



SERIES

S600/S604/S701
S704/S900/S904



Semiconductor Spec Valve

INTRODUCTION

Our **High-Purity ball valves (HP ball valves)** are engineered to support critical operations across the **semiconductor industry and data centers**, where system cleanliness, safety, and reliability are essential.

These **High-Purity / Semiconductor ball valves** are suitable for a wide range of high-purity and utility gas systems, including:

- **Inert and bulk gas handling systems**
- **Oxygen service systems (oxygen-grade cleaned)**
- **Nitrogen systems (GN₂ / UN₂ applications)**
- **Chemical delivery systems**
- **Vacuum process pipelines**
- **CDA (Clean-Dry Air) systems**
- **OFA (Oil-Free Air) systems**

Designed for **oxygen-clean (CFOS) applications**, these valves ensure contamination-free performance in environments requiring strict cleanliness standards, while offering a **cost-effective solution** for both process-critical and utility applications.

Semiconductor Spec Valve

Sanitary Ball Valve : Series S604-20 / Series S704-20 / Series S904-20

Ball Valve : Series S600-70 / Series S701-70 / Series S900-70

- ISO 15848-1
- Low Emission

TECHNICAL SUMMARY

SIZE RANGE	Series S600-70 / Series S701-70 / Series S900-70 : 1/4"~4" Series S604-20 (Sanitary) / Series S704-20 (Sanitary) / Series S904-20 (Sanitary) : 1/2"~4"
PRESSURE :	800, 1000, 1500, 2000 psi
BODY MATERIAL :	CF8 , CF8M , CF3 , CF3M (304 / 304L/ 316/ 316L) Request available on other alloys
TEMPERATURE RANGE :	-20°C ~ 180 °C (-4°F ~ 356°F)
CONNECTION TYPE :	SCH 5S auto butt-weld / SCH 10S manual butt-weld / Tube OD / Pipe ID / Pipe
TIGHTNESS CLASS :	Helium 2.67X10 ⁻⁵ mbar*I/ (s*mm)
PURGE PORT AVAILABILITY :	NPP, OPP, IOPP
CASTING SPECIFICATIONS :	Conforms to MSS-SP-55
INTERNAL SURFACE ROUGHNESS LEVEL :	AP Ra ≤ 1.0 μm MP Ra ≤ 0.5μm Mechanical Polishing EP Ra ≤ 0.2μm Electropolishing
HANDLE TYPE :	Lever and Actuator
WITH ANTI - STATIC DEVICE OPTIONS :	Yes

*Remark when required : CE, SIL 3, ATEX, EC 1935, FDA



Core Competency – Sanitary Clean Room

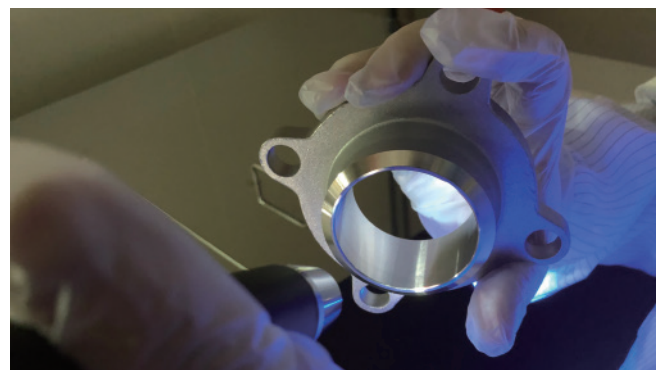


Clean Room Level Specifications

PIC/S GMP = EU GMP Systematics Standard
 Cleanroom : FED-STD-209E Class 10,000
 Vacuum Packing : FED-STD-209E Class 100
 ISO 14644-1 Class ISO 5 ~ Class ISO 7



Cleanroom Packaging Area



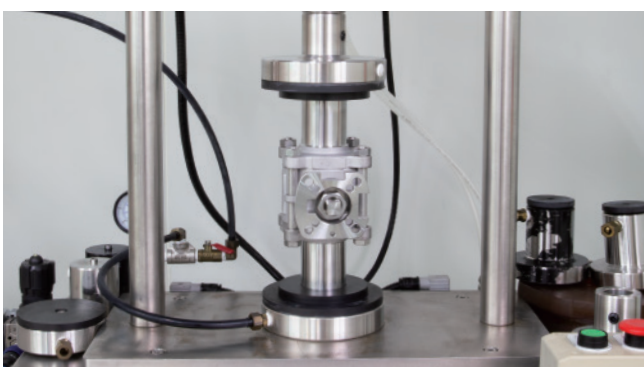
UV Testing



Vacuum Packaging



Clean Room Production Line



ISO 15848-1 Testing



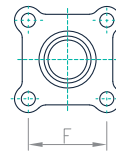
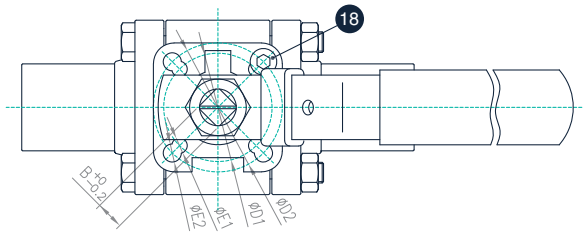
Clean Dry Air



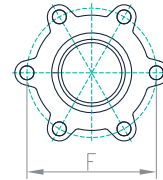
Ultrapure Water

CONSTRUCTION-BILL OF MATERIAL

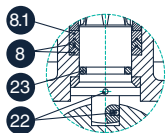
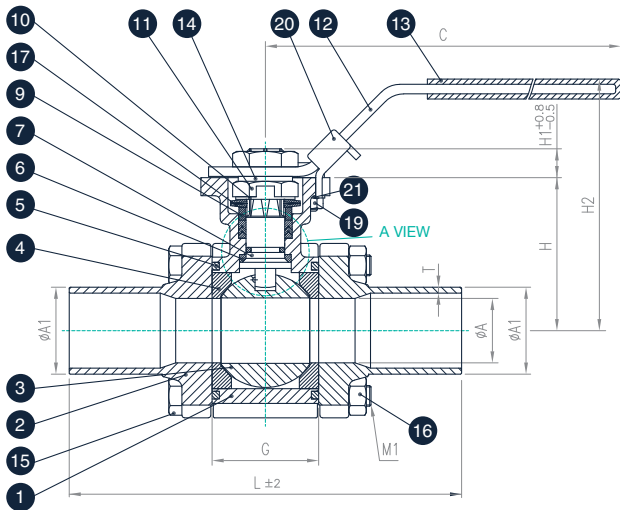
SERIES S600-70
1/4" ~ 2"



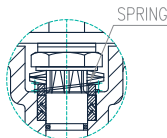
1/4" ~ 1-1/2"



2"



A VIEW



PS : 1/4"-1/2" - Spring
1pcxAnti-static Device

NO.	Parts	Material	Qty
1	Body	CF8M	1
2	End Cap	CF3M	2
3	Ball	SS316 / CF8M	1
4	Seat	PTFE	2
5	Joint Gasket	PTFE	2
6	Stem seal	PTFE	1
7	Stem	SS316	1
8	Stem Packing	PTFE	1
8.1	Stem Packing	25% GLASS FIBER FILED + PTFE	1
9	Gland	SS304	1
10	Lock saddle	SS304	1
11	Stem Nut	SS304	2
12	Handle	SS304	1
13	Handle Sleeve	PLASTIC	1
14	Stem Washer	SS304	1
15	Bolt	SS304	*
16	Bolt Nut	SS304	*
17	Belleville Washer	SS301	2
18	Stop Pin	SS304	1
19	Pin Nut	SS304	1
20	Locking Device	SS304	1
21	Washer	SS304	1
22	Anti-static Device	SS316	@
23	O-RING	VITON	1

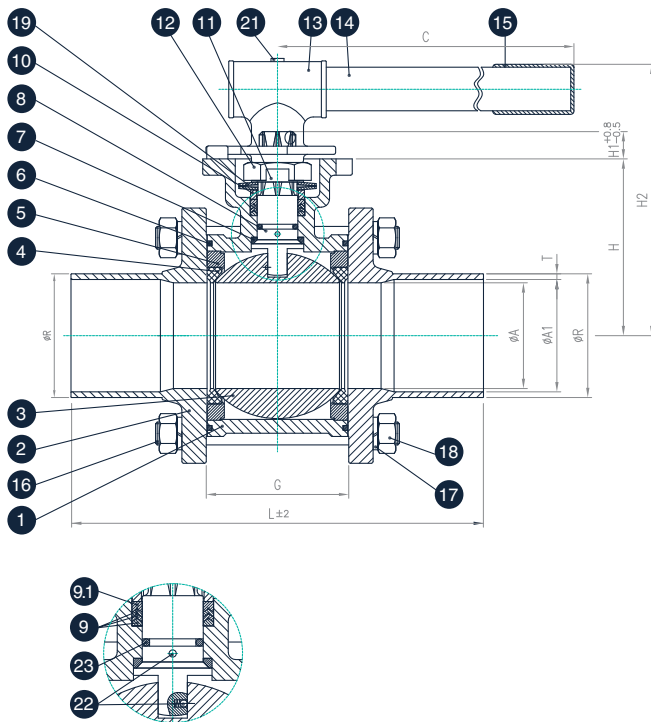
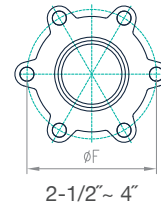
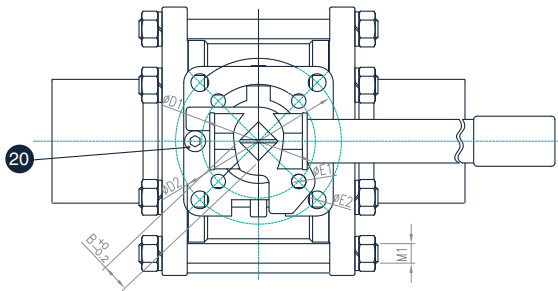
* 1/4" ~ 1-1/2" 4pcs
 * 2" 6pcs
 @ 1/4" ~ 1/2" 1pcs
 @ 3/4" ~ 2" 2pcs

DIMENSIONS(mm)

SIZE	øA	øA1	B	C	øD1	øD2	øE1	øE2	F	G	H	H1	H2	T	L	M1	ISO5211
1/4"	10.3	13.5	9	139	36	42	6	6	38.2	24.5	42.6	7.6	77	1.6	120	M6	F03/F04
3/8"	12.6	17.2	9	139	36	42	6	6	38.2	24.5	42.6	7.6	77	1.6	120	M6	F03/F04
1/2"	15	21.3	9	139	36	42	6	6	38.2	24.5	42.6	7.6	77	1.6	140	M6	F03/F04
3/4"	20	26.9	9	139	36	42	6	6	44.3	31.4	46.85	8.6	82	1.6	140	M8	F03/F04
1"	25	33.7	11	165	42	50	6	7	50	41.3	59.3	10.4	98.5	2	152	M8	F04/F05
1-1/4"	32	42.4	11	165	42	50	6	7	57.2	48.4	62.6	10.4	102	2	165	M10	F04/F05
1-1/2"	38	48.3	14	215	50	70	7.5	9	66.6	56.3	79	13.4	128	2	190	M10	F05/F07
2"	50	60.3	14	215	50	70	7.5	9	114	71.4	87.7	13.4	137	2	203	M12	F05/F07

CONSTRUCTION-BILL OF MATERIAL

SERIES S600-70
2-1/2" ~ 4"



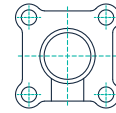
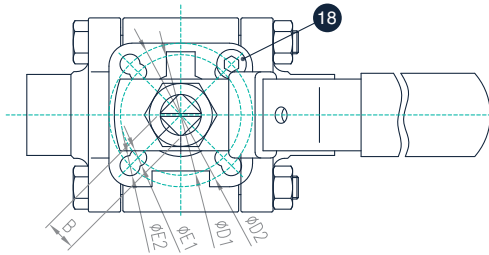
NO.	Parts	Material	Qty
1	Body	CF8M	1
2	End Cap	CF3M	2
3	Ball	CF8M	1
4	Seat	PTFE	2
5	Seat Ring	CF8M	2
6	Joint Gasket	PTFE	2
7	Stem seal	RTFE	1
8	Stem	SS316	1
9	Stem Packing	PTFE	3
9.1	Stem Packing	25% GLASS FIBER FILED + PTFE	1
10	Gland	SS304	1
11	Lock saddle	SS304	1
12	Stem Nut	SS304	1
13	Handle-A	SS304	1
14	Handle-B	SS304	1
15	Handle Sleeve	VINYL	1
16	Bolt	SS304	6
17	Bolt Washer	SS304	12
18	Bolt Nut	SS304	12
19	Belleville Washer	SS301	2
20	Stop Pin	SS304	1
21	Handle Screw	SS304	2
22	Anti-static Device	SS316	2
23	O-RING	VITON	1

DIMENSIONS(mm)

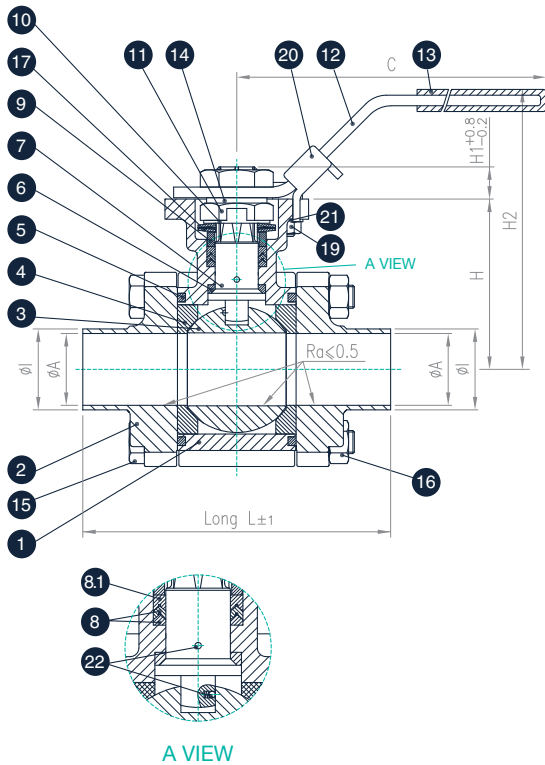
SIZE	øA	øA1	øR	B	C	øD1	øD2	øE1	øE2	øF	G	T	H	H1	H2	L	M1	ISO5211
2-1/2"	65	72.1	76.1	17/19	300	70	102	10	12	139	86.6	2	108.7	16.8	167	254	M14	F07/F10
3"	80	84.3	88.9	17/19	370	70	102	10	12	160	99	2.3	117.7	17.8	176	280	M16	F07/F10
4"	100	109.1	114.3	17/19	370	70	102	10	12	193	127	2.6	133.7	16.8	192	317	M16	F07/F10

CONSTRUCTION-BILL OF MATERIAL

SERIES S604-20
3/8" ~ 2"



3/8" ~ 2"



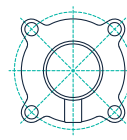
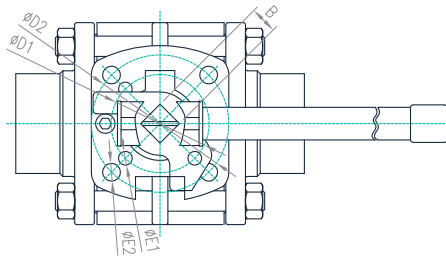
NO.	Parts	Material	Qty
1	Body	CF3M	1
2	End Cap	CF3M	2
3	Ball	SS316 / CF3M	1
4	Seat	PTFE	2
5	Joint Gasket	PTFE	2
6	Thrust Washer	PTFE	1
7	Stem	SS316L	1
8	Gland Packing	PTFE	2
8.1	Gland Packing	25% GLASS FIBER FILED + PTFE	1
9	Gland Bush	SS304	1
10	Stop Washer	SS304	1
11	Stem Nut	SS304	2
12	Handle	SS304	1
13	Handle cover	VINYL	1
14	Stem Washer	SS304	1
15	Bolt	SS304	4
16	Bolt Nut	SS304	4
17	Belleville Washer	SS304	2
18	Stop Pin	SS301	1
19	Pin Nut	SS304	1
20	Locking Device	SS304	1
21	Washer	SS304	1
22	Anti-static Device	SS316	2

DIMENSIONS(mm)

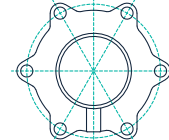
SIZE	øA	øl	B	C	øD1	øD2	øE1	øE2	H	H1	H2	L	ISO5211
3/8"	7.75	9.53	9	139	36	42	6	6	42.6	7.6	77	134.5	F03/F04
1/2"	9.4	12.7	9	139	36	42	6	6	42.6	7.6	77	134.5	F03/F04
3/4"	15.75	19.05	9	139	36	42	6	6	42.6	7.6	77	140.9	F03/F04
1"	22.1	25.4	9	139	36	42	6	6	46.85	8.6	82	161.5	F03/F04
1-1/2"	34.8	38.1	11	165	42	50	6	7	62.6	10.4	102	182.2	F04/F05
2"	47.5	50.8	14	215	50	70	7	9	84.7	14.55	134	191.7	F05/F07

CONSTRUCTION-BILL OF MATERIAL

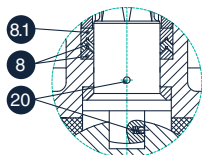
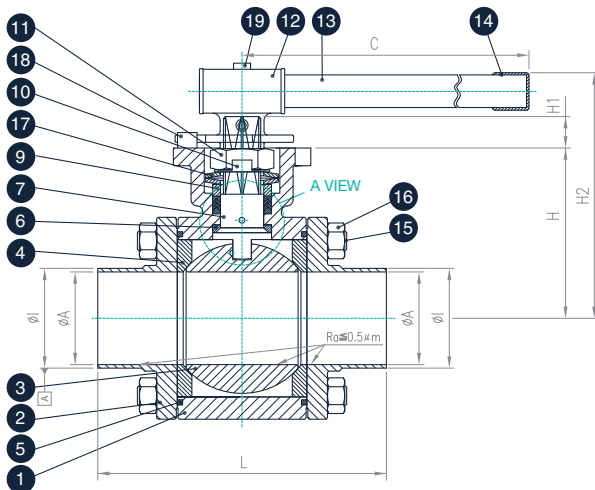
SERIES S604-20
2-1/2"~ 4"



2-1/2"~ 3"



4"



A VIEW

NO.	Parts	Material	Qty
1	Body	CF3M	1
2	End Cap	CF3M	2
3	Ball	CF3M	1
4	Seat	PTFE	2
5	Joint Gasket	PTFE	2
6	Thrust Washer	PTFE	1
7	Stem	SS316L	1
8	Gland Packing	PTFE	2
8.1	Gland Packing	25% GLASS FIBER FILED + PTFE	1
9	Gland Bush	SS304	1
10	Stop Washer	SS304	1
11	Stem Nut	SS304	1
12	Handle-A	SS304	1
13	Handle-B	SS304	1
14	Handle cover	VINYL	1
15	Bolt	SS304	*
16	Bolt Nut	SS304	&
17	Belleville Washer	SS301	2
18	Stop Pin	SS304	1
19	Handle Nut	SS304	2
20	Anti-static Device	SS316	2

2-1/2"~ 3" 8pcs

4" 12pcs

* 2-1/2"~ 3" 4pcs of bolts(double ended external thread)

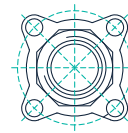
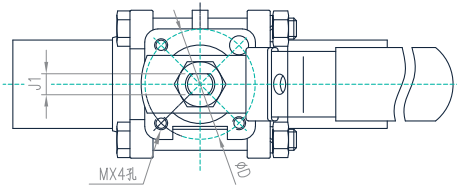
* 4" 6pcs of bolts(double ended external thread)

DIMENSIONS(mm)

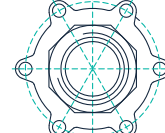
SIZE	ϕA	ϕl	B	C	$\phi D1$	$\phi D2$	$\phi E1$	$\phi E2$	H	H1	H2	L	ISO5211
2-1/2"	60.2	63.5	17	300	70	102	10	12	108.7	16.8	167	247.6	F07/F10
3"	72.9	76.2	17	370	70	102	10	12	117.7	17.8	176	266.8	F07/F10
4"	97.4	101.6	17	370	70	102	10	12	132.55	16.8	192	317.6	F07/F10

CONSTRUCTION-BILL OF MATERIAL

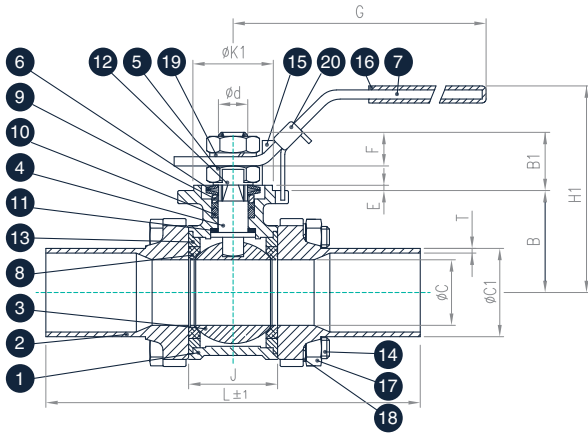
SERIES S701-70
1/4"~ 4"



1/4"~ 3"



4"



NO.	Parts	Material	Qty
1	Body	CF8M	1
2	End Cap	CF3M	2
3	Ball	SS316 / CF8M	1
4	Stem	SS316	1
5	Stem Nut	SS304	2
6	Belleville Washer	SS301	2
7	Handle	SS304	1
8	Seat	PTFE	2
9	Gland Bush	SS304	1
10	Gland Packing	PTFE	1 Set
11	Thrust Washer	RTFE	1
12	Stop Washer	SS304	1
13	Joint Gasket	PTFE	2
14	Bolt	SS304	*
15	Stop Pin	SS304	1
16	Handle cover	VINYL	1
17	Bolt Nut	SS304	&
18	Bolt Washer	SS304	&
19	Stem Washer	SS304	1
20	Locking Device	SS304	1

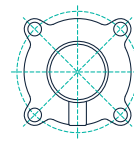
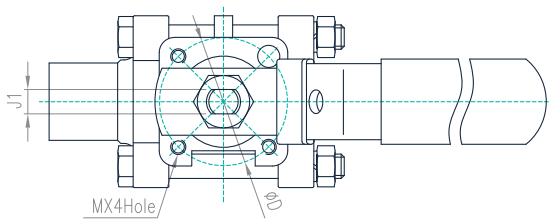
* 1/4"~ 2" 4pcs of bolts(single ended external thread)
 * 2-1/2"~ 3" 4pcs of bolts(double ended external thread)
 * 4" 6pcs of bolts(double ended external thread)
 & 1/4"~ 2" 4pcs
 & 2-1/2"~ 3" 8pcs
 & 4" 12pcs

DIMENSIONS(mm)

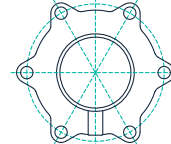
SIZE	øC	øC1	T	B	B1	øD	E	ød	F	G	H1	J	J1	øK1	L	M	ISO5211
1/4"	10	13.5	1.6	29.1	19.8	36	2	9.5	7.4	130	75	23.6	6.5	25	120.2	M5	FOR F03
3/8"	12.7	17.2	1.6	29.1	19.8	36	2	9.5	7.4	130	75	23.6	6.5	25	120.2	M5	FOR F03
1/2"	15	21.3	1.6	29.1	19.8	36	2	9.5	7.4	130	75	23.6	6.5	25	140.2	M5	FOR F03
3/4"	20	26.9	1.6	32.6	17.5	36	2	9.5	6.4	130	77	28	6.5	25	140	M5	FOR F03
1"	25	33.7	1.8	38.9	20.7	42	2	11	12.3	160	85	33.9	8	30	152.2	M5	FOR F04
1-1/4"	32	42.4	2	40.4	24.5	42	2	11	10.9	160	92	42.5	8	30	165.1	M5	FOR F04
1-1/2"	38	48.3	2	46.2	31	50	2	14	13.7	185	102	53.2	9.7	35	190.4	M6	FOR F05
2"	50	60.3	2.5	54.7	31	50	2	14	13.7	185	110	64.6	9.7	35	203	M6	FOR F05
1-1/2"	65	76.1	3	71.5	42.6	70	2.5	19	23.2	260	150	87	12	55	254	M8	FOR F07
3"	80	88.9	3	84.5	39.3	102	2.5	19	18.7	260	162	99	12	70	280.2	M10	FOR F10
4"	100	114.3	3	106.5	52.3	102	3	24	34.2	290	190	127	15	70	317	M10	FOR F10

CONSTRUCTION-BILL OF MATERIAL

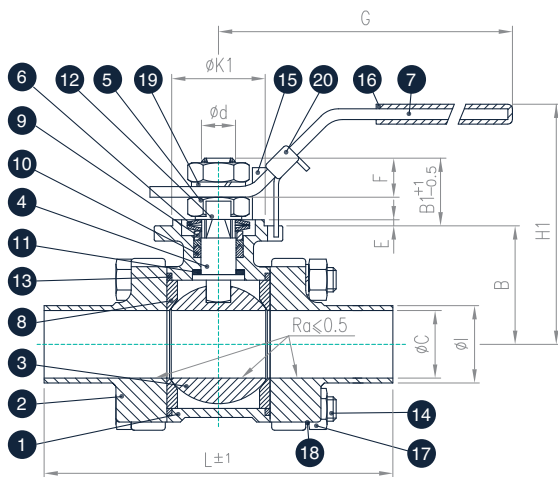
SERIES S704-20
1/2"~ 4"



1/2"~ 3"



4"



NO.	Parts	Material	Qty
1	Body	CF8M	1
2	End Cap	CF3M	2
3	Ball	SS316	1
4	Stem	SS316	1
5	Stem nut	SS304	2
6	Belleville Washer	SS301	2
7	Handle	SS304	1
8	Seat	PTFE	2
9	Gland Bush	SS304	1
10	Gland Packing	PTFE	1 Set
11	Thrust Washer	PTFE	1
12	Stop Washer	SS304	1
13	Joint Gasket	PTFE	2
14	Bolt	SS304	*
15	Stop Pin	SS304	1
16	Handle cover	VINYL	1
17	Bolt Nut	SS304	&
18	Bolt washer	SS304	&
19	Stem Washer	SS304	1
20	Locking Device	SS304	1

* 1/2"~ 2" 4pcs of bolts(single ended external thread)
 * 2-1/2"~ 3" 4pcs of bolts(double ended external thread)
 * 4" 6pcs of bolts(double ended external thread)
 & 1/2"~ 2" 4pcs
 & 2-1/2"~ 3" 8pcs
 & 4" 12pcs

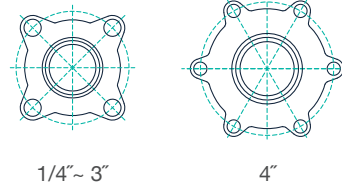
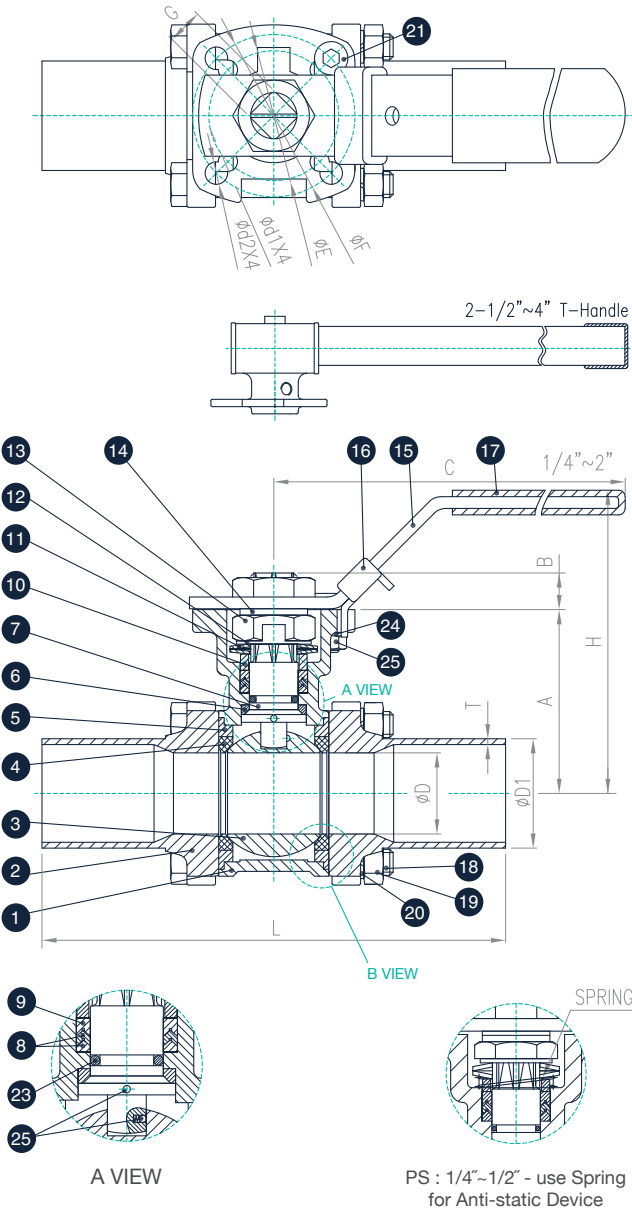
DIMENSIONS(mm)

SIZE	ϕC	ϕI	B	B1	ϕD	E	ϕd	F	G	H1	J1	$\phi K1$	L	M	ISO5211
1/2"	9.4	12.7	29.1	19.8	36	2	9.5	7.4	130	75	6.5	25	139.8	M5	FOR F03
3/4"	15.75	19.05	32.6	17.5	36	2	9.5	6.4	130	77	6.5	25	146	M5	FOR F03
1"	22.1	25.4	38.9	20.7	42	2	11	12.3	160	85	8	30	158.7	M5	FOR F04
1-1/2"	34.8	38.1	46.2	31	50	2	14	13.7	185	102	9.7	35	190.6	M6	FOR F05
2"	47.5	50.8	54.7	31	50	2	14	13.7	185	110	9.7	35	216	M6	FOR F05
2-1/2"	60.2	63.5	71.5	3142.6	70	2.5	19	23.2	260	150	12	55	247.6	M8	FOR F07
3"	72.9	76.2	84.5	39.3	102	2.5	19	18.7	260	162	12	70	266.8	M10	FOR F10
4"	97.4	101.6	106.5	52.3	102	3	24	34.2	290	190	15	70	317.6	M10	FOR F10

CONSTRUCTION-BILL OF MATERIAL

SERIES S900-70

1/4" ~ 4"



NO.	Parts	Material	Qty
1	Body	CF8M	1
2	End Cap	CF3M	2
3	Ball	SS316 / CF8M	1
4	Seat	PTFE	2
5	Joint Gasket	PTFE	2
6	Thrust Washer	RTFE	1
7	Stem	SS316	1
8	Gland Packing	PTFE	#
9	Gland Packing	25% GLASS FIBER FILED + PTFE	1
10	Gland Bush	SS304	1
11	Belleville Washer	SS301	2
12	Stop Washer	SS304	1
13	Stem Nut	SS304	2
14	Stem Washer	SS304	1
15	Handle	SS304	1
16	Locking Device	SS304	1
17	Handle Cover	VINYL	1
18	Bolt	SS304 / B7	*
19	Bolt Nut	SS304 / 2H	&
20	Bolt Washer	SS304	&
21	Stop Pin	SS304	1
22	Pin Nut	SS304	1
23	O-Ring	VITON	1
24	Washer	SS304	1
25	Anti-static Device	SS316	@

1/4"-2" 2pcs, 2-1/2"-4" 3pcs
 * 1/4"-2" 4pcs of bolts(single ended external thread)
 * 2-1/2"-3" 4pcs of bolts(double ended external thread)
 * 4" 6pcs of bolts(double ended external thread)
 & 1/4"-1-1/2" 4pcs
 & 2" When body and end cap were CF8M, 4pcs
 & 2" When body and end cap were WCB, 8pcs
 & 2-1/2"-3" 8pcs, 4" 12pcs
 * 2"-4" When body and end cap were CF8M, Bolts and Bolt Nut are SS304
 & 2"-4" When body and end cap were WCB, Bolts are B7, Bolt Nuts are 2H
 § 2-1/2"-4" 2pcs
 @ 3/4"-4" 2pcs, 1/4"-1/2" 1pcs

DIMENSIONS(mm)

SIZE	øD	øD1	T	A	B	C	øE	øF	G	L	H	ød1	ød2	ISO5211
1/4"	10	13.5	1.6	42.1	6.1	139	36	42	9	120.2	77	6	6	F03 / F04
3/8"	12.7	17.2	1.6	42.1	6.1	139	36	42	9	120.2	77	6	6	F03 / F04
1/2"	15	21.3	1.6	42.1	6.1	139	36	42	9	140.2	77	6	6	F03 / F04
3/4"	20	26.9	1.6	48	6.6	139	36	42	9	140	83	6	6	F03 / F04
1"	25	33.7	1.8	56.6	10.9	165	42	50	11	152.2	96	6	7	F04 / F05
1-1/4"	32	42.4	2	60.9	10.9	165	42	50	11	165.1	100	6	7	F04 / F05
1-1/2"	38	48.3	2	77.5	13.9	215	50	70	14	190.4	127	7.5	9	F05 / F07
2"	50	60.3	2.5	85.2	13.9	215	50	70	14	203	134	7.5	9	F05 / F07
2-1/2"	65	76.1	3	108.7	16.8	300	70	102	17	254	167	10	12	F07 / F10
3"	80	88.9	3	117.7	17.8	370	70	102	17	280.2	176	10	12	F07 / F10
4"	100	114.3	3	132.55	17.8	370	70	102	17	317	192	10	12	F07 / F10



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Established in 1992
TAWD has dedicated over 30 years to
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INNOVATION

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