

**FLO·TITE™**  
valves & controls

# Fusion Series Fire Safe Threaded Ball Valves



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## Models:

S23 1-Piece Seal-Weld Body Design

T23 2-Piece Full Port Design

## Full Port:

¼"–2" 2000 WOG

2½"–4" 1500 WOG

## Steam Rated:

S23 250 WSP

T23 150 WSP

## Temperature Range:

-20°F to 550°F CS Body

-50°F to 550°F SS Body

(Dependant on Seat Material)



**S23 with oval handle  
1pc Body**

## Standard Product Numbers for 1pc Body S23:

S23-SS-YGG-L

S23-CS-YGG-L

## Standard Product Numbers for 2pc Body T23:

T23-SS-FFG-L

T23-CS-FFG-L

T23-SS-FGG-L Fire Safe

T23-CS-FGG-L Fire Safe



**T23  
2pc Body**

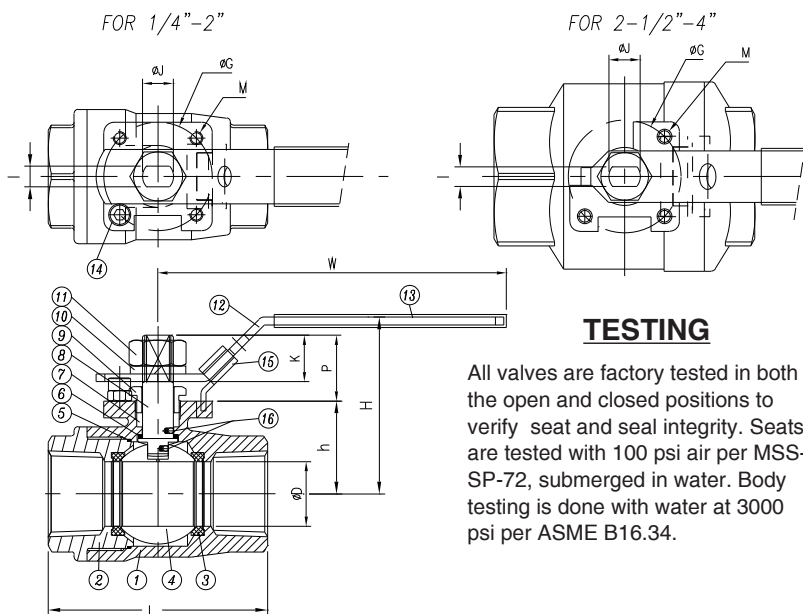
## Design Features

- ISO Automation Pad
- Anti-Static Grounding
- Adjustable Stem Packing
- Supertek Seating
- Safety Locking Handles
- Quality Investment Castings Foundry Heat Number for Full Traceability
- Metal Name Plates For Ease of Identifying Soft Parts
- API 608, MSS-SP-110
- Fire Safe API 607-5 Certified
- NACE-MR-0175
- CE Marking
- Vacuum Service to 20 Microns Hg
- NPT Connection ANSI B1-20-1
- Shell Wall Testing to 3000 PSI
- Pressure Balanced Ball
- Corrosion Resistant Black Phosphate Coating
- Blowout-Proof Stem

**One Valve Built to Handle Multiple Plant Applications**  
**www.flotite.com**

Fusion Series T23 - 2PC Body

Bill of Materials



TESTING

All valves are factory tested in both the open and closed positions to verify seat and seal integrity. Seats are tested with 100 psi air per MSS-SP-72, submerged in water. Body testing is done with water at 3000 psi per ASME B16.34.

No.	Parts	T23-SS	T23-CS	Qty
1	Body	ASTM A351 CF8M	ASTM A216 WCB	1
2	End Cap	ASTM A351 CF8M	ASTM A216 WCB	1
3	Seats #	Super-Tek	Super-Tek	2
4	Ball	ASTM A351 CF8M	ASTM A351 CF8	1
5	Gasket #	Graphite	Graphite	1
6	Thrust Washer #	TFM	TFM	1
7	Stem Packing #	TFM / GRAPHITE *	TFM / GRAPHITE *	1
8	Stem	A276-316 / 17-4PH	A276-304 / 17-4PH	1
9	Gland	SS304	SS304	1
10	Handle Washer	SS304	SS304	1
11	Handle Nut	SS304	SS304	1
12	Handle	SS304	Zinc Plated Steel	1
13	Handle Cover	PVC	PVC	1
14	Stop Screw	SS304	Steel	1
15	Locking Device	SS304	Zinc Plated CS	1
16	Anti-Static Devices	SS316	SS304	2

MODELS

T23-SS Stainless Steel  
T23-CS Carbon Steel

SIZE Range 1/4" thru 4"

1/4" - 2" 2000 WOG  
2 1/2" - 4" 1500 WOG  
All sizes 150 WSP

THREADED ENDS

ANSI B1-20-1 NPT  
BSP Threaded  
Available, C/F

ALSO AVAILABLE:

Locking Handle  
Oval Handle  
Stem Extension

# Parts included in repair kits  
Repair kits are only for the T23

\* Fire Safe uses graphite

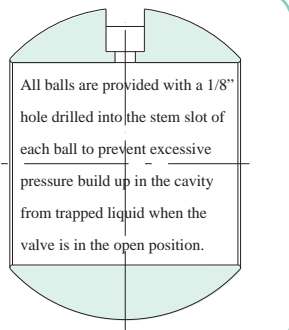
API 607-5th: Certified \* option  
NACE MR-0175 Compliance  
CRN Registered  
CE Approved per PED97/23/EC

Vacuum service:  
Standard valve to 25 torr.  
Custom assembled valve  
to 20 microns

TRACEABILITY:

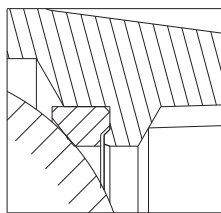
FOUNDRY HEAT # FOR ALL VALVES  
Metal nameplate on the valve identifies all soft parts

Ball design added  
safety feature for  
all sizes of S23 and  
T23



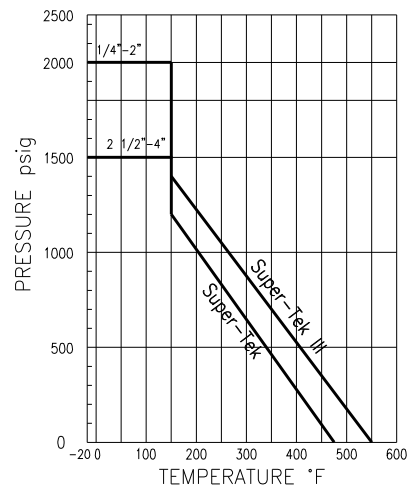
All balls are provided with a 1/8" hole drilled into the stem slot of each ball to prevent excessive pressure build up in the cavity from trapped liquid when the valve is in the open position.

Fire Safe Design Feature:



T23 valves are supplied standard as FFG with TFM stem packing. Valves can be supplied fire safe as FGG with graphite stem packing as an option at a slight upcharge. In the event of fire, after heat destroys the primary resilient seat, the ball makes contact with the secondary metal seat, forming a secure seal. The graphite body seal prevents external leakage. The graphite stem packing prevents stem leakage.

Pressure/Temperature Chart



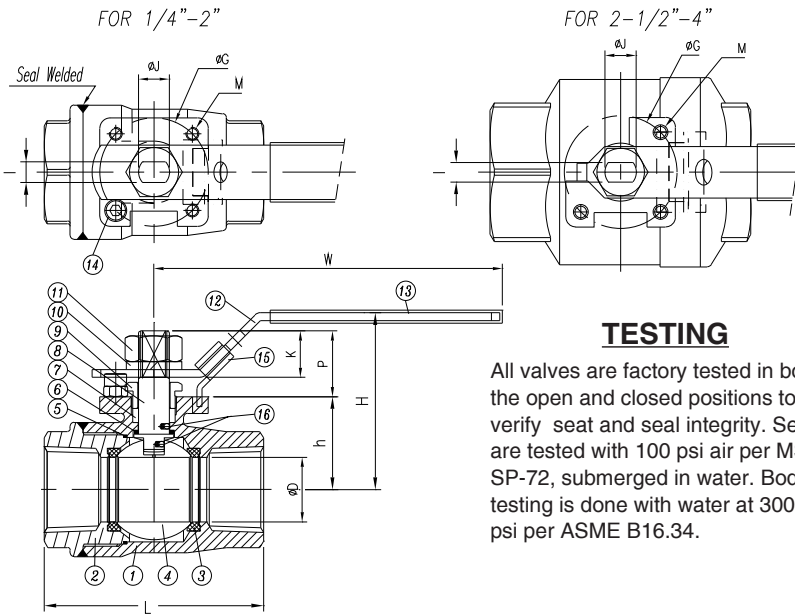
Dimensions and Weights

SIZE	D	G	H	h	I	J	K	L	M	P	W	Cv	Torque in-lb			Weight lbs
													800 psi	1000 psi	2000 psi	
1/4"	0.43	1.42	2.17	0.94	0.20	0.31	0.35	2.32	M5	0.59	5.31	8	60	68	100	0.97
3/8"	0.49	1.42	2.17	0.94	0.20	0.31	0.35	2.32	M5	0.59	5.31	8	60	68	100	0.97
1/2"	0.59	1.42	2.24	1.02	0.20	0.31	0.45	2.52	M5	0.69	5.31	15	60	70	100	0.97
3/4"	0.79	1.42	2.46	1.28	0.24	0.39	0.59	2.87	M5	0.79	5.31	38	80	90	115	1.35
1"	0.98	1.65	2.70	1.42	0.31	0.47	0.65	3.35	M5	0.91	6.50	65	95	102	178	2.25
1 1/4"	1.26	1.65	2.91	1.63	0.31	0.47	0.71	3.94	M5	1.00	6.50	118	190	210	270	3.20
1 1/2"	1.50	1.97	3.56	2.01	0.31	0.55	0.79	4.53	M6	1.06	6.89	195	310	330	430	5.20
2"	1.97	1.97	4.17	2.56	0.39	0.55	0.79	5.28	M6	1.06	9.65	320	385	420	586	8.65
2-1/2"	2.56	2.76	5.06	3.15	0.47	0.79	1.14	6.54	M8	1.56	12.6	485	480	585	674	14.77
3"	3.15	2.76	5.49	3.58	0.47	0.79	1.14	7.44	M8	1.56	12.6	770	800	975	1238	21.60
4"	3.94	4.02	6.50	4.41	0.63	0.98	1.48	9.09	M10	2.07	10.8	1460	1750	1908	2200	44.75

# Torque based on clean liquid media

Fusion Series S23 - 1PC Body

Bill of Materials



No.	Parts	S23-SS	S23-CS	Qty
1	Body	ASTM A351 CF8M	ASTM A216 WCB	1
2	End Cap	ASTM A351 CF8M	ASTM A216 WCB	1
3	Seats #	Super-Tek III	Super-Tek III	2
4	Ball	ASTM A351 CF8M	ASTM A351 CF8	1
5	Gasket #	Graphite	Graphite	1
6	Thrust Washer #	25% Carbon PTFE	25% Carbon PTFE	1
7	Stem Packing #	Graphite	Graphite	1
8	Stem	A276-316 / 17-4PH	A276-304 / 17-4PH	1
9	Gland	SS304	SS304	1
10	Handle Washer	SS304	SS304	1
11	Handle Nut	SS304	SS304	1
12	Handle	SS304	Zinc Plated Steel	1
13	Handle Cover	PVC	PVC	1
14	Stop Screw	SS304	Steel	1
15	Locking Device	SS304	Zinc Plated CS	1
16	Anti-Static Devices	SS316	SS304	2

TESTING

All valves are factory tested in both the open and closed positions to verify seat and seal integrity. Seats are tested with 100 psi air per MSS-SP-72, submerged in water. Body testing is done with water at 3000 psi per ASME B16.34.

# Parts included in repair kits  
Repair kits are only for the S23

MODELS

- S23-SS Stainless Steel
- S23-CS Carbon Steel

SIZE Range 1/4" thru 4"

- 1/4" - 2" 2000 WOG
- 2 1/2" - 4" 1500 WOG
- All Sizes 225 WSP

THREADED ENDS

- ANSI B1.20.1 NPT
- BSP Threaded
- Available, C/F

ALSO AVAILABLE:

- Locking Handle
- Oval Handle
- Stem Extension

API 607-5th: Certified

NACE MR-0175 Compliance

CRN Registered

CE Approved per PED97/23/EC

TRACEABILITY:

FOUNDRY HEAT # FOR ALL VALVES

Metal nameplate on the valve identifies all soft parts

Vacuum service:

Standard valve to 25 torr.

Custom assembled valve

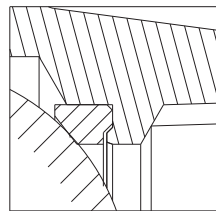
to 20 microns

Seal Weld Design Model S23

Eliminates the possibility of body tail piece unthreading  
Eliminates any possible leakage at body joints - safe, sure pressure containment.

Automatic Welding equipment is used for welding body joints. The welding width is always uniform and the weld penetration is consistent. Our equipment maintains a consistent water flow inside the valve, assuring a safe temperature. This prevents damage to all valve seats and seals.

Fire Safe Design Feature:



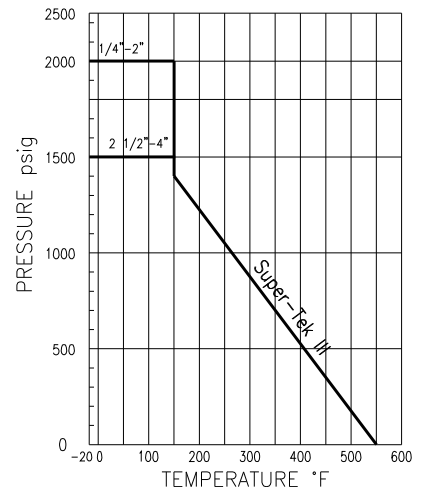
S23 valves are supplied as standard with graphite stem packing and body seal. Valves are certified fire safe. In the event of fire, after heat destroys the primary resilient seat, the ball makes contact with the secondary metal seat, forming a secure seal. The graphite body seal prevents external leakage. The graphite stem packing prevents stem leakage.

Dimensions and Weights

SIZE	D	G	H	h	I	J	K	L	M	P	W	Cv	Torque in-lb #		Weight lbs
													1000 psi	2000 psi	
1/4"	0.43	1.42	2.17	0.94	0.20	0.31	0.35	2.32	M5	0.59	5.31	8	90	110	0.97
3/8"	0.49	1.42	2.17	0.94	0.20	0.31	0.35	2.32	M5	0.59	5.31	8	90	110	0.97
1/2"	0.59	1.42	2.24	1.06	0.20	0.31	0.45	2.52	M5	0.65	5.31	15	90	110	0.97
3/4"	0.79	1.42	2.46	1.28	0.24	0.39	0.59	2.87	M5	0.79	5.31	38	122	140	1.35
1"	0.98	1.65	2.70	1.42	0.31	0.47	0.65	3.35	M5	0.91	6.50	65	148	189	2.25
1 1/4"	1.26	1.65	2.91	1.63	0.31	0.47	0.71	3.94	M5	1.00	6.50	118	282	360	3.20
1 1/2"	1.50	1.97	3.56	2.01	0.31	0.55	0.79	4.53	M6	1.06	6.89	195	490	600	5.20
2"	1.97	1.97	4.17	2.56	0.39	0.55	0.79	5.28	M6	1.06	9.65	320	638	850	8.65
2-1/2"	2.56	2.76	5.06	3.15	0.47	0.79	1.14	6.54	M8	1.56	12.6	485	695	1200	14.77
3"	3.15	2.76	5.49	3.58	0.47	0.79	1.14	7.44	M8	1.56	12.6	770	1180	1475	21.60
4"	3.94	4.02	6.50	4.41	0.63	0.98	1.48	9.09	M10	2.07	10.8	1460	2478	2750	44.75

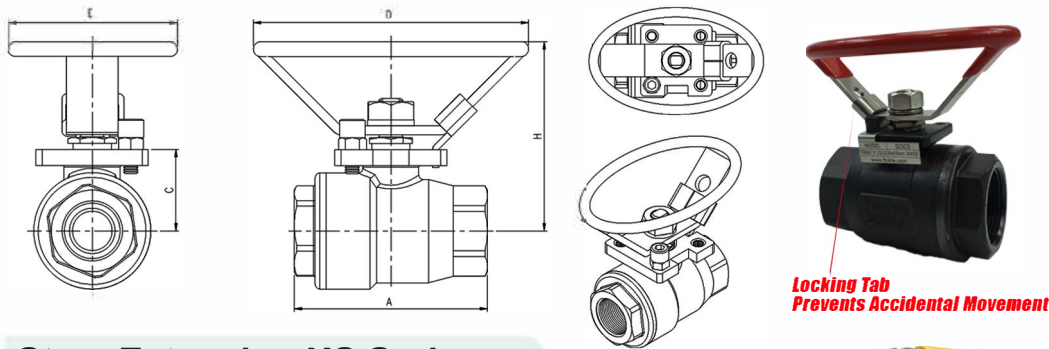
# Torque based on clean liquid media

Pressure/Temperature Chart



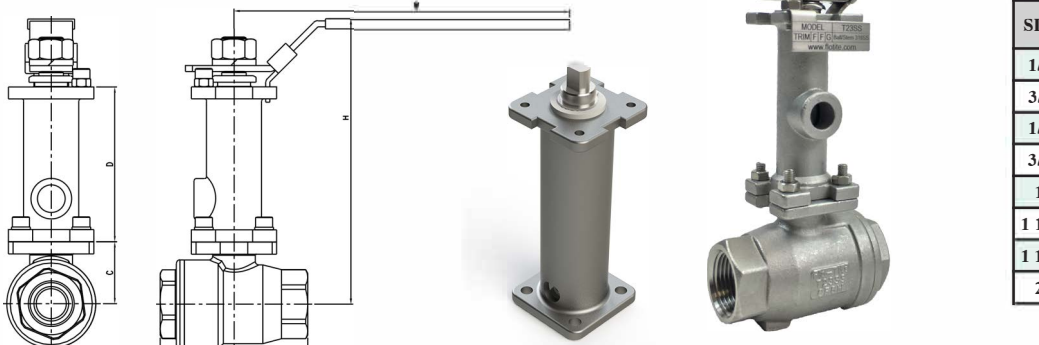


## Valve with Oval Handle Dimensions



SIZE	A	C	D	E	H
1/4"	2.32	0.94	3.58	2.20	2.40
3/8"	2.32	0.94	3.58	2.20	2.40
1/2"	2.52	1.06	3.58	2.20	2.52
3/4"	2.87	1.28	3.58	2.20	2.74
1"	3.35	1.52	4.88	2.76	3.66
1 1/4"	3.94	1.63	4.88	2.76	3.78
1 1/2"	4.53	2.01	5.28	3.31	4.27
2"	5.28	2.56	5.28	3.31	4.80

## Stem Extension XS Series



SIZE	Model of Stem Extension	A	C	D	H	W
1/4"	XS1	2.32	0.94	3.00	5.16	5.31
3/8"	XS1	2.32	0.94	3.00	5.16	5.31
1/2"	XS1	2.52	1.06	3.00	5.28	5.31
3/4"	XS2	2.87	1.28	3.00	5.49	5.31
1"	XS3	3.35	1.52	3.00	5.79	6.50
1 1/4"	XS3	3.94	1.63	3.00	5.91	6.50
1 1/2"	XS4	4.53	2.01	3.00	6.54	9.65
2"	XS5	5.28	2.56	3.00	7.09	9.65

Stem Extension Helps Protects Operator from High Temperatures

## Seal Welded Body Option



## Safety Trigger Locking Handle



# Standard Unique Features

- Flo-Tites safety trigger handle is designed to prevent accidental movement.
- The valve can be latch locked in the open or closed positions.
- The valve can also be padlocked to limit unwanted access.
- The safety trigger locking device is also standard.



# SAFETY FIRST!!!



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