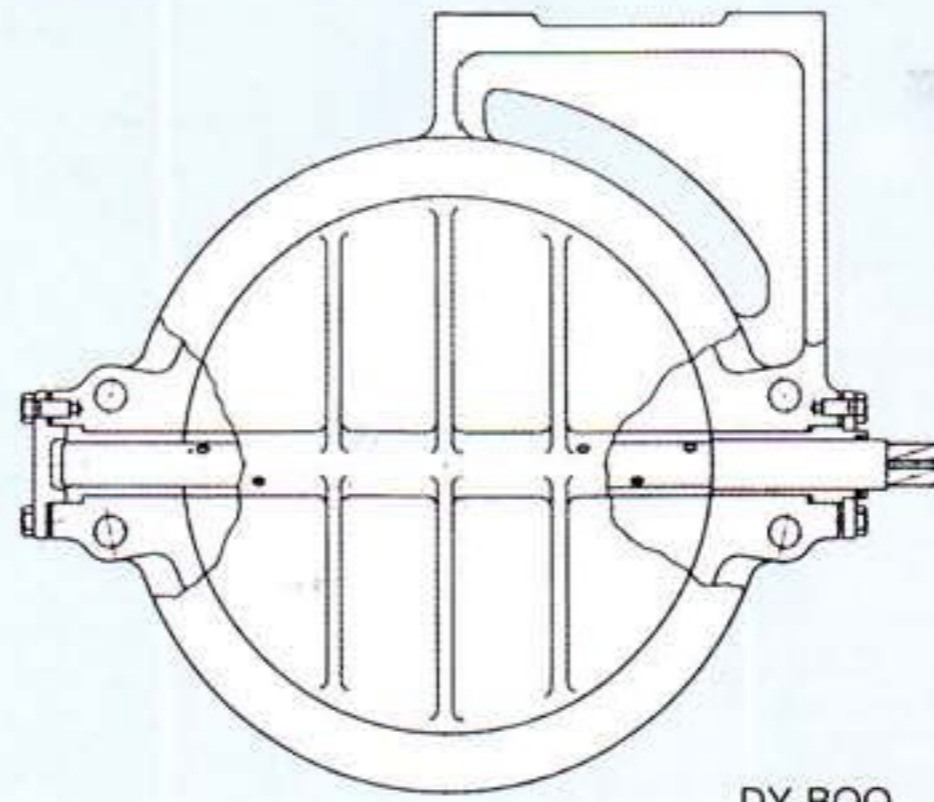


DY-B BUTTERFLY VALVE



DY-BOO

This control valve has a simple construction, and in comparison with the globe type control valve, is suitable to relatively low pressure drop services of large capacity or large bore. Many control valves of this type have been used in a wide range of services from low temperature to high temperature.

This wafer type (binding type) valve has a very small face-to-face dimension and can be easily connected to the piping system by means of through bolts.

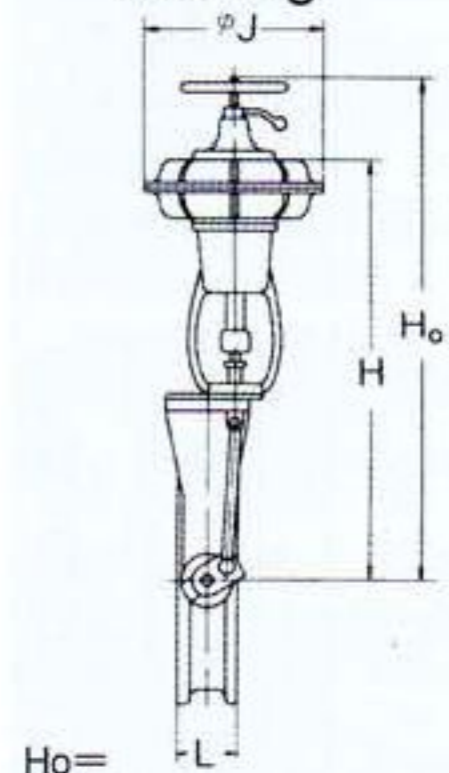
For handling corrosive fluids such as sea water, it is possible to apply rubber lining or coating onto the inner surface of the body.

SPECIFICATIONS

Type of valve body assembly	Wafer type butterfly valve of casting.
Pressure rating	JIS 5K, 10K or ANSI 125 • 150
Nominal bore	100~700 mm (4~28 inch)
Service temperature range	-196~550°C (-321 ~ 1022° F)
Standard materials	<ul style="list-style-type: none"> Valve body assembly FC200, FCD400, CAC403, CAC406, SCPH2, 11, 21, 32, 61, SCS13, 14 Trim SUS403 • 304 • 316, SCS13 • 14 Packing, Gasket (Asbestos Free) PTFE, graphite, etc.

Cv value	See the table below. At fully open position, Km value: 0.38 Xt value: 0.32
Flow characteristics	Approximately parabolic characteristic.
Performance	<ul style="list-style-type: none"> Rangeability 20:1 Leakage at full closure Not more than 3% of the rated Cv value
Maximum allowable pressure drop	Diaphragm type or cylinder type actuator can be mounted. Single action diaphragm type is normally used. Maximum allowable pressure drop is shown in the table below.
Dimensions and mass	See the table below and the figure on the right.

Dimensional drawing



Ho =
H+ (additional valve in table)

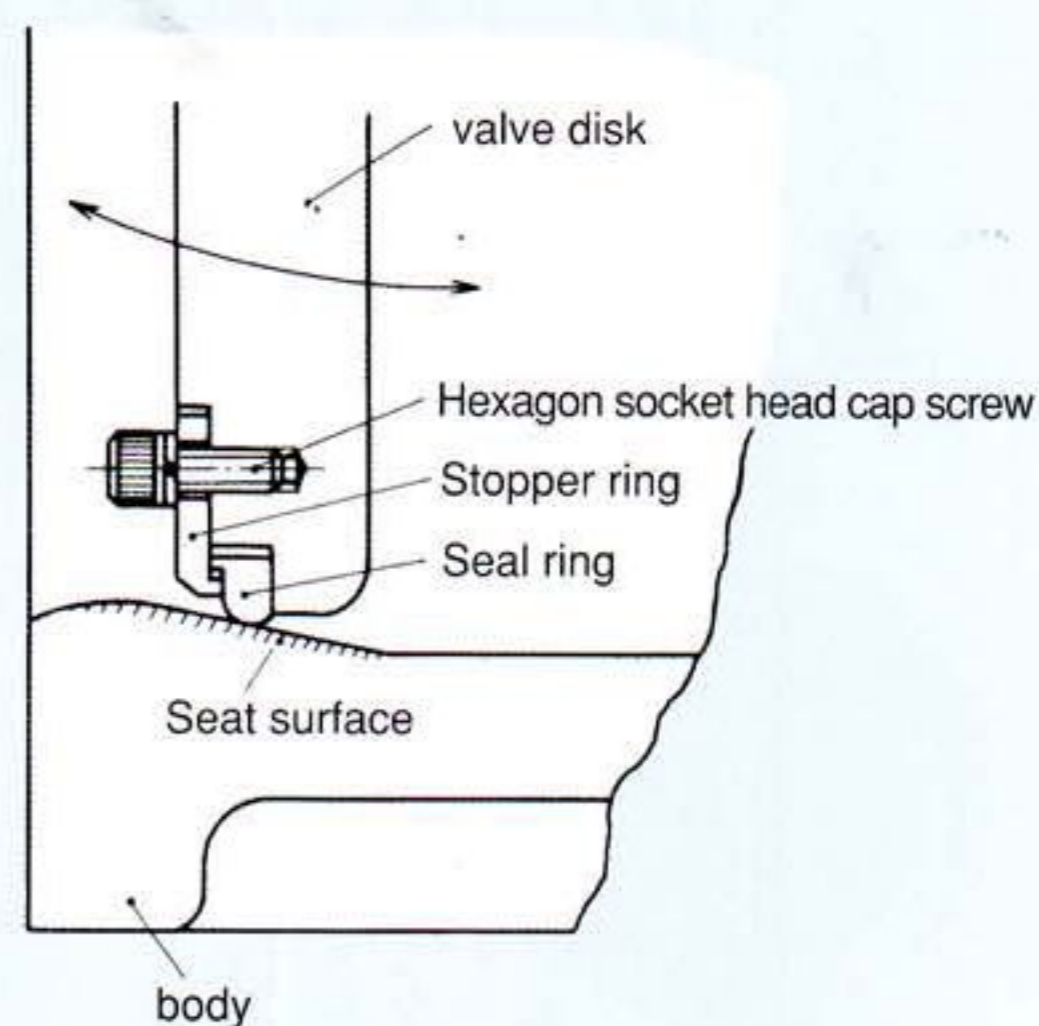
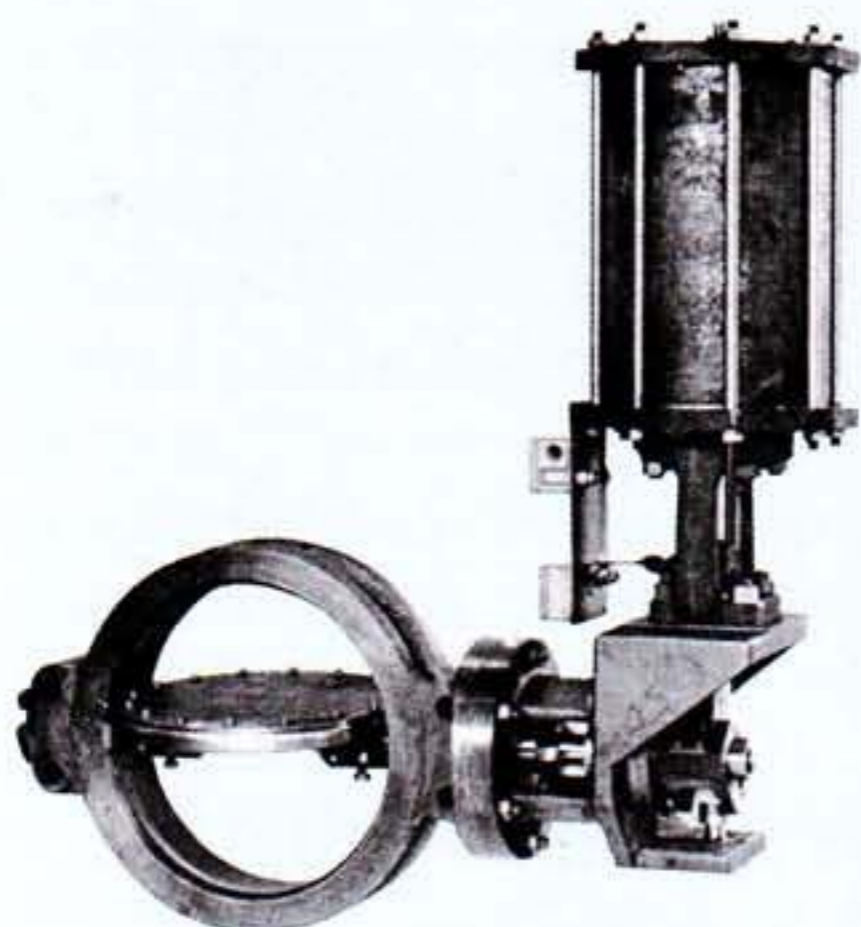
DY-B butterfly control valve

NOMINAL BORE mm (inch)		100 ^A (4 ^B)	125 ^A (5 ^B)	150 ^A (6 ^B)	200 ^A (8 ^B)	250 ^A (10 ^B)	300 ^A (12 ^B)	350 ^A (14 ^B)	400 ^A (16 ^B)	450 ^A (18 ^B)	500 ^A (20 ^B)	550 ^A (22 ^B)	600 ^A (24 ^B)	650 ^A (26 ^B)	700 ^A (28 ^B)		
RATED Cv VALUE		220	400	580	1030	1600	2300	3100	4000	5200	6400	7500	9000	10500	12000		
DIMENSIONS (mm)	Face to Face L (※1)	80				100	115		120		140			180			
	Height H (※1)	935	950	975	1005	1295	1325	1355	1390	1430	1465	1495	1535	1575			
	Additional valve; with handwheel	385								540							
	Actuator J	Refer to following (J)															
ALLOWABLE PRESSURE DROP (kgf/cm ²)	275	Range when open (kPa)	20~100	0.32	0.16	0.09	0.04	0.02									
			40~200	0.38	0.2	0.12	0.07	0.04									
		Off Balance when close (kPa)	20	2.0	1.2	0.66	0.4	0.3									
			40	2.0	1.2	0.66	0.4	0.4									
		355	Range when open (kPa)	20~100	0.36	0.19	0.11	0.05	0.03	0.02	0.02	0.01	0.01	0.01			
				40~200	0.38	0.2	0.12	0.07	0.05	0.04	0.03	0.02	0.02	0.01			
	410	Off Balance when close (kPa)	20	2.0	1.2	0.66	0.4	0.35	0.28	0.18	0.12	0.08	0.06				
			40	2.0	1.2	0.66	0.4	0.4	0.4	0.25	0.24	0.16	0.12				
	465	Range when open (kPa)	20~100						0.04	0.02	0.02	0.01	0.1	0.01	0.01	0.01	
			40~200						0.66	0.04	0.03	0.02	0.14	0.15	0.02	0.01	0.01
		Off Balance when close (kPa)	20						0.4	0.25	0.2	0.15	0.1	0.11	0.09	0.07	0.08
			40						0.4	0.25	0.24	0.17	0.17	0.13	0.16	0.14	0.11
Mass (kg) (※2)		140	145	150	170	180	235	245	265	290	340	380	410	495	600		

(※1) H dimension gives the longest dimension. However, when the valve is fitted with a handwheel, add the respective value shown above.

(※2) Mass indicated is that of the valve with a handwheel and positioner (=maximum mass).

DY-BR LOW LEAK BUTTERFLY CONTROL VALVE



For relatively low pressure drop services of large bore, butterfly valves have advantages in space and cost. This control valve uses a seal ring construction to minimize leakage at full closure, which is the weak point of butterfly valves, and assures low leakage of not more than 0.1% in a wide temperature range from low to high,

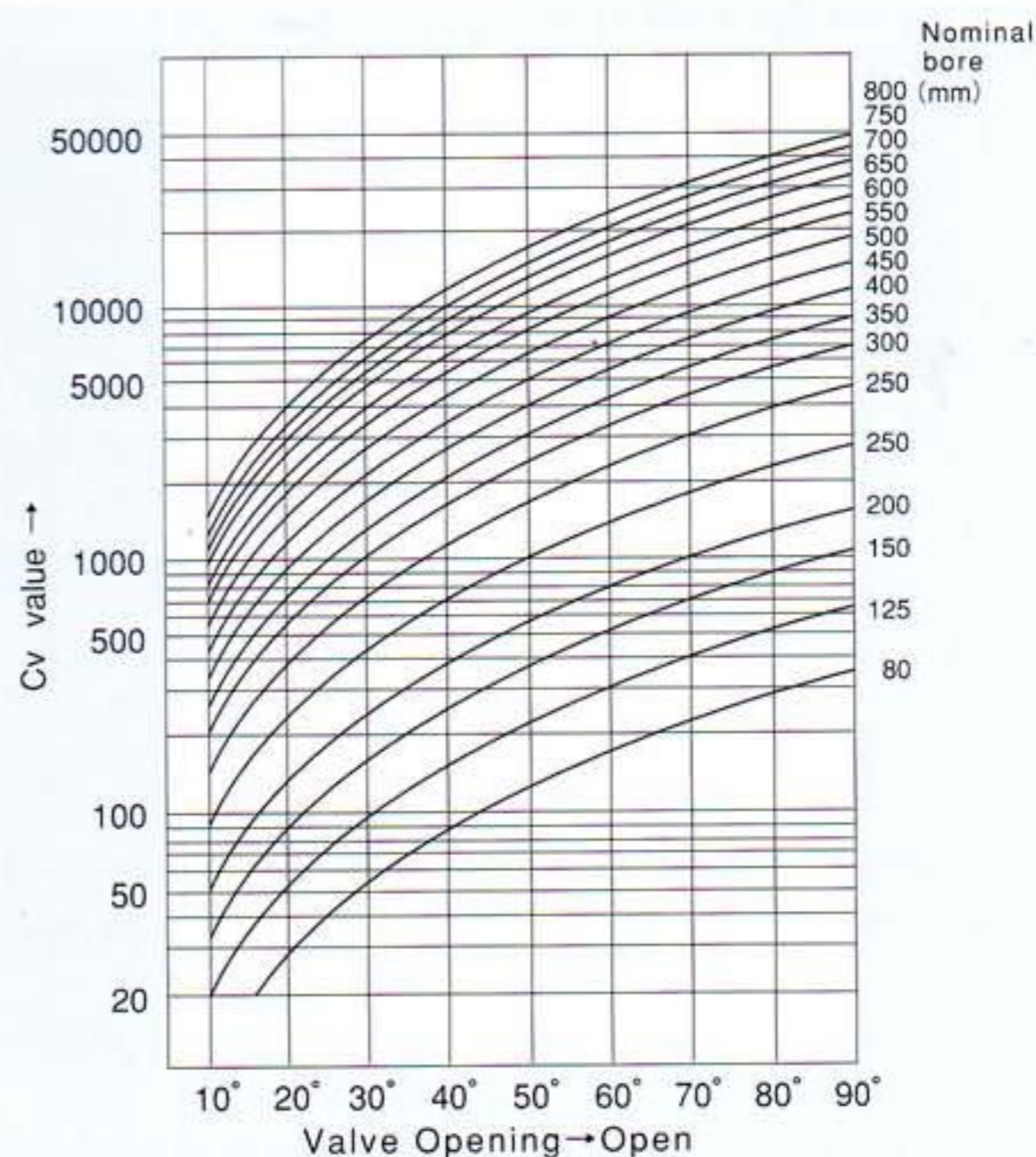
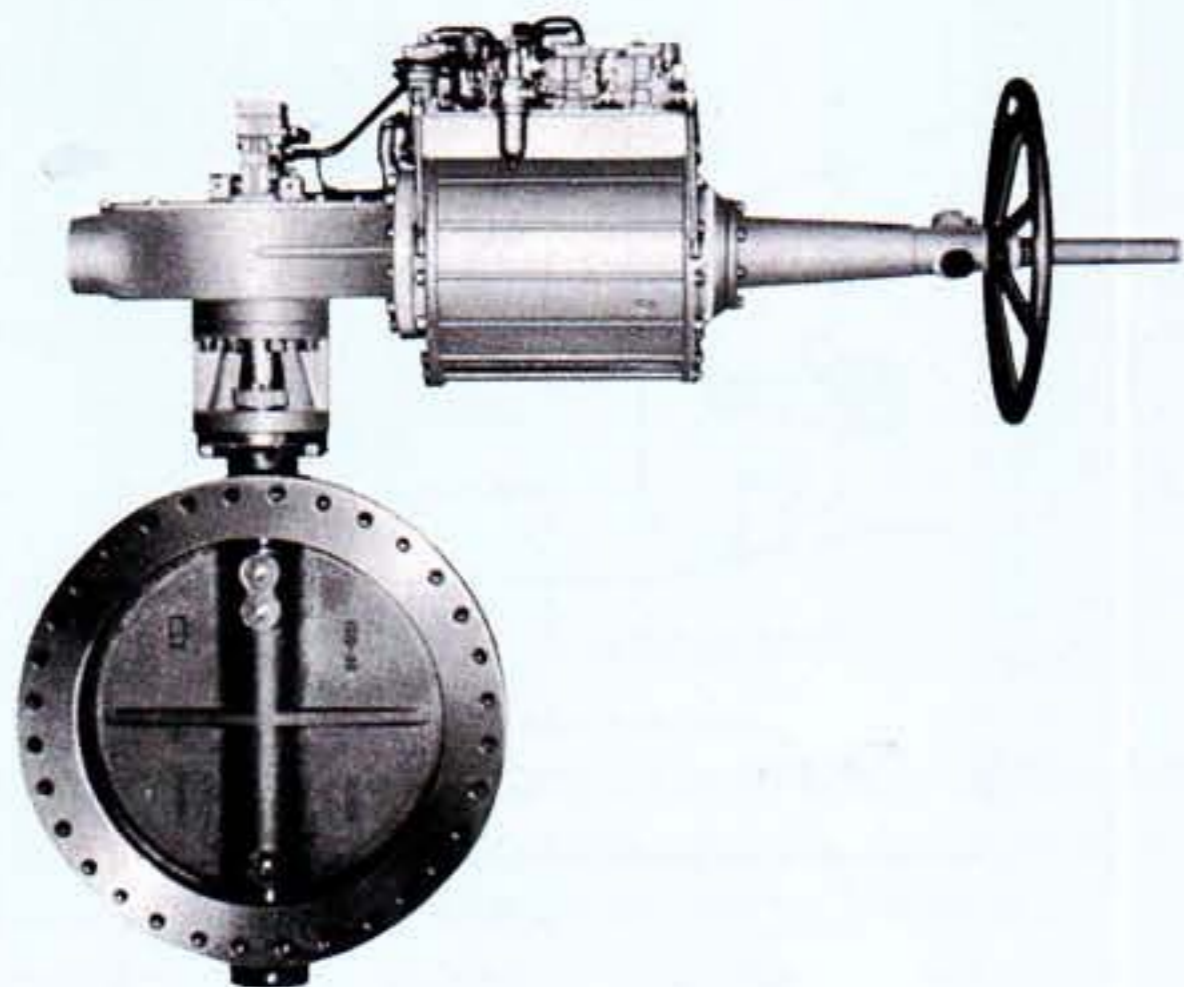
An appropriate slope is formed on the seat surface of the body by building stainless steel so as to ease sliding-in of the seal ring as well as to add corrosion resistance. On the other hand, a flexible seal ring margin for fixing is fitted on the outer circumference of the valve disk with a stopper ring so as to obtain smooth leak-off. The stopper ring is for fixing the margin of the seal ring as well as preventing slip-off.

This control valve is normally used for all types of fluid, gas, vapor or liquid, However, it is not suitable to corrosive fluids like sea water or fluids with much slurry or scale.

SPECIFICATIONS

Type of valve body assembly	Wafer type butterfly valve of casting. Seal ring construction.
Pressure rating	JIS 5K and 10K or ANSI 125 and 150
Nominal bore	100~700 ^A (4 ~ 28 inch)
Service temperature range	-196~550°C (-321 ~ 1022°F)
Standard materials	<ul style="list-style-type: none"> • Valve body assembly SCPH2 · 11 · 21 · 32, SCPL1 · 11 · 21 · 31 • Trim SUS304 (surface-hardened), or SCS13 (surface-hardened). • Packing · Gasket (Asbestors Free) PTFE, graphite, etc.
Cv value	See the table (page 43).
Flow characteristic	Approximately parabolic characteristics.
Performance	<ul style="list-style-type: none"> • Rangeability 20 : 1 • Leakage at full closure Not more than 0.1% of the rated Cv value.
Maximum allowable pressure drop	For single action diaphragm type, see the table (page43). For cylinder type, it is obtained from the output ratio to the abovementioned diaphragm type shown in the detailed data on actuators on page 50, which is about 5 times larger.
Dimensions and Mass	See the table (page 43).

ID SERIES DAMPER TYPE BUTTERFLY CONTROL VALVE



This valve is similar to DY-B type butterfly control valve, and is equipped with a cylinder type actuator.

As no valve seat is provided for sealing at full closure, there is a slight gap left between the valve body and the valve disk, and some leakage can not be avoided. We have many actual results of this valve for special applications such as fluid flow rate control around intermediate valve travel.

The power source of actuator is mainly pneumatic. The pneumatic type is a combination of a pneumatic positioner and a cylinder, and the pressure is normally 0.49 to 0.69MPa. We also produce oil hydraulic type and electric type.

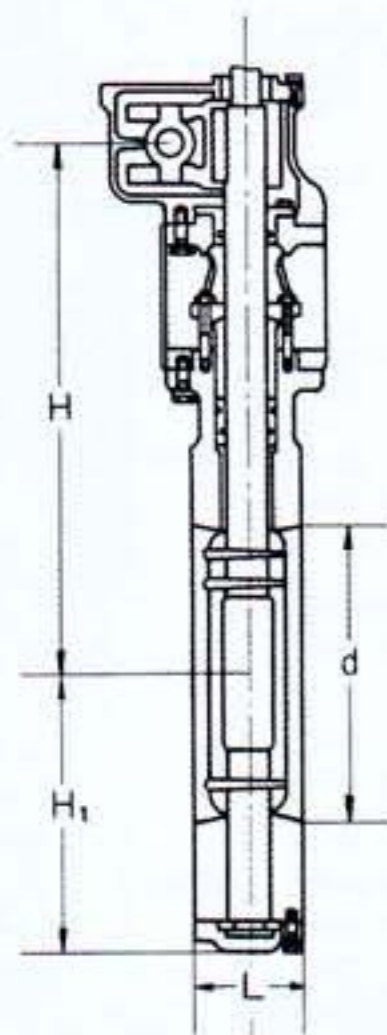
SPECIFICATIONS

Type of valve assembly	Wafer type butterfly valve of casting.
Pressure rating	JIS 5K~16K, or ANSI 125~150.
Nominal bore	80 ^A ~1500 ^A
Service temperature range	0~425°C (32~797°F). When the temperature exceeds 70°C, the frame type is used.
Standard materials	<ul style="list-style-type: none"> Valve body assembly FC200, FCD400, SCPH2(SCS13、14), etc. Valve disk SC (outer circumference:SUS304 facing), etc. Packing・Gasket (Asbestos Free) PTFE, graphite, etc.
Cv value	See the figure above.
Flow characteristics	See the figure above.
Performance	<ul style="list-style-type: none"> Rangeability 20 : 1 Leakage at full closure Max. 5% of the Cv value.
Dimensions and Mass	See the figure above.

Table of dimensions and weight

(mm)

Dimensional drawing



Nominal bore mm (inch)	d	L	H/HG *	H ₁	l ₁	l ₂	l ₃	Weight (kg)
80 ^A (3 ^B)	80	60	253/353	120	325	98	40	55/65
100 ^A (4 ^B)	100	60	268/388	124	325	102	40	67/78
150 ^A (6 ^B)	150	70	312/457	164	340	102	40	80/90
200 ^A (8 ^B)	200	80	338/483	189	340	102	40	105/115
250 ^A (10 ^B)	250	90	410/570	226	406	135	50	128/138
300 ^A (12 ^B)	300	90	435/595	251	406	135	50	155/168
350 ^A (14 ^B)	335	100	465/645	271	443	142	55	186/200
400 ^A (16 ^B)	380	110	521/701	306	505	162	65	240/255
450 ^A (18 ^B)	430	130	559/759	336	555	188	80	310/323
500 ^A (20 ^B)	480	140	601/821	368	575	198	85	368/385
550 ^A (22 ^B)	530	150	664/884	403	605	218	95	445/460
600 ^A (24 ^B)	580	160	697/947	428	640	231	105	532/566
650 ^A (26 ^B)	630	170	738/990	451	735	251	120	655/710
700 ^A (28 ^B)	680	180	788/1038	483	820	290	145	745/805
750 ^A (30 ^B)	730	190	818/1068	518	820	290	145	920/982
800 ^A (32 ^B)	780	200	851/1101	543	920	345	175	1064/1130

* HG : When valve is fitted with frame (and gland packing). For measurement of l₁, l₂, and l₃, see the dimensional drawing of page 47. This table is for valves without manual control unit. l₁ of valve with manual control unit is longer.

HD SERIES DAMPER TYPE BUTTERFLY CONTROL VALVE

This valve is modeled on the "NS-C series" H-type butterfly valve which is one of our representative products, and is designed as control valve.

Although the valve has a valve seat, it does not give complete sealing at fully closed position. There is a small gap between the valve disk and the seat, and some leakage can not be avoided. The valve is used, in the same way as ID series valve, for flow rate control around the intermediate valve travel. We have many actual results of this valve in special applications.

The feature of this valve is that it allows replacement of the valve seat in case it is damaged.

The power source of the actuators is mainly pneumatic.

- Pneumatic type is a combination of a pneumatic positioner and a cylinder. The pressure is normally 0.49 to 0.69 MPa.

We also produce oil hydraulic type and electric type.

SPECIFICATIONS

Type of valve body assembly	Wafer type butterfly valve of casting.
Pressure rating	JIS 5K~16K, or ANSI 125 and 150.
Nominal bore	150 ^A ~1500 ^A (6 ~ 60 inch)
Service temperature range	0~425°C (32~797°F). When the temperature exceeds 70°C, the frame (and gland packing) type is used.
Standard materials	<ul style="list-style-type: none"> • Valve body assembly FC200, FCD400, CAC403, CAC406, SCPH2, 11, 21, 32, 61, SCS13, 14 • Valve disk SC (outer circumference: SUS304facing), etc. • Valve seat S25C, SUS304, etc. • Packing · Gasket (Asbestors Free) PTFE, graphite, etc.
Cv value	See the top right figure on page 47.
Flow characteristic	See the top right figure on page 47.
Performance	<ul style="list-style-type: none"> • Rangeability 20 : 1 • Leakage at full closure Max. 3% of the Cv below.
Dimensions and mass	See the table below

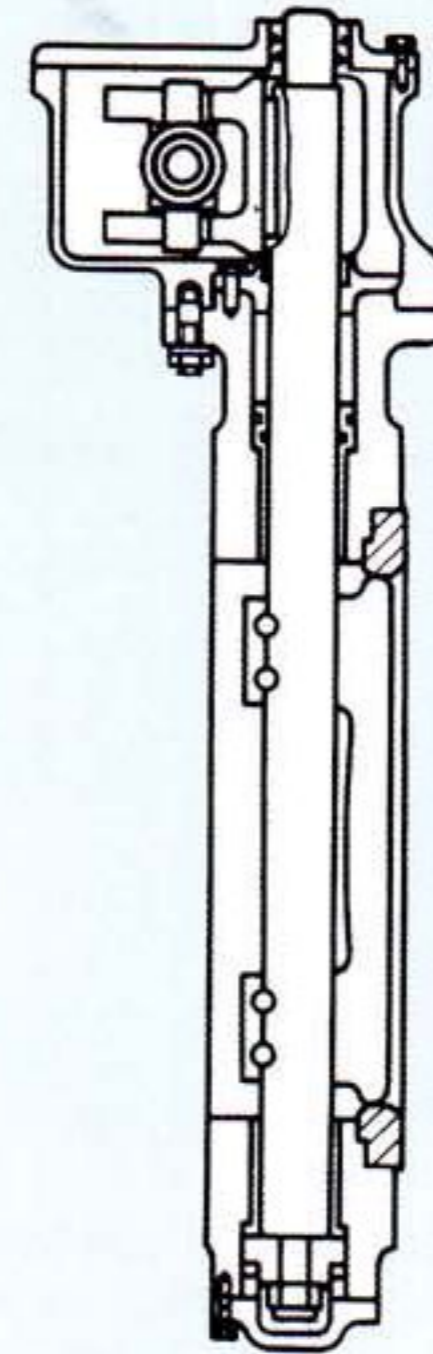
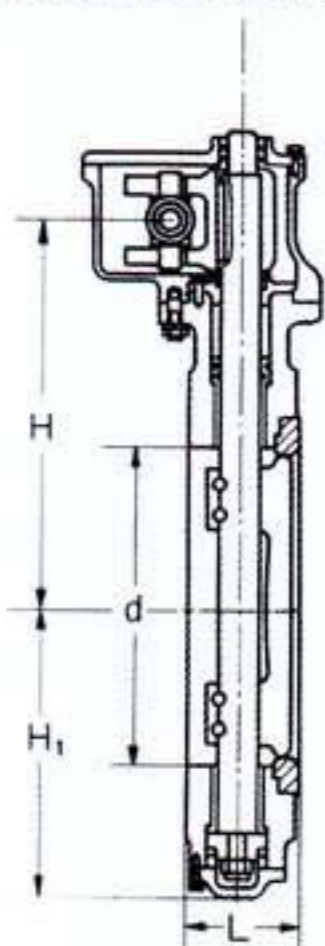


Table of dimensions weight

(mm)

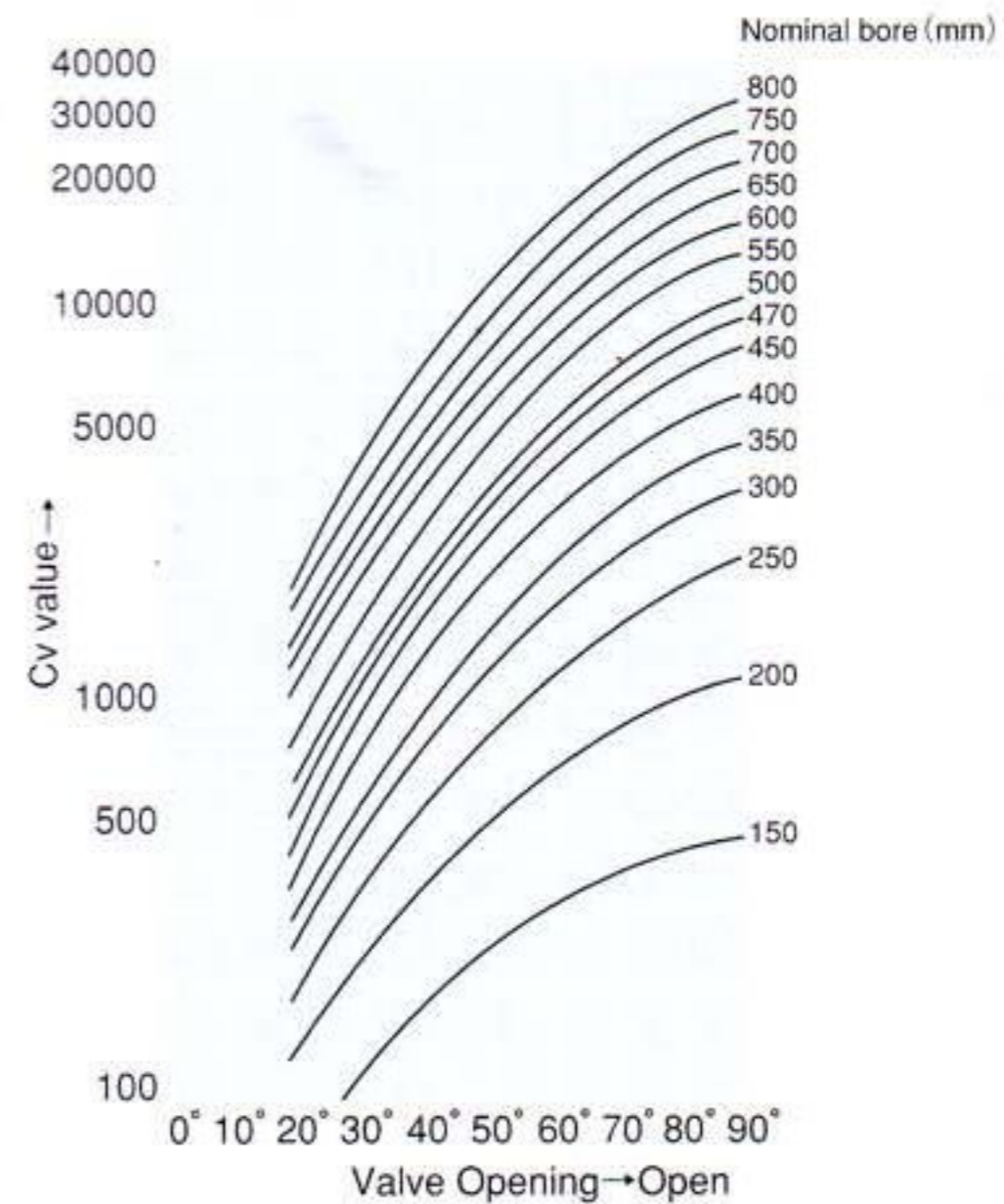
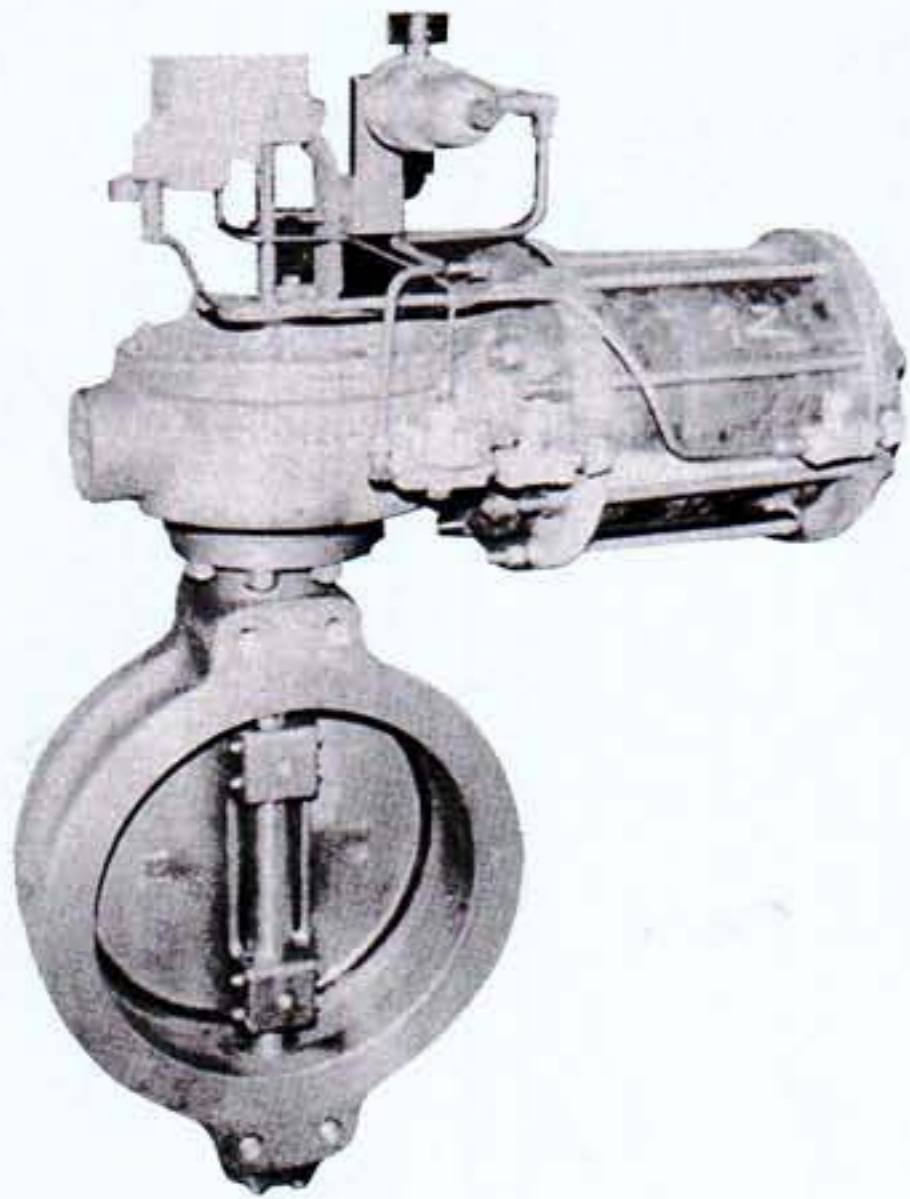
Dimensional drawing



Nominal bore mm(inch)	d	L	H/HG *	H ₁	l ₁	l ₂	l ₃	Mass (kg)
150 ^A (6 ^B)	150	91	361/506	196	389	135	50	87/98
200 ^A (8 ^B)	200	101	396/541	207	421	138	50	116/127
250 ^A (10 ^B)	250	111	436/596	247	443	142	55	140/152
300 ^A (12 ^B)	300	111	482/642	272	505	162	65	170/185
350 ^A (14 ^B)	335	122	520/700	322	555	188	80	205/220
400 ^A (16 ^B)	380	132	567/747	342	575	198	85	265/280
450 ^A (18 ^B)	430	152	630/830	392	605	218	95	340/355
500 ^A (20 ^B)	480	162	673/893	418	640	231	105	405/422
550 ^A (22 ^B)	530	172	745/965	445	735	251	120	490/507
600 ^A (24 ^B)	580	202	774/1024	479	820	290	145	585/623
650 ^A (26 ^B)	630	212	839/1089	483	820	300	145	720/780
700 ^A (28 ^B)	680	222	872/1122	523	920	345	175	820/885
750 ^A (30 ^B)	730	232	933/1183	538	1090	365	195	1010/1080
800 ^A (32 ^B)	780	242	967/1217	592	1070	405	220	1170/1245

* HG : When valve is fitted with frame (and gland packing). For measurement of l₁, l₂, and l₃, see the dimensional drawing on page 47.

NS-C NON-LEAK BUTTERFLY CONTROL VALVE



This valve is NS-C series non-leak type butterfly valve, one of our representative products, which is equipped with an appropriate actuator to be used as control valve. We have many actual results of this valve in special application.

The features of this valve are rubber-lining type valve seat, completely nil leakage at full closure, easy replacement of valve seat, and small piping space requirement.

The power source of actuator can be either oil hydraulic, pneumatic, or electric one.

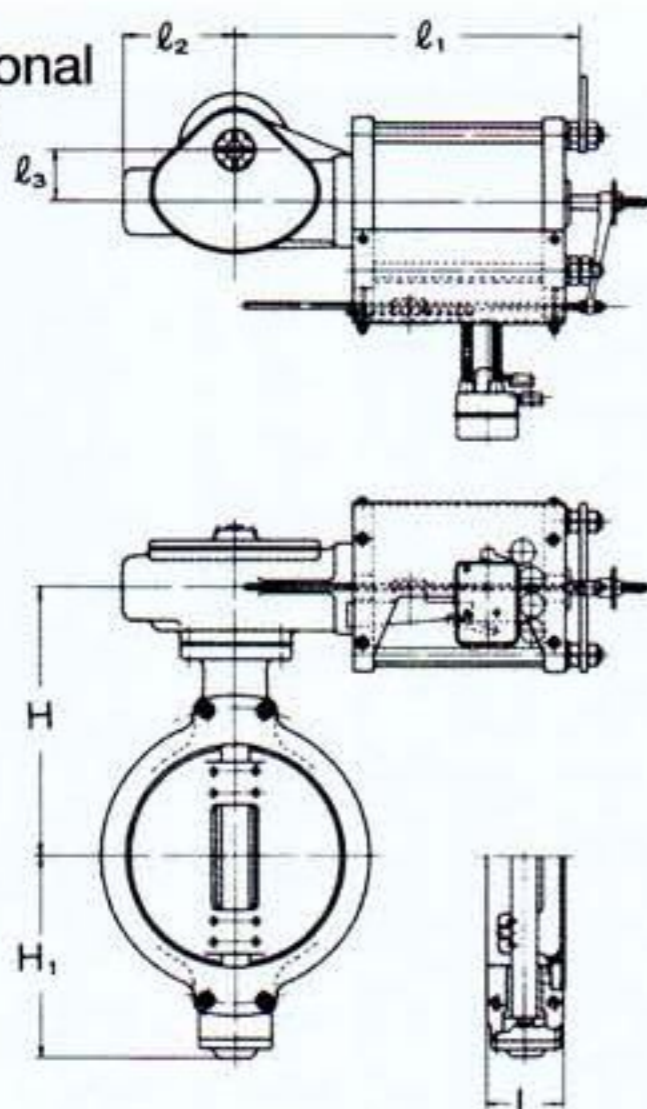
- The oil hydraulic type is an air-oil (or electricity-oil) positioner, and feedback is effected by transmitting pneumatic signal of valve travel. Oil hyd. pressure 4.9 to 6.9 Mpa is made the standard, and suitable for high pressure and large bore valves.
- The pneumatic type is a combination of a pneumatic positioner and a cylinder. Pressure is 4.9 to 6.9 Mpa.
- "Twin power" is available as a special rotary type actuator. (See the separate "Technical Manual".)

For the valve body assembly of butterfly valve, see the separate catalogue (Cat. No. 565).

SPECIFICATIONS

Type of valve body assembly	Wafer type butterfly valve of casting, with rubber lining seat.
Pressure rating	JIS 5K~16K, or ANSI 125 and 150
Nominal bore	150~1500 ^A
Maximum service temperature	70°C (158°F)
Standard materials	<ul style="list-style-type: none"> • Valve body assembly FC200, FCD400, CAC403, CAC406, SCPH2, 11, 21, 32, 61, SUS13, 14 • Trime (Valve seat...SS400+rubber lining (NBR · CR) (Valve dish...SC (Seat contacting surface is given SUS304 facing), etc • Packing Gasket (Asbestos Free) PTFE graphite etc.
Cv value	See the figure above. At fully open position, K _v value : 0.38 X _T value : 0.32
Flow characteristic	See the figure above.
Performance	<ul style="list-style-type: none"> • Rangeability 20 : 1 • Leakage at full closure Nil.
Dimensions and mass	See the table and the figure below.

Dimensional drawing



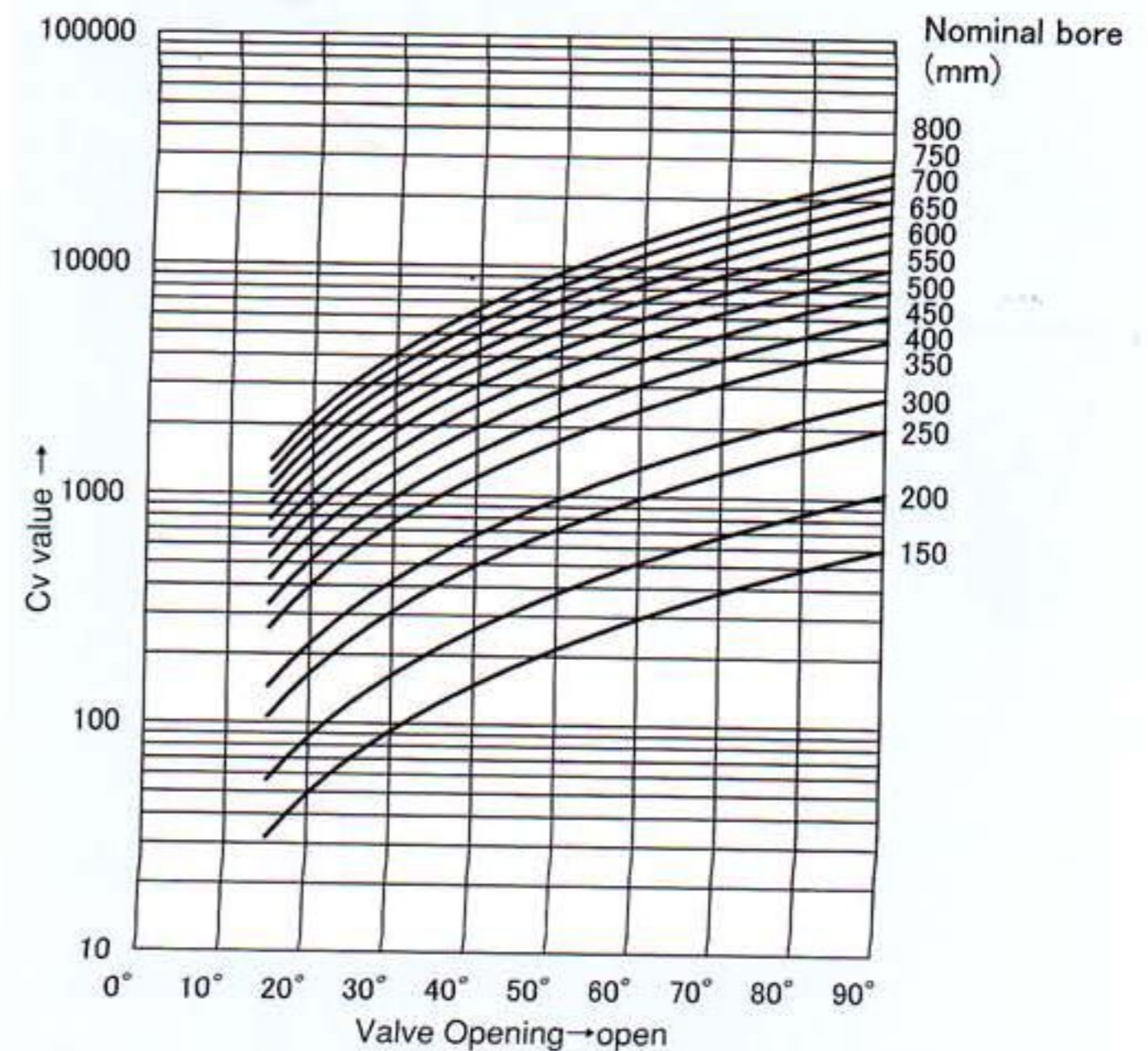
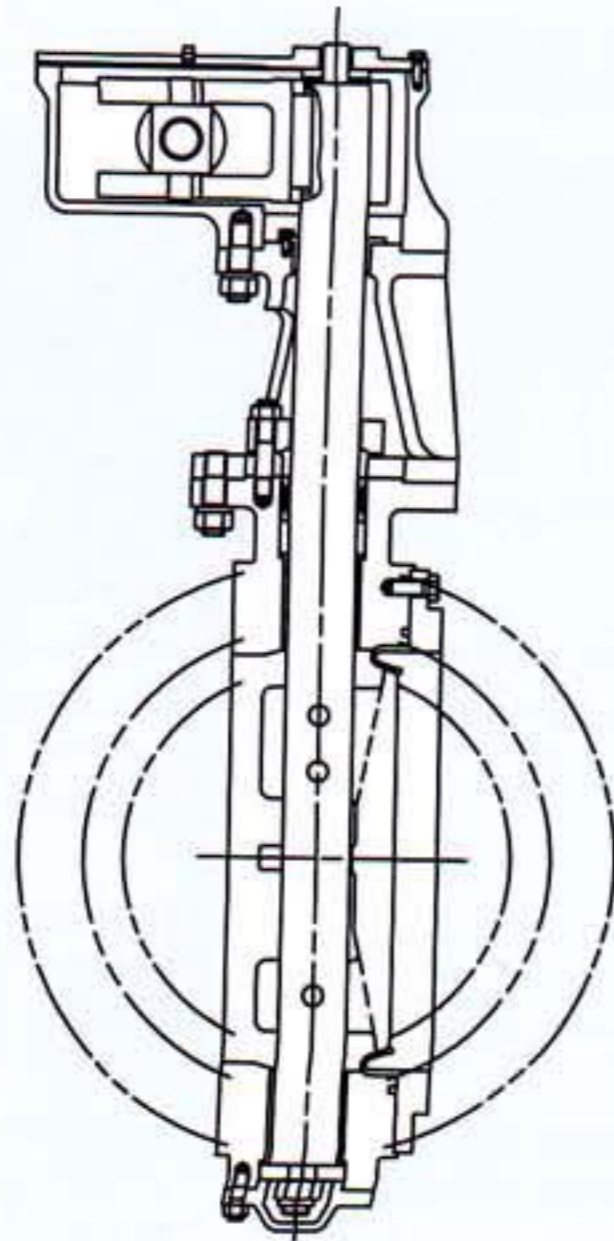
This drawing shows without handwheel.

Table of dimensions and weight

Nominal bore mm (inch)	d	L	H	H ₁	l ₁	l ₂	l ₃	Mass (kg)
150 ^A (6 ^B)	150	90	361	196	389	135	50	87
200 ^A (8 ^B)	200	100	396	207	421	138	50	116
250 ^A (10 ^B)	250	110	436	247	443	142	55	140
300 ^A (12 ^B)	300	110	482	272	505	162	65	170
350 ^A (14 ^B)	335	120	520	322	555	188	80	205
400 ^A (16 ^B)	380	130	567	342	575	198	85	265
450 ^A (18 ^B)	430	150	630	392	605	218	95	340
500 ^A (20 ^B)	480	160	673	418	640	231	105	405
550 ^A (22 ^B)	530	170	745	445	735	251	120	490
600 ^A (24 ^B)	580	200	774	479	820	290	145	585
650 ^A (26 ^B)	630	210	839	483	820	300	145	720
700 ^A (28 ^B)	680	220	872	523	920	345	175	820
750 ^A (30 ^B)	730	230	933	538	990	365	195	1010
800 ^A (32 ^B)	780	240	967	592	1070	405	220	1170

• Please consult us for sizes not listed on the table

DM SERIES METALLIC VALVE SEAT TYPE BUTTERFLY CONTROL VALVE



This valve is not influenced by the kind of fluid or the temperature of fluid. It serves in a wide temperature range from very low up to high, and has a special feature of fireproof design.

The valve has a double eccentric construction which permits the contact between the valve disk and the seat only at the fully closed position. As the deformation or/and defacement of the valve seat is very small, leakage is almost nil.

The power source of the actuator is mainly pneumatic. The pneumatic type is a combination of a pneumatic positioner and a cylinder. The pressure is normally 0.49 to 0.69MPa. We also produce oil hydraulic type and electric type.

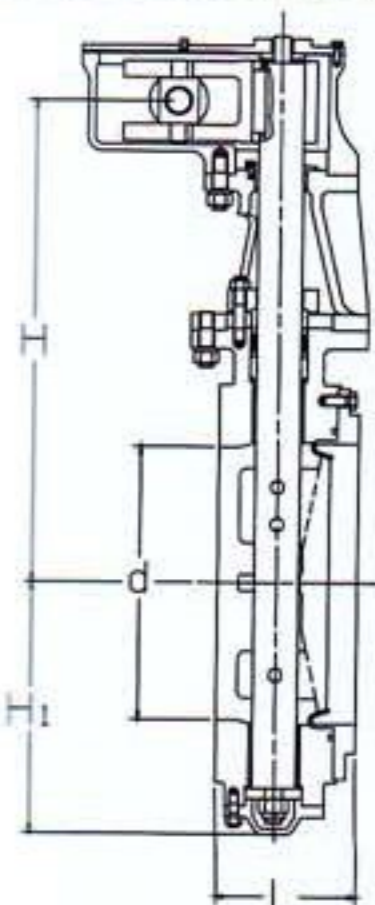
SPECIFICATIONS

Type of valve body assembly	Wafer type butterfly valve of casting. (valve for cryogenic service is flange type.)
Pressure rating	JIS 5K~20K or ANSI 125~300
Nominal bore	150 ~ 1500(6~60inch)

Service temperature range	-253~+475°C (-423~887°F)
Standard materials	<ul style="list-style-type: none"> Valve body assembly: FC200, FCD400, SCPH2, SCPH21, SCS13, SCS14, etc. Trim: (Valve seat...S25C, SFVAF11A, SUS304, SUS316) (Valve disk...SCPH2, SCPH21, SCS13, SCS14) Contacting surfaces of both parts are given stellite facing Packing, gasket (Asbestos Free): PTFE, graphite.
Cv value	See the figure above
Flow characteristic	See the figure above
Performance	<ul style="list-style-type: none"> Rangeability: 20 : 1 Leakage at full closure: 100cc/minute/inch of nominal bore.
Dimensions and Mass	See the table and the figure below.

Table of dimensions and weight

Dimensional drawing



Nominal bore mm(inch)	d	L	H/HG *	H ₁	l ₁	l ₂	l ₃	Mass (kg)
150A (6B)	150	150	361/506	190	421	138	50	96/108
200A (8B)	200	160	396/541	212	443	142	55	128/140
250A (10B)	250	165	441/601	247	505	162	65	155/169
300A (12B)	300	170	492/652	288	575	198	85	190/207
350A (14B)	335	185	544/724	338	640	231	105	236/250
400A (16B)	380	200	600/780	367	735	251	120	310/351
450A (18B)	430	220	653/853	400	820	290	145	388/438
500A (20B)	480	240	696/916	446	920	345	175	460/520
550A (22B)	530	260	775/995	485	1070	405	220	560/628
600A (24B)	580	280	830/1080	526	1318	438	240	690/790
650A (26B)	630	300	865/1140	554	1318	438	240	816/980
700A (28B)	680	320	944/1194	605	1500	475	280	975/1130
750A (30B)	730	340	996/1246	650	1535	475	280	1186/1365
800A (32B)	780	370	1023/1273	695	1570	475	280	1360/1563

* HG : When valve is fitted with frame (and gland packing).

For measurement of l₁, l₂, and l₃, see the dimensional drawing on page 47. Flange standard are JIS, ANSI, and others, but some dimensions may be altered. This table does not indicate dimensions of valves of long bonnet construction.

The size is different depending on the design pressure and the design temperature.

Please refer to an individual drawing for a detailed size.

NAKAKITA's CONTROL VALVES !

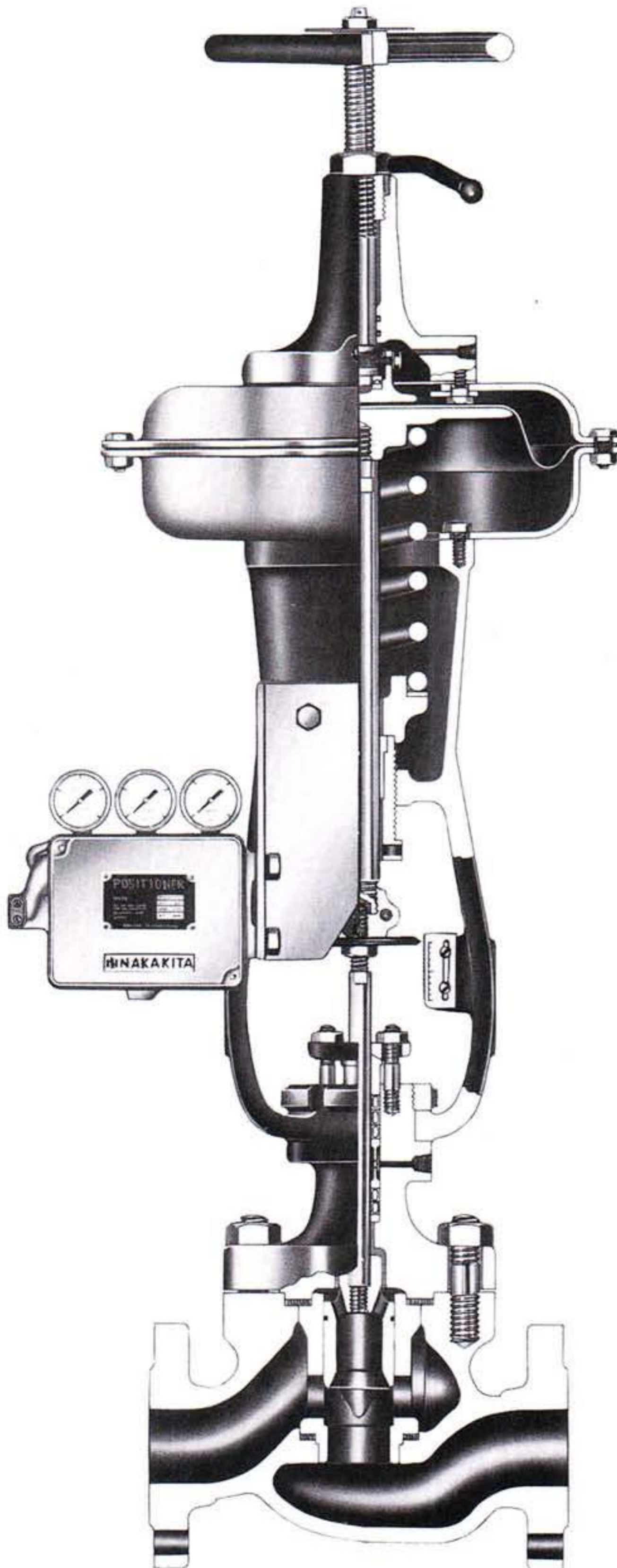
CONSTRUCTION

VALVE BODY ASSEMBLY

- The pressure containing part consisting of the valve body, bonnet and trim is called the [valve body assembly]. The pressure-temperature rating for the materials is determined by the applicable standard. As to the type and size, the optimum selection is made according to your [specifications].
- The valve plug, seat ring, cage, guide bushing, valve stem, etc. are called the [trim], and its combination is determined according to your [specifications] including the fluid properties and pressure drop.
- The [flow characteristic] which indicates the relationship between the valve travel and the flow rate is determined by properly selecting the shape of the throttle portion consisting of the valve plug and seat ring.
- The gland packing is required to prevent leakage of the fluid as well as to possess low-friction property and durability. It has a vital role in the normal operation of the control valve.

DIAPHRAGM ACTUATOR

- The [actuator] controls the travel of the valve, via the valve stem, by the balance between the operating air pressure applied to the diaphragm chamber and the compressive force of the counter spring.
- The signal (standard; 20 to 100kpa) from a pneumatic indicating controller is normally guided into the diaphragm chamber. For further responsiveness, a positioner is installed.
- When the electric signal (4 to 20 or 10 to 50 mA DC) is used, an E/P positioner is applied.



• This drawing shows DY-COBOO

MS-GCSS □ CAGE-GUIDED SINGLE SEATED CONTROL VALVE



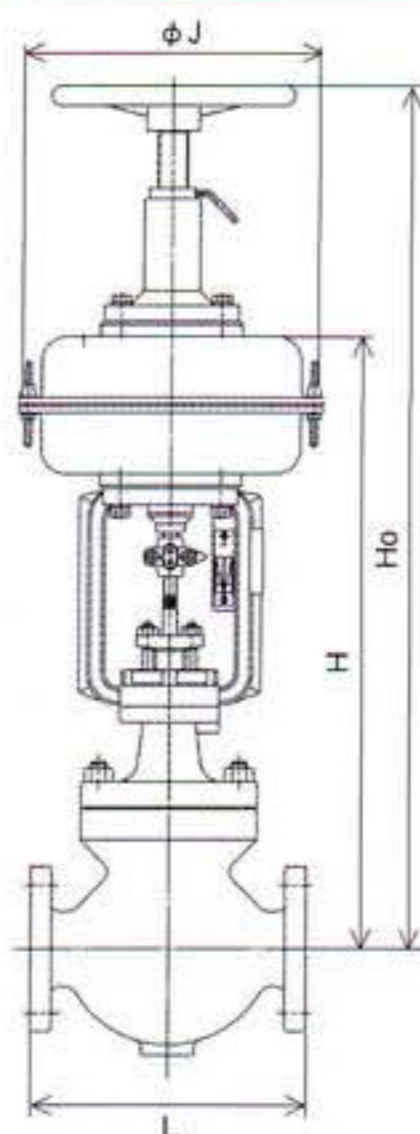
Model MS-GC Cage-guided Single-seated Control Valve is designed using powerful multi-spring type diaphragm actuator. And it is compact and lightening that compare with using DY-series from before. The valve trim is easy and quick replacement of trim without disconnecting the body from the piping. Special consideration is given to its durability and maintenance.

MS-GCS Cage-guided single seated control valve

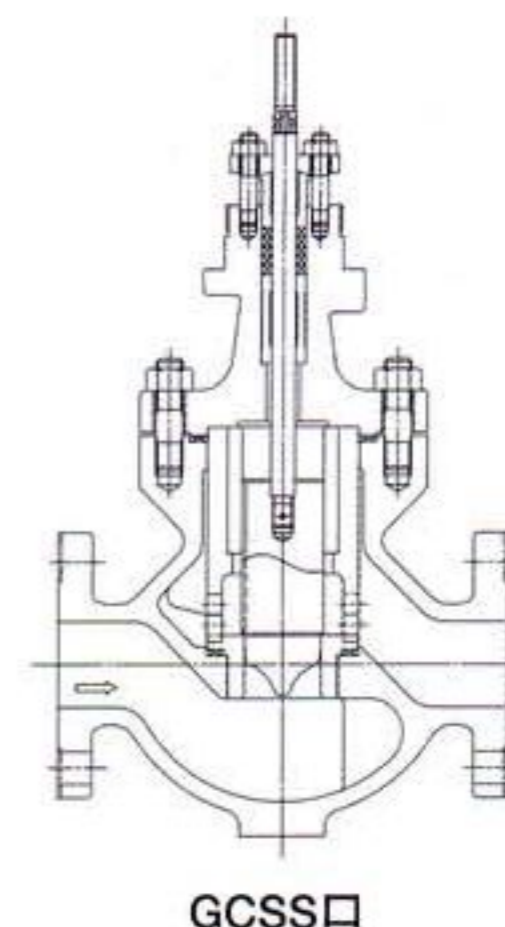
SPECIFICATIONS

Type of valve body	Cage guided type single seated glove valve
Pressure rating	JIS5K~63K, ANSI 125~900, PN10~100
Nominal bore	20~50A (3/4~2B)
Service temperature range	-20~550°C
Standard material (JIS)	<ul style="list-style-type: none"> • valve body FC, SCPH2, SCPH21, 32, SCS13,14 • Trim SUS403, SUS304, SUS316, etc • Gasket•Packing Asbestos free
Flow characteristic	Parabolic Linear EQ%
Maximum allowable pressure drop	Maximum allowable Pressure drop is shown in the table below.
Performance	<ul style="list-style-type: none"> • Rangeability 30:1 • Seat leakage 0.01% of rated Cv <ANSI CLASS IV>
Dimensions and mass	See the table and the figure below

Dimensional drawing



Structure drawing



GCSS □

NOMINAL BORE mm (inch)		20 ^A (3/4 ^B)								25 ^A (1 ^B)				32A (1 1/4 ^B)				40A (1 1/2 ^B)				50 ^A (2 ^B)																													
RATING	JIS (K)	5,10		16,20		30,40		63		5,10		16,20		30,40		63		5,10		16,20		30,40		63		5,10		16,20		30,40		63																			
	ANSI (Class)	125,150		300		600		900		125,150		300		600		900		125,150		300		600		900		125,150		300		600		900																			
	ISO * (PN-bar)	10,16		25,40		64,100				10,16		25,40		64,100		10,16		25,40		64,100		10,16		25,40		64,100		10,16		25,40		64,100																			
DIMENSION (mm)	Face to face L	154		162		162		166		212		216		240		256		154		162		162		166		216		220		244		262		210		220		280		235		250		305		265		275		370	
		Height	Dimension H (※1)		520		550		585		520		550		585		540		550		575		570		570		575		620		620		625		620		620		625												
	additional to H		With fin		105		100		115		105		100		115		100		100		100		100		100		100		100		100		100		100		100		100												
		With handwheel		180		180		180		180		180		180		180		180		180		180		180		180		180		180		180		180																	
RATED Cv VALUE		0.23		0.44		0.8		1.1		1.7		2.3		3.2		4.2		5.4		7.2		9.5		11		14		18		20		26		36																	
ALLOWABLE PRESSURE DROP (MPa) (※3)	Actuator size (J)	235	Off Balance Press (kPa)	30		5.2		2.7		2.2		1.6		1.1		0.8		0.6		0.4		0.1		0.06																											
				120		15.5		11.5		9.8		7.4		5.7		4.5		3.6		2.7		1.8		1.2																											
	270	30																		0.8		0.46		0.26		0.07																									
		120																		4.3		2.9		2.0		1.1																									
MASS (kg) (※2)		32		57		57				36		64		64		44		73		100		48		84		104		62		90		139																			

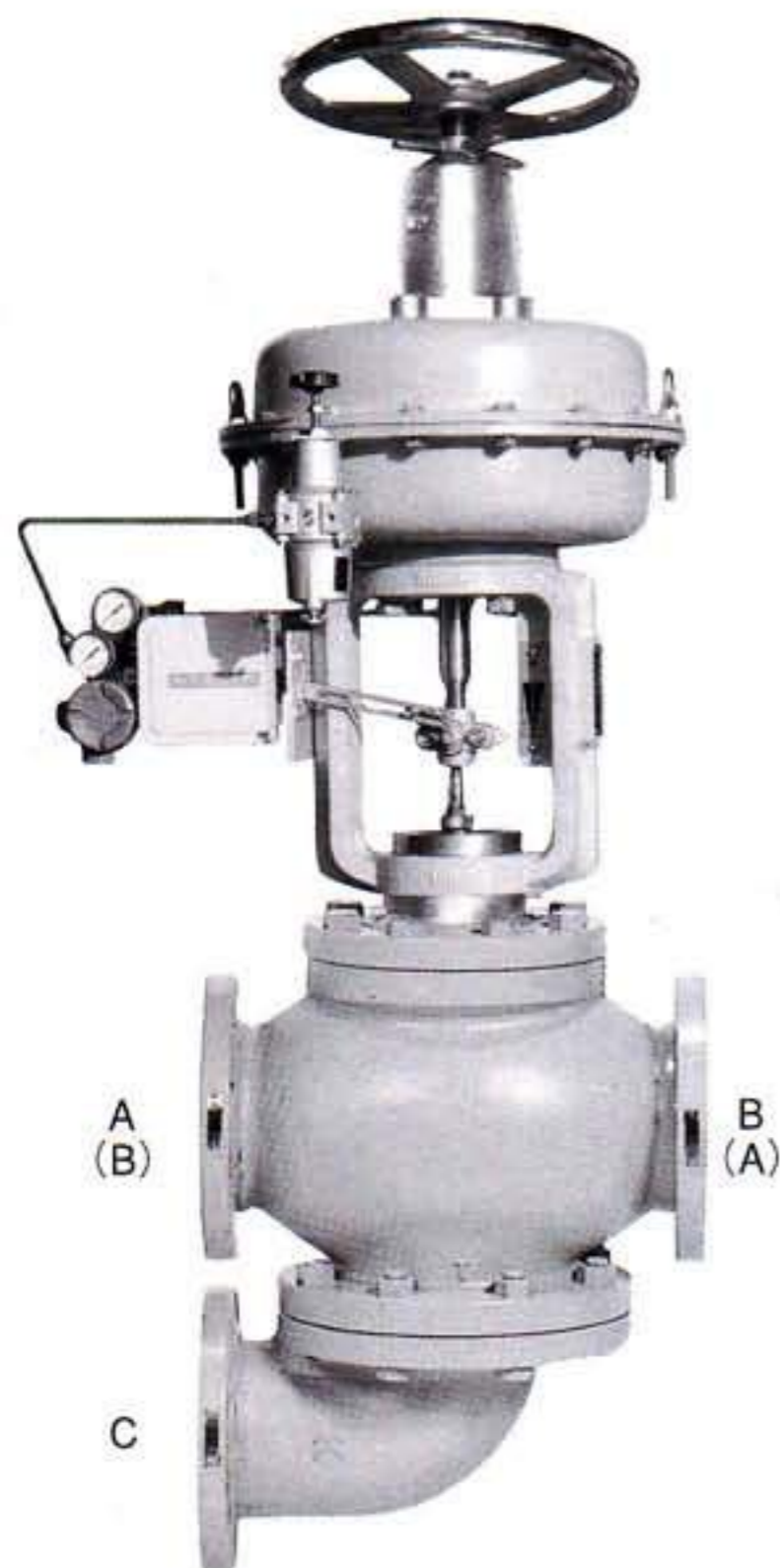
(※1) H dimension gives the longest dimension of the valve with standard type bonnet. However, in case of fin type bonnet or handwheel installation (Ho. dimension), add the respective [additional H value] of the above to H.

(※2) Mass indicated is that of the valve with handwheel by rating 300 (=maximum mass).

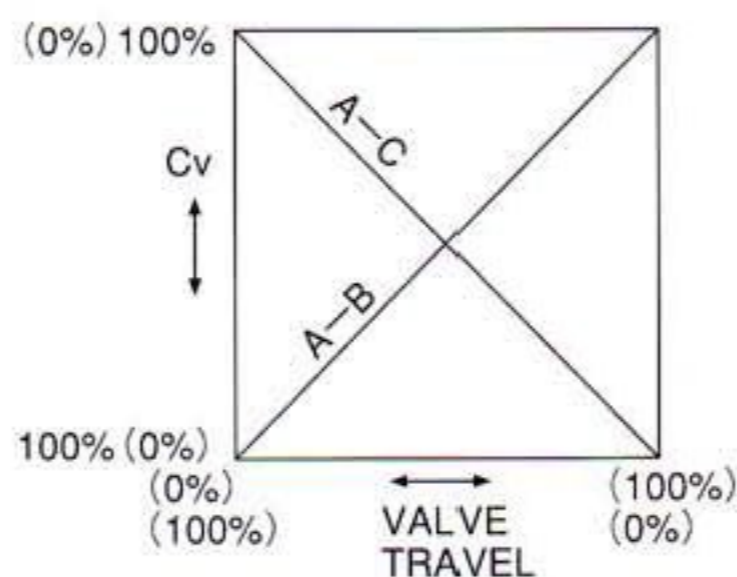
(※3) The off balance pressure of 120kPa becomes a one with positioner.

* ISO in the column of rating indicates of valve groups formed in terms of face to face dimension.

MS-T 3-WAY CONTROL VALVE



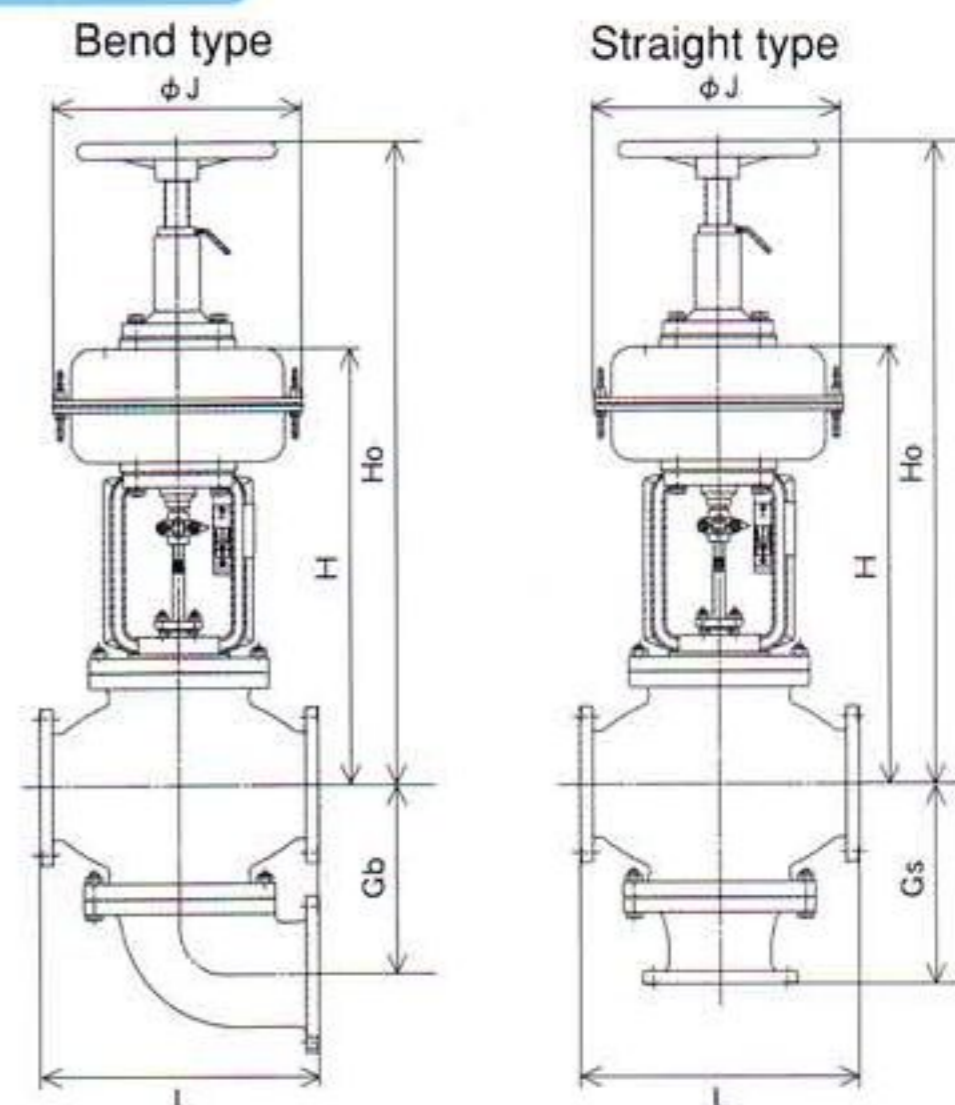
Inherent flow characteristic



SPECIFICATIONS

Type of valve body	Single seated 3-way valve with top and bottom guided plug
Pressure rating	JIS5K,10K, ANSI 125,150, PN10,16
Nominal bore	25~300A
Service temperature range	0~220°C
Standard material (JIS)	<ul style="list-style-type: none"> valve body FC, FCD, CAC403, SCPH2, SCS13,14 Trim SUS304,316, or SCS13, SCS14 Gasket·Packing Asbestos free
Flow characteristic	Linear ; See the left figure.
Maximum allowable pressure drop	In the case of mixing type, maximum allowable pressure drop is shown in the table below.
Performance	<ul style="list-style-type: none"> Rangeability 30:1 Seat leakage 0.1% of rated Cv
Dimensions and mass	See the table and the figure below

Dimensional drawing



Model MS-T 3-way control Valve is designed using powerful multi-spring type diaphragm actuator. And it is compact and lightening that compare with using DY-series from before.

Depending on the direction of the flow of the fluid, the valve can be used for mixing (from two ways to one way) as well as dividing (from one way to two ways). Generally, a good control-ability mixing type is used for the cooling water and the lubricating oil system which is supplied to the large-sized diesel engine and the reduction gear.

MS-T 3-way control valve

NOMINAL BORE mm (inch)		25 ^A (1 ^B)		40 ^A (1 1/2 ^B)		50 ^A (2 ^B)		65 ^A (2 1/2 ^B)		80 ^A (3 ^B)		100 ^A (4 ^B)		125 ^A (5 ^B)		150 ^A (6 ^B)		200 ^A (6 ^B)		250 ^A (10 ^B)		300 ^A (12 ^B)				
RATING	JIS (K)	5	10	5	10	5	10	5	10	5	10	5	10	5	10	5	10	5	10	5	10	5	10			
	ANSI (Class)	125	150	125	150	125	150	125	150	125	150	125	150	125	150	125	150	125	150	125	150	125	150			
	ISO * (PN-bar)	10	16	10	16	10	16	10	16	10	16	10	16	10	16	10	16	10	16	10	16	10	16			
RATED Cv		9.5		33		48		86		115		180		270		400		630		950		1400				
DIMENSION (mm)	Face to face L (FC)	JIS	162	170	260	268	260	268	300	308	316	324	350	358	420	428	480	488	570	574	740	748	860	868		
		ANSI	158	164	258	264	260	268	300	310	318	328	358	358	428	428	488	488	580	580	750	750	868	868		
		ISO	166	166	264	264	264	264	304	304	324	324	358	358	432	432	488	488	574	582	744	752	860	868		
	Bend Gb	150		221		221		181		196		219 ^{#3} (250)		275		321		370		459		520				
		Straight Gs		210		215		225		240		265		300		340		375		430		480				
Height	H without handwheel		500		504		521		540		548		552		620		750		838		942		984			
	Ho with handwheel		686		690		707		726		734		738		879		1100		1188		1322		1364			
ALLOWABLE PRESSURE DROP (MPa) (※1)	Actuator size (J)	Off Balance Press (kPa)	235	30	0.56	0.21																				
				120	2.72	1.00																				
			270	30	0.78	0.29	0.20	0.11	0.09	0.06																
				120	3.60	1.32	0.90	0.54	0.42	0.28																
			324	30													0.31	0.21								
				120																						
430	30																									
	120																		0.31	0.19	0.14					
MASS (kg) (※2)		44		60		70		74		82		95		152		262		323		509		703				

(※1) When the actuator size is selected, to be checked " allowable pressure > differential pressure of full close cooler side + loss pressure of cooler (abt.0.03MPa) "

In case of dividing type, the actuator selected 1.5 times allowable pressure above the table.

(※2) Mass indicated is that of the valve with handwheel and positioner (=maximum mass).

(※3) Gb dimension in the table indicates those of ANSI flanged valves.

* ISO in the column of rating indicates the ratings of valve groups formed in terms of face to face dimension. The scramble size L, Gs, and Gb with piping are as common as a DY-T 3-Way control valve.