
 In this case rangeability is 30 : 1.
 (5) For an application, service condition lower than -20 °C, please contact our sales office.
 (6) Body pattern for valve size 1/2"(15mm) and 3/4"(20mm) is the same.
 All the specification for valve size 1/2"(15mm) is the same as for the size 3/4"(20mm) except connection flanges.

2. MAIN MATERIALS

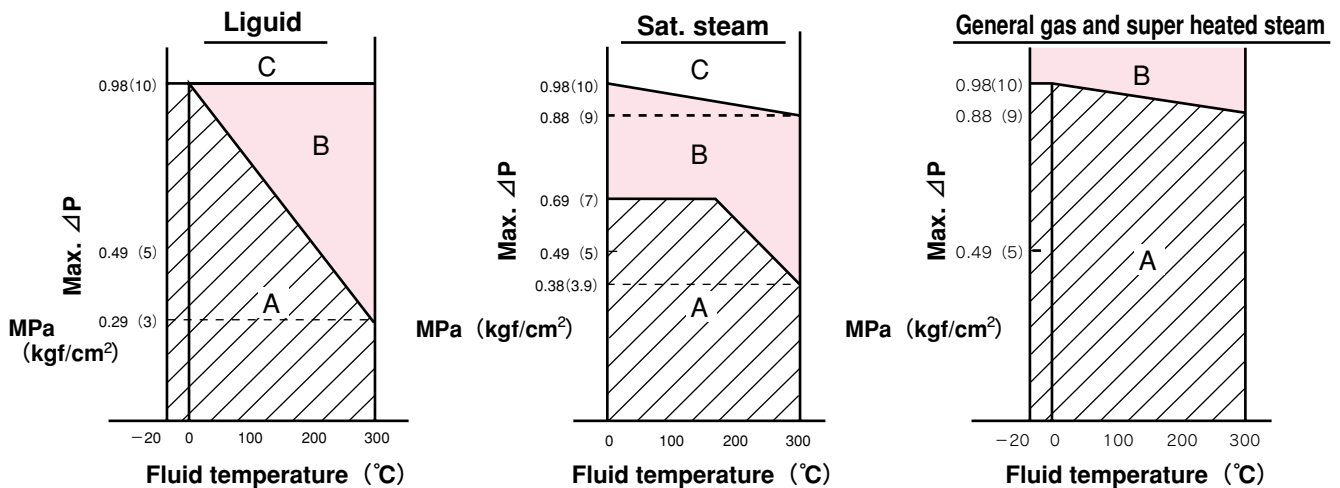
1 Typical Combination of Materials

Parts Name		Materials			
Body, Bonnet		A48 CI.35	WCB	CF8	CF8M
Trim	Seat Ring Valve Plug	SUS 316			
	Valve Stem	SUS 316			
	Guide Bushing	SUS 630			SUS 316
Stud Bolt & Nut		SS400/SS400	A193 Gr B7/S45C(H) (Class 150 or less S45C(H)/S45C(N))	SUS304/SUS304 (Class 600 only A193GrB8 Cl.2/SUS304)	

- [Notes]** (1) This table shows typical combination of materials. The combination may be subject to change by pressure, temperature and kind of fluid.
 (2) Material designation is represented by new JIS(SI Unit). Please be noted that approval drawing and other documents might be specified by old material designation.
 (3) Trim materials may be used casting instead of bar materials.

2 Pressure and Temperature Range for CoCr Alloy Hard Facing on Trim

A : CoCr Alloy is not required B : CoCr Alloy seat C : Seat-ring CoCr Alloy face and valve plug CoCr Alloy seat

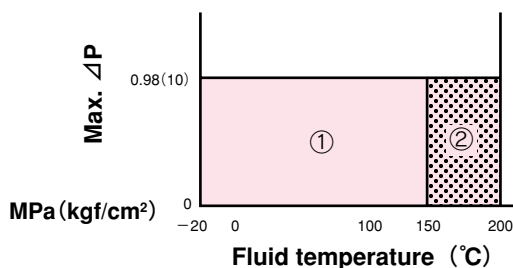


- [Notes]** (1) CoCr Alloy seat or higher grade surface treatment is required for On-Off valves.
 (2) CoCr Alloy face or higher grade surface treatment is required for flushing services.

3 Pressure and Temperature Range of Soft Disc

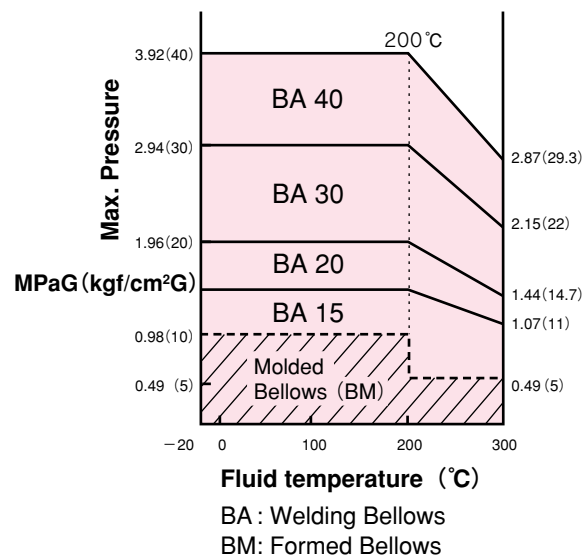
(Quick Opening only)

Disc Materials : ① PTFE
 ② Glass reinforced PTFE



4 Pressure and Temperature Range of Bellows Seal Bonnet

Bellows Material : SUS 316 L



3. SCOPE OF PRODUCTION

1 Combination of Valve Body and Actuator

Valve Model No.		3803, 3804				2803, 2804	
Actuator Size		N24	N28	N33S	N40	500S	650S
Valve Size	Actuator Size						
15, 20 (mm)	1/2, 3/4 (in.)	●	●	●			
25	1	●	●	●			
40	1 1/2	●	●	●	●	●	
50	2	●	●	●	●	●	
65	2 1/2	●	●	●	●	●	
80	3		●	●	●	●	●
100	4		●	●	●	●	●
125	5				●	●	●
150	6				●	●	●
200	8				(●)	●	●
250	10				(●)	●	●

[Note]

(●) is available only in case of 40kPaG (0.4kgf/cm²G) of off-balance.

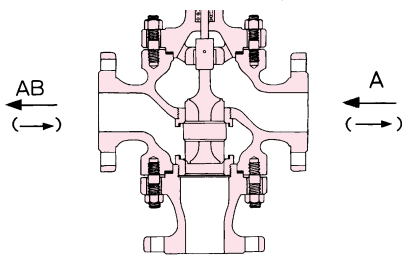
2 Scope of Port

Full port size is only available in correspondence with valve size. (Reduced port valve is not available.)

4. SERVICE CONFIGURATION

Model 03 Mixing Service (Classification M1, M2)

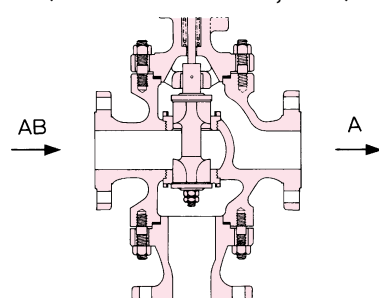
Model 04 Diverting service (Classification D1-S, D2-S)



B ↑ ↓

[Note] (→) represents diverting service.

Model 04 Diverting Service (Classification D1-L, D2-L)



B ↓

		Flow Condition		Flow Direction		
Model No. Service	Classification	Decrease in Supply Air Press.	Increase in Supply Air Press.	Valve Size (mm)	Flow	Action of Actuator
03 Mixing	M1			15 ~ 250		DA
	M2			15 ~ 250		RA
04 Diverting	D1-S			15 ~ 65		DA
	D1-L			80 ~ 250		RA
	D2-S			15 ~ 65		RA
	D2-L			80 ~ 250		DA

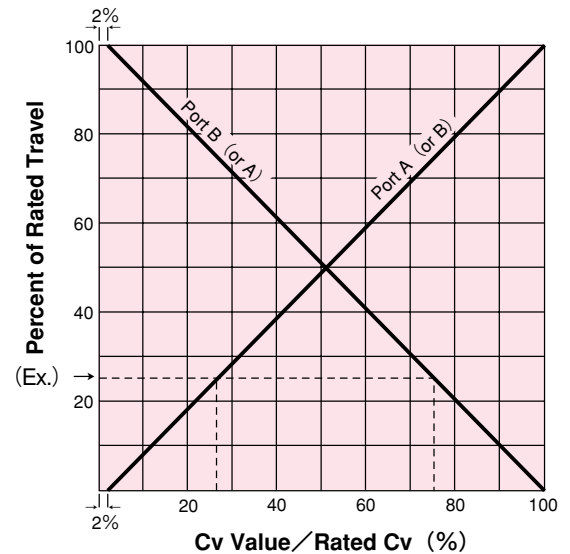
[Notes] (1) The body for mixing service is used for diverting service in valve size 15mm thru 65mm.
 (2) Please specify this classification mark on your order.

5. FLOW CHARACTERISTICS

1 Rated Cv Value

Port Size		Rated Travel (mm)	V-Port	Quick Opening
(mm)	(in.)			
15, 20	1/2, 3/4	15	6.5	9
25	1		10.5	13
40	1 1/2	20	24	27
50	2	25	40	46
65	2 1/2		60	72
80	3	38	84	100
100	4		140	165
125	5	50	200	270
150	6		290	400
200	8	65	500	660
250	10		750	1100
Inherent Rangeability			50 : 1	—

2 Flow Characteristics



[Example]

In Classification D1-L diverting service (see page 4), when the valve is opened 25% of the full travel, approx 74% of total flow rate in upper port AB flows out through down port B, and the rest 26% flows out through another down port A. As the travel increases further, the flow rate decreases through port B and increases through port A.

6. ALLOWABLE DIFFERENTIAL PRESSURE

1 Off-balance Classification

Unit : kPaG(kgf/cm²G)

Action	Spring Range Actuator Size		Supply Air Pressure	Off- balance	Positioner
	N24 ~ N40	500, 650			
V-Port	20 ~ 100 (0.2 ~ 1.0)		120 (1.2)	20 (0.2)	With/Without
	40 ~ 200 (0.4 ~ 2.0)		240 (2.4)	40 (0.4)	
	—	60 ~ 220 (0.6 ~ 2.2)	280 (2.8)	60 (0.6)	With
	80 ~ 200 (0.8 ~ 2.0)	—	280 (2.8)	80 (0.8)	
Quick opening	40 ~ 200 (0.4 ~ 2.0)		240 (2.4)	40 (0.4)	—
	—	60 ~ 220 (0.6 ~ 2.2)	280 (2.8)	60 (0.6)	
	80 ~ 200 (0.8 ~ 2.0)	—	280 (2.8)	80 (0.8)	

2 Allowable Shut-off Pressure

Unit : MPa(kgf/cm²)

Port Size		V-Port										
Actuator Size	Offbalance	15, 20 (mm)	25	40	50	65	80	100	125	150	200	250
		1/2, 3/4 (in.)	1	1 1/2	2	2 1/2	3	4	5	6	8	10
N24	20 (0.2)	0.98 (10)	0.69 (7.1)	0.34 (3.5)	0.20 (2.1)	0.13 (1.4)						
	40 (0.4)	1.96 (20)	1.37 (14)	0.69 (7.1)	0.41 (4.2)	0.27 (2.8)						
	80 (0.8)	4.02 (41)	2.74 (28)	1.37 (14)	0.83 (8.5)	0.55 (5.7)						
N28	20 (0.2)	1.27 (13)	0.90 (9.2)	0.45 (4.6)	0.26 (2.7)	0.17 (1.8)	0.12 (1.3)	0.06 (0.7)				
	40 (0.4)	2.64 (27)	1.76 (18)	0.90 (9.2)	0.53 (5.5)	0.35 (3.6)	0.25 (2.6)	0.14 (1.5)				
	80 (0.8)	5.29 (54)	3.53 (36)	1.76 (18)	1.07 (11)	0.71 (7.3)	0.50 (5.2)	0.29 (3.0)				
N33	20 (0.2)	1.96 (20)	1.27 (13)	0.65 (6.7)	0.39 (4.0)	0.26 (2.7)	0.18 (1.9)	0.10 (1.1)				
	40 (0.4)	3.92 (40)	2.64 (27)	1.27 (13)	0.79 (8.1)	0.52 (5.4)	0.37 (3.8)	0.21 (2.2)				
	80 (0.8)	7.84 (80)	5.29 (54)	2.64 (27)	1.56 (16)	0.98 (10)	0.75 (7.7)	0.44 (4.5)				
N40	20 (0.2)			0.93 (9.5)	0.55 (5.7)	0.37 (3.8)	0.26 (2.7)	0.14 (1.5)	0.09 (1.0)	0.06 (0.7)	0.03 (0.4)	0.01 (0.2)
	40 (0.4)			1.86 (19)	1.07 (11)	0.74 (7.6)	0.52 (5.4)	0.30 (3.1)	0.21 (2.2)	0.13 (1.4)	0.07 (0.8)	0.04 (0.5)
	80 (0.8)			3.72 (38)	2.15 (22)	1.47 (15)	0.98 (10)	0.61 (6.3)	0.40 (4.1)	0.28 (2.9)	—	—
500	20 (0.2)			1.47 (15)	0.93 (9.5)	0.61 (6.3)	0.44 (4.5)	0.25 (2.6)	0.16 (1.7)	0.11 (1.2)	0.05 (0.6)	0.03 (0.4)
	40 (0.4)			3.04 (31)	1.86 (19)	1.17 (12)	0.89 (9.1)	0.51 (5.3)	0.33 (3.4)	0.23 (2.4)	0.12 (1.3)	0.08 (0.9)
	60 (0.6)			4.60 (47)	2.74 (28)	1.86 (19)	1.27 (13)	0.77 (7.9)	0.50 (5.1)	0.35 (3.6)	0.19 (2.0)	0.12 (1.3)
650	20 (0.2)						—	—	—	—	—	—
	40 (0.4)						1.47 (15)	0.90 (9.2)	0.57 (5.9)	0.41 (4.2)	0.23 (2.4)	0.14 (1.5)
	60 (0.6)						2.25 (23)	1.27 (13)	0.87 (8.9)	0.61 (6.3)	0.35 (3.6)	0.22 (2.3)

Unit : MPa(kgf/cm²)

Port Size		Quick Opening										
15, 20 (mm)		25	40	50	65	80	100	125	150	200	250	
Actuator Size	Offbalance	1/2, 3/4 (in.)	1	1 1/2	2	2 1/2	3	4	5	6	8	10
N24	40 (0.4)	1.86 (19)	1.27 (13)	0.63 (6.5)	0.35 (3.6)	0.23 (2.4)						
	80 (0.8)	3.72 (38)	2.54 (26)	1.27 (13)	0.71 (7.3)	0.48 (4.9)						
N28	40 (0.4)	2.45 (25)	1.56 (16)	0.83 (8.5)	0.46 (4.7)	0.30 (3.1)	0.20 (2.1)	0.12 (1.3)				
	80 (0.8)	4.90 (50)	3.23 (33)	1.66 (17)	0.93 (9.5)	0.61 (6.3)	0.42 (4.3)	0.26 (2.7)				
N33	40 (0.4)	3.62 (37)	2.35 (24)	1.17 (12)	0.68 (7.0)	0.45 (4.6)	0.31 (3.2)	0.19 (2.0)				
	80 (0.8)	7.25 (74)	4.80 (49)	2.45 (25)	1.37 (14)	0.91 (9.3)	0.62 (6.4)	0.38 (3.9)				
N40	40 (0.4)			1.66 (17)	0.96 (9.8)	0.64 (6.6)	0.44 (4.5)	0.27 (2.8)	0.17 (1.8)	0.12 (1.3)	0.06 (0.7)	0.03 (0.4)
	80 (0.8)			3.43 (35)	1.86 (19)	1.27 (13)	0.88 (9.0)	0.54 (5.6)	0.36 (3.7)	0.25 (2.6)	—	—
500	40 (0.4)			2.84 (29)	1.56 (16)	1.07 (11)	0.73 (7.5)	0.46 (4.7)	0.30 (3.1)	0.21 (2.2)	0.11 (1.2)	0.07 (0.8)
	60 (0.6)			4.31 (44)	2.35 (24)	1.56 (16)	1.07 (11)	0.68 (7.0)	0.45 (4.6)	0.32 (3.3)	0.17 (1.8)	0.11 (1.2)
650	40 (0.4)						1.27 (13)	0.79 (8.1)	0.52 (5.4)	0.38 (3.9)	0.20 (2.1)	0.13 (1.4)
	60 (0.6)						1.86 (19)	1.17 (12)	0.79 (8.1)	0.56 (5.8)	0.31 (3.2)	0.20 (2.1)

- [Notes] (1) portion shows standard combination of valve Body and Actuator.
 (2) Shut-off pressure of this table shows the valve only with standard gland packing (P4519 + V7010).
 (3) The Unit of Off-balance is kPaG(kgf/cm²G)

7. MAIN DIMENSIONS AND WEIGHTS

1 Face-to-Face Dimensions of Valve

Model 03 (Mixing Service)

Unit : mm

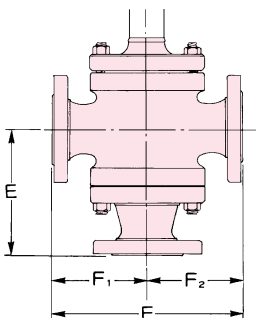
Press. Rating	Valve Size	JIS 10K RF ASME 150RF		JIS 20K RF ASME 300RF		JIS 30K, 40K RF ASME 300RJ, 600RF		ASME 600RJ	
		F		E		F		E	
		F ₁	F ₂	F ₁	F ₂	F ₁	F ₂	F ₁	F ₂
15,20	1/2, 3/4	184	135	194	135	206	140	206	140
		92 92		97 97		103 103		103 103	
25	1	184	135	197	135	210	140	210	140
		92 92		98.5 98.5		105 105		105 105	
40	1 1/2	222	168	235	168	251	173	251	173
		111 111		117.5 117.5		125.5 125.5		125.5 125.5	
50	2	254	180	267	180	286	185	289	185
		127 127		133.5 133.5		143 143		144.5 144.5	
65	2 1/2	276	200	292	200	311	205	314	205
		138 138		146 146		155.5 155.5		157 157	
80	3	298	220	317	220	337	237	340	237
		149 149		158.5 158.5		168.5 168.5		170 170	
100	4	352	245	368	245	394	275	397	275
		176 176		184 184		197 197		198.5 198.5	
125	5	403	280	425	280	457	310	460	310
		201.5 201.5		212.5 212.5		228.5 228.5		230 230	
150	6	451	320	473	320	508	350	511	350
		225.5 225.5		236.5 236.5		254 254		255.5 255.5	
200	8	543	370	568	370	610	408	613	408
		271.5 271.5		284 284		305 305		306.5 306.5	
250	10	708	450	708	450	752	478	755	478
		354 354		354 354		376 376		377.5 377.5	

Model 04 (Diverting Service)

Unit : mm

Press. Rating	Valve Size	JIS 10K RF ASME 150RF		JIS 20K RF ASME 300RF		JIS 30K, 40K RF ASME 300RJ, 600RF		ASME 600RJ	
		F		E		F		E	
		F ₁	F ₂	F ₁	F ₂	F ₁	F ₂	F ₁	F ₂
15,20	1/2, 3/4	184	135	194	135	206	140	206	140
		92 92		97 97		103 103		103 103	
25	1	184	135	197	135	210	140	210	140
		92 92		98.5 98.5		105 105		105 105	
40	1 1/2	222	168	235	168	251	173	251	173
		111 111		117.5 117.5		125.5 125.5		125.5 125.5	
50	2	254	180	267	180	286	185	289	185
		127 127		133.5 133.5		143 143		144.5 144.5	
65	2 1/2	276	200	292	200	311	205	314	205
		138 138		146 146		155.5 155.5		157 157	
80	3	298	248	317	248	337	265	340	265
		139 159		148.5 168.5		158.5 178.5		160 180	
100	4	352	280	368	280	394	310	397	310
		161 191		169 199		182 212		183.5 213.5	
125	5	403	320	425	320	457	350	460	350
		186 217		197 228		213 244		214.5 245.5	
150	6	451	360	473	360	508	390	511	390
		208 243		219 254		236.5 271.5		238 273	
200	8	543	430	568	430	610	468	613	468
		246 297		259 309		285 325		286.5 326.5	
250	10	708	500	708	500	752	528	755	528
		328 380		328 380		361 391		362.5 392.5	

- [Notes] (1) Face-to-face dimension in shaded zone conforms to IEC60534-3-1 (JIS B2005-3-1) and ANSI/ISA-S75.08.01.
 (2) Face-to-face dimension of male and female, tongue and groove flange for JIS 10K-30K(ASME 150, ASME 300) are identical with JIS 30K RF.
 (3) Face-to-face dimension for diverting service with valve size 20mm thru 65mm conforms to the dimension for mixing service with same size.
 (4) As to the contoured plug and support guiding valves used for slurry service or high temperature service (over 300 °C), dimension "E" differ from above table.
 (5) Since pressure rating of valve size 10"(250mm) is ASME 300, the Face-to-Face dimension is the same as JIS10K (ASME 150) and JIS20K (ASME 300).



2 Standard Dimensions

Unit : mm

Valve Size (mm) (in.)		Actuator Size	D	Model 03 (Mixing Service)										Model 04 (Mixing Service)								CR		
				Plain Bonnet		Finned Bonnet				Bellows seal Bonnet				Plain Bonnet		Finned Bonnet				Bellows seal Bonnet				
						10K		20K and over		Molded		Welded				10K		20K and over		Molded			Welded	
				G	C	G	C	G	C	G	C	G	C	G	C	G	C	G	C	G	C		G	C
15, 20	1/3, 3/4	N24	240		425		465		480		610		680		425		465		480		610		680	C+25
		N28	280	124	460	168	505	181	520	311	650	383	720	124	460	168	505	181	520	311	650	383	720	
		N33S	330		520		560		575		705		775		520		560		575		705		775	
25	1	N24	240		425		465		480		610		680		425		465		480		610		680	
		N28	280	124	460	168	505	181	520	311	650	383	720	124	460	168	505	181	520	311	650	383	720	
		N33S	330		520		560		575		705		775		520		560		575		705		775	
40	1 1/2	N24	240		440		495		510		680		725		440		495		510		680		725	
		N28	280	143	480	195	535	211	550	381	720	427	765	143	480	195	535	211	550	381	720	427	765	
		N33S	330		535		590		605		775		820		535		590		605		775		820	
50	2	N24	240		455		505		525		690		770		455		505		525		690		770	
		N28	280	156	495	208	545	224	560	390	730	469	810	156	495	208	545	224	560	390	730	469	810	
		N33S	330		550		600		620		785		860		550		600		620		785		860	
65	2 1/2	N24	240		465		520		535		700		780		465		520		535		700		780	
		N28	280	167	505	219	560	235	575	401	740	480	820	167	505	219	560	235	575	401	740	480	820	
		N33S	330		560		610		630		795		875		560		610		630		795		875	
80	3	N28	280		530		590		615		885		910		560		615		640		910		945	
		N33S	330	194	590	249	640	275	670	546	940	570	965	222	615	277	670	303	695	574	970	606	1000	
		N40	400	222	740	264	780	288	805	636	1155	658	1175	250	770	292	810	316	835	664	1180	686	1205	
100	4	N28	280		555		610		635		905		930		590		645		670		940		970	
		N33S	330	217	610	272	665	298	690	566	960	594	990	252	645	307	700	333	725	601	995	633	1025	
		N40	400	245	760	287	805	311	830	656	1175	678	1195	280	800	322	840	346	865	691	1210	713	1230	
125	5	N40	400		815		850		880		1280		1340		855		890		920		1320		1380	
		500S	500	298	1035	335	1070	362	1100	762	1500	823	1560	338	1075	375	1110	402	1140	802	1540	863	1600	
150	6	N40	400		830		865		890		1290		1355		870		905		930		1330		1395	
		500S	500	311	1045	348	1085	375	1110	775	1510	836	1570	351	1085	388	1125	415	1150	815	1550	876	1610	
200	8	N40	400		880		920		950		1430		1515		940		980		1010		1490		1575	
		500S	500	361	1095	403	1140	433	1170	915	1650	999	1735	421	1155	463	1200	493	1230	975	1710	1059	1795	
		650S	650	366	1395	438	1465	470	1470	940	1970	1024	2055	421	1455	498	1495	498	1525	1000	2035	1084	2115	
250	10	N40	400		920		990		955		1470		1555		970		1040		1040		1520		1605	
		500S	500	401	1135	473	1210	473	1210	955	1690	1039	1775	451	1185	523	1260	523	1260	1005	1740	1089	1825	
		650S	650	406	1435	478	1505	478	1510	980	2010	1064	2095	451	1485	523	1555	523	1555	1030	2065	1114	2145	

03
04

[Notes] (1) Dimension C applies for direct acting actuator. For reverse acting actuator, dimension CR applies.
 (2) The figures, indicated lower part of the column marked ※, only apply to the rating of JIS 40K (ASME 600).

Plain Bonnet Type Finned Bonnet Type

Bellows Seal Bonnet Type

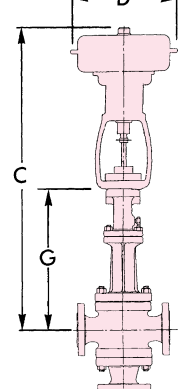
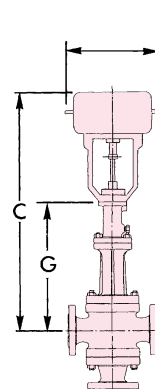
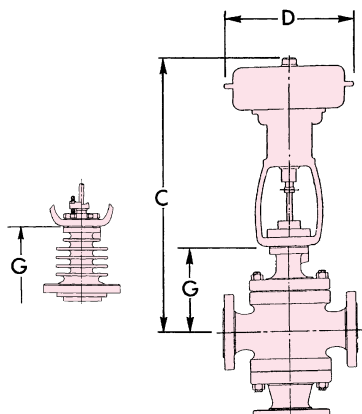
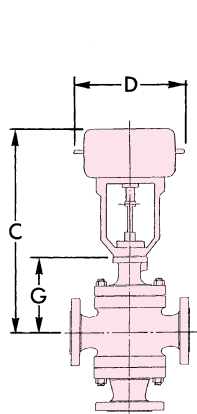
Actuator Size

N24 ~ N40

500, 650

N24 ~ N40

500, 650



3 Weights

Following table shows standard weights for valve body assembly completed with actuator except accessories. As to the weights not represented in this table, please contact your nearest our sales office.

Model 03

Unit : kg

Valve Size (mm) (in.)	15·20		25		40		50		65		80		100		125		150		200			250			
	1/2	3/4	1		1 1/2		2		2 1/2		3		4		5		6		8			10			
Press.Rating	10K	20,30 40K	10K	20,30 40K	10K	20,30 40K	10K	20,30 40K	10K	20,30 40K	10K	20,30 40K	10K	20,30 40K	10K	20,30 40K	10K	20,30 40K	10K	20K	30,40K	10K	20K	30,40K	
Actuator Size	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300	ASME 600	ASME 150	ASME 300	ASME 600	
N24	23	27	26	35	35	43	39	50	49	62															
N28	26	30	29	38	38	46	42	53	52	65	61	83	82	123											
N33S	35	39	53	47	47	55	51	62	61	74	70	92	91	132											
N40											95	117	116	157	148	194	178	221	274	350	490	485	574	720	
500S															184	230	214	257	310	386	525	520	610	765	
650S																			495	571	710	705	795	950	

Model 04

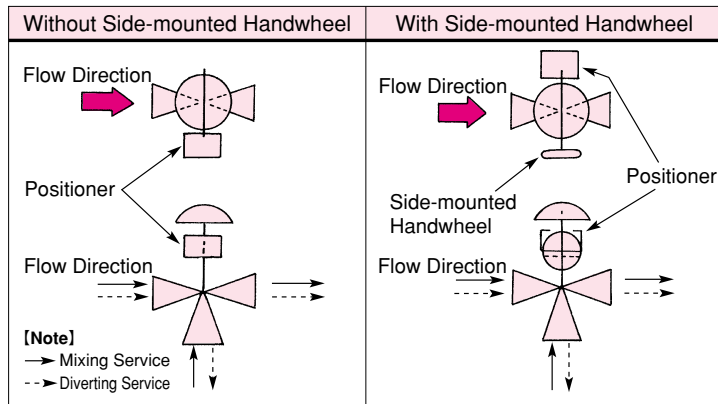
Unit : kg

Valve Size (mm) (in.)	15·20		25		40		50		65		80		100		125		150		200			250			
	1/2	3/4	1		1 1/2		2		2 1/2		3		4		5		6		8			10			
Press.Rating	10K	20,30 40K	10K	20,30 40K	10K	20,30 40K	10K	20,30 40K	10K	20,30 40K	10K	20,30 40K	10K	20,30 40K	10K	20,30 40K	10K	20,30 40K	10K	20K	30,40K	10K	20K	30,40K	
Actuator Size	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300,600	ASME 150	ASME 300	ASME 600	ASME 150	ASME 300	ASME 600	
N24	23	27	26	35	35	43	39	50	49	62															
N28	26	30	29	38	38	46	42	53	52	65	66	92	103	134											
N33S	35	39	53	47	47	55	51	62	61	74	75	101	112	143											
N40											100	126	137	168	173	224	218	256	335	410	520	515	605	780	
500S															209	250	254	292	371	446	550	550	640	815	
650S																			556	631	735	735	825	1000	

[Note] The weights of actuator size 500S and 650S shows on direct action.

8. MOUNTING ORIENTATIONS

Standard mounting orientations are as follows.



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