



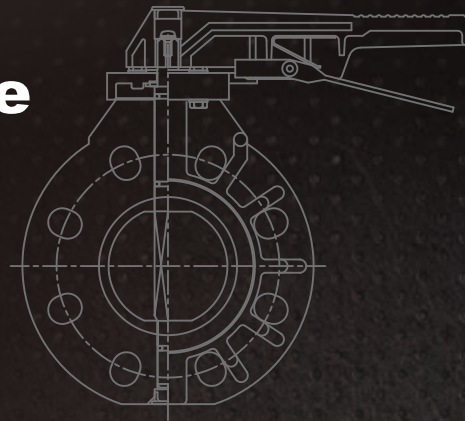
ESLON VALVES CATALOGUE

Manual Operation Valves / Automatic Operation Valves



ESLON VALVE Catalogue

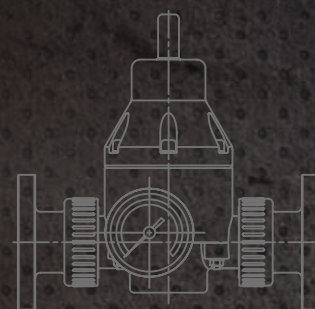
Manual Operation and Automatic Operation Valves



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Manual Operation Valves

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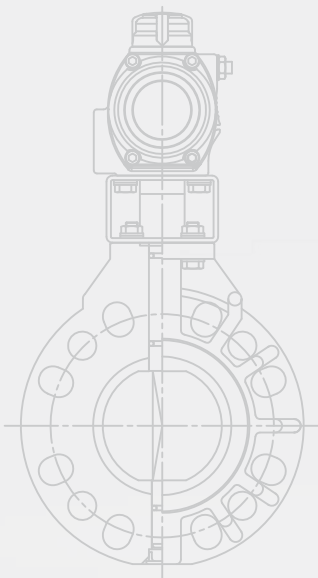
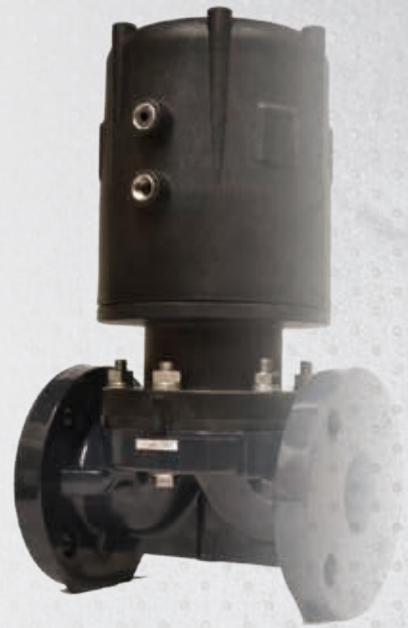
Automatic Operation Valves

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ESLON VALVE Product list

Automatic Operation Valves

PNEUMATIC DIAPHRAGM VALVE TYPE F ▶▶▶▶P53									
Connection	Flange				TS Socket		Thread		Butt Spigot
Body Material	PVC	HT·CPVC	PP	PVDF	PVC	HT·CPVC	PVC	PVDF	PVDF
Diaphragm Material	EPDM/PTFE				EPDM/PTFE		EPDM/PTFE		EPDM/PTFE
Operation	Double action/Air to open/Air to close								
15A	●	●	●	●	●	●	●	●	●
20A	●	●	●	●	●	●	●	●	●
25A	●	●	●	●	●	●	●	●	●
32A	●	●	●	●	●	●	●	●	●
40A	●	●	●	●	●	●	●	●	●
50A	●	●	●	●	●	●	●	●	●
65A	●	●	●	●	—	—	—	—	—
80A	●	●	●	●	—	—	—	—	—
100A	●	●	●	●	—	—	—	—	—

PNEUMATIC BALL VALVE TYPE S ▶▶▶▶P56									
Connection	Flange				TS Socket		Thread		Butt Spigot
Body Material	PVC	HT·CPVC	PP	PVDF	PVC	HT·CPVC	PVC	PVDF	PVDF
O-ring Material	EPDM/FKM				EPDM/FKM		EPDM/FKM		EPDM/FKM
Operation	Double action/Air to open/Air to close								
15A	●	●	●	●	●	●	●	●	●
20A	●	●	●	●	●	●	●	●	●
25A	●	●	●	●	●	●	●	●	●
32A	●	●	●	●	●	●	●	●	●
40A	●	●	●	●	●	●	●	●	●
50A	●	●	●	●	●	●	●	●	●
65A	●	●	●	●	●	●	●	●	●
80A	●	●	●	●	●	●	●	●	●
100A	●	●	●	●	●	●	●	●	●

PNEUMATIC BUTTERFLY VALVE TYPE S ▶▶▶▶P59			
Connection	Wafer		
Body × Disc Material	PVC×PP	PP×PP	PVDF×PVDF
Seat ring · O-ring Material	EPDM/FKM		
Stem Material	SUS420J2/SUS316		
Operation	Double action/Air to open/Air to close		
40A	●	●	●
50A	●	●	●
65A	●	●	●
80A	●	●	●
100A	●	●	●
125A	●	●	●
150A	●	●	●
200A	●	●	●
250A	●	●	●
300A	●	●	●
350A	●	●	●
400A	●	●	●

AIR OPERATION VALVE ▶▶▶▶P61	
Connection	TS Socket
Body Material	PVC
O-ring Material	EPDM/FKM
Operation	Double action/Air to open/Air to close
15A	●
20A	●
25A	●
32A	●
40A	●
50A	●
65A	●

Automatic Operation Valves

ELECTRIC DIAPHRAGM VALVE TYPE KS

▶▶▶▶P63

Connection	Flange				TS Socket		Thread		Butt Spigot
Body Material	PVC	HT·CPVC	PP	PVDF	PVC	HT·CPVC	PVC	PVDF	PVDF
Diaphragm Material	EPDM/FKM/PTFE				EPDM/FKM/PTFE		EPDM/FKM/PTFE		EPDM/FKM/PTFE
15A	●	●	●	●	●	●	●	●	●
20A	●	●	●	●	●	●	●	●	●
25A	●	●	●	●	●	●	●	●	●
32A	●	●	●	●	●	●	●	●	●
40A	●	●	●	●	●	●	●	●	●
50A	●	●	●	●	●	●	●	●	●
65A	●	●	●	●	—	—	—	—	—
80A	●	●	●	●	—	—	—	—	—
100A	●	●	●	●	—	—	—	—	—
125A	●	—	●	●	—	—	—	—	—
150A	●	—	●	●	—	—	—	—	—

ELECTRIC BALL VALVE TYPE K

▶▶▶▶P65

Connection	Flange				TS Socket		Thread		Butt Spigot
Body Material	PVC	HT·CPVC	PP	PVDF	PVC	HT·CPVC	PVC	PVDF	PVDF
O-ring Material	EPDM/FKM				EPDM/FKM		EPDM/FKM		EPDM/FKM
15A	●	●	●	●	●	●	●	●	●
20A	●	●	●	●	●	●	●	●	●
25A	●	●	●	●	●	●	●	●	●
32A	●	●	●	●	●	●	●	●	●
40A	●	●	●	●	●	●	●	●	●
50A	●	●	●	●	●	●	●	●	●
65A	●	●	●	●	●	●	●	●	●
80A	●	●	●	●	●	●	●	●	●
100A	●	●	●	●	●	●	●	●	●

ELECTRIC BALL VALVE TYPE N · Standard type

▶▶▶▶P67

Connection	Flange				TS Socket		Thread		Butt Spigot
Body Material	PVC	HT·CPVC	PP	PVDF	PVC	HT·CPVC	PVC	PVDF	PVDF
O-ring Material	EPDM/FKM				EPDM/FKM		EPDM/FKM		EPDM/FKM
15A	●	●	●	●	●	●	●	●	●
20A	●	●	●	●	●	●	●	●	●
25A	●	●	●	●	●	●	●	●	●
32A	●	●	●	●	●	●	●	●	●
40A	●	●	●	●	●	●	●	●	●

※Nominal diameter 15,32,80 can connect with 16,30,75.

ESLON VALVE Product list

Automatic Operation Valves

ELECTRIC BALL VALVE TYPE N · High speed type ▶▶▶▶P67									
Connection	Flange				TS Socket		Thread		Butt Spigot
Body Material	PVC	HT·CPVC	PP	PVDF	PVC	HT·CPVC	PVC	PVDF	PVDF
O-ring Material	EPDM/FKM				EPDM/FKM		EPDM/FKM		EPDM/FKM
15A	●	●	●	●	●	●	●	●	●
20A	●	●	●	●	●	●	●	●	●
25A	●	●	●	●	●	●	●	●	●
32A	●	●	●	●	●	●	●	●	●
40A	●	●	●	●	●	●	●	●	●
50A	●	●	●	●	●	●	●	●	●
65A	●	●	●	●	●	●	●	●	●
80A	●	●	●	●	●	●	●	●	●
100A	●	●	●	●	●	●	●	●	●

3-WAY BALL VALVE ▶▶▶▶P69			
Connection	Flange	TS Socket	Thread
Body Material	PVC		
O-ring Material	EPDM/FKM		
15A	●	●	●
20A	●	●	●
25A	●	●	●
40A	●	●	●
50A	●	●	●

ELECTRIC BALL VALVE TYPE K ▶▶▶▶P65			
Body × Disc Material	PVC×PP	PP×PP	PVDF×PVDF
O-ring Material	EPDM/FKM		
Stem Material	SUS420J2/SUS316		
40A	●	●	●
50A	●	●	●
65A	●	●	●
80A	●	●	●
100A	●	●	●
125A	●	●	●
150A	●	●	●
200A	●	●	●
250A	●	●	●
300A	●	●	●

※Nominal diameter 15,32,80 can connect with 16,30,75.

Automatic Operation Valves

ELECTRIC BUTTERFLY VALVE TYPE K ▶▶▶▶P71

Connection	Wafer		
Body x Disc Material	PVCxPP	PPxPP	PVDFxPVDF
Seat ring · O-ring Material	EPDM/FKM		
Stem Material	SUS420J2/SUS316		
40A	●	●	●
50A	●	●	●
65A	●	●	●
80A	●	●	●
100A	●	●	●
125A	●	●	●
150A	●	●	●
200A	●	●	●
250A	●	●	●
300A	●	●	●

ELECTRIC YP BALL VALVE ▶▶▶▶P75

Connection	Flange	TS Socket	Thread
Body Material	PVC		
O-ring Material	EPDM/FKM		
15A	●	●	●
20A	●	●	●
25A	●	●	●
32A	●	●	●
40A	●	●	●
50A	●	●	●

ESLON VALVE

Basic knowledge of ESLON VALVE

Features of main ESLON valve

Item	Appearance	Flow path	Size	Pressure drop	Controllability	Opening Closing speed	Against Slurry	Pneumatic Type	Electric Type
Diaphragm Valve			15-250	○	○	△	○	possible	possible
Ball Valve			6-100	◎	△	◎	—	possible	possible
Butterfly Valve			40-600	○	△	◎	△	possible	possible
Gate Valve			40-200	○	○	△	○	—	—
Globe Valve			15-100	△	△	△	○	—	—
Check Valve Swing Type			15-200	○	—	◎	—	—	—
Check Valve Ball Type			15-100	△	—	◎	—	—	—

Automatic Operation Valve [Pneumatic type and Electric type]

Pneumatic type Drive the piston in the actuator with air pressure to open and close the valve

- Single acting — Air to open/Normal close >>> Actuate from open to close by air supply
— Air to close/Normal open >>> Actuate from close to open by air supply
- Double acting >>> Open and close valves by switching 2 different air supply ports and exhaust port

Electric type Drive the motor in the actuator with electric power to open and close the valve

Specifications

Rinsed specification Clean assembled valve immersing in pure water (Not completely oil-free)

Oil Free specification Clean all valve parts by pure water and assemble valve

Accessories for pneumatic valve

Solenoid valve	To open/close the valve with on/off power supply .
Limit switch	To output a limit signal when valve is fully opened or fully closed.
Filter regulator	To regulate the air pressure and remove dust, water and oil in air.
Speed controller	To control the open/close speed of the valve with adjusting air volume to the actuator.
Electro-pneumatic positioner	To control the opening degree the valve by current signal.
Manual override	To open / close the valve with hand.

Protection Rating



Classification of First Digit

Index	Definition
0	No protection against contact, solid particles and bodies.
1	Protection against ingress of solid objects greater than 50 mm in diameter.
2	Protection against ingress of solid objects greater than 12.5 mm in diameter.
3	Protection against ingress of solid objects greater than 2.5 mm in diameter, e.g. tip of tool, wire etc.
4	Protection against ingress of solid objects greater than 1 mm in diameter, e.g. wire & copper band.
5	Protection from powder dust ingress (prevent malfunction even under presence of powder dust).
6	Protection from total dust ingress.

Classification of Second Digit

Index	Definition
0	No protection against water.
1	Protection against vertical water drops.
2	Protected against vertically falling water drops when enclosure tilted up to 15°.
3	Protection against spray water from an angle of 60° to vertical line.
4	Protection against splash water from all directions.
5	Protection against water jets from any angle.
6	Protection against powerful water jets from any angle.
7	Protection against water dip in certain level of pressure and length of time.
8	Protection against immersion which the condition is decided between customer & manufacturer (in severe condition comparing to no.7)

Materials

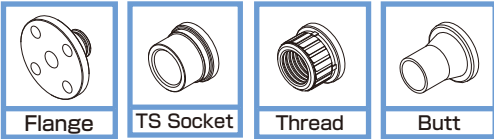
Valve body

		Operating temperature
PVC	Polyvinyl chloride	0°C~60°C
HT(CPVC)	High Temp. (chlorinated) polyvinyl chloride	0°C~90°C
PP	Polypropylene	-20°C~90°C
PVDF	Polyvinylidene fluoride	-20°C~120°C
GF-PP	Glass fiber reinforced polypropylene	-20°C~90°C

Sealing material

EPDM	Ethylene-propylene-diene ter-polymer
FKM	Fluororubber
FKM-FB	Acid-proof fluororubber
PTFE	Polytetrafluoroethylene





JIS ANSI/ASME/ASTM DIN/ISO



Operating Temperature(°C)

	Flange Type	Union Type
PVC	0 ~ 60	0 ~ 50
HT-CPVC	0 ~ 90	0 ~ 90
PP	0 ~ 90	
PVDF	0 ~ 120	0 ~ 100



15~50A

65~100A

ESLON PNEUMATIC DIAPHRAGM VALVE TYPE F

Feature

- High pressure rating and excellent sealing performance with optimized diaphragm design.
2 types of maximum working pressure, 1.0MPa / 0.7MPa for Normal Close Action.
- Standard optional accessories available on the top mount on request.
- Excellent chemical and corrosion resistance, light weight, and compact.
- Flat at the bottom of flange and insert nuts for prevention of tumbling and for better workability in plumbing.
※Union type

Max. Working Press. at R.T.

Size	Air Pressure	
	Double Action Air To Close	Air To Open
15-50A	1.0	7k / 10k
65-100A	0.7	—

Air Supply Port

Double Action	Rc 1/4
Air To Open&Close	Rc 1/4

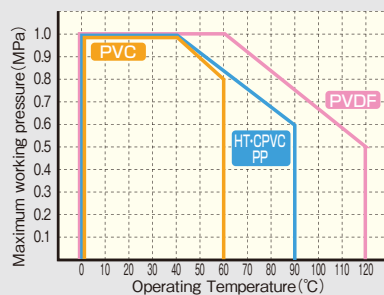
⚠ Important Notes

- Fluid containing slurry, solid, sediment, or crystallized fluid might disable sealing.

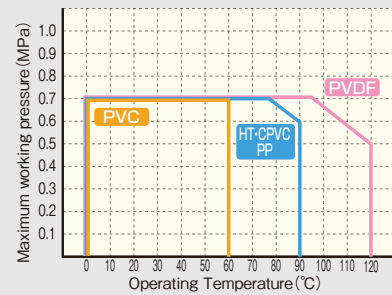
Maximum Working Pressure - Temperature Rating

■ Flange Type
EPDM-FKM-PTFE

● Double Action, Air To Close, Air To Open10K

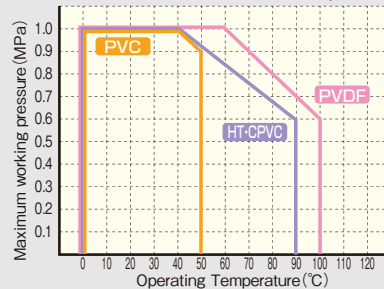


● Air To Open7K



■ Union Type
EPDM-FKM-PTFE

● Double Action, Air To Close, Air To Open10K



● Air To Open7K

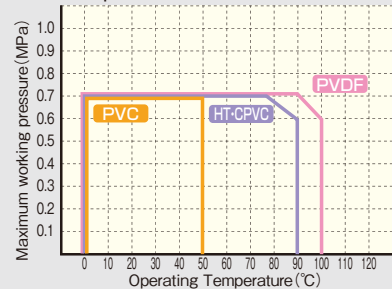
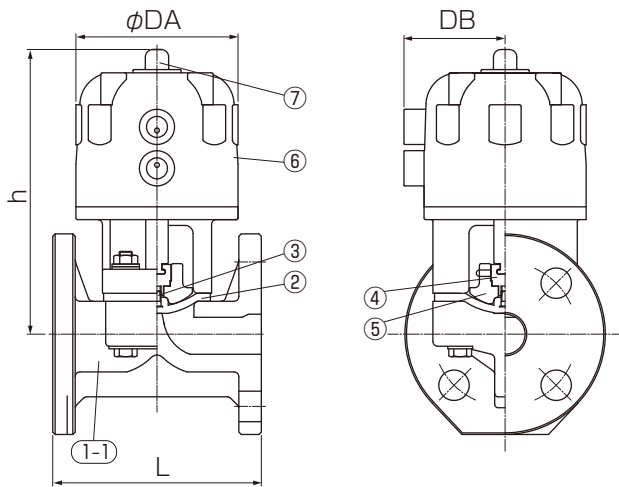
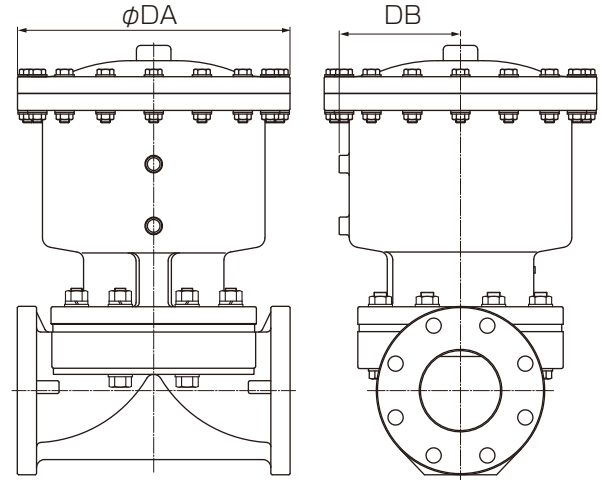


Figure (Flange Type · TS Socket Type · Thread Type · Butt Type)

● Flange Type
15A~50A



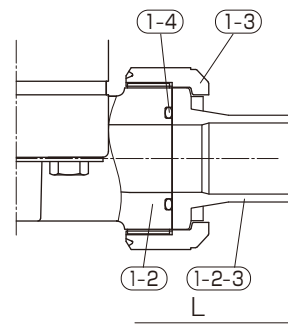
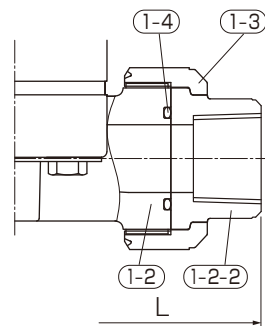
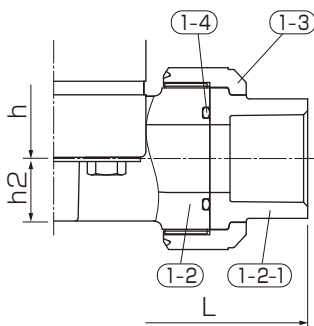
65~100A



● TS Socket Type

● Thread Type

● Butt Type



Option



● Opening control unit



● Closing control unit
(15 ~ 50A)



● Limit switch

Parts List

No.	Part Name	QTY	Material / Type
1-1	Body(Flange type)	1	● PVC ● HT (JIS : Brown) ● CPVC (ANSI-DIN : Gray) ● PP ● PVDF
1-2	Body(Union type)	1	● PVC ● HT (JIS : Brown) ● CPVC (ANSI-DIN : Gray) ● PVDF
1-2-1	TS Socket	2	● PVC ● HT ● CPVC
1-2-2	Threaded socket	2	● PVC ● PVDF
1-2-3	Butt Spigot Type	2	● PP ● PVDF ● PE
1-2-4	Socket welding	2	PP
1-3	Union nut	2	● PVC ● HT ● CPVC ● PVDF
1-4	O-ring	2	● EPDM ● FKM
2	Diaphragm	1	● EPDM ● FKM ● PTFE+EPDM
3	Diaphragm Stud Bolt	1	SUS304
4	Connecting Nut	1	C3604
5	Compressor	1	GF-PP
6	Actuator	1	GF-PP
7	Cap Cover	1	PC



● Solenoid valve



● Electro pneumatic positioner



● Speed controller



● Regulator with filter

※ Other options: Please contact us.

Size

Flange type · Thread type · TS socket type · Butt type

Unit : mm

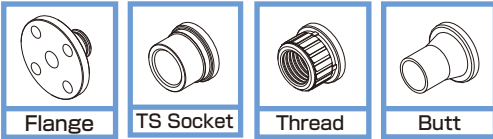
Size		h	φ DA	DB	Flange	Weight (kg/unit)
A	B				JIS10K,ANSI,DIN L	
15	1/2	176	101	63	110	1.6
20	3/4	176	101	63	120	1.7
25	1	183	101	63	130	1.8
32	1 1/4	183	101	63	142	2.1
40	1 1/2	303	155	90	180	8.0
50	2	307	155	90	210	8.9
65	2 1/2	386	235	124	250	15.9
80	3	392	285	124	280	17.5
100	4	430	340	151	340	27.3

Unit : mm

Size		h	h2	TS Socket			Thread				Weight (kg/unit)	
A	B			JIS	ASTM	DIN	JIS/DIN:Rc		ANSI:NPT	DIN:Rp	TS socket	Thread
		L	L	L	PVC	PVDF	PVC,PVDF	PVC,PVDF				
		L	L	L	L	L	L	L				
15	1/2	176	15.0	144	137	126	133	134	133	133	1.4	1.4
20	3/4	176	18.0	172	158	146	157	157	157	157	1.5	1.5
25	1	183	23.0	187	177	165	173	180	173	173	1.6	1.6
32	1 1/4	183	23.0	210	190	179	188	181	188	188	1.9	1.9
40	1 1/2	307	32.5	262	258	247	248	254	248	248	8.0	8.0
50	2	308	37.5	298	283	284	280	290	280	280	8.9	8.9

Unit : mm

Size		Butt Spigot			Socket welding	
A	B	DIN		JIS	DIN	
		PP,PVDF	PE	PE	PP	
		L	L	L	L	φ
15	1/2	176	246	-	137	12.0
20	3/4	189	259	-	153	13.0
25	1	203	283	293	171	14.5
32	1 1/4	210	301	-	183	18.0
40	1 1/2	272	376	376	245	16.0
50	2	306	419	409	278	20.0

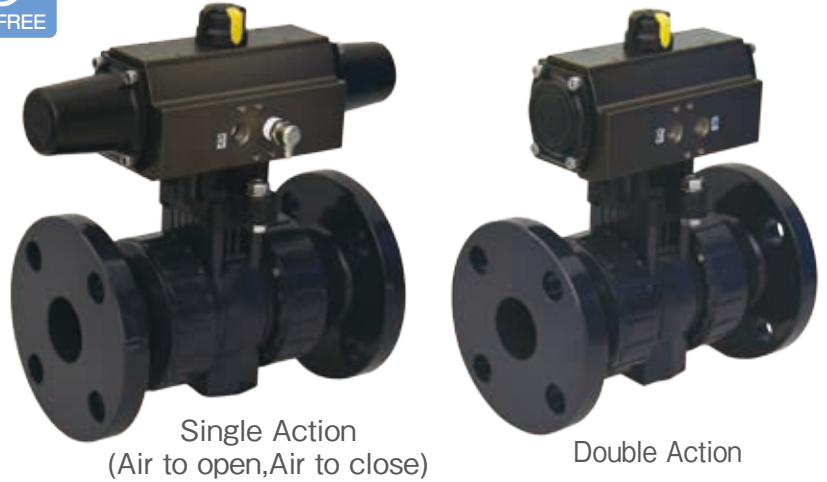


JIS ANSI/ASME/ASTM DIN/ISO



Operating Temperature(°C)

PVC	0 ~ 50	PP	-20 ~ 90
HT-CPVC	0 ~ 90	PVDF	-20 ~ 100



ESLON PNEUMATIC BALL VALVE TYPE S

Feature

- Light weight and compact aluminum actuator.
- Excellent chemical & corrosion resistance.
- High durability.
- Operating air pressure : 0.4MPa.
- Manual override wheel handle for open/close is available.
- Box type of Limit switch is available as an option.
- Conformity with NAMUR standard.

Operation type	Size	Actuator type	Air Consumption (ℓ /time/unit)
Double Action	15-20A	RD32	0.15
	25A	RD40	0.20
	32-50A	AD50	0.24
	65-80A	AD65	0.49
	100A	AD80	1.02
Air To Open Air To Close	15-25A	RS50	0.05
	32-40A	AS50	0.11
	50A	AS65	0.24
	65-80A	AS80	0.48
	100A	AS100	0.86

Max. Working Press. at R.T.

Double Action	0.4MPa
Air To Open:Air To Close	0.4MPa

Air Supply Port

Operation type	Size	Air intake port
Double Action	15-25A	Rc 1/8
	32-100A	Rc 1/4
Air To Open:Air To Close	15-100A	Rc 1/4

⚠ Important Notes

- Gasifying, volatile, or evaporating fluid such as hydrogen peroxide and sodium hypochlorite might rise inner pressure of valve and burst the valve. Please contact us concerning such risk. Gas relief type of customized ball valve which has relief orifice on the ball is available.
- Do not use for the fluid containing slurry, solid, sediment, or crystallized fluid. Or for those kinds of fluid, strainer should be used in upstream.

Maximum Working Pressure - Temperature Rating

■ Double Action, Air To Close, Air To Open

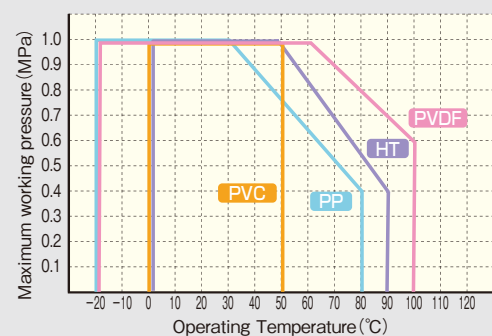
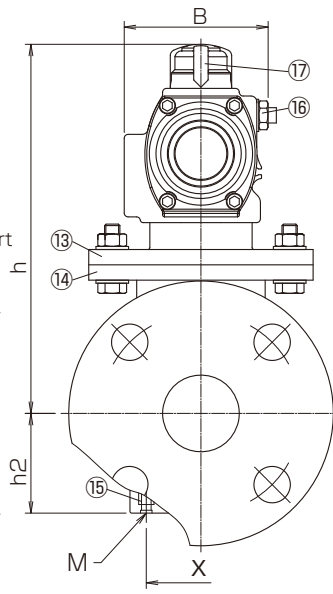
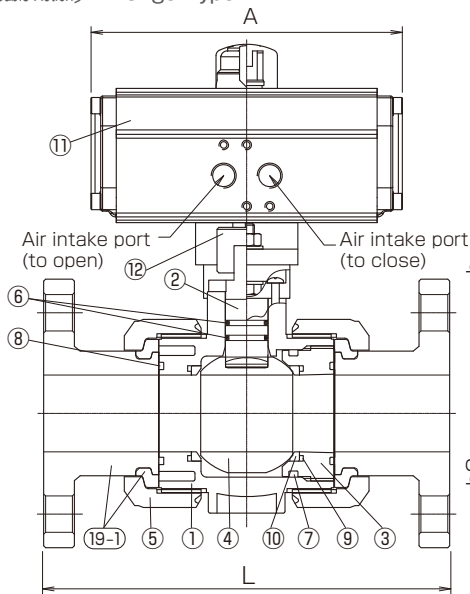
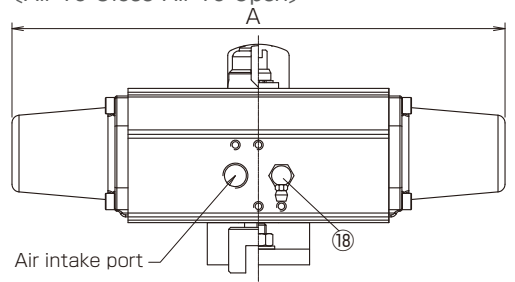


Figure (Flange Type · TS Socket Type · Thread Type · Butt Type)

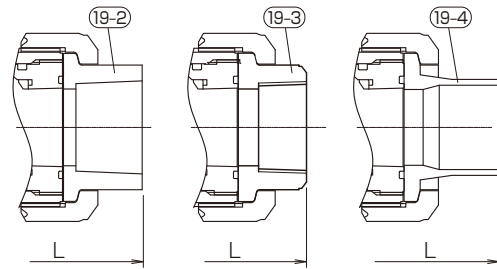
[Double Action] ● Flange Type



[Air To Close·Air To Open]



● TS Socket Type ● Thread Type ● Butt Type



Parts List

No.	Part Name	QTY	Material / Type
1	Body	1	● PVC
2	Stem	1	● HT (JIS : Brown)
3	Ball holder	1	● CPVC (ANSI·DIN : Gray)
4	Ball	1	● PP
5	Union nut	2	● PVDF
6	Stem O-ring*	2	
7	Ball holder O-ring	1	● EPDM
8	Union O-ring	2	● FKM
9	Ball seat O-ring	2	
10	Ball Seat	2	PTFE
11	Cylinder	1	AL6063
12	Connector	1	AL6061
13	Yoke	1	GF-PP
14	Yoke	1	GF-PP
15	Insert Nut	2	C3601
16	Adjust Bolt	2	SUS304
17	Indicator	1	PA+PE
18	Air Exhaust Port	1	C3601+Cr Coated
19	Flange.Set ring	2	● PVC ● HT ● CPVC ● PP ● PVDF
20	TS Socket	2	● PVC ● HT ● CPVC
21	Threaded socket	2	● PVC ● PVDF
22	Butt Spigot Type	2	● PP ● PVDF ● PE
23	Socket welding	2	PP

Option



* Other options: Please contact us.

Size

Flange type · Thread type · TS socket type · Butt type

Unit : mm

Size		φ d	h	A		B		Fixing Insert x000D_ Nut		Flange	
A	B			Double Action	Air to open Air to close	Double Action	Air to open Air to close	X	M	JIS10K,ANSI,DIN	
15	1/2	15	147	97	133	60	75	27.0	M5	L	
20	3/4	20	152	97	133	60	75	32.0	M5	172	
25	1	25	162	97	133	60	75	37.0	M5	187	
32	1 1/4	32	170	162	257	75	75	42.0	M5	190	
40	1 1/2	40	193	162	257	75	75	57.0	M6	212	
50	2	50	216	162	314	75	89	67.0	M6	234	
65	2 1/2	65	264	202	430	89	101	81.0	M6	259	257
80	3	80	275	202	430	89	101	99.7	M8	304	301
100	4	100	341	262	500	101	129	119.7	M8	372	367

Size		TS Socket			Thread					
A	B	JIS	ASTM	DIN	JIS,DIN (Rc)		ANSI (NPT)		DIN (Rp)	
		PVC,HT,CPVC	PVC,HT,CPVC	PVC,HT,CPVC	PVC	PVDF	PVC	PVDF	PVC	PVDF
		L	L	L	L		L		L	
15	1/2	109	103	92	97	99	97	99	97	99
20	3/4	132	119	107	117	116	117	116	117	116
25	1	143	133	121	128	136	128	136	128	136
32	1 1/4	166	147	137	146	148	146	148	146	148
40	1 1/2	175	171	161	163	169	163	169	163	169
50	2	203	188	189	188	196	188	196	188	196
65	2 1/2	259	211	211	227	227	212	212	212	212
80	3	311	262	263	278	278	261	261	261	261
100	4	390	315	315	330	330	315	315	315	315

Size		Butt Spigot			Socket welding	Ref.Weight Body:PVC (kg/unit)			
A	B	DIN	DIN	JIS	DIN	Double Action		Air to open Air to close	
		PP,PVDF	PE	PE	PP	Flange	Socket	Flange	Socket
		L	L	L	L				
15	1/2	143	210	-	103	0.7	0.5	1.6	1.3
20	3/4	152	220	-	114	0.9	0.6	1.7	1.4
25	1	161	237	247	126	1.6	1.1	2	1.6
32	1 1/4	167	258	-	141	2.6	2.1	2.9	2.3
40	1 1/2	190	292	291	162	3.2	2.6	3.5	2.8
50	2	216	325	314	185	0.9	0.6	5.6	4.7
65	2 1/2	208	363	-	204	1.6	1.1	9.5	8.5
80	3	301	424	424	264	2.6	2.1	11.9	11.0
100	4	340	478	498	317	18.4	17.5	21.1	20.2



JIS ANSI/ASME DIN



Operating Temperature(°C)

PVC	0 ~ 50
PP	0 ~ 80
PVDF	0 ~ 100



Single Action
(Air to open,Air to close)

Double Action

ESLON PNEUMATIC BUTTERFLY VALVE TYPE S

Feature

- Light weight and compact of aluminum actuator.
- Excellent corrosion resistance.
- Changeable into automatic/manual operation.
- Operating air pressure : 0.4MPa
- Manual override wheel handle for open/close is available.
- Box type of Limit switch is available as an option.
- Conformity with NAMUR standard.

Operation type	Size	Actuator type	Air Consumption (ℓ /time/unit)
Single Action	40A	AS50	0.11
	50-65A	AS65	0.24
	80A	AS80	0.48
	100A	AS100	0.86
	125A	AS125	1.68
	150A	AS140	2.45
	200-300A	AS160	3.74
Double Action	350-400A	AS210	6.19
	40-65A	AD50	0.24
	80A	AD65	0.49
	100A	AD80	1.02
	125A	AD100	1.83
	150-250A	AD125	3.46
	300A	AD140	5.19
300-400A	AD160	7.96	

Max. Working Press. at R.T.

Air Pressure	Double Action	0.4MPa
	Air To Open&Close	0.4MPa

Air Supply Port

Double Action	Rc 1/4
Air To Open&Close	Rc 1/4

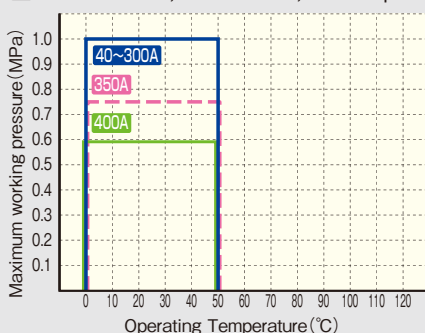
⚠ Important Notes

- Fluid containing slurry, solid, sediment, or crystallized fluid might disable sealing.

Maximum Working Pressure - Temperature Rating

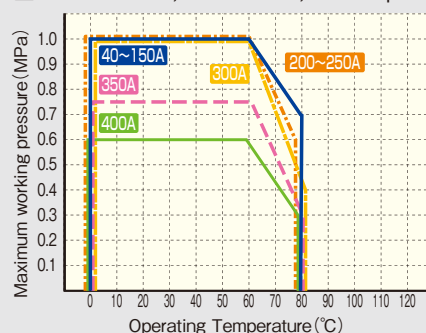
Body material : PVC

■ Double Action,Air To Close,Air To Open



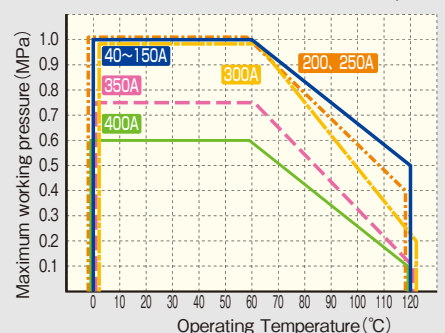
Body material : PP

■ Double Action,Air To Close,Air To Open

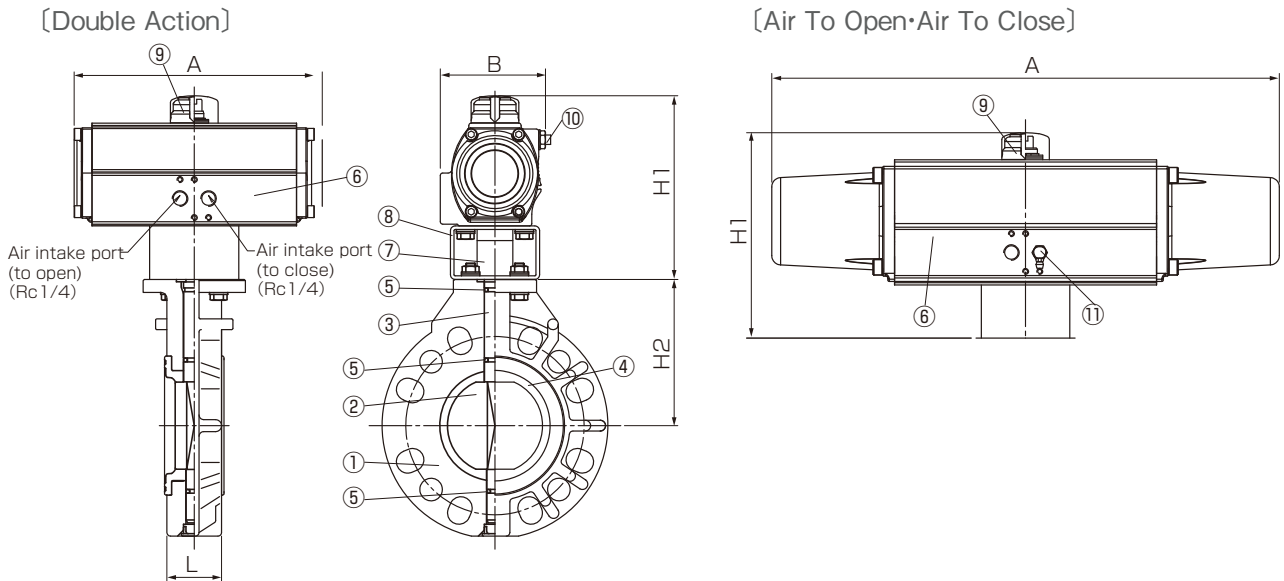


Body material : PVDF

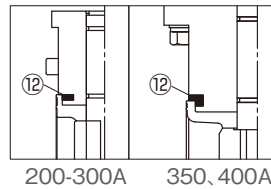
■ Double Action,Air To Close,Air To Open



Figure



200-400A (Body: PP)



Option



Parts List

No.	Part Name	Q'TY	Material / Type
1	Body	1	Body/Disc ● PVC/PP ● PP/PP ● PVDF/PVDF
2	Disc	1	
3	Shaft	1	● SUS420J2 ● SUS316
4	Seat Ring	1	● EPDM ● FKM
5	O-Ring	3	
6	Cylinder	1	AL6063
7	Yoke	1	STKR+Resin Coating
8	Connector	1	SUS303
9	Indicator	1	PA+PE
10	Adjust Bolt	2	SUS304
11	Air Exhaust Port	1	C3601+Resin Coating
12	Reinforced Ring (200-400A Body:PP)	2	S45C+Plating

* Other options: Please contact us.

Size

Size		L	φ d	Flange						H1		H2	Double Action		Air to open Air to close		Weight(kg/unit)	
A	B			JIS10K		ANSI		DIN		Double Action	Air to open Air to close		A	B	A	B	Double Action	Air to open Air to close
				φ C	n-φ h	φ C	n-φ h	φ C	n-φ h									
40	1 1/2	33	45	105	4-19	98.5	4-16	110	4-18	138	138	105	162	75	257	75	2.5	2.6
50	2	43	57	120	4-19	120.5	4-19	125	4-18	138	155	112	162	75	314	89	2.7	3.7
65	2 1/2	46	71	140	4-19	139.5	4-19	145	4-18	138	155	123	162	75	314	89	3.1	4.5
80	3	46	80	150	8-19	152.5	4-19	160	8-18	155	174	130	202	89	430	101	4.4	7.0
100	4	52	100	175	8-19	190.5	8-19	180	8-18	175	197	152	262	101	500	129	6.6	12.4
125	5	56	125	210	8-23	216	8-22	210	8-18	228	253	169	311	129	606	151	9.9	18.9
150	6	60	150	240	8-23	241.5	8-22	240	8-22	252	271	178	390	151	682	164	16.6	28.6
200	8	71	198	290	12-23	298.5	8-22	295	8-22	252	198	230	390	151	781	188	18.2	41.3
250	10	73	246	355	12-25	362	12-25	350	12-22	277	323	250	390	151	781	188	27.0	47.9
300	12	114	299	400	16-25	432	12-25	400	12-22	295	323	280	431	164	781	188	41.1	54.9
350	14	129	348	445	16-25	476.2	12-29	460	16-22	323	387	325	506	188	982	231	55.0	97.4
400	16	169	406	510	16-27	540.0	16-29	515	16-26	323	387	350	506	188	982	231	62.3	105.0

Unit : mm



Operating Temperature(°C)

PVC 0 ~ 50



ESLON AIR OPERATION VALVE

Feature

- Light weight and compact of plastic actuator.
- Excellent chemical and corrosion resistance.
- Excellent open-close durability.
- Water hammer prevention with optimized diaphragm design.
- By-pass on the valve body to avoid dead water while valve is shut is available as an option.

Max. Working Press. at R.T.

Air Pressure	Double Action	0.4MPa
	Air To Open&Close	0.5MPa

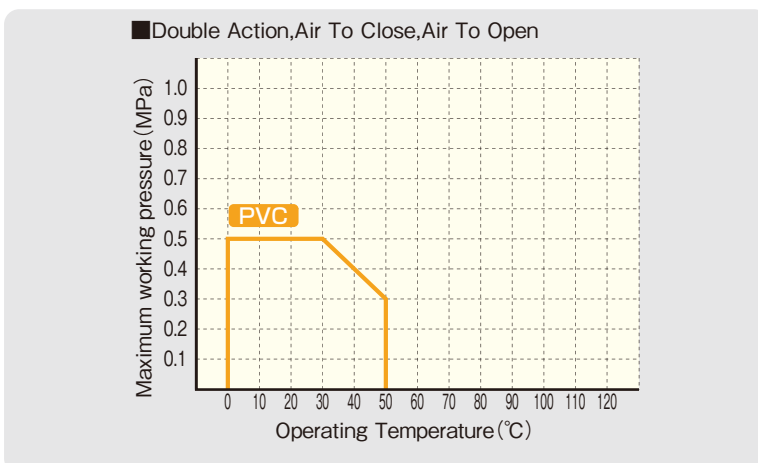
Air Supply Port

Double Action	Rc 1/8
Air To Open&Close	Rc 1/8

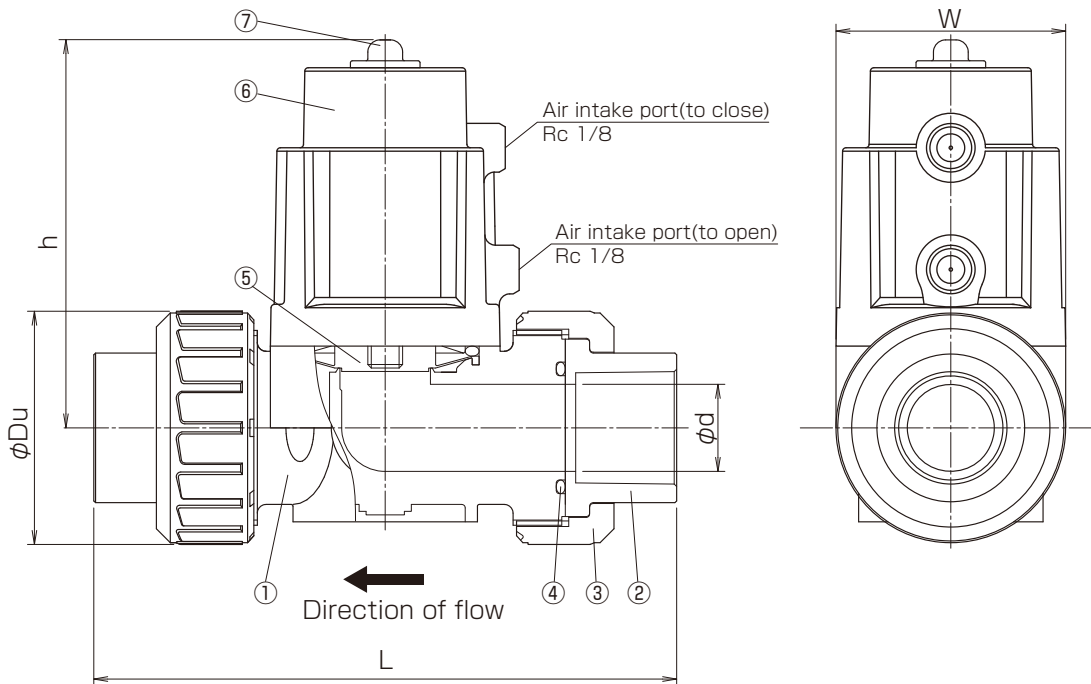
⚠ Important Notes

- Union nut is compatible only with Eslon True Union Fitting compact type. (Incompatible with Eslon Ball Valve, Diaphragm Valve, and True Union Fitting which is compatible with Ball Valve)

Maximum Working Pressure - Temperature Rating



Figure



Parts List

No.	Part Name	Q'TY	Material / Type
1	Body	1	PVC
2	TS Socket	2	PVC
3	Union nut	2	PVC
4	O-ring	2	●EPDM ●FKM
5	Diaphragm	1	PTFE
6	Actuator	1	PPS-GF
7	Indicator	1	PC

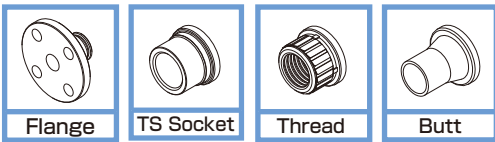
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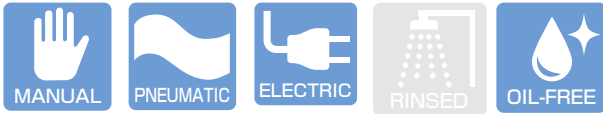
Size

Unit : mm

Size		d	L	h	W	Du	Air consumption(ℓ /time/unit)			Ref. Weight (kg/unit)		
A	B						Double Action	Air to close	Air to open	Double Action	Air to close	Air to open
15	1/2	15	145	113	66	54	0.06	0.04	0.02	0.6	0.6	0.7
20	3/4	20	149	113	66	54	0.06	0.04	0.02	0.6	0.6	0.7
25	1	25	168	113	66	67	0.06	0.04	0.02	0.7	0.8	0.8
32	1 1/4	31	242	149	97	87	0.23	0.13	0.05	1.9	2.1	2.3
40	1 1/2	40	238	149	97	87	0.23	0.13	0.05	1.9	2.1	2.3
50	2	51	275	200	117	107	0.45	0.26	0.09	3.3	3.6	4.1
65	2 1/2	65	321	246	149	128	1.03	0.65	0.21	6.0	6.6	8.4



JIS ANSI/ASME/ASTM DIN/ISO



Operating Temperature(°C)

	Flange Type	Union Type
PVC	0 ~ 60	0 ~ 50
HT-CPVC	0 ~ 90	0 ~ 90
PP	0 ~ 90	
PVDF	0 ~ 120	0 ~ 100

ESLON ELECTRIC DIAPHRAGM VALVE TYPE KS

Feature

- Excellent chemical and corrosion resistance with resin coated aluminum actuator.
- Compact and high durability motor onboard.
- Easy flow control and water hammer prevention by slow action.
- Visual position indicator on actuator.
- Manual open-close operation is available by attached box wrench.

⚠ Important Notes

- Fluid containing slurry, solid, sediment, or crystallized fluid might disable sealing.

Time For Open-Close (50/60Hz)

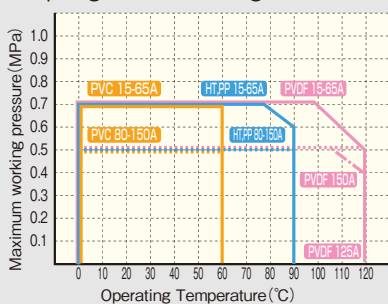
Size (A)	Time(Sec.)	Size (A)	Time(Sec.)
15	12/10	65	36/30
20	14/12	80	38/32
25,32	15/13	100	50/45
40	11/9	125	72/61
50	20/17	150	90/72

Specification of Actuator

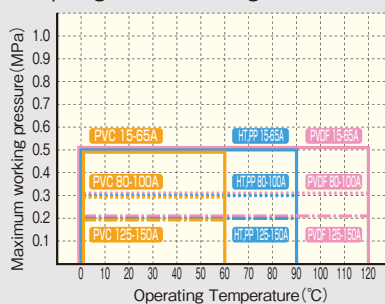
Nominal diameter(A)	15~32A	40~65A	80A	100A	125-150A
Input system	Power switching system				
Contact output	Power supply voltage				
Operating voltage	Single-phase AC100,200V(50/60Hz)				
Motor	Type	Reversible motor			
	Time rating	30 minutes rating			
Protect	15~32A	impedance protect inside			
	40~150A	Thermal protect inside			
Rated current	100V	0.3A	0.8A	1.0A	1.4A 2.0A
	200V	0.15A	0.4A	0.5A	0.7A 1.0A
Manual operation	Drive shaft direct operation				
Connector type	G1/2Conduit connector (max.φ10.5 Cabtire cable)				
Material	AC-4 Resin Coating				
Protection	IP63				

Maximum Working Pressure - Temperature Rating

■ Diaphragm:EPDM/Flange



■ Diaphragm:PTFE/Flange



■ Diaphragm:EPDM-PTFE/TS-Thread-Butt Spigot

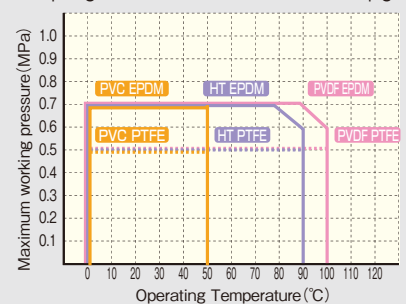
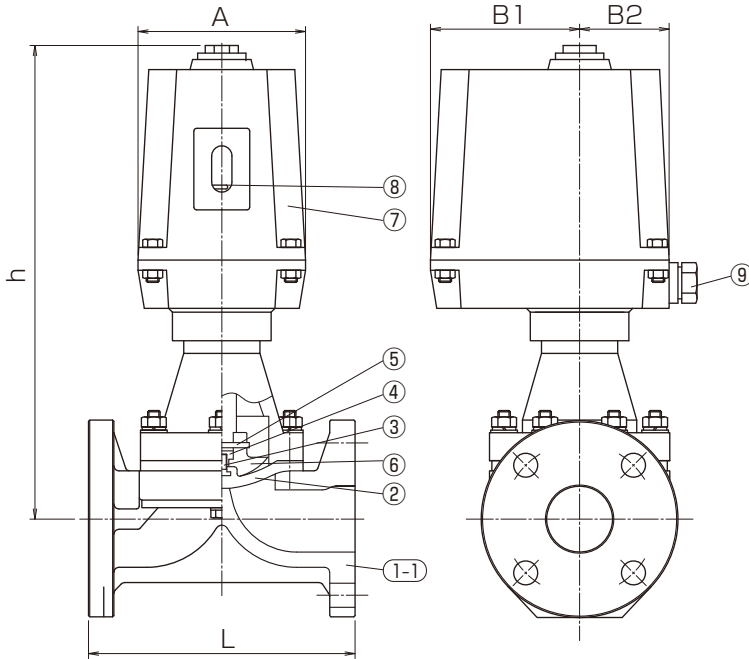
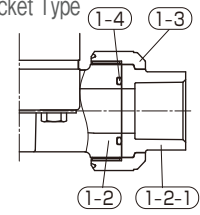


Figure (Flange Type · TS Socket Type · Thread Type · Butt Type)

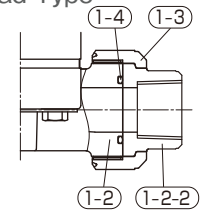
● Flange Type



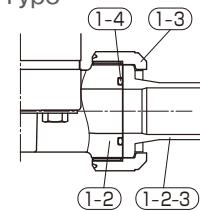
● TS Socket Type



● Thread Type



● Butt Type



Parts List

No.	Part Name	QTY	Material / Type
1-1	Flange Body	1	●PVC ●HT(JIS:Brown)●CPVC(ANSI·DIN:Gray)●PP ●PVDF
1-2	Union Body	1	●PVC ●HT(JIS:Brown)●CPVC(ANSI·DIN:Gray)●PVDF
1-2-1	TS Socket	2	●PVC ●HT(JIS:Brown)●CPVC(ANSI·DIN:Gray)
1-2-2	Thread Socket	2	●PVC ●PVDF
1-2-3	Butt Spigot	2	●PVDF
1-3	Union Nut	2	●PVC ●HT(JIS:Brown)●CPVC(ANSI·DIN:Gray)●PVDF
1-4	O-Ring	2	●EPDM ●FKM
2	Diaphragm	1	●EPDM ●PTFE+EPDM ●PTFE+PVDF+EPDM
3	Diaphragm Screw	1	SUS304※
4	Compressor Nut	1	C3604※
5	Pin	1	SUS304※
6	Compressor	1	GF-PP
7	Actuator	1	AC-4+Resin Coating
8	Indicator	1	C3604
9	Electric Conduit Gland	1	PP

※ Titanium Palladium is available on request.

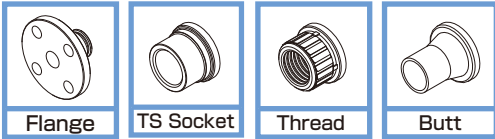
Option

- No-voltage limit switch
- Space heater
- Sodium resistance coating, Acid resistance coating

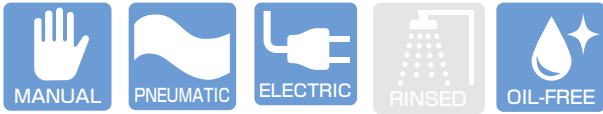
Size

Size		L												Actuator			Ref. Weight (kg/unit)	Actuator		
A	B	Flange		TS Socket			Thread				Butt Spigot		Socket welding	h	A	B ₁			B ₂	
		JIS10K	ANSI	DIN	JIS10K	ANSI	DIN	JIS(Rc)	ANSI(NPT)	DIN(Rp)	DIN	DIN	JIS							DIN
		PVC,HT,CPVC,PP,PVDF	PVC,HT,CPVC	PVC	PVDF	PVC,PVDF	PVC,PVDF	PP,PVDF	PE	PE	PP									
15	1/2	110	144	137	126	133	134	133	133	176	246	—	137	266	112	93	57	5.0	ED-6	
20	3/4	120	172	158	146	157	157	157	157	189	259	—	153	277	112	93	57	5.5	ED-6	
25	1	130	187	177	165	173	180	173	173	203	283	293	171	285	112	93	57	6.0	ED-6	
32	1 1/4	142	210	190	179	188	191	188	188	210	301	—	183	285	112	93	57	6.3	ED-6	
40	1 1/2	180	262	258	247	248	254	248	248	272	376	376	245	349	132	118	70	9.5	ED-25	
50	2	210	298	283	284	280	290	269	269	306	419	409	278	387	132	118	70	10.5	ED-25	
65	2 1/2	250	—	—	—	—	—	—	—	—	—	—	—	435	132	118	70	12.5	ED-25	
80	3	280	—	—	—	—	—	—	—	—	—	—	—	511	200	154	83	22.0	ED-40	
100	4	340	—	—	—	—	—	—	—	—	—	—	—	562	200	154	83	27.5	ED-60	
125	5	410	—	—	—	—	—	—	—	—	—	—	—	595	200	154	84	35.0	ED-90	
150	6	480	—	—	—	—	—	—	—	—	—	—	—	601	200	154	84	43.0	ED-90	

Unit : mm



JIS ANSI/ASME/ASTM DIN/ISO



Operating Temperature(°C)

PVC	0 ~ 50	PP	-20 ~ 80
HT-CPVC	0 ~ 90	PVDF	-20 ~ 100



ESLON ELECTRIC BALL VALVE TYPE K

Feature

- Light weight and compact of actuator with aluminum die-cast housing.
- Excellent chemical and corrosion resistance.
- Visual position indicator on actuator.
- Easy flow control and water hammer prevention by slow action.
- Suitable for frequent operation with constant rating type of motor onboard.
- Conformity with CE.

Specification of Actuator

Nominal diameter(A)	15~65A	80·100A	
Input system	Power switching system		
Contact output	Power supply voltage		
Operating voltage	Single-phase AC100,200V(50/60Hz)		
Motor	Type	Reversible motor	
	Time rating	Continuous rating	
Protect	Thermal protect inside Adjustable mechanical stopper for open and close-side		
Rated current	100/110V	0.7/0.9A	0.65/0.70A
	200/220V	0.4/0.5A	0.35/0.40A
Manual operation	Drive shaft direct operation		
Connector type	G 1/2 Conduit (t t Cable OD φ9-11)		
Material	ADC12 Resin Coating		
Protection	IP66		

Time For Open-Close (50/60Hz)

Size (A)	Time(Sec.)
15-25A	4/3.3
32-65A	15/12.5
80,100A	30/25

⚠ Important Notes

- Gasifying, volatile, or evaporating fluid such as hydrogen peroxide and sodium hypochlorite might rise inner pressure of valve and burst the valve. Please contact us concerning such risk. Gas relief type of customized ball valve which has relief orifice on the ball is available.
- Do not use for the fluid containing slurry, solid, sediment, or crystallized fluid. Or for those kinds of fluid, strainer should be used in upstream.

Maximum Working Pressure - Temperature Rating

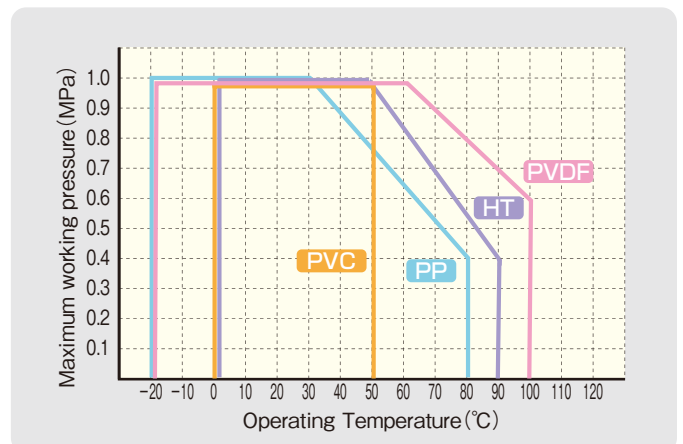
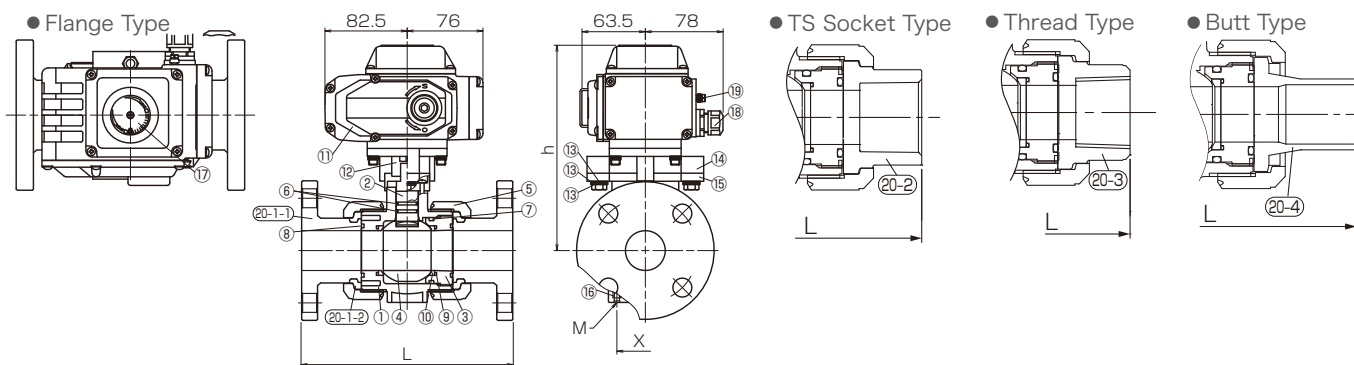


Figure (Flange Type · TS Socket Type · Thread Type · Butt Type)



Parts List

No.	Part Name	Q'TY	Material / Type	No.	Part Name	Q'TY	Material / Type
1	Body	1	● PVC	13	Bolt,Washer	-	SUS304
2	Stem	1	● HT(JIS:Brown)	14	Upper mount	1	AC4A
3	Ball holder	1	● CPVC(ANSI-DIN:Gray)	15	Lower mount	1	GF-PP
4	Ball	1	● PP	16	Fixing Insert Nut	2	C3601
5	Union nut	2	● PVDF	17	Valve Position Indicator	1	Tempered glass
6	Stem O-ring*1	2		18	Electric wire connector	1	PA, G1 / 2
7	Ball holder O-ring	1	● EPDM	19	Earth Terminal *2	1	SS400/Nickel Coated
8	Union O-ring	2	● FKM	20-1	Flange,Set ring	2	● PVC ● HT ● CPVC ● PP ● PVDF
9	Ball seat O-ring	2		20-2	TS Socket	2	● PVC ● HT ● CPVC
10	Ball Seat	2	PTFE	20-3	Threaded socket	2	● PVC ● PVDF
11	Actuator	1	ADC12(Resin Coating)	20-4	Butt Spigot Type	2	● PP ● PVDF ● PE
12	Connector	1	pvcZDC3	20-5	Socket welding	2	PP

*1 Stem O-Ring material will be FKM+PTFE in case of Oil Free *2 AC200 / 220V

Option

- No-voltage limit switch
- Potentiometer
- Space heater
- Proportional control (please contact us)

Size

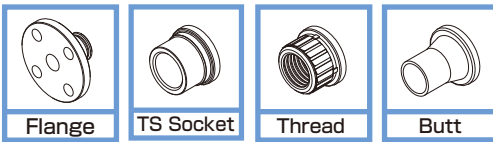
Flange type · Thread type · TS socket type · Butt type

Unit : mm

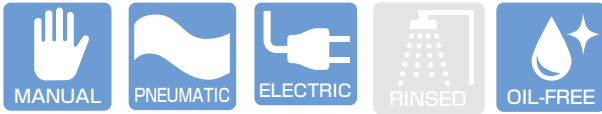
Size		A				B				Fixing Insert		Flange											
A	B	Double Action	Air to open Air to close	Double Action	Air to open Air to close	X	M	PVC,HT,CPVC	PP,PVDF	φ D	φ C	n-φ h	t	φ D	φ C	n-φ h	t	φ D	φ C	n-φ h	t		
15	1/2	15	147	97	133	60	75	27.0	M5	143	95	70	4-15	14	89	60.5	4-16	11.5	95	65	4-14	11	
20	3/4	20	152	97	133	60	75	32	M5	172	100	75	4-15	14	98	70	4-16	13	105	75	4-14	12	
25	1	25	162	97	133	60	75	37	M5	187	125	90	4-19	14	108	79.5	4-16	14.5	115	85	4-14	14	
32	1 1/4	32	170	162	257	75	75	42	M5	190	135	100	4-19	16	117.5	89	4-16	16	140	100	4-18	15	
40	1 1/2	40	193	162	257	75	75	57	M6	212	140	105	4-19	16	127	98.5	4-16	17.5	150	110	4-18	16	
50	2	50	216	162	314	75	89	67	M6	234	155	120	4-19	20	152	120.5	4-19	19.5	165	125	4-18	18	
65	2 1/2	65	264	202	430	89	101	81	M6	259	257	175	140	4-19	22	178	139.5	4-20	22.5	185	145	4-18	22
80	3	80	275	202	430	89	101	99.7	M8	304	301	185	150	8-19	22	191	152.5	4-20	24	200	160	8-18	23
100	4	100	341	262	500	101	129	119.7	M8	372	367	210	175	8-19	24	229	190.5	8-20	24	220	180	8-18	23

Size		TS Socket							Thread										
A	B	JIS		ASTM		DIN			JIS,DIN (Rc)				ANSI (NPT)				DIN (Rp)		
		PVC,HT,CPVC		PVC,HT,CPVC		PVC,HT,CPVC			PVC		PVDF		PVC		PVDF		PVC		PVDF
		L	ℓ	L	ℓ	L	ℓ	L	ℓ	L	ℓ	L	ℓ	L	ℓ	L	ℓ		
15	1/2	109	22	103	22.22	92	16	97	18	99	20	97	18	99	99	97	18	99	99
20	3/4	132	25	119	25.4	107	19	117	18	116	22	117	18	116	116	117	18	116	116
25	1	143	29	133	28.58	121	22	128	23	136	24	128	23	136	136	128	23	136	136
32	1 1/4	166	32	147	31.75	137	26	146	23	148	25	146	23	148	148	146	23	148	148
40	1 1/2	175	35	171	34.93	161	31	163	25	169	28	163	25	169	169	163	25	169	169
50	2	203	38	188	38.1	189	38	188	30	196	30	188	30	196	196	188	30	196	196
65	2 1/2	259	61	211	44.45	211	44	227	32	227	32	212	32	212	227	212	32	212	227
80	3	311	64	262	47.63	263	51	278	37	278	37	261	37	261	278	261	37	261	278
100	4	390	84	315	57.15	315	61	330	45	330	45	315	45	315	330	315	45	315	330

Size		Butt Spigot						Socket welding			Ref.Weight Body:PVC (kg/unit)	
A	B	DIN		DIN		JIS		DIN			Flange	TS Socket Thread
		PP,PVDF		PE		PE		PP				
		L	ℓ	L	ℓ	L	ℓ	L	ℓ 1	ℓ 2		
15	1/2	143	30	210	65	-	-	103	17.5	12	3.0	2.8
20	3/4	152	24	220	65	-	-	114	19	13	3.3	2.9
25	1	161	24	237	70	247	75	126	21	14.5	3.5	3.0
32	1 1/4	167	25	258	75	-	-	141	23.5	18	3.9	3.2
40	1 1/2	190	24	292	80	291	80	162	26.5	16	4.5	3.7
50	2	216	28	325	90	314	85	185	30.5	20	5.3	4.3
65	2 1/2	208	23	363	100	-	-	204	34	21	7.1	5.9
80	3	301	45	424	105	424	105	264	37	26.5	11.4	10.3
100	4	340	43	478	110	498	120	317	41	31.5	16.2	15.3



JIS ANSI/ASME/ASTM
DIN/ISO



Operating Temperature(°C)

PVC	0 ~ 50	PP	-20 ~ 80
HT-CPVC	0 ~ 90	PVDF	-20 ~ 100

ESLON ELECTRIC BALL VALVE TYPE N

Feature

- Light weight and compact of actuator with aluminum die-cast housing.
- Excellent chemical and corrosion resistance.
- Available 2 type of rotation speed by motor, standard type and high speed type for open-close operation.
- Visually confirmable valve action and open-close position, available manual open-close operation.

Time For Open-Close (50/60Hz)

Size (A)	Time(Sec.)	
	Standard Type	Higher Speed Type
15A	5.4/4.5	3/2.5
20,25A	15.5/13	15/22.5
32,40A	16/13.5	6/5
50,65A	-	3 ~ 4
80,100A	-	6 ~ 10

Specification of Actuator

Type	Standard Type		High Speed Type	
Nominal diameter(A)	15~32A	40A	15~40A	50~100A
Input system	Power switching system			
Contact output	Power supply voltage			
Operating voltage	Single-Phase AC100/110,200/220V(50/60Hz)			
Motor	Type	Inductor type synchronous motor		
	Time rating	15 minutes rating under loading rate 20%		
Protect	Thermal protect inside	Thermal protect inside	Thermistor type	
Power consumption	16VA	19VA	50VA	100VA max.
Manual operation	Release of the screw lock		Drive shaft direct operation	
Connector type	G3/8 wire connecto(r $\phi 5 \sim \phi 10.5$ Cabtire cable)			
Material	ADC Resin Coating			
Protection	IP65			
Condensation prevention	Built-in space heater			

⚠ Important Notes

- Gasifying, volatile, or evaporating fluid such as hydrogen peroxide and sodium hypochlorite might rise inner pressure of valve and burst the valve. Please contact us concerning such risk. Gas relief type of customized ball valve which has relief orifice on the ball is available.
- Do not use for the fluid containing slurry, solid, sediment, or crystallized fluid. Or for those kinds of fluid, strainer should be used in upstream.

Maximum Working Pressure - Temperature Rating

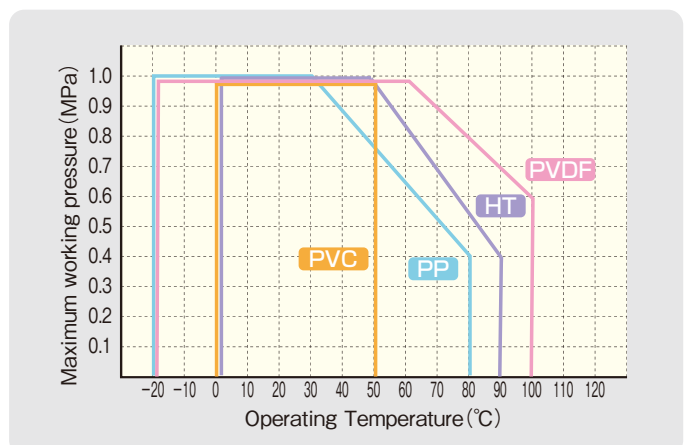
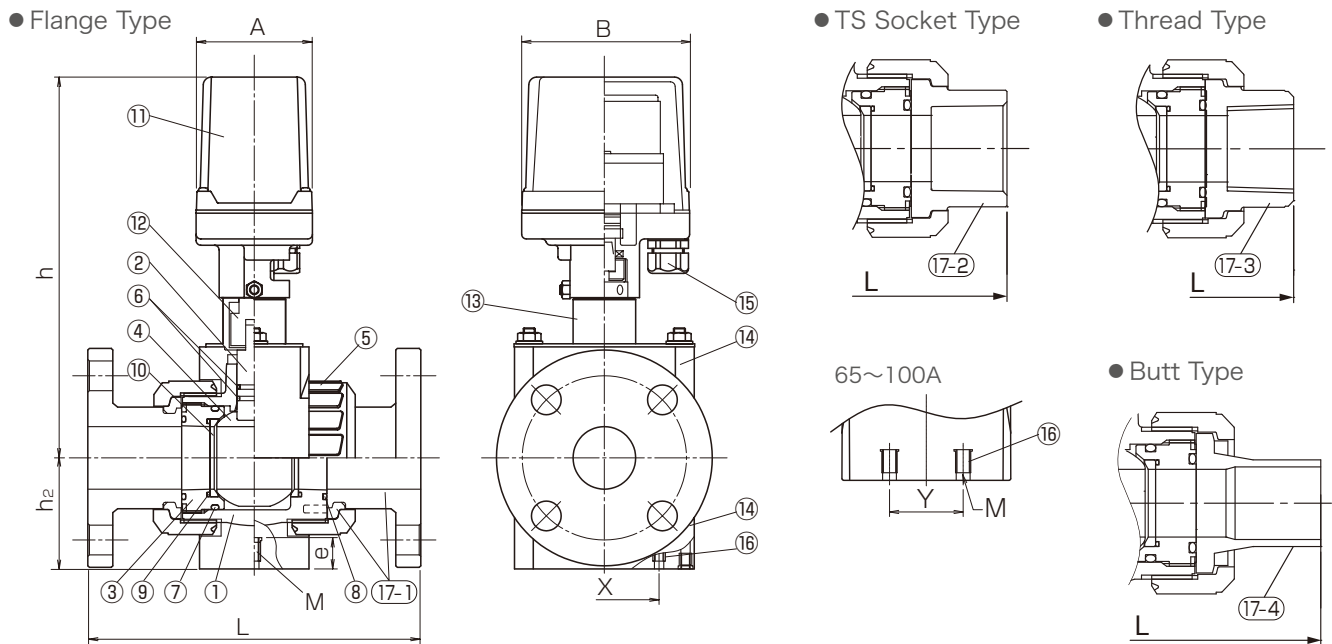


Figure (Flange Type · TS Socket Type · Thread Type · Butt Type)



Parts List

No.	Part Name	Q'TY	Material / Type	No.	Part Name	Q'TY	Material / Type
1	Body	1	● PVC	13	Yoke	1	SUS304
2	Stem	1	● HT (JIS:Brown)	14	Mount	2	FRP
3	Ball holder	1	● CPVC (ANSI-DIN:Gray)	15	Electric Conduit Gland	1	PA, G1/2
4	Ball	1	● PP	16	Fixing Insert Nut	-	C3601
5	Union nut	2	● PVDF	17-1	Flange, Set ring	2	● PVC ● HT ● CPVC ● PP ● PVDF
6	Stem O-ring*1	2		17-2	TS Socket	2	● PVC ● HT ● CPVC
7	Ball holder O-ring	1	● EPDM	17-3	Threaded socket	2	● PP ● PVDF ● PE
8	Union O-ring	2	● FKM	17-4	Butt Spigot Type	2	PVDF
9	Ball seat O-ring	2					
10	Ball Seat	2	PTFE				
11	Actuator	1	ADC+Resin Coating				
12	Connector	1	C3604				

Option

- No-voltage limit switch

*1 Stem O-Ring material will be FKM+PTFE in case of Oil Free.

Size

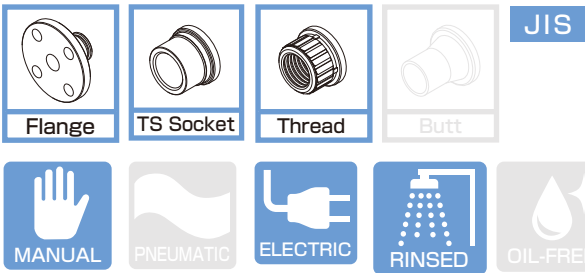
Flange Type · Thread Type · TS Socket Type · Butt Type

Unit : mm

Size		L						h		h ₂		Actuator				
A	B	Flange		TS Socket	Thread		Standard Type	Higher Speed Type	Flange	TS, Thread, Butt	A	B	X	Y	M	
		PVC-HT	PP-PVDF	PVC-HT	PVC	PVDF										PVDF
15	1/2	143	143	109	97	99	143	166	193	49	30	74	107	50	-	M6
20	3/4	172	172	132	117	116	152	168	195	52	34	74	107	50	-	M6
25	1	187	187	143	128	136	161	181	208	64	39	74	107	50	-	M6
32	1 1/4	190	190	166	146	148	167	228	228	69	49	74	107	55	-	M6
40	1 1/2	212	212	175	163	169	190	244	244	71	59	74	107	70	-	M8
50	2	234	234	203	188	196	216	-	331	79	74	160	175	85	-	M8
65	2 1/2	259	257	259	227	227	208	-	351	89	89	160	175	115	38	M8
80	3	304	301	311	278	278	301	-	377	110	110	160	175	140	48	M8
100	4	372	367	390	330	330	340	-	412	140	140	160	175	180	59	M8

Size		Ref. Weight (kg/unit)		Actuator	
A	B	Flange	TS, Thread	Standard Type	High Speed Type
		15	1/2	2.0	1.7
20	3/4	2.2	1.8	AM-070	AH-070 ※
25	1	2.5	2.0	AM-070	AH-070 ※
32	1 1/4	3.3	2.7	AM-180	AH-180 ※
40	1 1/2	3.9	3.4	AM-180	AH-180 ※
50	2	11.0	10.0	-	AD-300
65	2 1/2	14.0	13.0	-	AD-300
80	3	18.0	17.0	-	AD-700
100	4	24.5	24.0	-	AD-700

※ No-voltage limit switch is not available

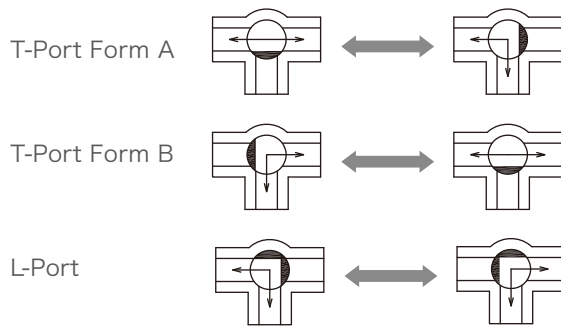


Operating Temperature(°C)
PVC 0 ~ 50

ESLON 3-WAY BALL VALVE

Feature

- Open/close position and flow rate control in 3-way
- Light weight and compact of actuator with aluminum die-cast housing.
- Excellent chemical and corrosion resistance.
- Visually confirmable valve action and open-close position, available manual open-close operation.



Specification of Actuator

Nominal diameter(A)	15~25A	32~65A
Input system	Power switching system	
Contact output	Power supply voltage	
Operating voltage	Single-phase AC100/110,200/220V(50/60Hz)	
Motor	Type	Synchronous motor Reversible motor
	Time rating	15 minutes rating under loading rate 20%
Protect	Thermal protect inside	
Power consumption	19VA	60VA
Manual operation	Drive shaft direct operation	
Connector type	G1/2 conduit (Cable connector) (Φ6-12 cabtire cable)	
Material	ADC Resin Coating	
Protection	IP65	
Condensation prevention	Built-in space heater	

⚠ Important Notes

- Do not use for the fluid containing slurry, solid, sediment, or crystallized fluid. Or for those kinds of fluid, strainer should be used in upstream.

Maximum Working Pressure - Temperature Rating

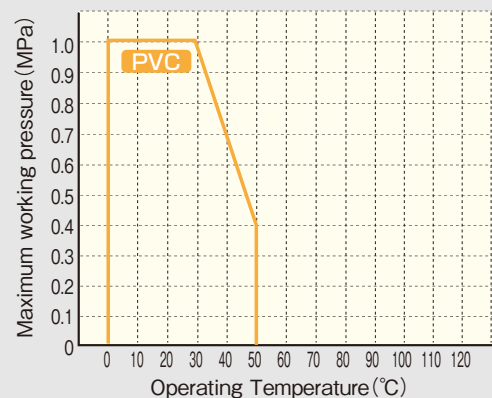
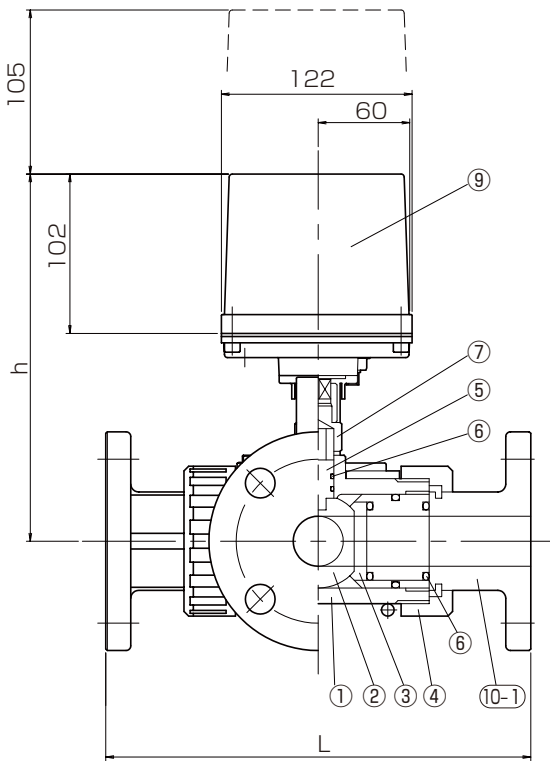
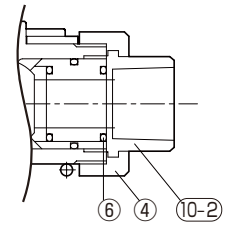


Figure (Flange Type · TS Socket Type · Thread Type)

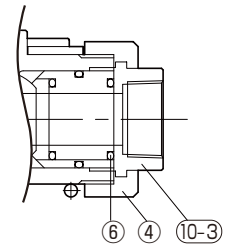
● Flange Type



● TS Socket Type



● Thread Type



Parts List

No.	Part Name	QTY	Material / Type
1	Body	1	PVC
2	Ball	1	PVC
3	Ball holder	2	PVC
4	Union nut	3	PVC
5	Stem	2	PVC
6	O-ring	11	● EPDM ● FKM
7	Connector	1	C3604BD
8	Yoke	1	SCS13
9	Actuator	1	ADC+Resin Coating
10-1	Flange,Set ring	3	PVC
10-2	TS Socket	3	PVC
10-3	Threaded socket	3	PVC

Option

- No-voltage limit switch

Size

Flange Type · Thread Type · TS Socket Type

Unit : mm

Size		L			L ₁			h	Actuator		Ref. Weight (kg/unit)		Actuator
A	B	Flange	TS Socket	Thread	Flange	TS Socket	Thread		A	B	Flange	TS, Thread, Butt	
15	1/2	163	129	118	82	65	59	202	145	122	3.7	3.2	AE-120
20	3/4	200	151	134	100	76	67	206	145	122	3.9	3.4	AE-120
25	1	221	175	156	111	88	78	221	145	122	4.5	3.6	AE-120
40	1 1/2	272	232	203	136	116	102	235	145	122	5.8	4.9	AE-300
50	2	306	260	225	153	130	113	246	145	122	7.3	5.7	AE-300



JIS ANSI/ASME DIN



Operating Temperature(°C)

PVC	0 ~ 50
PP	0 ~ 80
PVDF	0 ~ 120



ESLON ELECTRIC BUTTERFLY VALVE TYPE K

Feature

- Light weight and compact of actuator with aluminum die-cast housing.
- Excellent chemical and corrosion resistance.
- Visual position indicator built in the actuator.
- Easy flow control and water hammer prevention by slow action.
- Suitable for frequent operation with constant rating type of motor onboard.
- Manual open-close operation is available by attached handle.
- Conformity with CE.

Specification of Actuator

Nominal diameter(A)	40~65A	80~100A	125~200A	250~300A
Input system	Power switching system			
Contact output	Power supply voltage			
Operating voltage	Single-phase AC100/110,200/220V(50/60Hz)			
Motor	Type	Reversible motor		
	Time rating	Continuous rating		
Protect	Thermal protect inside			
	Adjustable mechanical stopper for open-side and close-side			
Rated current	100/110V	0.7/0.9A	0.65/0.70A	1.1/1.2A
	200/220V	0.4/0.5A	0.35/0.40A	0.55/0.60A
Manual operation	with manual operation mechanism			
Connector type	G1/2 conduit (Cable ODΦ9~11)			
Material	ADC12 Resin coating			
Protection	IP66			

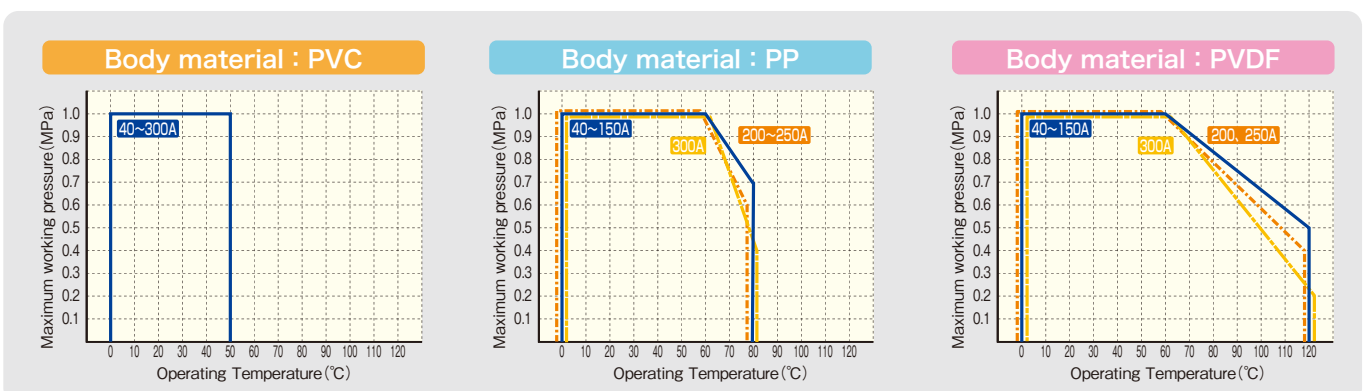
Time For Open-Close (50/60Hz)

Size (A)	Time(Sec.)
40-65A	15/12.5
80-300A	30/25

⚠ Important Notes

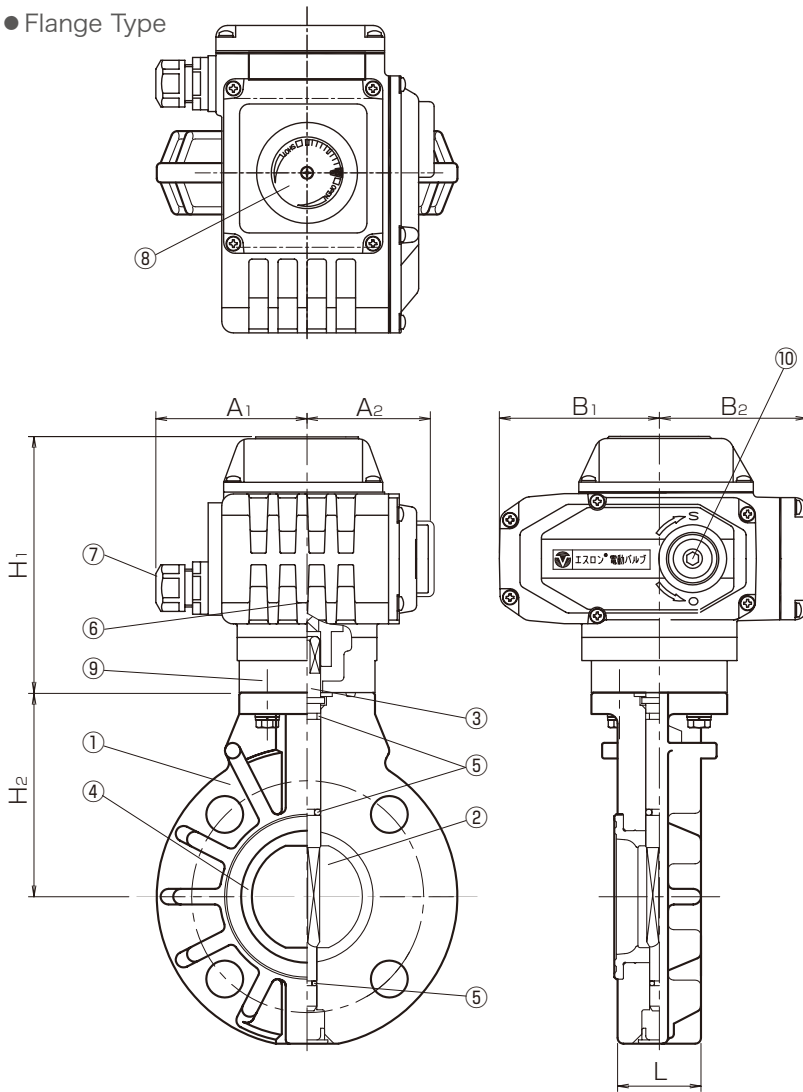
- Fluid containing slurry, solid, sediment, or crystallized fluid might disable sealing.

Maximum Working Pressure - Temperature Rating



Figure

● Flange Type



Parts List

No.	Part Name	QTY	Material / Type
1	Body	1	Body/Disc ● PVC / PP ● PP / PP ● PVDF / PVDF
2	Disc	1	● SUS420J2 ● SUS316
3	Shaft	1	● EPDM
4	Seat Ring	1	● FKM
5	O-Ring	1	ADC12
6	Actuator	1	PA, G1/2
7	Electric Conduit Gland	1	—
8	Indicator	1	—
9	Yoke	1	AC4A+Resin Coating
10	Handle shaft hole(Hex.)	1	S45C

Option

- No-voltage limit switch
- Potentiometer
- Space heater
- Proportional control
(please contact us)

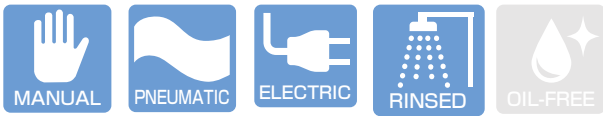
Size

Unit : mm

Size		L	h	H ₁	H ₂	A ₁	A ₂	Ref. Weight (kg/unit)	Actuator
A	B								
40	1 1/2	33	230	134	105	63.5	78.0	3.3	EF-05
50	2	43	237	134	112	63.5	78.0	3.5	EF-05
65	2 1/2	46	248	134	123	63.5	78.0	3.8	EF-05
80	3	46	282	160	130	67.0	80.5	6.1	EF-10
100	4	52	302	160	152	67.0	80.5	6.9	EF-10
125	5	56	348	191	169	94.0	88.5	11.8	EF-20
150	6	60	357	191	178	94.0	88.5	12.8	EF-20
200	8	71	409	191	230	94.0	88.5	15.1	EF-20
250	10	73	486	236	250	137.0	105.0	33.0	EF-60
300	12	114	516	236	280	137.0	105.0	40.1	EF-60



JIS ANSI/ASME DIN



Operating Temperature(°C)

PVC	0 ~ 50
PP	0 ~ 80
PVDF	0 ~ 120

ESLON ELECTRIC BUTTERFLY VALVE TYPE N

Feature

- Light weight and compact of actuator with aluminum die-cast housing.
- Excellent chemical and corrosion resistance.
- High speed of open-close operation for smaller sizes, easy flow control and water hammer prevention by slow action for larger sizes.

⚠ Important Notes

- Gasifying, volatile, or evaporating fluid such as hydrogen peroxide and sodium hypochlorite might rise inner pressure of valve and burst the valve. Please contact us concerning such risk. Gas relief type of customized ball valve which has relief orifice on the ball is available.
- Do not use for the fluid containing slurry, solid, sediment, or crystallized fluid. Or for those kinds of fluid, strainer should be used in upstream.

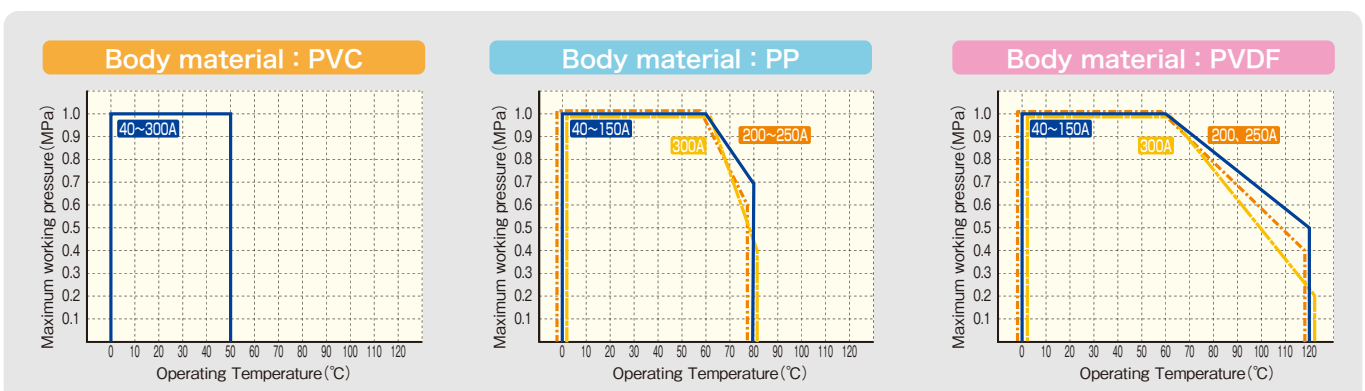
Specification of Actuator

Nominal diameter(A)	40~100A	125~200A	250-300A
Input system	Power switching system		
Contact output	Power supply voltage		
Operating voltage	Single-phase AC100/110,200/220V(50/60Hz)		
Motor	Type	DC Motor	
	Time rating	15 minutes rating under loading rate 20%	
Protect	Thermistor type		
Power consumption	100VA max.	150VA max.	120VA max.
Manual operation	Drive shaft dired operation	Drive shaft manipulation	
Connector type	G1/2 wire connector (φ6-12 Cabtire cable)		
Material	ADC Resin Coating		
Protection	IP65		
Condensation prevention	Built-in space heater		

Time For Open-Close (50/60Hz)

Size (A)	Time(Sec.)
40-65A	3 ~ 4
80-100A	6 ~ 10
125-200A	8 ~ 15
250-300A	24 ~ 45

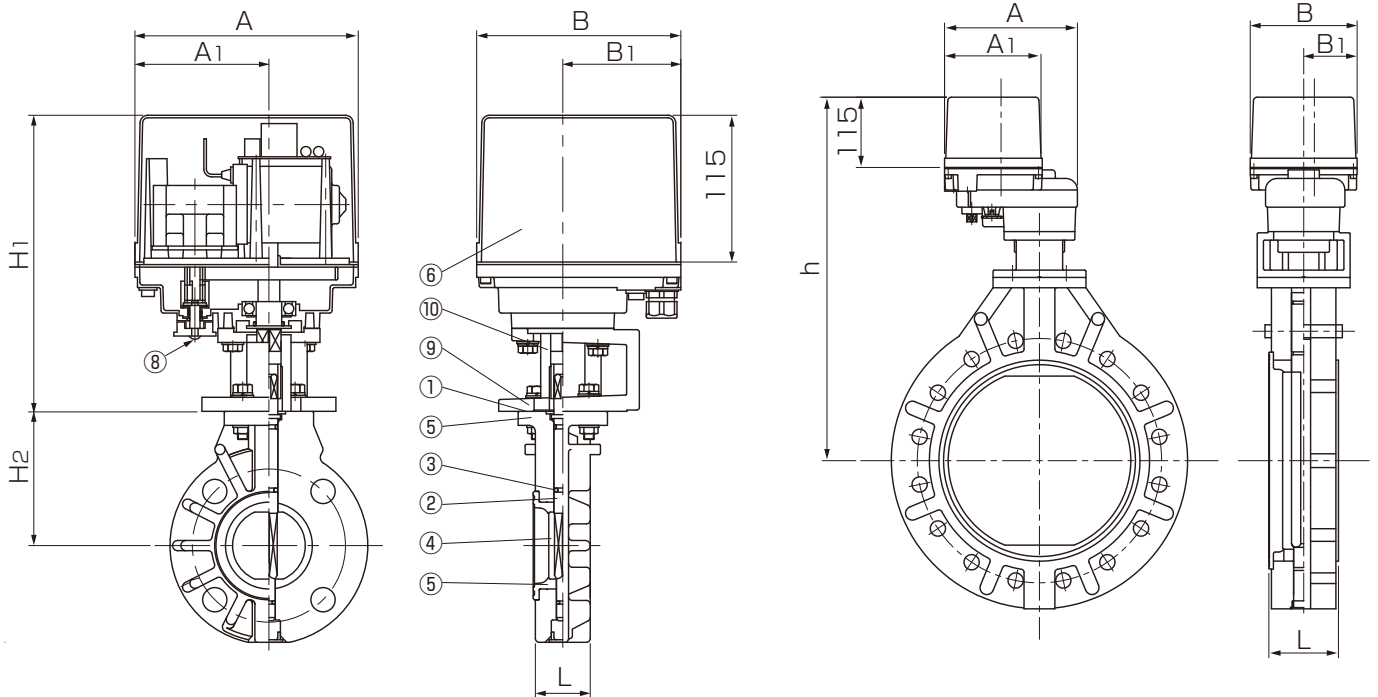
Maximum Working Pressure - Temperature Rating



Figure

(40A~200A)

(250~300A)



Parts List

No.	Part Name	QTY	Material / Type
1	Body	1	Body/Disc ● PVC/PP ● PP/PP ● PVDF/PVDF
2	Disc	1	
3	Shaft	1	● SUS420J2 ● SUS316
4	Seat Ring	1	● EPDM
5	O-Ring	3	● FKM
6	Actuator	1	ADC12
7	Electric Conduit Gland	1	PA, G1/2
8	Manual Handle	1	—
9	Yoke	1	AC4A
10	Connector	1	S45C+Ni Coated

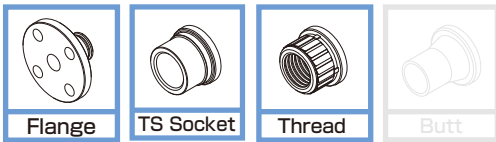
Option

- No-voltage limit switch

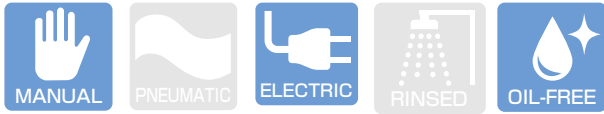
Size

Unit : mm

Size		L	H ₁	H ₂	Actuator				Ref. Weight (kg/unit)	Actuator
A	B				A	A ₁	B	B ₁		
40	1 1/2	33	226	105	175	105	160	92.5	7.8	AD-300
50	2	43	226	112	175	105	160	92.5	8.0	AD-300
65	2 1/2	46	226	120	175	105	160	92.5	8.5	AD-300
80	3	46	226	130	175	105	160	92.5	9.0	AD-700
100	4	52	226	152	175	105	160	92.5	10.5	AD-700
125	5	56	256	169	175	105	160	92.5	14.0	HD-02K
150	6	60	256	178	175	105	160	92.5	15.0	HD-02K
200	8	71	256	230	175	105	160	92.5	18.0	HD-02K
250	10	73	315	250	217.5	158	175	87.5	27.0	HD-06K
300	12	114	315	280	217.5	158	175	87.5	34.0	HD-06K



JIS ANSI/ASME/ASTM DIN



Operating Temperature(°C)

PVC 0 ~ 50



ESLON ELECTRIC YP BALL VALVE

Feature

- Unique flow channel design of the ball enable precise flowrate control.
- Automatic open/close control with 4- 20mA signal input.
- Excellent chemical and corrosion resistance with epoxy resin coated aluminum actuator.
- Compact and high durability motor onboard.
- Visual position indicator built in the actuator.

Time For Open-Close (50/60Hz)

Size (A)	Time(Sec.)
15-25A	10
32-50A	13

Specification of Actuator

Nominal diameter(A)	15~32A	40-50A
Operating voltage	DC24V	
Power consumption	14.4W	
Motor type	Synchronous motor	
Protective function	·Overload (lock) protection function ·Re-starting limit timer	
Opening detection	Potentiometer	
Input signal	DC4-20mA (Input resistance250Ω)	
Output signal	DC1~5V (Allowable load resistance 5kΩ or more)	
Resolution	1/1000	
Manual operation	None.	Drive shaft operation
Connector type	G1/2 female screw with 1m-cable	
Material	ADC	
Protection class	IP55	

⚠ Important Notes

- Do not use for the fluid containing slurry, solid, sediment, or crystallized fluid. Or for those kinds of fluid, strainer should be used in upstream.

Maximum Working Pressure - Temperature Rating

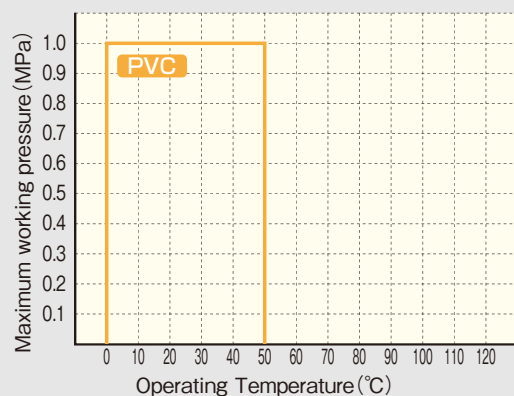
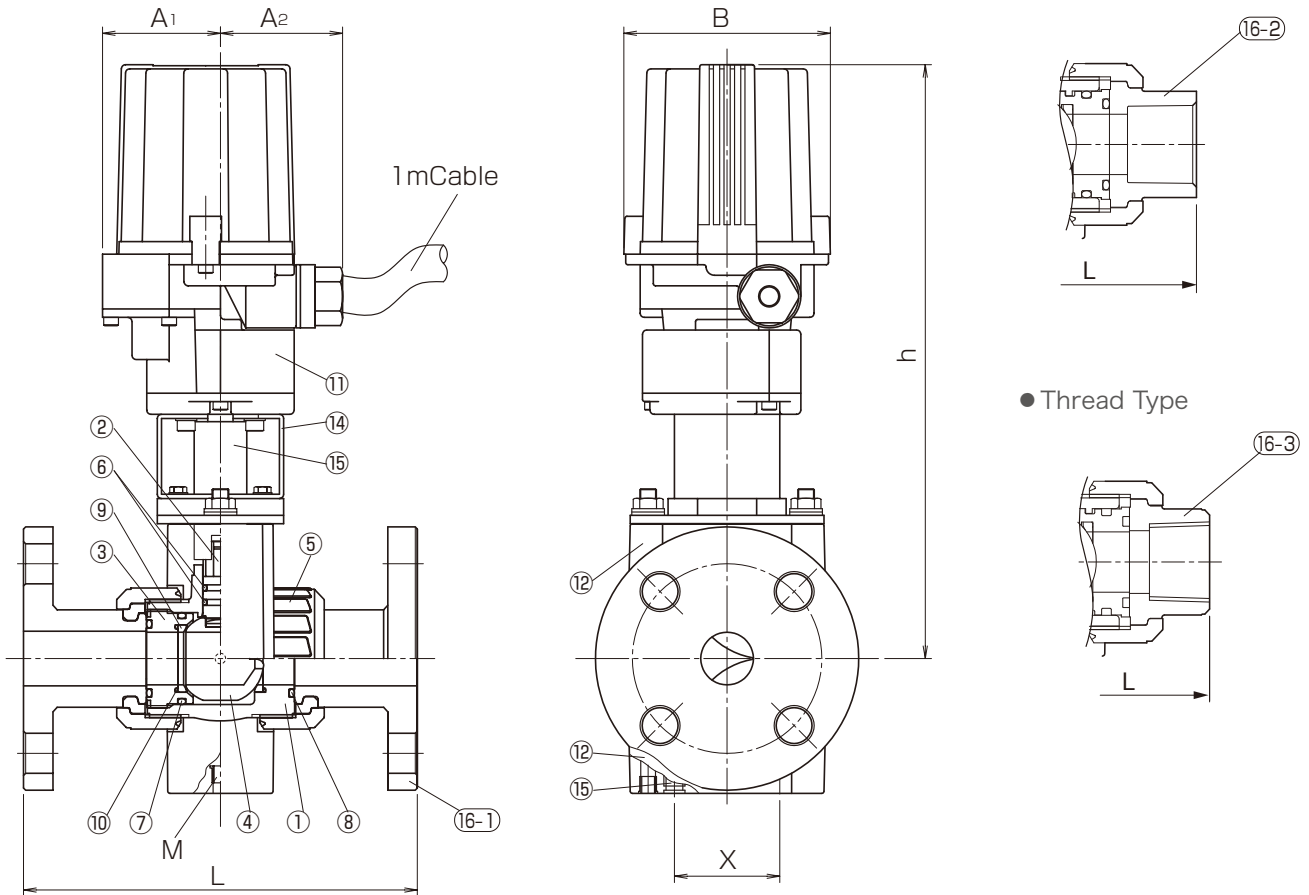


Figure (Flange Type · TS Socket Type · Thread Type)

● Flange Type

● TS Socket Type

● Thread Type



Parts List

No.	Part Name	QTY	Material / Type	No.	Part Name	QTY	Material / Type
1	Body	1	PVC	10	Ball Seat	2	PTFE
2	Stem	1	PVC	11	Electric Actuator	1	—
3	Ball holder	1	PVC	12	Yoke	1	SUS304
4	Ball	1	PVC	13	Joint	1	SUS303
5	Union nut	2	PVC	14	Mount	2	FRP
6	Stem O-ring	—		15	Insert Nut	2	C3604
7	Ball holder O-ring	1	● EPDM	16-1	Flange, Set Ring	2	PVC
8	Union O-ring	2	● FKM	16-2	TS Socket	2	PVC
9	Ball seat O-ring	2		16-3	Thread Socket	2	PVC

Size

Flange Type · Thread Type · TS Socket Type

Unit : mm

Size		L									Actuator			Ref. Weight (kg/unit)		Actuator			
A	B	Flange			TS Socket			Thread			h	A ₁	A ₂	B	X		M	Flange	TS, Thread
		JIS10K	ANSI	DIN	JIS10K	ANSI	DIN	JIS, DIN (Rp)	ANSI (NPT)	DIN (Rp)									
15	1/2	143	109	103	92	97	267	63	58	98	50	M6	3.5	3.1	MRP5				
20	3/4	172	132	119	107	117	270	63	58	98	50	M6	4.0	3.5	MRP5				
25	1	187	143	133	121	128	282	63	58	98	50	M6	4.5	4.0	MRP5				
32	1 1/4	190	166	147	137	146	286	63	58	98	55	M6	5.0	4.5	MRP5				
40	1 1/2	212	175	171	161	163	336	56	118	110	70	M8	6.0	5.5	MRP6				
50	2	234	203	188	189	188	343	56	118	110	85	M8	7.0	6.4	MRP6				

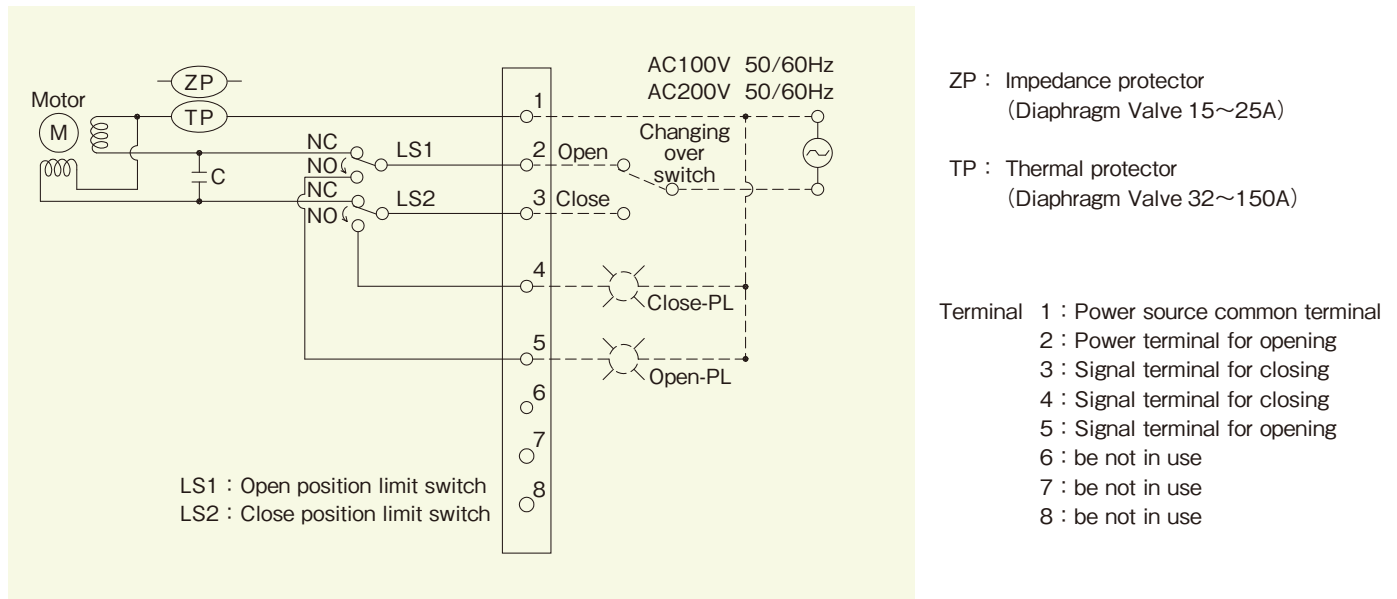
CONNECTING DIAGRAM

Connecting diagrams below are for the standard type of actuators, additional diagram must be referred to diagram for optional accessories.

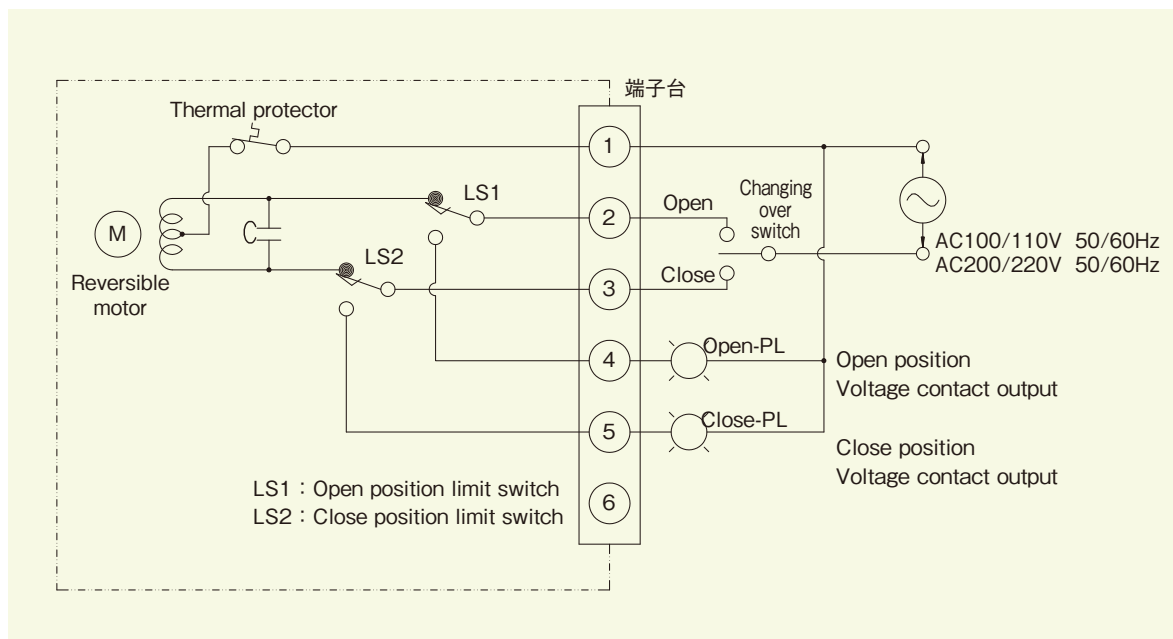
Precaution

- ⚠ Do not apply the current to selector switches for both open and close at same time.
- ⚠ Selector switch must be independently installed for each valve to prevent malfunction.

ELECTRIC DIAPHRAGM VALVE TYPE KS

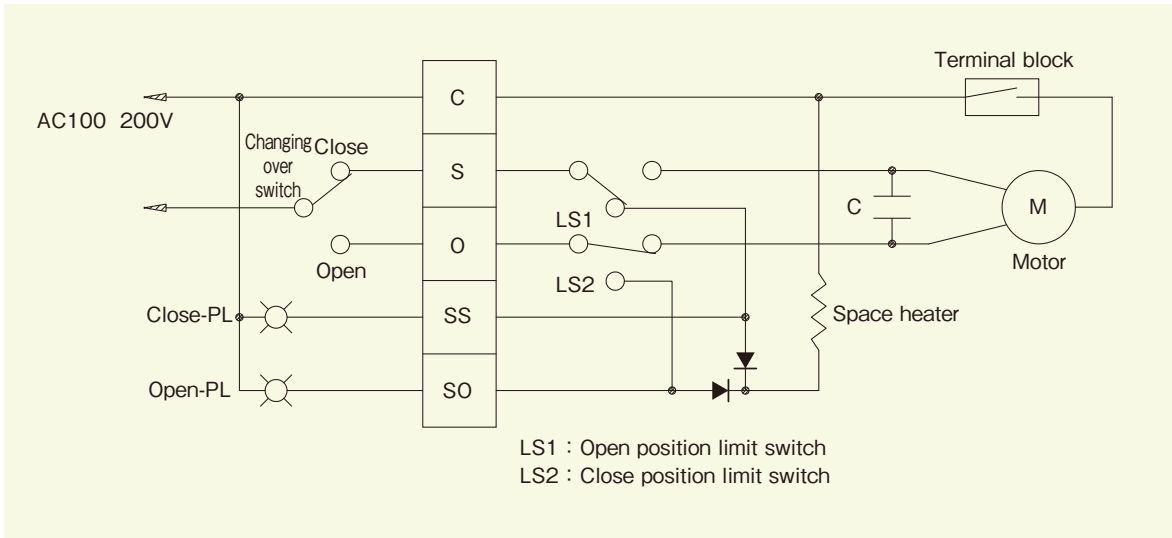


ELECTRIC BALL VALVE TYPE K, ELECTRIC BUTTERFLY VALVE TYPE K



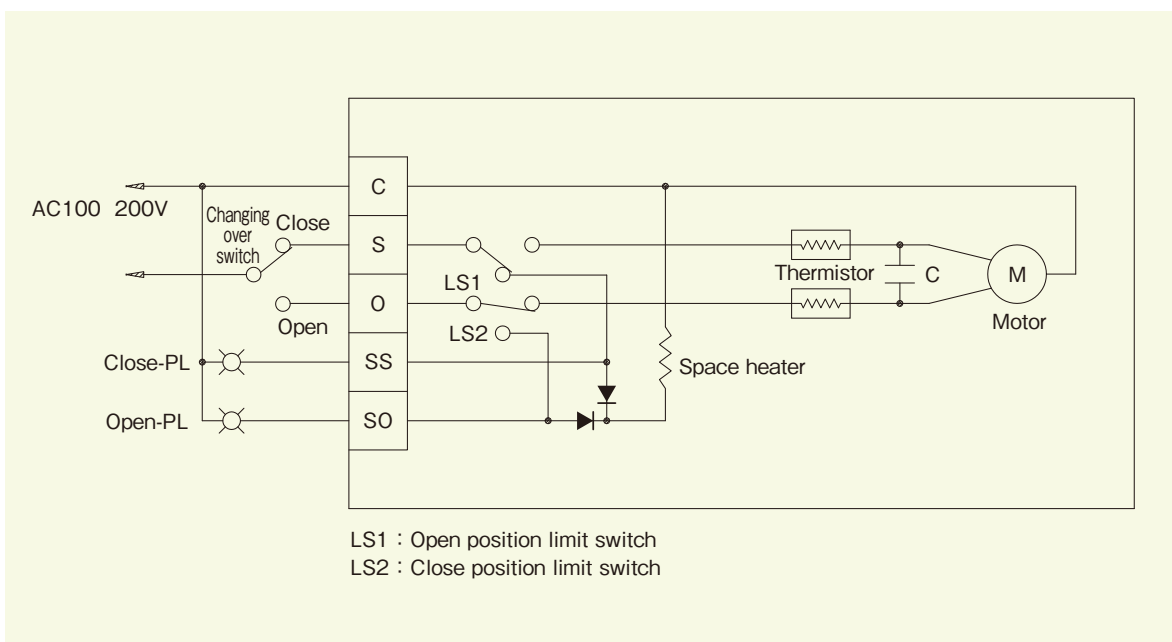
- Terminal 1 : Power source common terminal
2 : Power terminal for opening
3 : Signal terminal for closing
4 : Signal terminal for opening
5 : Signal terminal for closing
6 : be not in use

ELECTRIC BALL VALVE TYPE N STANDARD TYPE, 3-WAY BALL VALVE



- Terminal C : Power source common terminal
- S : Terminal for closing
- O : Terminal for opening
- SS : Signal terminal for closing
- SO : Signal terminal for opening

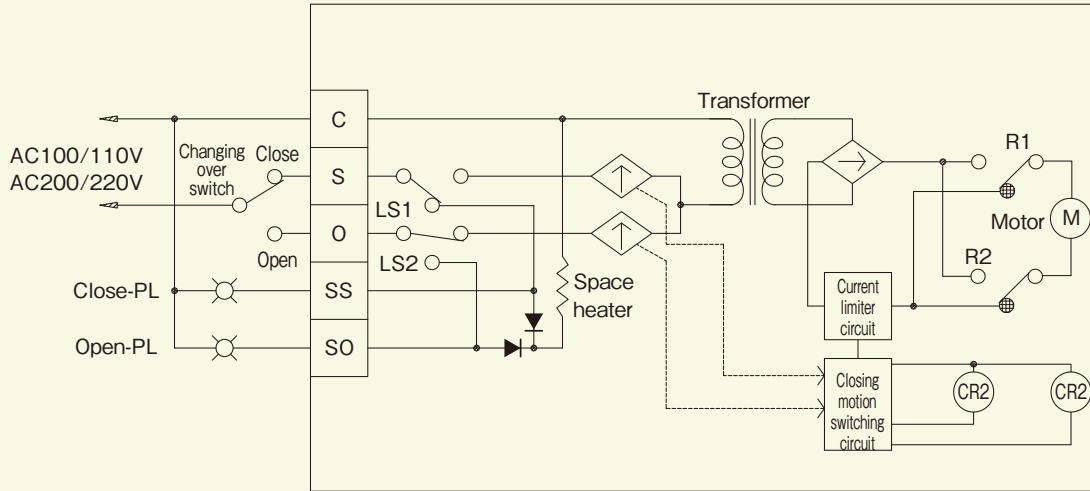
ELECTRIC BALL VALVE TYPE N HIGH SPEED TYPE (15~40A)



- Terminal C : Power source common terminal
- S : Terminal for closing
- O : Terminal for opening
- SS : Signal terminal for closing
- SO : Signal terminal for opening

CONNECTING DIAGRAM

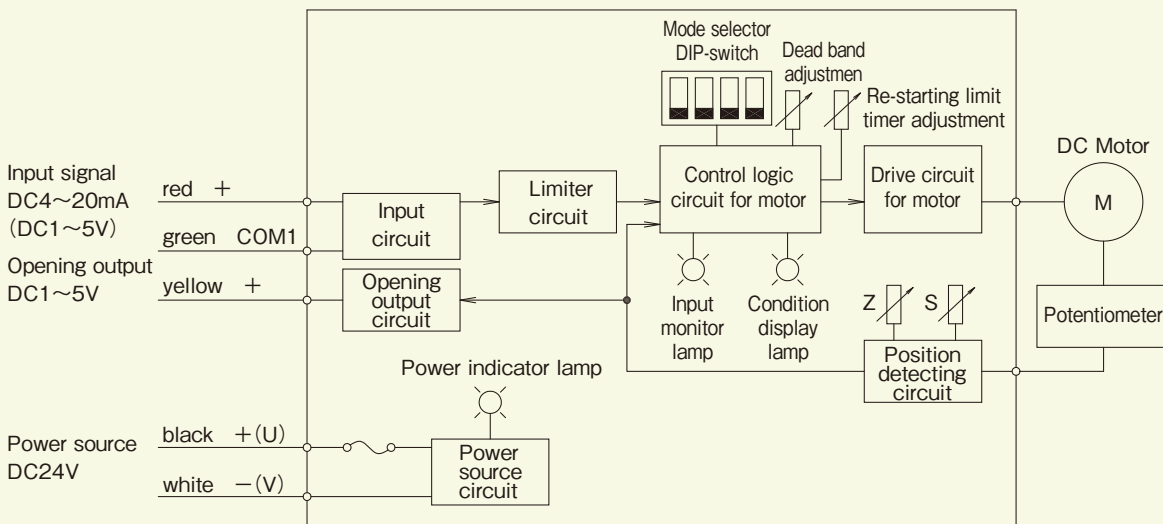
ELECTRIC BALL VALVE TYPE N HIGH SPEED TYPE (50~100A), ELECTRIC BUTTERFLY VALVE TYPE N



LS1 : Open position limit switch
LS2 : Close position limit switch

- Terminal C : Power source common terminal
S : Terminal for closing
O : Terminal for opening
SS : Signal terminal for closing
SO : Signal terminal for opening

ELECTRIC YP BALL VALVE



Z : Zero point adjustment
S : Span adjustment

Basic Physical Property of Material for Valve

Characteristic of Material

	Material	Abbreviation	General Characteristic
Valve body	Polyvinyl Chloride	PVC	Resistant against most of acids, alkalis and sodium of high to low concentration level, however tends to be attacked by some chemicals such as aromatic hydrocarbon, ketones, esters and chlorinated hydrocarbon.
	Hi-Impact Polyvinyl Chloride	HI-PVC	Almost same mechanical properties as PVC however higher impact strength and durability. Inferior to PVC in chemical resistance.
	Chlorinated Polyvinyl Chloride	HT CPVC	Almost same properties as PVC however higher heat resistance and usable for higher temperature application than PVC.
	Polypropylene	PP	Resist against most of acids, alkalis and salts however weak resistant against strong acids such as highly-concentrated nitric acid, chrome acid, and mixture of them. Resistant against many solvents (specifically the solvent with active group), however tends to be attacked by chlorine-containing solvents, aliphatic series, and aromatic hydro-carbon.
	Glass Fiber reinforced polypropylene (Trade name Teflon)	GF-PP	Glass fiber reinforced PP(polypropylene) has higher mechanical properties and temperature resistance than PP. High chemical resistance and light weight.
	Polyvinylidene difluoride	PVDF	Highly resistant in higher temperature range, against ordinary acids and chemicals, however broken down by fuming sulfuric acid and strong basic amines. Usable conditions and application are limited for ketones, amides, esters, solvents and alkalis.
Seal material etc	Polytetra-fluoroethylene	PTFE	Highly resistant against ordinary acids and alkalis, and not dissolved nor changed by ordinary solvent medium. Attacked by melted alkali metal and by fluorine and chlorine trifluoride in high temperature.
	Ethylene Propylene Rubber	EPDM	Chemical resistant and ozone resistant. Comparatively resistant against ketones and esters, however weak resistant against aromatics, aliphatic families, gasoline, and oil.
	Fluor rubber (Trade name Viton)	FKM	Highly resistant against ordinary chemicals, especially acids. Resistant against oils, however attacked by ketones, ammonia anhydride, concentrated caustic soda, etc.
	Chlorinated polyethylene	FKM-FB	Enhanced FKM in chemical resistance. Superior resistant especially against high-temperature acids and highly concentrated acids. Remarkably low metal elution by chemicals. Same level of oil-resistance and high temperature resistance as FKM.
	Polyvinylidene chloride	PVDC	Almost same properties as PVC however resistant and durability in higher temperature.

Basic Physical Property of Material for Valve at Temp.23°C

Material		PVC	HI-PVC	HT CPVC	PP	GF-PP	PVDF	PTFE
Property	Unit							
Density	g/cc	1.43	1.40	1.48	0.92	1.04	1.77	2.17
Water Absorption	mg/m ²	0.04~0.06	0.04~0.06	0.04~0.06	0.01		0.04≤	0.00
Tensile Strength Yield	MPa	50~55	40~45	50~55	35~40	77~83	49~54	17~22
Modulus of Elasticity	MPa	2.5~3.0×10 ³	2.0~2.5×10 ³	2.5~3.0×10 ³	1.0~1.5×10 ³	3.3~3.8×10 ³	2.3~2.8×10 ³	3.7~4.2×10 ²
Flexural Strength	MPa	78~89	76~81	88≤	24~35	93~98	64≤	
Charpy Impact Strength	kJ/m ²	5~10	not break (90≤)	10~15	3~8	7~12	17~21	2~5
Heat Deflection Temperature	°C	61~66	63~68	98~103	118~123	145~150	145~150	
Linear Expansion Coefficient	/°C	7×10 ⁻⁵	7×10 ⁻⁵	7×10 ⁻⁵	12×10 ⁻⁵	4.5×10 ⁻⁵	12×10 ⁻⁵	10×10 ⁻⁵
Thermal Conductivity	W/m·K	0.15	0.15	0.14	0.12		0.12	0.7
Dielectric Strength	kV/mm	40≤	40≤	40≤	26	26	70	
Volume Resistivity	Ωcm	5.3×10 ¹⁵ ≤	5.3×10 ¹⁵ ≤	5.3×10 ¹⁵ ≤	4.9×10 ¹⁵ ≤		5×10 ¹⁵ ≤	1×10 ¹⁸

*This data is intended to serve as reference.

Chemical Resistance Guide

Please refer to "Chemical Resistance Manual for Esilon Plastics Pipe, Valves and Relative Materials" for details.

1 Please note that plastic might be strongly affected by surface-activating agent.
 2 "PVC" in chemical resistance guide does not include "Hl-PVC".
 3 This table is intended to serve as guide only. The information based on data accumulated from immersion test and experiments herein is believed to be reliable, but no representations, guarantee or warranties of any kinds are made as to its accuracy, suitability for particular applications or results to be obtained.

++ : Excellent Resistant - : Caution
 + : Good Resistant -- : Not recommended
 (Actual testing suggested)

Chemical	Concentration(%)	Temp.		Plastic						Rubber			Metal		
		(°C)	(°F)	PVC	CPVC (HT)	PP	PVDC	PVDF	PTFE	EPDM	FKM	FKM FB	SUS 304	SUS 316	
Hydrochloric acid HCl	15	20	68	+	++	++	++	++	++	++	++	++	++	---	---
		40	104	+	++	++	++	++	++	+	+	++			
		60	140	+	++	++	++	++	++	-	-	++			
		80	176		++	++	++	++	++	---	---	+			
		100	212					++	++						
		120	248												
	35	20	68	+	++	++	++	++	++	+	++	++	---	---	
		40	104	+	++	++	++	++	++	-	-	++			
		60	140	+	+	++	++	++	++	---	---	+			
		80	176		+	+	++	++	++			+			
		100	212					+	++						
		120	248												
	38	20	68	+	++	++	++	++	++	+	+	++	---	---	
		40	104	-	++	++	++	++	++	-	-	+			
		60	140	-	+	++	+	++	++	---	---	+			
		80	176		+	+		++	++			-			
		100	212					+	++						
		120	248												
Nitric acid HNO ₃	10	20	68	++	++	++	++	++	++	++	++	++	++	++	
		40	104	++	++	++	++	++	++	++	++	++	++	++	
		60	140	+	++	++	++	++	++	+	+	++	++	++	
		80	176		+	+		++	++	---	---	++	++	++	
		100	212					++	++				+		
		120	248												
	30	20	68	++	++	++	++	++	++	+	++	++	++	++	
		40	104	+	+	++	++	++	++	+	+	++	++	++	
		60	140	-	-	+	++	++	++	---	+	++	+	+	
		80	176		---	+		++	++		-	+	+	+	
		100	212					++	++		-	+	+	+	
		120	248												
	50	20	68	++	++	++	++	++	++	---	++	++	++	++	
		40	104	-	-	+	++	++	++		+	++	+	+	
		60	140	---	---	-		+	++		-	+	+	+	
		80	176			---		+	++		---	+	-	-	
		100	212					-	++				-	-	
		120	248												
	60	20	68	+	+	-	++	++	++	---	---	++	++	++	
		40	104	-	-	---		++	++			+	+	+	
		60	140	---	---			+	++			+	+	+	
		80	176					-	++			-	-	-	
		100	212						++				-	-	
		120	248												
70	20	68	---	---	---	---	-	++	---	---	-	++	++		
	40	104					---	+							
	60	140						+							
	80	176						-							
	100	212						++							
	120	248													
Sulfuric acid H ₂ SO ₄	10	20	68	++	++	++	++	++	++	++	++	++	---	+	
		40	104	++	++	++	++	++	++	++	++	++		---	
		60	140	++	++	++		++	++	++	++	++			
		80	176		++	++		++	++	++	++	++			
		100	212					++	++		++	++			
		120	248												
	30	20	68	++	++	++	++	++	++	++	++	++	---	---	
		40	104	++	++	++		++	++	++	++	++			
		60	140	++	++	++		++	++	++	++	++			
		80	176		++	++		++	++	+	++	++			
		100	212					++	++	---	++	++			
		120	248												
	50	20	68	++	++	++	-	++	++	++	++	++	---	---	
		40	104	++	++	++		++	++	++	++	++			
		60	140	++	++	++		++	++	++	++	++			
		80	176		++	++		++	++	+	++	++			
		100	212					++	++	---	++	++			
		120	248												

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 --- : Not recommended

Chemical	Concentration(%)	Temp.		Plastic						Rubber			Metal	
		(°C)	(°F)	PVC	CPVC (HT)	PP	PVDC	PVDF	PTFE	EPDM	FKM	FKM FB	SUS 304	SUS 316
Sulfuric acid H ₂ SO ₄	70	20	68	++	++	++	--	++	++	++	++	++	---	---
		40	104	++	++	++		++	++	++	++	++		
		60	140	++	++	++		++	++	+	++	++		
		80	176		+	+		+	++	-	++	++		
		100	212					+	++		+	+		
	80	20	68	++	++	++	--	++	++	++	++	++	--	--
		40	104	++	++	++		++	++	++	++	++		
		60	140	+	+	+		++	++	+	++	++		
		80	176		-	+		+	++	-	+	++		
		100	212					+	++		-	+		
	90	20	68	+	+	++	--	++	++	++	++	++	--	--
		40	104	+	+	++		++	++	+	++	++		
		60	140	-	-	+		++	++	-	++	++		
		80	176			+		+	++	--	+	+		
		100	212					+	+		--	-		
	98	20	68	+	+	--	--	++	++	--	++	++	--	--
		40	104	-	-			+	++		+	++		
		60	140	--	--				++		-	+		
80		176						+						
100		212												
Hydrofluoric acid HF	Dilute	20	68	++	++	++	++	++	++	++	++	++		
		40	104	++	+	+	++	++	++	++	++	++		
		60	140	-	+	+	++	++	++	++	++	++		
		80	176		-	+	++	++	++	++	++	++		
		100	212			+		++	++	++	++	++		
	30	20	68	++	++	++	++	++	++	++	++	++		
		40	104	+	+	+	++	++	++	++	++	++		
		60	140	-	-	+	++	++	++	++	++	++		
		80	176	--	--	+	++	++	++	+	++	++		
		100	212					++	++	--	++	++		
	40	20	68	+	+	++	++	++	++	++	++	++		
		40	104	-	-	+	++	++	++	+	++	++		
		60	140	--	--	+	++	++	++	-	++	++		
		80	176			+	++	++	++	--	++	++		
		100	212					++	++		+	++		
	50	20	68	+	+	++	++	++	++	++	++	++	--	--
		40	104	--	--	+	++	++	++	+	++	++		
		60	140			+	++	++	++	-	++	++		
80		176			+		++	++		++	++			
100		212					++	++		+	++			
Acetic acid CH ₃ COOH	20	20	68	++	++	++	++	++	++	++	++	++	++	++
		40	104	+	++	++	++	++	++	++	+	++	++	++
		60	140	-	+	+		++	++	+	-	+	++	++
		80	176		-	-		++	++		--	+	++	++
		100	212					+	++				++	++
	50	20	68	++	++	++	++	++	++	+	+	+	++	++
		40	104	+	+	+	++	++	++	-	-	-	++	++
		60	140	-	-	-		++	++	--	--	--	++	++
		80	176		--			++	++				++	++
		100	212					+	++				++	++
	120	20	248											
		20	68	+	+	--	++	++	++	+	+	+	+	+
		40	104	+	+		+	++	++	--	+	+	-	-
		60	140	+	+		+	++	++		+	+	--	-
		80	176					++	++		-	-	--	-
	Chromic acid H ₂ CrO ₄	20	100	212					++	++		--	--	--
			120	248										

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Chemical	Concentration(%)	Temp.		Plastic						Rubber			Metal	
		(°C)	(°F)	PVC	CPVC (HT)	PP	PVDC	PVDF	PTFE	EPDM	FKM	FKM FB	SUS 304	SUS 316
Chromic acid H ₂ CrO ₄	50	20	68	+	+	--	++	++	++	--	+	+	+	+
		40	104	+	+		+	-	++				--	--
		60	140				+	--	++					
		80	176						++					
		100	212						++					
Hydrogen peroxide H ₂ O ₂	20	20	68	++	++	++	++	++	++	++	++	++	--	--
		40	104	+	+	++	++	++	++	+	++	++	--	--
		60	140	-	-	++		++	++	+	++	++	--	--
		80	176		-	+		++	++	-	++	++		
		100	212											
	30	20	68	++	-	++	++	++	++	++	++	++	--	--
		40	104	+	-	+	++	++	++	+	+	+	--	--
		60	140	-		+		++	++	-	-	-	--	--
		80	176			-		++	++		-	-		
		100	212											
	50	20	68	+	-	-	++	++	++	--	-	-	--	--
		40	104	-	--	--	++	++	++		--	--	--	--
		60	140					++	++					
		80	176					++	++					
		100	212											
Caustic potash (Potassium hydroxide) KOH	5	20	68	++	++	++	++	++	++	++	+	++	+	+
		40	104	++	+	++	++	++	++	++			+	+
		60	140	+	+	++		+	++	++			+	+
		80	176		+	++		-	++	++			+	+
		100	212					--	++	+			+	+
	14	20	68	+	+	++	++	++	++	++	+	++	+	+
		40	104	+	--					++	--		+	+
		60	140	+	--					++			+	+
		80	176							++			+	+
		100	212							+			+	+
	25	20	68	++	++	++	++	++	++	++	+	++	+	+
		40	104	++	+	++	++	++	++	++			+	+
		60	140	++	+	++		+	++	++			+	+
		80	176		+	++		-	++	++			+	+
		100	212					--	++	+			+	+
Sodium hydroxide NaOH	5	20	68	+	+	++	++	++	++	++	++	++	++	++
		40	104	+	--	++			++	++	++	++	++	++
		60	140	+	--	++			++	++	+	+	++	++
		80	176						++	+			++	++
		100	212										++	++
	15	20	68	++	+	++	++	++	++	++	+	++	++	++
		40	104	++	-	++		++	++	++	-	+	++	++
		60	140	++	-	++		+	++	++	--		++	++
		80	176		--	+		-	++	+			++	++
		100	212					--	++	+			++	++
	30	20	68	++	++	++	++	++	++	++	-	+	++	++
		40	104	++	++	++		+	++	++	--	--	++	++
		60	140	++	+	++		-	++	++			++	++
		80	176		-	+		--	++	++			++	++
		100	212						++	+			-	
50	20	68	++	++	++	++	++	++	++	--	--	+	+	
	40	104	++	++	++		+	++	++			+	+	
	60	140	++	++	++		-	++	++			+	+	
	80	176		+	+		--	++	++			+	+	
	100	212						++				+	+	
120	248										--	-		

Please refer to "Chemical Resistance Manual for Esilon Plastics Pipe, Valves and Relative Materials" for details.

1 Please note that plastic might be strongly affected by surface-activating agent.
 2 "PVC" in chemical resistance guide does not include "HI-PVC".
 3 This table is intended to serve as guide only. The information based on data accumulated from immersion test and experiments herein is believed to be reliable, but no representations, guarantee or warranties of any kinds are made as to its accuracy, suitability for particular applications or results to be obtained.

++ : Excellent Resistant - : Caution
 + : Good Resistant (Actual testing suggested)
 --- : Not recommended

Chemical	Concentration(%)	Temp.		Plastic						Rubber			Metal	
		(°C)	(°F)	PVC	CPVC (HT)	PP	PVDC	PVDF	PTFE	EPDM	FKM	FKM FB	SUS 304	SUS 316
Sodium hypochlorite NaClO	1ppm	20	68	++	++	++	++	++	++	++	++	++		
		40	104											
		60	140											
		80	176											
		100	212											
	3	20	68	++	++	+	++	++	++	+	++	++	+	+
		40	104	++	++	+	++	++	++	+	++	++	-	+
		60	140	+	-	+	+	++	++	-	++	++	--	-
		80	176					++						
		100	212					++						
	5	20	68	++	++	+	++	++	++	+	++	++	+	+
		40	104	++	++	+	++	++	++	+	++	++	-	+
		60	140	+	-	-	+	++	++	-	++	++	--	-
		80	176					++						
		100	212					++						
	7	20	68	++	++	+	++	++	++	+	++	++	+	+
		40	104	++	++	-	++	++	++	+	++	++	-	+
		60	140	+	-	-	+	++	++	-	++	++	--	-
		80	176					++						
		100	212					++						
	10	20	68	++	++	+	++	++	++	--	++	++	--	--
		40	104	++	++	-	+	++	++		++	++		
		60	140	+	-	-	+	++	++		++	++		
		80	176					++						
100		212					++							
13	20	68	++	++	+	++	++	++	--	++	++	--	--	
	40	104	++	++	-	+	++	++		+	+			
	60	140	+	-		+	++	++						
	80	176					++							
	100	212					++							
Ferric chloride FeCl ₃	Satu	20	68	++	++	++	++	++	++	++	++	++	--	--
		40	104	++	++	++	++	++	++	++	++	++		
		60	140	+	++	++		++	++	++	++	++		
		80	176		++	++		++	++	++	++	++		
		100	212					++	++	+	+	+		
Ammonia water NH ₃ Aq	10	20	68	+	--	++	--	++	++	++	+	+	++	++
		40	104	+	--	++		++	++	++	-	-	+	+
		60	140	+	--	++		++	++	++	--	--	+	+
		80	176		--	+		++	++	++			+	+
		100	212					++	++	++			+	+
	28	20	68	+	--	++	--	++	++	++	-	-	++	++
		40	104	+	--	++		++	++	++	-	-		
		60	140	-	--	++		++	++	++	--	--		
		80	176		--	++		++	++					
		100	212					++	++					
Toluene (Toluol) C ₆ H ₅ CH ₃	Pure	20	68	--	--	+	--	++	++	--	-	-		
		40	104			-		++	++					
		60	140			--		+	++					
		80	176					+	++					
		100	212					-	+					
Benzene C ₆ H ₆	Pure	20	68	-	-	+	++	++	++	--	+	+		
		40	104	--	--	-		+	++		+	+		
		60	140					+	++		+	+		
		80	176					+	++		+	+		
		100	212											
120	248													

Please refer to "Chemical Resistance Manual for Eslon Plastics Pipe, Valves and Relative Materials" for details.

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++ : Excellent Resistant - : Caution
 + : Good Resistant (Actual testing suggested)
 --- : Not recommended

Chemical	Concentration(%)	Temp.		Plastic						Rubber			Metal	
		(°C)	(°F)	PVC	CPVC (HT)	PP	PVDC	PVDF	PTFE	EPDM	FKM	FKM FB	SUS 304	SUS 316
Non-ionic Surfactant	10	20	68	-	---			+	+					
		40	104	-	---			+	+					
		60	140											
		80	176											
		100	212											
Cationic surfactant	10	20	68	+	-			++	++					
		40	104	+	-			++	++					
		60	140											
		80	176											
		100	212											
Anionic surfactant	10	20	68	+	-			++	++					
		40	104	+	-			++	++					
		60	140											
		80	176											
		100	212											
Methyl alcohol (Methanol) CH ₃ OH	Pure	20	68	-	-	++	++	++	++	++	++	++	+	++
		40	104	---	---	++	++	++	++	++	++	++	+	++
		60	140			+	+	+	+	+	+	+		++
		80	176											
		100	212											
	20	20	68	++	++	++	++	++	++	++	++	++	+	++
		40	104	+	+	++	++	++	++	++	++	++	+	++
		60	140			+	+	+	+	+	+	+		++
		80	176											
		100	212											
Soybean oil	-	20	68	-	-	++		++	++	++	++	++		
		40	104	-	-	++		++	++	++	++	++		
		60	140	-	-	++		++	++	++	++	++		
		80	176		-	+		++	++	-	++	++		
		100	212					++	++	---	-	-		
Gasoline	-	20	68	-	-	---		++	++	---	+	+		
		40	104					++	++					
		60	140					++	++					
		80	176					++	++					
		100	212											
Kerosene (kerosine)	-	20	68	-	-	+		++	++	---	++	++		
		40	104	-	-			++	++					
		60	140	---	---			++	++					
		80	176					++	++					
		100	212											
Aniline (Aminobenzene) C ₆ H ₅ NH ₂	Pure	20	68	-	-	+	---	++	++	++	++	++	+	+
		40	104	---	---	+		+	++	-	+	+	+	+
		60	140			-		+	++	---	-	-	+	+
		80	176			---		-	++				+	+
		100	212					---	++				+	+
Ethanolamine H ₂ NCH ₂ CH ₂ OH	Pure	20	68	---	---	++		---	++	+	---	---	+	+
		40	104						++				+	+
		60	140										+	+
		80	176										+	+
		100	212										+	+
120	248										+	+		

Flow characteristic of ESLON VALVE

1. Cv value

Cv value (valve constant) is the flow coefficient used in USA, and non-dimensional value representing how many gallons (1 US gallon = 3.7852 liters) of water of 60°F(15.5°C) pass valve for one minute, where the pressure difference at the inlet and the outlet of the valve is 1 psi (0.0703kgf/cm²)at its full open. 1 gallon is treated as 1Cv.

$$Cv = Q \sqrt{\frac{G}{P_1 - P_2}}$$

$$Cv = Q \sqrt{\frac{G}{\Delta P}}$$

G: Specific Gravity (water=1)
Q: Flow Rate [US_gal/min]
P1: Valve Inlet Pressure [psi]
P2: Valve Outlet Pressure [psi]
ΔP: P1 - P2 [psi]

Unit	Cv	Q : Flow Rate	ΔP : Pressure Drop
m ³ /hr, kPa	$Cv = 11.6 Q_{(h)} \sqrt{\frac{G}{\Delta P_{(k)}}}$	$Q_{(h)} = \frac{Cv}{11.6 \sqrt{\frac{G}{\Delta P_{(k)}}}}$	$\Delta P_{(k)} = \frac{G}{\left(\frac{Cv}{11.6 Q_{(h)}}\right)^2}$
m ³ /hr, MPa	$Cv = \frac{1}{2.73} Q_{(h)} \sqrt{\frac{G}{\Delta P_{(M)}}}$	$Q_{(h)} = \frac{2.73 Cv}{\sqrt{\frac{G}{\Delta P_{(M)}}}}$	$\Delta P_{(M)} = \frac{G}{\left(\frac{2.73 Cv}{Q_{(h)}}\right)^2}$
L/min, kPa	$Cv = 0.694 Q_{(m)} \sqrt{\frac{G}{\Delta P_{(k)}}}$	$Q_{(m)} = \frac{Cv}{0.694 \sqrt{\frac{G}{\Delta P_{(k)}}}}$	$\Delta P_{(k)} = \frac{G}{\left(\frac{Cv}{0.694 Q_{(m)}}\right)^2}$
L/min, MPa	$Cv = \frac{1}{45.7} Q_{(m)} \sqrt{\frac{G}{\Delta P_{(M)}}}$	$Q_{(m)} = \frac{45.7 Cv}{\sqrt{\frac{G}{\Delta P_{(M)}}}}$	$\Delta P_{(M)} = \frac{G}{\left(\frac{45.7 Cv}{Q_{(m)}}\right)^2}$

- Flow Rate: Q(h) [m³/hr], Q(m) [L/min]
- Pressure Drop: ΔP(k) [kPa], ΔP(M) [MPa]

Follow Cv value for each valve when valve selection.
When Cv value is

- too small: ① Volumetric flow shortage
② High Pressure drop
- too big: ① Poor Control
② Wrong size

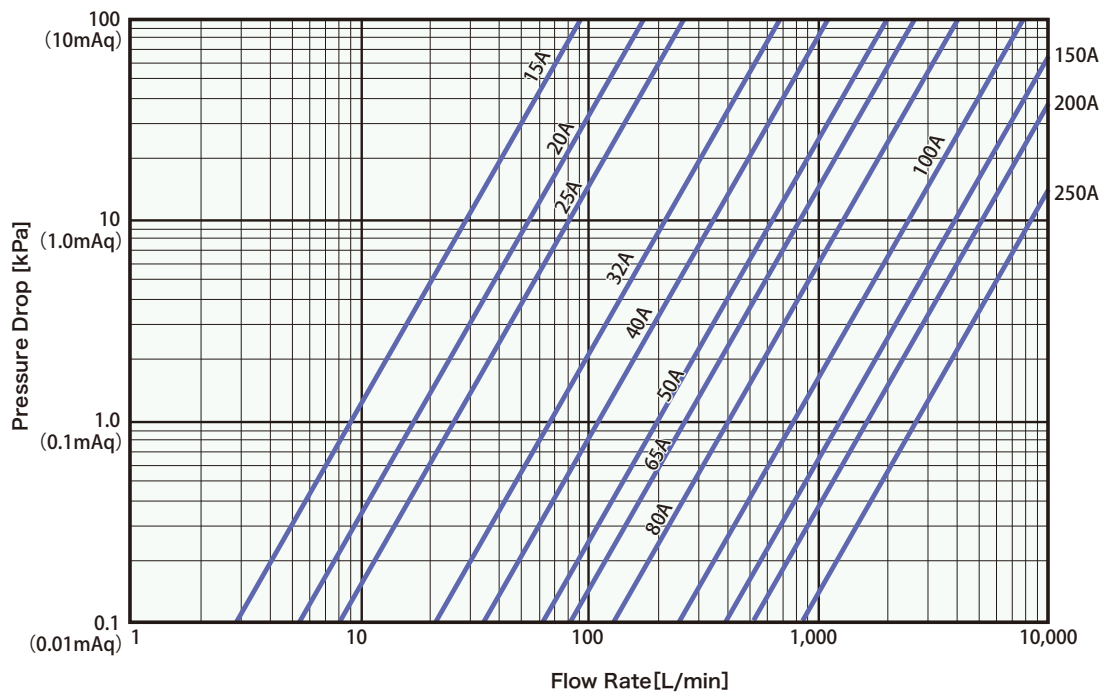
Kv value is the flow capacity coefficient used in the International Standards. It represents how many liters of water can pass the valve for one hour, where the pressure difference at the inlet and the outlet of the valve is 1 bar(1.0197kgf/cm²)at its full open.
The Cv and Kv value for liquids is expressed by the following equation;

$$KV = \frac{1}{1.16} Cv$$

2. Cv value and Flow Rate of ESLON VALVE

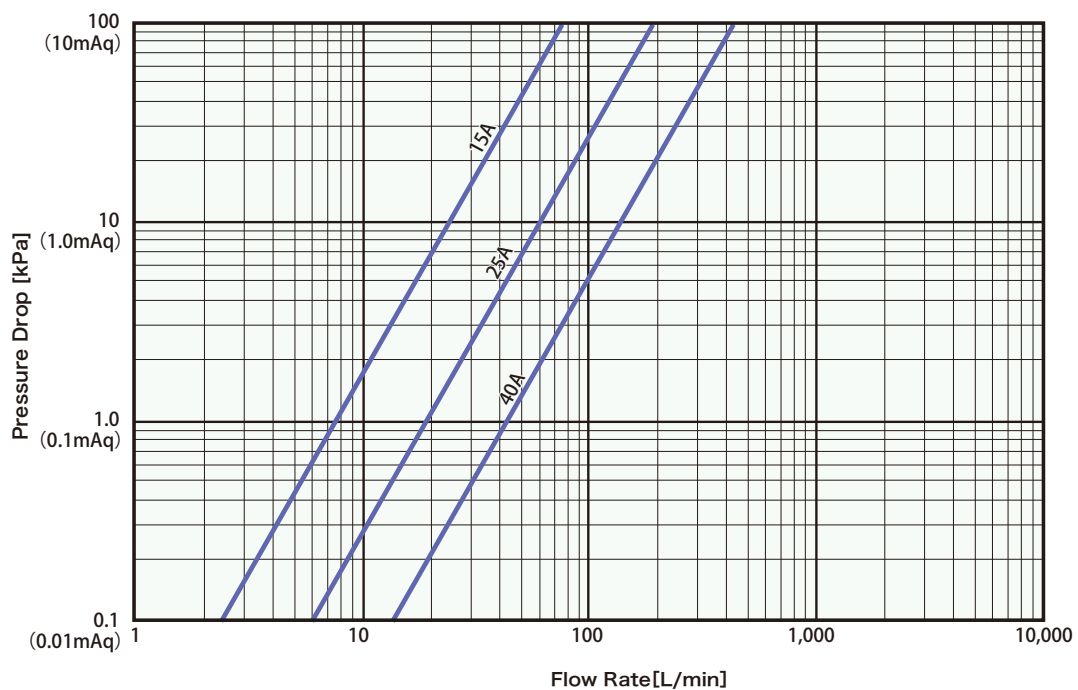
DIAPHRAGM VALVE

Size[A]	15	20	25	32	40	50	65	80	100	125	150	200	250
Cv Value	6.3	12.0	17.6	17.6	46.3	76.1	135	180	280	533	857	1113	1864



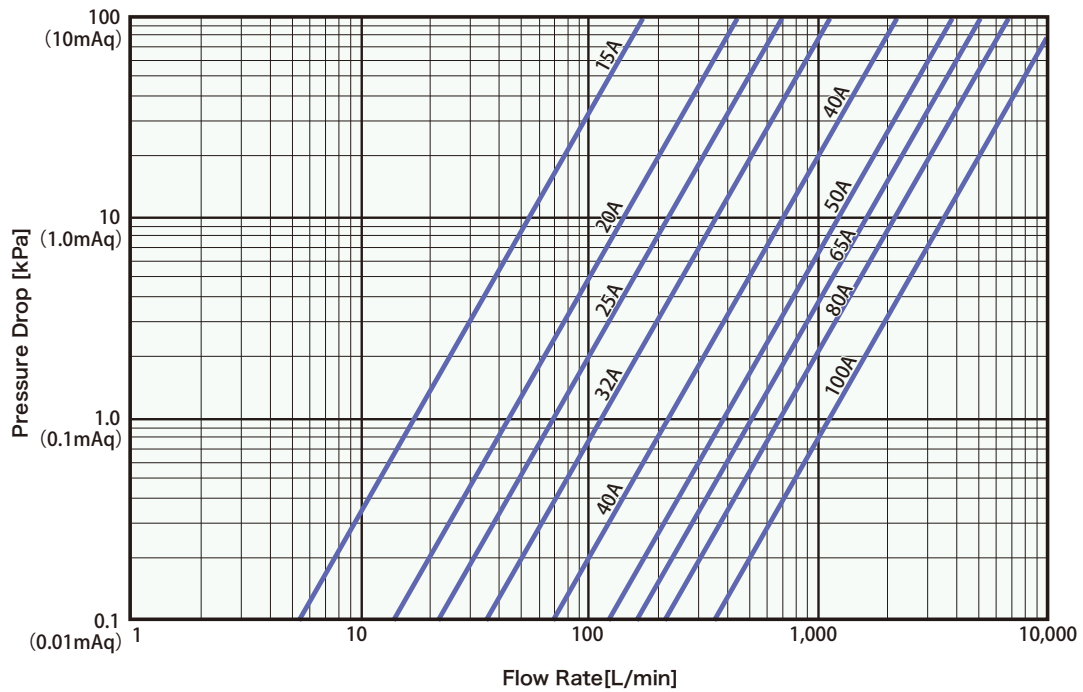
DEAD SPACE FREE TEE-TYPE DIAPHRAGM VALVE

Size[A]	15	20	25	32	40
Cv Value	5.2	-	13.1	-	30.1



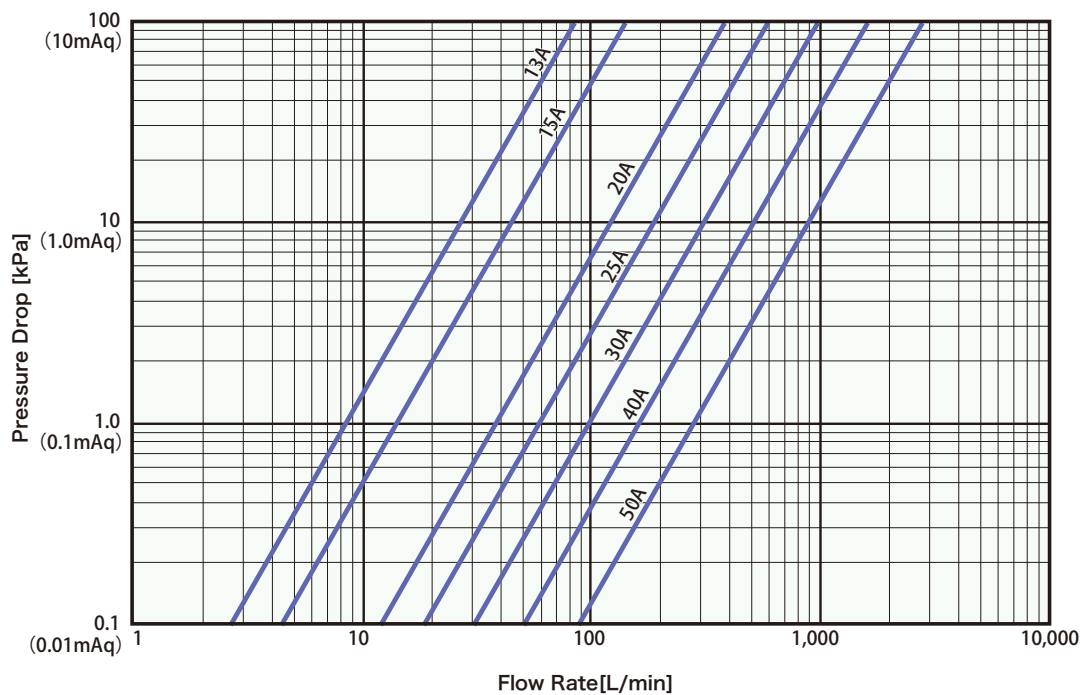
BALL VALVE, BALL VALVE TYPE M

Size[A]	15	20	25	32	40	50	65	80	100
Cv Value	12.1	31.5	48.9	80.1	154	267	352	471	780



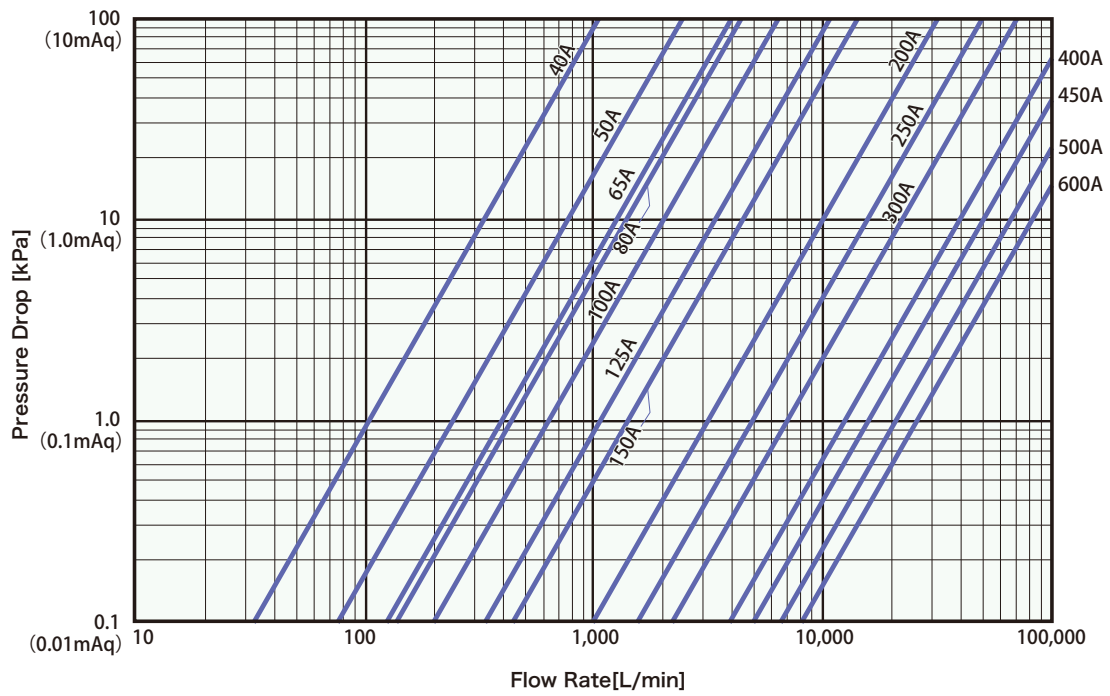
COMPACT BALL VALVE(13 - 20A), LOCK BALL VALVE(25 - 50A)

Size[A]	13	15	20	25	32	40	50
Cv Value	6	10.0	26.8	43.1	69.6	115	196



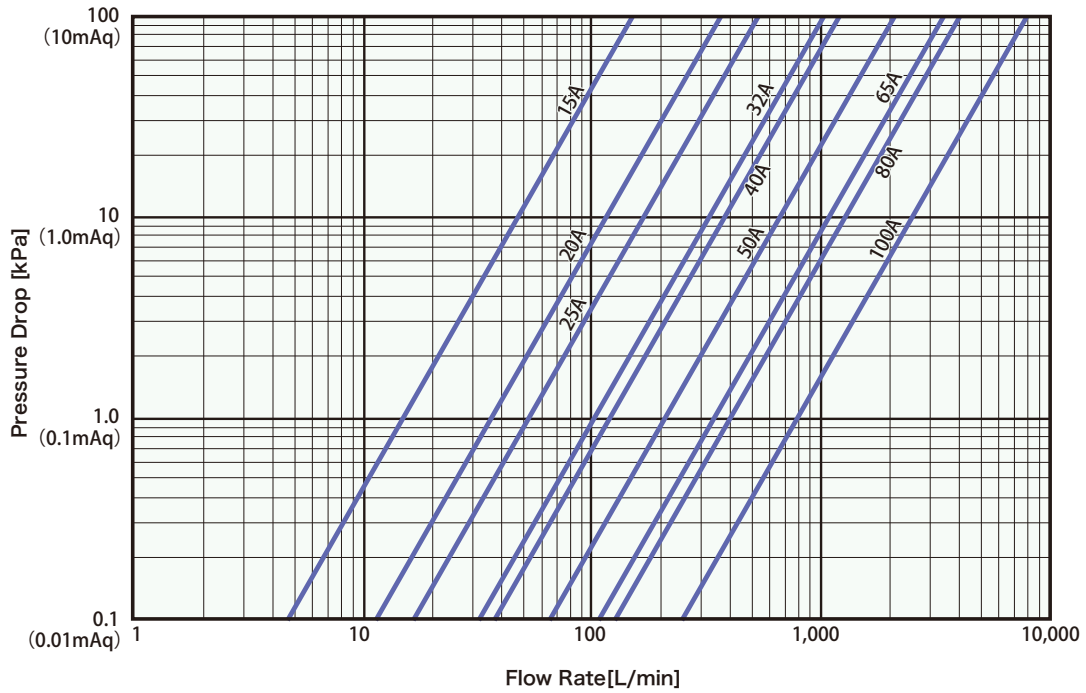
BUTTERFLY VALVE

Size[A]	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Cv Value	74.0	172	282	309	446	755	993	2213	3440	4929	6311	8757	11107	14622	17945



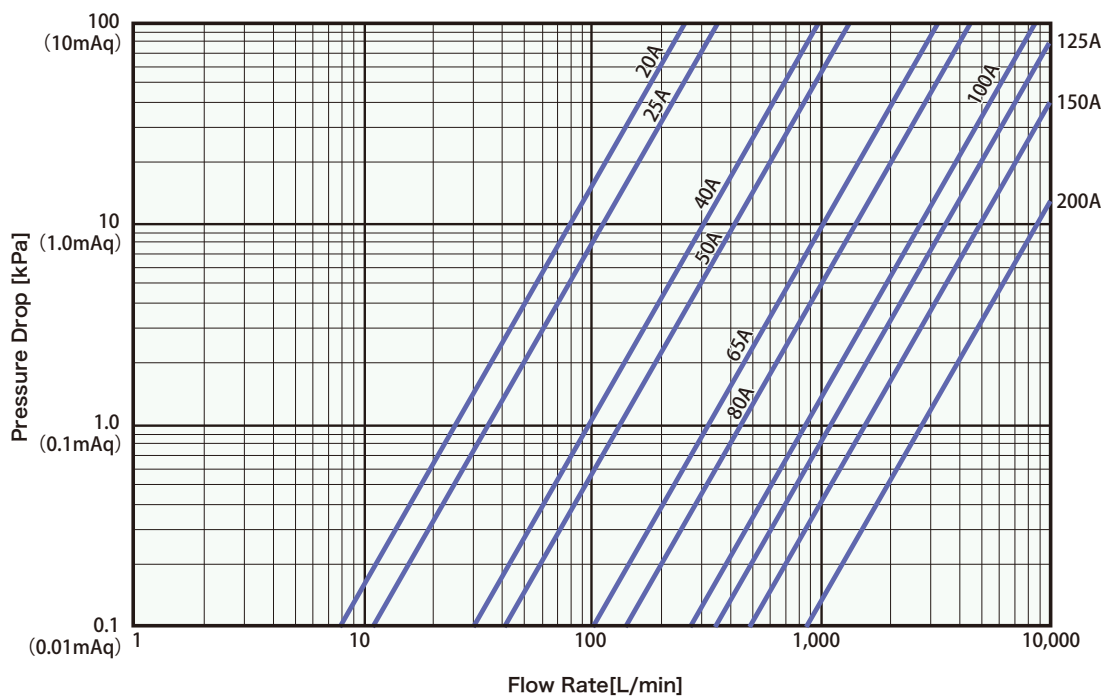
CHECK VALVE BALL TYPE

Size[A]	15	20	25	32	40	50	65	80	100
Cv Value	10.5	25.7	36.9	71	84.0	146	235	280	547



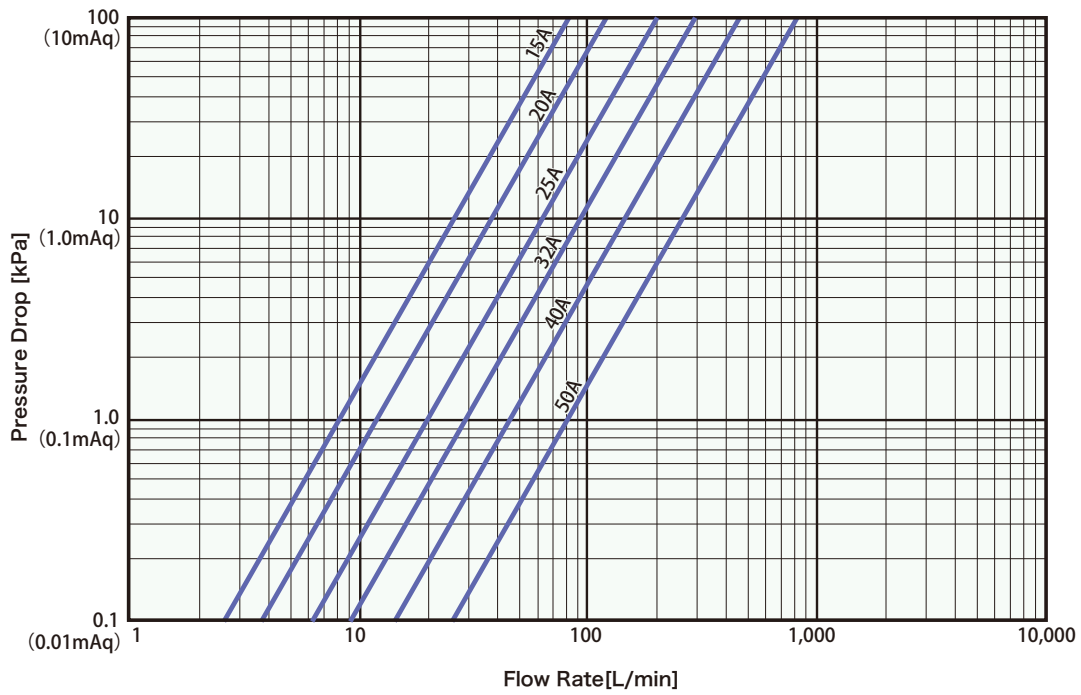
CHECK VALVE SWING TYPE

Size[A]	20	25	40	50	65	80	100	125	150	200
Cv Value	17.6	24.2	67.8	91.4	222	306	596	771	1084	1920



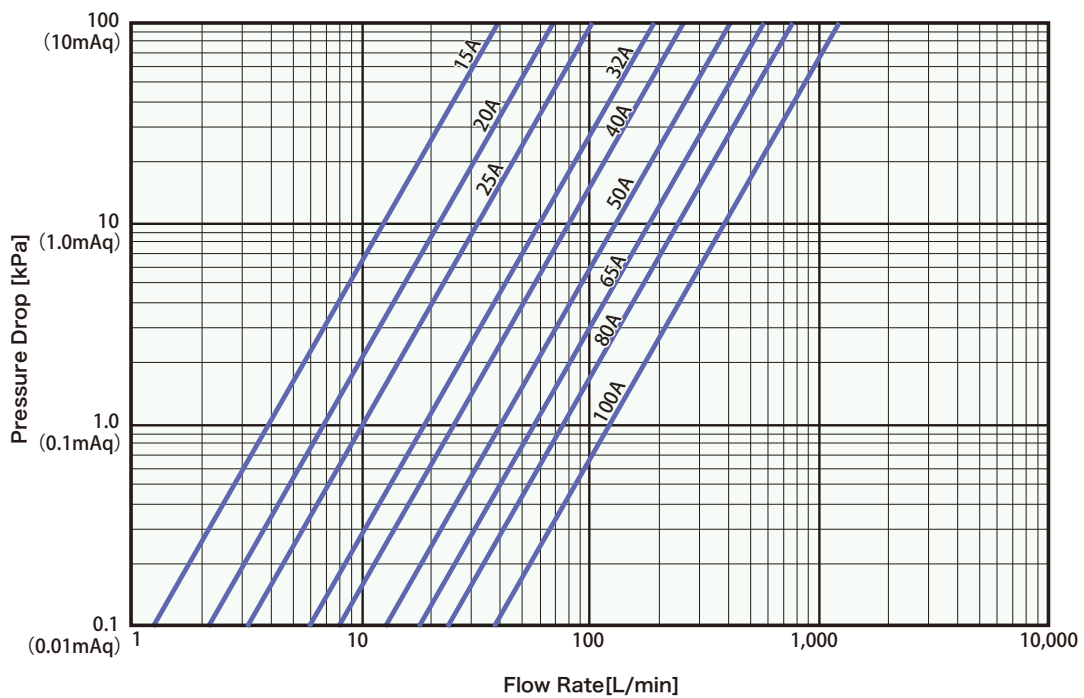
CHECK VALVE LIFT TYPE

Size[A]	15	20	25	32	40	50
Cv Value	5.6	8.3	13.8	20.2	31.7	56.5



STRAINER

Size[A]	15	20	25	32	40	50	65	80	100
Cv Value	2.8	4.9	7.2	13.2	17.9	28.7	39.8	52.6	84.6



3. Relationship between Valve opening and Flow rate

The relationship between valve opening and flow rate is shown in the figure below.

The flow characteristics depend on the valve structure.

NEEDLE VALVE is suitable for flow control because the flow rate increases linearly with valve opening.

However, the pressure loss of the NEEDLE VALVE is very large at large flow rates.

In this case, select DIAPHRAGM VALVE close to the linear characteristic.

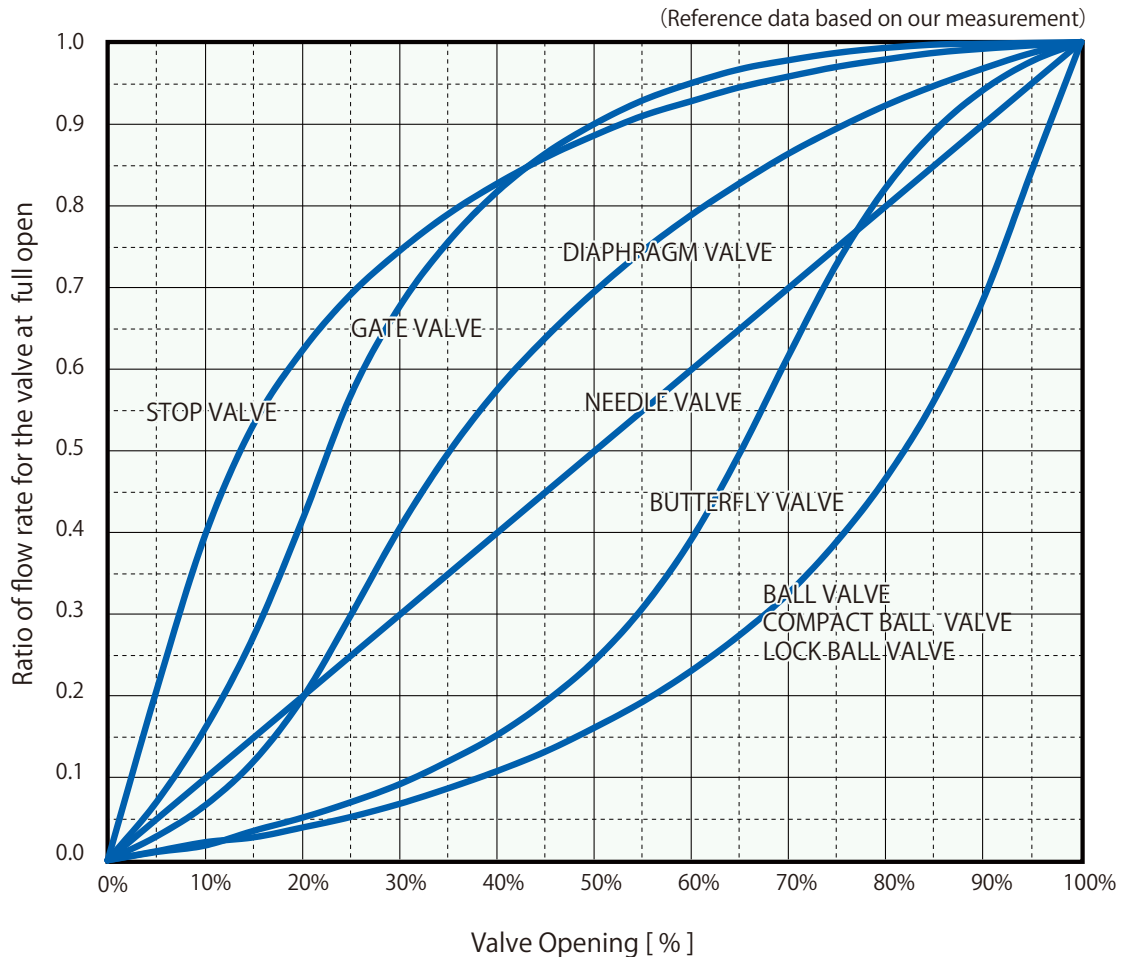
The flow characteristics of STOP VALVE or GATE VALVE vary greatly in a small opening range.

The flow characteristics of BALL VALVE or BUTTERFLY VALVE change greatly in a large opening range.

These valves are suitable for opening and closing valves.

Please select a valve suitable for your purpose.

Relationship between Valve opening and Flow rate



CAUTION IN USE OF ESLON VALVES



Pay special attention on items with this mark, because it may cause personal accident if the caution is in question in neglected.

1 Storage and Transportation

- ① Handle products carefully, avoid dropping and throwing products. Products might be affected in performance or damaged by strong impact.
- ② As large size of product is heavy, unload and handle by 2-persons if necessary.
- ③ For storage, store products in their cartons or wrapping and stack up orderly not to unpile.
- ④ Avoid exposing products to direct sunlight. Avoid storing and handling products in the condition of excessive temperature or humidity.

2 Operating Instructions

- ① Check inspection certificate packed with the products and observe the precaution.
- ② When installing products, avoid bending, tension, or other external load on products.
Avoid stepping or apply excessive weight on products. It might cause failure, leaking, or damage of products.
- ③ Do not install and use products under out of condition of temperature or humidity.
- ④ Keep ventilating when products are installed in corrosive atmosphere.
- ⑤ In case that fluid might freeze up due to operating condition, prevent freezing by thermal insulation or other methods.
- ⑥ In case of leaking from union nut, retighten evenly both sides of union nuts.
- ⑦ Inspect and exchange periodically valves in use for slurry medium.
- ⑧ Prevent using for crystalline fluid.
- ⑨ Check periodically bolt torque for flange connection and keep them specified torque. Bolt looseness might cause leaking.
- ⑩ Gasifying, volatile, or evaporating fluid such as hydrogen peroxide and sodium hypochlorite might rise inner pressure of valve and burst the valve. Please contact us concerning such risk.
- ⑪ Do not insert your hands into the valve in operating test to prevent serious injury accident.
- ⑫ Do not use Eslon valves, Pipes, and Fittings for compressed air or gas applications.
- ⑬ Do not disassemble valves while applying inner pressure to valves to avoid accident such as burst of valves or scatter fluid.

- ⑭ Use Eslon gasket (packing) as sealing for flange connection.
- ⑮ Tighten evenly bolts, using washers and spring washers for both of bolts and nuts for prevention of damage of flanges.
- ⑯ Set valve and gaskets between flanges, then tighten bolts after adjusting the position and dimensions not to make a gap between them.
- ⑰ Use flat faced flanges for Eslon valves and gaskets, do not use raised faced flange.
- ⑱ Tighten bolts diagonally, evenly, and gradually as shown below.
- ⑲ For tighten torque of bolts, refer to the dimension table of Eslon Packing (Gasket) .
- ⑳ Use specified size and length of bolts shown in table.

3 Installation

- ① Keep ventilating when products are installed in corrosive atmosphere.
- ② When installing products, avoid bending, tension, or other external load on products. Avoid stepping or apply excessive weight on products. It might cause failure, leaking, or damage of products.
- ③ Do not install automatic valve so as to set the actuator downward, it should be installed upward or sideways.
- ④ Align the axes of pipe and valve. Tighten bolts diagonally and evenly.
- ⑤ Support valve by proper method not to load excess stress.
- ⑥ Do not over-fasten the union nut of ball valve. Over-fastening union nut than the state at shipment may cause the inability of actuator operation due to over-torque.
- ⑦ Do not install and use products under out of condition of temperature or humidity.
- ⑧ In case that fluid might freeze up due to operating condition, prevent freezing by thermal insulation or other methods.
- ⑨ In case of leaking from union nut, retighten evenly both sides of union nuts.
- ⑩ Inspect and exchange periodically valves in use for slurry medium.
- ⑪ Prevent using for crystalline fluid.
- ⑫ Check periodically bolt torque for flange connection and keep them specified torque. Bolt looseness

might cause leaking.

- 13 Do not insert your hands into the valve in operating test to prevent serious injury accident.
- 14 Do not use Eslon valves, Pipes, & Fittings for compressed air or gas applications
- 15 Do not take the valve apart under pressure to prevent destruction and damage for the valve, scatter of solution in the valve.

4 Instructions

Pneumatic valve

- 1 Operation-air should be dry-air.
- 2 In case air pressure for actuator operation is high, reduce into the specified pressure for the actuators.
- 3 For flow test or operation test after installation, apply air pressure of less than 0.5MPa for double action valve and 0.6MPa for single action valve.
- 4 For the tube to supply compression air for actuator operation, use the tube with more than 6mm diameter. Using other diameter of tube may influence open-close speed.
- 5 In manual operation of pneumatic actuator, do not turn shaft-top of the actuator by wrench because spring back is dangerous.
Use manual operation unit if the manual operation is necessary.
- 6 Do not use pneumatic actuator under the condition of rainwater, splash, or fine particles. Install the cover to avoid rainwater or direct sunlight when use outside.
- 7 Prevent entering water into pneumatic actuator from air intake hole to avoid the inability of actuator operation.

Electric Valve

- 1 Electric valve is not explosion-proof. Do not install electric valve in flammable atmosphere.
- 2 Electric actuator is not waterproof. For outdoor use, install waterproof measure such as cover or roof. Install electric valve so as to set cable gland downward and putty to avoid water seeping.
- 3 Apply allowable voltage and the power source specified by indication on actuator.
- 4 Connect electric wire according to connecting diagram.
- 5 Install the grounding wire.
- 6 Usable only single phase AC for AC source. For positioner, install necessary devices for the proportional control of flow rate, such as balancing relay-unit, detect-sensor, and controller.
- 7 Do not splash water to the actuator.
- 8 Unable to change opening/closing speed of electric valve.

5 Maintenance

- 1 In case of des-assembling or re-assembling of valve for the maintenance, refer instruction or manual.
- 2 Execute maintenance and inspection of valve in every 3-6 months.
- 3 Refer instruction or manual of each valve type for installation, how to use, and others.

Pneumatic valve

- 4 Prohibit des-assembling of pneumatic actuator after installation of valve to avoid danger and trouble in operation.
- 5 No lubricating required.

Electric Valve

- 6 Prohibit des-assembling of electric pneumatic actuator.
- 7 Even in case thermal protector worked, the valve will return to workable condition in a few minutes. Check cause of overheating and execute preventive measures.

6 Installation Procedure for Flange connection

- 1 Use Eslon gasket (packing) as sealing for flange connection.
- 2 Tighten evenly bolts, using washers for both of bolts and nuts for prevention of damage of flanges.
- 3 Set valve and gaskets between flanges, then tighten bolts after adjusting the position and dimensions not to make a gap between them.
- 4 Use flat faced flanges for Eslon valves and gaskets, do not use raised faced flange.
- 5 Tighten bolts diagonally, evenly, and gradually as shown below.
- 6 Recommended torque for bolts is specified in table. 1(for Eslon EPDM gaskets).
- 7 Use specified size and length of bolts shown in table.2.

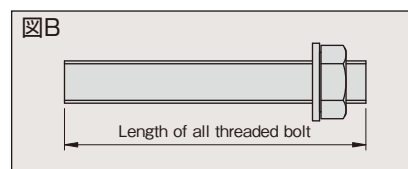
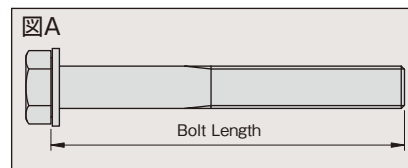
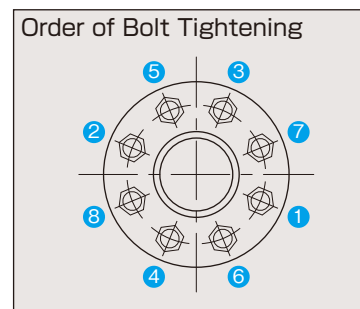


Table-1 Torque Standards for Bolt Tightening

Unit:N·m [kgf·cm]

Size(A)	15~20	25~50	65~100	125~200	250~350	400
Torque	15	30	45	55	65	70

Table-2 The bolt for the flange connection

Unit:mm

Nominal diameter (A)		15	20	25	32	40	50	65	75	80	100	125	150	200	250	300	350	400	450	500	600
BALL-STOP-STRAINER CHECK-TS Flange(10K)	Bolt Diameter	M12	M12	M16	M16	M16	M16	M16	—	M16	M16	M20	M20	M20	M22	M22	—	—	—	—	—
	Bolt Length	50	50	55	60	60	70	75	—	75	75	80	85	90	95	100	—	—	—	—	—
TS Flange(5K)	Bolt Diameter	M10	M10	M10	M12	M12	M12	M12	—	M16	M16	M16	M16	M20	M20	—	—	—	—	—	—
	Bolt Length	45	45	45	50	50	55	55	—	55	60	60	65	90	95	—	—	—	—	—	—
TS Flange (For Water Supply)	Bolt Diameter	—	—	—	—	—	—	—	M16	—	M16	M16	M16	M16	M20	M20	—	—	—	—	—
	Bolt Length	—	—	—	—	—	—	—	75	—	80	80	85	90	95	100	—	—	—	—	—
DIAPHRAGM(10K)	Bolt Diameter	M12	M12	M16	M16	M16	M16	M16	—	M16	M16	M20	M20	M20	M22	—	—	—	—	—	—
	Bolt Length	45	45	50	55	55	65	70	—	70	80	80	85	90	95	—	—	—	—	—	—
GATE VALVE FOR PIPELINE(10K)	Bolt Diameter	—	—	—	—	—	M16	M16	—	M16	M16	M20	M20	M20	—	—	—	—	—	—	—
	Bolt Length	—	—	—	—	—	70	70	—	70	75	80	85	90	—	—	—	—	—	—	—
BUTTERFLY VALVE	Bolt Diameter	—	—	—	—	M16	M16	M16	—	M16	M16	M20	M20	M20	M22	M22	M22	M24	M24	M24	M30
	Bolt Length	—	—	—	—	90	110	120	—	120	130	140	140	160	180	210	250	265	280	295	330
	Length of all threaded bolt	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	120	120	140

*For length of all threaded bolt for Butterfly valves 350 - 600A, please refer to Fig.B.

7 Installation Procedure by Solvent Cement

Disassemble union nut and socket ends from valve body, then connect by solvent cement. Cementing without disassembling socket ends might cause failure of valve function by flowing solvent cement in valve.

Make marks on union nuts and body in accordance with fully-tighten position before loosen union nuts, and becomes easy to reassemble.

- 1 Cut pipe in a right angle to the pipe axis.
- 2 Remove all burrs and saw dust by knife then round off edge by 1-2 degree.
- 3 Mark the insert length of pipe and depth of socket to ensure O (zero) point and complete inserting.
- 4 Wipe cementing surfaces of pipe and fitting by dry and clean cloth to remove all dirt, dust, moisture and oil.

- 5 Use specified grade of Eslon solvent cement.
- 6 Apply solvent cement evenly but slightly more on pipe and less on fitting to avoid overflowing of solvent cement to inside.
- 7 Avoid flowing of solvent cement into valve if in case of installing without disassembling socket ends. Need more attention especially for vertical piping lines.
- 8 After applying solvent cement, insert pipe quickly into socket end and wipe away overflowing cement.
- 9 Hold pipe and socket for 1 - 2 minutes after insertion. Avoid any impact and bending until dry. Ventilate inside of valve and piping to release solvent vapors in order to prevent solvent crack. Blow inside of piping if necessary.

- ⑩ Because of slow evaporation of solvent, installation at less than 5 degree C is not recommended.
- ⑪ Solvent cement is flammable hazardous material including organic solvents. To avoid explosion and any serious incidents, prohibit use of fire such as smoking, torching, or fire-working around work and storage area. Ventilate sufficiently, do not inhale solvent vapors.

8 Installation Procedure for Thread connection

- ① Disassemble union nut and thread ends from valve body, then connect to pipe. Make marks on union nuts and body in accordance with fully-tighten position before loosen union nuts, and becomes easy to reassemble.
- ② Do not screw with metal thread to prevent damage. Use plastic thread of fittings such as PVC valve sockets.
- ③ Prevent over-tightening to avoid damage of thread.
- ④ Use sealing tape for thread connection (wrap 2 - 3 ply). Do not use required sealing, hemp, or paint. It can cause stress cracking.
- ⑤ Tighten by single hand then use water-pump pliers or belt wrench by turning 180 - 360°
- ⑥ In case of tightening by belt wrench, turn carefully not to damage thread.

9 Installation Procedure by Socket welding

- ① For socket welding work, wide space to set welding machine is needed. Keep enough work space for safety and work by 2-persons.
- ② Prevent receiving wind during installation as temperature of heater face is affected and it cause failure in welding.
- ③ Ensure the type of welding machine corresponding to the size and material of pipe.
- ④ Ensure ground connection before turning on the power of welding machine.
- ⑤ Be careful of an electric shock by electric all leakage.
- ⑥ Be careful not to burn yourself by touch to heater face heated at 260 - 270 degree C.
- ⑦ Follow the instruction and specified welding condition such as heater face temperature, fusion time, and length of insertion as directed.
- ⑧ Insert pipe smoothly into socket with 5 seconds after pipe is pulled out from heater face. For details, refer to the instruction manual for welding machine.

■ Holding time after installation

Season	Size	
	Up to 50A	65~150A
Summer	More than 30 seconds	More than 1 minute
Winter		More than 2 minutes

10 Leak test on installed piping

- ① Prohibit using compressed air or gas in leak test for thermoplastic piping systems. Conduct leak test under hydrostatic pressure. Apply hydrostatic pressure after releasing air in piping.
- ② Prohibit using leak detector including surface-activating agent. That can cause damage or crack on valves, pipes, and fittings.

11 Expansion and Contraction

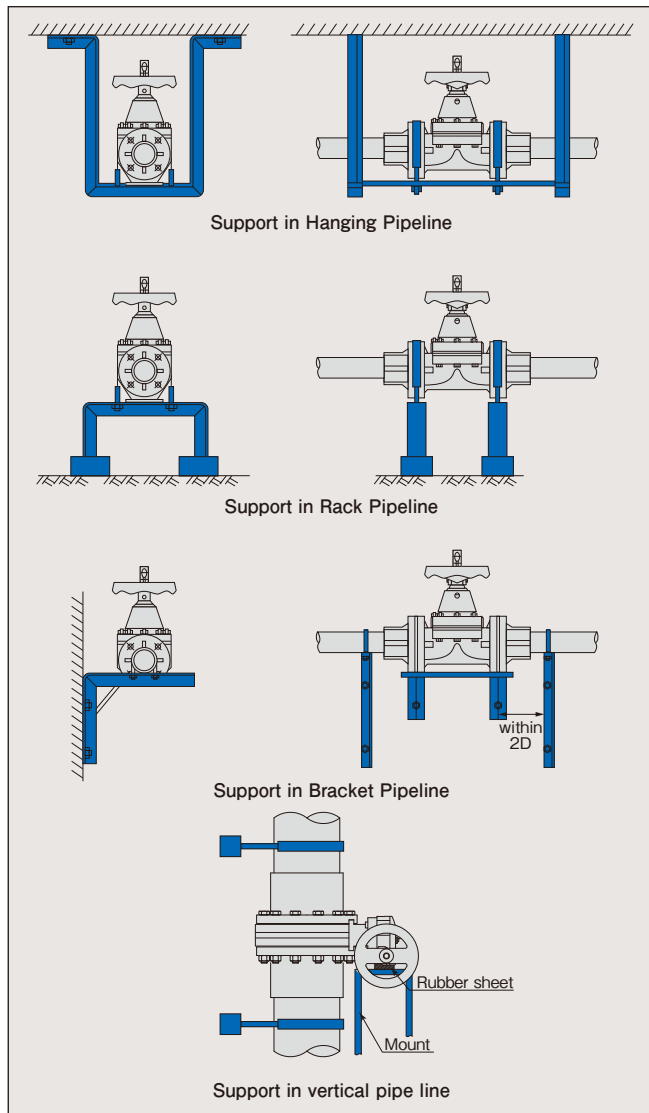
Linear expansion coefficient of plastic and temperature variation by fluid or change in atmosphere temperature cause thermal expansion & contraction, and tensile or compress stress on piping. Especially in case of installation of Esilon valve with metal piping, inlet and outlet around valves needs to be fixed not to be affected on valve as mechanical properties and loaded stress between plastic valve and metal piping absolutely differ.

12 Supporting

Support valve by proper method not to load excess stress.

- ① Support valve body, not at connection ends by union or other parts.
- ② In case of installation of Eslon valve with metal piping, support metal piping not to load on valve with concerning support position and method.

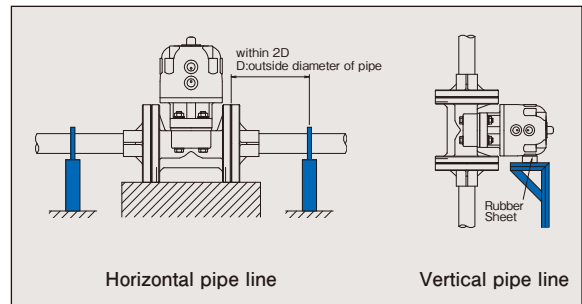
■ Standard Supporting Method(Manual Valve)



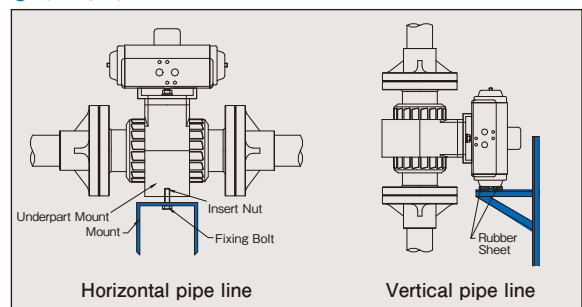
- ③ For flange type of valve, support by fixing valve flange with metal band and bolts. For union type of diaphragm valve, support by fixing with insert nuts at the bottom of valve body.
- ④ Support pipes of both sides of valve at the position within 2D (D : nominal size) distance from valve, separately from support of valve itself.
- ⑤ In case that pipe line or valve is vibrating, fix absolutely both of valve and piping.

■ Standard Supporting Method(Automatic Valve)

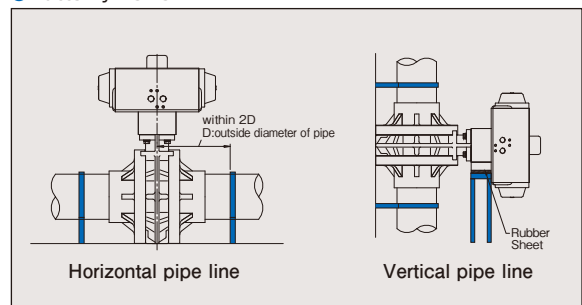
● Diaphragm Valve



● Ball Valve



● Butterfly Valve



13 Thermal Insulation

Fluid might freeze up in valve when temperature is under freezing point of fluid and stop flowing. Install thermal insulation material such as glass wool or foamed urethane onto piping in those cases. Refer to

insulation handbook to consult for proper thickness of insulation.

PVDF valves correspond to the export restriction products according to the regulations of the Export Trade Control Order. The export certificate is needed when exporting.

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