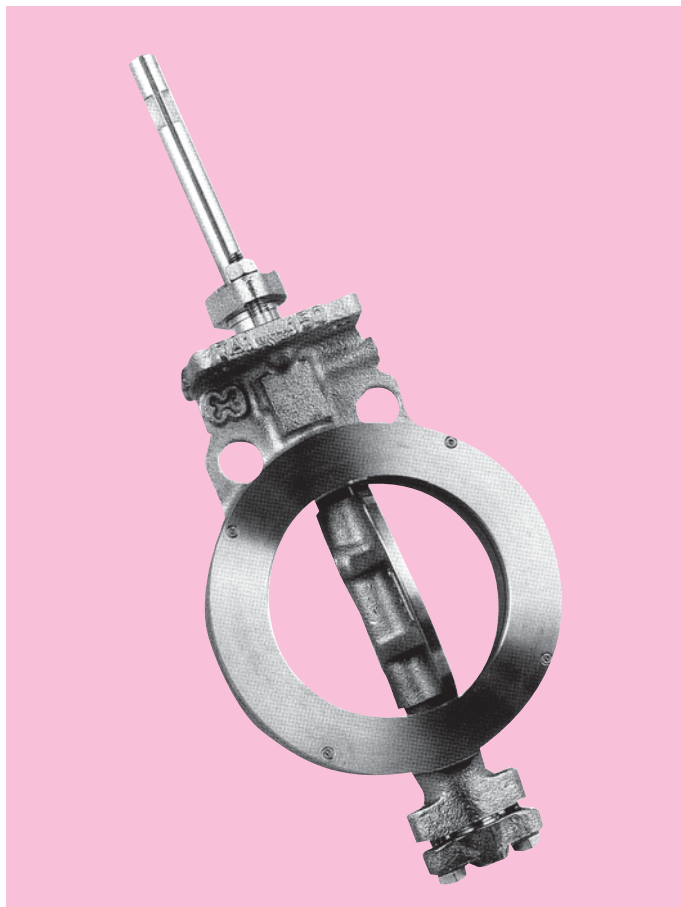


MOTOYAMA**General Specifications****MOTOSEAL®****Model 16B**
ECCENTRIC ROTATING DISC VALVES

- **MOTOSEAL®** is an eccentric rotating disc valve and a tight-shut-off butterfly valve, which is developed by the excellent experience and accumulation of knowhow in years' research as control valve manufacturer, MOTOYAMA.
- **MOTOSEAL®** provides extremely low leakage rates, low maintenance cost and long seal life by minimizing amount of moving contact of disc with seal and reducing seal wear and seating torque, and has actualized light weight, large capacity and low cost.
- **MOTOSEAL®** has extremely simple construction and realized easy maintenance and inspection.

**16B****FEATURES****◆ High Temperature Resistance Seat -20 to ~ +500°C**

A resilient seat (material : reinforced PTFE) is available for the temperature from -20 to +200°C. Metal seat is recommended for the temperature from -20 to +500°C. Model 16B is suitable for high temperature services that is not possible to obtain from normal type of butterfly valves.

◆ Tight-shut off is available using Offset Mechanism ANSI/FCI Class VI

Motoyama originally developed offset design realized moving contact resistance of disc with seat ring to be minimized. This design reduced seal wearing and seating torque at valve opening and closing. This offset design gives greatest tightness at the fully closed position of the disc with the seat ring and minimal leakage is available for high pressure drop services compared to other type of valves.

Zero leakage is available with reinforced PTFE seat and extremely low leakage is provided with metal seat design.

◆ High Range-ability 25 : 1

Smooth opening and closing, with minimum dead band, at lower opening position realized high inherent rangeability of 25 : 1.

Model 16B is available to use for throttling control at higher than 10 degree of disc opening.

1. SPECIFICATIONS

Valve Type			Eccentric rotating disc type diaphragm operated control valve (MOTOSEAL®)											
Valve Model No.			PM16B, 2916B						PM16B, 2916B, 2816B					
VALVE BODY	Body Type		16 B											
	Valve Sizes	(mm)	80	100	125	150	200	250	300	350	400	450	500	600
		(in.)	3	4	5	6	8	10	12	14	16	18	20	24
	Pressure Rating ^{Note(4)}		JIS5K, 10K, 20K, ASME/JPI Class 150, 300						JIS2K, 5K, 10K ASME/JPI Class 150					
	End Connection		Wafer type											
	Body Materials		See page 3											
	Gland Type		Bolted gland											
	Packing(Non Asbestos)		Braided packing, Molded packing											
	Gaskets(Non Asbestos)		Serrated gasket											
	Guiding		Inner guide											
	Disc Action		Rotating clockwise to close											
	Seat Type		Metal seat, Resin seat											
	Disc Characteristics		Butterfly valve's inherent characteristics											
	Flow		Flow to Open						Flow to Close					

ACTUATOR	Actuator Type		Model PM00 Spring type single acting cylinder operated					Model 2900 Spring return diaphragm actuator				Model 2800 Pneumatic single-acting spring diaphragm actuator		
	Actuator Sizes		BS-2	BS-3	BS-4	BS-5	BS-6	240HP	330HP	400HP	500H	650L-D		
	Spring Range kPaG (kgf/cm²G)		190~240 (1.9~2.4) …60°Direct Action 160~210 (1.6~2.1) …60°Reverse Action 160~240 (1.6~2.4) …90°					80~200 (0.8~2.0)			60~220 (0.6~2.2)	60~220 (0.6~2.2)		
	Supply Air Press. kPaG (kgf/cm²G)		400 (4.0)					280 (2.8)				280 (2.8)		
	Rotating Angle		60°, 90°					60°, 90°				60°, 90°		
	Air Connection		Rc 1/4		Rc 1/2			Rc 1/4				Rc 3/8		
	Ambient Temp.		-20℃~+60℃ (-40℃~-20℃, +60℃~+100℃※)					-20℃~+70℃ (-50℃~-20℃, +70℃~+100℃※)				-30℃~+70℃ (-50~-30℃, +70~+100℃※)		
Painting Color			Silver											
VALVE CHARACTERISTICS AND PERFORMANCE	Control Mode		Throttling control (opening 0~60°), On-off control (opening 0~90°)											
	Valve Action		Direct action (Air-to-close), Reverse Action (Air-to-open)											
	Applicable Press. Range		Max. 2.94MPaG (30kgf/cm²G) ~1.33Pa (10 ⁻² Torr) vacuum											
	Applicable Temp. Range		(Metal seat) -20℃~+500℃、(Resin seat) -20℃~+200℃											
	Allowable Differential Press.		See page 6~7											
	Rated Cv Value		See page 5											
	Flow Characteristics		See page 5											
	Inherent Range-ability		2.5 : 1 (60° Opening)											
	Allowable Seat Leakage Ratio	Metal Seat	See page 5											
		Resin Seat	ANSI/FCI Class VI											
Function Accuracy ^{Note(1)}	Hysteresis Error (with Positioner)	■Model PM00 : Max. 3%F.S. ■Model 2900/2800 : Max. 2%F.S.												
	Linearity (with Positioner)	■Model PM00 : Max. ±3%F.S. ■Model 2900/2800 : Max. ±2%F.S.												
OPTIONS [※]	Actuator		External exposure bolt & nut S.S., Handwheel, Travel stop (one side) .											
	Accessories		Pneumatic positioner (PA92A), Electro-pneumatic positioner (EA91A-C, EA90A-C,EA10S) Air Filter regulator (MR2000), Limit switch, Solenoid valve, and Others.											
	Others		Steam jacket type, Flanged type, Lug flanged type. The High Pressure The high pressure gas safety law certification, Oil free, Water free, Optional painting color.											

(Notes) (1) Valve performance is represented under the condition of standard packing (P4519+V7010)

(2) ※Manufactured and attached as option according to customer's request.

(3) Caution for line piping gasket :

It is available to use flat gasket of non-asbestos, PTFE, graphite or spiral wounded gasket.

When spiral wounded gasket is requested, special gasket is required to be supplied from Motoyama for seat holder side.

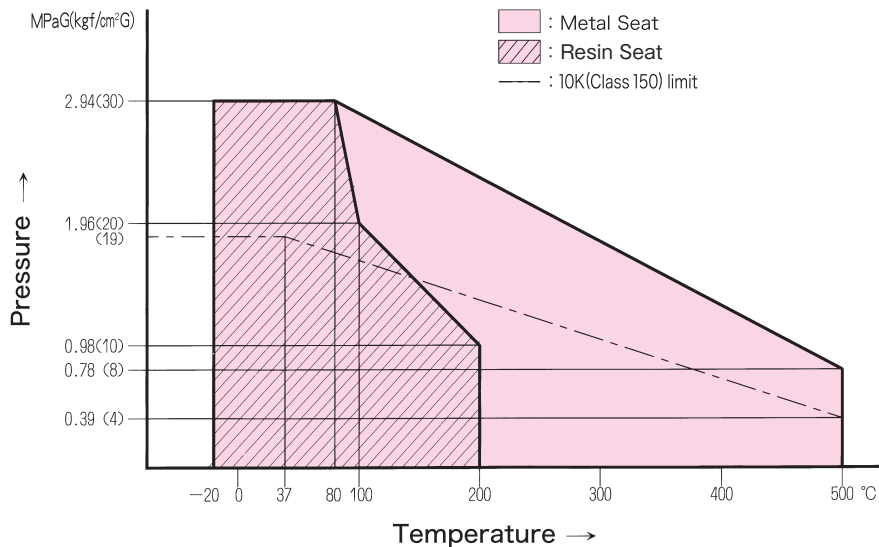
Standard gasket is applicable for the other side.

(4) On valve size 80mm~300mm, pressure rating JIS 2K is available as option.

(5) Double acting cylinder actuator is applicable on request.

2. PRESSURE-TEMPERATURE RANGE AND MAIN MATERIAL CLASSIFICATION.

Applicable Pressure-Temperature Range



16B

MAIN MATERIALS

Parts Name	Standard Materials				
	80mm~300mm		350mm~600mm		
Body (Note(1))	SCPH2, SCS13A, SCS14A	SCS 16A	SCPH2, SCS13A	SCS14A	SCS16A
Disc (Note(2))	SCS14A	SCS 16A	SCS13A	SCS14A	SCS 16A
Seat holder	SUS 316	SUS 316L	SUS 304	SUS 316	SUS 316L
Collar	CoCr Alloy, (Reinforced PTFE) (Note(3))		CoCr Alloy, (Reinforced PTFE) (Note(3))		
Shaft	SUS 316 (Note(4)) , (SUS 630)	SUS 316L (Note(4))	SUS 304, (SUS 630)	SUS 316L (Note(4)) , (SUS 630)	SUS 316L (Note(4))
Pin	SUS 316	SUS 316L	SUS 316		SUS 316L
Seat Ring	Metal	SUS 316	SUS 316L	SUS 304	SUS 316 (Note(5)) SUS 316L (Note(5))
	Resin	Reinforced PTFE		Reinforced PTFE	

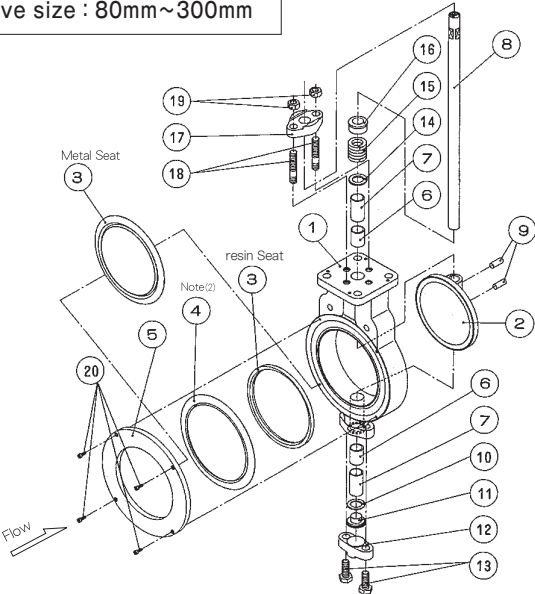
[Notes]

- (1)Stainless body is recommended for the service temperature 351°C and higher.
- (2)On metal seat, disc is either hard chromium plated or CoCr Alloy hardening treated.
- (3)Collar : Reinforced PTFE is applicable as option.
- (4)Shaft is hard chromium plated or CoCr Alloy hard treated on specific service condition.
- (5)Seat ring (metal only) is CoCr Alloy hard treated on specific service conditions.
- (6)Material combination may be changed on specific service conditions.

3. CONSTRUCTIONS

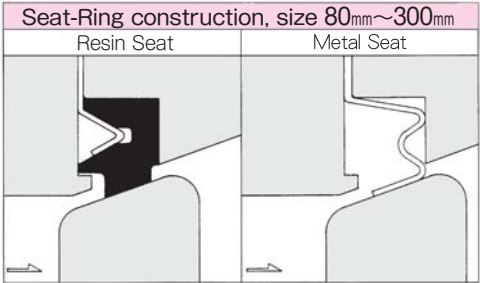
Two kind of seat-ring(metal or resin seat) is available depend on the service condition.
It is easy to replace the seat-ring at site because all other parts are common to use for metal and resin seat.
Valve disc is closed clockwise seeing from actuator side and open at counterclockwise.
Flow direction is Flow to Open on valve size 300mm and smaller, Flow to Close on valve size 350mm and larger.

Valve size : 80mm~300mm

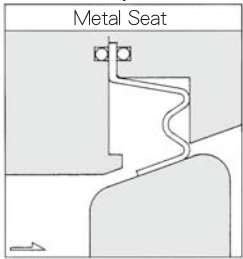


No.	Part Name	No.	Part Name
1	Body	11	Bottom bush
2	Disc	12	Bottom cover
3	Seat-Ring	13	Bottom bolt
4	Back Spring Note(2)	14	Packing ring Note(4)
5	Seat holder	15	Gland packing
6	Collar	16	Gland bush
7	Spacer Note(3)	17	Gland flange
8	Shaft	18	Gland bolt
9	Pin	19	Gland nut
10	Gasket	20	Set screw
		21	Bottom nut

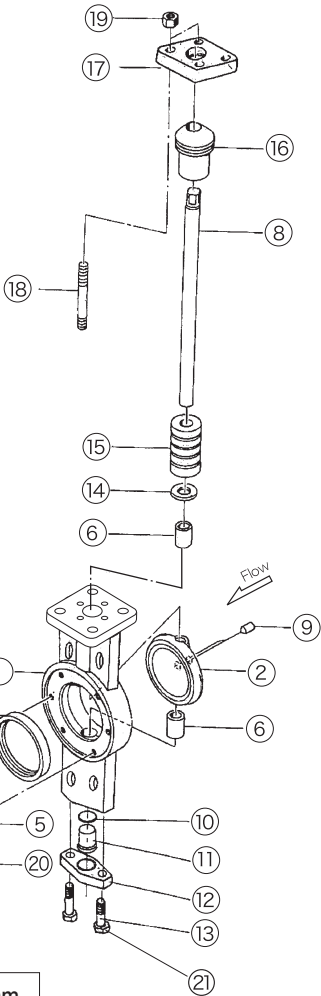
(Notes) (1) The numbers marked with ○ represent recommended spare parts.
(2) Back spring is applied for resin seat and valve size 300mm or smaller only.
(3) Spacer is applied for valve size 150mm and smaller only.
(4) Packing ring is not applied for valve size 200mm~300mm.



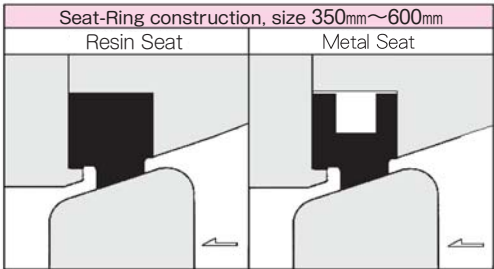
Vacuum Spec.(16BV)



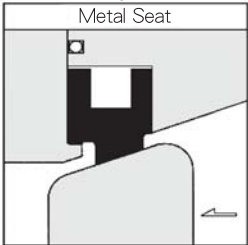
(Note)
For vacuum specification, Model number is changed to 16BV. Face to face dimensions is different from standard Model 16B.
(see page. 8, page. 9)



Valve Size : 350mm~600mm



Vacuum Spec. (16BV)



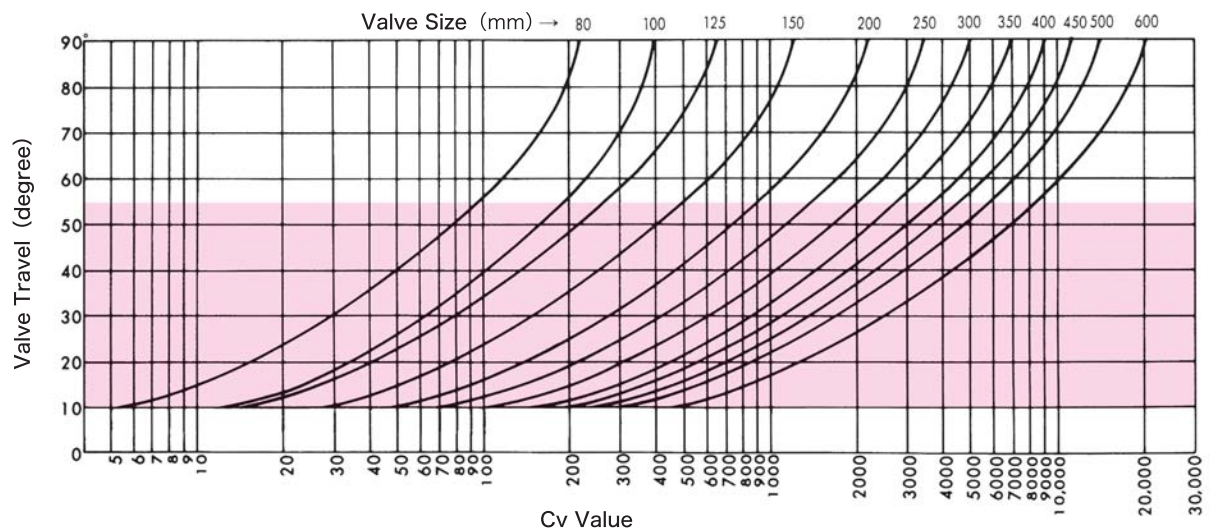
(Model 16BV for vacuum service)

4. CV VALUES AND FLOW CHARACTERISTICS

Rated Cv Values

Size	(mm)	80	100	125	150	200	250	300	350	400	450	500	600
Control Mode	(inch)	3	4	5	6	8	10	12	14	16	18	20	24
ON-OFF Control (90°)		230	390	650	1230	2200	3420	4920	6800	9000	11200	14000	20200
Throttling Control (60°)		120	230	330	620	1100	1710	2460	3500	4500	5600	7000	10200

Flow Characteristics



Colored zone is for throttling control range.

5. LEAKAGE CLASS FOR METAL SEAT

Leakage Class		Temperature	
		less than 300°C	300°C and higher
Standard Leakage	CLASS A (for Throttling Service)	less than 0.02% of Rated Cv	less than 0.2% of Rated Cv
	CLASS B (for On-off Service)	less than 0.001% of Rated Cv	less than 0.01% of Rated Cv
Optionable Leakage	CLASS C (for On-off Service)	less than 0.0001% of Rated Cv	less than 0.001% of Rated Cv

- [Notes] (1) The values on the above table are those of guarantee when shipped from factory.
 (2) Since leakage class C is optional order, please specify "Class C" when placing the order.
 Unless other wise specified, standard leakage class is applied.
 (3) On valve size 350mm~600mm, leakage class C is not applicable when max. shut-off pressure at valve fully closed position is lower than 0.049MPaG (0.5kgf/cm²G)

6. ALLOWABLE DIFFERENTIAL PRESSURE

1. PM16B Type

■ Valve size : 80mm~300mm

Unit : MPa (kgf/cm²)

Actuator Size			Valve Opening Shaft Material	BS-2		BS-3		BS-4		BS-5	
Valve Size (mm)	(in)			60°, 90°		60°, 90°		60°, 90°		60°, 90°	
80	3	SUS316	Shut	2.04 (20.9)							
			Open	0.64 (6.6)							
		SUS630	Shut	2.94 (30.0)							
			Open	0.77 (7.9)							
100	4	SUS316	Shut	0.55 (5.7)	2.94 (30.0)						
			Open	0.20 (2.1)	0.55 (5.7)						
		SUS630	Shut	0.77 (7.9)	2.94 (30.0)						
			Open	0.26 (2.7)	0.55 (5.7)						
125	5	SUS316	Shut		2.03 (20.8)						
			Open		0.24 (2.5)						
		SUS630	Shut		2.94 (30.0)						
			Open		0.32 (3.3)						
150	6	SUS316	Shut		1.12 (11.5)	—	—				
			Open		0.15 (1.6)	—	—				
		SUS630	Shut		1.86 (19.0)	2.94 (30.0)					
			Open		0.19 (2.0)	0.34 (3.5)					
200	8	SUS316	Shut			2.11 (21.6)	2.45 (25.1)				
			Open			0.13 (1.4)	0.23 (2.4)				
		SUS630	Shut			2.11 (21.6)	2.94 (30.0)				
			Open			0.17 (1.8)	0.26 (2.7)				
250	10	SUS316	Shut			0.82 (8.4)	1.00 (10.3)				
			Open			0.07 (0.8)	0.13 (1.4)				
		SUS630	Shut			0.82 (8.4)	2.94 (30.0)				
			Open			0.08 (0.9)	0.23 (2.4)				
300	12	SUS316	Shut			0.30 (3.1)	0.44 (4.5)				
			Open			0.02 (0.3)	0.05 (0.6)				
		SUS630	Shut			0.30 (3.1)	2.29 (23.4)				
			Open			0.03 (0.4)	0.09 (1.0)				

Valve Opening 60° : Throttling

Valve Opening 90° : On-Off Control

(Notes)

(1) "Shut" : Allowable shut-off pressure at valve fully closed position.

"Open" : Allowable differential pressure at valve fully opened (for liquid only) .

(2) Standard Shaft material is SUS316 (SUS304) for Body material SCPH2, SCS13A and SCS14A. When higher shut-off pressure is requested, SUS630 is applied for Shaft material as option.

■ Valve size : 350mm~600mm

Unit : MPa (kgf/cm²)

Actuator Size			Valve Opening Shaft Material	BS-4		BS-5		BS-6	
Valve Size (mm)	(in)			60°, 90°		60°, 90°		60°, 90°	
				Resin Seat	Metal Seat	Resin Seat	Metal Seat	Resin Seat	Metal Seat
350	14	SUS316	Shut	—	0.25 (2.6)	0.98 (10.0)	0.98 (10.0)		
			Open	—	0.02 (0.3)	0.06 (0.7)	0.06 (0.7)		
		SUS630	Shut	—	0.25 (2.6)	1.49 (15.2)	1.48 (15.1)		
			Open	—	0.02 (0.3)	0.06 (0.7)	0.06 (0.7)		
400	16	SUS316	Shut	—	0.08 (0.9)	0.68 (7.0)	0.68 (7.0)		
			Open	—	0.01 (0.2)	0.04 (0.5)	0.04 (0.5)		
		SUS630	Shut	—	0.08 (0.9)	0.98 (10.0)	1.00 (10.2)		
			Open	—	0.01 (0.2)	0.04 (0.5)	0.04 (0.5)		
450	18	SUS316	Shut			0.38 (3.9)	0.60 (6.2)	0.68 (7.0)	0.68 (7.0)
			Open			0.01 (0.2)	0.01 (0.2)	0.05 (0.6)	0.05 (0.6)
		SUS630	Shut			0.38 (3.9)	0.60 (6.2)	1.47 (15.0)	1.47 (15.0)
			Open			0.01 (0.2)	0.01 (0.2)	0.05 (0.6)	0.05 (0.6)
500	20	SUS316	Shut			—	0.36 (3.7)	0.68 (7.0)	0.68 (7.0)
			Open			—	0.01 (0.2)	0.04 (0.5)	0.04 (0.5)
		SUS630	Shut			—	0.36 (3.7)	1.29 (13.2)	1.42 (14.5)
			Open			—	0.01 (0.2)	0.04 (0.5)	0.04 (0.5)
600 (JIS10K)	24	SUS316	Shut					0.09 (1.0)	0.09 (1.0)
			Open					0.02 (0.3)	0.02 (0.3)
		SUS630	Shut					0.76 (7.8)	0.98 (10.0)
			Open					0.02 (0.3)	0.02 (0.3)
600 (ANSI 150)	24	SUS316	Shut					0.58 (6.0)	0.58 (6.0)
			Open					0.02 (0.3)	0.02 (0.3)
		SUS630	Shut					0.59 (6.1)	0.81 (8.3)
			Open					0.02 (0.3)	0.02 (0.3)

Model 16B



2. 2916B Type

■ Valve size : 80mm~300mm

Unit : MPa (kgf/cm²)

Actuator Size			240HP		330HP		400HP		500H	
Valve Size	Valve Opening	Shaft Material	60°	90°	60°	90°	60°	90°	60°	90°
(mm)	(in)									
80	3	SUS316	Shut	2.04 (20.9)	1.01 (10.4)					
			Open	0.68 (7.0)	0.63 (6.5)					
		SUS630	Shut	2.94 (30.0)	1.01 (10.4)					
			Open	0.68 (7.0)	0.63 (6.5)					
100	4	SUS316	Shut	0.67 (6.9)	— —	2.94 (30.0)	2.94 (30.0)			
			Open	0.35 (3.6)	— —	0.68 (7.0)	0.55 (5.7)			
		SUS630	Shut							
			Open							
125	5	SUS316	Shut			2.03 (20.8)	1.69 (17.3)	— —	2.03 (20.8)	
			Open			0.41 (4.2)	0.29 (3.0)	— —	0.31 (3.2)	
		SUS630	Shut			2.94 (30.0)	1.69 (17.3)	— —	2.94 (30.0)	
			Open			0.50 (5.1)	0.29 (3.0)	— —	0.37 (3.8)	
150	6	SUS316	Shut			1.12 (11.5)	0.93 (9.5)	1.12 (11.5)	1.12 (11.5)	
			Open			0.25 (2.6)	0.18 (1.9)	0.25 (2.6)	0.20 (2.1)	
		SUS630	Shut			2.79 (28.5)	0.93 (9.5)	2.94 (30.0)	2.56 (26.2)	
			Open			0.40 (4.1)	0.18 (1.9)	0.42 (4.3)	0.31 (3.2)	
200	8	SUS316	Shut			0.35 (3.5)	— —	1.61 (16.5)	0.34 (3.5)	2.46 (25.1)
			Open			0.10 (1.1)	— —	0.22 (2.3)	0.09 (1.0)	0.29 (3.0)
		SUS630	Shut			0.35 (3.5)	— —	1.61 (16.5)	0.34 (3.5)	2.94 (30.0)
			Open			0.10 (1.1)	— —	0.22 (2.3)	0.09 (1.0)	0.33 (3.4)
250	10	SUS316	Shut					0.55 (5.7)	— —	1.01 (10.3)
			Open					0.11 (1.2)	— —	0.15 (1.6)
		SUS630	Shut					0.55 (5.7)	— —	2.43 (24.8)
			Open					0.11 (1.2)	— —	0.26 (2.7)
300	12	SUS316	Shut							0.44 (4.5)
			Open							0.06 (0.7)
		SUS630	Shut							1.48 (15.1)
			Open							0.11 (1.2)

■ Valve size : 350mm~450mm

Unit : MPa (kgf/cm²)

Actuator Size				500H			
Valve Size		Valve Opening		60°		90°	
(mm)	(in)	Shaft Material		Resin Seat	Metal Seat	Resin Seat	Metal Seat
350	14	SUS316	Shut	0.71 (7.3)	0.80 (8.2)	0.06 (0.7)	0.25 (2.6)
			Open	0.06 (0.7)	0.06 (0.7)	0.02 (0.3)	0.02 (0.3)
		SUS630	Shut	0.71 (7.3)	0.80 (8.2)	0.06 (0.7)	0.25 (2.6)
			Open	0.06 (0.7)	0.06 (0.7)	0.02 (0.3)	0.02 (0.3)
400	16	SUS316	Shut	0.40 (4.1)	0.50 (5.2)	— —	0.09 (1.0)
			Open	0.04 (0.5)	0.04 (0.5)	— —	0.01 (0.2)
		SUS630	Shut	0.40 (4.1)	0.50 (5.2)	— —	0.09 (1.0)
			Open	0.04 (0.5)	0.04 (0.5)	— —	0.01 (0.2)
450	18	SUS316	Shut	— —	0.27 (2.8)		
			Open	— —	0.01 (0.2)		
		SUS630	Shut	— —	0.27 (2.8)		
			Open	— —	0.01 (0.2)		

Valve Opening 60° : Throttling

Valve Opening 90° : On-Off Control

(Notes)

(1) "Shut" : Allowable shut-off pressure at valve fully closed position.

"Open" : Allowable differential pressure at valve fully opened (for liquid only) .

(2) Standard Shaft material is SUS316 (SUS304) for Body material SCPH2, SCS13A and SCS14A. When higher shut-off pressure is requested, SUS630 is applied for Shaft material as option.

3. 2816B Type

■ Valve size : 350mm~600mm

Unit : MPaG (kgf/cm²G)

Actuator Size			650LD			
Valve Size	Valve Opening	Shaft Material	60°		90°	
(mm)	(in)		Resin Seat	Metal Seat	Resin Seat	Metal Seat
350	14	Shut	1.66 (17.0)	1.62 (16.6)	0.56 (5.8)	0.70 (7.2)
		Open	0.12 (1.3)	0.12 (1.3)	0.05 (0.6)	0.05 (0.6)
400	16	Shut	1.10 (11.3)	1.10 (11.3)	0.27 (2.8)	0.42 (4.3)
		Open	0.08 (0.9)	0.08 (0.9)	0.03 (0.4)	0.03 (0.4)
450	18	Shut	0.47 (4.8)	0.68 (7.0)	— —	0.20 (2.1)
		Open	0.03 (0.4)	0.03 (0.4)	— —	0.01 (0.2)
500	20	Shut	— —	0.42 (4.3)		
		Open	— —	0.02 (0.3)		
600 (JIS 10K)	24	Shut	— —	0.22 (2.3)		
		Open	— —	0.01 (0.2)		
600 (ASME 150)	24	Shut	— —	0.17 (1.8)		
		Open	— —	0.01 (0.2)		

Valve Opening 60° : Throttling

Valve Opening 90° : On-Off Control

(Notes)

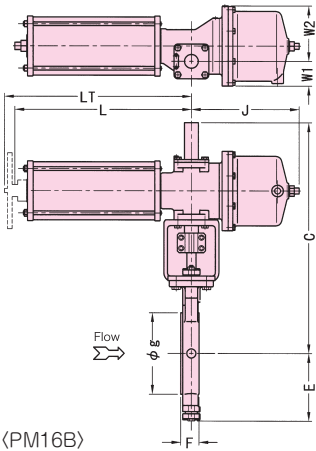
(1) "Shut" : Allowable shut-off pressure at valve fully closed position.

"Open" : Allowable differential pressure at valve fully opened (for liquid only) .

(2) Standard shaft material is SUS630.

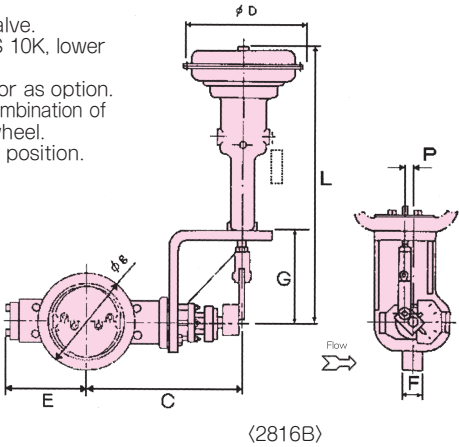
7. DIMENSIONS & WEIGHT

1. Model PM16B and 2816B



(PM16B)

- (Notes)
- (1) The sketch shows reverse action valve.
 - (2) ※1, upper dimension specify for JIS 10K, lower specify ASME/JPI class 150.
 - (3) Hand wheel is applicable on actuator as option.
 - (4) Specified weight are with standard combination of body and actuator without hand wheel.
 - (5) [] shows positioner mounting position.



(2816B)

PM16B Type (Valve size : 80mm~600mm)

Unit : mm

Valve Size		g			Face-to-Face Dimension F		E		Actuator Size	L	LT	J	C		W1	W2	Weight (kg)
					16B	16BV											
(mm)	(in)	JIS2K JIS5K	JIS10K ASME 150	JIS20K ASME 300	Positive Press.	Negative Press.	JIS10K ASME 150	JIS20K ASME 300					JIS10K ASME 150	JIS20K ASME 300			
80	3	125	128	134	46	49	135	135	BS-2	335	362	210	445	455	38	106	24
100	4	145	153	159	52	55	155	160	BS-2	335	362	210	495	415	38	106	28
									BS-3	451	482	276	595	615	52	140	56
125	5	180	183	195	56	59	165	185	BS-3	451	482	276	605	625	52	140	58
150	6	210	213	230	56	61	180	195	BS-3	451	482	276	620	640	52	140	62
									BS-4	575	609	351	645	665	81	188	106
200	8	255	※1 263 270	275	60	65	220	240	BS-4	575	609	351	710	730	81	188	120
									BS-5	745	795	446	850	870	117	256	240
250	10	320	322	345	68	73	245	265	BS-4	575	609	351	740	760	81	188	140
									BS-5	745	795	446	880	900	117	256	260
300	12	365	※1 368 381	381	78	90	※1 280 300	300	BS-4	575	609	351	780	800	81	188	158
									BS-5	745	795	446	※1 920 940	940	117	256	278
350	14	403	413		85	85	341		BS-4	575	609	351	850		81	188	191
									BS-5	745	795	446	965		117	256	312
400	16	463	※1 475 470		90	90	376		BS-4	575	609	351	880		81	188	215
									BS-5	745	795	446	995		117	256	336
450	18	523	※1 530 533		100	100	406		BS-5	745	795	446	1040		117	256	386
									BS-6	931	1006	638	1005		130	326	574
500	20	573	※1 585 584		110	110	437		BS-5	745	795	446	1075		117	256	425
									BS-6	931	1006	638	1035		130	326	613
600	24	680	※1 690 692		120	120	494		BS-5	745	795	446	1150		117	256	523
									BS-6	931	1006	638	1110		130	326	711

2816B Type (Valve size : 350mm~600mm)

Unit : mm

Valve Size		g			Face-to-Face Dimension F		E	Actuator Size	D	L	G	C	P		Weight (kg)
					16B	16BV							60° Travel	90° Travel	
(mm)	(in)	JIS2K JIS5K	JIS10K	ASME150	Positive Press.	Negative Press.									
350	14	403	413	413	85	85	341	650L-D	650	1458	325	543	112.6	65	382
400	16	463	475	470	90	90	376					573			406
450	18	523	530	533	100	100	406					615			456
500	20	573	585	584	110	110	437					649			495
600	24	680	690	692	120	120	494					724.5			593

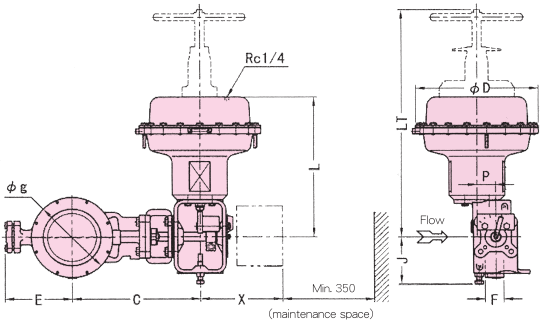
16B

Model 16B



2. Model 2916B

- (Notes)
- (1) The sketch shows reverse action valve.
 - (2) ※1, upper dimension specify for JIS 10K, lower specify ASME/JPI class 150.
 - (3) Hand wheel is applicable on actuator as option.
 - (4) Specified weight are with standard combination of body and actuator without hand wheel.
 - (5) shows positioner mounting position.



Valve size : 80mm~450mm

Unit : mm

Valve Size		g			Face to Face		E		Actuator Size	D	L	LT	J	C		X	P		weight (kg)
					16B	16BV													
(mm)	(in)	JIS2K JIS5K	JIS10K ASME150	JIS20K ASME300	Positive Press.	Negative Press.	JIS10K ASME150	JIS20K ASME300						JIS10K ASME150	JIS20K ASME300		60° Travel	90° Travel	
80	3	125	128	134	46	49	135	135	240HP	240	275	480	115	245	255	230	30	18	21
100	4	145	153	159	52	55	155	160	240HP	240	275	480	115	280	300	230	30	18	25
									330HP	330	435	690	130	330	350	240	52	30	44
125	5	180	183	195	56	59	165	185	330HP	330	435	690	130	340	360	240	52	30	46
									400HP	400	470	765	160	395	415	270	60	35	81
150	6	210	213	230	56	61	180	195	330HP	330	435	690	130	350	370	240	52	30	50
									400HP	400	470	765	160	410	430	270	60	35	85
200	8	255	※1 263 270	275	60	65	220	240	330HP	330	435	690	130	395	415	240	52	30	65
									400HP	400	470	765	160	420	440	270	60	35	100
									500H	500	635	1090	205	470	490	270	104	60	176
250	10	320	322	345	68	73	245	265	400HP	400	470	765	160	455	475	270	60	35	119
									500H	500	635	1090	205	505	525	270	104	60	195
300	12	365	※1 368 381	381	78	90	※1 280 300	300	500H	500	635	1090	205	※1 540 560	560	270	104	60	211
350	14	403	413		85	85	341		500H	500	635	1090	205	598		270	104	60	243
400	16	463	※1 475 470		90	90	376							628					267
450	18	523	※1 530 533		100	100	406							652					317

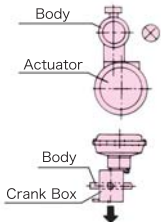
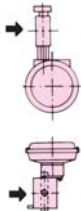
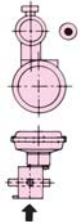
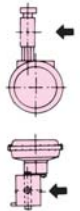
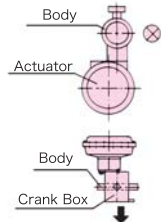
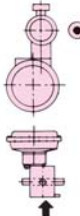
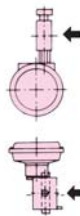
Actuator Mounting Orientation

Several combinations of Valve Body and Actuator are available as shown below to fit the valve in a limited piping spaces.

It is also available to mount the Actuator in vertical position.

Sketch D-2 or R-2 is Motoyama standard shipping orientation unless otherwise specified.

Note : Valve disc is closed clockwise seeing from actuator side.

Direct Action	D-1	D-2	Standard	D-3	D-4	Plan
						
Reverse Action	R-1	R-2	Standard	R-3	R-4	Plan
						
	Elevation	Elevation	Elevation	Elevation	Elevation	Elevation

(Legends) → : Flow Direction ⊙ : Upward flow on vertical piping ⊗ : Downward flow on vertical piping



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