



SERIES

S307/S504/S604
S704/S904/M304
Sanitary Ball Valves

KEY FEATURES OF TRANSWORLD STEEL'S SANITARY BALL VALVES

Transworld Steel's sanitary ball valves are engineered for industries that demand exceptional purity and corrosion resistance, including food & beverage, dairy, pharmaceuticals, biotechnology, cosmetics, and chemical processing.

316L Stainless Steel Construction

- Made from 316L stainless steel (**316L + CF3M standard**) for superior strength, durability, and chemical resistance
- **Controlled sulfur levels (0.005%–0.017%)** improve weldability, ensuring precise **automatic orbital welding**, essential in biopharmaceutical industries
- **Low iron content (ferrite level of 2%)** enhances corrosion resistance, preventing contamination and ensuring long-lasting performance

Standard & Enhanced Seat Designs for Hygiene & Performance

- **Standard seat design** provides a high level of cleanliness, making it ideal for sanitary applications
- **Cavity-filled seat designs** eliminate dead space, preventing bacterial growth and reduces **contamination risks** while providing **superior sealing** for high-efficiency processing
- Custom **seat materials available** for applications with specific chemical, temperature, or pressure requirements



Seamless System Integration & Compliance

- **Sanitary clamp and tube end connections** for easy integration with existing processing systems
- Fully compliant with **ASME BPE standards**, meeting the needs of high-purity industries
- **Quick disassembly for clean-in-place (CIP) and steam-in-place (SIP) systems**, ensuring efficient maintenance and maximum hygiene



Exceptional Surface Finishing & Microbial Control

- **Smooth, polished surface** prevents bacterial growth, meeting the most stringent hygiene regulations
- **Standard SF1 internal polish** ensures superior cleanliness, protecting product integrity
- **SF4 electropolishing available upon request**, further enhancing corrosion resistance and microbial control
- Additional **custom surface finishes** available to meet specific processing and regulatory requirements

Mechanically Polished		
Surface Designation	Ra Max	
	µin	µm
SF0	No finish requirement	No finish requirement
SF1	20	0.51
SF2	25	0.64
SF3	30	0.76

Electropolished		
Surface Designation	Ra Max	
	µin	µm
SF4	15	0.38
SF5	20	0.51
SF6	25	0.64

INDUSTRIES & SYSTEMS

- Bio-Pharmaceutical & Sterilization – Meeting strict hygiene and safety standards
- Food & Beverage – Ideal for dairy, brewing, and food processing
- Cosmetics & Personal Care – Ensuring hygiene in skincare and liquid products
- Brewing & Distilling – Supporting purity in fermentation processes

APPLICATIONS

- Clean Steam & Sterilization – Ensuring contamination-free processing
- High-Purity Water & WFI – Maintaining ultra-clean water flow
- High-Purity Gas & CDA – Precision control in critical environments
- Ultrafiltration – Advanced filtration for purity assurance
- Gas Delivery & Semiconductor Processing – Reliable performance in high-tech applications

CUSTOMIZATION OPTIONS

- FDA compliance is available at no additional cost but must be requested in advance
- Cleanroom assembly is available upon request at an additional cost

SERIES S304

Three-Piece Sanitary Ball Valve

- ISO 5211 Mounting Pad
- Drive by Flat Head stem
- Standard Stem Packing Design
- Encapsulated Bolts Design
- CIP, SIP System
- Standard, Cavity-Filled Seat (Optional)
- FDA Approved, Clean Room Assemble (Optional)
- Tri-Clamp, Tube, Extended Tube End Cap (Available)
- 316L-CF3M Standard Material, Low Ferrite Content (Optional)
- Easy-to-Maintain Construction



TECHNICAL SUMMARY

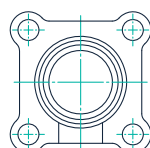
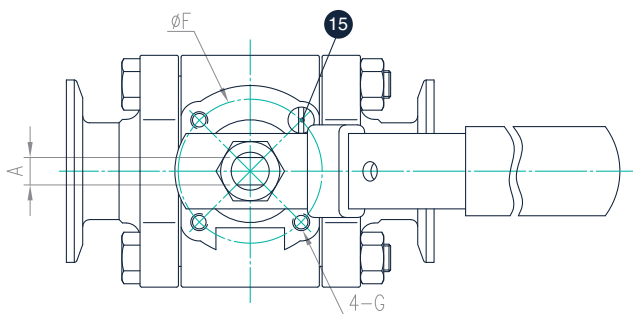
SIZE RANGE	NPS 1/2~1, 1-1/2~2 (DN15~25, DN40~50)
PRESSURE RATING	1000 WOG
END CONNECTIONS	Clamp / Tube End
VALVE TYPE	True Bore
BODY & END CAP MATERIAL (ASTM)	CF8M, CF3M, CF8, CF3
BODY & END CAP MATERIAL (EN)	1.4408, 1.4409, 1.4308, 1.4309
SEAT MATERIAL	PTFE, RTFE, CTFE, TFM1600, MG1241, STFE
HANDLE TYPE	Flat (with / without SR Lock), Oval, Economical Stem Extension
HANDLE MATERIAL	Flat & Oval - 304, 316
V-PORT OPTION	N/A
WITH ANTI-STATIC DEVICE OPTION	Yes
WITH ENCAPSULATED BOLTS DESIGN	All sizes

STANDARD OF COMPLIANCE

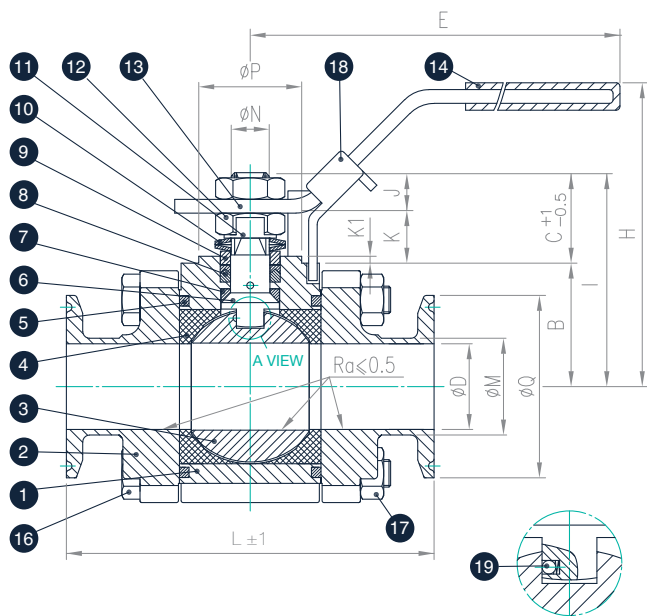
MATERIAL CERTIFICATION	EN 10204-3.1
END CONNECTIONS	ASME BPE
PRESSURE TESTING	API 598
MOUNTING PAD	ISO 5211
MARKING	ISO 5209
CE APPROVAL	2014 / 68 / EU Module H
QUALITY ASSURANCE	ISO 9001:2015
EUROPEAN DIRECTIVES APPLIED	ATEX, 2014/34/EU
SAFETY INTEGRITY LEVEL, SIL	IEC 61508

CONSTRUCTION-BILL OF MATERIAL

SERIES S304
1/2" ~ 2"
Sanitary Clamp Cap



1/2"~2"



A VIEW

NO.	Parts	Material	Qty
1	Body	CF3M	1
2	End Cap	CF3M	2
3	Ball	SS316L	1
4	Seat	PTFE	2
5	Joint Gasket	PTFE	2
6	Stem	SS316L	1
7	Thrust Washer	PTFE	1
8	Gland Packing	PTFE	1 Set
9	Gland Bush	SS304	1
10	Belleville Washer	SS301	2
11	Stop Washer	SS304	1
12	Stem Nut	SS304	2
13	Handle	SS304	1
14	Handle Cover	VINYL	1
15	Stop Pin	SS304	1
16	Bolt	SS304	4
17	Bolt Nut	SS304	4
18	Locking Device	SS304	1
19	Anti-static Device	SS316	2

DIMENSIONS(mm)

SIZE	øD	øM	øQ	A	B	C	E	øF	G	H	I	J	K	K1	L	øP	øN	ISO5211
1/2"	9.4	12.7	25.2	6.5	29.8	7.4	134	36	M5	64	37.2	6.1	1.3	0.5	89.1	25	9.5	FOR F03
3/4"	15.75	19	25.2	6.5	29	16.1	134	36	M5	72	45.1	7.3	8.8	2	101.6	25	9.5	FOR F03
1"	22.2	25.4	50.4	6.5	33	18.1	134	36	M5	77	51.1	8.8	9.3	2	114.5	25	9.5	FOR F03
1-1/2"	34.9	38.1	50.5	8	40	24.3	170	42	M5	88	64.3	9.7	14.6	2	140.1	30	11.1	FOR F04
2"	47.5	50.8	63.9	9.7	55.5	28.9	207	50	M6	110	84.4	13.7	15.2	2	159	35	14.3	FOR F05

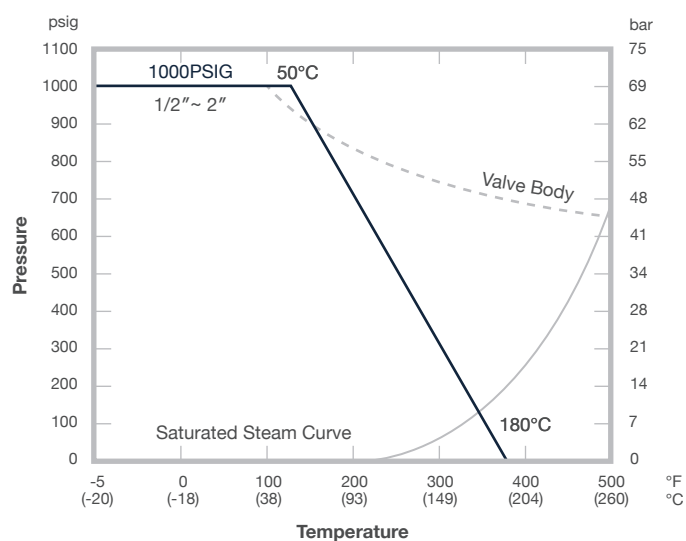
TECHNICAL DATA | Breakaway torque / Cv and Kv values / Weight

S304							
Size	Torque (N.m)	Torque (lbs.in)	Cv values	Kv values (M ³ /h)	Weight (Kg)		
					Extended Tube	Tube	Cimap
1/2"	9	80	10	9	0.7	0.7	0.7
3/4"	12	106	30	26	0.8	0.8	0.9
1"	13	115	65	55	1.2	1.3	1.4
1-1/2"	33	292	200	170	2.4	2.5	2.6
2"	42	372	410	349	5.5	5.8	5.8

Without Grease

TECHNICAL DATA | Pressure - Temperature diagram | 1/2" ~ 4"

Series S304 (True Bore)
 Seat material : PTFE / RTFE



SERIES S504

Three-Piece Sanitary Ball Valve

- No ISO 5211 Mounting Pad
- Stem with Flat Head and Gland Nut Design
- CIP, SIP System
- Standard, Cavity-Filled Seat (Optional)
- FDA Approved, Clean Room Assemble (Optional)
- Tri-Clamp, Tube, Extended Tube End Cap (Available)
- 316L-CF3M Standard Material, Low Ferrite Content (Optional)
- Easy-to-Maintain Construction



TECHNICAL SUMMARY

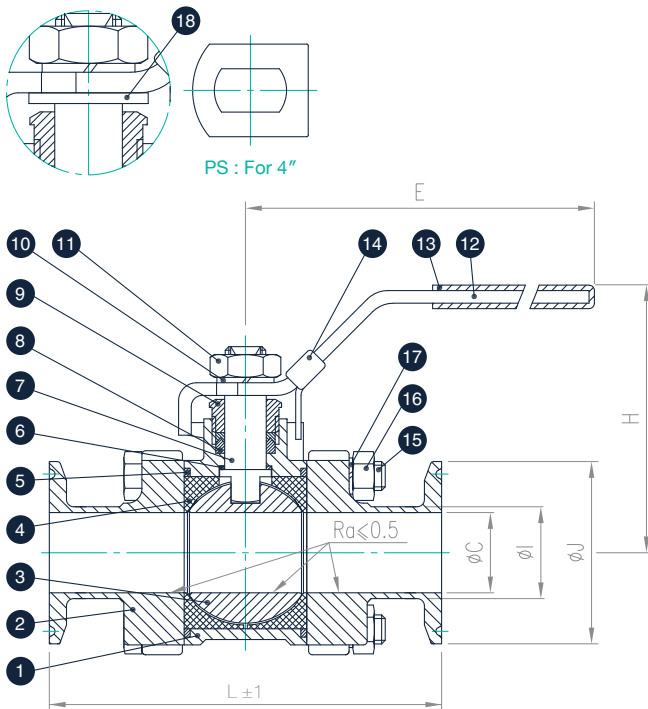
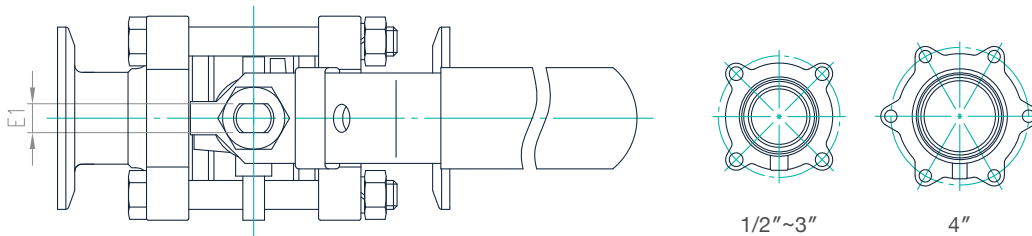
SIZE RANGE	NPS 1/2~1, 1-1/2~4 (DN15~25, DN40~100)
PRESSURE RATING	1000 WOG (NPS 1/2~2, DN15~50) 800 WOG (NPS 2-1/2~4, DN65~100)
END CONNECTIONS	Clamp / Tube End
VALVE TYPE	Full Bore
BODY & END CAP MATERIAL (ASTM)	CF8M, CF3M, CF8, CF3
BODY & END CAP MATERIAL (EN)	1.4408, 1.4409, 1.4308, 1.4309
SEAT MATERIAL	PTFE, RTFE, CTFE, TFM1600, MG1241, STFE
HANDLE TYPE	Flat (with / without SR Lock), Butterfly, Oval, Economical Stem Extension
HANDLE MATERIAL	Flat & Oval - 304, 316
V-PORT OPTION	N/A
WITH ANTI-STATIC DEVICE OPTION	Yes
WITH ENCAPSULATED BOLTS DESIGN	N/A

STANDARD OF COMPLIANCE

MATERIAL CERTIFICATION	EN 10204-3.1
END CONNECTIONS	ASME BPE
PRESSURE TESTING	API 598
MOUNTING PAD	ISO 5211
MARKING	ISO 5209
CE APPROVAL	2014 / 68 / EU Module H
QUALITY ASSURANCE	ISO 9001:2015
EUROPEAN DIRECTIVES APPLIED	ATEX, 2014/34/EU

CONSTRUCTION-BILL OF MATERIAL

SERIES S504
1/2" ~ 4"
Sanitary Clamp Cap



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

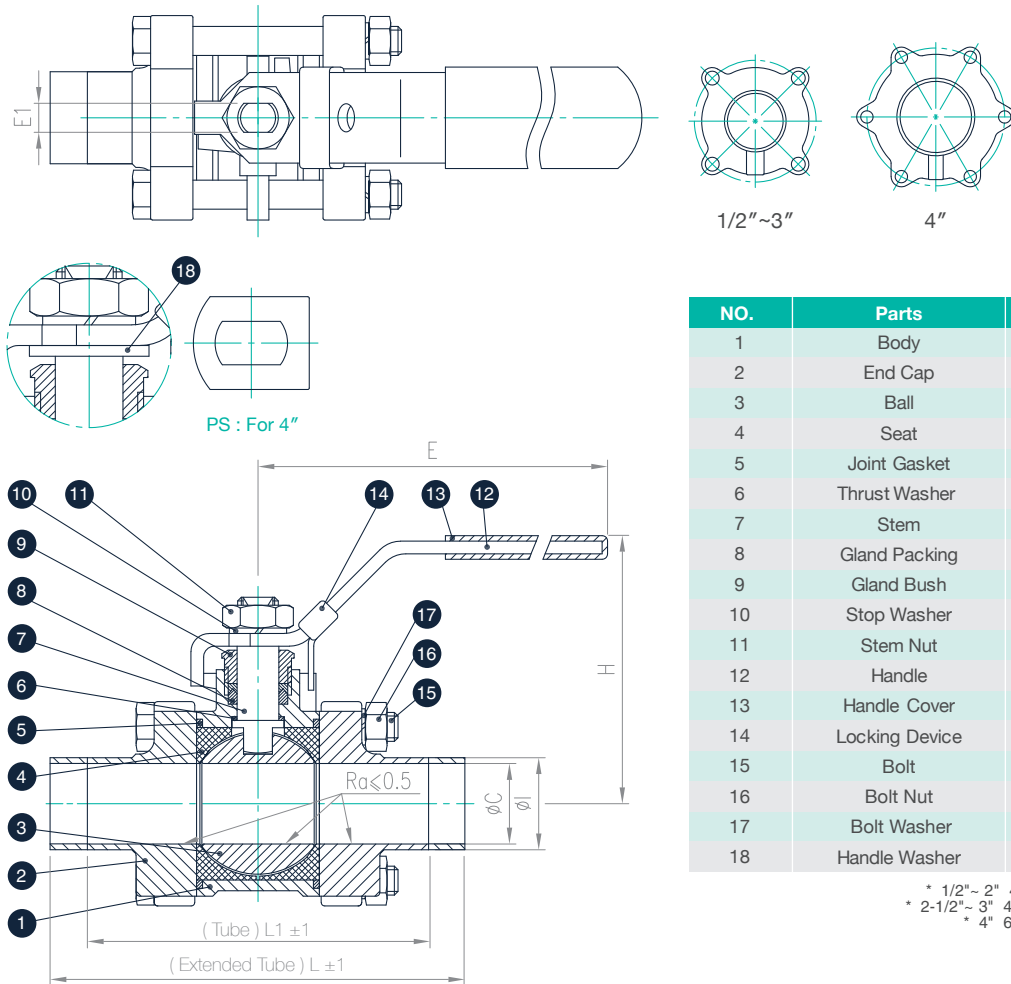
* 1/2" ~ 2" 4pcs of bolts(single ended external thread)
 * 2-1/2" ~ 3" 4pcs of bolts(double ended external thread)
 * 4" 6pcs of bolts(double ended external thread)
 & 1/2" ~ 2" 4pcs
 & 2-1/2" ~ 3" 8pcs
 & 4" 12pcs
 @ 4" 1pcs

DIMENSIONS(mm)

SIZE	øC	øI	øJ	L	H	E	E1
1/2"	9.4	12.7	25.2	89.1	64	132	6.5
3/4"	15.75	19	25.2	101.6	67	132	6.5
1"	22.2	25.4	50.4	114.5	75	167	8
1-1/2"	34.9	38.1	50.5	140.1	90	192	9.7
2"	47.5	50.8	63.9	159	98	192	9.7
2-1/2"	60.3	63.5	77.4	174	137	252	12
3"	73	76.2	90.9	193.2	147	252	12
4"	97.4	101.6	118.9	226	175	282	15

CONSTRUCTION-BILL OF MATERIAL

SERIES S504
1/2" ~ 4"
Sanitary Tube Cap



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

* 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
 @ 4" 1pcs

DIMENSIONS(mm)

SIZE	øC	øI	L	L1	H	E	E1
1/2"	9.4	12.7	139.8	66.2	64	132	6.5
3/4"	15.75	19	146	75	67	132	6.5
1"	22.2	25.4	158.7	94.2	75	167	8
1-1/2"	34.9	38.1	190.6	114.7	90	192	9.7
2"	47.5	50.8	216	128	98	192	9.7
2-1/2"	60.3	63.5	247.6	160	137	252	12
3"	73	76.2	266.8	176.2	147	252	12
4"	97.4	101.6	317.6	210	175	282	15

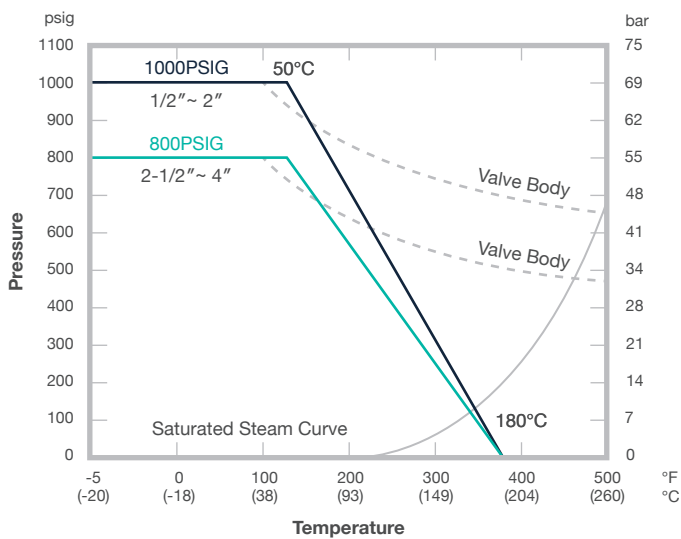
TECHNICAL DATA | Breakaway torque / Cv and Kv values / Weight

S504							
Size	Torque (N.m)	Torque (lbs.in)	Cv values	Kv values (M ³ /h)	Weight (Kg)		
					Extended Tube	Tube	Cimap
1/4"	9	80	10	9	0.6	0.6	0.7
3/4"	10	89	30	26	0.8	0.7	0.8
1"	16	142	65	55	1.1	1.1	1.2
1-1/2"	38	337	200	170	2.5	2.5	2.6
2"	46	408	410	349	3.9	3.8	3.9
2-1/2"	98	868	600	510	8.3	8.1	8.3
3"	111	984	1050	893	11.6	11.3	11.8
4"	117	1037	1900	1615	19.6	19.0	20.1

Without Grease

TECHNICAL DATA | Pressure - Temperature diagram | 1/2" ~ 4"

Series S504 (True Bore)
 Seat material : PTFE / RTFE



SERIES S604

Three-Piece Sanitary Ball Valve

- ISO 5211 Mounting Pad
- Drive by Diagonal Square Head Stem
- Standard Stem Packing Design
- CIP, SIP System
- Standard, Cavity-Filled Seat (Optional)
- FDA Approved, Clean Room Assemble (Optional)
- Tri-Clamp, Tube, Extended Tube End Cap (Available)
- 316L-CF3M Standard Material, Low Ferrite Content (Optional)
- Easy-to-Maintain Construction



TECHNICAL SUMMARY

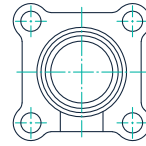
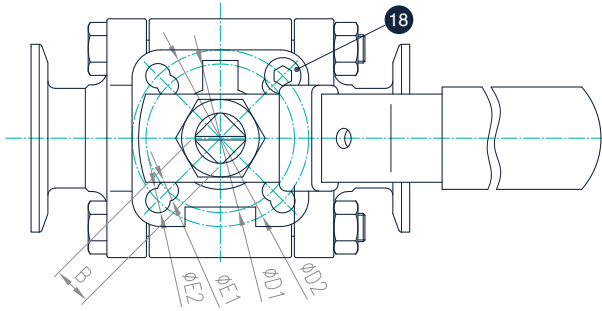
SIZE RANGE	NPS 1/2~1, 1-1/2~4 (DN15~25, DN40~100)
PRESSURE RATING	1000 WOG (NPS 1/2~2, DN15~50) 800 WOG (NPS 2-1/2~4, DN65~100)
END CONNECTIONS	Clamp / Tube End
VALVE TYPE	Full Bore
BODY & END CAP MATERIAL (ASTM)	CF8M, CF3M, CF8, CF3
BODY & END CAP MATERIAL (EN)	1.4408, 1.4409, 1.4308, 1.4309
SEAT MATERIAL	PTFE, RTFE, CTFE, TFM1600, MG1241, STFE
HANDLE TYPE	Flat (with / without SR Lock), Oval, Cast, T-Bar, Spring Return Safety (SRS) Handle, Economical Stem Extension
HANDLE MATERIAL	Flat, Oval, T-Bar - 304, 316, Cast - CF8, CF8M
V-PORT OPTION	N/A
WITH ANTI-STATIC DEVICE OPTION	Yes
WITH ENCAPSULATED BOLTS DESIGN	NPS 1/2~2, DN15~50

STANDARD OF COMPLIANCE

MATERIAL CERTIFICATION	EN 10204-3.1
END CONNECTIONS	ASME BPE
PRESSURE TESTING	API 598
MOUNTING PAD	ISO 5211
MARKING	ISO 5209
CE APPROVAL	2014 / 68 / EU Module H
QUALITY ASSURANCE	ISO 9001:2015
EUROPEAN DIRECTIVES APPLIED	ATEX, 2014/34/EU
SAFETY INTEGRITY LEVEL, SIL	IEC 61508

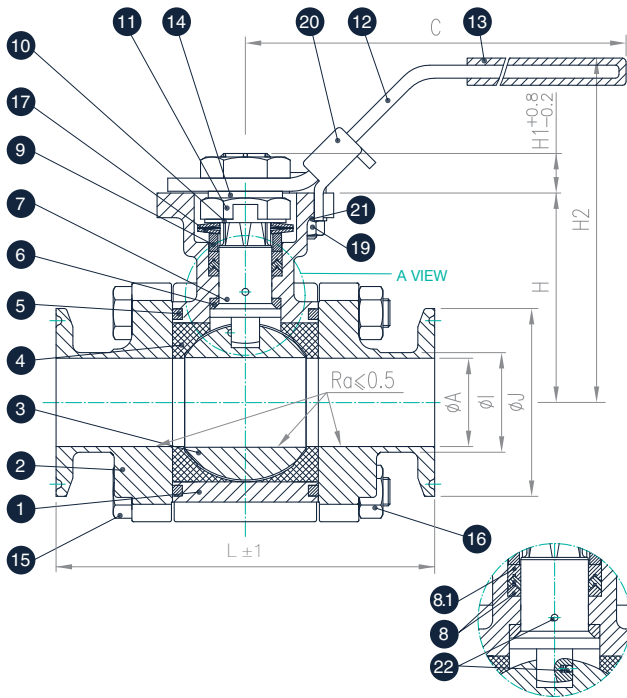
CONSTRUCTION-BILL OF MATERIAL

SERIES S604
1/2" ~ 2"
Sanitary Clamp Cap



1/2"~2"

Encapsulated Bolts



A VIEW

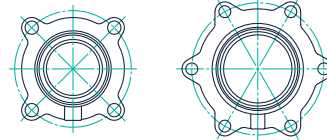
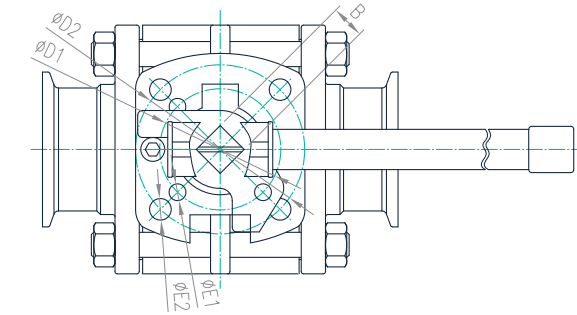
NO.	Parts	Material	Qty
1	Body	CF3M	1
2	End Cap	CF3M	2
3	Ball	SS316L	1
4	Seat	PTFE	2
5	Joint Gasket	PTFE	2
6	Thrust Washer	PTFE	1
7	Stem	SS316L	1
8	Gland Packing	PTFE	2
8.1	Gland Packing	25% GLASS FIBER FILED+PTFE	1
9	Gland Bush	SS304	1
10	Stop Washer	SS304	1
11	Stem Nut	SS304	2
12	Handle	SS304	1
13	Handle Cover	VINYL	1
14	Stem Washer	SS304	1
15	Bolt	SS304	4
16	Bolt Nut	SS304	4
17	Belleville Washer	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	2

DIMENSIONS(mm)

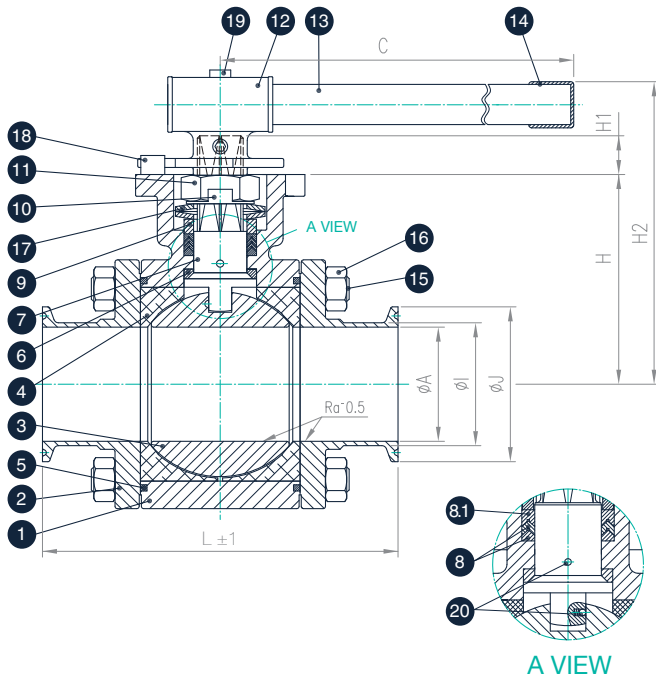
SIZE	øA	øI	øJ	B	C	øD1	øD2	øE1	øE2	H	H1	øM	L Clamp	ISO5211
1/2"	9.4	12.7	25.2	9	139	36	42	6	6	42.6	7.6	77	89.1	FOR F03 / F04
3/4"	15.75	19	25.2	9	139	36	42	6	6	42.6	7.6	77	101.6	FOR F03 / F04
1"	22.2	25.4	50.4	9	139	36	42	6	6	46.85	8.6	82	114.5	FOR F03 / F04
1-1/2"	34.9	38.1	50.5	11	165	42	50	6	7	62.6	10.4	102	140.1	FOR F04 / F05
2"	47.5	50.8	63.9	14	215	50	70	7	9	84.7	14.55	134	159	FOR F05 / F07

CONSTRUCTION-BILL OF MATERIAL

SERIES S604
2-1/2" ~ 4"
Sanitary Clamp Cap



2-1/2" ~ 3" 4"
Not Encapsulated Bolts



NO.	Parts	Material	Qty
1	Body	CF3M	1
2	End Cap	CF3M	2
3	Ball	SS316L	1
4	Seat	PTFE	2
5	Joint Gasket	PTFE	2
6	Thrust Washer	PTFE	1
7	Stem	SS316L	1
8	Gland Packing	PTFE	3
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

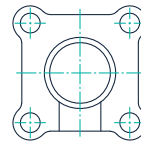
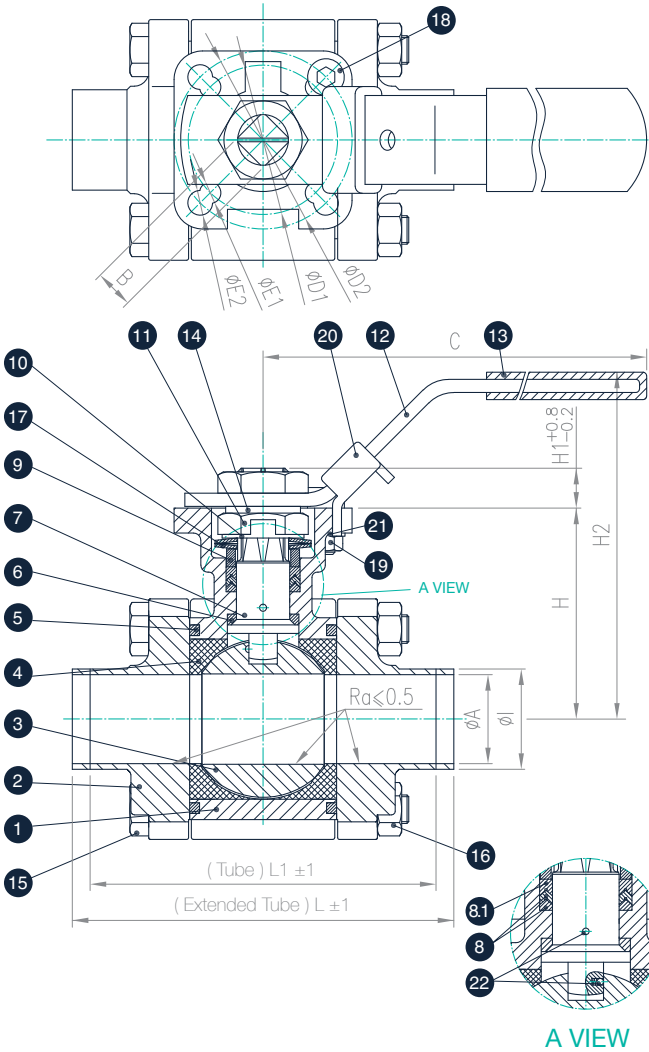
& 2-1/2" ~ 3" (8pcs) , 4" (12pcs)
2-1/2" ~ 3" 4pcs of bolts(double ended external thread)
4" 6pcs of bolts(double ended external thread)

DIMENSIONS(mm)

SIZE	ϕA	ϕI	ϕJ	B	C	$\phi D1$	$\phi D2$	$\phi E1$	$\phi E2$	H	H1	H2	L Clamp	ISO5211
2-1/2"	60.3	63.5	77.4	17	300	70	102	10	12	108.7	16.8	167	174	FOR F07 / F10
3"	73	76.2	90.9	17	370	70	102	10	12	117.7	17.8	176	193.2	FOR F07 / F10
4"	97.4	101.6	118.9	17	370	70	102	10	12	132.55	16.8	192	226	FOR F07 / F10

CONSTRUCTION-BILL OF MATERIAL

SERIES S604
1/2" ~ 2"
Sanitary Tube Cap



1/2" ~ 2"
 Encapsulated Bolts

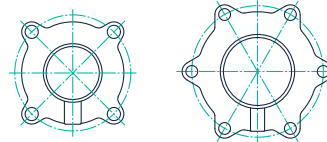
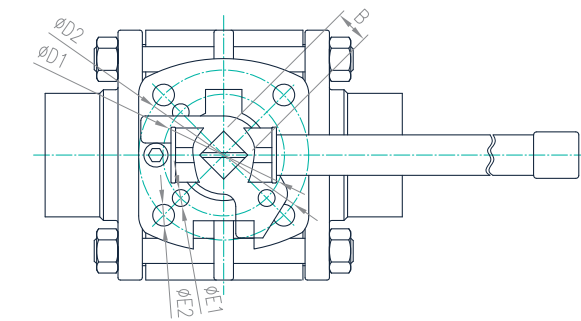
NO.	Parts	Material	Qty
1	Body	CF3M	1
2	End Cap	CF3M	2
3	Ball	SS316L	1
4	Seat	PTFE	2
5	Joint Gasket	PTFE	2
6	Thrust Washer	PTFE	1
7	Stem	SS316L	1
8	Gland Packing	PTFE	2
8.1	Gland Packing	25% GLASS FIBER FILED+PTFE	1
9	Gland Bush	SS304	1
10	Stop Washer	SS304	1
11	Stem Nut	SS304	2
12	Handle	SS304	1
13	Handle Cover	VINYL	1
14	Stem Washer	SS304	1
15	Bolt	SS304	4
16	Bolt Nut	SS304	4
17	Belleville Washer	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	2

DIMENSIONS(mm)

SIZE	øA	øI	B	C	øD1	øD2	øE1	øE2	H	H1	H2	L	L1	ISO5211
1/2"	9.4	12.7	9	139	36	42	6	6	42.6	7.6	77	134.5	66.2	FOR F03 / F04
3/4"	15.75	19	9	139	36	42	6	6	42.6	7.6	77	140.9	75	FOR F03 / F04
1"	22.2	25.4	9	139	36	42	6	6	46.85	8.6	82	161.5	94.2	FOR F03 / F04
1-1/2"	34.9	38.1	11	165	42	50	6	7	62.6	10.4	102	182.2	114.7	FOR F04 / F05
2"	47.5	50.8	14	215	50	70	7	9	84.7	14.55	134	191.7	128	FOR F05 / F07

CONSTRUCTION-BILL OF MATERIAL

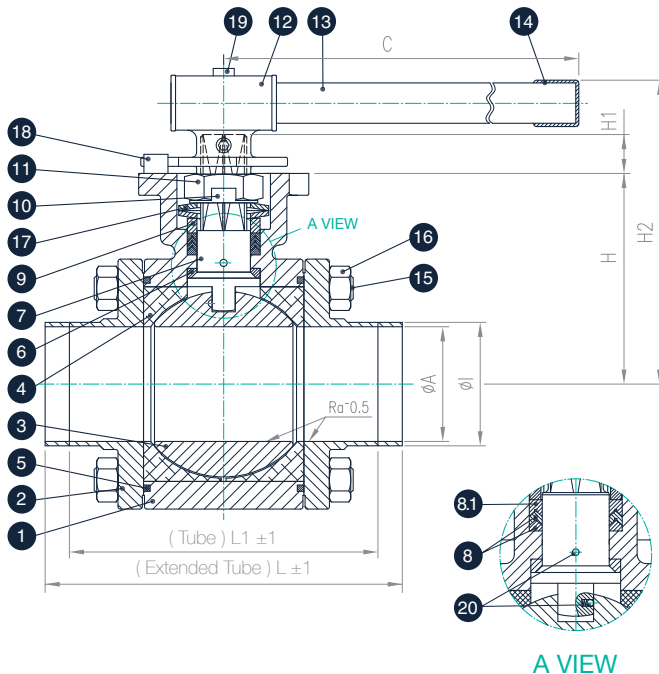
SERIES S604
2-1/2" ~ 4"
Sanitary Tube Cap



2-1/2" ~ 3"

4"

Not Encapsulated Bolts



NO.	Parts	Material	Qty
1	Body	CF3M	1
2	End Cap	CF3M	2
3	Ball	SS316L	1
4	Seat	PTFE	2
5	Joint Gasket	PTFE	2
6	Thrust Washer	PTFE	1
7	Stem	SS316L	1
8	Gland Packing	PTFE	3
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	ϕI	B	C	$\phi D1$	$\phi D2$	$\phi E1$	$\phi E2$	H	H1	H2	L	L1	ISO5211
2-1/2"	60.3	63.5	17	300	70	102	10	12	108.7	16.8	167	247.6	160	FOR F07 / F10
3"	73	76.2	17	370	70	102	10	12	117.7	17.8	176	266.8	176.2	FOR F07 / F10
4"	97.4	101.6	17	370	70	102	10	12	132.55	16.8	192	317.6	210	FOR F07 / F10

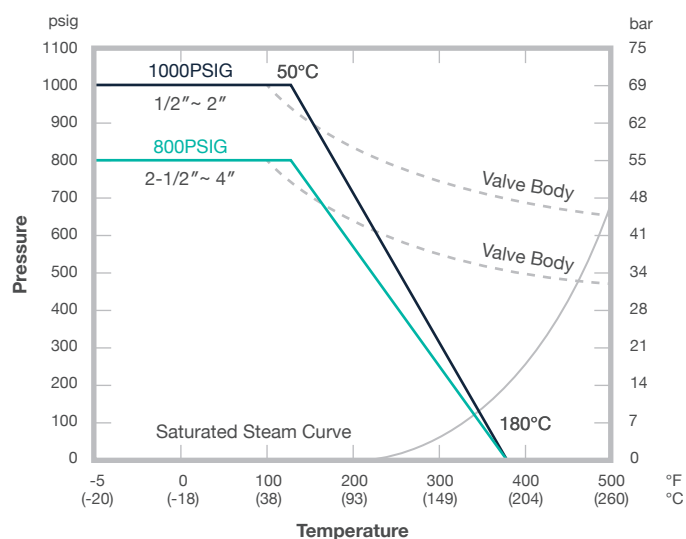
TECHNICAL DATA | Breakaway torque / Cv and Kv values / Weight

S604							
Size	Torque (N.m)	Torque (lbs.in)	Cv values	Kv values (M ³ /h)	Weight (Kg)		
					Extended Tube	Tube	Cmap
1/2"	9	80	10	9	0.8	0.8	0.8
3/4"	12	106	30	26	0.8	0.8	0.8
1"	13	115	65	55	1.2	1.3	1.5
1-1/2"	33	292	200	170	2.5	2.6	2.6
2"	42	372	410	349	6.0	6.2	6.1
2-1/2"	91	806	600	510	9.5	9.3	9.3
3"	104	921	1050	893	12.7	12.4	12.2
4"	117	1037	1900	1615	20.4	19.8	20.0

Without Grease

TECHNICAL DATA | Pressure - Temperature diagram | 1/2" ~ 4"

Series S604 (True Bore)
 Seat material : PTFE / RTFE



SERIES S704

Three-Piece Sanitary Ball Valve

- ISO 5211 Mounting Pad
- Drive by Flat Head Stem
- Standard Stem Packing Design
- CIP, SIP System
- Standard, Cavity-Filled Seat (Optional)
- FDA Approved, Clean Room Assemble (Optional)
- Tri-Clamp, Tube, Extended Tube End Cap (Available)
- 316L-CF3M Standard Material, Low Ferrite Content (Optional)
- Easy-to-Maintain Construction



TECHNICAL SUMMARY

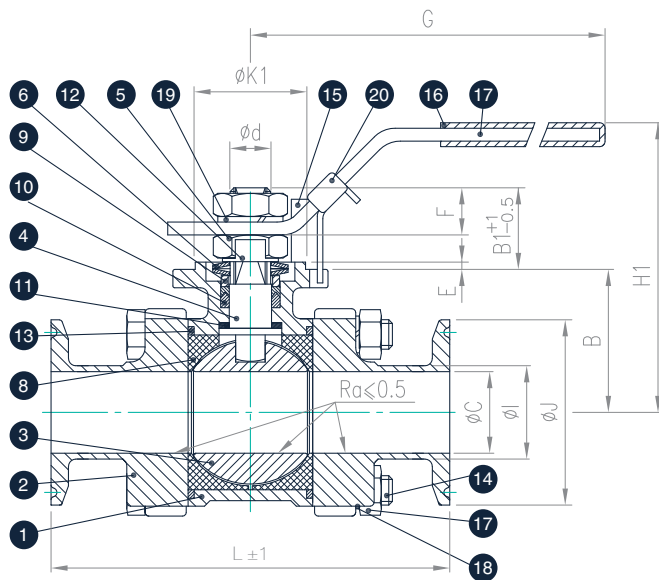
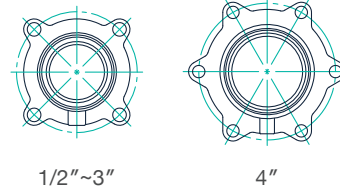
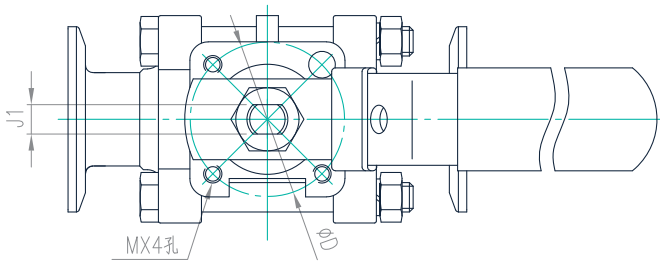
SIZE RANGE	NPS 1/2~1, 1-1/2~4 (DN15~25, DN40~100)
PRESSURE RATING	1000 WOG (NPS 1/2~2, DN15~50) 800 WOG (NPS 2-1/2~4, DN65~100)
END CONNECTIONS	Clamp / Tube End
VALVE TYPE	Full Bore
BODY & END CAP MATERIAL (ASTM)	CF8M, CF3M, CF8, CF3
BODY & END CAP MATERIAL (EN)	1.4408, 1.4409, 1.4308, 1.4309
SEAT MATERIAL	PTFE, RTFE, CTFE, TFM1600, MG1241, STFE
HANDLE TYPE	Flat (with / without SR Lock), Oval, Economical Stem Extension
HANDLE MATERIAL	Flat & Oval - 304, 316
V-PORT BALL OPTION	N/A
WITH ANTI-STATIC DEVICE OPTION	Yes
WITH ENCAPSULATED BOLTS DESIGN	N/A

STANDARD OF COMPLIANCE

MATERIAL CERTIFICATION	EN 10204-3.1
END CONNECTIONS	ASME BPE
PRESSURE TESTING	API 598
MOUNTING PAD	ISO 5211
MARKING	ISO 5209
CE APPROVAL	2014 / 68 / EU Module H
QUALITY ASSURANCE	ISO 9001:2015
EUROPEAN DIRECTIVES APPLIED	ATEX, 2014/34/EU
SAFETY INTEGRITY LEVEL, SIL	IEC 61508

CONSTRUCTION-BILL OF MATERIAL

SERIES S704
1/2" ~ 4"
Sanitary Clamp Cap



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	Belleve 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

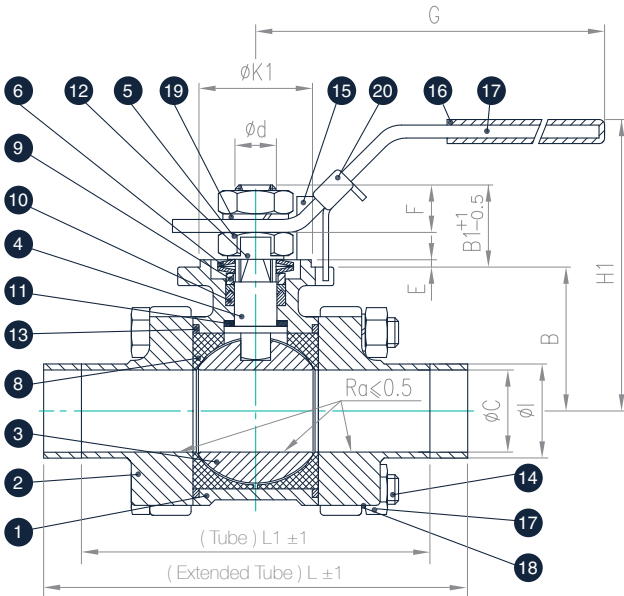
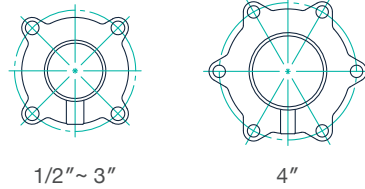
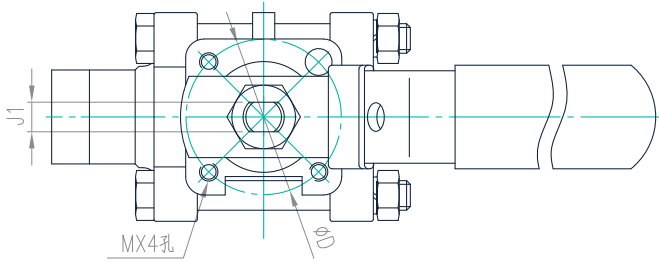
* 1/2"~ 2" 4pcs of bolts(single ended external thread)
 * 2-1/2"~ 3" 4pcs of bolts(double ended external thread)
 * 4" 6pcs of bolts(double ended external thread)
 & 1/2"~ 2" 4pcs
 & 2-1/2"~ 3" 8pcs
 & 4" 12pcs

DIMENSIONS(mm)

SIZE	øC	øI	øJ	B	B1	øD	E	ød	F	G	H1	J1	øK1	L	M	ISO5211
1/2"	9.4	12.7	25.2	29.1	19.8	36	2	9.5	7.4	130	75	6.5	25	89.1	M5	FOR F03
3/4"	15.75	19	25.2	17.5	17.5	36	2	9.5	6.4	130	77	6.5	25	101.6	M5	FOR F03
1"	22.2	25.4	50.4	20.7	20.7	42	2	11	12.3	160	85	8	30	114.5	M5	FOR F04
1-1/2"	34.9	38.1	50.5	31	31	50	2	14	13.7	185	102	9.7	35	140.1	M6	FOR F05
2"	47.5	50.8	63.9	31	31	50	2	14	13.7	185	110	9.7	35	159	M6	FOR F05
2-1/2"	60.3	63.5	77.4	42.6	42.6	70	2.5	19	23.2	260	150	12	55	174	M8	FOR F07
3"	73	76.2	90.9	39.3	39.3	102	2.5	19	18.7	260	162	12	70	193.2	M10	FOR F10
4"	97.4	101.6	118.9	52.3	52.3	102	3	24	34.2	290	190	15	70	226	M10	FOR F10

CONSTRUCTION-BILL OF MATERIAL

SERIES S704
1/2" ~ 4"
Sanitary Tube Cap



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	φK1	L	L1	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	66.2	M5	FOR F03
3/4"	15.75	19	32.6	17.5	36	2	9.5	6.4	130	77	6.5	25	146	75	M5	FOR F03
1"	22.2	25.4	38.9	20.7	42	2	11	12.3	160	85	8	30	158.7	94.2	M5	FOR F04
1-1/2"	34.9	38.1	46.2	31	50	2	14	13.7	185	102	9.7	35	190.6	114.7	M6	FOR F05
2"	47.5	50.8	54.7	31	50	2	14	13.7	185	110	9.7	35	216	128	M6	FOR F05
2-1/2"	60.3	63.5	71.5	42.6	70	2.5	19	23.2	260	150	12	55	247.6	160	M8	FOR F07
3"	73	76.2	84.5	39.3	102	2.5	19	18.7	260	162	12	70	266.8	176.2	M10	FOR F10
4"	97.4	101.6	106.5	52.3	102	3	24	34.2	290	190	15	70	317.6	210	M10	FOR F10

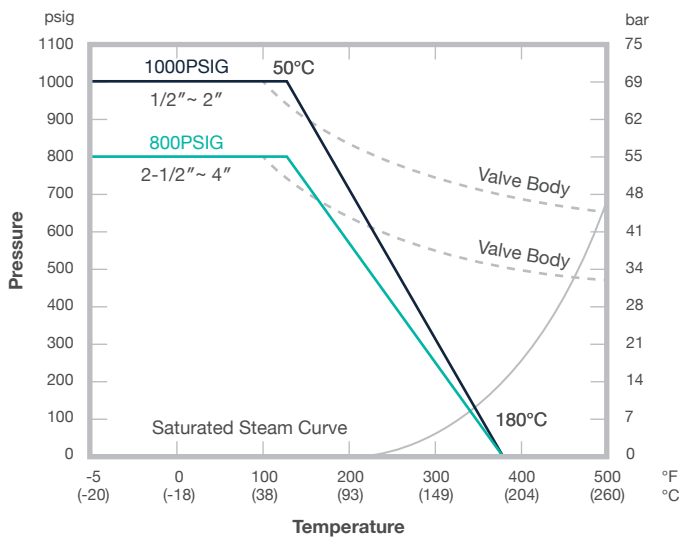
TECHNICAL DATA | Breakaway torque / Cv and Kv values / Weight

S704							
Size	Torque (N.m)	Torque (lbs.in)	Cv values	Kv values (M ³ /h)	Weight (Kg)		
					Extended Tube	Tube	Cimap
1/2"	9	80	10	9	0.7	0.7	0.7
3/4"	10	89	30	26	0.9	0.7	0.8
1"	16	142	65	55	1.2	1.2	1.3
1-1/2"	36	319	200	170	2.7	2.6	2.7
2"	44	390	410	349	3.9	3.9	4.0
2-1/2"	91	806	600	510	8.5	8.2	8.3
3"	104	921	1050	893	12.2	12.0	12.1
4"	117	1037	1900	1615	19.6	19.0	19.2

Without Grease

TECHNICAL DATA | Pressure - Temperature diagram | 1/2" ~ 4"

Series S704 (True Bore)
Seat material : PTFE / RTFE



SERIES S904

Three-Piece Sanitary Ball Valve

- ISO 5211 Mounting Pad
- Drive by Diagonal Square Head Stem
- Standard Stem Packing Design
- CIP, SIP System
- Standard, Cavity-Filled Seat (Optional)
- FDA Approved, Clean Room Assemble (Optional)
- Tri-Clamp, Tube, Extended Tube End Cap (Available)
- 316L-CF3M Standard Material, Low Ferrite Content (Optional)
- Easy-to-Maintain Construction



TECHNICAL SUMMARY

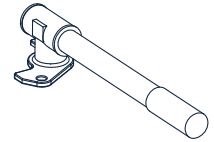
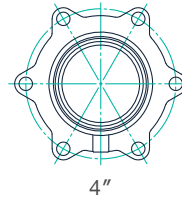
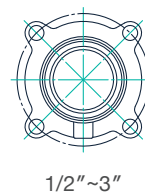
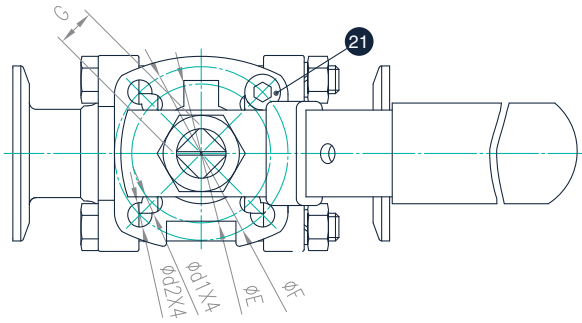
SIZE RANGE	True bore 1/2"~4", 6"(DN15~100, DN150)
PRESSURE RATING	True bore 1/2"~2"(DN15~50):1000 WOG(≠PN63) 2-1/2"~4"(DN65~100):800 WOG(≠PN50) 6"(DN150):400 WOG(≠PN25)
END CONNECTIONS	Clamp / Tube End
VALVE TYPE	Full bore
BODY & END CAP MATERIAL (ASTM)	CF8M, CF3M, CF8, CF3
BODY & END CAP MATERIAL (EN)	1.4408, 1.4409, 1.4308, 1.4309
SEAT MATERIAL	PTFE, RTFE, CTFE, TFM1600, MG1241, STFE
HANDLE TYPE	Flat (with / without SR Lock), Oval, Cast, T-Bar, Spring Return Safety (SRS) Handle, Economical Stem Extension
HANDLE MATERIAL	Flat, Oval, T-Bar - 304, 316, Cast - CF8, CF8M
V-PORT OPTION	Yes
WITH ANTI-STATIC DEVICE OPTION	Yes

STANDARD OF COMPLIANCE

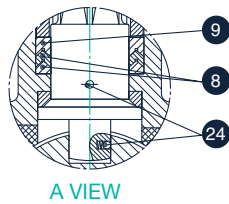
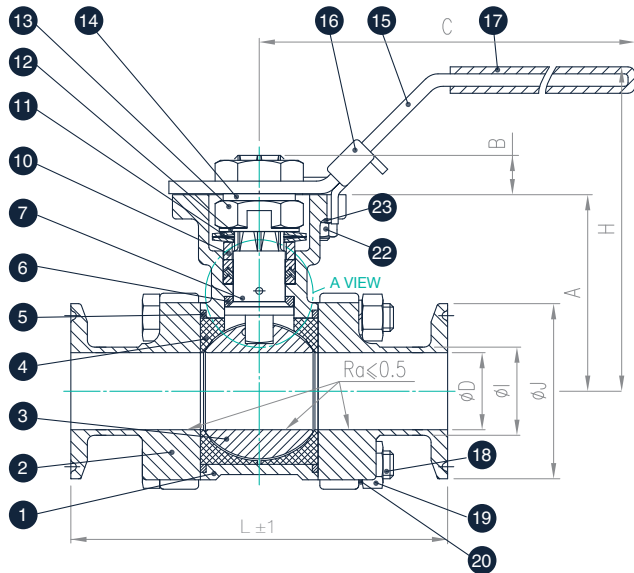
MATERIAL CERTIFICATION	EN 10204-3.1
END CONNECTIONS	ASME BPE
PRESSURE TESTING	API 598
MOUNTING PAD	ISO 5211
MARKING	ISO 5209
CE APPROVAL	2014 / 68 / EU Module H
QUALITY ASSURANCE	ISO 9001:2015
EUROPEAN DIRECTIVES APPLIED	ATEX, 2014/34/EU
SAFETY INTEGRITY LEVEL, SIL	IEC 61508

CONSTRUCTION-BILL OF MATERIAL

SERIES S904
1/2" ~ 4"
Sanitary Clamp Cap



1/2"~3"
4"
2-1/2"~4"
S.S. T-HANDLE



NO.	Parts	Material	Qty
1	Body	CF3M	1
2	End Cap	CF3M	2
3	Ball	SS316L	1
4	Seat	PTFE	2
5	Joint Gasket	PTFE	2
6	Thrust Washer	PTFE	1
7	Stem	SS316L	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	*
19	Bolt Nut	SS304	&
20	Bolt Washer	SS304	&
21	Stop Pin	SS304	1
22	Pin Nut	SS304	1
23	Washer	SS304	1
24	Anti-static Device	SS316	2

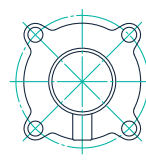
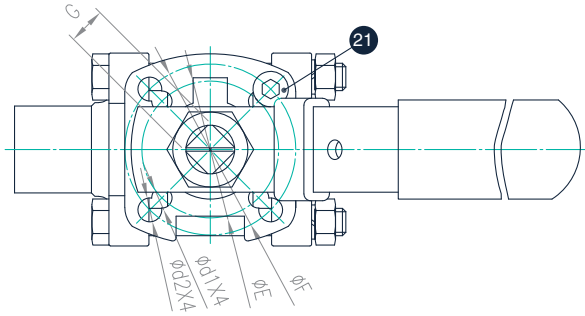
1-1/2"~ 2" (2pcs) , 2-1/2"~4" (3pcs)
 * 2-1/2"~ 2" - 4pcs of bolts(single ended external thread)
 * 2-1/2"~ 3" - 4pcs of bolts(double ended external thread)
 * 4" - 6pcs of bolts(double ended external thread)
 & 1/2"~2" - 4pcs
 & 2-1/2"~3" - 8pcs
 & 4"~12" - 12pcs

DIMENSIONS(mm)

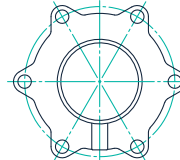
SIZE	øD	ø1	øJ	A	B	C	øE	øF	G	L	H	ø1	ø2	ISO5211
1/2"	9.4	12.7	25.2	42.1	6.1	139	36	42	9	89.1	77	6	6	FOR F03 / F04
3/4"	15.75	19	25.2	48	6.1	139	36	42	9	101.6	83	6	6	FOR F03 / F04
1"	22.2	25.4	50.4	566.6	10.9	165	42	50	11	114.5	96	6	7	FOR F04 / F05
1-1/2"	34.9	38.1	50.5	77.5	13.9	215	50	70	14	140.1	127	7.5	9	FOR F05 / F07
2"	47.5	50.8	63.9	85.2	13.9	215	50	70	14	159	134	7.5	9	FOR F05 / F07
2-1/2"	60.3	63.5	77.4	108.7	16.8	300	70	102	17	174	167	10	12	FOR F07 / F10
3"	73	76.2	90.9	117.7	17.8	370	70	102	17	193.2	176	10	12	FOR F07 / F10
4"	97.4	101.6	118.9	132.55	16.8	370	70	102	17	226	192	10	12	FOR F07 / F10

CONSTRUCTION-BILL OF MATERIAL

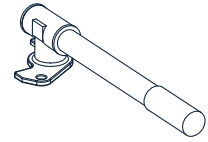
SERIES S904
2-1/2" ~ 4"
Sanitary Tube Cap



1-1/2" ~ 3"

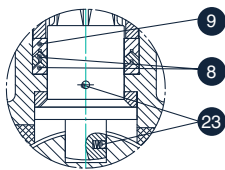
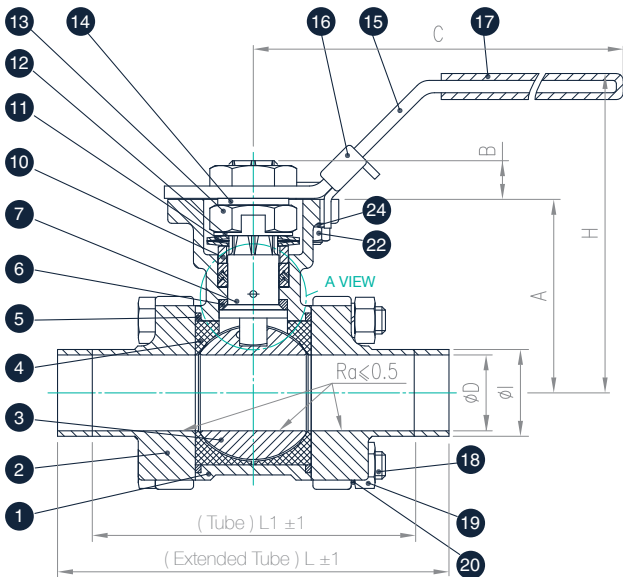


4"



2-1/2" ~ 4"

S.S. T-HANDLE



A VIEW

NO.	Parts	Material	Qty
1	Body	CF3M	1
2	End Cap	CF3M	2
3	Ball	SS316L	1
4	Seat	PTFE	2
5	Joint Gasket	PTFE	2
6	Thrust Washer	PTFE	1
7	Stem	SS316L	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	*
19	Bolt Nut	SS304	&
20	Bolt Washer	SS304	&
21	Stop Pin	SS304	1
22	Pin Nut	SS304	1
23	Washer	SS304	1
24	Anti-static Device	SS316	2

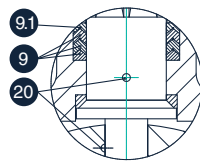
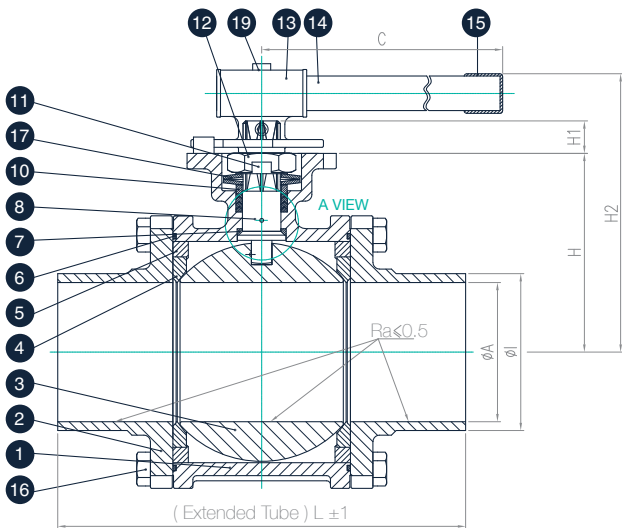
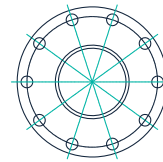
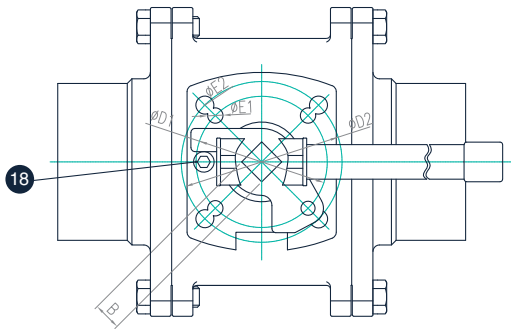
1-1/2"~ 2" (2pcs) , 2-1/2"~4" (3pcs)
 * 1/2"~ 2" - 4pcs of bolts(single ended external thread)
 * 2-1/2"~ 3" - 4pcs of bolts(double ended external thread)
 * 4" - 6pcs of bolts(double ended external thread)
 & 1/2"~2" - 4pcs
 & 2-1/2"~3" - 8pcs
 & 4" - 12pcs

DIMENSIONS(mm)

SIZE	øD	øI	A	B	C	øE	øF	G	L	L1	H	ød1	ød2	ISO5211
1/2"	9.4	12.7	42.1	6.1	139	36	42	9	139.8	66.2	77	6	6	FOR F03 / F04
3/4"	15.75	19	48	6.1	139	36	42	9	146	75	83	6	6	FOR F03 / F04
1"	22.2	25.4	56.6	10.9	165	42	50	11	158.7	94.2	96	6	7	FOR F04 / F05
1-1/2"	34.9	38.1	77.5	13.9	215	50	70	14	190.6	114.7	127	7.5	9	FOR F05 / F07
2"	47.5	50.8	85.2	13.9	215	50	70	14	216	128	134	7.5	9	FOR F05 / F07
2-1/2"	60.3	63.5	108.7	16.8	300	70	102	17	247.6	160	167	10	12	FOR F07 / F10
3"	73	76.2	117.7	17.8	370	70	102	17	266.8	176.2	176	10	12	FOR F07 / F10
4"	97.4	101.6	132.55	16.8	370	70	102	17	317.6	210	192	10	12	FOR F07 / F10

CONSTRUCTION-BILL OF MATERIAL

SERIES S904
6"
Sanitary Tube Cap



A VIEW

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

DIMENSIONS(mm)

SIZE	øA	øI	B	C	øD1	øD2	øE1	øE2	H	H1	H2	Long L	ISO5211
6"	147	152.4	27	750	125	140	14	18	210.2	28.5	295.1	457.2	FOR F12 / F14

TECHNICAL DATA | Breakaway torque / Cv and Kv values / Weight

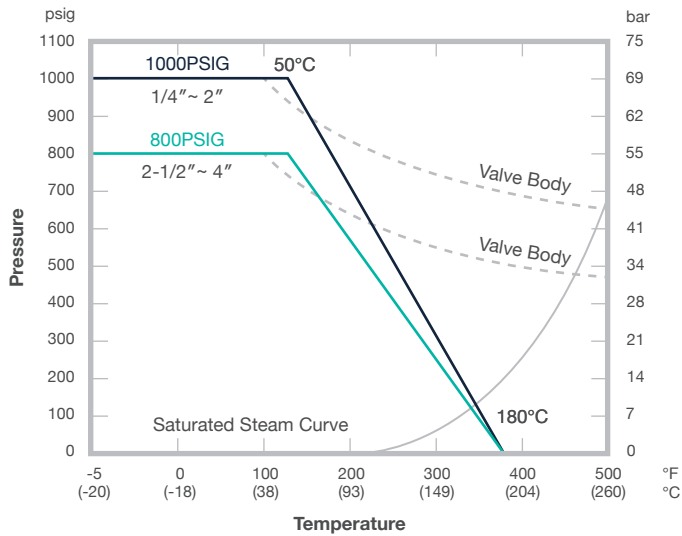
S904							
Size	Breakaway Torque		Cv values	Kv values (M ³ /h)	Weight (Kg)		
	Torque (N.m)	Torque (lbs.in)			Extended Tube	Tube	Clamp
1/2"	9	80	10	9	0.80	0.80	0.90
3/4"	10	89	30	26	1.00	0.90	1.00
1"	16	142	65	55	1.50	1.40	1.50
1-1/2"	36	319	200	170	3.50	3.30	3.50
2"	44	390	410	349	4.90	4.70	4.90
2-1/2"	91	806	600	510	9.90	9.40	9.80
3"	104	921	1050	893	13.70	13.30	13.70
4"	117	1036	1900	1615	20.90	20.50	20.70
6"	450	3987	4200	3570	-	-	-

Without Grease

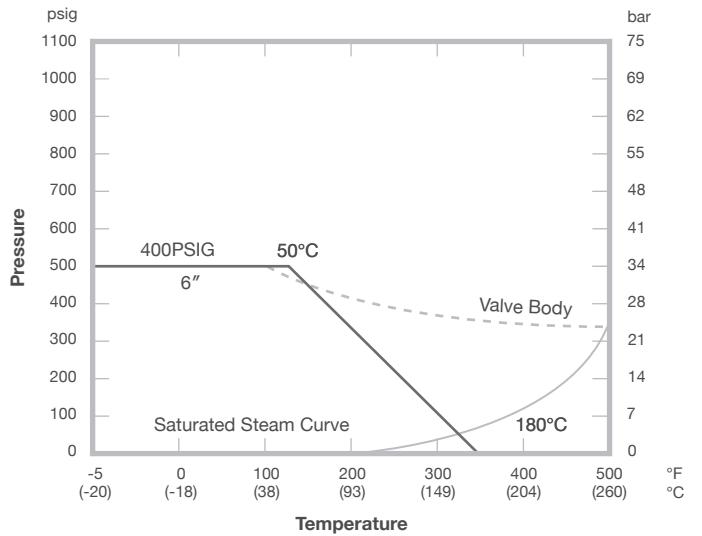
Round shape Flower shape F : Full Port R : Reduced Port

TECHNICAL DATA | Pressure- Temperature diagram | 1/4" ~ 6"

Series S904 - 1/4" ~ 4" (True Bore)
 Seat material : PTFE / RTFE



Series S604 - 6" (True Bore)
 Seat material : PTFE / RTFE



SERIES M304

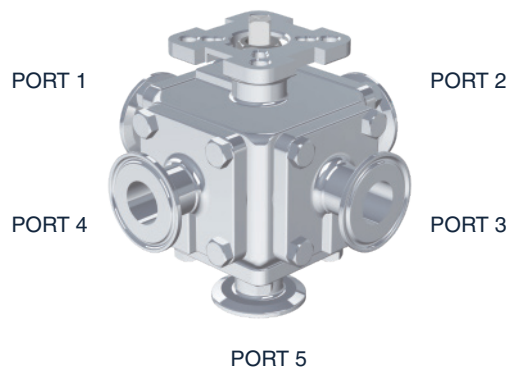
Three-Piece Sanitary Ball Valve

- ISO 5211 Mounting Pad
- Drive by Diagonal Square Head Stem
- Semi-Trunnion Ball Design
- Standard Stem Packing Design
- CIP, SIP System
- Standard, Cavity-Filled Seat (Optional)
- FDA Approved, Clean Room Assemble (Optional)
- Tri-Clamp, Tube, Extended Tube End Cap (Available)
- 316L-CF3M Standard Material, Low Ferrite Content (Optional)
- Easy-to-Maintain Construction



TECHNICAL SUMMARY

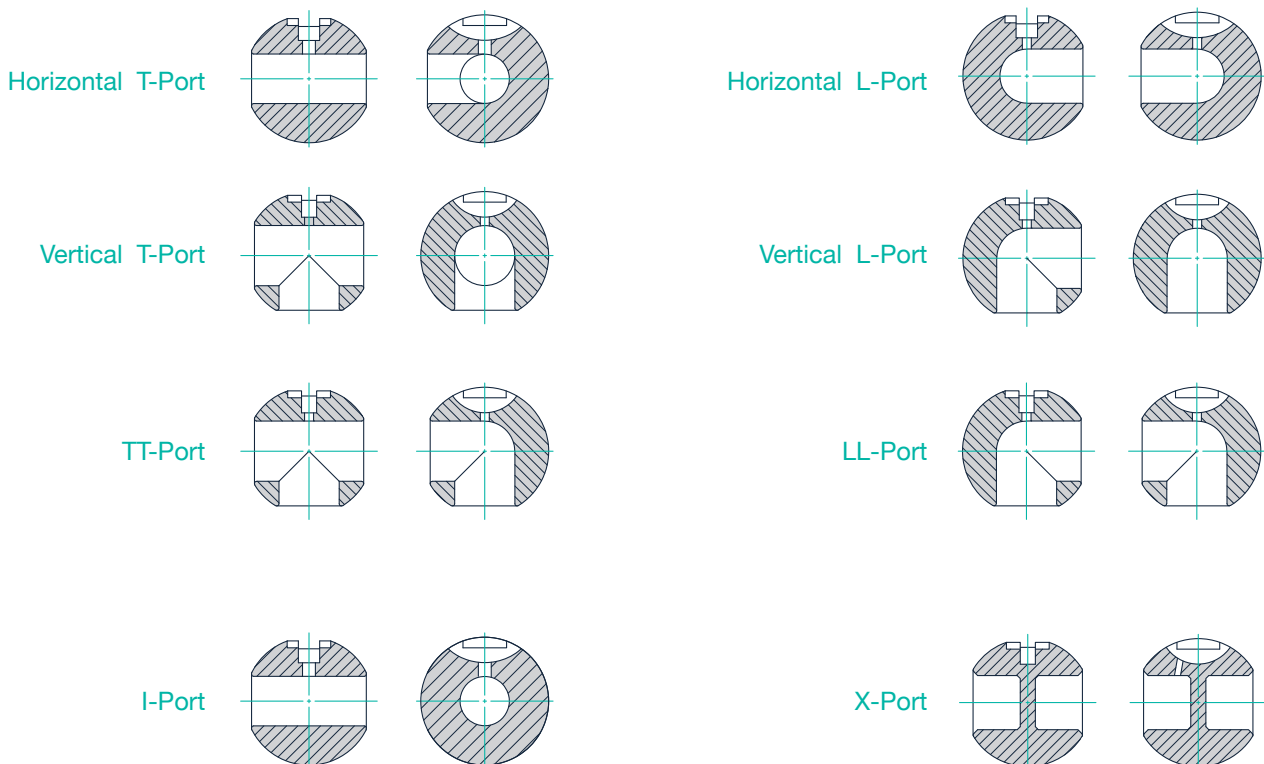
MODEL	3 Way (M304W) ; 4 Way (M304X) ; 5 Way (M304Y)
SIZE RANGE	1/2" to 4" (DN15 to 100)
PRESSURE RATING	1000 WOG : 1/2" to 1" (DN15 to 25) 800 WOG : 1-1/2" to 2" (DN40 to 50) 600 WOG : 2-1/2" to 3" (DN65 to 80) 300 WOG : 4" (DN100)
CAVITY FILLED SEATS PRESSURE RATING	600 WOG : 1/2" to 2" (DN15 to 50) 300 WOG : 2-1/2" to 4" (DN65 to 100)
END CONNECTIONS	Clamp / Tube End
VALVE TYPE	Full Bore
BODY & END CAP MATERIAL (ASTM)	CF8M, CF3M, CF8, CF3
BODY & END CAP MATERIAL (EN)	1.4408, 1.4409, 1.4308, 1.4309
SEAT MATERIAL	PTFE, RTFE, CTFE, TFM1600, MG1241, STFE
HANDLE TYPE	Flat (with / without SR Lock), T-Bar, Economical Stem Extension
HANDLE MATERIAL	Flat & T-Bar - 304, 316
V-PORT OPTION	N/A
WITH ANTI-STATIC DEVICE OPTION	Yes



STANDARD OF COMPLIANCE

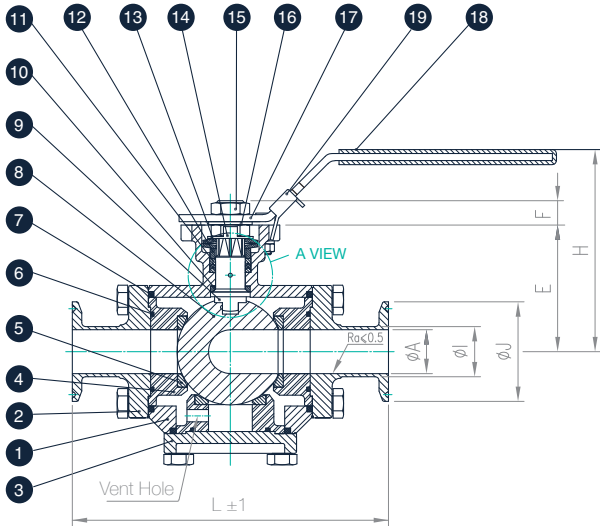
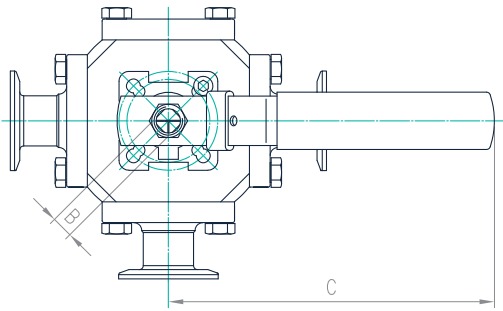
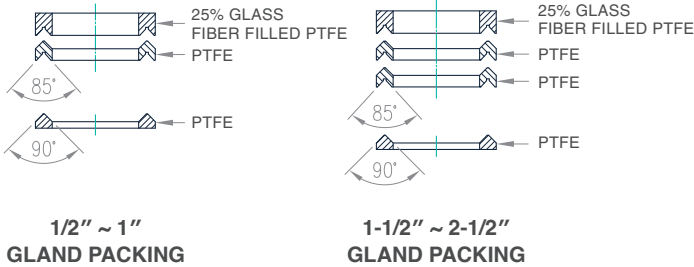
MATERIAL CERTIFICATION	EN 10204-3.1
END CONNECTIONS	ASME BPE
PRESSURE TESTING	API 598
MOUNTING PAD	ISO 5211
MARKING	ISO 5209
CE APPROVAL	2014 / 68 / EU Module H
QUALITY ASSURANCE	ISO 9001:2015
EUROPEAN DIRECTIVES APPLIED	ATEX, 2014/34/EU
SAFETY INTEGRITY LEVEL, SIL	IEC 61508

Flow Patterns and Multi-port Ball Options



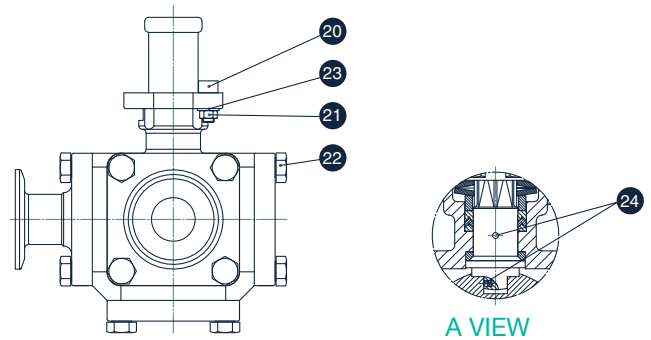
CONSTRUCTION-BILL OF MATERIAL

SERIES M304
1/2" ~ 2-1/2"
Sanitary Clamp Cap



NO.	Parts	Material	Qty
1	Body	CF3M	1
2	End cap - A	CF3M	3
3	End cap - B	CF3M	2
4	Seat Retainer	CF3M	5
5	Seat	PTFE	5
6	Retainer Seal	PTFE	5
7	Joint Gasket	PTFE	5
8	Ball	316L/CF3M	1
9	Stem	316L	1
10	Thrust Washer	PTFE	1
11	Gland Packing	25% GLASS FIBER FILED+PTFE and PTFE	1 set
12	Gland Bush	SS304	1
13	Belleville Washer	SS301	2
14	Stop Washer	SS304	1
15	Stem Nut	SS304	2
16	Stem Washer	SS304	1
17	Handle	SS304	1
18	Handle Cover	VINYL	1
19	Locking Device	SS304	1
20	Stop Pin	SS304	1
21	Pin Nut	SS304	1
22	Bolt nut	SS304	20
23	Washer	SS304	1
24	Anti-static Device	SS316	2

ISO 5211 Monnting Pad

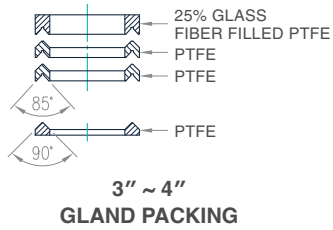
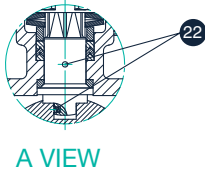


DIMENSIONS(mm)

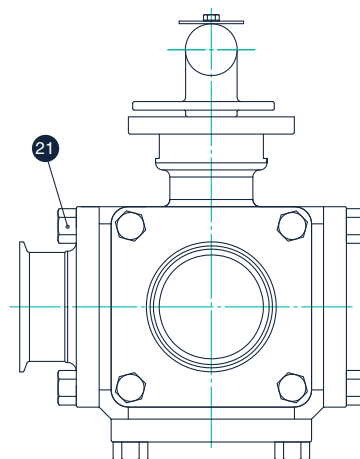
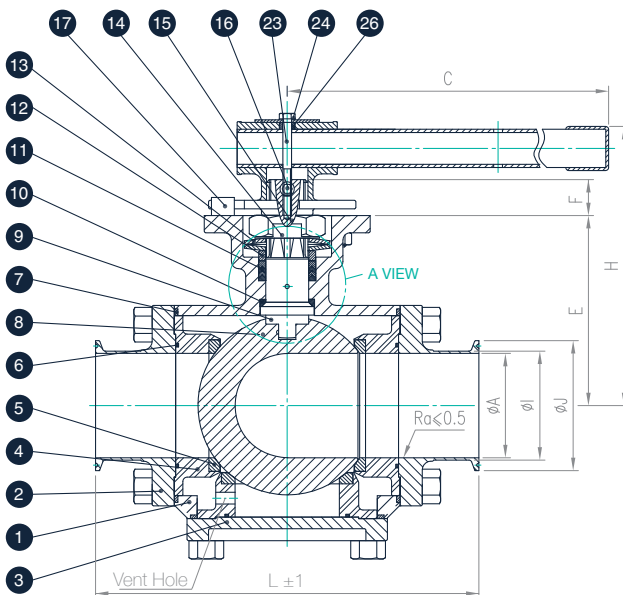
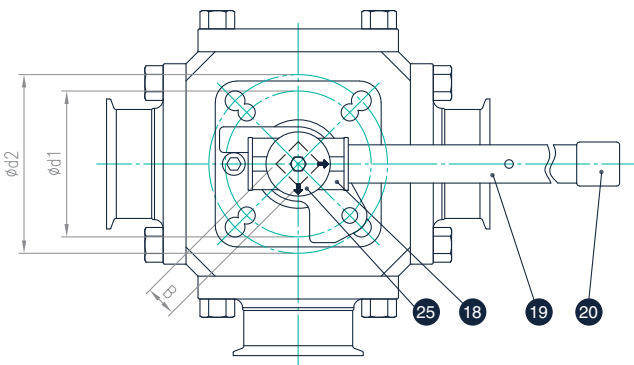
SIZE	øA	B	C	E	F	H	L	øI	øJ	ISO 5211
1/2"	9.4	9	150	43.9	9	85	110	12.7	25.2	FOR F03 / F04 / F05
3/4"	15.75	11	165	54.2	10.5	93	140	19	25.2	FOR F04 / F05
1"	22.2	11	180	64.1	10.5	108	160	25.4	50.4	FOR F04 / F05 / F07
1-1/2"	34.9	17 / 19	263	94.9	18	152	200	38.1	50.5	FOR F07 / F10
2"	47.5	17 / 19	313	101.6	18	159	220	50.8	63.9	FOR F07 / F10
2-1/2"	60.3	17 / 19	344	120	18	177	240	63.5	77.4	FOR F07 / F10

CONSTRUCTION-BILL OF MATERIAL

SERIES M304
3", 4"
Sanitary Clamp Cap



NO.	Parts	Material	Qty
1	Body	CF3M	1
2	End cap - A	CF3M	3
3	End cap - B	CF3M	2
4	Seat Retainer	CF3M	5
5	Seat	PTFE	5
6	Retainer Seal	PTFE	5
7	Joint Gasket	PTFE	5
8	Ball	CF3M	1
9	Stem	316L	1
10	Thrust Washer	PTFE	1
11	Gland Packing	25% GLASS FIBER FILED+PTFE and PTFE	1 set
12	Gland Bush	SS304	1
13	Belleville Washer	SS301	2
14	Stop Washer	SS304	1
15	Stem Nut	SS304	1
16	Handle Screw	SS304	1
17	Stop Pin	SS304	1
18	Handle-A	SS304	1
19	Handle-B	SS304	1
20	Handle Cover	VINYL	1
21	Bolt nut	SS304	20
22	Anti-static Device	SS316	2
23	Handle Bolt	SS304	1
24	Washer	SS304	1
25	Position Indication	SS304	1
26	Handle Bush	SS304	1

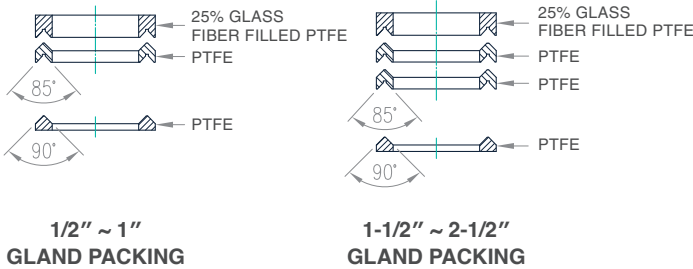


DIMENSIONS(mm)

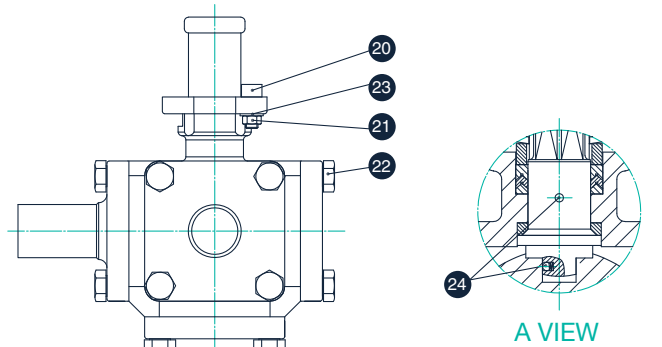
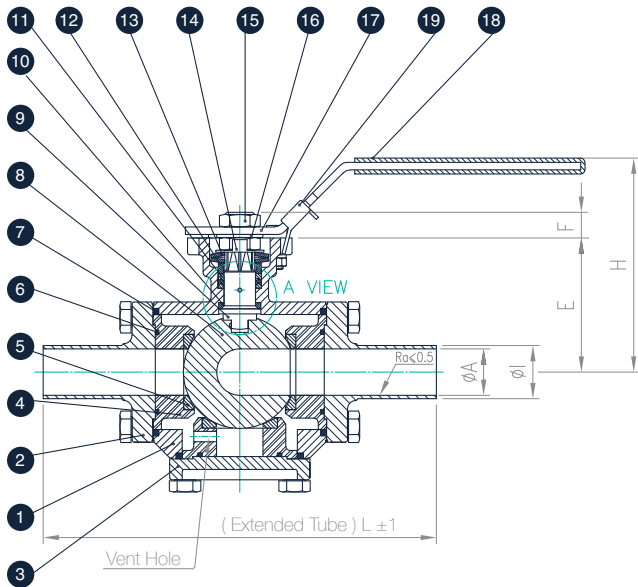
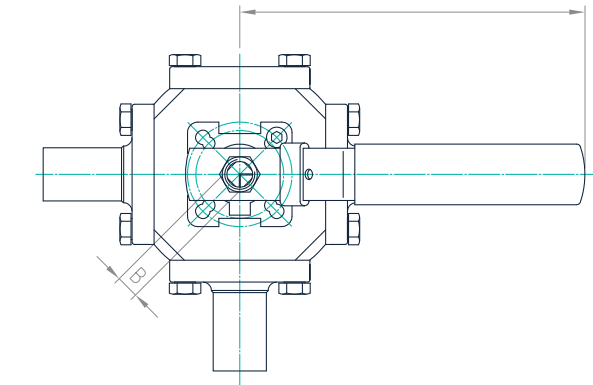
SIZE	ϕA	B	C	E	F	H	L	ϕI	ϕJ	$\phi d1$	$\phi d2$	ISO 5211
3"	76	22	370	132.9	23	195	265	76.2	90.9	102	125	FOR F10 / F12
4"	100	22	510	164	23	226	317	101.6	118.9	102	125	FOR F10 / F12

CONSTRUCTION-BILL OF MATERIAL

SERIES M304
1/2" ~ 2-1/2"
Sanitary Tube Cap



NO.	Parts	Material	Qty
1	Body	CF3M	1
2	End cap - A	CF3M	3
3	End cap - B	CF3M	2
4	Seat Retainer	CF3M	5
5	Seat	PTFE	5
6	Retainer Seal	PTFE	5
7	Joint Gasket	PTFE	5
8	Ball	316L/CF3M	1
9	Stem	316L	1
10	Thrust Washer	PTFE	1
11	Gland Packing	25% GLASS FIBER FILED+PTFE and PTFE	1 set
12	Gland Bush	SS304	1
13	Belleville Washer	SS301	2
14	Stop Washer	SS304	1
15	Stem Nut	SS304	2
16	Stem Washer	SS304	1
17	Handle	SS304	1
18	Handle Cover	VINYL	1
19	Locking Device	SS304	1
20	Stop Pin	SS304	1
21	Pin Nut	SS304	1
22	Bolt nut	SS304	20
23	Washer	SS304	1
24	Anti-static Device	SS316	2



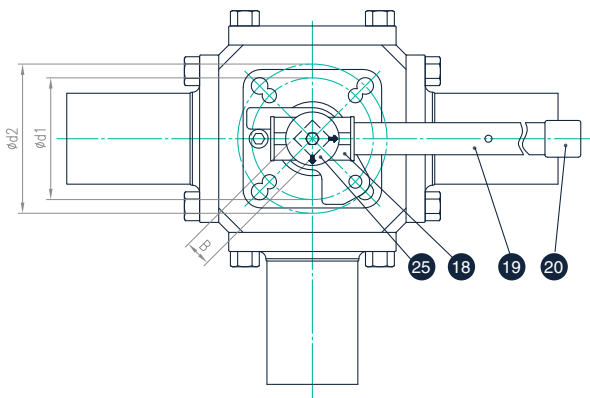
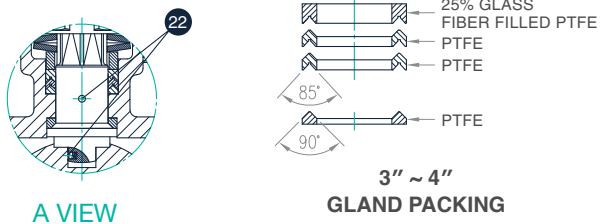
ISO 5211 Monnting Pad

DIMENSIONS(mm)

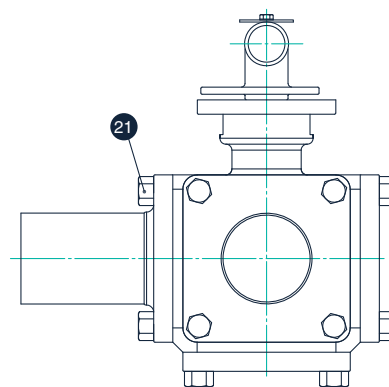
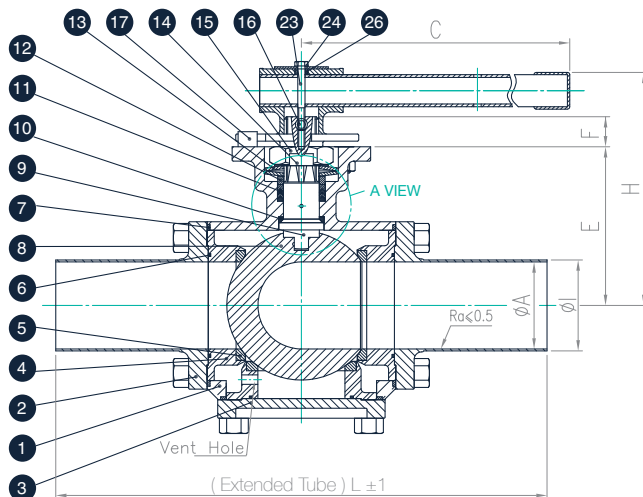
SIZE	øA	B	C	E	F	H	L	I	ISO 5211
1/2"	9.4	9	150	43.9	9	85	160	12.7	FOR F03 / F04 / F05
3/4"	15.75	11	165	54.2	10.5	93	186	19	FOR F04 / F05
1"	22.2	11	180	64.1	10.5	108	208	25.4	FOR F04 / F05 / F07
1-1/2"	34.9	17 / 19	263	94.9	18	152	250	38.1	FOR F07 / F10
2"	47.5	17 / 19	313	101.6	18	159	270	50.8	FOR F07 / F10
2-1/2"	60.3	17 / 19	344	120	18	177	306	63.5	FOR F07 / F10

CONSTRUCTION-BILL OF MATERIAL

SERIES M304 3", 4" Sanitary Tube Cap



NO.	Parts	Material	Qty
1	Body	CF3M	1
2	End cap - A	CF3M	2
3	End cap - B	CF3M	3
4	Seat Retainer	CF3M	5
5	Seat	PTFE	5
6	Retainer Seal	PTFE	5
7	Joint Gasket	PTFE	5
8	Ball	CF8M	1
9	Stem	316L	1
10	Thrust Washer	PTFE	1
11	Gland Packing	25% GLASS FIBER FILED+PTFE and PTFE	1 set
12	Gland Bush	SS304	1
13	Belleville Washer	SS301	2
14	Stop Washer	SS304	1
15	Stem Nut	SS304	1
16	Handle Screw	SS304	1
17	Stop Pin	SS304	1
18	Handle-A	SS304	1
19	Handle-B	SS304	1
20	Handle Cover	VINYL	1
21	Bolt nut	SS304	20
22	Anti-static Device	SS316	2
23	Handle Bolt	SS304	1
24	Washer	SS304	1
25	Position Indication	SS304	1
26	Handle Bush	SS304	1



DIMENSIONS(mm)

SIZE	øA	B	C	E	F	H	L	øl	ød1	ød2	ISO 5211
3"	73	22	370	132.9	23	195	365	76.2	102	125	FOR F10 / F12
4"	97.4	22	510	164	23	226	400	101.6	102	125	FOR F10 / F12

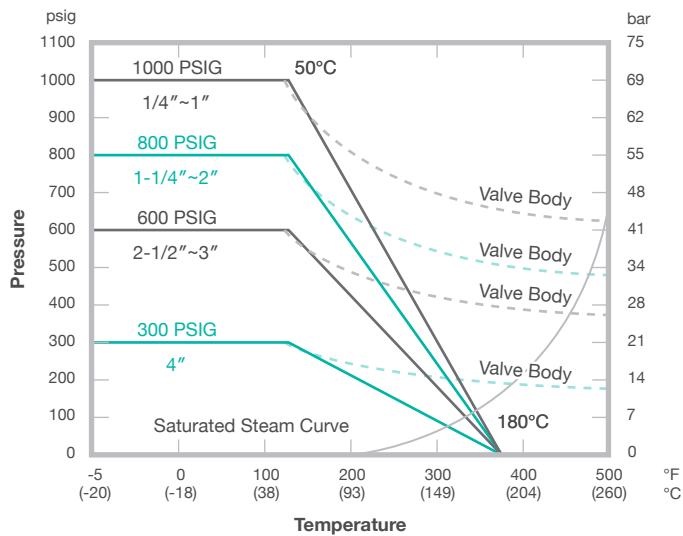
TECHNICAL DATA | Breakaway torque / Cv and Kv values / Weight

M304																
Size	Torque		Cv values				Kv values (M ³ /h)						Weight (Kg)		Weight (Kg)	
	N.m	lbs.in	L-Port Horizontal	L-Port Vertical	T-Port Horizontal	T-Port Vertical	LL-Port	V-Port Horizontal	L-Port Vertical	T-Port Horizontal	T-Port Vertical	LL-Port	L-Port Clamp	T-Port Clamp	L-Port Tube	T-Port Tube
1/2"	12	106	6	6	5	10	6	5	5	4	9	5	1.6	1.6	1.6	1.6
3/4"	20	177	16	16	13	21	15	14	14	11	18	13	2.9	2.9	2.9	2.9
1"	47	416	31	31	22	36	27	26	26	19	31	23	5.1	5.1	5.0	5.0
1-1/2"	91	806	75	75	55	90	65	64	64	47	77	55	11.0	11.0	11.2	11.2
2"	120	1063	140	140	100	175	120	119	119	85	149	102	14.0	14.0	14.7	14.7
2-1/2"	143	1267	210	210	149	235	175	179	179	127	200	149	23.0	23.0	23.5	23.5
3"	211	1870	375	375	270	450	300	319	319	230	383	255	29.6	29.6	31.3	31.3
4"	264	2339	670	670	475	800	353	570	570	404	680	300	59.9	59.9	59.5	59.5

Without Grease

TECHNICAL DATA | Pressure - Temperature Diagram | 1/2" ~ 4"

Series M304 (True Bore)
Seat material : PTFE / RTFE



OPTIONAL ACCESSORIES

| Handle Options



Butterfly Handle



Flat (with / without Spring Return Lock)

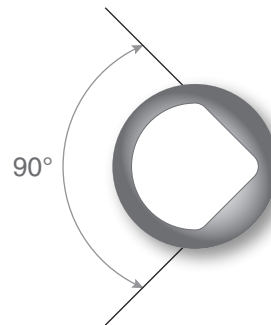
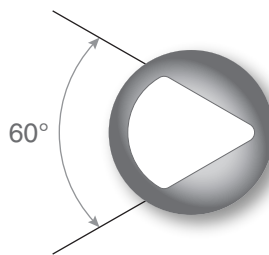
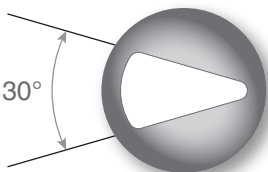


T-Bar Handle



Spring Return Safety (SRS) Handle
Option : Fail Open / Fail Close assembly

| V Port ball



| Accessories



Actuator



Transworld Steel Enterprise Co., Ltd.

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Address No. 34, Gongye 14th Rd., Dali Dist.,
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Established in 1992
TAWD has dedicated over 30 years to
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