



SERIES

S400/S600/S603

API 607 FIRE SAFE

Three-Piece Ball Valve



INTRODUCTION

The Series S600 is a direct-mount, heavy-duty, three-piece ball valve designed for high performance and reliability in demanding industrial applications. It features a unique encapsulated body bolt design and a swing-out body for easy in-line maintenance without full disassembly. It is ideal for applications involving liquids, gases, vapors, and oils. A fire-safe option is available, with the valve being ATEX-approved and certified to API 607 for enhanced safety and reliability.

The Series S603, designed as a reduced-bore version of the S600, provides the same robust construction and innovative design but is tailored for applications requiring more precise flow control, offering increased efficiency in specific use cases.

The Series S400, while maintaining the core design of the S600, incorporates a larger ISO platform, making it more suitable for actuators that demand higher torque. This sets it apart from the S600, which is equipped with a standard ISO platform for typical operational requirements.

TECHNICAL SUMMARY

SIZE RANGE	Full Port	1/4" ~ 4"	
	Reduced Port	1/2" ~ 4"	
PRESSURE RATING	Full Port	1/4" ~ 1"	: 2000 PSI / CLASS 800 / PN 125
		1-1/4" ~ 1-1/2"	: 1500 PSI / CLASS 600 / PN 100
		2" ~ 4"	: 1000 PSI / CLASS 400 / PN 63
	Reduced Port	1/2" ~ 2-1/2"	: 2000 PSI / CLASS 800 / PN 125
		3" ~ 4"	: 1000 PSI / CLASS 400 / PN 63
END CONNECTIONS	Threaded, Butt Weld, Socket Weld, Flanged, Tube Butt Weld		
VALVE TYPE	Full / Reduced Port		
BODY & END CAP MATERIAL (ASTM)	CF8M, CF3M, CF8, CF3, WCB, CN7M, CD3MN, CE3MN, CW12MW, 904L, LCC, Titanium Alloy (Gr. C-2)		
BODY & END CAP MATERIAL (EN)	1.4408, 1.4409, 1.4308, 1.4309, 1.0619, 1.4470		
SEAT MATERIAL	PTFE, RTFE, CTFE, TFM1600, MG1241, STFE, PEEK, Delrin, UHMWPE, PCTFE		
HANDLE TYPE	Flat, Oval, Cast, T-Bar, Spring Return Safety (SRS) Handle, Spring Return Sliding Lock		
V-PORT OPTION	Yes		
OPERATION	Pneumatic or Electric Actuated		

STANDARD OF COMPLIANCE

MATERIAL CERTIFICATION	EN 10204-3.1
DESIGN	ASME B16.34
THREADED END CONNECTIONS	NPT ASME B1.20.1
	BSPP ISO 228-1
	BSPT ISO 7-1
	DIN 2999
SOCKET WELD END CONNECTIONS	ASME B16.11
BUTT WELD END CONNECTIONS	ASME B16.25
FLANGED END CONNECTIONS	EN 1092-1 PN 16 / PN 40
	ASME B16.5 CLASS 150
PRESSURE TESTING	API 598
MOUNTING PAD	ISO 5211
FIRE SAFE	API 607 7th Edition
MARKING	ISO 5209
CE APPROVAL	2014 / 68 / EU Module H
QUALITY ASSURANCE	ISO 9001: 2015

DESIGN FEATURE

Dual Pattern ISO 5211 Direct Mount Pad

Facilitating straightforward and cost-effective automation, the need for brackets and couplings for actuator installation is eliminated.

Patented Leak-Observation Display

By identifying potential stem leaks before they escalate, this feature acts as an early alert system, helping to avert hazardous situations and minimize downtime.

Blow Out Proof Stem

The stem is inserted from inside of the body. This feature prevents the stem from being ejected due to internal pressure.

O-Ring Stem Seal

Serves to prevent emissions and helps to maintain precise alignment of the stem while strengthens its durability.

Smooth Stem Surface

By minimizing abrasion against the seal, this feature effectively lowers the torque required.

Locking Handle

Prevent unauthorized adjustments and help to avoid accidental opening or closing, to ensure a reliable fluid flow control.

Anti-Static Device

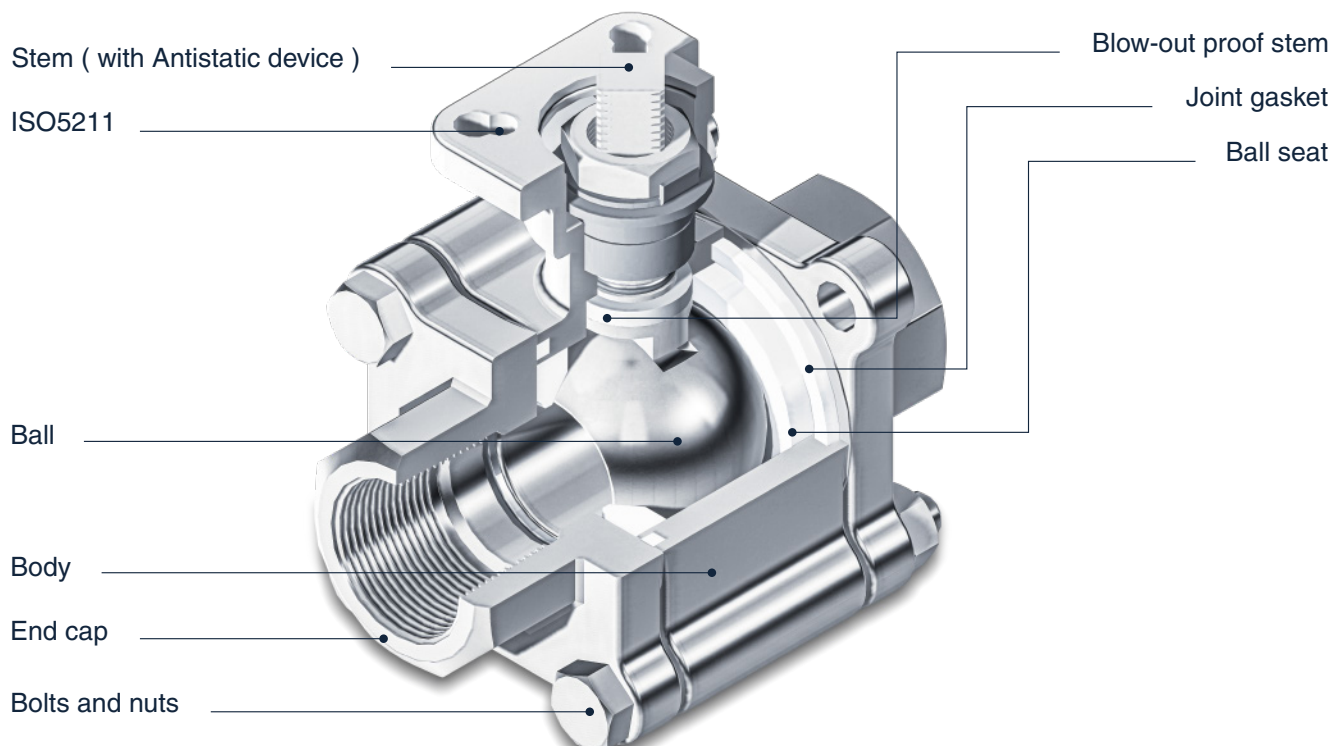
Located between the ball and stem and between the stem and valve body. It enables safe discharge of static electricity while minimizing the risk of fire.

Seats

A groove is designed to achieve pressure relief, contributing to decreased in valve torque and preventing seat damage.

Ball

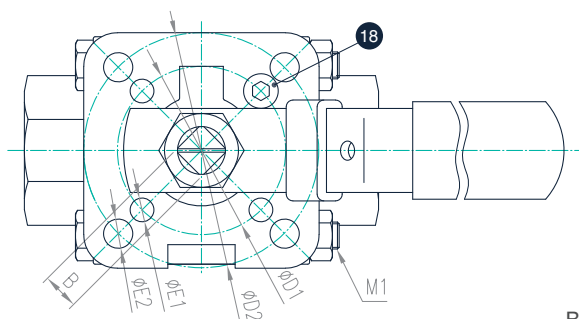
Designed with a pressure-equalizing hole, the mirror-polished ball ensures both a bubble-tight shut-off and an extended service life.



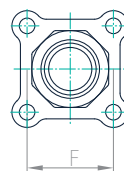
CONSTRUCTION-BILL OF MATERIAL

BIGGER ISO TOP

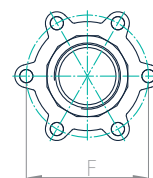
SERIES S400 1/4"~ 2" Full port



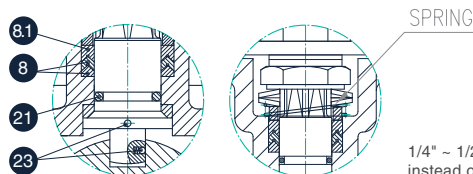
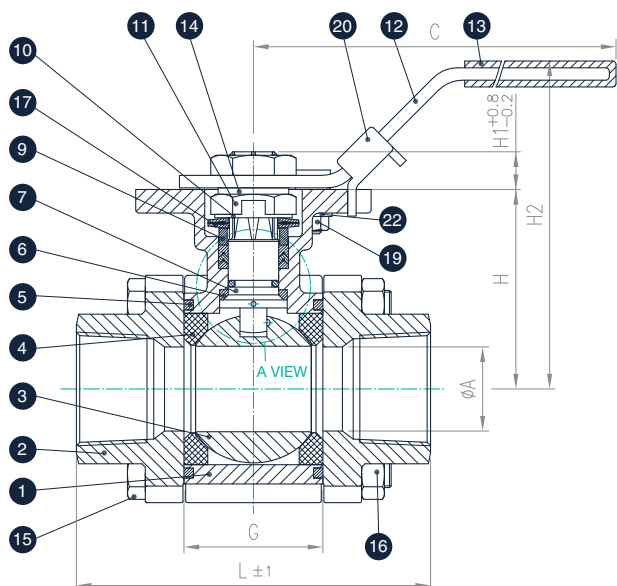
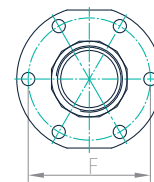
Full port
Bolts design



1/4" ~ 1-1/2"
Encapsulated Bolts



2"
Not Encapsulated Bolts



A VIEW

SPRING

1/4" ~ 1/2" uses spring
instead of anti-static device.

NO.	Parts	Material	Qty
1	Body	CF8M	1
2	End cap	CF8M	2
3	Ball	SS316	1
4	Seat	RTFE	2
5	Joint Gasket	RTFE	2
6	Thrust Washer	RTFE	1
7	Stem	SS316	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	*
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	O-Ring	VITON	1
22	Washer	SS304	1
23	Anti-static Device	SS316	@

1/4"~1-1/2" (4pcs) , 2" (6pcs) @ 1/4"~1/2" (1pc) , 3/4"~2" (2pcs)

DIMENSIONS(mm)

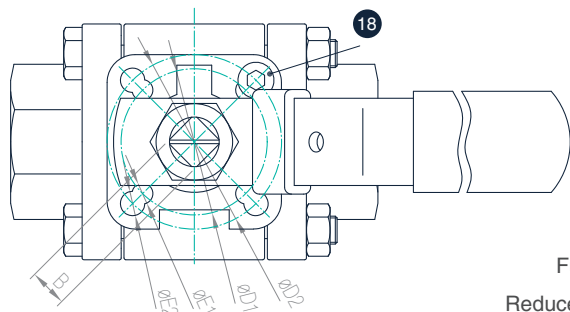
SIZE	øA	B	C	øD1	øD2	øE1	øE2	F	G	H	H1	H2	L	M1	ISO5211
1/4"	11.5	9	150	42	50	6.4	6.4	38.2	24.5	42.6	7.6	84	75	1/4"-20UNC	FOR F04 / F05
3/8"	12.6	9	150	42	50	6.4	6.4	38.2	24.5	42.6	7.6	84	75	1/4"-20UNC	FOR F04 / F05
1/2"	15	9	150	42	50	6.4	6.4	38.2	24.5	42.6	7.6	84	72.5	1/4"-20UNC	FOR F04 / F05
3/4"	20	9	182	50	70	7.1	8.7	44.3	31.4	46.85	8.6	84	85.4	5/16"-18UNC	FOR F05 / F07
1"	25	11	182	50	70	7.1	8.7	50	41.3	59.3	10.4	105	105.3	5/16"-18UNC	FOR F05 / F07
1-1/4"	32	11	182	50	70	7.1	8.7	57.2	48.4	62.6	10.4	108	111	3/8"-16UNC	FOR F05 / F07
1-1/2"	38	14	215	50	70	7.1	8.7	66.6	56.3	79	13.4	128	127.3	3/8"-16UNC	FOR F05 / F07
2"	50	14	215	50	70	7.5	9	@	71.4	87.7	13.4	137	#	7/16"-14UNC	FOR F05 / F07

145 (Round shape) / 142.8 (Flower shape) @ 112 (Round shape) / 114 (Flower shape)

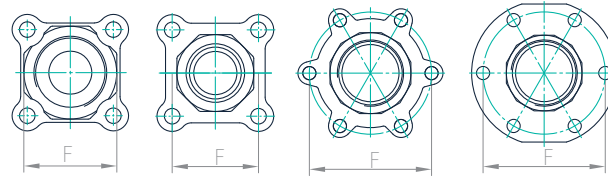
CONSTRUCTION-BILL OF MATERIAL

SERIES S600/S603

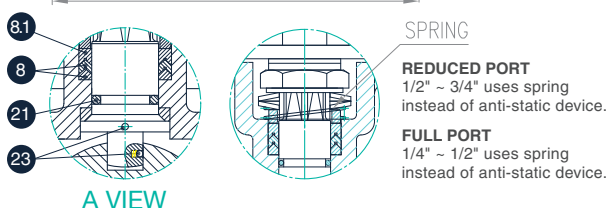
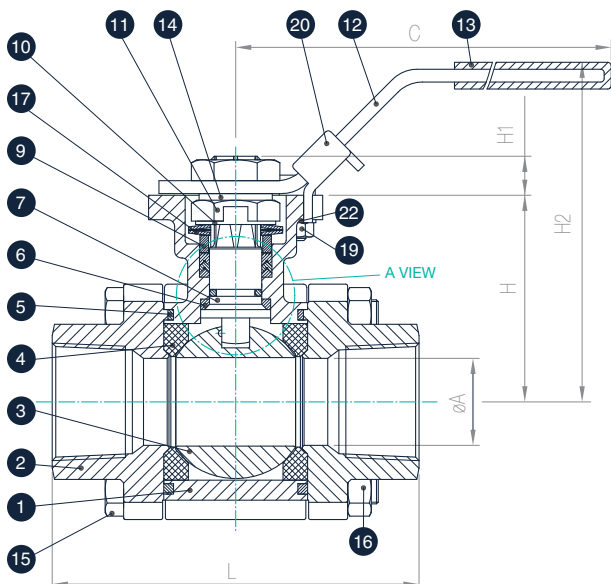
1/4"~ 4" Full port / Reduced port



Full port
Reduced port
Bolts design



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



NO.	Parts	Material	Qty
1	Body	CF8M	1
2	End cap	CF8M	2
3	Ball	SS316	1
4	Seat	RTFE	2
5	Joint Gasket	RTFE	2
6	Thrust Washer	RTFE	1
7	Stem	SS316	1
8	Gland Packing	PTFE	2
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22	Washer	SS304	1
23	Anti-static Device	SS316	@

1/4" ~ 1-1/2" (4pcs) , 2" (6pcs) @ 1/4" ~ 1/2" (1pc) , 3/4" ~ 2" (2pcs)

DIMENSIONS(mm)

SIZE	øA		B		C		øD1		øD2		øE1		øE2		F		H		H1		H2		L		ISO5211	
	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R
1/4"	11.5	-	9	-	139	-	36	-	42	-	6	-	6	-	38.2	-	42.6	-	7.6	-	77	-	75	-	F03 F04	-
3/8"	12.6	-	9	-	139	-	36	-	42	-	6	-	6	-	38.2	-	42.6	-	7.6	-	77	-	75	-	F03 F04	-
1/2"	15	12.6	9	9	139	139	36	36	42	42	6	6	6	6	38.2	38.2	42.6	42.6	7.6	7.6	77	77	72.5	75	F03 F04	F03 F04
3/4"	20	15	9	9	139	139	36	36	42	42	6	6	6	6	44.3	38.2	46.85	42.6	8.6	7.6	82	77	85.4	72.5	F03 F04	F03 F04
1"	25	20	11	9	165	139	42	36	50	42	6	6	7	6	50	44.3	59.3	46.85	10.4	8.6	98.5	82	105.3	85.4	F04 F05	F03 F04
1-1/4"	32	25	11	11	165	165	42	42	50	50	6	6	7	7	57.2	50	62.6	59.3	10.4	10.4	102	98.5	111	105.3	F04 F05	F04 F05
1-1/2"	38	32	14	11	260.5	165	50	42	70	50	7.5	6	9	7	66.6	57.2	79	62.6	13.4	10.4	128	102	127.3	111	F05 F07	F04 F05
2"	50	38	14	14	260.5	260.5	50	50	70	70	7.5	7.5	9	9	#	66.6	87.7	79	13.4	13.4	137	128	@	127.3	F05 F07	F05 F07
2-1/2"	65	50	17/19	14	300	260.5	70	50	102	70	10	7.5	12	9	139	112	108.7	87.7	16.8	13.4	167	137	185	145	F07 F10	F05 F07
3"	80	65	17/19	17/19	370	300	70	70	102	102	10	10	12	12	160	139	117.7	108.7	17.8	16.8	176	167	205	185	F07 F10	F07 F10
4"	100	80	17/19	17/19	370	370	70	70	102	102	10	10	12	12	193	160	133.7	117.7	16.8	17.8	192	176	240	205	F07 F10	F07 F10

112 (Round shape) / 114 (Flower shape) @ 145 (Round shape) / 142.8 (Flower shape) F : Full Port R : Reduced Port

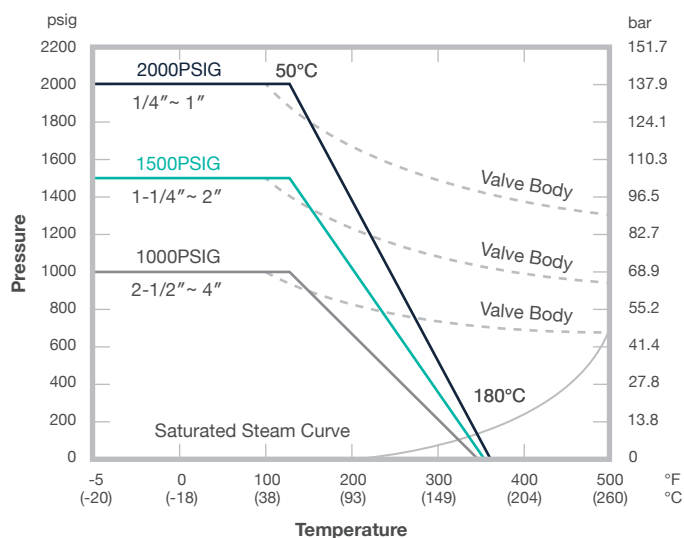
TECHNICAL DATA | Breakaway torque / Cv and Kv values / Weight

Size	Torque (N.m)		Torque (lbs.in)		Cv values		Kv values (M ³ /h)	Weight (Kg)	
	F	R	F	R	F	R	F	F	R
1/4"	8	-	69	-	8	-	7	0.89	-
3/8"	8	8	69	69	8	8	7	0.89	0.89
1/2"	8	8	69	69	15	15	13	0.84	0.84
3/4"	10	10	92	92	34	34	30	1.35	0.85
1"	16	16	138	138	56	56	48	2.13	1.41
1-1/4"	23	23	207	207	85	85	73	2.76	2.17
1-1/2"	33	33	288	288	125	125	108	4.42	2.87
2"	34	34	301	301	250	250	216	# 6.93 / * 6.25	4.49
2-1/2"	62	62	553	553	320	320	277	# 12.12 / * 11	# 6.94
3"	88	88	780	780	580	580	502	# 16 / * 14.78	# 12.64 / * 11
4"	114	-	1010	-	1020	-	882	# 25 / * 23.3	# 16 / * 14.78

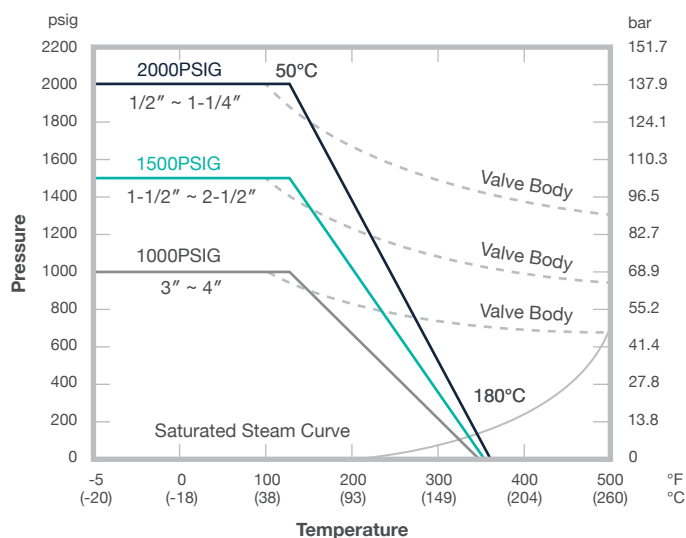
Round shape Flower shape F : Full Port R : Reduced Port

TECHNICAL DATA | Pressure- Temperature diagram

1/4" ~ 4" Full port
Seat material : PTFE / RTFE



1/2" ~ 4" Reduced port
Seat material : PTFE / RTFE



OPTIONAL ACCESSORIES

| Handle Options



Oval Handle



Spring Return Sliding Lock



Economical Stem Extension



Spring Return Safety (SRS) Handle

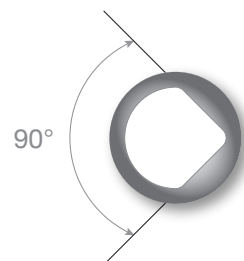
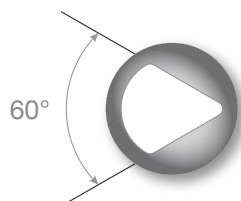
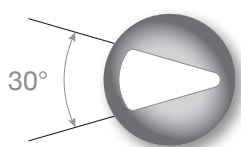


T-Bar Handle



S.S Investment Casting Handle

| V-Port Ball



| Accessories



TSM



TSM with Handle



Actuator



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Established in 1992
TAWD has dedicated over 30 years to
manufacturing premium ball valves

INNOVATION

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