Butterfly Valve

Material Table

No.	Part Name	Material	Q'ty
1	BODY	Cst Iron (FC)	1
2	DISC	SCS13 (CF8)	1
3	SEAT	EPDM/NBR	1
4	UPPER STEM	SS410	1
5	LOWER STEM	SS410	1
6	PACKING RING	ACETAL	1
7	O-RING	EPDM	2
8	SNAP RING	STEEL	1
9	TOP PLATE	SS304	1
10	SCREW BOLT	SS304	2
11	BOTTOM BOLT	STEEL	1

■Design

- Pressure Rating : JIS 10K, PN10/16, ANSI 150LB
- Face to face dimensions : ISO 5752, JIS B2032
- Inspection and Testing : API 598, BS 5155
- Surface quality visual method : MSS-SP-55
- Marking standard : MSS-SP-25
- Operator : Lever, Gear, Actuator (Pneumatic, Electric)

■Body Painting

- Color : Gentian Blue
- Powder coating : RAL 5010
- Thickness (finish coat) : 150~200 microns

Body Marking

FRONT	
LOGO	DV
SIZE	40A~600A
MATERIAL	FC

BACK	
PRESSURE RATING	10K
	150LB
	PN10/16
CHARGE NO.	Ex.: DPJF

■Features

- ISO 5211 Top Flange
- Two Stem(Pinless Type)
- Changeable Seat
- Low Torque
- Tight Shut-Off
- Concentric Structure
- Bi-directional Service

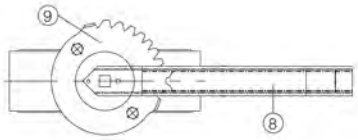
MV-26(L) SIZE : 1-1/2" to 6"

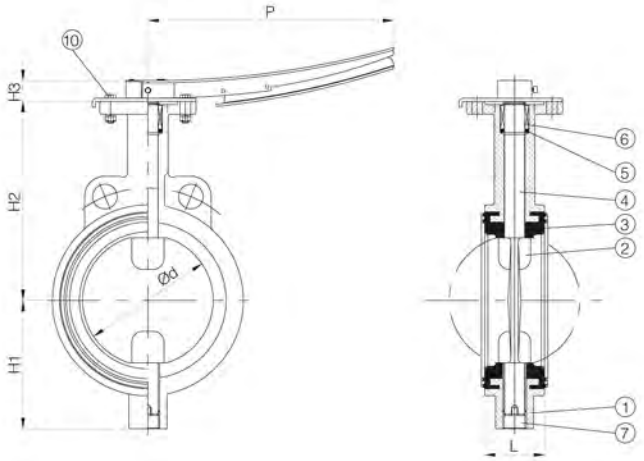
■Features

- Type of Body : Wafer
- Flange : JIS 5K/10K, ANSI 150LBS, PN 6/10/16
- Material
  - Body : Cast iron, Cast steel, Ductile iron, Stainless steel
  - Disc : Stainless steel, Aluminium bronze
  - Seat : EPDM, NBR, PTFE, Silicone, Viton
  - Stem : Stainless steel

■Option

- Lug body
- Flange body





Material List

No.	Part	Material		Q'ty
		Cast Iron	Stainless Steel	
1	Body	GG25 (GC200)	A351-CF8	1
2	Disc	A351-CF8	A351-CF8	1
3	Seat	EPDM	EPDM	1
4	Stem	STS 410	SS 304	2
5	Packing	EPDM	EPDM	1
6	Packing Ring	Acetal	Acetal	1
7	Plug	Steel	SS 304	1
8	Lever	Steel	SS 304	1
9	Indicator	Steel	SS 304	1
10	Bolt/Nut/Washer	Steel	SS 304	2

DIMENSIONS

(UNIT : mm)

SIZE		Ød	L	H1	H2	H3	P	Weight
Inch	mm							(Kg)
1-1/2"	40	38.0	33	57	120	24	220	2.2
2"	50	51.5	43	69	129	24	220	2.4
2-1/2"	65	63.5	46	75	135	24	220	3.0
3"	80	78.0	46	91	150	24	255	4.0
4"	100	105.5	52	104	168	24	255	4.8
5"	125	125.0	56	120	186	24	300	6.9
6"	150	148.0	56	135	201	24	300	8.2

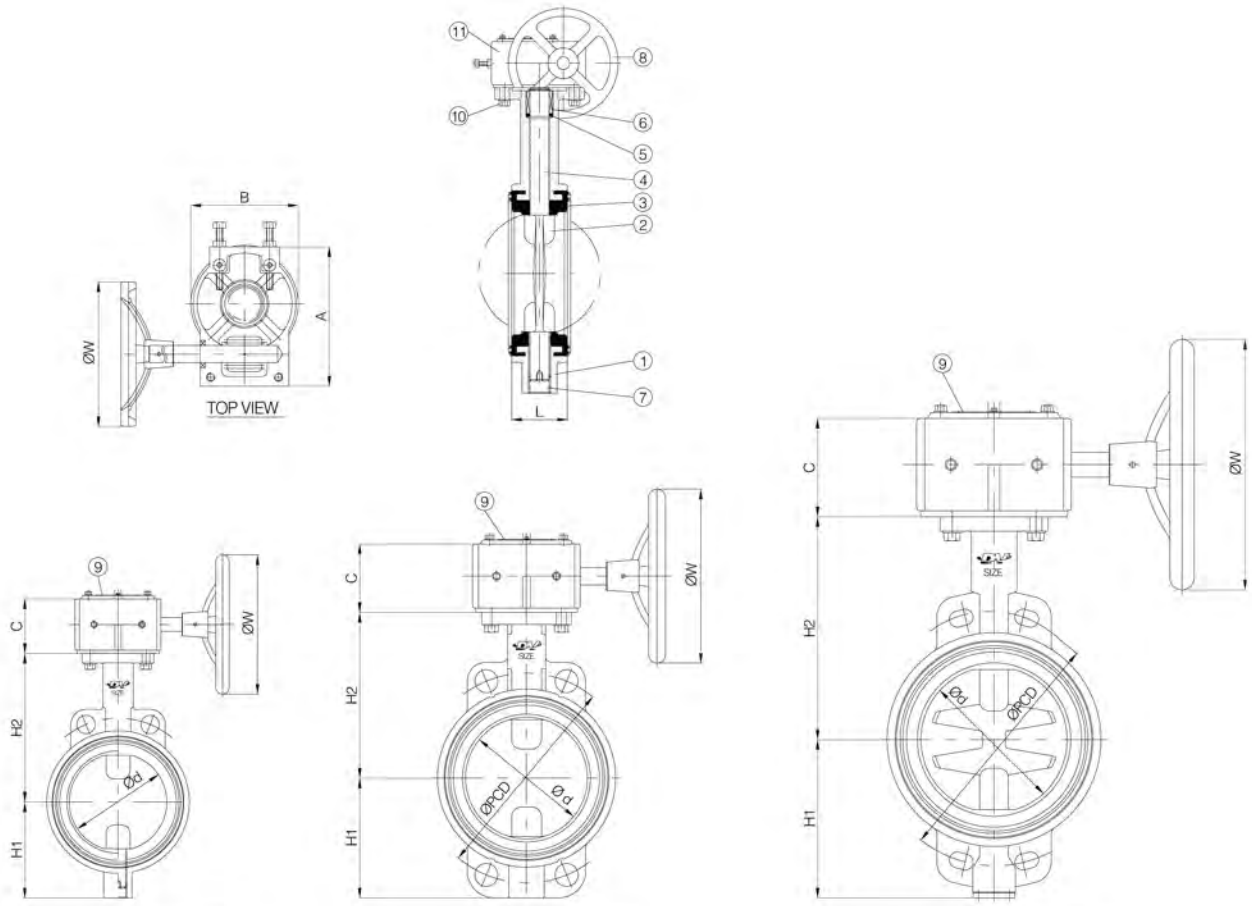
MV-26(G) SIZE : 1-1/2" to 24"

■Features

- Type of Body : Wafer
- Flange : JIS 5K/10K, ANSI 150LBS, PN 6/10/16
- Material
  - Body : Cast iron, Cast steel, Ductile iron, Stainless steel
  - Disc : Stainless steel, Aluminium bronze
  - Seat : EPDM, NBR, PTFE, Silicone, Viton
  - Stem : Stainless steel

■Option

- Lug body
- Flange body



SIZE : 1.1/2"~6"

SIZE : 8" ~12"

SIZE : 14"~24"

Butterfly Valve | Wafer, JIS 5K/10K, ANSI 150, PN6/10/16, Gear

Material List

No.	Part	Material		Q'ty
		Cast Iron	Stainless Steel	
1	Body	GG25 (GC200)	A351-CF8	1
2	Disc	A351-CF8	A351-CF8	1
3	Seat	EPDM	EPDM	1
4	Stem	STS 410	SS 304	2
5	Packing	EPDM	EPDM	1
6	Packing Ring	Acetal	Acetal	1
7	Plug	Steel	SS 304	1
8	Handle	GG40		1
9	Indicator	Steel	SS 304	1
10	Bolt/Nut/Washer	Steel	SS 304	2
11	Gear Box	GG40		1

Dimensions

(UNIT : mm)

SIZE		Ød	L	H1	H2	A	B	C	ØW	ØPCD
Inch	mm									
1-1/2"	40	38.0	33	57	120	116	94	55	150	98.5
2"	50	51.5	43	69	129	116	94	55	150	120.5
2-1/2"	65	63.5	46	75	135	116	94	55	150	139.5
3"	80	78.0	46	91	150	116	94	55	150	152.5
4"	100	105.5	52	104	168	116	94	55	150	190.5
5"	125	125.0	56	120	186	116	94	55	210	216.0
6"	150	148.0	56	135	201	116	94	55	210	241.5
8"	200	198.0	60	168	232	116	94	55	210	298.5
10"	250	248.0	68	205	273	164	126	71	310	362.0
12"	300	298.0	78	245	315	164	126	71	310	432.0
14"	350	346.0	78	275	325	164	126	71	310	476.0
16"	400	395.0	102	315	380	187	153	74	380	539.5
18"	450	452.0	114	330	410	187	153	74	380	578.0
20"	500	489.5	127	385	445	280	250	100	700	635.0
24"	600	579.0	154	435	510	280	250	100	700	749.5

Gear Box Dimension

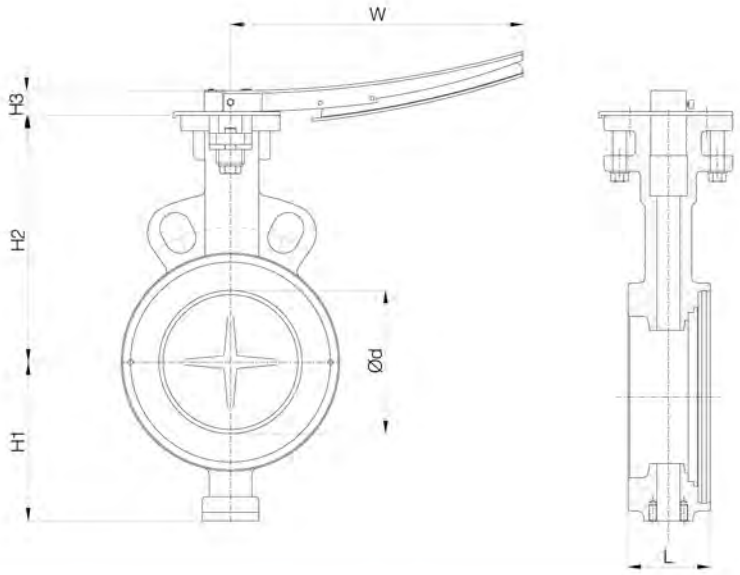
Gear Ration	SIZE		A	B	C	ØW	Weight (Kg)
	Inch	mm					
24 : 1	1.1/2"~4"	40~100	117	94	55	150	3.4
	5"~8"	125~200	117	94	55	210	3.9
30 : 1	10"~14"	250~350	164	126	71	310	8.4
50 : 1	16"~18"	400~450	187	153	74	380	13.0
80 : 1	20"~24"	500~600	280	250	100	700	27.0

MV-28(L) SIZE : 2" to 6"

■Features

- Type of Body : Wafer
- Flange : JIS 20K, ANSI 300
- Material
  - Body : Cast steel, Stainless steel (304, 316)
  - Disc : Stainless steel (304, 316 & 316L)
  - Stem : Stainless steel (304, 316 & 316L)
  - Seat ring : PTFE, RTFE
- Double eccentric (Double offset) disc
- Vacuum equipment (up to 10^{-5} Torr)
- Max. Temperature: PTFE : -60°C to +160°C
  RTFE : -60°C to +200°C
- Max. Pressure : 10, 20, 30kg/㎠
- Operator : Lock lever (2"~6")

Body shell test	30kg/㎠ (Hydraulic)
Seat Leak Test	10K ... 11kg/㎠ (Water) 20K ... 22kg/㎠ (Water)



Dimensions

(UNIT : mm)

SIZE		Ød	L	H1	H2	H3	W	Weight (Kg)
Inch	mm							
2"	50	42	44	58	150	26	220	3.2
2-1/2"	65	54	47	68	150	26	220	3.7
3"	80	68	47	78	167	26	255	4.6
4"	100	86	53	91	182	26	255	5.6
5"	125	114	57	99	206	26	300	8.0
6"	150	136	57	115	219	26	300	9.6

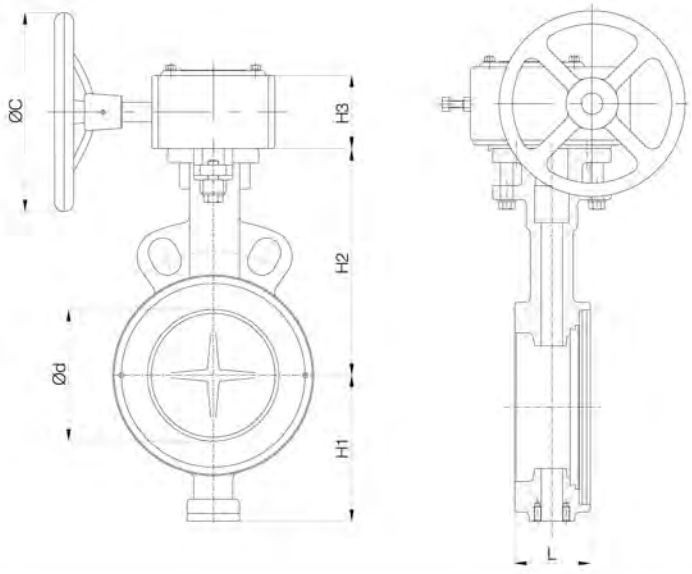
High Performance Butterfly Valve | JIS 10K/20K, ANSI 300, Gear

MV-28(G) SIZE : 2" to 8"

■Features

- Type of Body : Wafer
- Flange : JIS 10K/20K, PN 10/16, ANSI 150/300
- Material
  - Body : Cast steel, Stainless steel (304, 316)
  - Disc : Stainless steel (304, 316 & 316L)
  - Stem : Stainless steel (304, 316 & 316L)
  - Seat ring : PTFE, RTFE
- Face to face dimention : ISO 5752, API 609, MSS SP-68, DIN 3203/K1 (Short)
- Double eccentric (Double offset) disc
- Vacuum equipment (up to 10-5 Torr)
- Max. Temperature: PTFE : -60°C to +160°C
  RTFE : -60°C to +200°C
- Max. Pressure : 10, 20, 30kg/㎠
- Operator : Worm gear (2"~8")

Body shell test	30kg/㎠ (Hydraulic)
Seat Leak Test	10K ... 11kg/㎠ (Water) 20K ... 22kg/㎠ (Water)



Dimensions

(UNIT : mm)

SIZE		Ød	L	H1	H2	H3	øC	Weight (Kg)
Inch	mm							
2"	50	42	44	58	150	55	150	6.1
2-1/2"	65	54	47	68	150	55	150	6.6
3"	80	68	47	78	167	55	150	7.4
4"	100	86	53	91	182	55	150	8.00
5"	125	114	57	99	206	55	210	10.8
6"	150	136	57	115	219	55	210	12.5
8"	200	188	61	170	270	71	310	23.2

AVP-13(D) SIZE: 1-1/2" to 24"

Double Acting

■ Valve

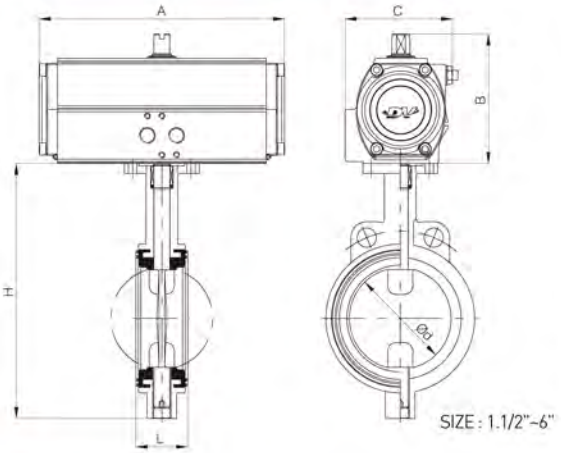
- Type of body : Wafer
- Flange : JIS 10K
- Material : - Body : Cast Iron, Cast Steel, Ductile Iron, Stainless Steel
  - Disc : Stainless Steel, Aluminium Bronze
  - Stem : SS 410
  - Seat : EPDM, NBR, PTFE, VITON
- Max. Pressure : 10kg/cm² (0.98MPa)
- Max. Temperature: EPDM (-20°C to +120°C)
  NBR (-10°C to +80°C)
- Test : Body= 15kg/cm² (1.47MPa)
  Seat= 11kg/cm² (1.08MPa)

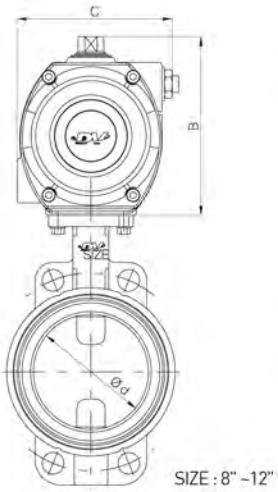
■ Option

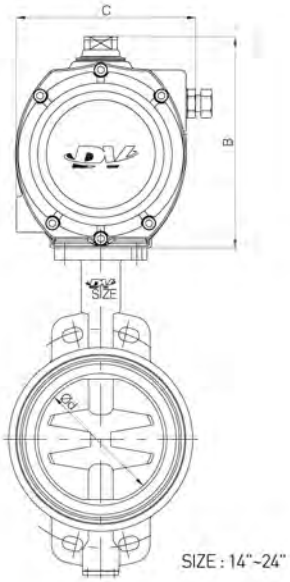
- Lug body
- Flange body

■ Actuator

- Double Acting
- Scotch yoke design. Please refer to details page 17~21.
- Accessories : This is options. Please refer to details page 26~27.







Dimensions

(UNIT : mm)

SIZE		Ød	L	H	A	B	C	ACTUATOR	Stem/ISO5211	TORQUE	
Inch	mm									N.m	Kg.m
1-1/2"	40	38.0	33	177	162	90	75	RP-050SD	11mm/F05,07	7	0.7
2"	50	51.5	43	198	162	90	75	RP-050SD	11mm/F05,07	16	1.6
2-1/2"	65	63.5	46	210	162	90	75	RP-050SD	11mm/F05,07	26	2.7
3"	80	78.0	46	241	202	107	89	RP-065SD	11mm/F07	40	4.1
4"	100	105.5	52	272	202	107	89	RP-065SD	11mm/F07	42	4.3
5"	125	125.0	56	306	202	107	89	RP-065SD	14mm/F07	60	6.1
6"	150	148.0	56	336	202	107	89	RP-065SD	14mm/F07	65	6.6
8"	200	198.0	60	400	262	126	101	RP-080SD	17mm/F07	96	9.8
10"	250	248.0	68	478	311	148	129	RP-100SD	17mm/F10	164	16.7
12"	300	298.0	78	560	390	174	151	RP-125SD	22mm/F10	410	41.8
14"	350	346.0	78	600	431	192	164	RP-140SD	22mm/F10	617	63.0
16"	400	395.0	102	695	506	216	188	RP-160SD	27mm/F14	784	80.0
18"	450	435.0	114	740	581	254	217	RP-185SD	27mm/F14	1147	117.0
20"	500	485.0	127	830	581	254	217	RP-185SD	27mm/F16	1470	150.0
24"	600	573.0	154	945	755	335	301	RP-250SD	36mm/F16	2548	260.0

Pneumatic Butterfly Valve | Wafer, JIS 5K/10K, ANSI 150, PN 6/10/16

AVP-13(S) SIZE: 1-1/2" to 24"

Single Acting

■ Valve

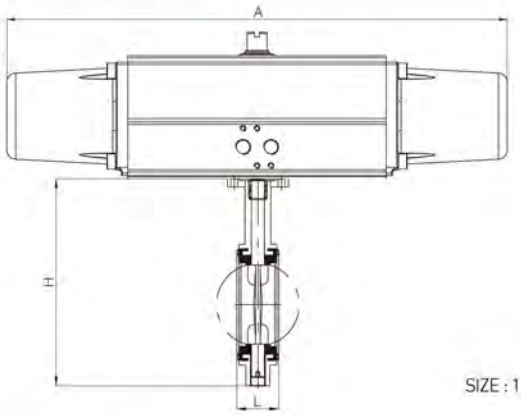
- Type of body : Wafer
- Flange : JIS 10K
- Material : - Body : Cast Iron, Cast Steel, Ductile Iron, Stainless Steel
  - Disc : Stainless Steel, Aluminium Bronze
  - Stem : SS 410
  - Seat : EPDM, NBR, PTFE, VITON
- Max. Pressure : 10kg/cm² (0.98MPa)
- Max. Temperature: EPDM (-20°C to +120°C)
  NBR (-10°C to +80°C)
- Test : Body= 15kg/cm² (1.47MPa)
  Seat= 11kg/cm² (1.08MPa)

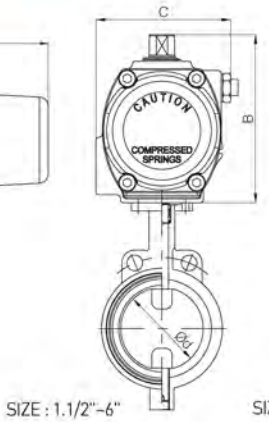
■ Option

- Lug body
- Flange body

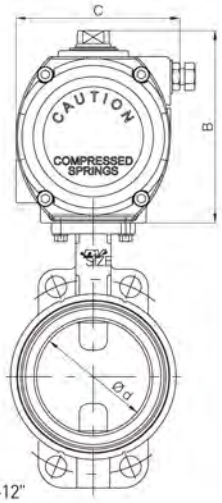
■ Actuator

- Single Acting (Spring Return)
- Scotch yoke design. Please refer to details page 17~21.
- Accessories : This is options. Please refer to details page 26~27.

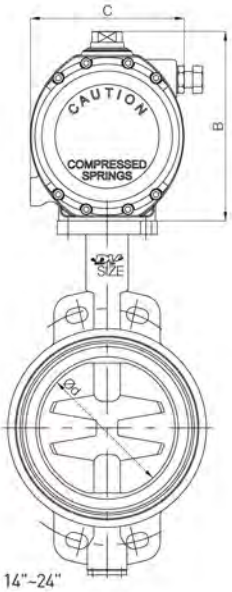




SIZE : 1.1/2"~6"



SIZE : 8" ~12"



SIZE : 14"~24"

Dimensions

(UNIT : mm)

SIZE		Ød	L	H	A	B	C	ACTUATOR	Stem/ISO5211	TORQUE	
Inch	mm									N.m	Kg.m
1-1/2"	40	38.0	33	177	257	90	75	RP-050SS	11mm/F05,07	7	0.7
2"	50	51.5	43	198	314	107	89	RP-065SS	11mm/F05,07	16	1.6
2-1/2"	65	63.5	46	210	314	107	89	RP-065SS	11mm/F05,07	26	2.7
3"	80	78.0	46	241	430	126	101	RP-080SS	11mm/F07	40	4.1
4"	100	105.5	52	272	430	126	101	RP-080SS	11mm/F07	42	4.3
5"	125	125.0	56	306	500	148	129	RP-100SS	14mm/F07	60	6.1
6"	150	148.0	56	336	500	148	129	RP-100SS	14mm/F07	65	6.6
8"	200	198.0	60	400	606	174	151	RP-125SS	17mm/F07	96	9.8
10"	250	248.0	68	478	606	174	151	RP-125SS	17mm/F10	164	16.7
12"	300	298.0	78	560	682	192	164	RP-140SS	22mm/F10	410	41.8
14"	350	346.0	78	600	781	216	188	RP-160SS	22mm/F10	617	63.0
16"	400	395.0	102	695	894	254	217	RP-185SS	27mm/F14	784	80.0
18"	450	435.0	114	740	982	284	231	RP-210SS	27mm/F14	1147	117.0
20"	500	485.0	127	830	982	284	231	RP-210SS	27mm/F16	1470	150.0
24"	600	573.0	154	945	1108	335	301	RP-250SS	36mm/F16	2548	260.0

AVE-13 SIZE : 1-1/2" to 24"

■Valve

- Type of body : Wafer
- Flange : JIS 10K
- Material :
  - BODY : Cast Iron, Cast Steel, Ductile Iron and Stainless Steel
  - DISC : Stainless Steel, Aluminium Bronze
  - STEM : SS 410
  - SEAT : EPDM, NBR, PTFE, VITON
- Max. Pressure : 10Kg/cm^2 (0.98MPa)
- Max. Temperature : EPDM (-20 to +120°C)
  NBR (-10 to +80°C)
- Test : Body=15Kg/cm^2 (1.47MPa)
  Seat=11Kg/cm^2 (1.08MPa)

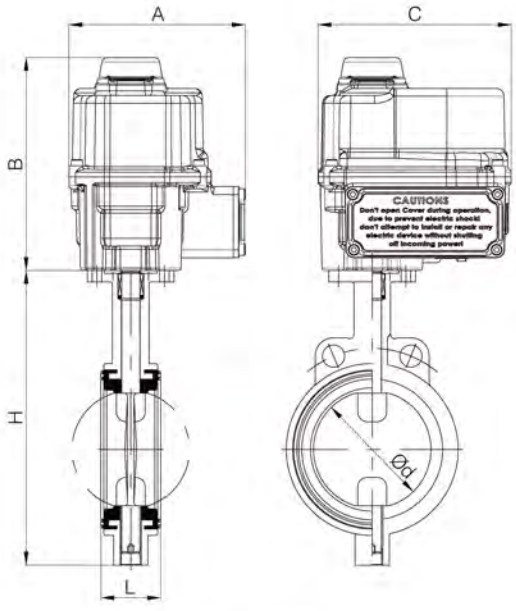
■Option

- Lug body
- Flange body

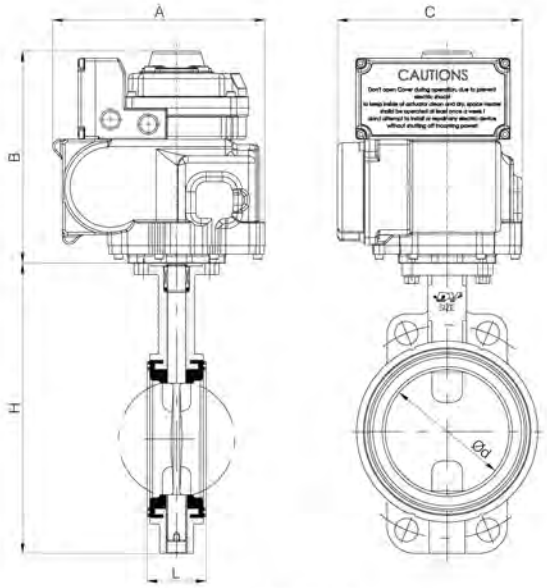
■ Actuator

- Enclosure : Weather Proof IP67
- Power : 110/220VAC 1PH, 380/440VAC 3PH 50/60Hz
- Limit switch : 2 x open/close SPDT
- Travel angle : 90°±10°
- Manual override
- Option : EXA : Explosionproof Eexd II BT4
  WTA : Watertight Enclosure
  PCU : Proportional Control Unit (4~20mA)
  PIU : Potentiometer (1K~10K)
  CPT : Current Position Transmitter (4~20mA)
  DCM : 24VDC Motor

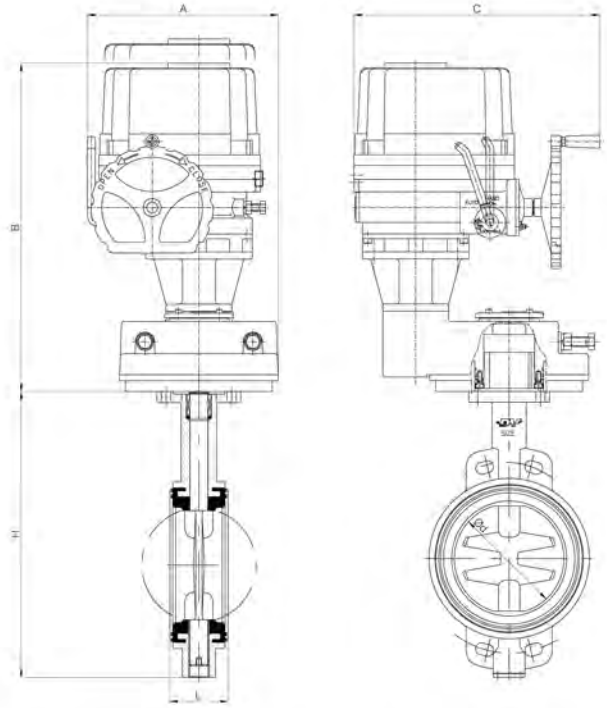
*Please refer to details page 22~25.



SIZE : 1.1/2"~6"



SIZE : 8" ~12"



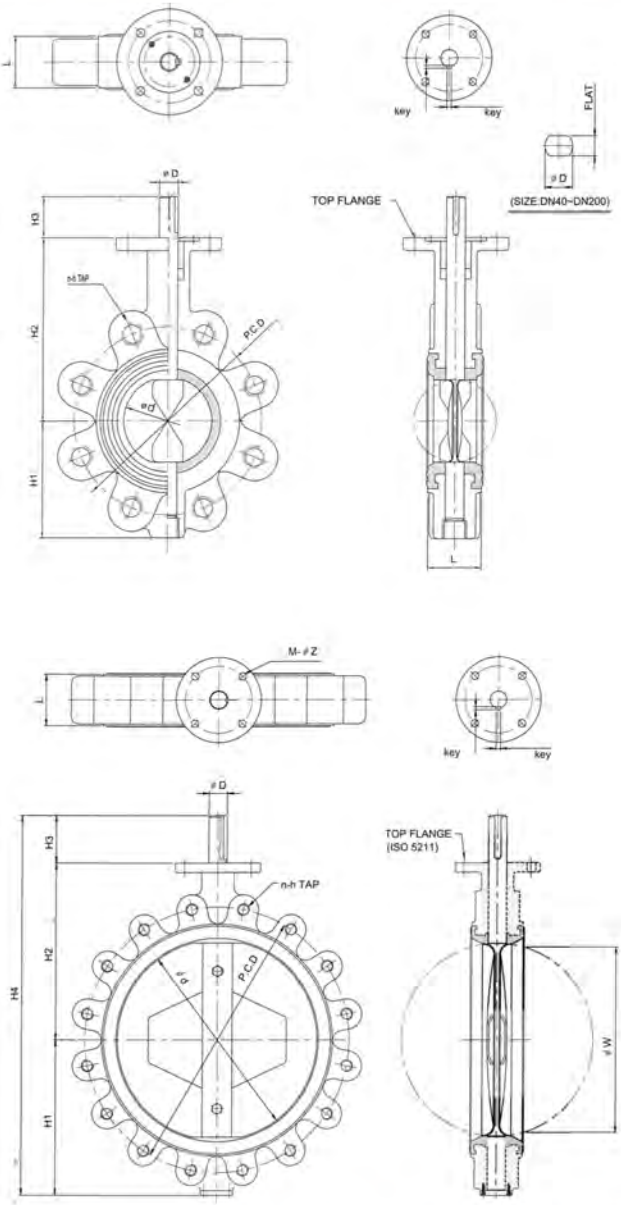
SIZE : 14"~24"

Dimensions

(UNIT : mm)

SIZE		Ød	L	H	A	B	C	ACTUATOR	Stem/ISO5211	TORQUE	
Inch	mm									N.m	Kg.m
1-1/2"	40	38.0	33	177	97	120	108	DE-004	11mm/F05,07	7	0.7
2"	50	51.5	43	198	97	120	108	DE-004	11mm/F05,07	16	1.6
2-1/2"	65	63.5	46	210	97	120	108	DE-004	11mm/F05,07	26	2.7
3"	80	78.0	46	241	97.6	124	123	DE-005	11mm/F07	40	4.1
4"	100	105.5	52	272	111	134	122	DE-006	11mm/F07	42	4.3
5"	125	125.0	56	306	114	155	125	DE-008	14mm/F07	60	6.1
6"	150	148.0	56	336	114	155	125	DE-008	14mm/F07	65	6.6
8"	200	198.0	60	400	157	190	171.6	DE-016	17mm/F07	96	9.8
10"	250	248.0	68	478	182	209	209	DE-028	17mm/F10	164	16.7
12"	300	298.0	78	560	182	209	209	DE-050	22mm/F10	410	41.8
14"	350	346.0	78	600	297	330	410	RE-080	22mm/F10	617	63.0
16"	400	395.0	102	695	297	330	410	RE-120	27mm/F14	784	80.0
18"	450	435.0	114	740	319	563	410	RE-200	27mm/F14	1147	117.0
20"	500	485.0	127	830	319	563	410	RE-200	27mm/F16	1470	150.0
24"	600	573.0	154	945	319	563	410	RE-300	36mm/F16	2548	260.0

MV-41 SIZE : 1.1/2"~24"



Dimensions

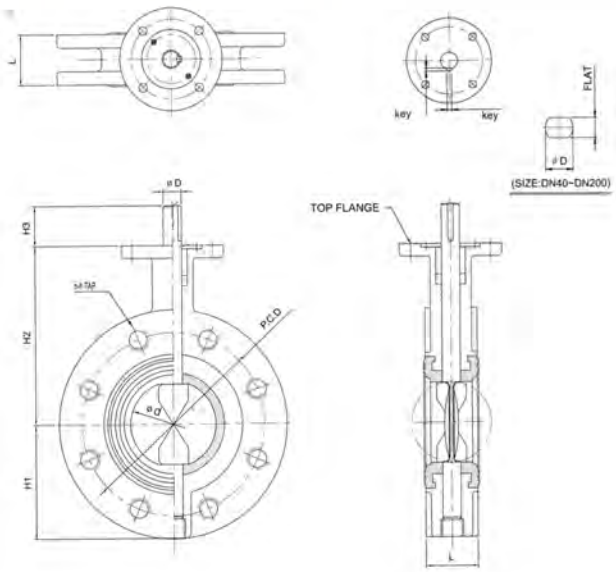
(UNIT : mm)

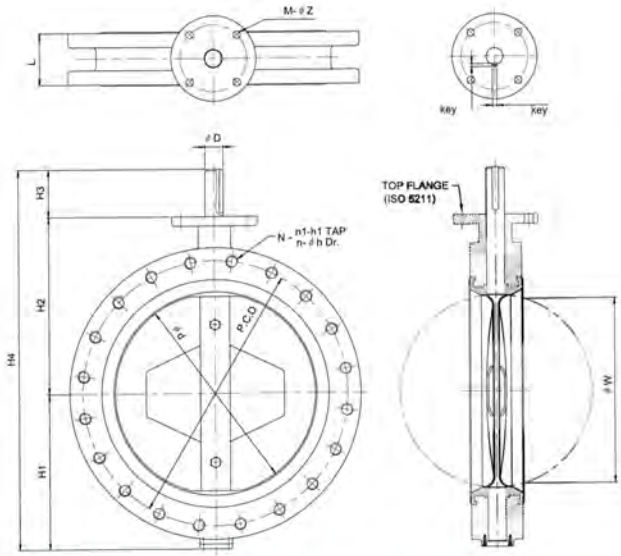
SIZE		Ød	L	H1	H2	H3	STEM		TOP FLANGE (ISO5211)	JIS 10K			ANSI 150LB			BS 4504 PN10			WEIGHT Kg)
Inch	mm						D	key		ØC	n	h	ØC	n	h	ØC	n	h	
1-1/2"	40	40	40	54	120	33	14	FL'10	F07	105	4	M16	98.5	4	1/2	110	4	M16	3
2"	50	52	43	68	130	33	14	FL'10	F07	120	4	M16	120.5	4	5/8	125	4	M16	3.5
2-1/2"	65	64	46	77	138	33	14	FL'10	F07	140	4	M16	139.5	4	5/8	145	4	M16	4.7
3"	80	76	46	84	157	33	16	FL'12	F07	150	8	M16	152.5	4	5/8	160	8	M16	5.5
4"	100	101	52	105	170	33	16	FL'12	F07	175	8	M16	190.5	8	5/8	180	8	M16	7.5
5"	125	126	56	120	186	33	19	FL'15	F07	210	8	M20	216.00	8	3/4	210	8	M16	9.5
6"	150	149	56	135	200	33	19	FL'15	F07	240	8	M20	241.5	8	3/4	240	8	M20	12
8"	200	196	60	183	237	33	22	FL'18	F07	290	12	M20	298.5	8	3/4	295	8	M20	16
10"	250	244	68	223	286	50	22	8X7	F10	355	12	M22	362.00	12	7/8	350	12	M20	27
12"	300	294	78	255	314	50	28	8X7	F10	400	16	M22	432.00	12	7/8	400	12	M20	44
14"	350	333	78	280	340	50	28	8X7	F10	445	16	M22	476.00	12	1	460	16	M20	67
16"	400	384	102	310	378	60	38	12X8	F14	510	16	M24	539.5	16	1	515	16	M24	100
18"	450	435	114	350	400	60	38	12X8	F14	565	20	M24	578.0	16	1.1/8	565	20	M24	130
20"	500	485	127	380	440	80	45	14X9	F16	620	20	M24	635.0	20	1.1/8	620	20	M24	162
22"	550	534	142	396	485	80	55	14X9	F16	680	20	M30	392.2	20	1.1/4	—	—	—	185
24"	600	573	154	448	510	80	55	14X9	F16	730	24	M30	749.5	20	1.1/4	725	20	M27	220

* Specification and design are subject to change without notice.

Butterfly Valve | FLANGE TYPE | JIS 10K/ANSI 150LB/PN10

MV-42 SIZE : 1.1/2"~24"





Dimensions

(UNIT : mm)

SIZE		Ød	L		H1	H2	H3	STEM		TOP FLANGE (ISO5211)	JIS 10K			ANSI 150LB			BS 4504 PN10			WEIGHT Kg)
Inch	mm		Short	Long				D	key		ØC	n	h	ØC	n	h	ØC	n	h	
1-1/2"	40	40	40	40	70	120	33	14	FL'10	F07	105	4	M16	98.5	4	1/2	110	4	M16	4
2"	50	52	43	40	68	130	33	14	FL'10	F07	120	4	M16	120.5	4	5/8	125	4	M16	5.5
2-1/2"	65	64	46	40	90	138	33	14	FL'10	F07	140	4	M16	139.5	4	5/8	145	4	M16	8
3"	80	76	46	60	98	157	33	16	FL'12	F07	150	8	M16	152.5	4	5/8	160	8	M16	10
4"	100	101	52	60	110	170	33	16	FL'12	F07	175	8	M16	190.5	8	5/8	180	8	M16	13
5"	125	126	56	100	130	186	33	19	FL'15	F07	210	8	M20	216.00	8	3/4	210	8	M16	16
6"	150	149	56	100	145	200	33	19	FL'15	F07	240	8	M20	241.5	8	3/4	240	8	M20	18
8"	200	196	60	100	183	237	33	22	FL'18	F07	290	12	M20	298.5	8	3/4	295	8	M20	31
10"	250	244	68	110	223	286	50	22	8X7	F10	355	12	M22	362.00	12	7/8	350	12	M20	45
12"	300	294	78	110	255	314	50	28	8X7	F10	400	16	M22	432.00	12	7/8	400	12	M20	58
14"	350	333	78	120	280	340	50	28	8X7	F10	445	16	M22	476.00	12	1	460	16	M20	65
16"	400	384	102	130	310	378	60	38	12X8	F14	510	16	M24	539.5	16	1	515	16	M24	94
18"	450	435	114	150	350	400	60	38	12X8	F14	565	20	M24	578.0	16	1.1/8	565	20	M24	145
20"	500	485	127	160	380	440	80	45	14X9	F16	620	20	M24	635.0	20	1.1/8	620	20	M24	160
22"	550	534	142	170	396	485	80	55	14X9	F16	680	20	M30	392.2	20	1.1/4	—	—	—	185
24"	600	573	154	170	448	510	80	55	14X9	F16	730	24	M30	749.5	20	1.1/4	725	20	M27	280

* Specification and design are subject to change without notice.

Basic Torque Table

SIZE		Differential Pressure (△P) : BAR											
			3 bar			5 bar			10 bar			16 bar	
Inch	mm	Kg.m	N.m	lb-in	Kg.m	N.m	lb-in	Kg.m	N.m	lb-in	Kg.m	N.m	lb-in
1-1/2"	40	1.2	11.7	104.0	1.5	14.7	130.1	1.8	17.6	156.1	2.3	22.5	199.5
2"	50	1.5	14.7	130.1	1.8	18.3	162.6	2.5	24.5	216.8	2.7	26.4	234.1
2-1/2"	65	2.5	24.5	216.8	2.7	27.6	240.0	3.0	29.4	260.2	3.5	34.3	303.5
3"	80	3.5	34.3	303.5	4.3	42.8	379.4	5.0	49.0	433.6	5.0	49.0	433.6
4"	100	5.0	49.0	433.6	6.2	61.2	542.1	6.5	63.7	563.7	8.0	78.4	693.9
5"	125	8.0	78.4	693.9	10.0	98.0	867.3	12.0	117.6	1,040.0	15.0	147.0	1,300.0
6"	150	14.0	137.2	1,214.3	16.0	156.8	1,387.8	18.0	176.4	1,561.2	24.0	235.2	2,081.7
8"	200	23.0	225.4	1,994.9	26.0	254.9	2,256.0	29.0	284.2	2,515.3	36.0	352.8	3,122.5
10"	250	31.0	303.8	2,688.8	34.0	333.2	2,949.0	53.0	519.4	4,597.0	72.0	705.6	6,245.0
12"	300	45.0	441.0	3,903.1	50.0	490.0	4,336.8	63.0	617.4	5,464.4	115.0	1,127.0	9,974.8
14"	350	61.0	597.8	5,290.9	70.0	686.0	6,071.6	80.0	784.0	6,938.9	144.0	1,411.2	12,490.1
16"	400	81.0	793.8	7,025.7	92.0	901.6	7,979.8	117.0	1,146.6	10,148.2	190.0	1,862.0	16,480.1
18"	450	106.0	1,038.8	9,194.1	120.0	1,176.0	10,408.4	150.0	1,470.0	13,010.6	220.0	2,156.0	19,082.2
20"	500	130.0	1,274.0	11,275.8	162.5	1,592.5	14,094.8	181.0	1,773.8	15,699.4	295.0	2,891.0	25,587.5
24"	600	221.0	2,165.8	19,168.9	240.0	2,352.0	20,816.9	260.0	2,548.0	22,551.7	355.0	3,479.0	30,791.7
26"	650	182.0	1,784.8	15,796.8	245.0	2,401.0	21,250.6	288.0	2,822.4	24,980.3	345.6	3,386.8	29,976.4
28"	700	215.0	2,107.0	18,648.5	315.0	3,087.0	27,322.2	355.0	3,479.0	30,791.7	426.0	4,174.8	36,950.1
30"	750	255.0	2,499.0	22,118.0	342.0	3,351.6	29,664.1	390.0	3,822.0	33,827.5	468.0	4,586.4	40,593.0
32"	800	290.0	2,842.0	25,153.8	405.0	3,969.0	35,128.6	460.0	4,058.0	39,899.1	552.0	5,409.6	47,879.0
34"	850	325.0	3,185.0	28,189.6	495.0	4,851.0	42,934.9	538.0	5,272.4	46,664.6	645.6	6,326.8	55,997.6
36"	900	405.0	3,969.0	35,128.6	578.0	5,664.4	50,134.1	660.0	6,468.0	57,246.6	792.0	7,761.6	68,695.9
40"	1000	565.0	5,537.0	49,006.6	880.0	8,624.0	76,328.8	1,050.0	10,290.0	91,074.2	1,260.0	12,348.0	109,289.0
48"	1200	968.0	9,486.0	83,961.0	1,210.0	11,858.0	104,952.0	1,760.0	17,248.0	152,657.0	2,110.0	21,658.0	191,689.0
54"	1350	1,135.0	11,123.0	98,446.0	1,400.0	13,720.0	121,432.0	2,024.0	19,835.0	175,556.0	2,211.0	21,667.0	191,776.0
72"	1800	1,970.0	19,306.0	170,872.0	2,260.0	22,148.0	196,026.0	2,780.0	27,244.0	241,129.0	3,813.0	37,367.0	330,729.0

Pneumatic Actuator (RP series) | Scotch-Yoke Type

Pneumatic Actuator

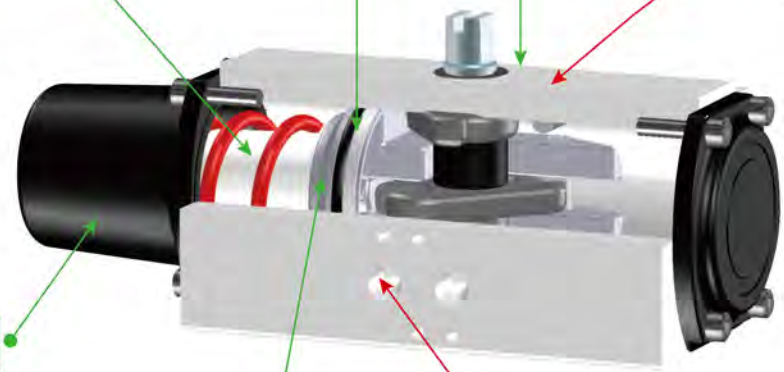
- Optimized for a ball, butterfly valves that open and close at an angle of 90°
- Convenient since it can be mounted directly onto the valves or accessories in accordance with the ISO standards.
- Designed conveniently to allow users to use easily.

Aluminum Body
is anodized to prevent internal/external scratches and thus securing long product life.

As there is no friction between metal to metal, product life is long and without noise.

ISO5211/DIN3337
is the international standards, and thus the products can easily be fitted (assembled) with the accessories.

Spring Cap
enables safer assembly/disassenmbly.

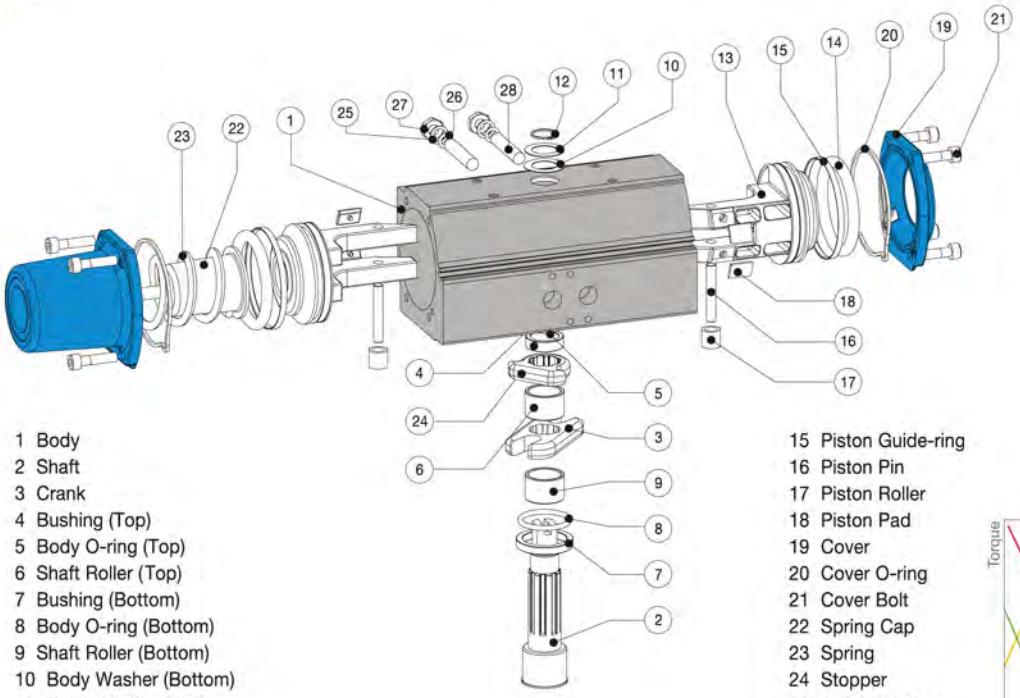


Aluminum Cover
is not easily peeled off, and its polish can last long as it is powder coated upon special surface treatment.

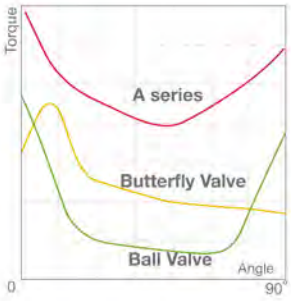
NAMUR
is the international standard, and thus the products can easily be fitted with solenoid valves.

NBR
The products can be used at low/high temperature as the products are available in EPDM and/or VITON in addition to the standard NBR.

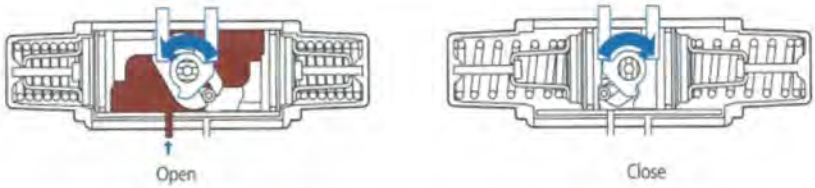
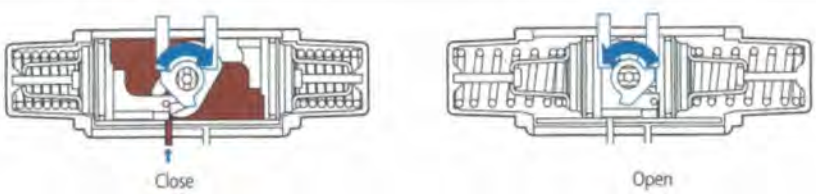
Part List



1 Body
2 Shaft
3 Crank
4 Bushing (Top)
5 Body O-ring (Top)
6 Shaft Roller (Top)
7 Bushing (Bottom)
8 Body O-ring (Bottom)
9 Shaft Roller (Bottom)
10 Body Washer (Bottom)
11 Body Washer (Top)
12 Body Snap-ring
13 Piston
14 Piston O-ring
15 Piston Guide-ring
16 Piston Pin
17 Piston Roller
18 Piston Pad
19 Cover
20 Cover O-ring
21 Cover Bolt
22 Spring Cap
23 Spring
24 Stopper
25 Adjust Washer
26 Adjust Nut
27 Adjust O-ring
28 Adjust Bolt



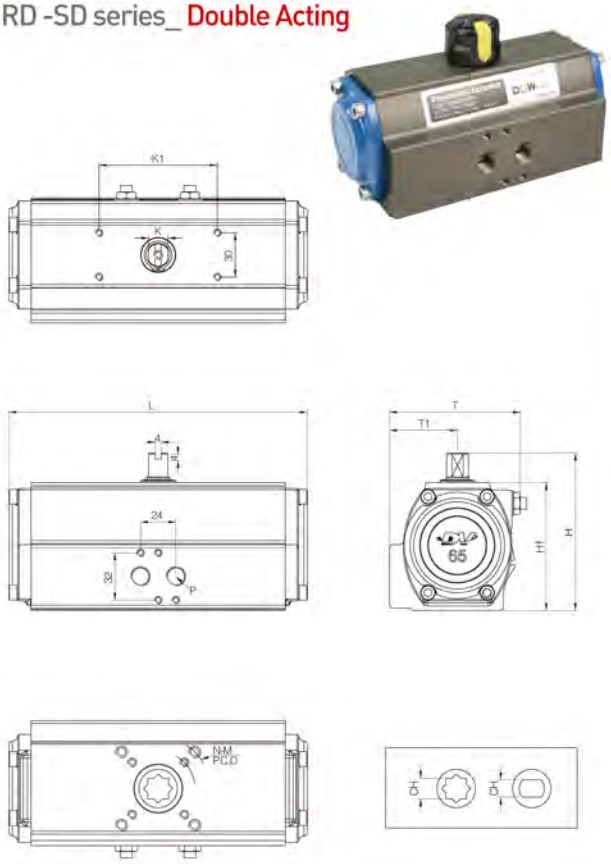
Operating Mechanism

Double Acting	Action "A" OPEN CLOSE	
Spring Return	Action "A" (Fail Close) OPEN CLOSE	
	Action "B" (Fail Open) CLOSE OPEN	

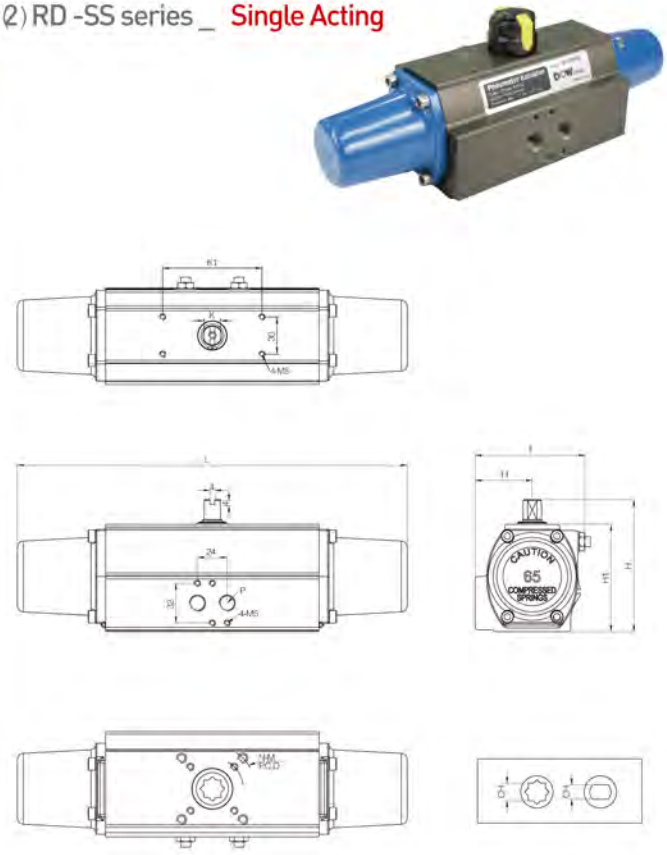
Pneumatic Actuator (RP series) | Scotch-Yoke Type

Dimension Table

(1) RD -SD series_ Double Acting



(2) RD -SS series _ Single Acting



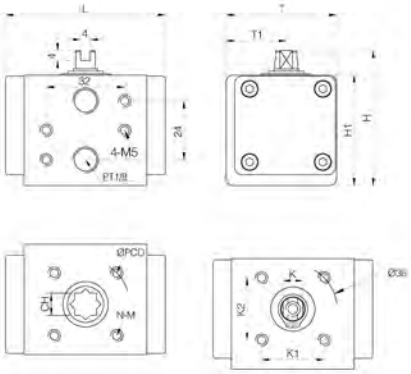
(UNIT : mm)

Model		L		T	T1	H	H1	K	K1	P	ISO	P.C.D Ø	N-M	CH	DTH	WT Kg	
SD	SS	SD	SS													SD	SS
RP-050SD	RP-050SS	162	257	75	40	90	70	9	80	PT ¼	F03/F05/F07	36/50/70	4-M5/M6/M8	11*11 #14*14 #9.7*ø15	13 14 14	1.4	1.6
RP-065SD	RP-065SS	202	314	89	46	107	87	13	80	PT ¼	F05/F07	50/70	4-M6/M8	14*14 #11.7*ø17 #9.7*ø15	17 17 14	2.3	3
RP-080SD	RP-080SS	262	430	101	49.5	126	106	13	80	PT ¼	F07	70	4-M8	17*17 #14.7*ø19	19 20	3.9	5.3
RP-100SD	RP-100SS	311	500	129	61.5	148	128	19	80	PT ¼	F07/F10	70/102	4-M8/M10	22*22 #17.7*ø22	26 26	6.7	9.5
RP-125SD	RP-125SS	390	606	151	71.5	174	154	19	80	PT ¼	F07/F10	70/102	4-M8/M10	22*22	26	11.3	17.6
RP-140SD	RP-140SS	431	682	164	77	192	172	24	80	PT ¼	F10/F12	102/125	4-M10/M12	27*27 #22*22	30	16.4	23.9
RP-160SD	RP-160SS	506	781	188	89	216	196	24	80	PT ¼	F14 #F10/F12	140 #102/125	4-M16 #4-M10/M12	36*36 #27*27	30	23.7	36.6
RP-185SD	RP-185SS	578	894	217	102	254	224	30	80/130	PT ¼	F14	140	4-M16	36*36	30	38.1	62.6
RP-210SD	RP-210SS	605	982	231	115	284	254	36	130	PT ¼	F16 #F14	165	4-M20	46*46 #36*36	60 50	45.5	77.2
RP-250SD	RP-250SS	755	1108	301	152	335	305	36	130	PT ¼ #PT ⅜	F16	165	4-M20	46*46	60	65.8	119.6
RP-300SD	RP-300SS	900	1344	360	170	408	378	36	130	#PT ½	F16/F25	165/254	4-M20/8-M16	55*55	60	78.0	145.0

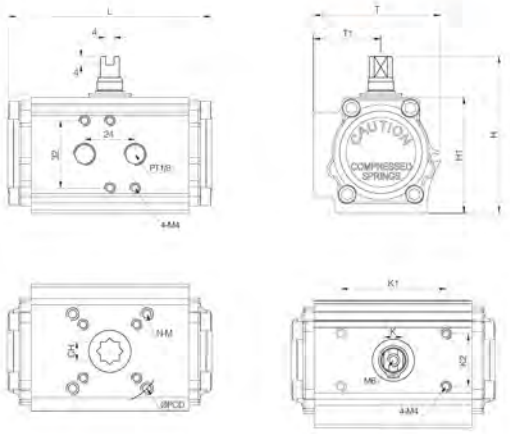
* Model with ' #' is optional.

Dimension Table

RP-032RD



RP-040RD



(UNIT : mm)

Model	ISO	P.C.D Ø	N-M	K	K1	K2	L	T	T1	H	H1	CH	DTH	WT Kg
RP-032RD	F03	36	4-M5	7	25.5	25.5	66	45	25	55	45	9*9	9	0.3
RP-040RD	F03/F05	36/50	4-M5/M6	9	50	25	97	63	32	75	55	9*9	9	0.5

Selection Guide

Valve Size		Double Acting		Spring Return	
		Ball valve	Butterfly valve	Ball valve	Butterfly valve
1/2"	15A	RP-050SD	—	RP-050SS	—
3/4"	20A		—	RP-065SS	—
1"	25A		—		—
1-1/4"	32A		—		—
1-1/2"	40A	RP-065SD	RP-050SD		RP-050SS
2"	50A			RP-080SS	RP-065SS
2-1/2"	65A	RP-080SD		RP-100SS	
3"	80A		RP-065SD	RP-125SS	RP-080SS
4"	100A	RP-100SD			
5"	125A	RP-125SD		RP-160SS	RP-100SS
6"	150A				
8"	200A	RP-160SD	RP-080SD	RP-210SS	RP-125SS
10"	250A	RP-210SD	RP-100SD		
12"	300A		RP-125SD		RP-140SS
14"	350A	—	RP-140SD	—	RP-160SS
16"	400A	—	RP-160SD	—	RP-185SS
18"	450A	—	RP-185SD	—	RP-210SS
20"	500A	—		—	
24"	600A	—	RP-250SD	—	RP-250SS

* The above data is for reference only; the actual assembly may be different depending on valve material, pressure, structure, fluid and operational environment.
* The data is not legally effective and therefore should not be used as legal ground.

Pneumatic Actuator (RP series) | Scotch-Yoke Type

Torque Table

(1) RP-SD series_ Double acting

(UNIT : Nm)

Model	Angle	Supply Air											
		3 Bar		4 Bar		5 Bar		6 Bar		7 Bar		8 Bar	
		Close	Open	Close	Open	Close	Open	Close	Open	Close	Open	Close	Open
RP-050SD	0°	29.0	21.0	37.0	28.0	38.0	37.0	42.0	41.0	46.5	45.4	50.4	49.2
	45°	15.0	16.0	20.0	21.0	25.0	26.0	30.0	31.0	33.2	34.4	36.0	37.2
	90°	25.0	25.0	33.0	38.0	39.0	40.0	50.0	52.0	55.4	57.6	60.0	62.4
RP-065SD	0°	63.0	59.0	85.0	78.0	105.0	95.0	131.0	116.0	145.2	128.6	157.2	139.2
	45°	33.0	38.0	45.0	49.0	57.0	63.0	68.0	73.0	75.4	80.9	81.6	87.6
	90°	54.0	52.0	72.0	71.0	88.0	93.0	107.0	107.0	118.6	118.6	128.4	128.4
RP-080SD	0°	121.0	105.0	162.0	143.0	209.0	183.0	261.0	210.0	289.3	232.7	313.2	252.0
	45°	65.0	69.0	84.0	92.0	112.0	121.0	130.0	144.0	144.1	159.6	156.0	172.8
	90°	97.0	101.0	130.0	133.0	171.0	156.0	198.0	209.0	219.4	231.6	237.6	250.8
RP-100SD	0°	194.0	186.0	265.0	247.0	332.0	292.0	393.0	368.0	435.5	407.8	471.6	441.6
	45°	110.0	127.0	147.0	165.0	185.0	196.0	237.0	250.0	262.7	277.1	284.4	300.0
	90°	173.0	179.0	231.0	237.0	297.0	301.0	348.0	363.0	385.7	402.3	417.6	435.6
RP-125SD	0°	428.0	432.0	576.0	551.0	725.0	678.0	886.9	793.9	983.0	880.0	1,064.3	952.7
	45°	255.0	273.0	339.0	360.0	425.0	443.0	513.0	531.0	568.5	588.5	615.6	637.2
	90°	385.0	375.0	510.0	491.0	635.0	613.0	750.0	732.0	831.2	811.2	899.9	878.3
RP-140SD	0°	623.0	576.0	829.9	753.9	1,104.9	922.9	1,310.9	1,096.9	1,452.9	1,215.8	1,573.1	1,316.3
	45°	333.0	331.0	450.0	455.0	579.0	582.0	691.0	668.0	765.8	740.3	829.1	801.5
	90°	520.0	523.0	689.0	720.0	862.9	879.9	1,054.9	969.9	1,169.2	1,075.0	1,265.9	1,163.9
RP-160SD	0°	952.9	812.9	1,146.9	1,061.9	1,484.9	1,311.9	1,799.9	1,599.9	1,994.9	1,773.2	2,159.9	1,919.9
	45°	540.0	569.0	730.0	757.9	919.9	948.9	1,109.9	1,132.9	1,230.2	1,255.7	1,331.9	1,359.5
	90°	879.9	978.9	1,169.9	1,319.9	1,447.9	1,634.9	1,749.9	2,026.9	1,939.5	2,246.4	2,099.9	2,432.2
RP-185SD	0°	1,528.8	1,304.2	1,840.0	1,703.6	2,382.2	2,104.7	2,887.5	2,566.7	3,200.4	2,844.8	3,465.1	3,080.0
	45°	830.2	874.8	1,122.3	1,165.3	1,414.4	1,458.9	1,706.5	1,741.8	1,891.3	1,930.5	2,047.7	2,090.2
	90°	1,294.0	1,439.6	1,720.5	1,941.1	2,129.3	2,404.3	2,573.4	2,980.7	2,852.2	3,303.6	3,088.1	3,576.9
RP-210SD	0°	1,979.9	1,909.9	2,799.8	2,599.8	3,299.8	3,199.8	3,919.7	3,819.7	4,344.4	4,233.6	4,703.7	4,583.7
	45°	1,099.9	1,149.9	1,459.9	1,499.9	1,919.9	1,949.9	2,299.8	2,399.8	2,549.0	2,659.8	2,759.8	2,879.8
	90°	1,669.9	1,719.9	2,149.9	2,299.8	2,799.8	2,899.8	3,349.8	3,449.8	3,712.7	3,823.5	4,019.7	4,139.7
RP-250SD	0°	4,100.0	3,000.0	5,500.0	3,950.0	7,100.0	4,850.0	8,480.0	5,750.0	9,398.7	6,372.9	10,176.0	6,900.0
	45°	1,880.0	1,850.0	2,550.0	2,500.0	3,200.0	3,150.0	3,800.0	3,760.0	4,211.7	4,167.3	4,560.0	4,512.0
	90°	3,100.0	3,400.0	4,180.0	4,580.0	5,240.0	5,850.0	6,180.0	7,050.0	6,849.5	7,813.8	7,416.0	8,460.0
RP-300SD	0°	7,211.0	5,049.0	9,615.0	6,732.0	12,019.0	8,416.0	14,422.0	10,099.0	15,984.4	11,193.1	17,306.4	12,118.8
	45°	2,970.0	2,970.0	3,960.0	3,960.0	4,950.0	4,950.0	5,940.0	5,940.0	6,583.5	6,583.5	7,128.0	7,128.0
	90°	5,049.0	7,211.0	6,732.0	9,415.0	8,416.0	12,019.0	10,099.0	14,422.0	11,193.1	15,984.4	12,118.8	17,306.4

(2) RP-SS series _ Single acting

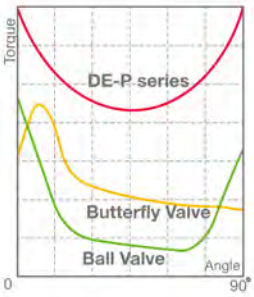
(UNIT : Nm)

Model	Angle	Spring Torque: Weak		Spring Torque: Middle		Spring Torque: Strong	
		Spring to Close	Air to Open: 3Bar	Spring to Close	Air to Open: 4.5Bar	Spring to Close	Air to Open: 6Bar
RP-050SS	0°	10.0	20.0	14.0	26.0	17.0	34.0
	45°	9.0	9.0	12.0	12.0	15.0	15.0
	90°	20.0	10.0	26.0	14.0	34.0	17.0
RP-065SS	0°	22.0	39.0	35.0	54.0	48.0	70.0
	45°	18.0	18.0	23.0	28.0	37.0	32.0
	90°	39.0	22.0	54.0	35.0	70.0	48.0
RP-080SS	0°	40.0	70.0	60.0	100.0	80.0	130.0
	45°	30.0	30.0	50.0	50.0	70.0	70.0
	90°	70.0	40.0	100.0	60.0	130.0	80.0
RP-100SS	0°	70.0	140.0	100.0	190.0	130.0	240.0
	45°	50.0	50.0	80.0	80.0	110.0	110.0
	90°	140.0	70.0	190.0	100.0	240.0	130.0
RP-125SS	0°	175.0	251.0	243.0	403.0	358.0	520.0
	45°	105.0	125.0	177.0	182.0	215.0	254.0
	90°	215.0	168.0	395.0	210.0	441.0	341.0
RP-140SS	0°	200.0	370.0	371.0	576.0	480.0	726.0
	45°	170.0	170.0	236.0	265.0	330.0	360.0
	90°	370.0	200.0	447.0	366.0	680.0	430.0
RP-160SS	0°	400.0	540.0	550.0	750.0	769.9	1,149.9
	45°	290.0	290.0	420.0	420.0	560.0	560.0
	90°	540.0	400.0	750.0	550.0	1,149.9	769.9
RP-185SS	0°	641.7	866.3	882.3	1,203.1	1,235.2	1,844.8
	45°	445.8	445.8	645.7	645.7	860.9	860.9
	90°	794.1	588.2	1,102.9	808.8	1,691.1	1,132.3
RP-210SS	0°	840.0	910.0	1,250.0	1,510.0	1,750.0	2,160.0
	45°	500.0	430.0	740.0	780.0	1,040.0	1,130.0
	90°	1,000.0	500.0	1,500.0	920.0	2,140.0	1,370.0
RP-250SS	0°	1,540.0	1,900.0	2,120.0	2,760.0	3,060.0	3,660.0
	45°	920.0	950.0	1,320.0	1,370.0	1,830.0	1,900.0
	90°	1,800.0	1,400.0	2,470.0	2,200.0	3,550.0	2,760.0
RP-300SS	0°	2,870.0	4,283.0	4,308.0	6,421.0	5,740.0	8,566.0
	45°	1,447.0	1,523.0	2,172.0	2,283.0	2,894.0	3,046.0
	90°	2,928.0	2,180.0	4,396.0	3,266.0	5,857.0	4,359.0

* You may select spring types from strong/middle/weak, if unspecified in P/O, the standard type (as shown in the blue box) is provided.

Electric Actuator

- Optimized for a ball/butterfly valves that open and close at an angle of 90°.
- Convernient since it can be mounted directly onto the valves or accessories in accordance with the ISO standards.
- Designed conveniently to allow users to use easily.



Dome type indicator

Since indicator is exposed to the outside, it is easy check the status of opening and closing of the valve at a distance.

Plastic intermediate cap

There will be no rubbing off even when used for a long period or exposure to sunlight by the use of plastic cap, a non-printing method.

Captive bolt

Bolts shall not be lost even though the cover is opened for wiring.

Self locking

Designed to prevent overheating that occurs due to repeated forward & reverse rotation by a wrong signal.

Terminal Box

Safe and simple wiring is possible by just opening the terminal box without the need of opening & closing whole product.

Low power consumption design

Lesser power consumption by the use of an exclusive special motor.

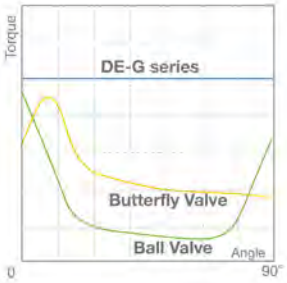
Electric Actuator | DE-G series

Plastic intermediate cap.

There will e no rubbing off even when used for a long period or exposure to sunlight by the use of plastic cap, a non-printing method.

Terminal Box

Safe and simple wiring is possible by just opening the terminal box without the need of opening & closing whole product.



SIZE		BALL VALVE (2Way 10K/150#)	BUTTERFLY VALVE (10K/150#)
1/2"	15A	DE002	
3/4"	20A	DE004	
1"	25A		
1-1/4"	32A	DE005	
1-1/2"	40A	DE006	
2"	50A	DE008	DE004
2-1/2"	65A		
3"	80A		DE005
4"	100A		DE006

Performance

DE002/DE004/DE006/DE008 (Single-voltage Type)

MODEL	MAX. TORQUE (Nm)	OPERATING TIME 50Hz/60Hz (sec)	RATED CURRENT (A)			DUTY CYCLE (%)	No. OF HANDLE TURNS
			AC (1PH)		DC		
			110V	220V	24V		
DE002-6G	20	17.5/14.5	0.2	0.1	2.5	S2 40%	3
DE002-5G	10	7/6	0.2	0.1	2.5	S2 40%	3
DE004-5G	40	17.5/14.5	0.38	0.2	3	S2 40%	3
DE004-4G	15	6/5	0.38	0.2	3	S2 40%	3
DE006-6G	60	18/15	0.5	0.3	3	S2 40%	3
DE006-5G	25	8/6.5	0.5	0.3	3	S2 40%	3
DE008-6G	80	17/14	0.5	0.3	3	S2 40%	20
DE008-5G	40	8/6	0.5	0.3	3	S2 40%	20

* DE006's data can be changed.

DE005 (Multi-voltage type)

MODEL	MAX. TORQUE (Nm)	OPERATING TIME 50Hz/60Hz (sec)	RATED CURRENT (A)			DUTY CYCLE (%)	No. OF HANDLE TURNS
			100~250V AC	24V AC / 24V DC	24V DC		
DE005-8G	50	13	0.5~0.2	3.5A	3.5A	S2 40%	18
DE005-7G	20	6	0.5~0.2	3.5A	3.5A	S2 40%	18

* 24V DC is control board embedded.

Standard Specification

DE002/DE004/DE006/DE008

Option

ENCLOSURE	Weather proof IP67
MAIN POWER	110V, 220V AC 1PH 50Hz/60Hz, 24V DC
DUTY CYCLE	S2 40% Max. 30minutes
INDICATOR	Dome type mechanical indicator
LIMIT SWITCHES	2 each for open & close (SPDT 250VAC/5A)
MANUAL OPERATION	(DE002~006) By spanner 5mm (DE008) By wrench 5mm (Hex.)
TRAVEL ANGLE	90
CABLE ENTRIES	±5 (DE002~006) 1-PF 1/2" (DE008) 2-PF 1/2"
AMBIENT TEMPERATURE	-20°C~+60°C
EXTERNAL COATING	Powder coating (DE002~006) N/A
INSIDE HEATER	(DE008) 1PH 220V/110V AC (DE002) F03/05, CH 11*11 DP15, 0.9Kg (DE004) F03/05, CH 11*11 DP15, 1.5Kg (DE006) F03/05/07, CH 14*14 DP19 (DE008) F03/05/07, CH 14*14 DP15/ # F05/07, #CH 17*17 DP19, 2.9Kg
ISO5211, CH STEM, WEIGHT	(DE002) Cable wire type (DE004/006/008) Terminal box type
CABLE ENTRY	

DE005

Option

ENCLOSURE	Weatherproof IP67
MAIN POWER	110V, 220V AC 1PH 50Hz/60Hz, 24V DC
DUTY CYCLE	S2 40% Max. 30minutes
INDICATOR	Dome type mechanical indicator
LIMIT SWITCHES	2 each for open & close (SPDT 250VAC/5A)
MANUAL OPERATION	By wrench 5mm (Hex.)
TRAVEL ANGLE	90°±5
CABLE ENTRIES	2-PF 1/2"
AMBIENT TEMPERATURE	-20°C~+60°C
EXTERNAL COATING	Powder coating
INSIDE HEATER	Heating element on PCB
ISO5211, CH STEM, WEIGHT	F03/F05/#F07, CH 11*11 DP15 / #CH 14*14 DP17, 1.3Kg
CABLE ENTRY	Terminal box type

Performance

MODEL	MAX. TORQUE (Nm)			OPERATING TIME 50Hz/60Hz (sec)	RATED CURRENT (A)					DUTY CYCLE (%)	MOTOR INSULATION CLASS	No. OF HANDLE TURNS	WEIGHT (Kg)
					AC (1PH)		AC (3PH)		DC				
	0°	45°	90°		110V	220V	380V	480V	24V				
DE010-3P	100	65	100	22/18	0.5	0.3	N/A	N/A	3	S2 40%	* F	15	3.0
DE010-4P	80	50	80	18/14	0.5	0.3	N/A	N/A	3	S2 40%	* F	11	
DE010-5P	60	40	60	14/11	0.5	0.3	N/A	N/A	3	S2 40%	* F	9	
DE016-3P	160	107	160	28/23	1.05	0.55	N/A	N/A	5	S2 40%	* F	19	6.2
DE016-4P	130	85	130	22/18	1.05	0.55	N/A	N/A	5	S2 40%	* F	16	
DE016-5P	100	65	100	18/14	1.05	0.55	N/A	N/A	5	S2 40%	* F	13	
DE028-3P	280	190	280	40/33	1.05	0.55	N/A	N/A	5	S2 40%	* F	23	8.9
DE028-4P	240	160	240	30/25	1.05	0.55	N/A	N/A	5	S2 40%	* F	19	
DE028-5P	190	125	190	24/20	1.05	0.55	N/A	N/A	5	S2 40%	* F	15	
DE040-3P	400	270	400	40/33	1.5	0.7	0.15	0.16	7	S2 40%	* F	23	8.9
DE040-4P	350	240	350	30/25	1.5	0.7	0.15	0.16	7	S2 40%	* F	19	
DE040-5P	300	220	300	24/20	1.5	0.7	0.15	0.16	7	S2 40%	* F	15	
DE050-3P	500	350	500	40/33	2	1	0.28	0.3	N/A	S2 40%	F	23	9.4
DE050-4P	450	310	450	30/25	2	1	0.28	0.3	N/A	S2 40%	F	19	
DE050-5P	400	280	400	24/20	2	1	0.28	0.3	N/A	S2 40%	F	15	

* Motor insulation class of 24V DC is B

Selection Guide

SIZE		BALL VALVE (2Way 10K/#150)	BUTTERFLY VALVE (10K/#150)
1/2"	15A	DE002	
3/4"	20A	DE004	
1"	25A	DE004	
1-1/4"	32A	DE005	
1-1/2"	40A	DE006	DE004
2"	50A	DE008	DE004
2-1/2"	65A	DE010	DE004
3"	80A	DE016	DE005
4"	100A	DE028	DE006
5"	125A	DE040	DE008
6"	150A	DE050	DE008
8"	200A		DE016
10"	250A		DE028
12"	300A		DE050
14"	350A		RE080
16"	400A		RE120
18"	450A		RE200
20"	500A		RE200
24"	600A		RE300

The above data is for reference only: the actual assembly may be different depending on valve material, pressure, structure, fluid and operational environment.

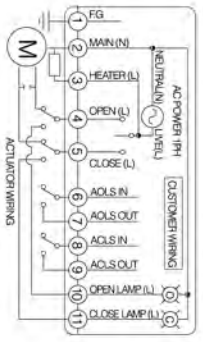
Electric Actuator | DE-P series

Standard Specification

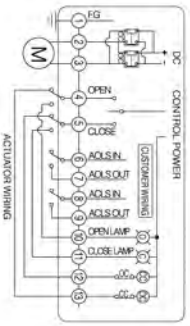
ENCLOSURE	Weather proof IP67
MAIN POWER	110V, 220V AC 1PH 50Hz/60Hz, 24V DC
DUTY CYCLE	S2 40% Max. 30minutes
INDICATOR	Dome type mechanical indicator
LIMIT SWITCHES	2 each for open & close (SPDT 250VAC/5A)
MANUAL OPERATION	(DE010~DE016) By wrench 6mm (Hex.) (DE028~DE050) By wrench 8mm (Hex.)
TRAVEL ANGLE	90°±5
CABLE ENTRIES	2-PF 1/2" (DE008) 2-PF 1/2"
AMBIENT TEMPERATURE	-20°C~+60°C
EXTERNAL COATING	Powder coating
INSIDE HEATER	1PH 220V/110 5W

Wiring (DE010~DE050)

AC 1PH (110V/220V)

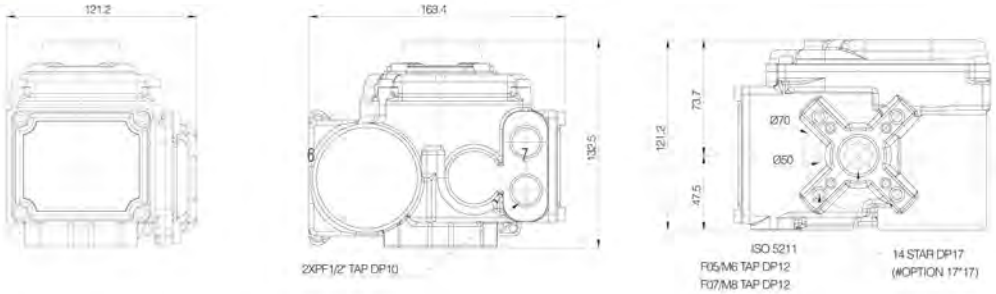


DC 24V

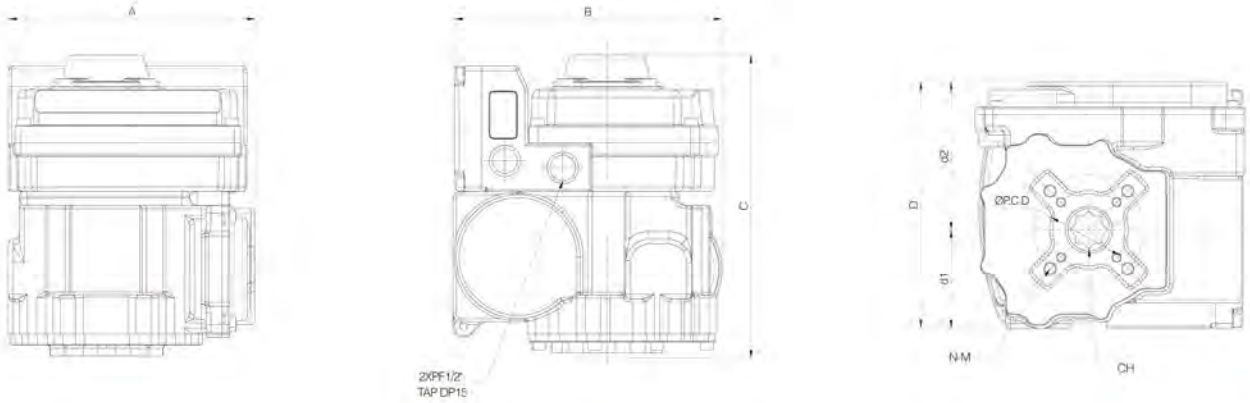


Dimensions

DE010



DE016~050



#Option

MODEL	A	B	C	D	d1	d2	ISO	PCD	N-M	CH	DTH
DE016	157	170.5	189.8	157	62	95	F05/F07/#F10	50/70/#102	4-M6/M8/M10	17	19
DE028	181.9	208.9	209	181.9	73.7	108.2	F07/F10/#F12	70/102/#125	4-M8/M10/#M12	22	19
DE040											
DE050											

Accessories for Pneumatic Actuator

SOLENOID VALVE

PA-01

- 2-Position single or double type
- Voltage : 24/110/220V AC, 50-60Hz, 12/24V DC
- Direct mounting type (NAMUR standard)
- Push button manual override
- Option : DIN connector, Neon lamp, Lever manual override

EXPLOSIONPROOF SOLENOID VALVE

PA-02

- Grade : Exd IIC T6
- Supply pressure : 3 Way (0~0.7 Mpa)
  4 Way (0.1~1 Mpa)
- Power : 110/220V AC, 24V DC

AIR FILTER REGULATOR

PA-03

- Bowl material : Poly carbonate
- Max. pressure : 1.0Mpa (10 bar)
- Max. Temperature : 60°C

AIR FILTER REGULATOR

PA-04

- Material : Stainless steel 316
- Max. Pressure : 1.5Mpa (15 bar)

LIMIT SWITCH BOX

PA-05

- Enclosure : IP67
- 2-SPDT mechnical switch
- Position indicator (OPEN/CLOSED)
- Mounting bracket (NAMUR, VDE/VDI 3845)

EXPLOSIONPROOF LIMIT SWITCH BOX

PA-06

- Enclosure : Eexd IIC T6
- 2-SPDT mechnical switch
- Position indicator (OPEN/CLOSED)
- Mounting bracket (NAMUR, VDE/VDI 3845)

ELECTRO-PNEUMATIC POSITIONER

PA-07

- Single or double acting
- Enclosure : IP66, Explosionproof (Exdm IIB T5)
- Input signal : 4 to 20mA
- Supply pressure : 0.14~0.7Mpa (1.4~7 bar)
- Stroke : 0~90°
- Material : Aluminum diecasting

SMART POSITIONER

PA-08

- Rotary motin single or double acting
- Enclosure :IP66, Explosionproof (Exia IIC T6/T5)
- Input signal : 4 to 20mA
- Stroke : 0~90°

Accessories for Pneumatic Actuator

DECLUTCHABLE GEAR OPERATOR PA-09

- Travel : 90°±5°
- Gear ration : 32:1 ~ 1328:1

SIDE HANDWHEEL PA-10

- Leaves the top of pneumatic actuator free for the fitting of accessory
- Enable locking of the actuator in open/close position Simple and secure function

SPEED CONTROLLER PA-11

- Tube outside diameter : ø3.2~ø12
- Max. pressure : 1 Mpa (10bar)

SPEED CONTROLLER WITH SILENCER PA-12

- Size: 1/8"~1/2"
- Max. pressure : 1.5Mpa (15bar)

SILENCER PA-13

ONE TOUCH FITTING PA-14

- Tube outside diameter : ø4~ø16

SQUARE ADAPTER PA-15

- Size : 9-11 ~ 36-46

OCTAGON (STAR) ADAPTER PA-16

- Size : 9-11 ~ 27-36

Material Comparisons Table

GENERAL	JIS Symbol		ASTM Symbol		DIN	
CLASSIFICATION	Casting	Forging	Casting	Forging	Casting	Forging
CAST IRON	G5501-FC200	-	A126 CLASS B	-	GG-20	-
	G5501-FC250	-	A126 CLASS C	-	GG-30	-
CAST BRONZE	BC6	-	B62 C83600	-	-	-
DUCTILE IRON	G5502-FCD450	-	A395	A439-D2C	GGG-40	-
	G5502-FCD550	-	A536	-	GGG-50	-
CARBON STEEL	G5151-SCPH2	G3201-SF50	A216-WCB	A105	GS-C25N	1.0402
	G5151-SCPH21	-	A217-WC6	A182-F11	GS-22	1.7733
STAINLESS STEEL	G5121-SCS13	G3214-SUS F304	A351-CF8	A182-F304	1.4308	1.4301
	G5121-SCS14	G3214-SUS F316	A351-CF8M	A182-F316	1.4408	1.4401
	G5121-SCS16	G3214-SUS F316L	A351-CF3M	A182-F316L	1.4409	1.4404
	G5121-SCS19	G3214-SUS F304L	A351-CF3	A182-F304L	-	1.4306
TITANIUM	-	-	B367	B381	-	-
ALUMINIUM	ADC-12	-	B26	B247	3.3591	-
ALUMINIUM-BRONZE	AlBC2	-	B148-C95500	-	-	-
ALLOY 400 (MONEL)	-	-	A494-M35	B564N04400	-	-
HASTELLOY C	-	-	A494-CW-12M	-	-	-
BOLTS	G4107-SNB7	-	-	A193-B7	-	1.7225
NUTS	G4303-SUS304	-	-	A194-8	-	1.4301
STAINLESS STEEL ROUND BAR	-	G4303-SUS304	-	A276-304	-	1.4301
	-	G4303-SUS316	-	A276-316	-	1.4401
	-	G4303-SUS316L	-	A276-316L	-	1.4404
	-	G4303-SUS304L	-	A276-304L	-	1.4306

Technical Data

Elastomer General Chart

The following chart should be used as a general guide.
Application suggested derive from recommendation given by elastomer manufacturer.
The resistance can be affected by type of fluid, concentration, temperature, pressure, flow rate or evaporation of the medium.
The final choice us to be taken by the customer based on characteristics and specific application.

Material	General Application	Service Temperature	Not Recommended For
EPDM	Water, Steam Sea Water Brine Ester Alkali Ozone Alcohol Brake Fluid Treated Water With Caustic Soda	-20°C to +120°C (Allowable temperature in continuous use 0°C ~ 100°C)	Hydrocarbon Oils Fats Grease
NBR	Hydrocarbon Natural Gas Oil and Fat Air Gasoline	-10°C to +80°C (Allowable temperature in continuous use 0°C ~ 70°C) (L- NBR -50°C to 70°C)	Solvent Benzene Xylene
SBR	Acids and Alkalis	-20°C to +80°C	
VITON	Acid, Oils Hydrocarbon	-10°C to + 220°C	Steam, Ester Freon22, Alkalis Solvent, Ketone
SILICONE	Food Beverage	-20°C to +140°C	Steam Solvent Hydrocarbon
TEFLON	Solvent Corrosive Products Ketone	-50°C to +200°C (PTFE -196°C to + 220°C)	Fluid Containing Powers Alkaline Gaseous Fluorine
NEOPRENE	Acid, Ozone, Oils Fats Grease Solvent	-18°C to + 90°C	Ketone, Thinner Concentrated Acids

Rubber Seat Materials

Features of Rubber

The following is general informations and special application shall be referred to the manufacturer's representatives.

Commom Name	ASTM Code	Max. Tempe-rature	Abrasion	Aging	Sun Light Resist-ance	Water Resist-ance	Oil Resist-ance	Solvent	Strong Acid	Weak Acid	Strong Alkali	Weak Alkali
Buna-N	NBR	130°C	◎	◎	○	◎	◎	△	X	○	○	◎
Neoprene	CR	120°C	◎	◎	◎	◎	○	X	X	○	○	◎
Natural Rubber	NR	100°C	◎	○	○	◎	X	X	X	○	○	◎
EPDM	EPT	150°C	○	◎	◎	◎	X	X	○	◎	◎	◎
Silicone	Si	230°C	○	◎	◎	○	X~○	△	X	○	○	◎
Viton	FPM	260°C	○	◎	◎	◎	◎	○	◎	◎	◎	◎

Note : ◎ excellent, ○ good, △ fair, X poor

Conversion Tables

Fahrenheit to Celsius Conversion Table

Celsius °C = (°F - 32) ÷ 1.8 To Fahrenheit °F = (°C x 1.8) +32

NOTE : The number in the center columm refer to the temperature either in degrees Celsius or Fahrenheit when it is desired to convert into either scale. If converting from Fahrenheit degrees to Celsius degrees the equivalent temperature will be found in the column, while if converting from degrees Celsius to degrees Fahrenheit, the answer will be found in the column on the right.

°C.		°F.	°C.		°F.	°C.		°F.	°C.		°F.	°C.		°F.
-45.6	-50	-58	-26.1	-15	5.0	-6.67	20	68.0	12.8	55	131.0	32.2	90	194.0
-45	-49	-56.2	-25.6	-14	6.8	-6.11	21	69.8	13.3	56	132.8	32.8	91	195.8
-44.4	-48	-54.4	-25	-13	8.6	-5.56	22	71.6	13.9	57	134.6	32.3	92	196.7
-43.9	-47	-52.6	-24.4	-12	10.4	-5.00	23	73.4	14.4	58	136.4	33.9	93	199.4
-43.3	-46	-50.8	-23.9	-11	12.2	-4.44	24	75.2	15.0	59	138.2	34.4	94	201.2
-42.8	-45	-49	-23.3	-10	14.0	-3.89	25	77.0	15.6	60	140.0	35.0	95	203.0
-42.2	-44	-47.2	-22.8	-9	15.8	-3.33	26	78.8	16.1	61	141.8	35.6	96	204.8
-41.7	-43	-45.4	-22.2	-8	17.6	-2.78	27	80.6	16.7	62	143.6	36.1	97	206.6
-41.1	-42	-43.6	-21.7	-7	19.4	-2.22	28	82.4	17.2	63	145.4	36.7	98	208.4
-40.6	-41	-41.8	-21.1	-6	21.2	-1.67	29	84.2	17.8	64	147.2	37.2	99	210.2
-40	-40	-40	-20.6	-5	23.0	-1.11	30	86.0	18.3	65	149.0	37.8	100	212
-39.2	-39	-38.2	-20	-4	24.8	-0.56	31	87.8	18.9	66	150.8	66	150	302
-38.9	-38	-36.4	-19.4	-3	26.6	0	32	89.6	19.4	67	152.6	93	200	392
-38.3	-37	-34.6	-18.9	-2	28.4	0.56	33	91.4	20.0	68	154.4	121	250	482
-37.8	-36	-32.8	-18.3	-1	30.2	1.11	34	93.2	20.6	69	156.2	149	300	572
-37.2	-35	-31.0	-17.8	0	32	1.67	35	95.0	21.1	70	158.0	177	350	662
-36.7	-34	-29.2	-17.2	1	33.8	2.22	36	96.8	21.7	71	158.8	204	400	752
-36.1	-33	-27.4	-16.7	2	35.6	2.78	37	98.6	22.2	72	161.6	232	450	842
-35.6	-32	-25.6	-16.1	3	37.4	3.33	38	100.4	22.8	73	163.4	260	500	932
-35	-31	-23.8	-15.6	4	39.2	3.89	39	102.2	23.3	74	165.2	288	550	1022
-34.4	-30	-22	15.0	5	41.0	4.44	40	104.0	23.9	75	167.0			
-33.9	-29	-20.2	-14.4	6	42.8	5.00	41	105.8	24.4	76	168.8			
-33.3	-28	-18.4	-13.9	7	44.6	5.56	42	107.6	25.0	77	170.6			
-32.8	-27	-16.6	-13.3	8	46.4	6.11	43	109.4	25.6	78	172.4			
-32.2	-26	14.8	-12.8	9	48.2	6.67	44	111.2	26.1	79	174.2			
-31.7	-25	-13.0	-12.2	10	50.0	7.22	45	113.0	26.7	80	176.0			
-31.1	-24	-11.2	-11.7	11	51.8	7.78	46	114.8	27.2	81	177.8			
-30.6	-23	- 9.4	-11.1	12	53.6	8.33	47	116.6	27.8	82	179.6			
-30.0	-22	- 7.6	-10.6	13	55.4	8.89	48	118.4	28.3	83	181.4			
-29.4	-21	- 5.8	-10.0	14	57.2	9.44	49	120.2	28.9	84	183.2			
-28.9	-20	- 4.0	-9.44	15	59.0	10.0	50	122.0	29.4	85	185.0			
-28.3	-19	- 2.2	-8.89	16	60.8	10.6	51	123.8	30.0	86	186.8			
-27.8	-18	- 0.4	-8.33	17	62.6	11.1	52	125.6	30.6	87	188.6			
-27.2	-17	1.4	-7.78	18	64.4	11.7	53	127.4	31.1	88	190.4			
-26.7	-16	3.2	-7.72	19	66.2	12.2	54	129.2	31.7	89	192.2			

Torque Conversion Ratios

oz · in	lb · in	lb · ft	g · cm	kg · cm	kg · m	mN · m	cN · m	N · m
1	0.0625	0.005	72	0.072	0.0007	7.062	0.706	0.007
16	1	0.083	1152.1	1.152	0.0115	113	11.3	0.113
192	12	1	13826	13.83	0.138	1356	135.6	1.356
0.014	0.0009	0.00007	1	0.001	0.00001	0.098	0.01	0.0001
13.89	0.868	0.072	1000	1	0.01	98.07	9.807	0.098
1389	86.8	7.233	100000	100	1	9807	980.7	9.807
0.142	0.009	0.0007	10.2	0.01	0.0001	1	0.1	0.001
14.16	0.088	0.007	102	0.102	0.001	10	1	0.01
141.6	8.851	0.738	10197	10.20	0.102	1000	100	1