

유체 제어의 선도자



INDEX

1. PLUMBING VALVE (MANUAL)

4~55



2. DIRECT MOUNTING VALVE

56~76



3. AUTOMATIC ACTUATING VALVE

77~128



■ PNEUMATIC ACTUATOR (ROTARY)

129~132



■ ELECTRIC ACTUATOR (ROTARY)

133~139



■ TECHNICAL INFORMATION

140~155

1. Plumbing Valve (Manual)

MODEL	DESCRIPTION		PAGE
MV-01	1-Piece Ball Valve, Threaded, Reduced Flow 1000PSI		7
MV-02	1-Piece Ball Valve, Threaded, Reduced Flow 1000PSI, Wing		8
MV-03	1-Piece Ball Valve, Threaded, Reduced Flow, 2000PSI		9
MV-04	2-Piece Ball Valve, Threaded, Full Flow, 1000PSI		10
MV-05	2-Piece Ball Valve, Threaded Female x Male, Full Flow, 1000PSI		11
MV-06	2-Piece Ball Valve, Threaded, Full Flow, 2000PSI		12
MV-07	2-Piece Ball Valve, Threaded, Full Flow, 3000PSI		13
MV-08	2-Piece Ball Valve, Threaded, Full Flow, 6000PSI		14
MV-09	3-Piece Ball Valve, Threaded/SW/BW, Full Flow, 1000PSI		15
MV-10	3-Piece Ball Valve, Long BW, Full Flow, 1000PSI		16
MV-11	3-Piece Ball Valve, Threaded/SW/BW, Standard Flow, 2000PSI		17
MV-12	3-Piece Ball Valve, Threaded/SW/BW, Full Flow 3000PSI		18-19
MV-13	3-Piece Ball Valve, Threaded/SW/BW, Full Flow, 6000PSI		20
MV-14	3-Piece Instrumentation Ball Valve, Lok Tube, Reduced Flow, 2000PSI		21
MV-15	3-Way Ball Valve, Threaded, Standard Flow, 1000~800PSI		22
MV-16	3-Way Ball Valve, Lok/Male/Female, 6000PSI		23
MV-17	3/4/5-Way Ball Valve, Threaded/SW/BW, Standard Flow, 800PSI		24-25
MV-18	1-Piece Flanged Ball Valve, ANSI 150, Standard Bore		26
MV-19	1-Piece Wafer Flanged Ball Valve, PN16/40, Full Bore		27
MV-20	2-Piece Flanged Ball Valve, JIS 10K/20K, Full Bore		28

MODEL	DESCRIPTION		PAGE
MV-21	2-Piece Flanged Ball Valve, ANSI 150/300, Full Bore		29
MV-22	2-Piece Flanged Ball Valve, JIS 10K/20K, Full Bore (D)		30
MV-23	3-Piece Flanged Ball Valve, PN16, ANSI 150, Full Bore		31
MV-24	3/4/5-Way Flanged Ball Valve, JIS 10K, ANSI 150, PN16, Full Bore (D)		32-34
MV-25	3/4/5-Way Flanged Ball Valve, JIS 10K, ANSI 150, Full Bore		35
MV-26	Butterfly Valve, Wafer, JIS 5K/10K, ANSI 150, PN 6/10/16		36-37
MV-27	Butterfly Valve, Wafer, Aluminum Alloy Body, Wafer, JIS 10K, ANSI 150, PN 10		38-39
MV-28	High Performance Butterfly Valve, JIS 10K/20K, ANSI 150		40-41
MV-29	Gate Valve, Threaded, 2000PSI		42
MV-30	Globe Valve, Threaded, 200PSI		43
MV-31	Swing Check Valve, Threaded, 200PSI		44
MV-32	Y-Strainer, Threaded, 800PSI		45
MV-33	Piston Check Valve, Threaded, PN 40		46
MV-34	Shut Off Valve, Threaded, PN 40		47
MV-35	1-Piece Wafer Disc Check Valve, PN 40		48
MV-36	3-Piece Disc Check Valve, Threaded/SW/BW, 600PSI		49
MV-37	Needle Valve, Lok/Threaded/SW, 5000PSI		50
MV-38	Tank Bottom Ball Valve, JIS10K, Full Bore		51
MV-39	Top Entry Ball Valve, Threaded/SW/BW, 800PSI		52-53
MV-40	Top Entry Flanged Ball Valve, ANSI 150/600, PN 16/40		54-55

3-PIECE BALL VALVE

1000PSI, Threaded

MV-09

SIZE : 1/4" to 4"

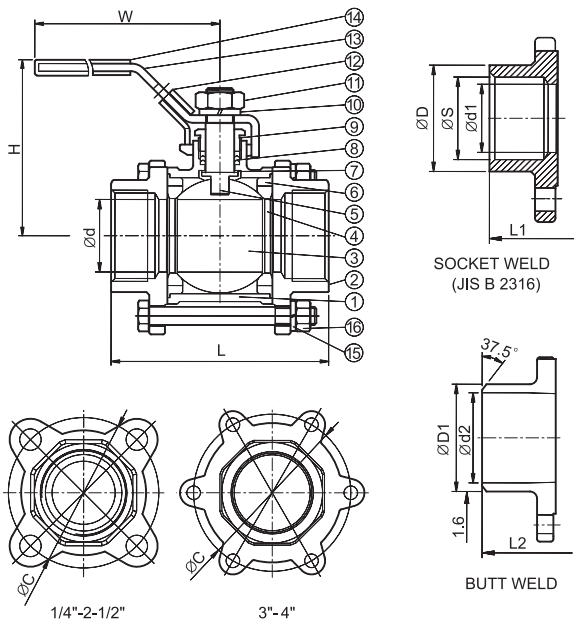
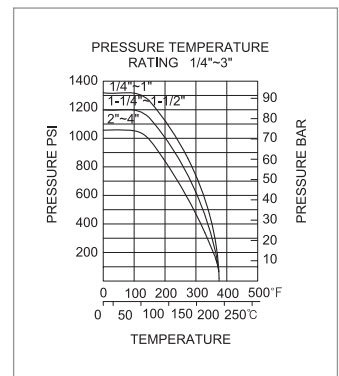


FEATURES

- Max. Pressure : 1000PSI (70kg/cm²) W.O.G
- Max. Temperature : 160℃
- Ball : Full flow
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- End connection :
 - * Screwed : BS21 1973 (BSPT), ANSI B2.1 (NPT),
DIN 259/2999, ISO 228
 - * Socket Weld : JIS B2316
 - * Butt Weld (37.5°)
- Lug body
- Blow-out proof stem
- Investment casting body & end cap

OPTION

- Locking device
- 5", 6" & 8" (Butt weld ends)
- Socket weld : ANSI B16.11



MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	BALL	ASTM A351-CF8M
4	BALL SEAT	PTFE
5	STEM	SS 316
6	GASKET	PTFE
7	THRUST WASHER	PTFE
8	PACKING	PTFE
9	GLAND	SS 304
10	SPRING WASHER	SS 304
11	STEM NUT	SS 304
12	LOCKING DEVICE	SS 304
13	HANDLE	SS 304
14	HANDLE COVER	PLASTIC
15	BOLT	SS 304
	WASHER	
		1/4"~2-1/2" : 4EA
		3"~4" : 6EA
16	HEX NUT	SS 304
		1/4"~ 2-1/2" : 4EA
		3"~ 4" : 6EA

DIMENSIONS

(UNIT : mm)

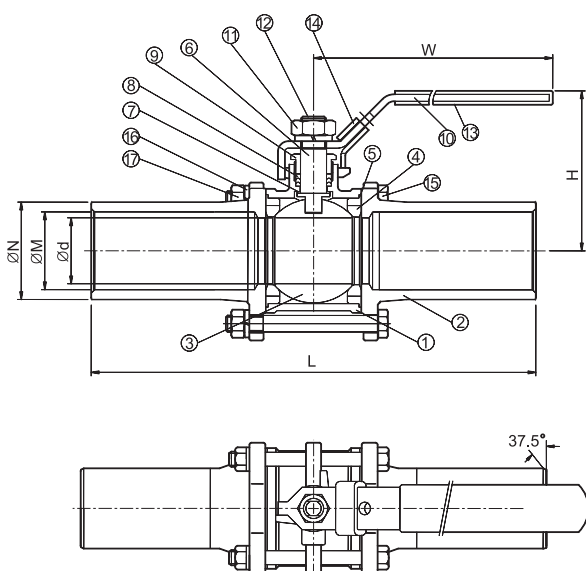
SIZE		Ød	L	Ød1	Ød2	ØS	ØD	ØD1	L1	L2	H	W	ØC	WEIGHT (kg)
Inch	mm													
1/4"	8A	11.6	58	11.6	11.6	14.3	22.6	17	58	70	52	102	37.5	0.30
3/8"	10A	12.7	58	12.7	12.7	17.8	22.6	17	58	70	54	102	37.5	0.28
1/2"	15A	15	63	15	16	22.2	27.3	21.3	63	75	62	123	45.5	0.44
3/4"	20A	20	73	20	20	27.7	33.1	26.7	73	90	66	123	52.5	0.58
1"	25A	25	85	25	25	34.5	39.8	33.6	85	100	77	153	57.5	0.84
1-1/4"	32A	32	96	32	33.8	43.2	48.6	42.4	96	110	80	153	71.5	1.32
1-1/2"	40A	38	114	38	39.5	49.1	55.1	48	114	125	91	183	79	1.76
2"	50A	50	134	50	50.8	61.1	68.1	60.5	134	150	98	183	97	2.94
2-1/2"	65A	65	180	65	62.7	77.1	85.9	76.1	180	190	138	246	124.5	5.72
3"	80A	80	200	80	77.9	90.0	100.8	88.9	200	220	149	246	149	9.00
4"	100A	100	228	100	100	115.5	127.5	114.2	228	270	175	246	180.6	16.69

3-PIECE BALL VALVE

1000PSI, Long BW

MV-10

SIZE : 3/8" to 4"



FEATURES

- Max. Pressure : 1000PSI (70kg/cm²) W.O.G
- Max. Temperature : 160℃
- Ball : Full flow
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- End connection : Long butt weld (JIS B2316)
- Lug body
- Blow-out proof stem
- Investment casting body & end cap

OPTION

- Locking device
- ISO 5211 mounting pad
- End cap 316L (1.4409)
- Long butt weld (ANSI B16.11)

MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	BALL	ASTM A351-CF8M
4	BALL SEAT	PTFE
5	JOINT GASKET	PTFE
6	STEM	SS 316
7	THRUST WASHER	PTFE
8	STEM PACKING	PTFE
9	GLAND NUT	SS 304
10	HANDLE	SS 304
11	STEM WASHER	SS 304
12	STEM NUT	SS 304
13	HANDLE COVER	PLASTIC
14	LOCK DEVICE	SS 304
15	BOLT	4EA (3/8"~2-1/2") 6EA (3"~4") SS 304
16	SPRING WASHER	SS 304
17	HEX NUT	SS 304

DIMENSIONS

(UNIT : mm)

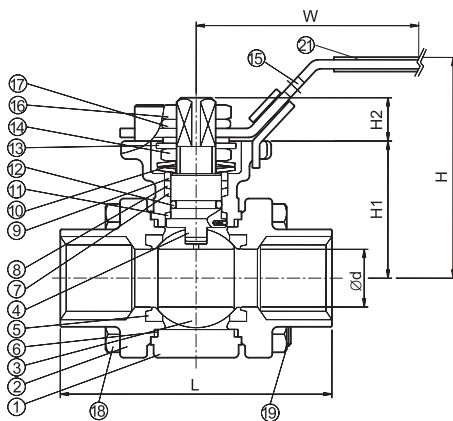
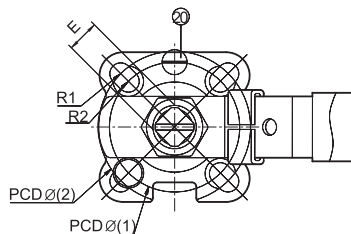
SIZE		Ød	L	H	W	ØM	ØN	CV Factor	TORQUE (N.m)
Inch	mm								
3/8"	10A	12.7	225	56	102	9.5	13.5	7.9	4.2
1/2"	15A	15	225	65	123	16	20	11.2	7
3/4"	20A	20	225	67	123	21	25	21	9
1"	25A	25.1	245	79	153	26	30	35	12.4
1-1/4"	32A	32	255	84	153	32	36	57	15
1-1/2"	40A	38	260	92	183	41	45	80	20
2"	50A	50.8	275	99	183	50	54	150	30
2-1/2"	65A	65	334	136	246	64	70	265	42
3"	80A	80	354	146	246	80	86	415	65
4"	100A	100	365	168	325	100	106	780	100

3-PIECE BALL VALVE

1500/2000PSI, Threaded, SW, BW

MV-11

SIZE : 1/4" to 2-1/2"

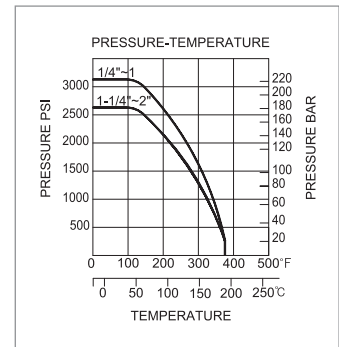


FEATURES

- Max. Pressure : 2000PSI (141kg/cm²) 1/4" to 1"
1500PSI (106kg/cm²) 1-1/4" to 2"
1000PSI (70kg/cm²) 2-1/2" to 4"
- Max. Temperature : 160℃
- Ball : Standard flow
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- End connection:
 - * Screwed : BS21 1973 (BSPT), ANSI B2.1 (NPT),
DIN 259/2999, ISO 228
 - * Socket Weld : JIS B2316, ANSI B16.11
 - * Butt Weld (37.5°)
- 8 bolted encapsulated body
- Lug body
- Blow-out proof stem
- Investment casting body & end cap

OPTION

- Locking device
- Full flow
- DIN standard M3 length
- Fire safe design(API607)



MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	BALL	ASTM A351-CF8M
4	STEM	SS 316
5	BALL SEAT	PTFE
6	GASKET	PTFE
7	STEM PACKING	PTFE
9	GLAND BUSH	SS 304
10	BEVEL WASHER	SUS304-USP
11	THRUST WASHER	PTFE
12	O-RING	VITON
13	SADDLE WASHER	SS 304
14	STEM NUT	SS 304
15	HANDLE	SS 304
16	HANDLE NUT	SS 304
17	HANDLE WASHER	SS 304
18	BOLTS	SS 304
19	BOLTS WASHER	SS 304
20	STOP PIN	SS 304
21	HANDLE COVER	PLASTIC

DIMENSIONS

(UNIT : mm)

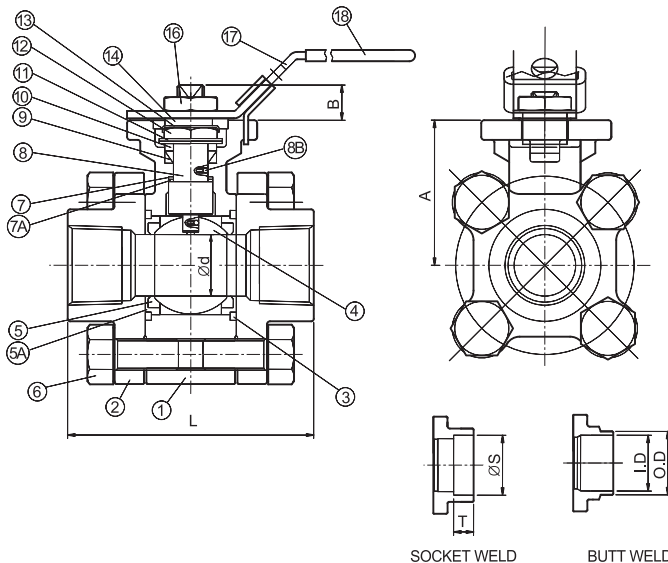
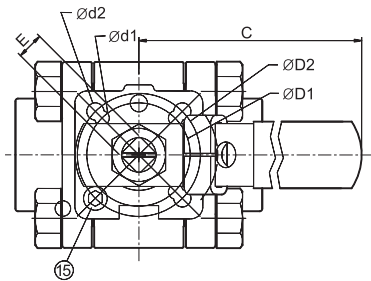
SIZE		Ød	L	H	H1	H2	W	ISO 5211		TORQUE (N.m)	WEIGHT (kg)
Inch	mm							E	PCD(1)/(2)		
1/4"	8A	11.5	56.1	72.9	8.5	37	112	9	F03 F05	5.9	0.75
3/8"	10A	12.5	56.1	72.9	8.5	37	112	9	F03 F05	5.9	0.75
1/2"	15A	12.5	68.0	72.9	8.5	37	112	9	F03 F05	5.9	0.77
3/4"	20A	15	71.1	72.9	8.5	37	112	9	F03 F05	5.9	0.80
1"	25A	20	76.1	81.8	8.5	45	112	9	F03 F05	7.5	1.01
1-1/4"	32A	25	84.6	90.5	9.5	53.5	136	9	F03 F05	9.2	1.40
1-1/2"	40A	32	98.1	98	9.5	59	185	9	F03 F05	16.7	2.20
2"	50A	38	111.2	114.7	14	74.8	198	14	F05 F07	21.6	3.2
2-1/2"	65A	50	140.7	124	13.7	83.5	198	14	F05 F07	26	6.97

3-PIECE BALL VALVE

3000PSI, Threaded, SW, BW

MV-12

SIZE : 1/4" to 3"



FEATURES

- Max. Pressure : **3000PSI (211kg/cm²)** W.O.G
- Max. Temperature : 230℃
- Ball : Full flow
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- End connection :
 - * Screwed : BS21 1973 (BSPT), ANSI B2.1 (NPT), DIN 259/2999, ISO 228
 - * Socket Weld : JIS B2316, ANSI B16.11
 - * Butt Weld (37.5°)
- 8 bolted encapsulated body
- Blow-out proof stem
- Investment casting body & end cap

OPTION

- Locking device
- Spring handle (dead man handle)
- V-Flow ball for control valve (15°, 30°, 60° and 90°)
- PTFE/PFA coating (40~70µm)
- Fire safe design (API607)
- Metal seated design
- Special Alloy : Hastelloy C276 / Super duplex / Alloy 20 / Monel 400

MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	GASKET	TFM
4	BALL	SS 316
5	BALL SEAT	PEEK
5A	SEAT HOUSING	SS 316
6	BOLTS	SS 304
7	THRUST WASHER	TFM
7A	THRUST WASHER	PEEK
8	BEVEL WASHER	SS 316
8A	THRUST WASHER	SS 316E
8B	ANTI-STATIC	SS 316
9	STEM PACKING	TFM
10	GLAND WASHER	SS 304
11	DISK WASHER	SS 301
12	STEM NUT	SS 304
13	NUT STOP	SS 304
14	SPACE WASHER	SS 304
15	STOP PIN	SS 304
16	HANDLE NUT	SS 304
17	HANDLE	SS 304
18	HANDLE COVER	PLASTIC

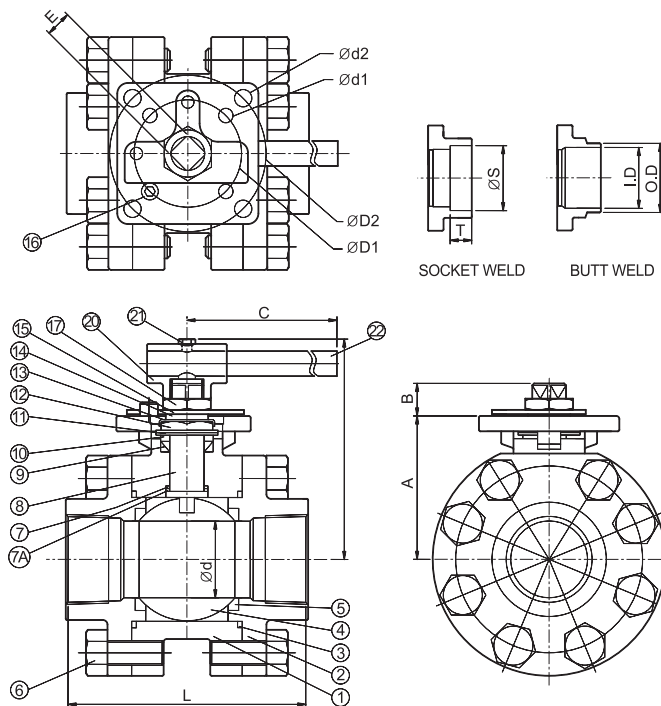
DIMENSIONS

(UNIT : mm)

SIZE		Ød	L	A	B	C	ØD1	ØD2	d1	d2	E	SW		BW(40#)		BW(80#)	
Inch	mm											S	T	OD	ID	OD	ID
1/4"	8A	11	67	45	11	130	F03	F04	6	7	9	14.1	11.2	14.0	8.8	-	-
3/8"	10A	11	67	45	11	130	F03	F04	6	7	9	17.5	11.2	17.5	13.1	-	-
1/2"	15A	15	70	48	11	130	F03	F04	6	7	9	21.8	12.7	21.3	15.9	21.3	13.8
3/4"	20A	20	92	53	14	155	-	F05	-	7.2	11	27.1	14.3	26.7	20.6	26.7	18.9
1"	25A	25	105	59	14	155	-	F05	-	7.2	11	33.8	15.9	33.3	26.6	33.3	24.3

3-PIECE BALL VALVE

3000PSI, Threaded, SW, BW



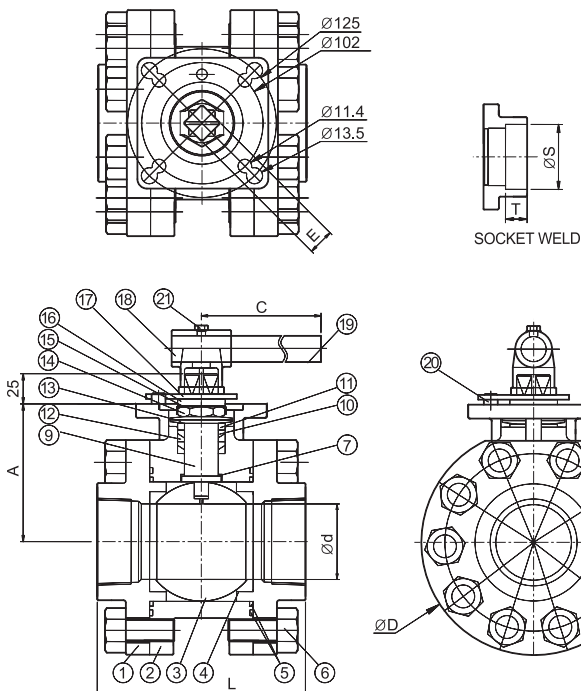
MATERIAL LIST (SIZE : 1-1/2" ~ 2")

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	GASKET	TFM
4	BALL	SS 316
5	BALL SEAT	PEEK
6	BOLT	SS 304
7	THRUST WASHER	TFM
7A	THRUST WASHER	PEEK
8	STEM	SS 316 / 17-4P
9	STEM PACKING	TFM
10	GLAND WASHER	SS 304
11	DISC WASHER	SS 301
12	GLAND NUT	SS 304
13	NUT STOP	SS 304
14	SPACE WASHER	SS 304
15	STOP PLATE	SS 304
16	STOP PIN	SS 304
17	STEM NUT	SS 304
18	HANDLE	SS 304
19	HANDLE COVER	PLASTIC
20	LEVER HEAD	CF8
21	SET BOLT	SS 304
22	LEVER	STEEL PIPE

DIMENSIONS

(UNIT : mm)

SIZE		Ød	L	A	B	C	ØD1	ØD2	Ød1	Ød2	E	H	SW		BW(40#)		BW(80#)	
Inch	mm												S	T	OD	ID	OD	ID
1-1/2"	40A	38	124	80	16	205	F05	F07	7.2	9.2	14	115	48.6	18.3	48.5	40.5	48.5	37.8
2"	50A	50	150	96	20	350	F07	F10	9.2	11.4	17	148	61.1	21.3	60.5	52.4	60.5	48.9



MATERIAL LIST (SIZE : 2-1/2" to 3")

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	BALL	SS 316
4	BALL SEAT	PEEK / DELRIN
5	GASKET	TFM
6	BOLT	SS 304
7	THRUST WASHER	PEEK
8	STEM	SS 316 / 17-4PH
9	STEM PACKING	TFM
10	GLAND WASHER	SS 304
11	DISC WASHER	SS 301
12	GLAND NUT	SS 304
13	NUT STOP	SS 304
14	SPACE WASHER	SS 304
15	STOP PLATE	SS 304
16	STOP PIN	SS 304
17	LEVER HEAD	CF8
18	LEVER	STEEL PIPE
19	STOP PIN	SS 304
20	SET BOLT	SS 304

DIMENSIONS

(UNIT : mm)

SIZE		Ød	L	ØD	A	C	E	SW	
Inch	mm							S	T
2-1/2"	65A	63.5	165	-	-	400	22	73.9	22.2
3"	80A	78	195	200	126	500	22	89.9	25.4

TANK BOTTOM BALL VALVE

JIS 10K, Flanged

MV-38

SIZE : 1" to 6"

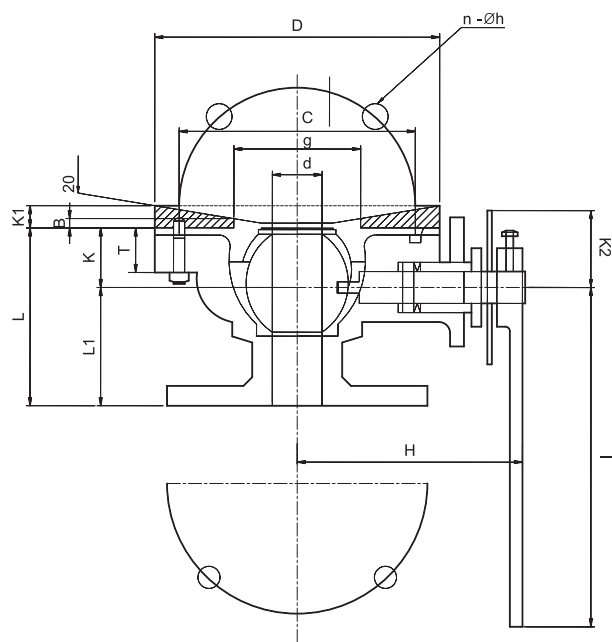


FEATURES

- Flange : JIS 10K
- Max. Temperature : 160℃
- Ball : Full flow
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- Sand casting body & end cap
- Floating Ball
- Operator : Lever handle (SS304) 1" to 4"
Pipe handle (SS304) 5" to 6"
Worm gear
Pneumatic actuator
Electric actuator

OPTION

- Clamp (Ferrule) end



DIMENSIONS

(UNIT : mm)

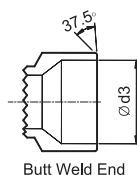
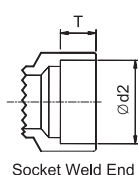
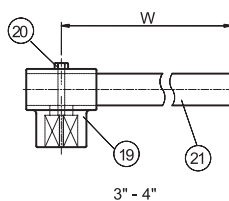
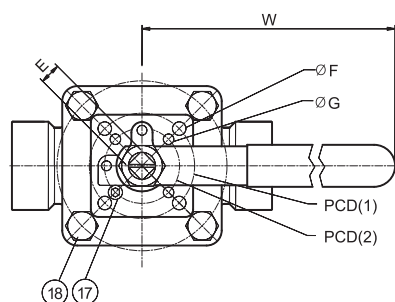
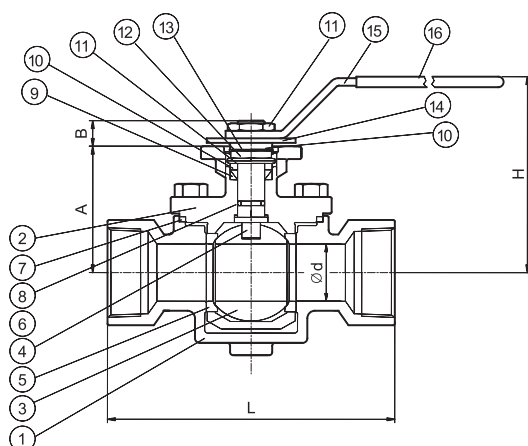
SIZE		d	D	C	g	n	h	t	B	K	K1	K2	L	L1	I	H	WT (kg)
Drain	Tank																
1"	1-1/2"	25	140	105	49	4	15	25	12	26	28.5	22	93	66	152	110	5.5
1-1/2"	2"	40	155	120	61	4	15	25	12	34	29	27	109	75	213	137	8
2"	2-1/2"	50	175	140	77	4	15	28	14.5	38	32	27	124	86.5	213	150	10
2-1/2"	195(O.D)	65	195	160	102	6	15	30	20	39	37	27	131	93	213	160	14
3"	5"	80	250	210	140	6	19	32	25	46	45	34	150	101	270	180	23.5
4"	6"	100	280	240	166	8	19	35	40	54	62.5	34	167	112	270	190	33
5"	305(O.D)	125	305	265	192	8	19	43	42	77	62.5		254	177	400	224	50
6"	14"	150	350	310	243	8	23	49	42	75	62.5		273	198	500	265	70

TOP ENTRY BALL VALVE

800PSI, Threaded, SW, BW

MV-39

SIZE : 1/2" to 4"



FEATURES

- Max. Pressure : 800PSI (56kg/cm²) W.O.G
- Max. Temperature : 232°C (450°F)
- Ball : Full and standard flow
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- End connection
 - Screwed : BS21 1973 (BSPT), ANSI B2.1 (NPT),
DIN 259/2999, ISO 228
 - Socket Weld : JIS B2316
 - Butt Weld (37.5°)
- ISO5211 direct mounting pad
- In-line repairing, cleaning, maintaining
- Investment casting body and end cap
- Blow-out proof stem design
- Locking function

OPTION

- Spring handle (dead man handle)
- Fire safe design (API607 edition 4)
- PTFE/PFA coating (40~70µm)
- Hastelloy C / Super duplex / Alloy 20 / Monel
- Cavity filled seat
- Steam jacket

MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	BONNET	ASTM A351-CF8M
3	BALL	SS316
4	STEM	SS 316
5	BALL SEAT	TFM 1600
6	THRUST WASHER	TFM 1600
7	GASKET	TFM 1600
8	O-RING	VITON
9	STEM PACKING	TFM 1600
10	SPACE WASHER	SS 304
11	DISK WASHER	SS 301
12	STEM NUT	SS 304
13	NUT STOP	SS 304
14	STOPPER PLATE	SS 304
15	HANDLE (1/2"~ 2")	SS 304
16	HANDLE COVER	PLASTIC
17	STOP PIN	SS 304
18	BONNET BOLTS	GRADE B8
19	LEVER HEAD	CF8
20	SET BOLT	SS 304
21	LEVER (3" & 4")	STEEL PIPE

TOP ENTRY BALL VALVE

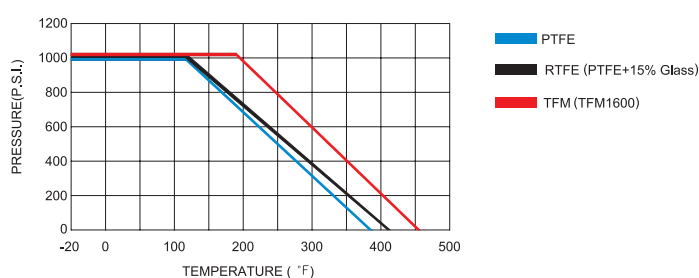
800PSI, Threaded, SW, BW

DIMENSIONS

(UNIT : mm)

SIZE		Ød	L	A	B	H	W	F	G	PCD(1)	PCD(2)	E	T	Ød2	Ød3 SCH.40
Inch	mm														
1/2"	15	19.5	127	65	14	96	165	7.2	6	F05	F04	11	12.7	21.8	15.5
3/4"	20	19.5	133	65	14	96	165	7.2	6	F05	F04	11	14.3	27.1	20.5
1"	25	19.5	140	65	14	96	165	7.2	6	F05	F04	11	15.9	33.8	26.5
1-1/2"	40	32	172	75.5	16	111	205	9.2	7.2	F07	F05	14	19.1	48.7	35
2"	50	38	191	80.5	16	111	205	9.2	7.2	F07	F05	14	22.2	61.1	40.5
3"	80	57.2	241	106	23	153	340	11.5	9.2	F10	F07	17	25.4	89.9	78
4"	100	76	280	130	23	153	340	11.5	9.2	F10	F07	17	32	115.2	102

PRESSURE - TEMPERATURE RATING



BREAK - TORQUE VALUE for PRESSURE BELOW 300 PSI

(UNIT : Nm)

SIZE	1/2"	3/4"	1"	1-1/2"	2"	3"	4"
GREASE	6	8.5	8.5	12.5	18	52.5	86
NON-GREASE	8	11.5	11.5	19	29	121	187.5

BREAK - TORQUE VALUE for PRESSURE OVER 300 PSI

(UNIT : Nm)

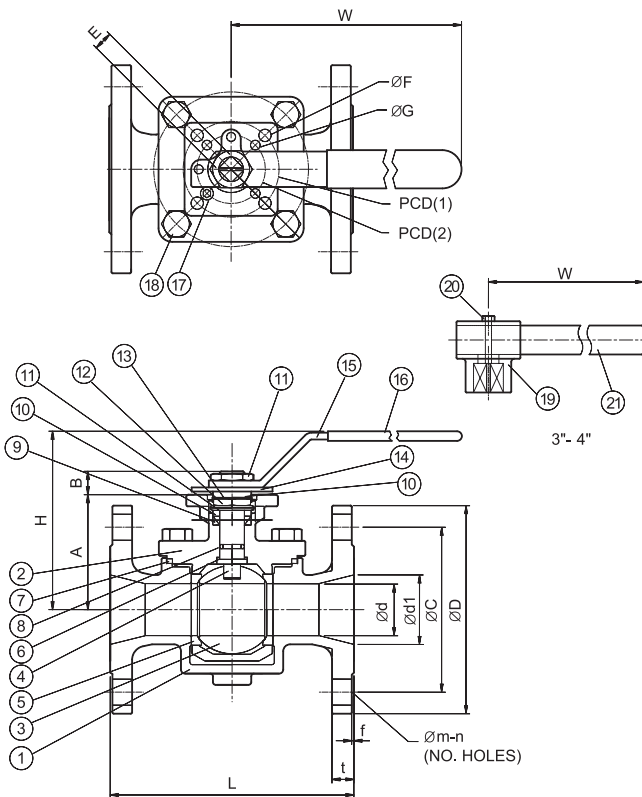
SIZE	1/2"	3/4"	1"	1-1/2"	2"	3"	4"
GREASE	9	12.8	12.8	18.8	27	78.8	129
NON-GREASE	12	17.3	17.3	28.5	43.5	182	281.3

TOP ENTRY FLANGED BALL VALVE

ANSI 150/300, PN 16/40

MV-40

SIZE : 1/2" to 4"



FEATURES

- Flange : ANSI 150/300LBS
PN 16/40
- Max. Temperature : 232°C (450°F)
- Ball : Full & Standard bore
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- End connection :
 - Class 150/ 300 - Face to face : ANSI B16.10
 - Flange connection : ANSI B16.50
 - Pressure test : API 598
- PN 16/ 40 - Face to face : DIN 3202-F1
- Flange connection : DIN2633 (PN16)
DIN2635 (PN40)
- Shell wall thickness : prEN 12516-1
- Pressure test : prEN12266-1 and prEN12266-2
- ISO5211 direct mounting pad
- line repairing, cleaning, maintaining
- Investment casting body and end cap
- Blow-out proof stem design

OPTION

- Spring handle (dead man handle)
- Fire safe design (API607 edition 4)
- PTFE/PFA coating (40~70µm)
- Hastelloy C / Super duplex / Alloy 20 / Monel
- Cavity filled seat
- Steam jacket

MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	BONNET	ASTM A351-CF8M
3	BALL	SS316
4	ATEM	SS316
5	BALL SEAT	TFM1600
6	THRUST WASHER	TFM1600
7	GASKET	TFM1600
8	O-RING	VITON
9	STEM PACKING	TFM1600
10	SPACE WASHER	SS304
11	DISC WASHER	SS301
12	STEM NUT	SS304
13	NUT STOP	SS304
14	STOPPER PLATE	SS304
15	HANDLE (1/2" ~ 2")	SS304
16	HANDLE COVER	PLASTIC
17	STOP PIN	SS 304
18	BONNET BOLTS	GRADE B8
19	LEVER HEAD	CF8
20	SET BOLT	SS304
21	HANDLE (3 ~ 4")	STEEL PIPE

DIMENSIONS

(UNIT : mm)

SIZE		Ød	Ød1	L			A	B	H	W	F	G	PCD(1)	PCD(2)	E
Inch	mm			ANSI 150	ANSI 300	PN 16 / 40									
1/2"	15	15	15	117	140	130	65	14	96	165	7.2	6	F05	F04	11
3/4"	20	19.5	19.5	117	152	150	65	14	96	165	7.2	6	F05	F04	11
1"	25	19.5	25.4	127	165	180	65	14	96	165	7.2	6	F05	F04	11
1-1/2"	40	32	38.1	165	191	200	75.5	18	111	205	9.2	7.2	F07	F05	14
2"	50	38	50.6	178	216	230	80.5	18	111	205	9.2	7.2	F07	F05	14
3"	80	57.2	78	203	283	310	106	23	153	340	11.5	9.2	F10	F07	17
4"	100	76	101.6	229	305	350	130	23	153	340	11.5	9.2	F10	F07	17

TOP ENTRY FLANGED BALL VALVE

ANSI 150/300, PN 16/40

DIMENSIONS - FLANGE

(UNIT : mm)

SIZE		ANSI 150					ANSI 300					PN 16					PN 40				
		ØD	BOLT ØC	HOLE Øm-n	t	f	ØD	BOLT ØC	HOLE Øm-n	t	f	ØD	BOLT ØC	HOLE Øm-n	t	f	ØD	BOLT ØC	HOLE Øm-n	t	f
1/2"	15	86	60.5	16-4	11.2	1.6	95.3	66.7	16-4	14.3	1.6	95	65	14-4	16	2	95	65	14-4	16	2
3/4"	20	98.5	69.9	16-4	11.2	1.6	117.5	82.5	19-4	15.9	1.6	105	75	14-4	18	2	105	75	14-4	18	2
1"	25	108	79.5	16-4	11.2	1.6	123.9	88.9	19-4	17.5	1.6	115	85	14-4	18	2	115	85	14-4	18	2
1-1/2"	40	127	98.5	16-4	14.3	1.6	155.6	114.3	22.2-4	20.7	1.6	150	110	18-4	18	3	150	110	18-4	18	3
2"	50	152.4	120.7	19-4	15.9	1.6	165.1	127.0	19-8	22.3	1.6	165	125	18-4	20	3	165	125	18-4	20	3
3"	80	190.5	152.5	19*-4	19.1	1.6	209.6	168.3	22.2-8	28.6	1.6	200	160	18-8	20	3	200	160	18-8	24	3
4"	100	228.6	190.5	19*-8	23.9	1.6	254.0	200.0	22.2-8	31.8	1.6	220	180	18-8	20	3	235	190	22-8	24	3

Top two holes in each flange drilled and tapped 5/8" - 11UNC-2B

BREAK - TORQUE VALUE for ANSI 150 / PN 16

(Nm / at 0 PSI)

SIZE	1/2"	3/4"	1"	1-1/2"	2"	3"	4"
GREASE	6	8.5	8.5	12.5	18	52.5	86
NON-GREASE	8	11.5	11.5	19	29	121	187.5

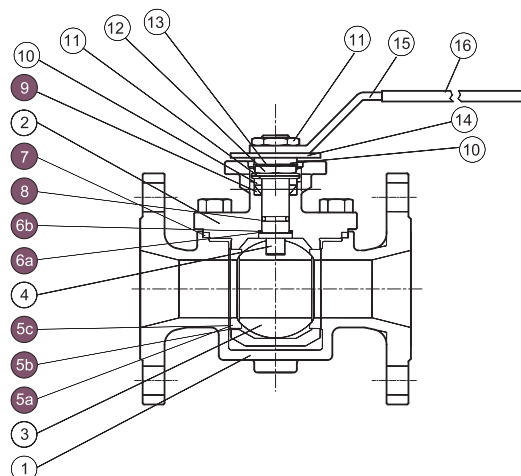
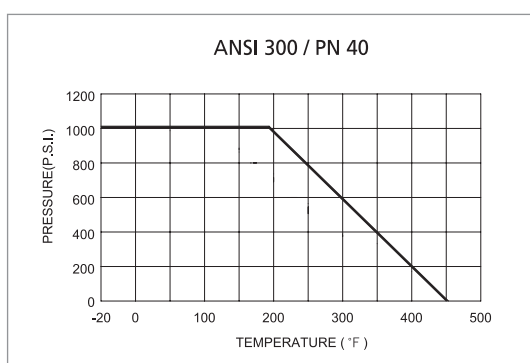
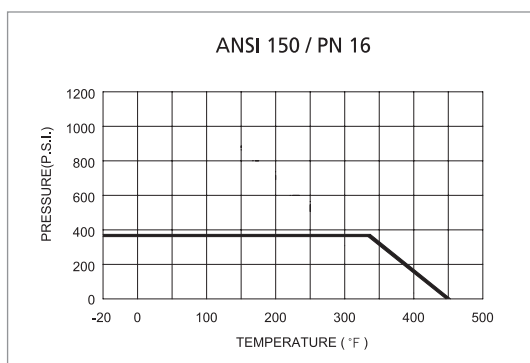
BREAK - TORQUE VALUE for ANSI 300 / PN 40

(Nm / at 0 PSI)

SIZE	1/2"	3/4"	1"	1-1/2"	2"	3"	4"
GREASE	9	12.8	12.8	18.8	27	78.8	129
NON-GREASE	12	17.3	17.3	28.5	43.5	182	281.3

MATERIAL LIST for FIRE SAFE

ITEM	PART NAME	MATERIALS
5a	SEAT	TFM1600
5b	SEAT HOUSING	SS316
5c	SEAT GASKET	GRAPHITE
6a	THRUST WASHER	TFM1600
6b	THRUST WASHER	GRAPHITE
7	GASKET	GRAPHITE
8	O-RING	VITON
9	STEM PACKING	GRAPHITE



 FIRE SAFE

2. Direct Mounting Valve

MODEL	DESCRIPTION		PAGE
AV-01	1-Piece Ball Valve, Threaded, Reduced Flow, 1000PSI		57
AV-02	2-Piece Ball Valve, Threaded, Full Flow, 1000PSI		58
AV-03	3-Piece Ball Valve, Threaded, Full Flow, 1000PSI		59-60
AV-04	3-Piece Ball Valve, Threaded, Standard Flow, 2000PSI		61
AV-05	3-Piece Ball Valve, Threaded, Full Flow, 3000PSI		62-63
AV-06	3-Piece Instrumentation Ball Valve, Lok Tube, Reduced Flow, 2000PSI		64
AV-07	3-Way Ball Valve, Threaded, Standard Flow, 1000~800PSI		65
AV-08	3/4/5-Way Ball Valve, Threaded, Standard Flow, 800PSI		66-67
AV-09	1-Piece Wafer Flanged Ball Valve, PN 16, Full Bore		68
AV-10	2-Piece Flanged Ball Valve, JIS 10K, Full Bore		69-70
AV-11	2-Piece Flanged Ball Valve, JIS 10K/20K, Full Bore		71
AV-12	2-Piece Flanged Ball Valve, ANSI 150/300, Full Bore		72
AV-13	Butterfly Valve, Wafer, JIS 5K/10K, ANSI 150, PN 6/10/16		73
AV-14	Butterfly Valve, Wafer, Aluminum Alloy, JIS 10K, ANSI 150, PN 10		74
AV-15	High Performance Butterfly Valve, Wafer, JIS 10K/20K, ANSI 150		75
AV-16	High Performance Butterfly Valve, Wafer, ANSI 300		76

1-PIECE BALL VALVE

1000PSI, Threaded

AV-01

SIZE : 3/8" to 2"



FEATURES

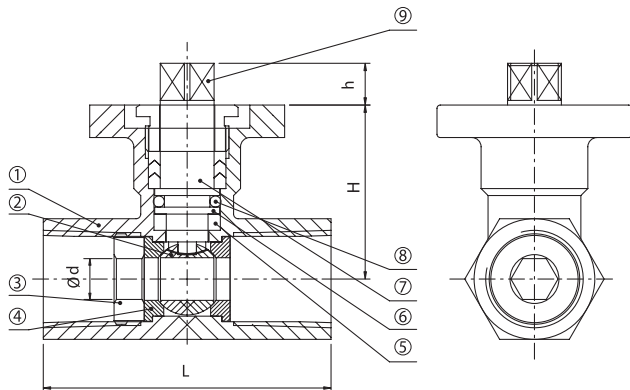
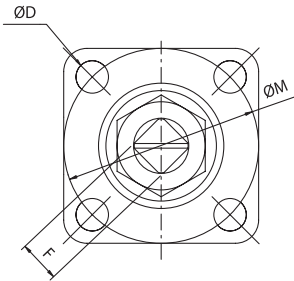
- Max. Pressure : 1000PSI (70 kg/cm²)
- Max. Temperature : 160°C
- Ball : Reduced flow
- Material : ASTM A351-CF8 (1.4308)
ASTM A351-CF8M (1.4408)
- End connection :
 - Screwed : BS21 1973 (BSPT), ANSI B2.1 (NPT),
DIN 259/2999, ISO 228
- ISO5211 Direct mounting pad
- Long neck mounting pad
- Blow-out proof stem
- Solid ball
- Investment casting body



Pneumatic (AVP-01)

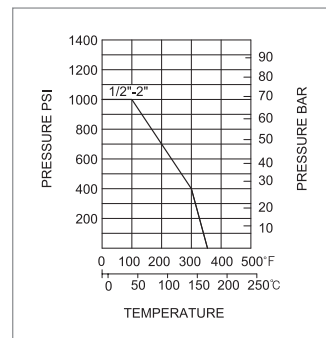


Electric (AVE-01)



MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	CF8 / CF8M
2	BALL	CF8 / CF8M
3	CAP	CF8 / CF8M
4	BALL SEAT	RPTFE
5	SPLIT RING	304 / 316
6	GASKET	PTFE
7	STEM	304 / 316
8	O-RING	VITON
9	LANTERN RING	304



DIMENSIONS

(UNIT : mm)

SIZE (Inch)	L	Ød	H	h	ØD	ØM	F	TORQUE (N.m)
3/8"	45	7	24	9	6.5	F03 (36)	9	0.6
1/2"	55	9.2	26	9	6.5	F03 (36)	9	1.15
3/4"	60	12.5	32	9	6.5	F03 (36)	9	1.75
1"	73	15	35	9	6.5	F03 (36)	9	2.5
1-1/4"	78	20	38	9	6.5	F03 (36)	9	4.0
1-1/2"	89	25	42	11	7	F05 (50)	11	6.2
2"	100	32	50	11	7	F05 (50)	11	8.3

2-PIECE BALL VALVE

1000PSI, Threaded

AV-02

SIZE : 1/4" to 3"



FEATURES

- Max. Pressure : 1000PSI (70kg/cm²) W.O.G.
- Max. Temperature : 160°C
- Bal : Full flow
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- End connection
 - Screwed : BS21 1973 (BSPT), ANSI B2.1 (NPT), DIN 259/2999, ISO 228
- ISO5211 Direct mounting pad
- Investment Casting body & end cap
- Blow-out proof stem

OPTION

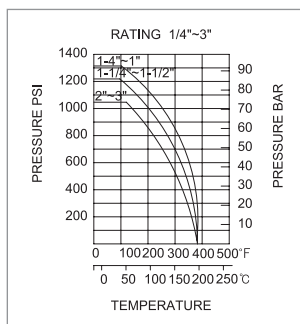
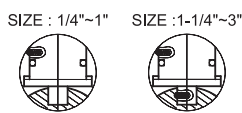
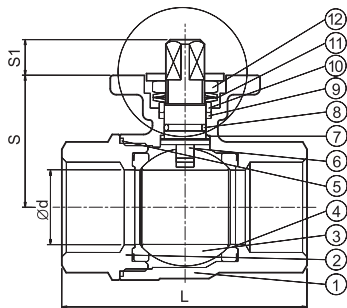
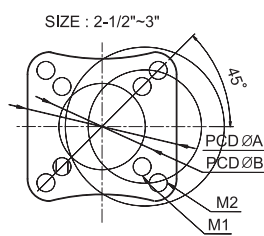
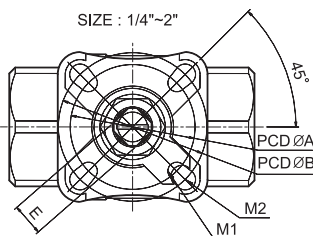
- DIN standard M3 length



Pneumatic (AVP-02)



Electric (AVE-02)



MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	BALL	ASTM A351-CF8M
4	BALL SEAT	PTFE
5	JOINT GASKET	PTFE
6	STEM	SS 316
7	THRUST WASHER	PTFE
8	O-RING	VITON
9	STEM PACKING	PTFE
10	STEM RING	SS 304
11	BELLEVILLE WASHER	SS 304
12	STEM NUT	SS 304

DIMENSIONS

SIZE		Ød	L	S	S1	ISO 5211					TORQUE (N.m)	CV Factor
Inch	mm					E	ØA	ØB	M1	M2		
1/4"	8A	11	49.6	36	10	9	F03	-	R3	-	4.4	6.4
3/8"	10A	12.7	49.6	36	10	9	F03	-	R3	-	4.4	7.9
1/2"	15A	15	55	38	10	9	F04	-	R3.5	-	5.4	11.2
3/4"	20A	20	75.5	41.7	12	11	F04	F05	R3	R3.5	8.8	21
1"	25A	25	82.5	44.4	12	11	F04	F05	R3	R3.5	10.8	35
1-1/4"	32A	32	90.8	54	16.5	14	F05	F07	R3.5	R4.5	15.2	57
1-1/2"	40A	40	103	59.5	16.5	14	F05	F07	R3.5	R4.5	21.6	85
2"	50A	50	120	67	16.5	14	F05	F07	R3.5	R4.5	32.3	148
2-1/2"	65A	65	155	101.5	24.5	17	F07	F10	R4.5	R5.5	39.2	265
3"	80A	80	182	112.5	24.5	17	F07	F10	R4.5	R5.5	64.7	415

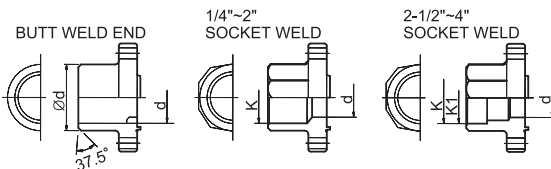
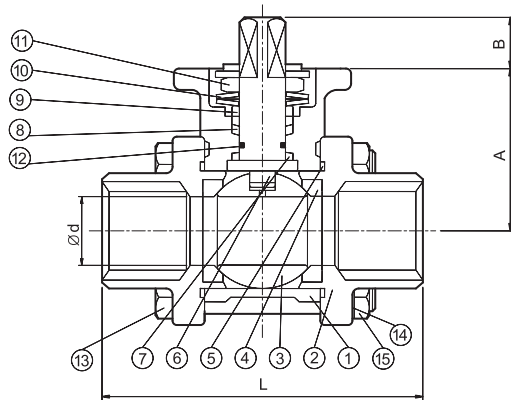
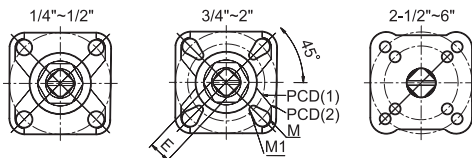
(UNIT : mm)

3-PIECE BALL VALVE

1000PSI, Threaded

AV-03

SIZE : 1/4" to 4"



FEATURES

- Max. Pressure : 1000PSI (70kg/cm²) W.O.G → 1/4"~2"
800PSI (56kg/cm²) W.O.G → 2-1/2"~6"
- Max. Temperature : 160°C
- Ball : Full Flow
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- End connection :
 - Screwed : BS21 1973 (BSPT), ANSI B2.1 (NPT), DIN 259/2999, ISO 228
 - Socket Weld : JIS B2316, ANSI B16.11
 - Butt Weld (37.5°)
- ISO5211 direct mounting pad
- Investment casting body & cap
- Blow-out proof stem

OPTION

- V-port (30°, 45°, 60°)
- 5" & 6" = Only butt weld ends



Pneumatic (AVP-03)



Electric (AVE-03)

MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	BALL	ASTM A351-CF8M
4	BALL SEAT	PTFE
5	JOINT GASKET	PTFE
6	STEM	SS 316
7	THRUST WASHER	SS 304
8	STEM PACKING	PTFE
9	HIGH WASHER	SS 304
10	BELLEVILLE WASHER	SS 304
11	STEM NUT	SS 304
12	O-RING	VITON
13	BOLT	SS 304
14	SPRING WASHER	SS 304
15	HEX NUT	SS 304

DIMENSIONS

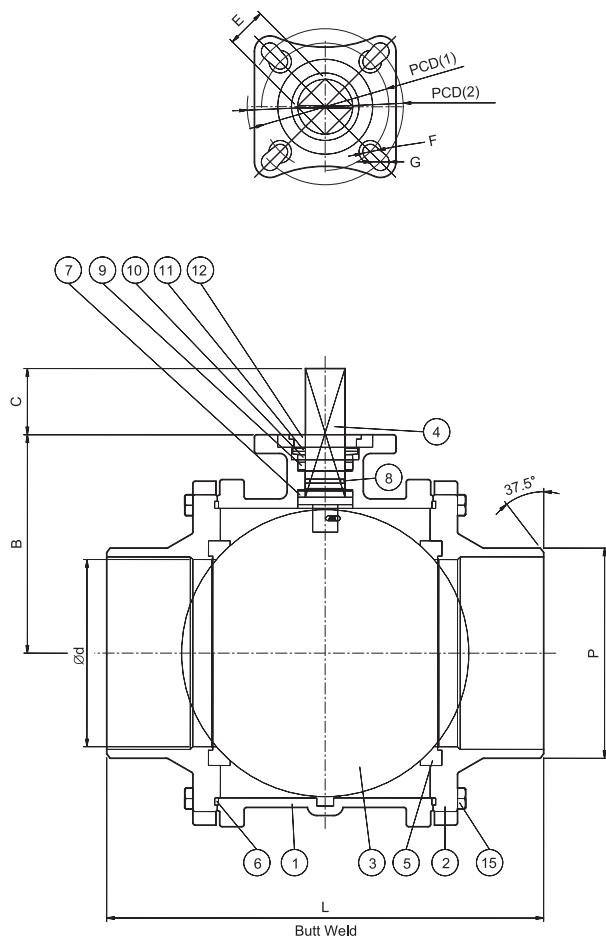
(UNIT : mm)

SIZE		Ød	L	A	B	ISO 5211					D	d	K	K1	CV Factor	TORQUE (N.m)	WEIGHT (kg)
Inch	mm					E	M1	M	PCD(1)	PCD(2)							
1/4"	8A	11.5	63.5	36.95	8.5	9	6	6	F03	F04	18.1	11.6	14.1	-	6.6	4	0.54
3/8"	10A	12.5	63.5	36.95	8.5	9	6	6	F03	F04	18.1	12.7	17.6	-	7.9	4	0.53
1/2"	15A	15	63.5	36.95	8.5	9	6	6	F03	F04	21.7	15	21.7	-	11.2	4	0.49
3/4"	20A	20	72.5	45	8.5	9	6	6	F03	F04	27.2	20	27.2	-	21	6	0.65
1"	25A	25	81	53.45	11.4	11	6	7	F04	F05	34	25	33.9	-	35	9.8	0.95
1-1/4"	32A	32	94.5	58.95	11	11	6	7	F04	F05	42.7	32	42.6	-	57	16.4	1.20
1-1/2"	40A	38	108	74.75	14	11	7	9	F05	F07	48.6	40	48.7	-	80	18.3	2.20
2"	50A	50	121.5	83.5	13.7	11	7	9	F05	F07	60.5	50	61.14	-	150	25.8	3.20
2-1/2"	65A	65	157.5	108.75	18	14	9	11	F07	F10	76.3	65	73.8	70.9	265	47.6	6.80
3"	80A	80	190	118.25	18	17	9	11	F07	F10	93	80	89.8	82.5	415	81.1	10.40
4"	100A	100	225	153.75	23	22	9	11	F10	F12	114	100	115.4	108	780	135	21.60

3-PIECE BALL VALVE

1000PSI, Threaded

SIZE : 5" to 6"



MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	BALL	ASTM A351-CF8M
4	STEM	SS 306
5	BALL SEAT	PTFE
6	JOINT GASKET	PTFE
7	THRUST WASHER	PTFE
8	O-RING	VITON
9	STEM PACKING	SS 304
10	SHIM	SS 304
11	B.V. WASHER	SS 304
12	STEM NUT	SS 304
13	BOLT	SS 304

DIMENSIONS

(UNIT : mm)

SIZE		Ød	L	B	C	ISO 5211					P	CV Factor	TORQUE (N.m)	WEIGHT (kg)
Inch	mm					E	M1	M	PCD(1)	PCD(2)				
5"	125A	125	319	158.5	47	27	12	14	F10	F12	139.8	1040	141	-
6"	150A	150	350	175	47	27	12	14	F10	F12	165.2	1200	147	-

DIRECT MOUNTING VALVE

3-PIECE BALL VALVE

2000PSI, Threaded

AV-04

SIZE : 1/4" to 2-1/2"

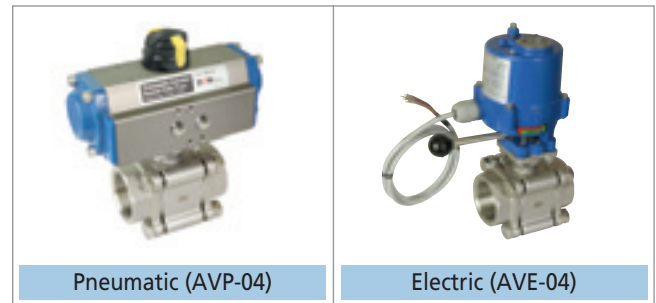
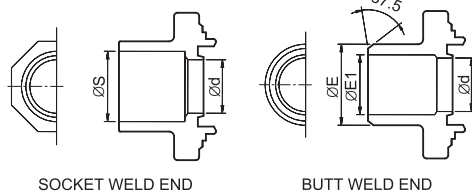
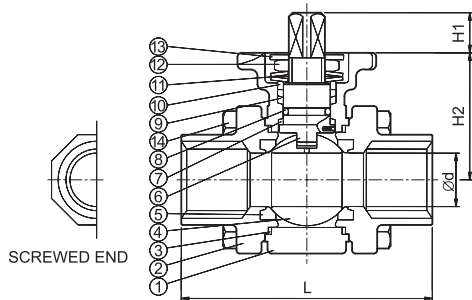
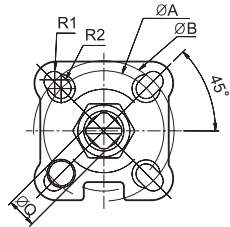


FEATURES

- Max. Pressure : 2000PSI (141 kg/cm²) 1/4" to 1"
1500PSI (106 kg/cm²) 1-1/4" to 2"
1000PSI (70 kg/cm²) 2-1/2" to 4"
- Max. Temperature : 160℃
- Ball : Standard(Regular) flow
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- End connection :
 - Screwed : BS21 1973 (BSPT), ANSI B2.1 (NPT),
DIN 259/2999, ISO 228
 - Socket Weld : JIS B2316, ANSI B16.11
 - Butt Weld (37.5°)
- ISO5211 Direct mounting pad
- Investment casing body & end cap
- Blow-out proof stem

OPTION

- Full port (1/4" to 4")
- V-port (30°, 45°, 60°)
- Fire safe design
- DIN standard M3 length



MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	JOINT GASKET	PTFE
4	SOLID BALL	ASTM A351-CF8M
5	BALL SEAT	PTFE
6	STEM	SS304
7	THRUST WASHER	PTFE
8	O-RING	VITON
9	STEM PACKING	PTFE
10	STEM RING	SS304
11	BELLEVILLEWASHER	SS301
12	STEM NUT	SS304
13	SADDLE WASHER	SS304
14	HEX BOLT	SS304

DIMENSIONS

(UNIT : mm)

SIZE		Ød	L	H1	H2	ISO 5211					ØE	ØE1	ØS	TORQUE (N.m)	WEIGHT (kg)
Inch	mm					ØQ	R1	R2	ØA	ØB					
1/4"	8A	11.5	56.1	8.5	37	9	7	6	F03	F05	18	12	14.1	5.9	0.75
3/8"	10A	12.5	56.1	8.5	37	9	7	6	F03	F05	18	14	17.6	5.9	0.75
1/2"	15A	12.5	68.0	8.5	37	9	7	6	F03	F05	22	17.1	21.7	5.9	0.77
3/4"	20A	15	71.1	8.5	37	9	7	6	F03	F05	27.5	22.5	27.1	5.9	0.80
1"	25A	20	76.1	8.5	45	9	7	6	F03	F05	33.5	28	33.8	7.5	1.01
1-1/4"	32A	25	84.6	9.5	53.5	9	7	6	F03	F05	44	33.5	44	9.2	1.40
1-1/2"	40A	32	98.1	9.5	59	9	7	6	F03	F05	50	43	50	16.7	2.20
2"	50A	38	111.2	14	74.8	14	9	7	F05	F07	61.5	53	61.5	21.6	3.2
2-1/2"	65A	50	140.7	13.7	83.5	14	9	7	F05	F07	61.5	53	61.5	26	6.97

3-PIECE BALL VALVE

3000PSI, Threaded

AV-05

SIZE : 1/4" to 3"

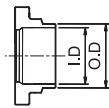
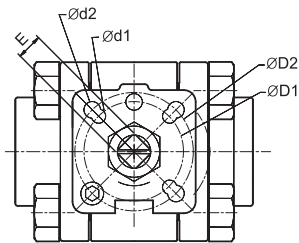


FEATURES

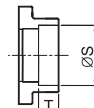
- Max. Pressure : 3000PSI (211kg/cm²) W.O.G
- Max. Temperature : 230℃
- Ball : Full flow
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- End connection :
 - Screwed : BS21 1973 (BSPT), ANSI B2.1 (NPT), DIN 259/2999, ISO 228
 - Socket Weld : JIS B2316, ANSI B16.11
 - Butt Weld (37.5°)
- ISO5211 Direct mounting pad
- 8 Bolted encapsulated body
- Investment casting body & end cap
- Blow-out proof stem

OPTION

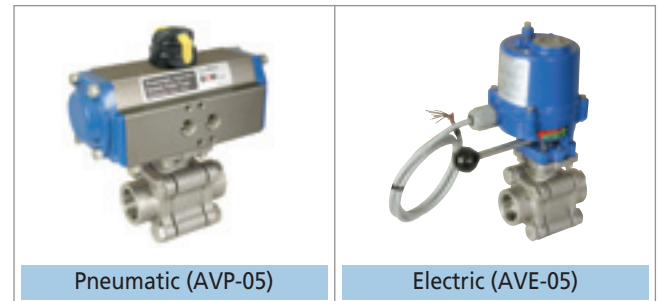
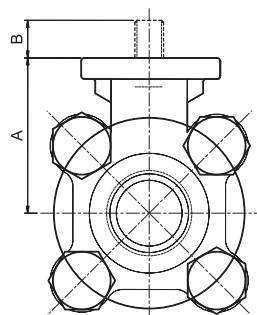
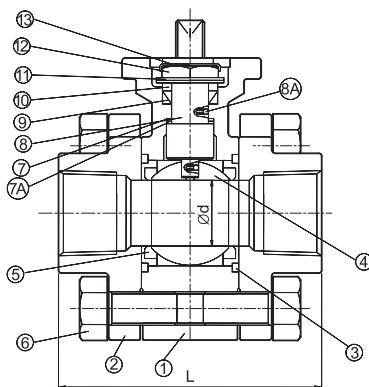
- Locking device
- Spring handle (Dead man handle)
- V-port (15°, 30°, 60°)
- PTFE / PFA coating (40~70μm)
- Fire safe design (API 607)
- Metal seated design
- Steam jacket
- Special alloy : Hastelloy C276 / Super duplex / Alloy 20 / Monel 400



BUTT WELD



SOCKET WELD



Pneumatic (AVP-05)

Electric (AVE-05)

MATERIAL LIST (SIZE : 1/4" to 1")

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	GASKET	TFM 1600
4	BALL	SS 316
5	BALL SEAT	PEEK
6	BOLT	SS 304
7	THRUST WASHER	TFM 1600
7A	THRUST WASHER	PEEK
8	STEM	SS 316
8A	HALF SPILT RING	SS 316
9	STEM PACKING	TFM 1600
10	GLAND WASHER	SS 304
11	DISC WASHER	SS 301
12	STEM NUT	SS 304
13	NUT STOP	SS 304

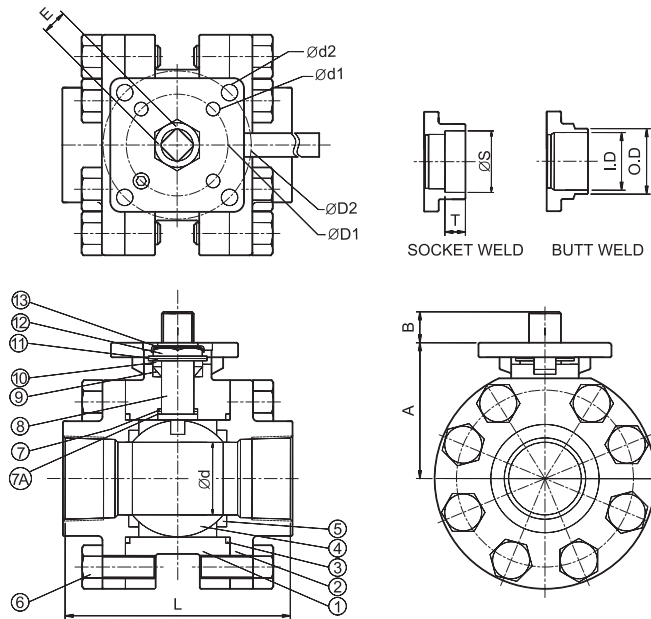
DIMENSIONS

(UNIT : mm)

SIZE		Ød	L	A	B	ØD1	ØD2	Ød1	Ød2	E	SW		BW(40#)		BW(80#)		TORQUE (N.m)
Inch	mm										S	T	OD	ID	OD	ID	
1/4"	8A	11	67	45	11	F03	F04	6	7	9	14.1	11.2	14.0	8.8	-	-	12
3/8"	10A	11	67	45	11	F03	F04	6	7	9	17.5	11.2	17.5	13.1	-	-	12
1/2"	15A	15	70	48	11	F03	F04	6	7	9	21.8	12.7	21.3	15.9	21.3	13.8	12
3/4"	20A	20	92	53	14	-	F05	-	7.2	11	27.1	14.3	26.7	20.6	26.7	18.9	20
1"	25A	25	105	59	14	-	F05	-	7.2	11	33.8	15.9	33.3	26.6	33.3	24.3	24

3-PIECE BALL VALVE

3000PSI, Threaded



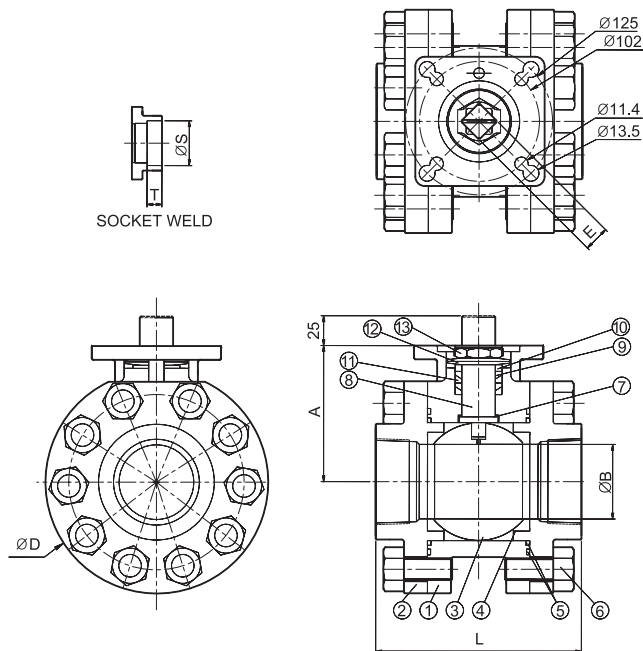
MATERIAL LIST (SIZE : 1-1/2" ~ 2")

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	GASKET	TFM 1600
4	BALL	SS 316
5	BALL SEAT	PEEK
6	BOLT	SS 304
7	THRUST WASHER	TFM 1600
7A	THRUST WASHER	PEEK
8	STEM	SS 316 / 17-4P
9	STEM PACKING	TFM 1600
10	GLAND WASHER	SS 304
11	DISC WASHER	SS 301
12	STEM NUT	SS 304
13	NUT STOP	SS 304

DIMENSIONS

(UNIT : mm)

SIZE		Ød	L	A	B	ØD1	ØD2	Ød1	Ød2	E	SW		BW(40#)		BW(80#)		TORQUE (N.m)
Inch	mm										S	T	OD	ID	OD	ID	
1-1/2"	40A	38	128	80	16	F05	F07	7.2	9.2	14	48.6	18.3	48.5	40.5	48.5	37.8	65
2"	50A	50	158	96	20	F07	F10	9.2	11.4	17	61.1	21.3	60.5	52.4	60.5	48.9	180



MATERIAL LIST (SIZE : 2-1/2" to 3")

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	GASKET	TFM 1600
4	BALL	SS 316
5	BALL SEAT	PEEK
6	BOLT	SS 304
7	THRUST WASHER	TFM 1600
7A	THRUST WASHER	PEEK
8	STEM	SS 316 / 17-4PH
9	STEM PACKING	TFM 1600
10	GLAND WASHER	SS 304
11	DISC WASHER	SS 301
12	STEM NUT	SS 304
13	NUT STOP	SS 304

DIMENSIONS

(UNIT : mm)

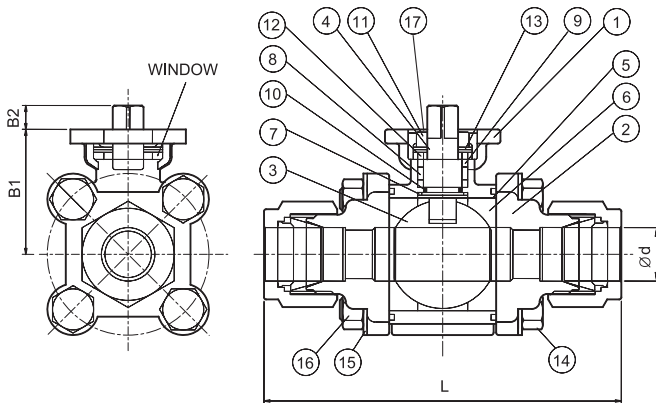
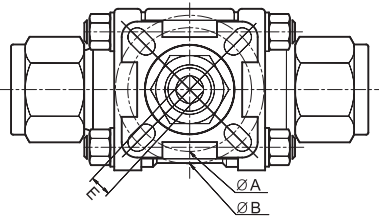
SIZE		A	B	ØD	E	L	SW		TORQUE (N.m)
Inch	mm						S	T	
2-1/2"	65A	-	63.5	-	22	-	73.9	22.2	-
3"	80A	126	78	200	22	196	89.9	25.4	310

3-PIECE INSTRUMENTATION BALL VALVE

2000PSI, Threaded

AV-06

SIZE : 1/4" to 3/4"

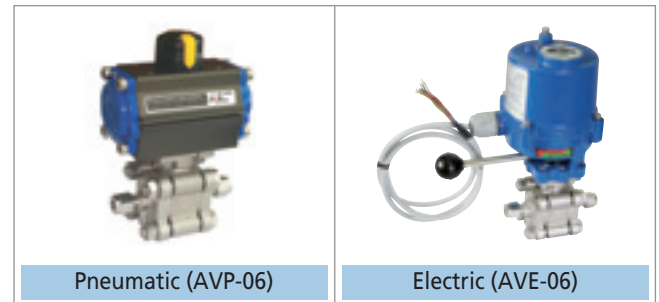


FEATURES

- Max. Pressure : 2000PSI (141kg/cm²)
- Max. Temperature : 180℃
- Ball : Reduced flow
- Material : ASTM A351-CF8M (1.4408)
- End connection : Lok tube fitting
- ISO 5211 direct mounting pad
- Easy in-line maintenance
- Blow-out proof stem
- Silver plated nut standard
- Heat treated ferrules standard
- AP / BA Grade
- RO cleaned, clean room packaged with class 10,000 & Oil Free
- Helium leak test approved

OPTION

- Variety of end connections



MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	BALL	SS 316
4	STEM	SS 316
5	PACKING	PTFE
6	BALL SEAT	TFM 1600
7	STEM SEAL	RPTFE
8	V-RING PACKING	PTFE
9	BUSING	50% SS POWDER FILLED PTFE
10	O-RING	VITON
11	STEM NUT	SS 304
12	GLAND	SS 304
13	BELLEVILLE WASHER	SS 301
14	BOLT	SS 304
15	WASHER	SS 304
16	BOLT NUT	SS 304
17	LOCK SADDLE	SS 304

DIMENSIONS

SIZE		Ød	L	B1	B2	ISO 5211			TORQUE (N.m)
Inch	mm					E	ØA	ØB	
1/4"	8A	8	95.1	40.5	9	9	F03	F04	4
3/8"	10A	10	96.2	40.5	9	9	F03	F04	4
1/2"	15A	15	102.2	40.5	9	9	F03	F04	4
3/4"	20A	20	102.2	43.7	9	9	F03	F04	5

3-WAY BALL VALVE

1000PSI, Threaded

AV-07

SIZE : 1/4" to 2"

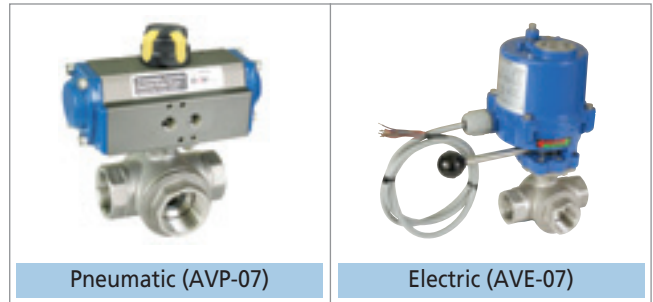


FEATURES

- Max. Pressure : 1000PSI (70 kg/cm²) W.O.G 1/4" ~ 1-1/4"
800PSI (56 kg/cm²) W.O.G 1-1/2" ~ 2"
- Max. Temperature : 180°C
- Ball : Standard flow
- Material : ASTM A351-CF8M (1.4408), ASTM A351-CF8 (1.4308)
- End connection : BS21 1973 (BSPT), ANSI B2.1 (NPT),
DIN 259/2999, ISO 228
- ISO 5211 direct mounting pad
- Available in L or T-position
- 4 Ball seats design
- Blow-out proof stem
- Investment casting body & end cap

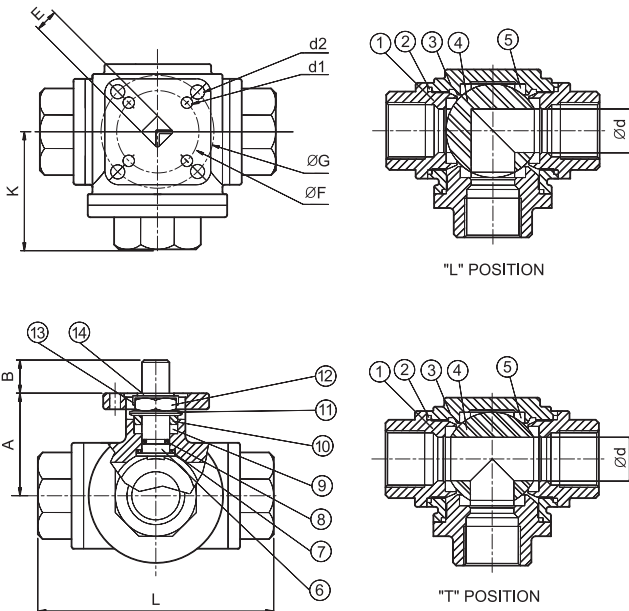
OPTION

- Full port
- Socket weld ends (JIS B2316)
- Carbon filled teflon seat
- PTFE / PFA coating (40-70µm)
- 180° Operation stop plate



Pneumatic (AVP-07)

Electric (AVE-07)



MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	BALL	SS 316
4	BALL SEAT	TFM 1600
5	STEM	SS 316
6	GASKET	TFM 1600
7	THRUST WASHER	TFM-1600
8	O-RING	VITON
9	STEM PACKING	TFM 1600
10	GLAND	SS 304
11	DISC WASHER	SS 301
12	STEM NUT	SS 304
13	NUT STOP	SS 304
14	SPACE WASHER	SS 304

TYPE NO. 1 HANDLE MOUNT STANDARD

Position	Type	1	2	3	4
L		1 2 3 3	1 2 3 3	1 2 3 3	1 2 3 3
T		1 2 3 3	1 2 3 3	1 2 3 3	1 2 3 3

DIMENSIONS

FULL PORT	STD. PORT	Ød	L	A	B	d1	6	ØF	ØG	E	K	TORQUE (N.m)	WEIGHT(kg)	
													Full Port	Std.Port
1/4"	-	11	72	37.5	11	6	6	36	42	9	36	9	0.66	0.66
3/8"	1/4~1/2"	12	72	38.5	11	6	6	36	42	9	36	9	0.66	0.66
1/2"	3/4"	15	72	42	11	6	6	36	42	11	41.5	11	0.86	0.66
3/4"	1"	20	84.5	49	14	6	7.1	42	50	13	49.5	13	1.48	0.86
1"	1-1/4"	25	100	55	14	6	7.1	42	50	24	56	24	2.22	1.52
1-1/4"	1-1/2"	32	113	63	18	7.1	9.2	50	70	43	62.5	43	3.22	2.18
1-1/2"	2"	38	125.5	74	18	7.1	9.2	50	70	53	74.5	53	5.36	3.38
2"	-	50	150	93	22	9.2	11.4	70	102	60	87	60	9.70	5.26

(UNIT : mm)

3/4/5-WAY BALL VALVE

800PSI, Threaded

AV-08

SIZE : 1/4" to 4"

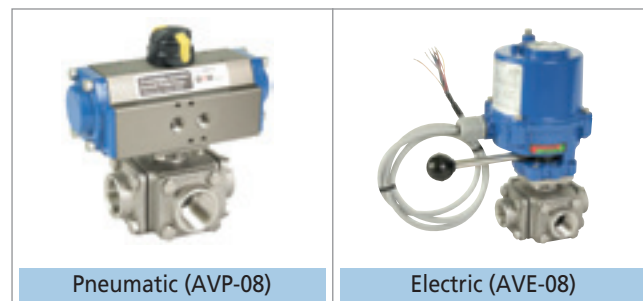
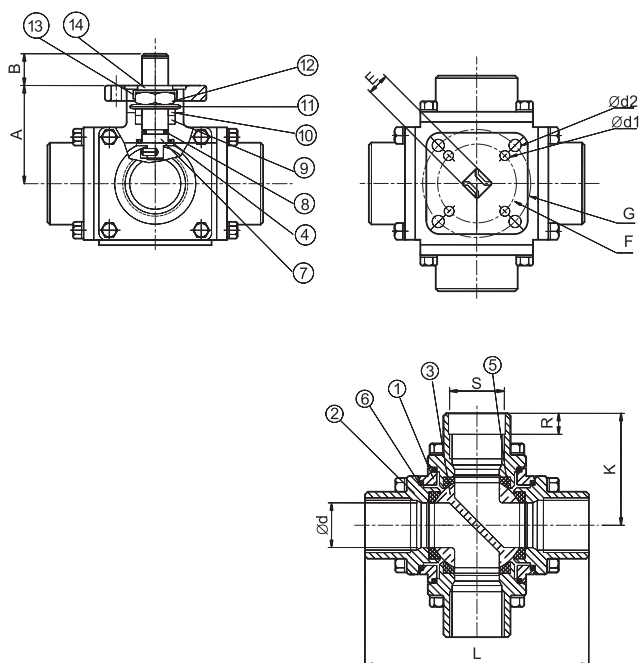


FEATURES

- Max. Pressure : 800PSI (56kg/cm²)
- Max. Temperature : 180°C
- Ball : Standard flow
- End connection : - Screwed : BS21 1973(BSPT), ANSI B2.1 (NPT), DIN 259/2999, ISO 228
- Socket Weld : JIS B2316, ANSI B16.11
- Butt Weld (37.5°)
- Material : ASTM A351-CF8M (1.4408), ASTM A351-CF8 (1.4308)
- Available in L, T, X & I-position
- Direct mounting pad ISO5211
- 4 Ball seats design
- Locking function
- Blow-out proof stem
- Investment casting body & end cap

OPTION

- Full port
- Carbon filled teflon seat
- PTFE / PFA coating (40~70μm)
- Cavity filled teflon seat
- 180° Operation stop plate
- Steam jacket
- Fire safe design
- Special alloy : Hastely C276 / Super duplex / Alloy 20 / Monel 400



MATERIAL LIST (SIZE : 1/4" to 2")

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	BALL	SS 316
4	STEM	SS 316
5	BALL SEAT	TFM 1600
6	GASKET	TFM 1600
7	THRUST WASHER	RPTFE
8	O-RING	VITON
9	STEM PACKING	TFM 1600
10	GLAND	SS 304
11	DISC WASHER	SS 301
12	STEM NUT	SS 304
13	NUT STOP	SS 304
14	SPACE WASHER	SS 304

DIMENSIONS (STANDARD FLOW)

SIZE	Ød	L	A	B	d1	d2	F	G	E	K	R	S	TORQUE (N.m)
1/4"~1/2"	12.5	88	38.5	11	6.0	6.0	F03	F04	9	44	12.7	21.7	10.3
3/4"	15	105	41	11	6.0	6.0	F03	F04	9	52.5	14.3	27.1	12.8
1"	20	112	49	14	6.0	7.1	F04	F05	11	55.5	15.9	33.9	15.4
1-1/4"	25	128	55	14	6.0	7.1	F04	F05	11	64	17.5	42.5	25.0
1-1/2"	32	140	63	18	7.1	9.2	F05	F07	14	70	19.1	48.6	34.6
2"	38	160	74	18	7.1	9.2	F05	F07	14	80	22.2	61.1	55.3

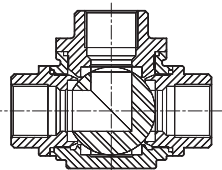
(FULL FLOW)

(UNIT : mm)

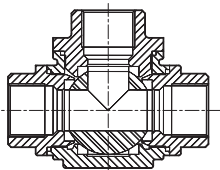
SIZE	Ød	L	A	B	d1	d2	F	G	E	K	R	S	TORQUE (N.m)
1/4"	10	88	38.5	11	6.0	6.0	F03	F04	9	44	11.1	14.2	10.3
3/8"	12.5	88	38.5	11	6.0	6.0	F03	F04	9	44	11.1	17.5	10.3
1/2"	15	105	41	11	6.0	6.0	F03	F04	9	52.5	12.7	21.7	10.3
3/4"	20	112	49	14	6.0	7.1	F04	F05	11	52.5	14.3	27.1	12.8
1"	25	128	55	14	6.0	7.1	F04	F05	11	64	15.9	33.9	15.4
1-1/4"	32	140	63	18	7.1	9.2	F05	F05	14	70	17.5	42.5	32.1
1-1/2"	38	160	74	18	7.1	9.2	F05	F07	14	80	19.1	48.6	34.6
2"	50	192	93	23	9.2	11.4	F07	F10	17	96	22.2	61.1	55.2

3/4/5-WAY BALL VALVE

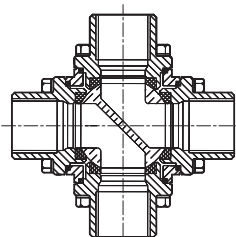
800PSI, Threaded



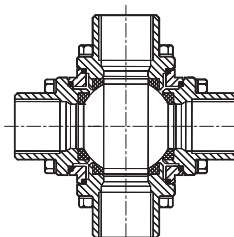
"L" POSITION



"T" POSITION

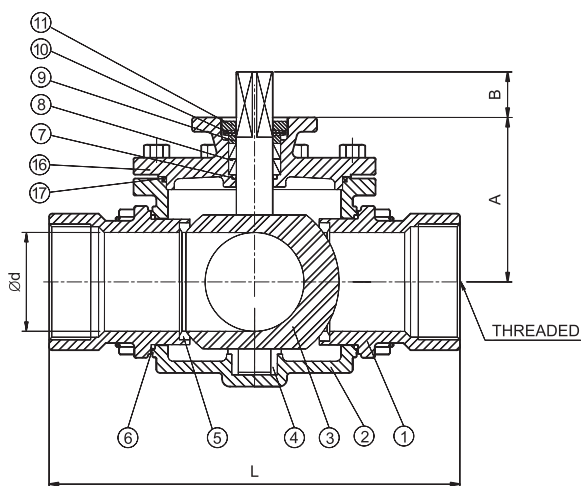
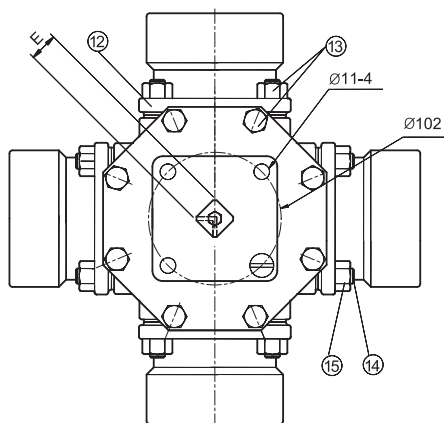


X(LL)-POSITION



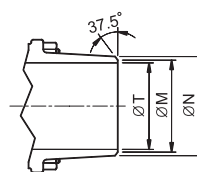
I-POSITION

SIZE : 2-1/2" to 4"

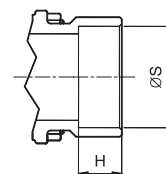


MATERIAL LIST (SIZE : 2-1/2" to 4")

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	BALL & STEM	SS 316
4	HOUSING	PTFE+STAINLESS
5	BALL SEAT	TFM 1600
6	GASKET	TFM 1600
7	O-RING	VITON
8	STEM PACKING	TFM 1600
9	GLAND WASHER	SS 304
10	DISC WASHER	SS 301
11	GLAND	SS 304
12	BLANK CAP	ASTM A351-CF8M
13	BOLT	SS 304
14	END CAP BOLT	SS 304
15	BOLT NUT	SS 304
16	BONNET	SS 304
17	BONNET GASKET	TFM 1600



Butt Weld



Socket Weld

DIMENSIONS (SIZE : 2-1/2" to 4")

(UNIT : mm)

SIZE	Ød	L	A	B	E	SW		BW				TORQUE (N.m)	WEIGHT(kg)	
						R	ØS	ØT	ØM	ØN	L		3-WAY	4-WAY
2-1/2"	62	294	119	25	22	22.2	73.9/77(DIN)	65	70	78	265	134.7	22.7	23.6
3"	76	317	137	25	22	25.4	89.6	80	85	94	290.6	147.5	31.2	31.8
4"	96	369	157	25	22	32	115	100	100	117.5	345	237.3	53.4	54.2

1-PIECE WAFER FLANGED BALL VALVE

PN 16

AV-09

SIZE : 1/2" to 4"



FEATURES

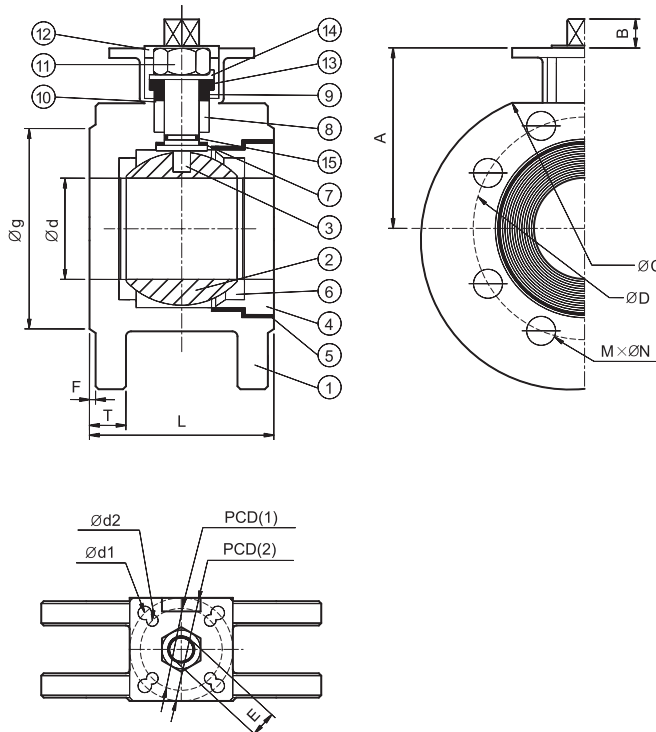
- Flange : PN 16
- Max. Temperature : 160°C
- Ball : Full bore
- Material : DIN 1.4408 (A351-CF8M)
- Pressure : PN 40 (1/2"~1-1/2")
PN 16 (2"~4")
- Pressure Testing : EN12266
- ISO5211 direct mounting pad
- Extra high cycle life (loaded double sealing)
- Compact space saving design
- Anti-static device
- Blow out proof stem
- Solid ball
- Investment casting body



Pneumatic (AVP-09)



Electric (AVE-09)



MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	1.4408 / EN1503-1
2	BALL	CF8M / EN1503-2
3	STEM	SS 316
4	INSERT CAP	1.4408 / EN1503-1
5	BODY SEAL	PTFE
6	BALL SEAT	PTFE
7	THRUST WASHER	PTFE
8	STEM PACKING	PTFE
9	GLAND BUSHING	SS 304
10	GLAND WASHER	15% G.F + PTFE
11	STEM NUT	SS 304
12	WASHER	SS 304
13	BELLEVILLE WASHER	SS 301
14	TAB WASHER	SS 304
15	O-RING	VITON

DIMENSIONS

(UNIT : mm)

SIZE		Ød	L	A	B	d1	d2	PCD(1)	PCD(2)	E	D	C	g	T	F	M	ØN	TORQUE (N.m)
Inch	mm																	
1/2"	15A	15	43	50.5	9	6	6	F03	F04	9	95	65	45	16	2	4	1/2"-13UNC	4
3/4"	20A	20	44	57	9	6	6	F03	F04	9	105	75	58	18	2	4	1/2"-13UNC	4
1"	25A	25	51	62	9	7	6	F04	F05	9	115	85	68	18	2	4	1/2"-13UNC	8
1-1/4"	32A	32	56	71.5	9	7	6	F04	F05	9	140	100	78	18	2	4	1/2"-13UNC	8
1-1/2"	40A	38	65	86	11	9	7	F05	F07	11	150	110	88	18	3	4	1/2"-13UNC	16
2"	50A	50	80	93	11	9	7	F05	F07	11	165	125	102	18	3	4	5/8"-11UNC	30
2-1/2"	65A	65	102	105	14	11	9	F07	F10	14	185	145	122	18	3	4	5/8"-11UNC	36
3"	80A	80	122	115	14	11	9	F07	F10	14	200	160	138	20	3	8	5/8"-11UNC	60
4"	100A	100	153	132	17	13	11	F10	F12	17	220	180	158	20	3	8	5/8"-11UNC	120

2-PIECE FLANGED BALL VALVE

JIS 10K

AV-10

SIZE : 1/2" to 4"

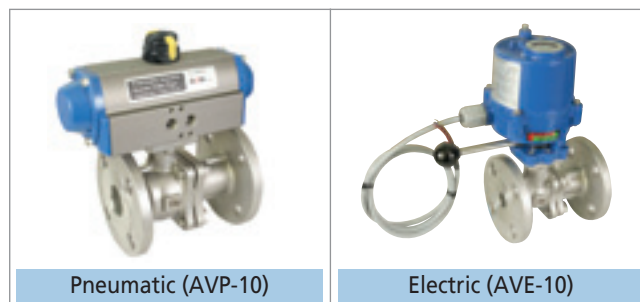
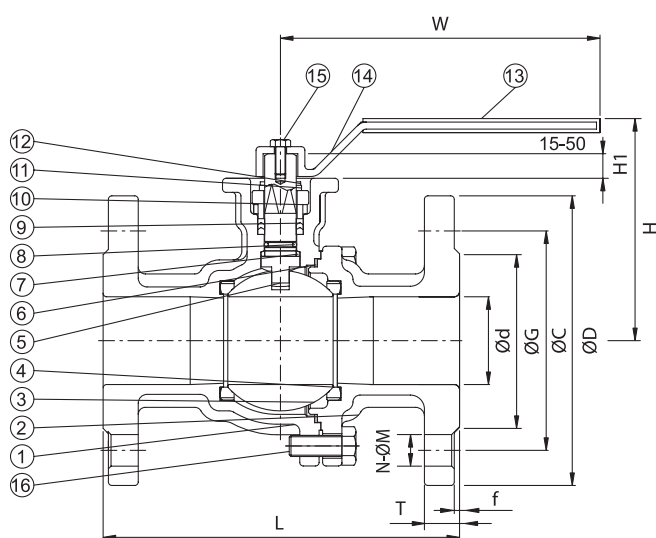
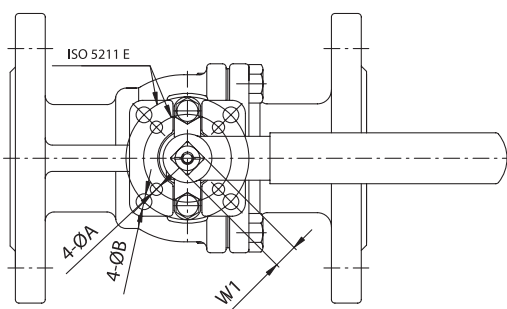


FEATURES

- Flange : JIS 10K
- Max. Temperature : 180°C
- Ball : Full bore
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- ISO5211 Direct mounting pad
- Investment casting body & end cap
- RF ENDS (Ripple face / Lapped face)
- Blow-out proof stem design
- JIS 10K
 - Valve design : ASME B16.34
 - Steel casting : MSS SP-55
 - Face to Face : JIS B 2002
 - Flange connection : JIS B 2212
 - Pressure test : JIS B 2003 (API 598)

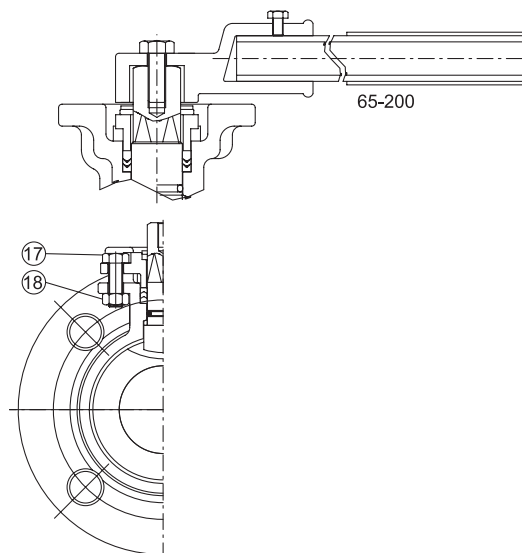
OPTION

- Fire safe : API607-5th edition certified
- TFM 1600/ TFM 4215/ PEEK/ UPE soft kits
- PTFE/ PFA coating (40 -70 μ m)
- Hastelloy C / Super duplex / Alloy 20 / Monel
- Anti-static devices
- V-Ball for modulating control 15°, 30°, 60°, 90°
- Flange with table D, table E drilling



Pneumatic (AVP-10)

Electric (AVE-10)



2-PIECE FLANGED BALL VALVE

JIS 10K

TEST PRESSURE

SHELL (BY WATER)		2.1MPa
		21.5kg/cm ²
SEAT	BY WATER	1.6MPa
		16.5kg/cm ²
	BY AIR	0.6MPa
		6kg/cm ²

MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	SCS13
2	CAP	SCS13
3	BALL	SCS13
4	SEAT	PTFE
5	STEM	SUS304
6	GASKET	PTFE
7	THRUST WASHER	PEEK+PTFE
8	O-RING	VITON
9	PACKING	PTFE
10	GLAND	CF8
11	STOPPER	SUS304
12	SNAP RING	SUS304
13	PLASTIC COVER	PLASTIC
14	HANDLE	SUS304
15	BOLT	SUS304
16	BOLT	SUS304
17	BOLT	SUS304
18	NUT	SUS304

DIMENSIONS

(UNIT : mm)

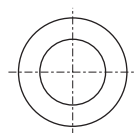
SIZE		∅d	∅D	∅C	∅G	f	T	N-∅M	L	H	H1	W	W1	ISO 5211	E	A	B
Inch	mm																
1/2"	10A	15	95	70	51	1	12	4-∅15	110	84	9	123	9	F03-F04	36-42	6	6
3/4"	20A	20	100	75	56	1	14	4-∅15	120	94	9	123	9	F03-F04	36-42	6	6
1"	25A	25	125	90	67	1	14	4-∅19	130	101	11	153	11	F04-F05	42-50	6	7
1-1/4"	32A	32	135	100	76	2	16	4-∅19	140	108	11	153	11	F04-F05	42-50	6	7
1-1/2"	40A	40	140	105	81	2	16	4-∅19	165	121	14	183	14	F05-F07	50-70	7	9
2"	50A	50	155	120	96	2	16	4-∅19	180	127	14	183	14	F05-F07	50-70	7	9
2-1/2"	65A	65	175	140	116	2	18	4-∅19	190	154	17	352	14	F07-F10	70-102	9	11
3"	80A	80	185	150	126	2	18	8-∅19	200	165	17	352	17	F07-F10	70-102	9	11
4"	100A	100	210	175	151	2	18	8-∅19	230	183	22	397	17	F10-F12	102-125	11	13

BREAK - TORQUE VALUE for JIS 10K

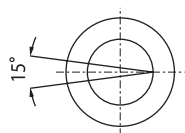
(Nm / at 0 psi)

SIZE	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
Grease	5.5	7.2	8.8	13	20	24	54	62	124
Non-Grease	7.2	9.4	13.2	18.2	30	36	95	132	245

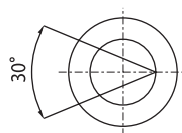
V-BALL for MODULATING CONTROLLER



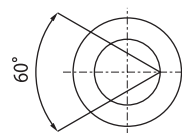
Straight Port



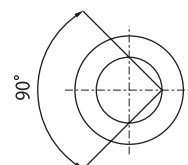
15° V-Port



30° V-Port



60° V-Port



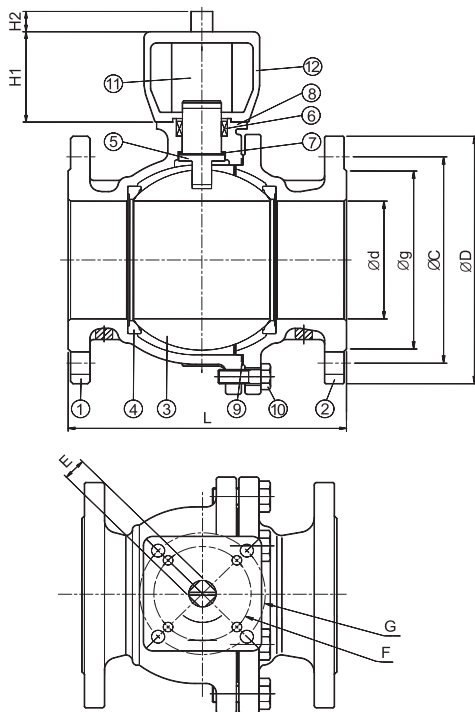
90° V-Port

2-PIECE FLANGED BALL VALVE

JIS 10/20K

AV-11

SIZE : 1/2" to 12"



FEATURES

- Flange : JIS 10K/20K
- Bal : Full bore
- Material : SCS14 (ASTM A351-CF8M), SCS13 (ASTM A351-CF8)
- Blow-out proof stem
- Locking device
- Lower break away torque
- Sand casting body & end cap

APPLICABLE STANDARDS

- Face to face dimension : KS B2308
- End flange dimension : KS B1511
- Shell wall thickness : KS B2308
- Gearbox operator : 200A (8") & Larger



Pneumatic (AVP-11)



Electric (AVE-11)

MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	SCS 13/14
2	END CAP	SCS 13/14
3	BALL	SCS 13/14
4	BALL SEAT	RTFE
5	STEM	SS 304/316
6	PACKING	PTFE
7	BACK SEAT	PTFE
8	GLAND	SS 304
9	GASKET	PTFE
10	HEX BOLT	SCM 304
11	COUPLING	SS 304
12	MOUNTING BRACKET	SS 304

DIMENSIONS

(UNIT : mm)

SIZE		Ød	JIS 10K									TORQUE (N.m)	JIS 20K			
Inch	mm		L	ØD	ØC	Øg	H1	H2	E	F	G		L	ØD	ØC	Øg
1/2"	15A	15	108	95	70	51	61	12.6	11	-	F05	3.4	140	95	70	51
3/4"	20A	20	117	100	75	56	61	12.6	11	-	F05	6.9	152	100	75	56
1"	25A	25	127	125	90	67	61	12.6	11	-	F05	9.8	165	125	90	67
1-1/4"	32A	32	140	135	100	76	61	12.6	11	-	F05	19.6	178	135	100	76
1-1/2"	40A	40	165	140	105	81	72	14.5	14	-	F07	29.4	190	140	105	81
2"	50A	50	178	155	120	96	72	14.5	14	-	F07	49	216	155	120	96
2-1/2"	65A	65	190	175	140	116	72	14.5	17	-	F07	73.6	241	175	140	116
3"	80A	80	203	185	150	126	87	17.5	17	F07	F10	128	283	200	160	132
4"	100A	100	229	210	175	151	87	17.5	22	F07	F10	206	305	225	185	160
5"	125A	125	356	250	210	182	100	20	22	F07	F10	343	381	270	225	195
6"	150A	150	394	280	240	212	100	20	22	F07	F10	441	403	305	260	230
8"	200A	200	457	330	290	262	110	25	36	-	F14	883	502	350	305	275
10"	250A	250	533	400	355	324	150	25	46	-	F16	1275	568	430	380	345
12"	300A	300	610	445	400	368	160	50	46	-	F16	1628	648	480	430	395

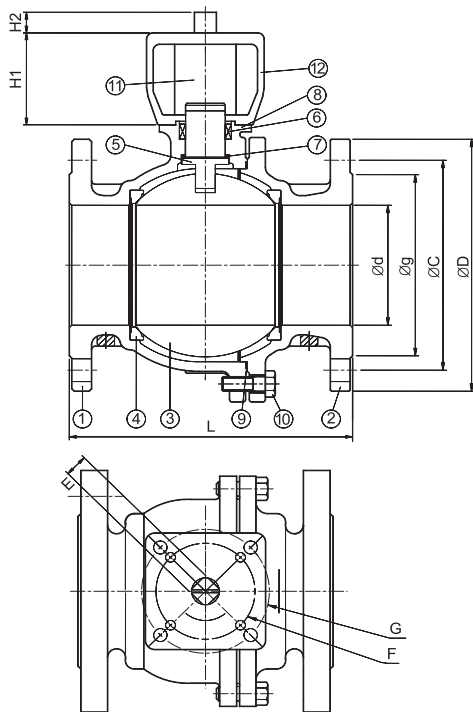
<Note> The size 250A~400A are trunnion mounted type.

2-PIECE FLANGED BALL VALVE

ANSI 150/300

AV-12

SIZE : 1/2" to 12"

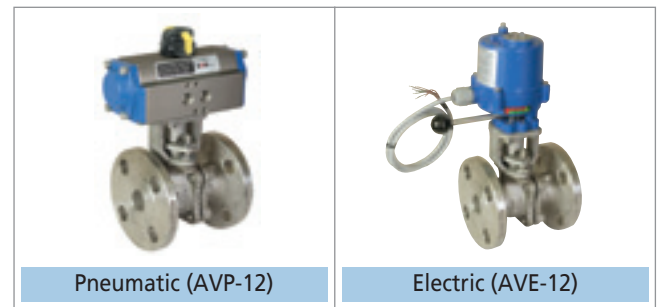


FEATURES

- Flange : ANSI 150 / 300LBS
- Ball : Full bore
- Material : SCS14 (ASTM A351-CF8M), SCS13 (ASTM A351-CF8)
- Fire safe design
- Anti static device
- Blow-out proof stem
- Locking device
- Lower break away torque
- Sand casting body & end cap

APPLICABLE STANDARDS

- Face to face dimension : ANSI B16.10
- End flange dimension : ANSI B16.5
- Shell wall thickness : ANSI B16.34
- Gearbox operator : 200A (8") & Larger



Pneumatic (AVP-12)

Electric (AVE-12)

MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	A351-CF8/ CF8M
2	END CAP	A351-CF8/ CF8M
3	BALL	A351-CF8/ CF8M
4	BALL SEAT	RTFE
5	STEM	SS 304/316
6	PACKING	PTFE
7	BACK SEAT	PTFE
8	GLAND	SS 304
9	GASKET	PTFE
10	HEX BOLT	SCM 304
11	COUPLING	SS 304
12	MOUNTING BRACKET	SS 304

DIMENSIONS

(UNIT : mm)

SIZE		Ød	ANSI 150									TORQUE (N.m)	ANSI 300			
Inch	mm		L	ØD	ØC	Øg	H1	H2	E	F	G		L	ØD	ØC	Øg
1/2"	15A	15	108	90	60.3	34.9	61	12.6	11	-	F05	3.4	140	95	66.7	34.9
3/4"	20A	20	117	100	69.9	42.9	61	12.6	11	-	F05	6.9	152	115	82.6	42.9
1"	25A	25	127	110	79.4	50.8	61	12.6	11	-	F05	9.8	165	125	88.9	50.8
1-1/4"	32A	32	140	115	88.9	63.5	61	12.6	11	-	F05	19.6	178	135	98.4	63.5
1-1/2"	40A	40	165	125	98.4	73	72	14.5	14	-	F07	29.4	190	155	114.3	73
2"	50A	50	178	150	120.7	92.1	72	14.5	14	-	F07	49	216	165	127	92.1
2-1/2"	65A	65	190	180	139.7	104.8	72	14.5	17	-	F07	73.6	241	190	149.2	104.8
3"	80A	80	203	190	152.4	127	87	17.5	17	F07	F10	128	283	210	168.3	127
4"	100A	100	229	230	190.5	157.2	87	17.5	22	F07	F10	206	305	255	200	157.2
5"	125A	125	356	255	215.9	185.7	100	20	22	F07	F10	343	381	280	235	185.7
6"	150A	150	394	280	241.3	215.9	100	20	22	F07	F10	441	403	320	269.9	215.9
8"	200A	200	457	343	298.5	270	110	25	36	-	F14	883	502	381	330.2	269.7
10"	250A	250	533	406	362	324	150	25	46	-	F16	1275	568	445	387.4	323.9
12"	300A	300	610	483	432	381	160	50	46	-	F16	1628	648	521	450.9	381

<Note> The size 250A~400A are trunnion mounted type.

3. Automatic Actuating Valve

MODEL			DESCRIPTION	PAGE
AVP-01(D) Pneumatic 	AVP-01(S) Pneumatic 	AVE-01(E) Electric 	1-Piece Ball Valve, Threaded, Reduced Flow, 1000PSI (D) Double Acting (S) Single Acting (Spring Return) (E) Electric	79 80 81
AVP-02(D) Pneumatic 	AVP-02(S) Pneumatic 	AVE-02(E) Electric 	2-Piece Ball Valve, Threaded, Full Flow, 1000PSI (D) Double Acting (S) Single Acting (Spring Return) (E) Electric	82 83 84
AVP-03(D) Pneumatic 	AVP-03(S) Pneumatic 	AVE-03(E) Electric 	3-Piece Ball Valve, Threaded, Full Flow, 1000PSI (D) Double Acting (S) Single Acting (Spring Return) (E) Electric	85 86 87
AVP-04(D) Pneumatic 	AVP-04(S) Pneumatic 	AVE-04(E) Electric 	3-Piece Ball Valve, Threaded, Standard Flow, 2000PSI (D) Double Acting (S) Single Acting (Spring Return) (E) Electric	88 89 90
AVP-05(D) Pneumatic 	AVP-05(S) Pneumatic 	AVE-05(E) Electric 	3-Piece Ball Valve, Threaded, Full Flow, 3000PSI (D) Double Acting (S) Single Acting (Spring Return) (E) Electric	91 92 93
AVP-06(D) Pneumatic 	AVP-06(S) Pneumatic 	AVE-06(E) Electric 	3-Piece Instrumentation Ball Valve, Lok Tube, Reduced Flow, 2000PSI (D) Double Acting (S) Single Acting (Spring Return) (E) Electric	94 95 96
AVP-07(D) Pneumatic 	AVP-07(S) Pneumatic 	AVE-07(E) Electric 	3-Way Ball Valve, Threaded, Standard Flow, 1000~800PSI (D) Double Acting (S) Single Acting (Spring Return) (E) Electric	97 98 99
AVP-08(D) Pneumatic 	AVP-08(S) Pneumatic 	AVE-08(E) Electric 	3/4/5-Way Ball Valve, Threaded, Standard Flow, 800PSI (D) Double Acting (S) Single Acting (Spring Return) (E) Electric	100 101 102

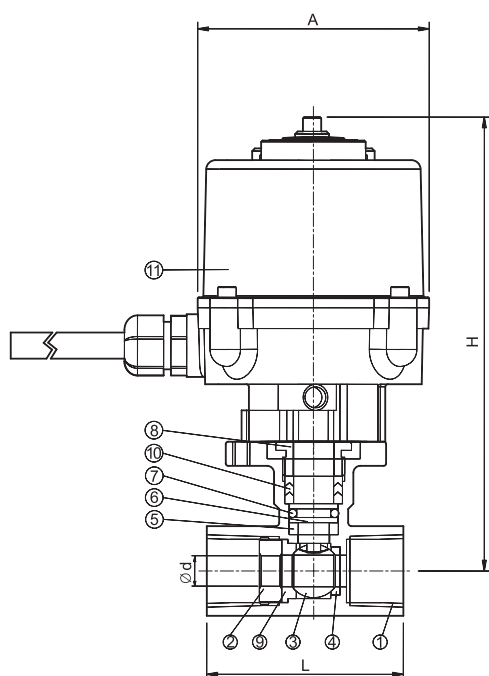
MODEL			DESCRIPTION	PAGE
AVP-09(D)	AVP-09(S)	AVE-09(E)	1-Piece Wafer Flanged Ball Valve, PN 16, Full Bore	
Pneumatic	Pneumatic	Electric	(D) Double Acting	103
			(S) Single Acting (Spring Return)	104
			(E) Electric	105
AVP-10(D)	AVP-10(S)	AVE-10(E)	2-Piece Flanged Ball Valve, JIS 10K, Full Bore	
Pneumatic	Pneumatic	Electric	(D) Double Acting	106
			(S) Single Acting (Spring Return)	107
			(E) Electric	108
AVP-11(D)	AVP-11(S)	AVE-11(E)	2-Piece Flanged Ball Valve, JIS 10K/20K, Full Bore	
Pneumatic	Pneumatic	Electric	(D) Double Acting	109
			(S) Single Acting (Spring Return)	110
			(E) Electric	111
AVP-12(D)	AVP-12(S)	AVE-12(E)	2-Piece Flanged Ball Valve, ANSI 150/300, Full Bore	
Pneumatic	Pneumatic	Electric	(D) Double Acting	112
			(S) Single Acting (Spring Return)	113
			(E) Electric	114
AVP-13(D)	AVP-13(S)	AVE-13(E)	Butterfly Valve, Wafer, JIS 5K/10K, ANSI 150, PN 6/10/16	
Pneumatic	Pneumatic	Electric	(D) Double Acting	115
			(S) Single Acting (Spring Return)	116
			(E) Electric	117
AVP-14(D)	AVP-14(S)	AVE-14(E)	Butterfly Valve, Wafer, Aluminum Alloy, JIS 10K, ANSI 150, PN 10	
Pneumatic	Pneumatic	Electric	(D) Double Acting	118
			(S) Single Acting (Spring Return)	119
			(E) Electric	120
AVP-15(D)	AVP-15(S)	AVE-15(E)	High Performance Butterfly Valve, Wafer, JIS10K/20K, ANSI 150	
Pneumatic	Pneumatic	Electric	(D) Double Acting	121
			(S) Single Acting (Spring Return)	122
			(E) Electric	123
AVP-16(D)	AVP-16(S)	AVE-16(E)	High Performance Butterfly Valve, Wafer, ANSI 300	
Pneumatic	Pneumatic	Electric	(D) Double Acting	124
			(S) Single Acting (Spring Return)	125
			(E) Electric	126
AVP-17(S)			Angle Seat Valve, Threaded	127-128

ELECTRIC 1-PIECE BALL VALVE

1000PSI, Threaded

AVE-01

SIZE : 3/8" to 2"



VALVE

- Max. Pressure : 1000PSI (70kg/cm²)
- Max. Temperature : 200°C
- Ball : Reduced flow
- Material : ASTM A351-CF8M(1.4408)
- End connection :
Screwed : BS21 1973(BSPT), ANSI B2.1(NPT),
DIN 259/2999, ISO 228
- ISO5211 Direct mounting pad
- Hex bar
- Long neck mounting pad
- Blow-out proof stem
- Solid ball
- Investment casting body

ACTUATOR

- Free voltage : 95~245VAC / 1PH, 24VDC
- ISO5211 mounting base : F03 / 04 / 05
- Push button & manual lever
- LED lamp indicator (open/close)
- Mechanical position indicator
- Weather proof (IP67)
- Standard 4-limit switches
- Space heater (0.5W)
- Operating time : 11 Sec.

OPTION

- PIU : Potentiometer (1K~10Ω)
- PCU : Proportional Control Unit (in/out, 4~20mA, 0-10VDC)
- CPT : Current Position Transmitter (output 4~20mA)
- Operating time : 6.5 Sec.

MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	INSCREWED PART	SS 316
3	BALL	ASTM A351-CF8M
4	BALL SEAT	PTFE
5	THRUST WASHER	PTFE
6	STEM	SS 316
7	O-RING	VITON
8	GLAND	SS 304
9	JOINT GASKET	PTFE
10	STEM PACKING	PTFE
11	COVER & HOUSING	ALUMINUM ALLOY

DIMENSIONS

(UNIT : mm)

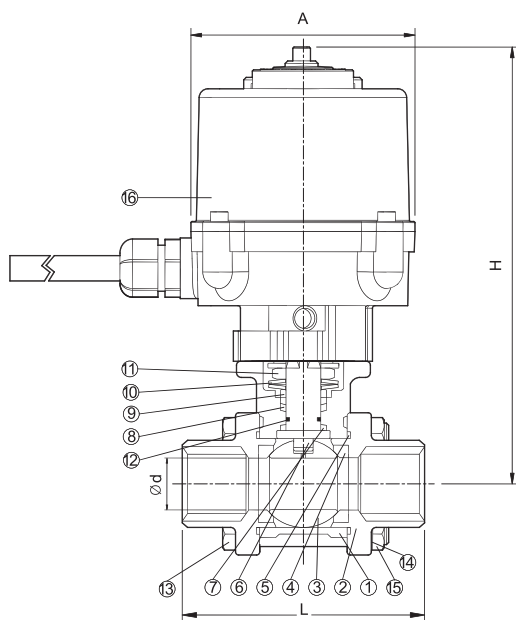
SIZE		Ød	L	H	A	BODY / ACTUATOR	Stem / ISO5211	TORQUE (N.m)	WEIGHT (kg)
Inch	mm								
3/8"	10A	7	45	146	97	AV-01 / RE-004	9mm / F03	0.6	1.40
1/2"	15A	9.2	55	148	97	AV-01 / RE-004	9mm / F03	1.15	1.40
3/4"	20A	12.5	60	154	97	AV-01 / RE-004	9mm / F03	1.75	1.43
1"	25A	15	73	157	97	AV-01 / RE-004	9mm / F03	2.50	1.49
1-1/4"	32A	20	78	160	97	AV-01 / RE-004	9mm / F03	4.00	1.70
1-1/2"	40A	25	89	164	162	AV-01 / RE-004	11mm / F05	6.20	2.73
2"	50A	32	100	172	162	AV-01 / RE-004	11mm / F05	8.30	3.05

ELECTRIC 3-PIECE BALL VALVE

1000PSI, Threaded

AVE-03

SIZE : 1/4" to 6"



DIMENSIONS

(UNIT : mm)

SIZE	Ød	L	H	A	BODY / ACTUATOR	Stem / ISO5211	BOLT	TORQUE	WEIGHT
Inch mm								N.m Kg.m	(kg)
1/4"	8A	11.6	63.5	161.25	88.6	AV-03 / RE-004	9mm / F03,04	M5×20	4 0.4 1.2
3/8"	10A	12.8	63.5	161.25	88.6	AV-03 / RE-004	9mm / F03,04	M5×20	4 0.4 1.2
1/2"	15A	15	63.5	161.25	88.6	AV-03 / RE-004	9mm / F03,04	M5×20	4 0.4 1.1
3/4"	20A	20	72.5	169.3	88.6	AV-03 / RE-004	9mm / F03,04	M5×25	6 0.6 1.3
1"	25A	25	81	177.75	88.6	AV-03 / RE-004	11mm / F04,05	M6×30	9.8 1 2.3
1-1/4"	32A	32	94.5	183.25	88.6	AV-03 / RE-004	11mm / F04,05	M6×30	16.4 1.7 2.8
1-1/2"	40A	38	108	199.05	88.6	AV-03 / RE-004	11mm / F05,07	M6×30	18.3 1.9 3.4
2"	50A	50	121.5	207.8	88.6	AV-03 / RE-004	11mm / F05,07	M6×35	25.8 2.6 5.3
2-1/2"	65A	65	157.5	240.8	105	AV-03 / RE-006	14mm / F07,10	HEX 8×25	47.6 4.9 8.9
3"	80A	80	190	353.3	170	AV-03 / RE-010	17mm / F07,10	HEX 8×25	81.1 8.3 14
4"	100A	100	225	421.8	229	AV-03 / RE-020	22mm / F10,12	HEX 8×25	135 13.8 28
5"	125A	125	319	426.5	229	AV-03 / RE-020	27mm / F10,12	-	141 14.4 -
6"	150A	150	350	443	229	AV-03 / RE-020	27mm / F10,12	-	147 15 -

VALVE

- Max. Pressure : 1000PSI (70kg/cm²) W.O.G 1/4" ~2"
800PSI (56kg/cm²) W.O.G 2-1/2" ~6"
- Max. Temperature : 160℃
- Ball : Full flow
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- End connection :
 - Screwed : BS21 1973 (BSPT), ANSI B2.1 (NPT),
DIN 259/2999, ISO 228
 - Socket Weld : JIS B2316, ANSI B16.11
 - Butt Weld (37.5°)
 - ISO5211 direct mounting pad
 - Investment casting body & cap
 - Blow-out proof stem

OPTION

- V-port (30°, 45°, 60°)
- 5" & 6" = Only butt weld ends

ACTUATOR

- Power : 95~245VAC/1PH, 24VDC (RE-004)
110/220VAC, 50/60Hz, 1PH (RE-006, 020)
380/440VAC, 50/60Hz, 3PH (RE-020)
- ISO5211 mounting base : F03 / 04 / 05 (RE-004)
F03 / 05 / 07 (RE-006)
- Manual Lever (RE-004)
Manual Override (RE-006)
Declutching Manual Handwheel (RE-010,020)
- Weather proof (IP67)

OPTION

- EXA : Explosionproof Eexd II BT4 (RE-010, 020)
- WTA : Watertight Enclosure (IP68)
- PCU : Proportional Control Unit (in/out, 4~20mA, 0-10VDC)
- PIU : Potentiometer (1K~10KΩ)
- CPT : Current Position Transmitter (output 4~20mA)
- DCM : 24VDC Motor (RE-006~020)

MATERIAL LIST

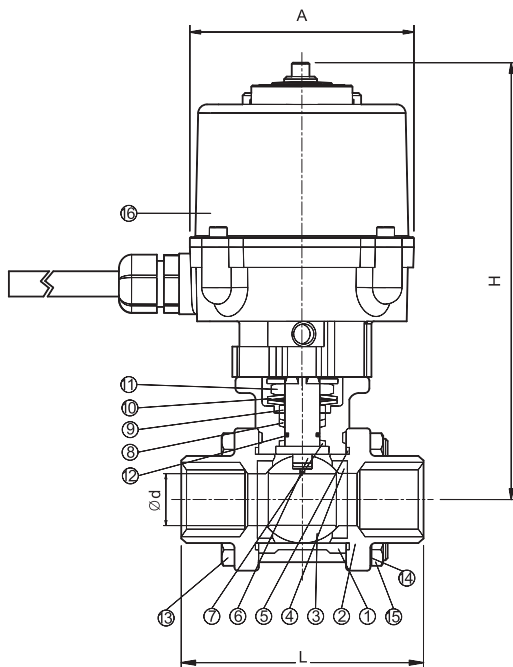
NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	BALL	ASTM A351-CF8M
4	BALL SEAT	PTFE
5	JOINT GASKET	PTFE
6	STEM	SS 316
7	THRUST WASHER	SS 304
8	STEM PACKING	PTFE
9	HIGH WASHER	SS 304
10	BELLEVILLE WASHER	SS 304
11	STEM NUT	SS 304
12	O-RING	VITON
13	BOLT	SS 304
14	SPRING WASHER	SS 304
15	HEX NUT	SS 304
16	COVER & HOUSING	ALUMINUM ALLOY

ELECTRIC 3-PIECE BALL VALVE

2000PSI, Threaded

AVE-04

SIZE : 1/4" to 2"



VALVE

- Max. Pressure : 2000PSI (141kg/cm²) 1/4" to 1-1/4"
1500PSI (106kg/cm²) 1-1/2" to 2"
- Max. Temperature : 180°C
- Ball : Standard(Regular) flow
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- End connection :
 - Screwed : BS21 1973 (BSPT), ANSI B2.1 (NPT), DIN 259/2999, ISO 228
 - Socket Weld : JIS B2316, ANSI B16.11
 - Butt Weld (37.5°)
- ISO5211 Direct mounting pad
- Investment casing body & end cap
- Blow-out proof stem

OPTION

- Full port
- V-port (30°, 45°, 60°)
- Fire safe design
- DIN standard M3 length

ACTUATOR

- Free voltage : 95~245VAC/1PH, 24VDC
- ISO5211 mounting base : F03 / 04 / 05
- Push button & manual lever
- LED lamp indicator (open/close)
- Mechanical position indicator
- Weather proof (IP67)
- Standard 4-limit switches
- Space heater (0.5W)
- Operating time : 11 Sec.

OPTION

- PIU : Potentiometer (1K~10KΩ)
- PCU : Proportional Control Unit (in/out, 4~20mA, 0-10VDC)
- CPT : Current Position Transmitter (output 4~20mA)

MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	JOINT GASKET	PTFE
4	SOLID BALL	ASTM A351-CF8M
5	BALL SEAT	PTFE
6	STEM	SS 304
7	THRUST WASHER	PTFE
8	O-RING	VITON
9	STEM PACKING	PTFE
10	STEM RING	SS 304
11	BELLEVILLEWASHER	SS 301
12	STEMNUT	SS 304
13	SADDLE WASHER	SS 304
14	HEX BOLT	SS 304
15	COVER & HOUSING	ALUMINUM ALLOY

DIMENSIONS

(UNIT : mm)

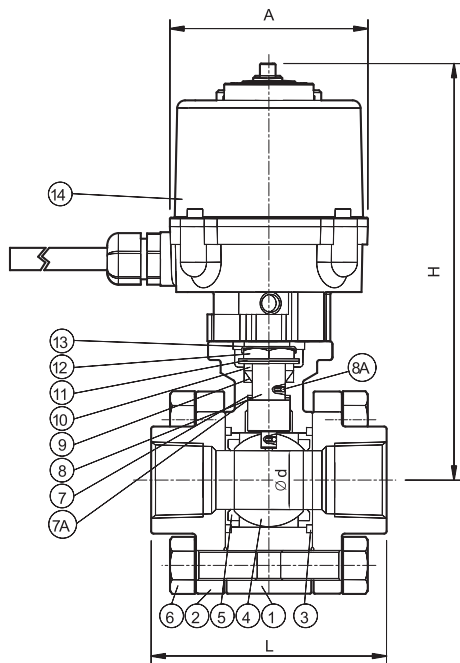
SIZE		Ød	L	H	A	BODY / ACTUATOR	Stem / ISO5211	BOLT	TORQUE		WEIGHT (kg)
Inch	mm								N.m	Kg.m	
1/4"	8A	11.5	56	158.3	88.6	AV-04 / RE-004	9mm / F03,05	M5×20	5.9	0.60	1.7
3/8"	10A	12.5	56	158.3	88.6	AV-04 / RE-004	9mm / F03,05	M5×20	5.9	0.60	1.7
1/2"	15A	12.5	68	158.3	88.6	AV-04 / RE-004	9mm / F03,05	M5×20	5.9	0.60	1.8
3/4"	20A	15	71	162.3	88.6	AV-04 / RE-004	9mm / F03,05	M5×25	5.9	0.60	1.9
1"	25A	20	76	167.3	88.6	AV-04 / RE-004	9mm / F03,05	M6×30	7.5	0.77	2.7
1-1/4"	32A	25	85	174.3	88.6	AV-04 / RE-004	9mm / F03,05	M6×30	9.5	0.94	2.8
1-1/2"	40A	32	98	179.3	88.6	AV-04 / RE-004	9mm / F03,05	M6×30	16.7	1.70	3.9
2"	50A	38	111	202	105	AV-04 / RE-006	14mm / F05,07	M6×30	21.6	2.20	6.7

ELECTRIC 3-PIECE BALL VALVE

3000PSI, Threaded

AVE-05

SIZE : 1/4" to 3"



VALVE

- Max. Pressure : 3000PSI (211kg/cm²) W.O.G
- Max. Temperature : 230°C
- Ball : Full flow
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- End connection :
 - Screwed : BS21 1973 (BSPT), ANSI B2.1 (NPT), DIN 259/2999, ISO 228
 - Socket Weld : JIS B2316, ANSI B16.11
 - Butt Weld (37.5°)
- ISO5211 Direct mounting pad
- 8 Bolted encapsulated body
- Investment casting body & end cap
- Blow-out proof stem

OPTION

- V-port (15°, 30°, 60°)
- PTFE / PFA coating (40~70μm)
- Fire safe design (API 607)
- Metal seated design
- Steam jacket
- Special alloy : Hastelloy C276 / Super duplex / Alloy 20 / Monel 400

ACTUATOR

- Power : 95~245VAC/1PH, 24VDC (RE-004)
110/220VAC, 50/60Hz, 1PH (RE-008~050)
380/440VAC, 50/60Hz, 3PH (RE-030~050)
- ISO5211 mounting base : F03 / 04 / 05 (RE-004)
- Manual Lever (RE-004)
Declutching Manual Handwheel (RE-008~050)
- Weather proof (IP67)

OPTION

- EXA : Explosionproof Eexd II BT4 (RE-008~050)
- WTA : Watertight Enclosure (IP68)
- PCU : Proportional Control Unit (in/out, 4~20mA, 0-10VDC)
- PIU : Potentiometer (1K~10KΩ)
- CPT : Current Position Transmitter(output 4~20mA)
- DCM : 24VDC Motor (RE-008~050)

DIMENSIONS

(UNIT : mm)

SIZE		Ød	L	H	A	BODY / ACTUATOR	Stem / ISO5211	TORQUE	
Inch	mm							N.m	Kg.m
1/4"	8A	11	67	132	258	AV-05 / RE-004	9mm / F03,04	12	1.2
3/8"	10A	11	67	132	258	AV-05 / RE-004	9mm / F03,04	12	1.2
1/2"	15A	15	70	135	258	AV-05 / RE-004	9mm / F03,04	12	1.2
3/4"	20A	20	92	159	320	AV-05 / RE-004	11mm / F05	20	2
1"	25A	25	105	165	320	AV-05 / RE-004	11mm / F05	24	2.5
1-1/2"	40A	38	128	223	506	AV-05 / RE-008	14mm / F05,07	65	6.6
2"	50A	50	158	260	649	AV-05 / RE-030	17mm / F07,10	180	18.4
2-1/2"	65A	63.5	-	-	-	-	22mm / F10,12	-	-
3"	80A	78	196	306	716	AV-05 / RE-050	22mm / F10,12	310	31.6

MATERIAL LIST (SIZE : 1/4" to 1")

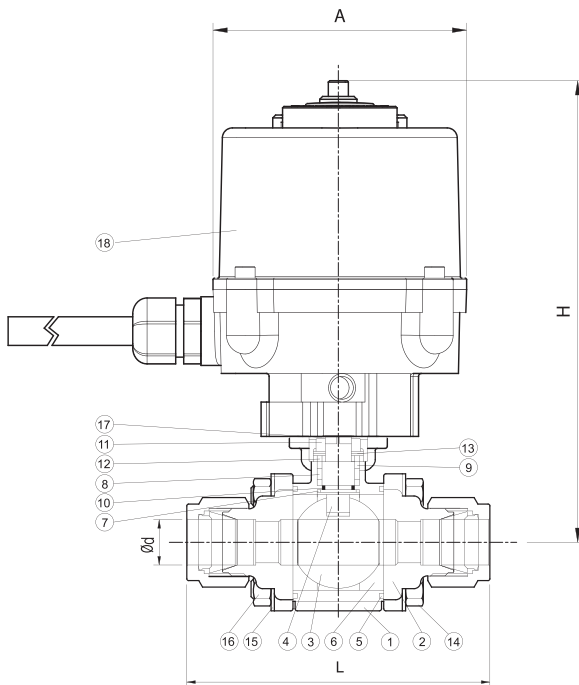
NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	GASKET	TFM
4	BALL	SS 316
5	BALL SEAT	PEEK
6	BOLT	SS 304
7	THRUST WASHER	TFM
7A	THRUST WASHER	PEEK
8	STEM	SS 316
8A	HALF SPILT RING	SS 316
9	STEM PACKING	TFM
10	GLAND WASHER	SS 304
11	DISC WASHER	SS 301
12	STEM NUT	SS 304
13	NUT STOP	SS 304
14	COVER & HOUSING	ALUMINUM ALLOY

ELECTRIC 3-PIECE INSTRUMENTATION BALL VALVE

2000PSI, Threaded

AVE-06

SIZE : 1/4" to 3/4"



VALVE

- Max. Pressure : 2000PSI (141kg/cm²)
- Max. Temperature : 180℃
- Ball : Reduced flow
- Material : ASTM A351-CF8M (1.4408)
- End connection : Lok tube fitting
- ISO 5211 direct mounting pad
- Easy in-line maintenance
- Blow-out proof stem
- Silver plated nut standard
- Heat treated ferrules standard
- AP / BA Grade
- RO cleaned, clean room packaged with class 10,000 & Oil Free
- Helium leak test approved

OPTION

- Variety of end connections

ACTUATOR

- Free voltage : 95~245VAC/1PH, 24VDC
- ISO5211 mounting base : F03 / 04 / 05
- Push button & manual lever
- LED lamp indicator(open/close)
- Mechanical position indicator
- Weather proof (IP67)
- Standard 4-limit switches
- Space heater (0.5W)
- Operating time : 11 Sec.

OPTION

- PIU : Potentiometer (1K~10KΩ)
- PCU : Proportional Control Unit (in/out, 4~20mA, 0-10VDC)
- CPT : Current Position Transmitter (output 4~20mA)

MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	BALL	SS 316
4	STEM	SS 316
5	PACKING	PTFE
6	BALL SEAT	TFM 1600
7	STEM SEAL	RPTFE
8	V-RING PACKING	PTFE
9	BUSING	50% SS POWDER FILLED PTFE
10	O-RING	VITON
11	STEM NUT	SS 304
12	GLAND	SS 304
13	BELLEVILLE WASHER	SS 301
14	BOLT	SS 304
15	WASHER	SS 304
16	BOLT NUT	SS 304
17	LOCK SADDLE	SS 304
18	COVER & HOUSING	ALUMINUM ALLOY

DIMENSIONS

(UNIT : mm)

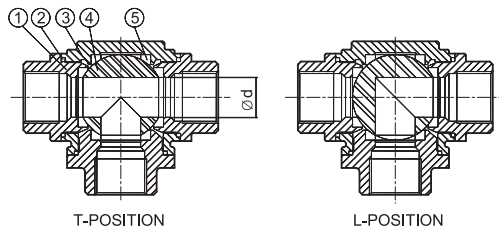
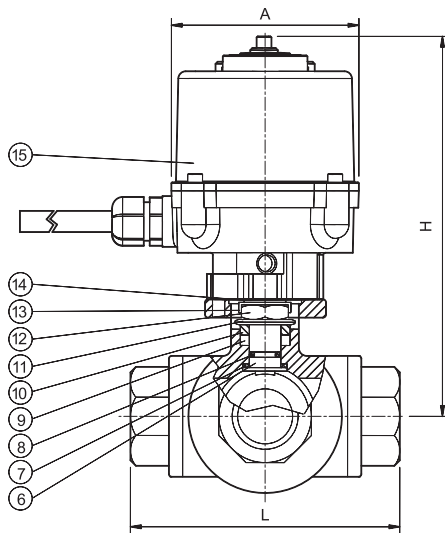
SIZE		Ød	L	H	A	BODY / ACTUATOR	Stem / ISO5211	TORQUE	
Inch	mm							N.m	Kg.m
1/4"	8A	8	95.1	164.8	88.6	AV-06 / RE-004	9mm / F03,04	4	0.39
3/8"	10A	10	96.2	164.8	88.6	AV-06 / RE-004	9mm / F03,04	4	0.39
1/2"	15A	15	102.2	164.8	88.6	AV-06 / RE-004	9mm / F03,04	4	0.39
3/4"	20A	20	102.2	168	88.6	AV-06 / RE-004	9mm / F03,04	5	0.49

ELECTRIC 3-WAY BALL VALVE

1000PSI, Threaded

AVE-07

SIZE : 1/4" to 2"



DIMENSIONS

(UNIT : mm)

SIZE		ød	L	H	A	BODY / ACTUATOR	Stem / ISO5211	BOLT	TORQUE		WEIGHT
Inch	mm								N.m	Kg.m	
1/4"	8A	11	72	161.8	88.6	AV-07 / RE-004	9mm / F03,04	M5×20	9	0.92	1.9
3/8"	10A	11	72	162.8	88.6	AV-07 / RE-004	9mm / F03,04	M5×20	9	0.92	1.9
1/2"	15A	12	72	166.3	88.6	AV-07 / RE-004	9mm / F03,04	M5×20	9	0.92	1.9
3/4"	20A	15	84.5	173.3	88.6	AV-07 / RE-004	9mm / F03,04	M5×25	11	1.12	2.1
1"	25A	20	100	179.3	88.6	AV-07 / RE-004	11mm / F04,05	M5×30	13	1.33	2.7
1-1/4"	32A	25	113	187.3	88.6	AV-07 / RE-004	11mm / F04,05	M5×30	24	2.45	3.4
1-1/2"	40A	32	125.5	206	105	AV-07 / RE-006	14mm / F05,07	M5×30	43	4.39	6.4
2"	50A	38	150	225	105	AV-07 / RE-006	14mm / F05,07	M5×30	53	5.41	8.26

VALVE

- Max. Pressure : 1000PSI (70kg/cm²) W.O.G 1/4" ~1-1/4"
800PSI (56kg/cm²) W.O.G 1-1/2" ~2"
- Max. Temperature : 180℃
- Ball : Standard flow
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- End connection : BS21 1973 (BSPT), ANSI B2.1 (NPT),
DIN 259/2999, ISO 228
- ISO 5211 direct mounting pad
- Available in L or T-position
- 4 Ball seats design
- Blow-out proof stem
- Investment casting body & end cap

OPTION

- Full port
- Socket weld ends (JIS B2316)
- Carbon filled teflon seat
- PTFE / PFA coating (40-70µm)
- 180° Operation stop plate

ACTUATOR

- Power : 95~245VAC/1PH, 24VDC (RE-004)
110/220VAC, 50/60Hz, 1PH (RE-006)
- ISO5211 mounting base : F03 / 04 / 05 (RE-004)
F03 / 05 / 07 (RE-006)
- Manual Lever (RE-004)
- Manual Override (RE-006)
- Operating time : 11 Sec. (RE-004)
14 / 12 Sec. : 50/60Hz (RE-006)
- Mechanical position indicator
- Weather proof (IP67)
- Standard 4-limit switches

OPTION

- PCU : Proportional Control Unit (in/out, 4~20mA, 0-10VDC)
- PIU : Potentiometer (1K~10KΩ)
- CPT : Current Position Transmitter (output 4~20mA)
- DCM : 24VDC Motor (RE-006)

MATERIAL LIST

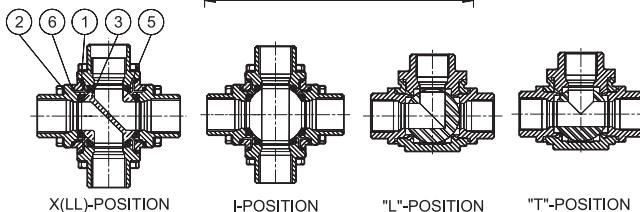
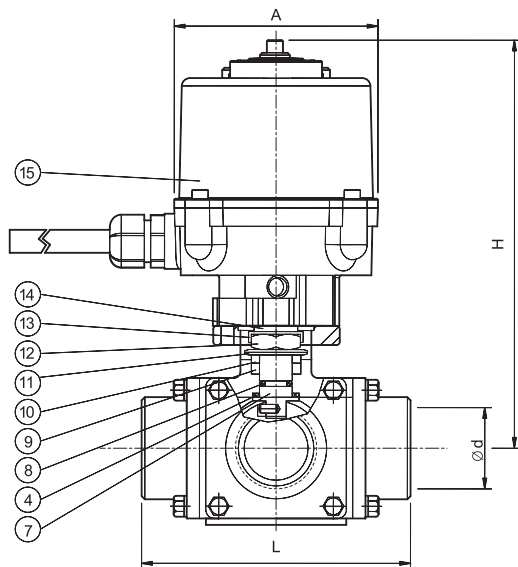
NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	BALL	SS 316
4	BALL SEAT	TFM-1600
5	STEM	SS 316
6	GASKET	TFM-1600
7	THRUST WASHER	TFM-1600
8	O-RING	VITON
9	STEM PACKING	TFM-1600
10	GLAND	SS 304
11	DISC WASHER	SS 301
12	STEM NUT	SS 304
13	NUT STOP	SS 304
14	SPACE WASHER	SS 304
15	COVER & HOUSING	ALUMINUM ALLOY

ELECTRIC 3/4/5-WAY BALL VALVE

800PSI, Threaded

AVE-08

SIZE : 1/4" to 2"



DIMENSIONS

(UNIT : mm)

SIZE	Inch	mm	Ød	L	H	A	BODY / ACTUATOR	Stem / ISO5211	TORQUE	
									N.m	Kg.m
1/4"	8A	12.5	88	162.8	88.6	AV-08 / RE-004	9mm / F03,04	10.3	1.05	
3/8"	10A	12.5	88	162.8	88.6	AV-08 / RE-004	9mm / F03,04	10.3	1.05	
1/2"	15A	12.5	88	162.8	88.6	AV-08 / RE-004	9mm / F03,04	10.3	1.05	
3/4"	20A	15	105	165.3	88.6	AV-08 / RE-004	9mm / F03,04	12.8	1.31	
1"	25A	20	112	173.3	88.6	AV-08 / RE-004	11mm / F04,05	15.4	1.57	
1-1/4"	32A	25	128	179.3	88.6	AV-08 / RE-004	11mm / F04,05	32.1	3.27	
1-1/2"	40A	32	140	195	105	AV-08 / RE-006	14mm / F05,07	34.6	3.53	
2"	50A	38	160	309	170	AV-08 / RE-008	14mm / F05,07	55.2	5.63	

VALVE

- Max. Pressure : 800PSI (56kg/cm²)
- Max. Temperature : 180°C
- Ball : Standard flow
- End connection :
 - Screwed : BS21 1973 (BSPT), ANSI B2.1 (NPT), DIN 259/2999, ISO 228
 - Socket Weld : JIS B2316, ANSI B16.11
 - Butt Weld (37.5°)
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- Available in L, T, X & I-position
- Direct mounting pad ISO5211
- 4 Ball seats design
- Locking function
- Blow-out proof stem
- Investment casting body & end cap

OPTION

- Full port
- Carbon filled teflon seat
- PTFE / PFA coating (40~70µm)
- Cavity filled teflon seat
- 180° Operation stop plate
- Steam jacket
- Fire safe design
- Special alloy : Hastelloy C276 / Super duplex / Alloy 20 / Monel 400

ACTUATOR

- Power : 95~245VAC/1PH, 24VDC (RE-004)
110/220VAC, 50/60Hz, 1PH (RE-006, 008)
- ISO5211 mounting base : F03 / 04 / 05 (RE-004)
F03 / 05 / 07 (RE-006)
- Manual Lever (RE-004)
- Manual Override (RE-006)
- Decutching Manual Handwheel (RE-008)
- Weather proof (IP67)

OPTION

- EXA : Explosionproof Eexd II BT4 (RE-008)
- WTA : Watertight Enclosure (IP68)
- PCU : Proportional Control Unit (in/out, 4~20mA, 0-10VDC)
- PIU : Potentiometer (1K~10KΩ)
- CPT : Current Position Transmitter (output 4~20mA)
- DCM : 24VDC Motor (RE-006, 008)

MATERIAL LIST (SIZE : 1/4" to 2")

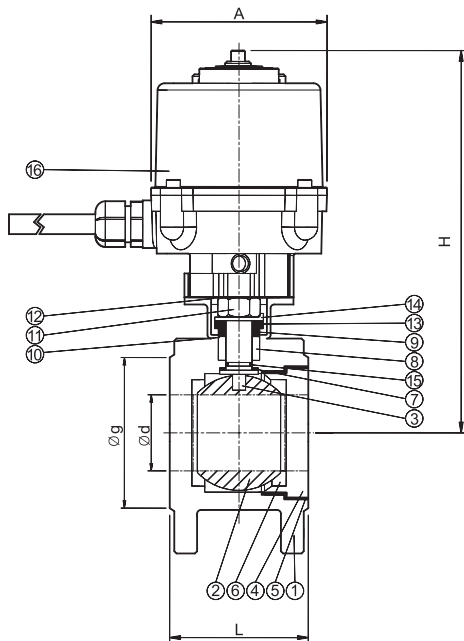
NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	END CAP	ASTM A351-CF8M
3	BALL	SS 316
4	STEM	SS 316
5	BALL SEAT	TFM1600
6	GASKET	TFM1600
7	THRUST WASHER	RPTFE
8	O-RING	VITON
9	STEM PACKING	TFM1600
10	GLAND	SS 304
11	DISC WASHER	SS 301
12	STEM NUT	SS 304
13	NUT STOP	SS 304
14	SPACE WASHER	SS 304
15	COVER & HOUSING	ALUMINUM ALLOY

ELECTRIC 1-PIECE WAFER FLANGED BALL VALVE

PN 16

AVE-09

SIZE : 1/2" to 4"



VALVE

- Flange : PN 16
- Max. Temperature : 160°C
- Ball : Full bore
- Material : DIN 1.4408 (A351-CF8M)
- ISO5211 mounting pad
- Extra high cycle life (loaded double sealing)
- Compact space saving design
- Fire safe design (BS6755 & API607)
- Anti-static device
- Blow out proof stem
- Solid ball
- Investment casting body
- Option : PN 10/25/40

ACTUATOR

- Power : 95~245VAC/1PH, 24VDC (RE-004)
110/220VAC, 50/60Hz, 1PH (RE-006~015)
380/440VAC, 50/60Hz, 3PH (RE-015)
- ISO5211 mounting base : F03 / 04 / 05 (RE-004)
F03 / 05 / 07 (RE-006)
- Manual Lever (RE-004)
- Manual Override (RE-006)
- Declutching Manual Handwheel (RE-008~015)
- Weather proof (IP67)

OPTION

- EXA : Explosionproof Eexd II BT4 (RE-008~015)
- WTA : Watertight Enclosure (IP68)
- PCU : Proportional Control Unit (in/out, 4~20mA, 0-10VDC)
- PIU : Potentiometer (1K~10KΩ)
- CPT : Current Position Transmitter (output 4~20mA)
- DCM : 24VDC Motor (RE-006~015)

MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	1.4408 / EN1503-1
2	BALL	CF8M / EN1503-2
3	STEM	SS 316
4	INSERT CAP	1.4408 / EN1503-1
5	BODY SEAL	PTFE
6	BALL SEAT	PTFE
7	THRUST WASHER	PTFE
8	STEM PACKING	PTFE
9	GLAND BUSHING	SS 304
10	GLAND WASHER	15% G.F + PTFE
11	STEM NUT	SS 304
12	WASHER	SS 304
13	BELLEVILLE WASHER	SS 301
14	TAB WASHER	SS 304
15	O-RING	VITON
16	COVER & HOUSING	ALUMINUM ALLOY

DIMENSIONS

(UNIT : mm)

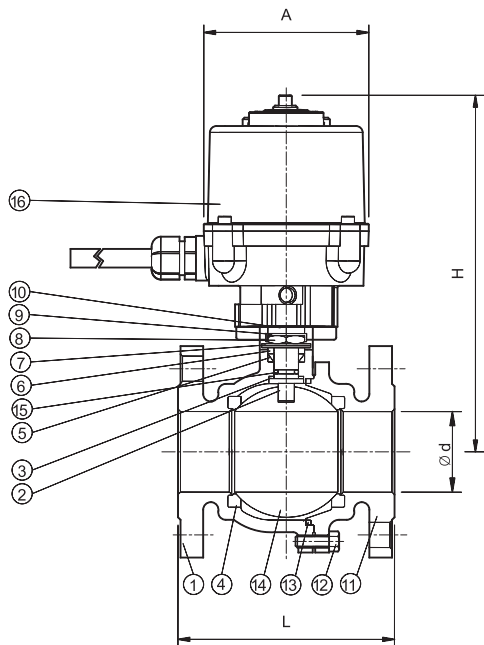
SIZE		Ød	Øg	L	H	A	BODY / ACTUATOR	Stem / ISO5211	TORQUE	
Inch	mm								N.m	Kg.m
1/2"	15A	15	45	43	174.8	88.6	AV-09 / RE-004	9mm / F03,04	4	0.4
3/4"	20A	20	58	44	181.3	88.6	AV-09 / RE-004	9mm / F03,04	4	0.4
1"	25A	25	68	51	186.3	88.6	AV-09 / RE-004	9mm / F04,05	8	0.8
1-1/4"	32A	32	78	56	195.8	88.6	AV-09 / RE-004	9mm / F04,05	8	0.8
1-1/2"	40A	38	88	65	210.3	88.6	AV-09 / RE-004	11mm / F05,07	16	1.6
2"	50A	50	102	80	217.3	88.6	AV-09 / RE-004	11mm / F05,07	30	3
2-1/2"	65A	65	122	102	237	105	AV-09 / RE-006	14mm / F07,10	36	3.6
3"	80A	80	138	122	350	170	AV-09 / RE-008	14mm / F07,10	60	6
4"	100A	100	158	153	400	229	AV-09 / RE-015	17mm / F10,12	120	12

ELECTRIC 2-PIECE FLANGED BALL VALVE

JIS 10K

AVE-10

SIZE : 1/2" to 4"



VALVE

- Flange : JIS 10K
- Max. Temperature : 180℃
- Ball : Full bore
- Material : ASTM A351-CF8M (1.4408)
ASTM A351-CF8 (1.4308)
- ISO5211 Direct mounting pad
- Investment casting body & end cap
- RF ENDS (Ripple face / Lapped face)
- Blow-out proof stem design

OPTION

- Fire safe : API 607 -5th edition certified
- TFM 1600 / TFM 4215 / PEEK / UPE soft kits
- PTFE/ PFA coating (40 - 70µm)
- Hastelloy C / Super duplex / Alloy 20 / Monel
- Anti-static devices
- V-Ball for modulating control 15°, 30°, 60°, 90°
- Flange with table D, table E drilling

ACTUATOR

- Power : 95~245VAC/1PH, 24VDC (RE-004)
380/440VAC, 50/60Hz, 3PH (RE-015)
- ISO5211 mounting base : F03 / 04 / 05 (RE-004)
- Manual Lever (RE-004)
Declutching Manual Handwheel (RE-008~015)
- Weather proof (IP67)

OPTION

- EXA : Explosionproof Eexd II BT4 (RE-008~015)
- WTA : Watertight Enclosure (IP68)
- PCU : Proportional Control Unit (in/out, 4~20mA, 0-10VDC)
- PIU : Potentiometer (1K~10KΩ)
- CPT : Current Position Transmitter (output 4~20mA)
- DCM : 24VDC Motor (RE-008~015)

MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	ASTM A351-CF8M
2	STEM	SS 316
3	THRUST WASHER	TFM 1600
4	BALL SEAT	TFM 1600
5	STEM PACKING	TFM 1600
6	GLAND	SS 304
7	DISC WASHER	SS 301
8	STEM NUT	SS 304
9	NUT STOP	SS 304
10	WASHER	SS 304
11	END CAP	ASTM A351-CF8M
12	BOLT	SS 304
13	GASKET	TFM 1600
14	BALL	SS 316
15	O-RING	VITON
16	COVER & HOUSING	ALUMINUM ALLOY

DIMENSIONS

(UNIT : mm)

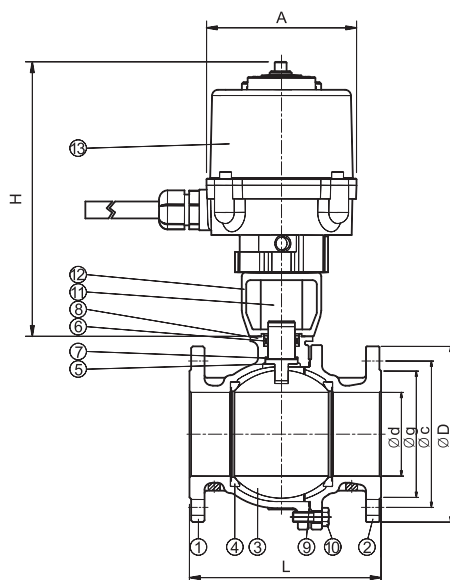
SIZE		Ød	L	H	A	BODY / ACTUATOR	Stem / ISO5211	TORQUE	
Inch	mm							N.m	Kg.m
1/2"	15A	15	110	172.3	88.6	AV-10 / RE-004	9mm / F03,04	14	1.43
3/4"	20A	20	120	177.3	88.6	AV-10 / RE-004	9mm / F03,04	18	1.84
1"	25A	25	130	183.3	88.6	AV-10 / RE-004	11mm / F04,05	22	2.24
1-1/4"	32A	32	140	195.3	88.6	AV-10 / RE-004	11mm / F04,05	25	2.55
1-1/2"	40A	38	165	200.3	88.6	AV-10 / RE-004	14mm / F05,07	29	2.96
2"	50A	50	180	209.3	88.6	AV-10 / RE-004	14mm / F05,07	34	3.47
2-1/2"	65A	65	190	328.5	170	AV-10 / RE-008	14mm / F07,10	50	5.10
3"	80A	80	200	338	170	AV-10 / RE-008	17mm / F07,10	75	7.65
4"	100A	100	230	436	229	AV-10 / RE-015	22mm / F10,12	100	10.20

ELECTRIC 2-PIECE FLANGED BALL VALVE

JIS 10K

AVE-11

SIZE : 1/2" to 12"



VALVE

- Flange : JIS 10K
- Blow-out proof stem
- Locking device
- Lower break away torque

APPLICABLE STANDARDS

- Face to face dimension : KS B2308
- End flange dimension : KS B1511
- Shell wall thickness : KS B2308

ACTUATOR

- Power : 95~245VAC/1PH, 24VDC (RE-004)
110/220VAC, 50/60Hz, 1PH (RE-006~200)
380/440VAC, 50/60Hz, 3PH (RE-015~200)
- ISO5211 mounting base : F03 / 04 / 05 (RE-004)
F03 / 05 / 07 (RE-006)
- Manual Lever (RE-004)
- Manual Override (RE-006)
- Dec clutching Manual Handwheel (RE-010~200)
- Weather proof (IP67)

OPTION

- EXA : Explosionproof Eexd II BT4 (RE-010~200)
- WTA : Watertight Enclosure (IP68)
- PCU : Proportional Control Unit (in/out, 4~20mA, 0-10VDC)
- PIU : Potentiometer (1K~10KΩ)
- CPT : Current Position Transmitter (output 4~20mA)
- DCM : 24VDC Motor (RE-010~200)

MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	SCS 13/14
2	END CAP	SCS 13/14
3	BALL	SCS 13/14
4	BALL SEAT	RTFE
5	STEM	SS 304/316
6	PACKING	PTFE
7	BACK SEAT	PTFE
8	GLAND	SS 304
9	GASKET	PTFE
10	HEX BOLT	SCM 304
11	COUPLING	SS304
12	MOUNTING BRACKET	SS 304
13	COVER & HOUSING	ALUMINUM ALLOY

DIMENSIONS

(UNIT : mm)

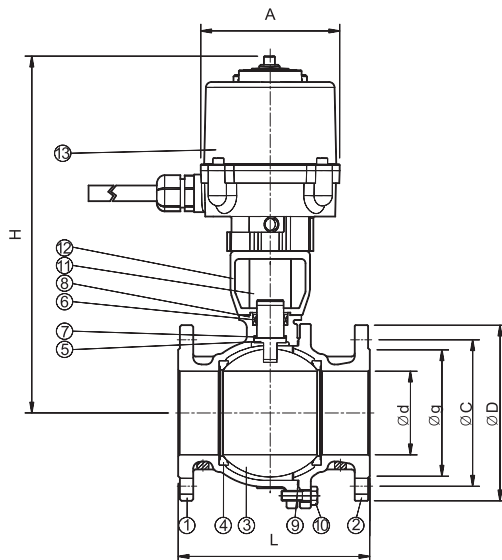
SIZE		Ød	Øg	ØC	ØD	L	H	A	BODY / ACTUATOR	Stem / ISO5211	BOLT	TORQUE	
Inch	mm											N.m	Kg.m
1/2"	15A	15	51	70	95	108	185.3	88.6	AV-11 / RE-004	11mm / F05	HEX6×20	3.4	0.35
3/4"	20A	20	56	75	100	117	185.3	88.6	AV-11 / RE-004	11mm / F05	HEX6×20	6.9	0.7
1"	25A	25	67	90	125	127	185.3	88.6	AV-11 / RE-004	11mm / F05	HEX6×20	9.8	1
1-1/4"	32A	32	76	100	135	140	185.3	88.6	AV-11 / RE-004	11mm / F05	HEX6×20	19.6	2
1-1/2"	40A	40	81	105	140	165	204	105	AV-11 / RE-006	14mm / F07	HEX8×25	29.4	3
2"	50A	50	96	120	155	178	204	105	AV-11 / RE-006	14mm / F07	HEX8×25	49	5
2-1/2"	65A	65	116	140	175	190	307	170	AV-11 / RE-010	17mm / F07	HEX8×25	73.6	7.5
3"	80A	80	126	150	185	203	355	229	AV-11 / RE-015	17mm / F07,10	HEX8×25	128	13
4"	100A	100	151	175	210	229	391	259	AV-11 / RE-030	22mm / F07,10	HEX10×30	206	21
5"	125A	125	182	210	250	356	404	259	AV-11 / RE-050	22mm / F07,10	HEX10×30	343	35
6"	150A	150	212	240	280	394	404	259	AV-11 / RE-050	22mm / F07,10	HEX10×30	441	45
8"	200A	200	262	290	330	457	440	297	AV-11 / RE-120	36mm / F14	-	883	90
10"	250A	250	324	355	400	533	713	319	AV-11 / RE-200	46mm / F16	-	1275	130
12"	300A	300	368	400	445	610	723	319	AV-11 / RE-200	46mm / F16	-	1628	166

ELECTRIC 2-PIECE FLANGED BALL VALVE

ANSI 150

AVE-12

SIZE : 1/2" to 12"



VALVE

- Flange : ANSI 150
- Blow-out proof stem
- Locking device
- Lower break away torque

APPLICABLE STANDARDS

- Face to face dimension : API-6D
- End flange dimension : ANSI B16.5
- Shell wall thickness : ANSI B16.34

ACTUATOR

- Power : 95~245VAC/1PH, 24VDC (RE-004)
110/220VAC, 50/60Hz, 1PH (RE-006~200)
380/440VAC, 50/60Hz, 3PH (RE-015~200)
- ISO5211 mounting base : F03 / 04 / 05 (RE-004)
F03 / 05 / 07 (RE-006)
- Manual Lever (RE-004)
- Manual Override (RE-006)
- Declutching Manual Handwheel (RE-010~200)
- Weather proof (IP67)

OPTION

- EXA : Explosionproof Eexd II BT4 (RE-008~200)
- WTA : Watertight Enclosure (IP68)
- PCU : Proportional Control Unit (in/out, 4~20mA, 0-10VDC)
- PIU : Potentiometer (1K~10KΩ)
- CPT : Current Position Transmitter (output 4~20mA)
- DCM : 24VDC Motor (RE-006~200)

MATERIAL LIST

NO.	PART	MATERIAL
1	BODY	A351-CF8/ CF8M
2	END CAP	A351-CF8/ CF8M
3	BALL	A351-CF8/ CF8M
4	BALL SEAT	RTFE
5	STEM	SS 304/316
6	PACKING	PTFE
7	BACK SEAT	PTFE
8	GLAND	SS 304
9	GASKET	PTFE
10	HEX BOLT	SCM 304
11	COUPLING	SS304
12	MOUNTING BRACKET	SS 304
13	COVER & HOUSING	ALUMINUM ALLOY

DIMENSIONS

(UNIT : mm)

SIZE		Ød	Øg	ØC	ØD	L	H	A	BODY / ACTUATOR	Stem / ISO5211	BOLT	TORQUE	
Inch	mm											N.m	Kg.m
1/2"	15A	15	34.9	60.3	90	108	185.3	88.6	AV-12 / RE-004	11mm / F05	HEX6×20	3.4	0.35
3/4"	20A	20	42.9	69.9	100	117	185.3	88.6	AV-12 / RE-004	11mm / F05	HEX6×20	6.9	0.7
1"	25A	25	50.8	79.4	110	127	185.3	88.6	AV-12 / RE-004	11mm / F05	HEX6×20	9.8	1
1-1/4"	32A	32	63.5	88.9	115	140	185.3	88.6	AV-12 / RE-004	11mm / F05	HEX6×20	19.6	2
1-1/2"	40A	40	73	98.4	125	165	204	88.6	AV-12 / RE-006	14mm / F07	HEX8×25	29.4	3
2"	50A	50	92.1	120.7	150	178	204	105	AV-12 / RE-006	14mm / F07	HEX8×25	49	5
2-1/2"	65A	65	105	139.7	180	190	307	170	AV-12 / RE-010	17mm / F07	HEX8×25	73.6	7.5
3"	80A	80	127	152.4	190	203	355	229	AV-12 / RE-015	17mm / F07,10	HEX10×30	128	13
4"	100A	100	157	190.5	230	229	391	259	AV-12 / RE-030	22mm / F07,10	HEX10×30	206	21
5"	125A	125	186	215.9	255	356	404	259	AV-12 / RE-050	22mm / F07,10	HEX10×30	343	35
6"	150A	150	216	241.3	280	394	404	259	AV-12 / RE-050	22mm / F07,10	HEX10×30	441	45
8"	200A	200	270	298.5	343	457	440	297	AV-12 / RE-120	36mm / F14	-	883	90
10"	250A	250	324	362	406	533	713	319	AV-12 / RE-200	46mm / F16	-	1275	130
12"	300A	300	381	432	483	610	723	319	AV-12 / RE-200	46mm / F16	-	1628	166

ELECTRIC, PNEUMATIC ACTUATOR & ACCESSORIES

전동 액추에이터, 공압 액추에이터 및 부속품

Electric Actuator



RE-004

Electric Actuator



RE-006

Electric Actuator



RE-006+PCU

Electric Actuator



RE-008~300

Pneumatic Actuator (Scotch Yoke)



RP-SD Series



RP-SS Series

Pneumatic Actuator (Rack & Pinion)



RP-GD Series



AP Series (Stainless)

Solenoid Valve



PA-01

Solenoid Valve (Explosion)



PA-02

Air Filter Regulator



PA-03

Air Filter Regulator (Stainless)



PA-04

Limit Switch Box (IP67)



PA-05 (E-06)

Limit Switch Box (Explosion)



PA-06

E/P Positioner



PA-07

Smart Positioner



PA-08

Dec clutch Gear Operator



PA-09

Side Handwheel



PA-10

Speed Controller



PA-11

One Touch Fitting



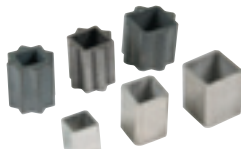
PA-12

Silencer



PA-13

Square Adapter



PA-14 / PA-15

* Application *

