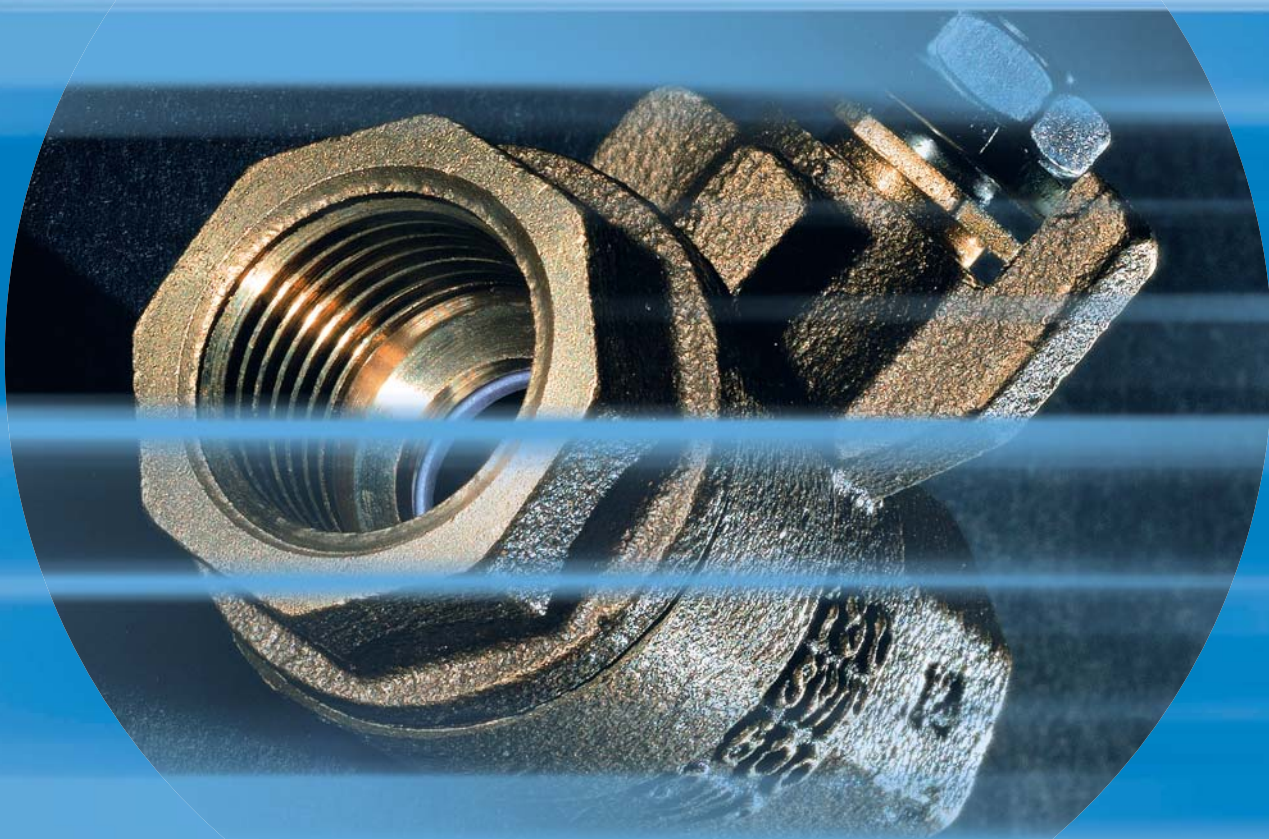


NIBCO®

AHEAD OF THE FLOW®



Ball Valves

Business-to-Business Solutions

Look to NIBCO for technology leadership.

The velocity with which e-business evolves demands that new products and services be continuously developed and introduced to keep our customers at the center of our business efforts. NIBCO provides an entire suite of business-to-business solutions that is changing the way we interact with customers.



NIBCOpartner.comSM is an exclusive set of secure web applications that allow quick access to customer-specific information and online order processing. This self-service approach gives you 24/7 access to your order status putting you in total control of your business.

Real time information includes:

- Online order entry
- Viewable invoices & reports
- Inventory availability
- Current price checks
- Order status
- Online library of price sheets, catalogs & submittals



Electronic Data Interchange (EDI) makes it possible to trade business documents at the speed of light. This technology cuts the cost of each transaction by eliminating the manual labor and paperwork involved in traditional order taking. This amounts to cost-savings, increased accuracy and better use of resources.

With EDI, you can trade:

- Purchase orders
- PO Acknowledgements
- Invoices
- Product activity data
- Advanced ship notices
- Remittance advice



Vendor Managed Inventory (VMI), a sophisticated service for automated inventory management, reduces your overhead by transferring inventory management, order entry and forecasting to NIBCO. This is an on-going, interactive partnership with NIBCO.

Through automation, VMI brings results:

- Improves customer service
- Optimum inventory efficiencies
- Better forecasting
- Cuts transaction costs
- Peace of mind
- Relief from day-to-day management





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Visit our website for the most current information.

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Bronze Ball Valves

One, Two, and Three-Piece Body
Threaded, Solder and Grooved Ends

Bronze Ball Valve Figure Number Key

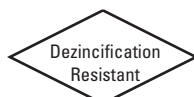
T-560-BR-R-20-**

End Connection	Valve Style	Basic Material	Seat Material	Trim Material	Options
BM - Butt Weld ISO Mount	560 - One-Piece Body Reduced Port 600 PSI	*BR - Bronze	R - Reinforced Y - Virgin PTFE	20 - Bronze 66 - Stainless Steel **70 - Bronze/Chrome Plated Ball	BSP - British Standard Thread (Parallel) BST - British Thread (Taper) CP - Chrome Plated EL - Extended Lever HC - Hose Cap and Chain HCL - Horizontal Chain Lever IC - Integral Check LL - Locking Lever M - Memory Stop NS - NIB-SEAL® Handle OL - Oval Locking OV - Oval Handle RH - Round Handle SS - Stainless Steel Externals ST - Steam Service SU - Single Union End SV - Safety Vent UL - UL Listed VCL - Vertical Chain Lever W3 - Three-Way Valve WH - Wing Handle X - Oxygen Cleaned
G - Grooved					
GM - Grooved ISO Mount	580 - Two-Piece Conventional Port 400 PSI				
KM - Socket Weld ISO Mount					
MTT - Male x Female Thread	580-70 - Two-Piece Conventional Port 600 PSI				
S - Solder	585-70 - Two-Piece Full Port 600 PSI				
ST - Solder x Thread					
T - Thread	585-CV - Two-Piece with a Flow Control Port				
TC - Thread (investment cast carbon body)	590 - Three-Piece Body Conventional Port 600 PSI				
TM - Thread ISO Mount					
TS - Thread x Solder	595 - Three-Piece Body Full Port 600 PSI				

* BR only applies to T-560 line.

** 70 only applies to T or S-580-70 and T or S-585-70 series valves.

This key is a guide only and is not intended to infer that every valve combination will be produced.
Key for threaded, socket weld, grooved end ball valves.



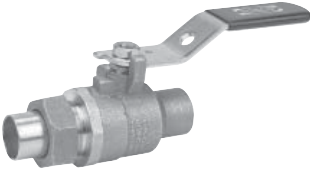
De-alloying corrosion, known as "Dezincification," was effectively eradicated from valve products in the 1950s. Today, however, this problem has returned with the increased use of high-zinc alloys (commonly referred to as 'Yellow Brass') in forged and cast valves typically produced outside the United States.

Dezincification selectively removes zinc from the alloy, leaving behind a porous, copper-rich structure that has little mechanical strength. The physical attributes of an in-service valve with Dezincification includes a white powdery substance or mineral stains on its exterior surface.

What's the cure? On all bronze valves the metal components in the waterway must not contain more than 15% zinc in their chemical makeup. As a standard NIBCO bronze ball valves are made to be "Dezincification Resistant," which is a seal of quality and longevity.

One-Piece and Two-Piece Bronze Ball Valves

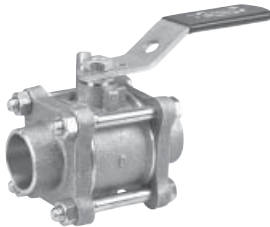
Illustrated Index

One-Piece Bronze Ball Valve Up to 600 lb. CWP  T-560-BR-20/T-560-BR-66 Sizes 1/4" thru 2" Threaded Ends Page 7, 8	Two-Piece Bronze Ball Valve 600 lb. CWP  T or S-580-70/T or S-580-70-66 Sizes 1 1/4" thru 3" T or S-585-70/T or S-585-70-66 Sizes 1/4" thru 2" Threaded or Solder Ends • Other End Connections Page 9-15	Two-Piece Bronze Hose End Ball Valve 600 lb. CWP  T or S-585-70-HC/T or S-585-70-66-HC Sizes 1/2" thru 3/4" Threaded or Solder Ends Page 16, 17
Two-Piece Bronze Single Union Ball Valve 600 lb. CWP  T or S-585-70-SU Sizes 1/2" thru 2" Threaded or Solder Ends Page 18, 19	Two-Piece Bronze 250 Steam Ball Valve 250 lb. SWP 600 lb. CWP  T-585-70-66-ST Sizes 1/2" thru 2" Threaded Ends Page 20	Two-Piece Safety Vent Bronze Ball Valve 600 lb. CWP  T-580-70-SV Sizes 1 1/4" thru 2" T-585-70-SV Sizes 1/4" thru 1" Threaded Ends Page 21
Two-Piece UL/LP Gas Bronze Ball Valve 250 lb. CWP  T-580-70-UL Sizes 1 1/4" thru 3" T-585-70-UL Sizes 1/4" thru 1" Threaded Ends Page 22	Two-Piece Act. Mount Bronze Ball Valve 600 lb. CWP  TM-585-70-66 Sizes 1/2" thru 2 1/2" Threaded Ends Page 23	Bronze 3-Way Ball Valve 400 lb. CWP  T-585-70-W3 Sizes 1 1/4" thru 2" T or S-585-70-W3 Sizes 1/2" thru 1" Threaded or Solder Ends Page 24, 25

Three-Piece Bronze Ball Valve Illustrated Index

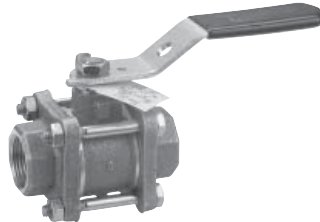
Dezincification
Resistant

Three-Piece Bronze Ball Valve
600 lb. CWP



T or S-590-Y/T or S-590-Y-66
Sizes 1/4" thru 3"
Threaded or Solder Ends
Page 26, 27

Three-Piece Bronze Ball Valve
600 lb. CWP
175 PSI LP Gas



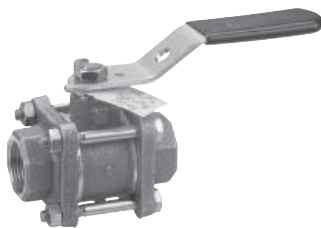
T-590-Y-UL
Sizes 1/4" thru 3"
Threaded Ends
Page 28

Three-Piece Bronze Ball Valve
600 lb. CWP



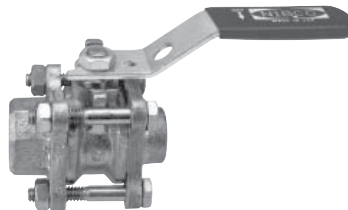
G-590-Y/G-590-Y-66
Sizes 1 1/2" thru 3"
Grooved Ends
Page 29, 30

Three-Piece Bronze Ball Valve
600 lb. CWP



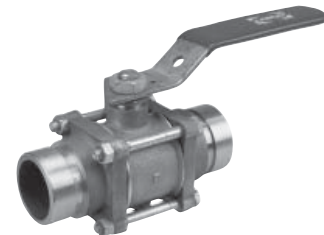
**T or S-595-Y/T-595-Y-SS/T or S-595-Y-66/
T-595-Y-66-SS**
Sizes 1/4" thru 2 1/2"
Threaded or Solder Ends
Page 31-34

Three-Piece Bronze Ball Valve
600 lb. CWP



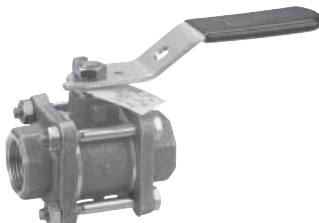
TS-595-Y
Sizes 1/4" thru 2"
Threaded x Solder Ends
Page 41

Three-Piece Bronze Ball Valve
600 lb. CWP



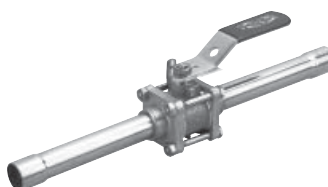
G-595-Y/G-595-Y-66
Sizes 1 1/2" thru 2 1/2"
Grooved Ends
Page 36, 37

Three-Piece Bronze Ball Valve
600 lb. CWP
175 PSI LP Gas



T-595-Y-UL
Sizes 1/4" thru 2"
Threaded Ends
Page 38

Three-Piece Bronze Ball Valve
200 lb. PSI Medical Gas



CS-595-YX/CS-595-YX-66/EC
Sizes 1/2" thru 2"
Solder Ends
Page 39, 40

**Pressure
Temperature
Chart**

Page 41

Bronze Ball Valves

One-Piece Body • Reduced Port • Bronze Trim • Blowout-Proof Stem



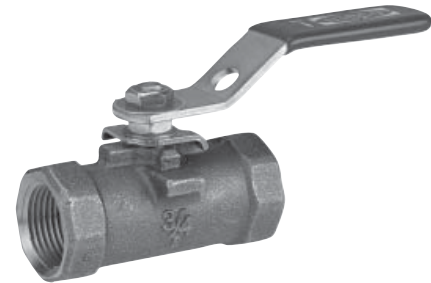
600 PSI/41.4 Bar Non-Shock Cold Working Pressure

CONFORMS TO MSS SP-110

MATERIAL LIST

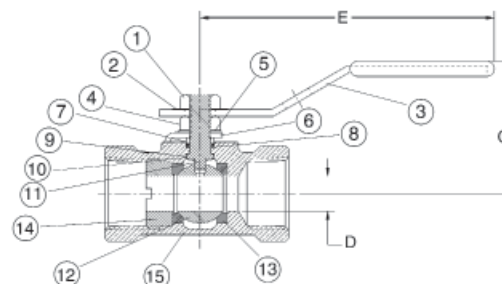
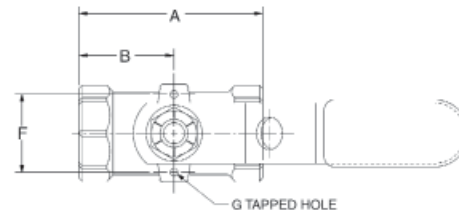
PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Identification Plate	Aluminum
3. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
4. ¹ Packing Nut	Stainless Steel
5. Belleville Washer	Zinc Plated Steel
6. Travel Stop	Zinc Dichromate Plated Steel
7. Pack Gland	Brass ASTM B 16 Alloy C36000
8. Packing	Reinforced PTFE
9. Grounding Washer	Stainless Steel ASTM A 167 Type 304
10. Thrust Washer	Reinforced PTFE
11. Stem	Bronze ASTM B 371 Alloy C69430
12. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B 16 Alloy C36000
13. Seat Ring (2)	*PTFE (Y) or Reinforced PTFE (R)
14. Body Insert	Bronze ASTM B 584 Alloy C84400
15. Body	Bronze ASTM B 584 Alloy C84400
16. Body End Piece	Brass ASTM B 16 Alloy C36000 (not shown) 1/4 and 3/8 size only

¹ 1/4"-3/4" ASTM A 582 Type 416. 1"-2" 300 Series.



T-560-BR-*-20

Threaded



T-560-BR-*-20

NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

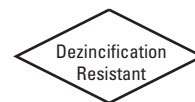
Size		Dimensions														T-560-BR-*-20		Master Ctn.	Qty.
		A		B		C		D		E		F		G					
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.		
¼	8	2.63	67	1.34	34	1.63	41	.38	10	4.00	102	1.22	31	10-24	.66	.30	50		
⅜	10	2.63	67	1.34	34	1.63	41	.38	10	4.00	102	1.22	31	10-24	.63	.28	50		
½	15	2.63	67	1.34	34	1.63	41	.38	10	4.00	102	1.22	31	10-24	.59	.27	50		
¾	20	2.88	73	1.50	38	1.71	43	.50	13	4.00	102	1.22	31	10-24	.82	.37	50		
1	25	3.31	84	1.71	43	2.00	51	.63	16	4.69	119	1.34	34	¼-20	1.36	.62	40		
1¼	32	3.84	98	1.97	50	2.06	52	.81	21	4.69	119	1.50	38	¼-20	2.01	.91	20		
1½	40	4.03	102	2.03	52	2.56	65	1.00	25	6.75	171	1.63	41	¼-20	2.75	1.25	20		
2	50	4.59	117	2.28	58	2.75	70	1.25	32	6.75	171	2.06	52	¼-20	4.16	1.89	10		

Note: G Holes are only tapped for actuated valves.

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

One-Piece Body • Reduced Port • Stainless Trim • Vented Ball •
Blowout-Proof Stem



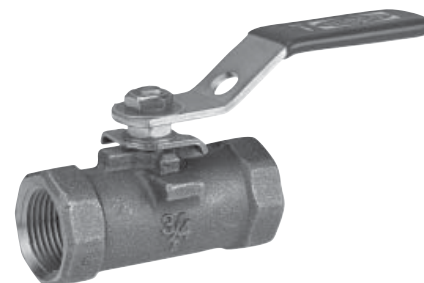
600 PSI/41.4 Bar Non-Shock Cold Working Pressure

CONFORMS TO MSS SP-110

MATERIAL LIST

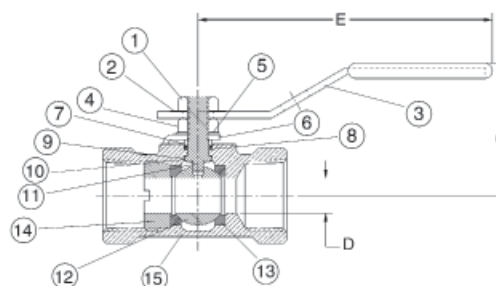
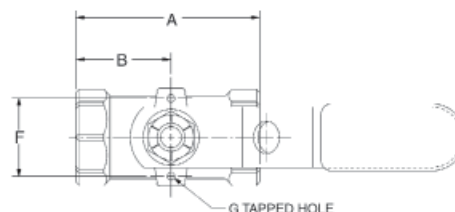
PART	SPECIFICATION
1. Handle Nut	Stainless Steel 300 Series
2. Identification Plate	Aluminum
3. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
4. ¹ Packing Nut	Stainless Steel
5. Belleville Washer	Zinc Plated Steel
6. Travel Stop	Zinc Dichromate Plated Steel
7. Pack Gland	Stainless Steel ASTM A 167 Type 316
8. Packing	Reinforced PTFE
9. Grounding Washer	Stainless Steel ASTM A 240 Type 304
10. Thrust Washer	Reinforced PTFE
11. Stem	Stainless Steel ASTM A 276 Type 316
12. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
13. Seat Ring (2)	*PTFE (Y) or Reinforced PTFE (R)
14. Body Insert	Bronze ASTM B 584 Alloy C84400
15. Body	Bronze ASTM B 584 Alloy C84400
16. Body End Piece	Brass ASTM B 16 Alloy C36000 (not shown) 1/4 and 3/8 size only

¹ 1/4"-3/4" ASTM A 582 Type 416. 1"-2" 300 Series.



T-560-BR-*-66

Threaded



T-560-BR-*-66

NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions														T-560-BR-*-66		Master Ctn. Qty.
	In.	mm.	A	In.	mm.	B	In.	mm.	C	In.	mm.	D	In.	mm.	E	In.	mm.
1/4	8	2.63	67	1.34	34	1.63	41	.38	10	4.00	102	1.22	31	10-24	.66	.30	50
3/8	10	2.63	67	1.34	34	1.63	41	.38	10	4.00	102	1.22	31	10-24	.63	.29	50
1/2	15	2.63	67	1.34	34	1.63	41	.38	10	4.00	102	1.22	31	10-24	.59	.27	50
3/4	20	2.88	73	1.50	38	1.71	43	.50	13	4.00	102	1.22	31	10-24	.82	.37	50
1	25	3.31	84	1.71	43	2.00	51	.63	16	4.69	119	1.34	34	1/4-20	1.36	.62	40
1 1/4	32	3.84	98	1.97	50	2.06	52	.81	21	4.69	119	1.50	38	1/4-20	2.01	.91	20
1 1/2	40	4.03	102	2.03	52	2.56	65	1.00	25	6.75	171	1.63	41	1/4-20	2.75	1.25	20
2	50	4.59	117	2.28	58	2.75	70	1.25	32	6.75	171	2.06	52	1/4-20	4.16	1.89	10

Note: G Holes are only tapped for actuated valves.

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Two-Piece Body • Full Port 1/4"-1" • Conventional Port 1 1/4"-3" •
Bronze Trim • Blowout-Proof Stem

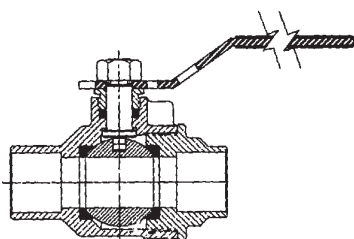
600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Bar Saturated Steam ♦

CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Stem	Silicon Bronze ASTM B 371 Alloy C69430 or ASTM B 99 Alloy C65100
6. Thrust Washer	Reinforced PTFE
7. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
8. Seat Ring (2)	Reinforced PTFE
9. Body	Cast Red Bronze ASTM B 584 Alloy C84400
10. Body End Piece	Cast Red Bronze ASTM B 584 Alloy C84400

1/4" size only has a 304 stainless steel grounding washer.



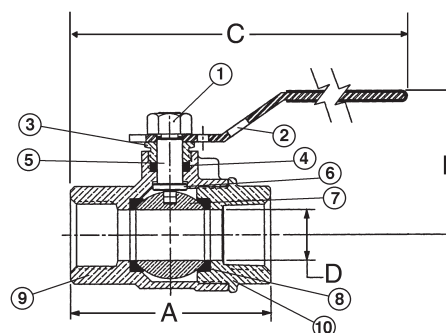
S-580-70
C x C



T-580-70
Threaded



S-580-70
Solder



T-580-70
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions																	Master Ctn. Qty.	
Size		T-580-70		S-580-70		T-580-70				S-580-70				T-580-70		S-580-70		
		A		A		B		C		C		D						
		In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.					Lbs.
† ¼	8	2.00	51	1.75	44	1.75	44	5.00	127	4.75	121	.38	10	.45	.21	.42	.19	100
† ⅜	10	2.00	51	1.84	47	1.75	44	5.00	127	4.81	122	.38	10	.45	.21	.42	.19	100
† ½	15	2.44	62	2.56	65	1.88	48	5.19	132	5.25	133	.50	13	.64	.29	.60	.27	100
† ¾	20	2.94	75	3.25	83	2.25	57	6.25	159	6.25	159	.75	19	1.33	.60	1.27	.58	50
† 1	25	3.34	85	3.75	95	2.38	60	6.44	164	6.63	168	1.00	25	1.79	.81	1.72	.78	40
1 ¼	32	3.94	100	4.00	102	2.63	67	6.75	171	6.75	171	1.00	25	2.17	.98	1.78	.81	20
1 ½	40	4.31	109	4.44	113	3.00	76	8.88	226	9.00	229	1.25	32	3.27	1.48	2.87	1.30	20
2	50	4.63	118	5.50	140	3.16	80	9.06	230	9.50	241	1.50	38	5.09	2.31	4.60	2.08	10
2 ½	65	5.84	148	7.28	185	3.50	89	9.66	245	10.38	264	2.00	51	8.25	3.74	8.18	3.71	6
3	80	7.09	180	8.78	223	4.41	112	11.53	293	12.38	314	2.50	64	15.65	7.10	14.86	6.74	4

† NIBCO supplies Full Port T or S-585-70 on this size.

Note: Solder end is designed to be soft-soldered into lines using solders with the melting point not exceeding 500°F.
Higher temperature solders will damage the seat material. See installation sheet packaged with valves.

♦ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Two-Piece Body • Full Port 1/4"-1" • Conventional Port 1 1/4"-3" •
Stainless Trim • Blowout-Proof Stem • Vented Ball

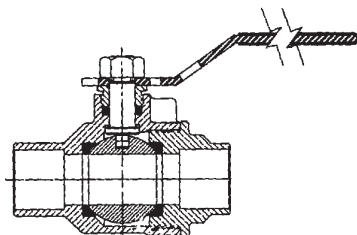
600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Bar Saturated Steam ♦

CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Stainless Steel 300 Series
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Stem	Stainless Steel ASTM A 276 Type 316
6. Thrust Washer	Reinforced PTFE
7. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
8. Seat Ring (2)	Reinforced PTFE
9. Body	Bronze ASTM B 584 Alloy C84400
10. Body End Piece	Bronze ASTM B 584 Alloy C84400

1/4" size only has a 304 stainless steel grounding washer.



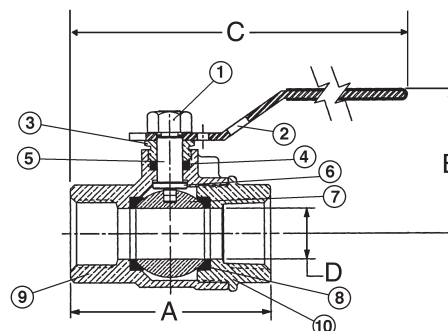
S-580-70-66
C x C



T-580-70-66
Threaded



S-580-70-66
Solder



T-580-70-66
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions

Size	T-580-70-66		S-580-70-66		T-580-70-66		S-580-70-66												Master Ctn. Qty.
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.	
† 1/4	8	2.00	51	1.75	44	1.75	44	5.00	127	4.75	121	.38	10	.45	.21	.42	.19	.100	100
† 3/8	10	2.00	51	1.84	47	1.75	44	5.00	127	4.81	122	.38	10	.45	.21	.42	.19	.100	100
† 1/2	15	2.44	62	2.56	65	1.88	48	5.19	132	5.25	133	.50	13	.64	.29	.60	.27	.100	100
† 3/4	20	2.94	75	3.25	83	2.25	57	6.25	159	6.25	159	.75	19	1.33	.60	1.27	.58	.50	50
† 1	25	3.34	85	3.75	95	2.38	60	6.44	164	6.63	168	1.00	25	1.79	.81	1.72	.78	.40	40
1 1/4	32	3.94	100	4.00	102	2.63	67	6.75	171	6.75	171	1.00	25	2.33	1.06	1.94	.88	.20	20
1 1/2	40	4.31	109	4.44	113	3.00	76	8.88	226	9.00	229	1.25	32	3.49	1.58	3.10	1.40	.20	20
2	50	4.63	118	5.50	140	3.16	80	9.06	230	9.50	241	1.50	38	5.16	2.34	4.67	2.12	.10	10
2 1/2	65	5.84	148	7.28	185	3.50	89	9.66	245	10.38	264	2.00	51	8.98	4.07	8.92	4.04	.6	6
3	80	7.09	180	8.78	223	4.41	112	11.53	293	12.38	314	2.50	64	17.38	7.88	16.59	7.52	.4	4

† NIBCO supplies Full Port T or S-585-70-66 on this size.

Note: Solder end is designed to be soft-soldered into lines using solders with the melting point not exceeding 500°F.
Higher temperature solders will damage the seat material. See installation sheet packaged with valves.

♦ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Two-Piece Body • Full Port • Bronze Trim • Blowout-Proof Stem

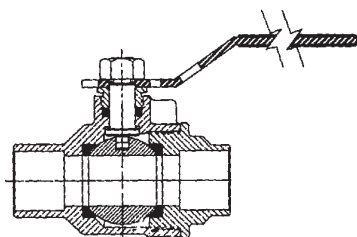
600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Bar Saturated Steam ◆

CONFORMS TO MSS SP-110

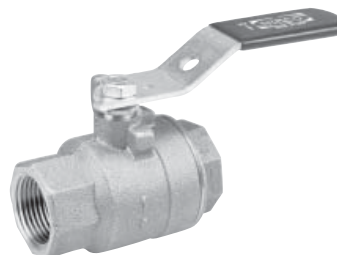
MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Stem	Silicon Bronze ASTM B 371 Alloy C69300 or ASTM B 99 Alloy C65100
6. Thrust Washer	Reinforced PTFE
7. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
8. Seat Ring (2)	Reinforced PTFE
9. Body	Cast Red Bronze ASTM B 584 Alloy C84400
10. Body End Piece	Cast Red Bronze ASTM B 584 Alloy C84400

1/4" size only has a 304 stainless steel grounding washer.



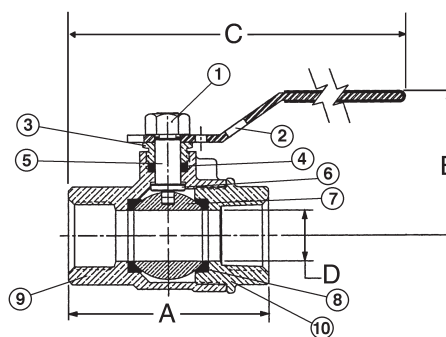
S-585-70
C x C



T-585-70
Threaded



S-585-70
Solder



T-585-70
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions														
Size	T-585-70		S-585-70		T-585-70		S-585-70							
	A	B	A	B	C	D	C	D	A	B	C	D	E	F
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.
1/4 8	2.00 51	1.75 44	1.75 44	5.00 127	4.75 121	.38 10	.45 11	.42 11	.19 5	.19 5	.19 5	.19 5	.19 5	.19 5
3/8 10	2.00 51	1.84 47	1.75 44	5.00 127	4.81 122	.38 10	.45 11	.42 11	.19 5	.19 5	.19 5	.19 5	.19 5	.19 5
1/2 15	2.44 62	2.56 65	1.88 48	5.19 132	5.25 133	.50 13	.64 16	.60 15	.27 7	.27 7	.27 7	.27 7	.27 7	.27 7
3/4 20	2.94 75	3.25 82	2.25 57	6.25 159	6.25 159	.75 19	1.33 34	.60 15	.27 7	.27 7	.27 7	.27 7	.27 7	.27 7
1 25	3.34 85	3.75 95	2.38 60	6.44 164	6.63 168	1.00 25	1.79 45	.81 21	.78 20	.78 20	.78 20	.78 20	.78 20	.78 20
1 1/4 32	4.19 106	5.06 128	3.00 76	6.75 171	7.19 183	1.25 32	3.12 79	1.41 36	1.44 36	1.44 36	1.44 36	1.44 36	1.44 36	1.44 36
1 1/2 40	4.72 120	5.99 151	3.16 80	9.06 230	9.69 246	1.50 38	4.78 121	5.12 130	2.32 59	2.32 59	2.32 59	2.32 59	2.32 59	2.32 59
2 50	5.16 131	6.72 170	3.50 89	9.25 235	10.06 256	2.00 51	6.68 170	3.03 77	3.22 82	3.22 82	3.22 82	3.22 82	3.22 82	3.22 82

Note: Solder end is designed to be soft-soldered into lines using solders with the melting point not exceeding 500°F.
Higher temperature solders will damage the seat material. See installation sheet packaged with valves.

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Two-Piece Body • Full Port • Stainless Trim • Blowout-Proof Stem •
Vented Ball

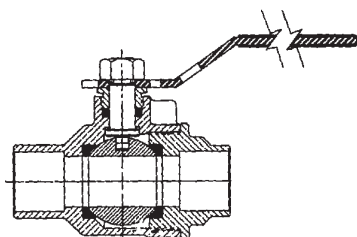
600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Bar Saturated Steam ◆

CONFORMS TO MSS SP-110

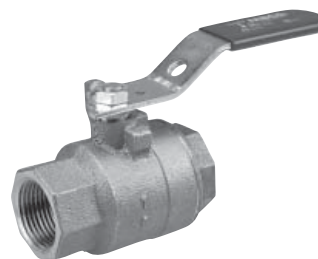
MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Stainless Steel 300 Series
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Stem	Stainless Steel ASTM A 276 Type 316
6. Thrust Washer	Reinforced PTFE
7. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
8. Seat Ring (2)	Reinforced PTFE
9. Body	Bronze ASTM B 584 Alloy C84400
10. Body End Piece	Bronze ASTM B 584 Alloy C84400

1/4" size only has a 304 stainless steel grounding washer.



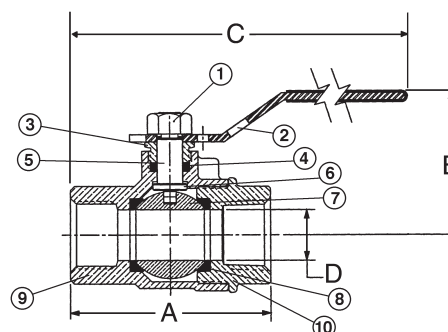
S-585-70-66
C x C



T-585-70-66
Threaded



S-585-70-66
Solder



T-585-70-66
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions

Size	T-585-70-66		S-585-70-66		T-585-70-66		S-585-70-66		D		T-585-70-66		S-585-70-66		Master
	A	A	B	B	C	C	C	C							
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs. Kg.	Lbs. Kg.	Lbs. Kg.	Lbs. Kg.	Ctn. Qty.
1/4	8 2.00	51 1.75	44 1.75	44 1.75	5.00 127	4.75 121	.38 10	.45 11	.21 5	.42 11	.19 4	.19 4	.19 4	.19 4	100
3/8	10 2.00	51 1.84	47 1.75	44 1.75	5.00 127	4.81 122	.38 10	.45 11	.21 5	.42 11	.19 4	.19 4	.19 4	.19 4	100
1/2	15 2.44	62 2.56	65 1.88	48 1.88	5.19 132	5.25 133	.50 13	.64 16	.29 7	.60 15	.27 6	.27 6	.27 6	.27 6	100
3/4	20 2.94	75 3.25	82 2.25	57 2.25	6.25 159	6.25 159	.75 19	1.33 30	.60 15	1.27 32	.58 13	.58 13	.58 13	.58 13	50
1	25 3.34	85 3.75	95 2.38	60 2.38	6.44 164	6.63 168	1.00 25	1.79 40	.81 19	1.72 38	.78 18	.78 18	.78 18	.78 18	40
1 1/4	32 4.19	106 5.06	128 3.00	76 3.00	6.75 171	7.19 183	1.25 32	3.34 75	1.52 34	3.40 81	1.55 35	1.55 35	1.55 35	1.55 35	20
1 1/2	40 4.72	120 5.99	151 3.16	80 3.16	9.06 230	9.69 246	1.50 38	4.84 108	2.20 49	5.18 115	2.35 53	2.35 53	2.35 53	2.35 53	10
2	50 5.16	131 6.72	170 3.50	89 3.50	9.25 235	10.06 256	2.00 51	7.41 165	3.37 75	7.83 173	3.56 79	3.56 79	3.56 79	3.56 79	8

Note: Solder end is designed to be soft-soldered into lines using solders with the melting point not exceeding 500°F.
Higher temperature solders will damage the seat material. See installation sheet packaged with valves.

◆ For detailed Operating Pressure, refer to Pressure
Temperature Chart on page 41.

Bronze Ball Valves

Two-Piece Body • Full Port • Bronze Trim • Thread x Solder (TS)
or Solder x Thread End (ST) • Blowout-Proof Stem

600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Bar Saturated Steam ◆



CONFORMS TO MSS SP-110

MATERIAL LIST

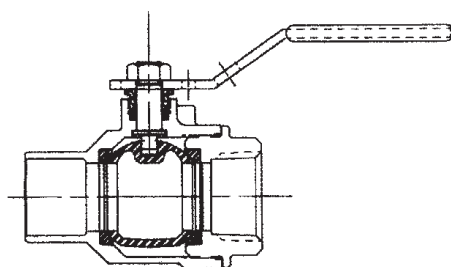
PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Stem	Silicon Bronze ASTM B 371 Alloy C69300 or ASTM B99 Alloy C65100
6. Thrust Washer	Reinforced PTFE
7. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
8. Seat Ring (2)	Reinforced PTFE
9. Body	Bronze ASTM B 584 Alloy C84400
10. Body End Piece	Bronze ASTM B 584 Alloy C84400



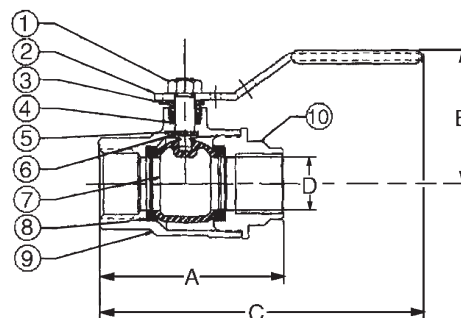
TS-585-70
Threaded x Solder



ST-585-70
Solder x Threaded



ST-585-70
NPT x C



TS-585-70
NPT x C

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions													
		TS-585-70		ST-585-70		TS-585-70		ST-585-70					
Size		A		A		B		C		C		D	
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.
1/2	15	2.55	65	2.40	61	1.88	48	5.19	132	5.25	133	.50	13
3/4	20	3.06	78	3.09	78	2.25	57	6.25	159	6.25	159	.75	19
1	25	3.53	90	3.53	90	2.38	60	6.44	164	6.63	168	1.00	25
1 1/4	32	4.61	117	4.63	118	3.00	76	6.75	171	7.19	183	1.25	32
1 1/2	40	5.32	135	5.32	135	3.16	80	9.06	230	9.69	246	1.50	38
2	50	5.93	151	5.93	151	3.50	89	9.25	235	10.06	256	2.00	51

Note: Solder end is designed to be soft-soldered into lines using solders with the melting point not exceeding 500°F.
Higher temperature solders will damage the seat material. See installation sheet packaged with valves.

◆ For detailed Operating Pressure, refer to Pressure
Temperature Chart on page 41.

Bronze Ball Valves

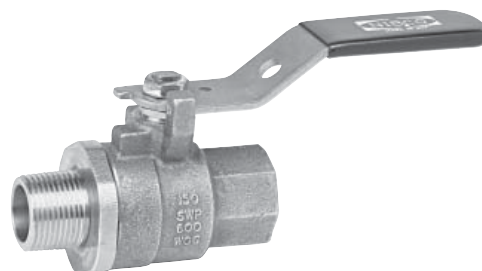
Two-Piece Body • Full Port • Bronze Trim • Male x Female Thread Ends •
Blowout-Proof Stem

600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Bar Saturated Steam ♦

CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Thrust Washer	Reinforced PTFE
6. Stem	Silicon Bronze ASTM B 371 Alloy C69300 or ASTM B 99 Alloy C65100
7. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
8. Seat Ring (2)	Reinforced PTFE
9. Body	Bronze ASTM B 584 Alloy C84400
10. Male Body End	Brass ASTM B 16 Alloy C36000
11. Cap Plug	Low Density Polyethylene

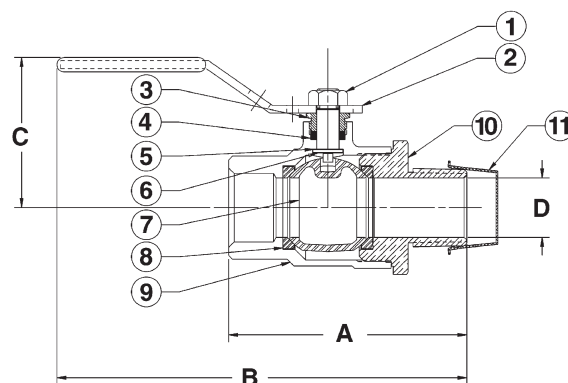


MTT-585-70

Male x Female NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions													Master Ctn. Qty.
Size		A		B		C		D		MTT-585-70			
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.		
1/4	8	2.41	61	5.30	135	1.75	44	.38	10	.43	.19	40	
3/8	10	2.40	61	5.30	135	1.72	44	.38	10	.52	.24	40	
1/2	15	2.80	71	5.50	140	1.88	48	.50	13	.78	.35	40	
3/4	20	3.40	86	6.59	167	2.25	57	.75	19	1.54	.70	20	
1	25	4.00	102	6.99	178	2.38	60	1.00	25	2.71	1.23	20	
1 1/4	32	4.58	116	9.18	233	3.00	76	1.25	32	3.56	1.62	10	
1 1/2	40	5.20	132	9.53	242	3.16	80	1.50	38	5.34	2.42	6	
2	50	5.49	139	9.61	244	3.50	89	2.00	51	6.83	3.10	4	



MTT-585-70

Male x Female NPT

♦ For detailed Operating Pressure, refer to Pressure
Temperature Chart on page 41.

Bronze Ball Valves

Two-Piece Body • Full Port • Bronze Trim •
Body with Chrome Plating • Blowout-Proof Stem

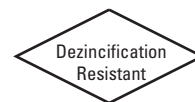
600 PSI/41.4 Bar Non-Shock Cold Working Pressure

CONFORMS TO MSS SP-110

MATERIAL LIST

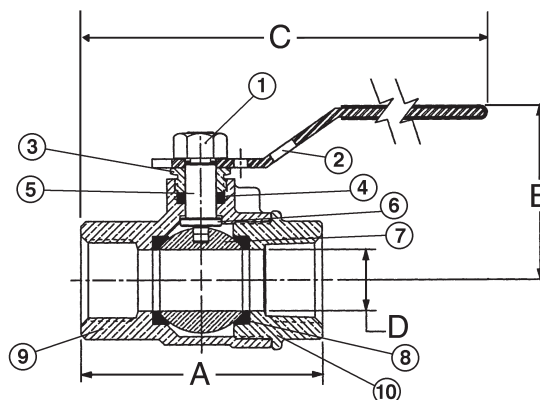
PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Stem	Silicon Bronze ASTM B 371 Alloy C69300 or ASTM B 99 Alloy C65100
6. Thrust Washer	Reinforced PTFE
7. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
8. Seat Ring (2)	Reinforced PTFE
9. Body	Chrome Plated Bronze ASTM B 584 Alloy C84400
10. Body End Piece	Chrome Plated Bronze ASTM B 584 Alloy C84400

1/4" and 3/8" sizes have a 304 stainless steel grounding washer.



T-585-70-CP

Threaded



T-585-70-CP
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions				T-585-70-CP	Master
	In.	mm.	In.	mm.	Lbs.	Ctn. Qty.
1/4	8	2.00	51	1.75	44	100
3/8	10	2.00	51	1.75	44	100
1/2	15	2.44	62	1.88	48	100
3/4	20	2.94	75	2.25	57	50
1	25	3.34	85	2.38	60	40
1 1/4	32	4.19	106	3.00	76	20
1 1/2	40	4.72	120	3.16	80	10
2	50	5.16	131	3.50	89	8

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Two-Piece Body • Full Port • Bronze Trim • ¾" Hose Connection with Cap and Chain • Blowout-Proof Stem

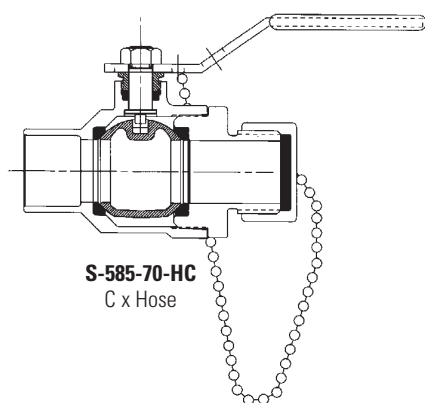
600 PSI/41.4 Bar Non-Shock Cold Working Pressure

CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Thrust Washer	Reinforced PTFE
6. Stem	Silicon Bronze ASTM B 371 Alloy C69300 or ASTM B 99 Alloy C65100
7. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
8. Seat Ring (2)	Reinforced PTFE
9. Body	Bronze ASTM B 584 Alloy C84400
10. Hose Body End	ASTM B 124 Alloy C37700
11. ¹ Cap	Die Cast Brass
12. Gasket	Rubber
13. Chain	Brass

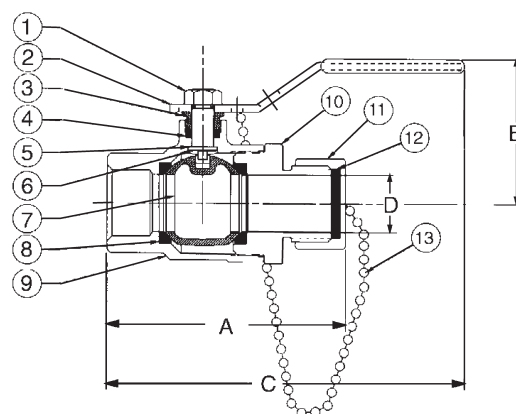
¹ Cap is for hose end thread protection only. Not to be used for pressure containing purposes.



T-585-70-HC
Threaded x Hose



S-585-70-HC
Solder x Hose



T-585-70-HC
NPT x Hose

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions																		
Size		T-585-70-HC		S-585-70-HC		T-585-70-HC		S-585-70-HC		D		T-585-70-HC		S-585-70-HC		Master Ctn. Qty.		
		A		A		B		C				C		Lbs. Kg.				Lbs. Kg.
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.	
½	15	2.84	72	2.90	74	1.88	48	5.19	132	5.25	133	.50	13	.80	.36	.74	.34	100
¾	20	3.31	84	3.47	88	2.25	57	6.25	159	6.25	159	.75	19	1.46	.66	1.42	.65	50

Note: Solder end is designed to be soft-soldered into lines using solders with the melting point not exceeding 500°F. Higher temperature solders will damage the seat material. See installation sheet packaged with valves.

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Two-Piece Body • Full Port • Stainless Trim • ¾" Hose Connection with Cap and Chain • Blowout-Proof Stem

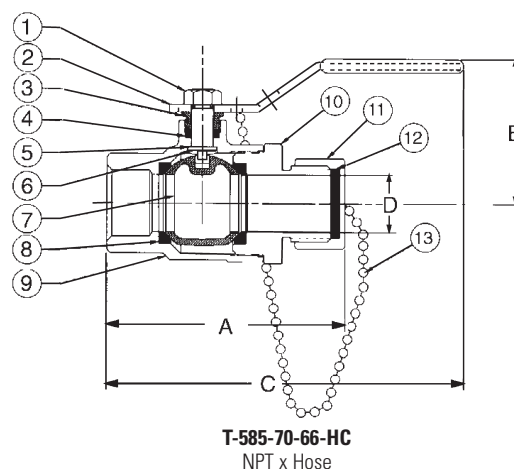
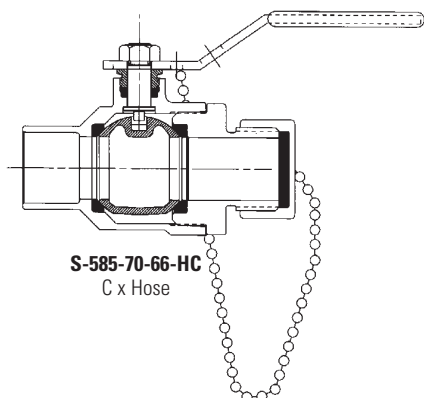
600 PSI/41.4 Bar Non-Shock Cold Working Pressure

CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Stainless Steel 300 Series
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Thrust Washer	Reinforced PTFE
6. Stem	Stainless Steel ASTM A 276 Type 316
7. Ball	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
8. Seat Ring (2)	Reinforced PTFE
9. Body	Bronze ASTM B 584 Alloy C84400
10. Hose Body End	ASTM B 124 Alloy C37700
11. ¹ Cap	Die Cast Brass
12. Gasket	Rubber
13. Chain	Brass

¹ Cap is for hose end thread protection only. Not to be used for pressure containing purposes.



DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions - Wireline Connections																		
Size		Dimensions																
		T-585-70-66-HC		S-585-70-66-HC		T-585-70-66-HC		S-585-70-66-HC				T-585-70-66-HC		S-585-70-66-HC		Master Ctn. Qty.		
In.	mm.	A In.	A mm.	A In.	A mm.	B In.	B mm.	C In.	C mm.	C In.	C mm.	D In.	D mm.	Lbs.	Kg.		Lbs.	Kg.
1/2	15	2.84	72	2.90	74	1.88	48	5.19	132	5.25	133	.50	13	.80	.36	.74	.34	100
3/4	20	3.31	84	3.47	88	2.25	57	6.25	159	6.25	159	.75	19	1.46	.66	1.42	.65	50

Note: Solder end is designed to be soft-soldered into lines using solders with the melting point not exceeding 500°F.
Higher temperature solders will damage the seat material. See installation sheet packaged with valves.

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

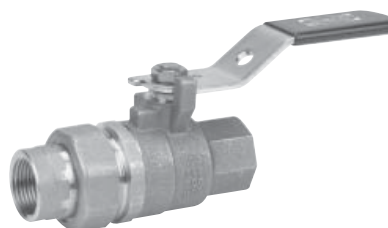
Two-Piece Body • Full Port • Bronze Trim • Single Union Ends •
Blowout-Proof Stem

600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Saturated Steam ♦*

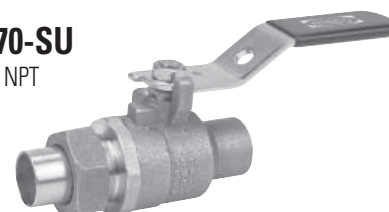
CONFORMS TO MSS SP-110

MATERIAL LIST

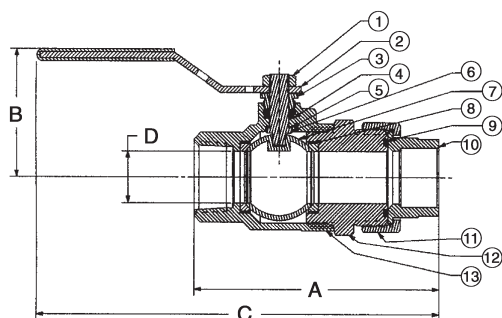
PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Thrust Washer	Reinforced PTFE
6. Stem	Silicon Bronze ASTM B 371 Alloy C69300 or ASTM B 99 Alloy C65100
7. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
8. Seat Ring (2)	Reinforced PTFE
9. O-Ring	FKM
10. Tail Piece	ASTM B 124 Alloy C37700
11. Union Nut	ASTM B 124 Alloy C37700 or ASTM B 584 Alloy C84400
12. Body End	ASTM B 124 Alloy C37700
13. Body	Bronze ASTM B 584 Alloy C84400



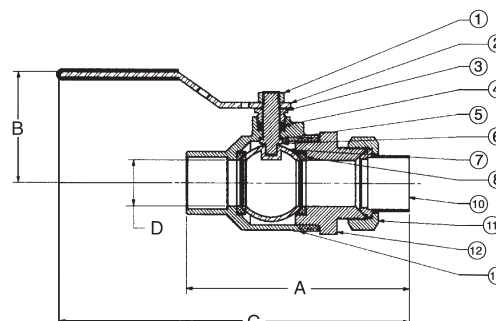
T-585-70-SU
NPT x NPT



S-585-70-SU
C x C



T-585-70-SU
NPT x NPT



S-585-70-SU
C x C

DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions														T-585-70-SU S-585-70-SU Master					
		T-585-70-SU		S-585-70-SU		T-585-70-SU				S-585-70-SU											
		A	A	B	C	C	D	D	D	D	D	D	D								
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.	Ctn.	Qty.		
½	15	3.57	91	3.32	84	1.88	48	6.22	158	6.00	152	.50	13	.64	.29	.60	.27	40			
¾	20	4.13	105	4.20	107	2.25	57	7.28	185	7.25	184	.75	19	1.33	.60	1.27	.58	20			
1	25	4.70	119	5.00	127	2.38	60	7.66	195	7.83	199	1.00	25	1.79	.81	1.72	.78	20			
1 ¼	32	5.38	137	6.09	155	3.00	76	9.97	253	10.23	260	1.25	32	2.17	.98	3.18	1.44	10			
1 ½	40	6.06	154	7.09	180	3.16	80	10.40	264	10.81	275	1.50	38	3.27	1.48	5.12	2.32	6			
2	50	6.38	162	7.66	195	3.50	89	10.50	267	10.97	279	2.00	51	5.09	2.31	7.10	3.22	4			

* Consult MSS SP123 for pressure temperature limitations

♦ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

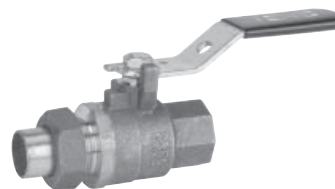
Two-Piece Body • Full Port • Bronze Trim • Single Union Ends •
Blowout-Proof Stem

600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Bar Saturated Steam◆*

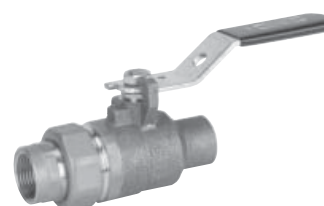
CONFORMS TO MSS SP-110

MATERIAL LIST

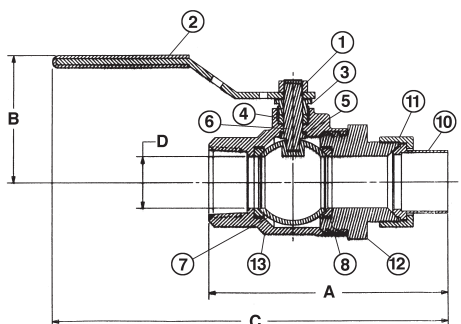
PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Thrust Washer	Reinforced PTFE
6. Stem	Silicon Bronze ASTM B 371 Alloy C69300 or ASTM B 99 Alloy C65100
7. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
8. Seat Ring (2)	Reinforced PTFE
9. O-Ring	FKM
10. Tail Piece	ASTM B 124 Alloy C37700
11. Union Nut	ASTM B 124 Alloy C37700 or ASTM B 584 Alloy C84400
12. Body End	ASTM B 124 Alloy C37700
13. Body	Bronze ASTM B 584 Alloy C84400



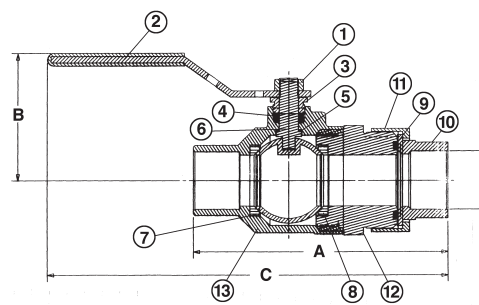
TS-585-70-SU
Threaded x Solder



ST-585-70-SU
Solder x Threaded



TS-585-70-SU
NPT x C



ST-585-70-SU
C x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions

ST-585-70-SU																			
ST-585-70-SU				TS-585-70-SU				ST-585-70-SU				TS-585-70-SU							
Size	A		A		B		C		C		D		ST-585-70-SU		TS-585-70-SU		Master		
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.	Ctn.	Qty.
½	15	3.53	90	3.21	82	1.88	48	6.22	158	6.00	152	.50	132	1.21	.55	1.21	.55	40	
¾	20	4.22	107	4.10	104	2.25	57	7.28	185	7.25	184	.75	19	1.84	.84	1.84	.84	20	
1	25	4.86	123	4.91	125	2.38	60	7.66	195	7.83	199	1.00	25	2.91	1.32	2.91	1.32	20	
1 ¼	32	5.79	147	5.63	143	3.00	76	9.97	253	10.23	260	1.25	32	4.39	2.00	4.39	2.00	10	
1 ½	40	6.63	168	6.28	160	3.16	80	10.40	264	10.81	275	1.50	38	6.44	2.93	6.44	2.93	6	
2	50	7.10	180	6.89	175	3.50	89	10.50	267	10.91	277	2.00	51	9.44	4.29	9.44	4.29	4	

* Consult MSS SP123 for pressure temperature limitations

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Two-Piece Body • 250 Steam Rating • Full Port • 316SS Trim •
Carbon-Filled PTFE Seats • Blowout-Proof Stem • Vented Ball

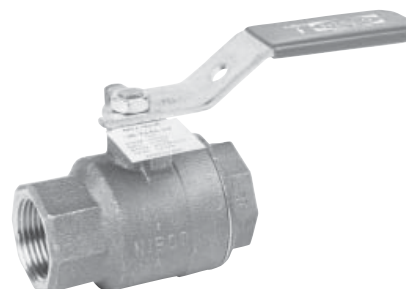
600 PSI/41.4 Bar Non-Shock Cold Working Pressure
250 PSI/17.2 Bar Saturated Steam ♦



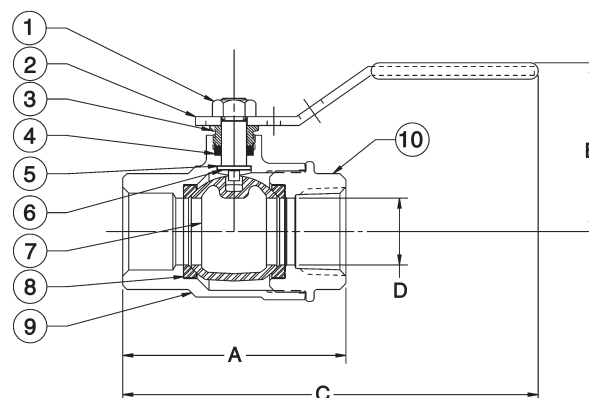
CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	300 Series Stainless Steel
2. Handle	Stainless Steel Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	Carbon Filled PTFE
5. Thrust Washer	Carbon Filled PTFE
6. Stem	Stainless Steel ASTM A 276 Type 316
7. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
8. Seat Ring (2)	Carbon Filled PTFE
9. Body	Bronze ASTM B 61 Alloy C92200
10. Body End Piece	Bronze ASTM B 584 Alloy C84400



T-585-70-66-ST
Threaded



T-585-70-66-ST
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions								T-585-70-66-ST		Master Ctn. Qty.
		A		B		C		D				
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	
1/2	15	2.44	62	1.88	48	5.19	132	.50	13	.64	.29	10
3/4	20	2.94	75	2.25	57	6.25	159	.75	19	1.33	.60	5
1	25	3.34	85	2.38	61	6.44	164	1.00	25	1.79	.81	5
1 1/4	32	4.19	106	3.00	76	6.75	171	1.25	32	2.17	.98	5
1 1/2	40	4.72	120	3.16	80	9.06	230	1.50	38	3.27	1.48	5
2	50	5.16	131	3.50	89	9.25	235	2.00	51	5.09	2.31	2

♦ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Two-Piece Body • Full Port 1/4"-1" • Conventional Port 1 1/4"-2" • Bronze Trim • Safety Vent® for Pneumatic Applications • Blowout-Proof Stem

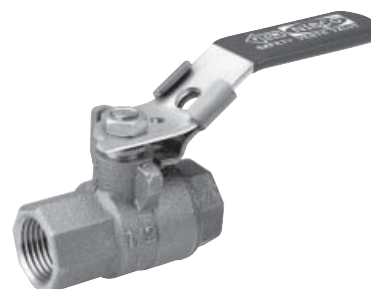
600 PSI/41.4 Bar Non-Shock Cold Working Pressure

O.S.H.A. 1910.147

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Stem	Silicon Bronze ASTM B 371 Alloy C69430 or C69300 or ASTM B 99 Alloy C65100
6. Thrust Washer	Reinforced PTFE
7. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
8. Seat Ring (2)	Reinforced PTFE
9. Body	Bronze ASTM B 584 Alloy C84400
10. Body End Piece	Bronze ASTM B 584 Alloy C84400
11. Locking Device	300 Series Stainless Steel

Note: A Buna O-ring is installed on the upstream side behind the seat ring.
Maximum temperature of Buna is 180° F. (Not Shown)

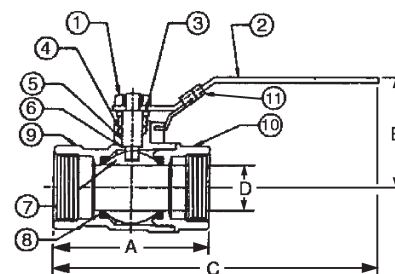


T-585-70-SV

1/4"-1" Full Port
Threaded

T-580-70-SV

1 1/4"-2" Conventional Port
Threaded



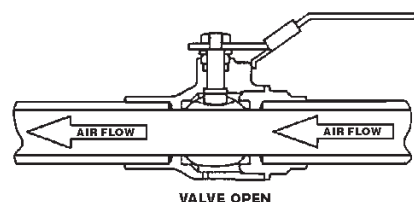
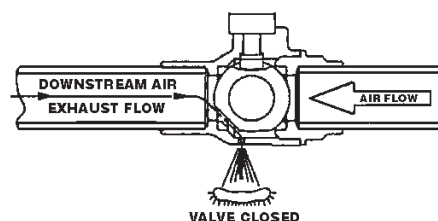
T-585-70-SV
T-580-70-SV
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions								T-585-70-SV		Master
		A		B		C		D		T-580-70-SV		
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Ctn. Qty.
† ¼	8	2.00	51	1.75	44	5.00	127	.38	10	.49	.22	100
† ⅜	10	2.00	51	1.75	44	5.00	127	.38	10	.48	.22	100
† ½	15	2.44	62	1.88	48	5.19	132	.50	13	.68	.31	100
† ¾	20	2.94	75	2.25	57	6.25	159	.75	19	1.38	.63	50
† 1	25	3.34	85	2.38	60	6.44	164	1.00	25	1.99	.90	40
1 ¼	32	3.94	100	2.63	67	6.75	171	1.00	25	2.37	1.07	20
1 ½	40	4.31	109	3.00	76	8.88	226	1.25	32	3.57	1.62	20
2	50	4.63	118	3.16	80	9.06	230	1.50	38	5.20	2.36	10

NIBCO T-585-70-SV Safety Vent® lock-out ball valves provide positive energy isolation per O.S.H.A. standard 1910.147. Valves lock in closed position only. For compressed air. To order specify T-585-70-SV/T-580-70-SV.

† NIBCO Supplies Full Port T-585-70-SV on this size.



Bronze Ball Valves

Two-Piece Body • Full Port 1/4"-1" • Conventional Port 1 1/4"-3" •
Bronze Trim • Blowout-Proof Stem • UL Listed

250 PSI/17.2 Bar Non-Shock LP Gas per UL842

CONFORMS TO MSS SP-110 •
CSA CERTIFIED TO ANSI/ASME B 16.33 AND CGA 3.16
FOR NATURAL AND PROPANE GAS TO 125 PSIG (1/4"-1")

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Stem	Silicon Bronze ASTM B 371 Alloy C69430 or ASTM B 99 Alloy C65100
6. Thrust Washer	Reinforced PTFE
7. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
8. Seat Ring (2)	Reinforced PTFE
9. Body	Bronze ASTM B 584 Alloy C84400
10. Body End Piece	Bronze ASTM B 584 Alloy C84400

UL Listed For:

YSDT LP gas shut-off
YQNZ Compressed gas shut-off
YRPV Gas shut-off
YRBX Flammable liquid shut-off
MHKZ Manual valves

Service

A - Air or non-toxic, non-flammable gas
G - City gas supplied by public utilities
GA - Gasoline
LP - Liquified petroleum gas, 250 PSI max.
02 - No. 1 and 2 fuel oil
04 - No. 4 fuel oil
05 - No. 5 fuel oil
06 - No. 6 fuel oil

CUL Listed For:

YSDT7 LP gas shut-off for Canada

DIMENSIONS—WEIGHTS—QUANTITIES

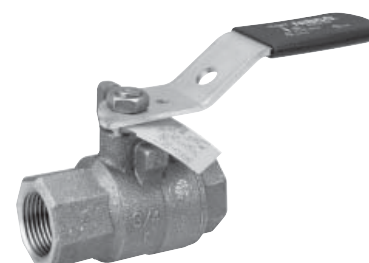
Size	Dimensions				T-585-70-UL		T-580-70-UL		Master
	A	B	C	D	Lbs.	Kg.	Lbs.	Kg.	
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs.	Kg.	Lbs.	Kg.	Ctn. Qty.
† 1/4 8	2.00 51	1.75 44	5.00 127	.38 10	.45	.21	.45	.21	100
† 3/8 10	2.00 51	1.75 44	5.00 127	.38 10	.45	.20	.45	.20	100
† 1/2 15	2.44 62	1.88 48	5.19 132	.50 13	.64	.29	.64	.29	100
† 3/4 20	2.94 75	2.25 57	6.25 159	.75 19	1.33	.60	1.33	.60	50
† 1 25	3.34 85	2.38 60	6.44 164	1.00 25	1.79	.81	1.79	.81	40
1 1/4 32	3.94 100	2.63 67	6.75 171	1.00 25	2.17	.98	2.17	.98	20
1 1/2 40	4.31 109	3.00 76	8.88 226	1.25 32	3.27	1.48	3.27	1.48	20
2 50	4.63 118	3.16 80	9.06 230	1.50 38	5.09	2.31	5.09	2.31	10
2 1/2 65	5.84 148	3.50 89	9.66 245	2.00 51	8.25	3.74	8.25	3.74	6
3 80	7.09 180	4.41 112	11.53 293	2.50 64	15.65	7.10	15.65	7.10	4

† NIBCO Supplies Full Port T-585-70-UL on this size.



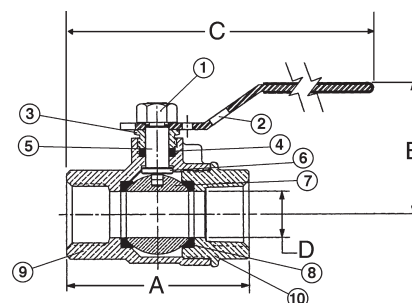
T-585-70-UL

1/4"-1" Full Port CSA
Threaded



T-580-70-UL

1 1/4"-3" Conventional Port
Threaded
UL Only



T-585-70-UL
T-580-70-UL
NPT x NPT

Bronze Ball Valves

Two-Piece Body • Full Port • 316SS Trim • Blowout-Proof Stem •
ISO Direct-Mount Pad for Actuation • Vented Ball

600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Bar Saturated Steam ♦

CONFORMS TO MSS SP-110 •
ACTUATOR MOUNT PER ISO 5211

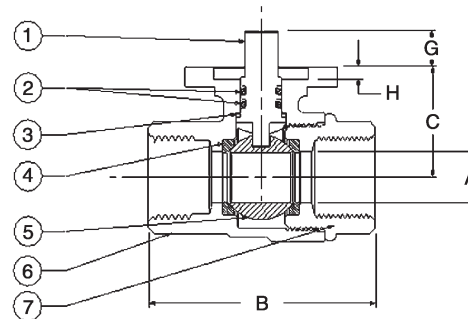
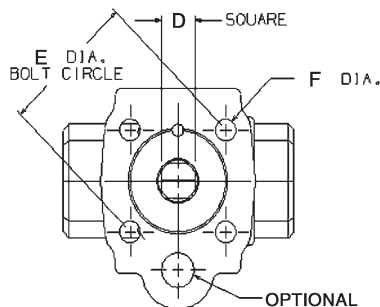
MATERIAL LIST

PART	SPECIFICATION
1. Stem	Stainless Steel ASTM A 276 Type 316
2. O-Ring (2)	Fluoroelastomer
3. Thrust Washer	Reinforced PTFE
4. Seat Ring (2)	Carbon Filled PTFE
5. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
6. Body	Bronze ASTM B 584 Alloy C84400
7. Body End Piece	Bronze ASTM B 584 Alloy C84400



TM-585-70-66

Threaded
with Mounting Pads



TM-585-70-66
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Flange Size	Dimensions										TM-585-70-66		Master Ctn. Qty.
		A	B	C	D	E	F	G	H			Lbs.	Kg.	
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.			
½	15	F03	.50 13	2.43 62	1.10 28	.35 9	1.42 36	.22 5.6	.39 10	.12 3	.82 .37			50
¾	20	F03	.75 19	2.94 75	1.37 35	.35 9	1.42 36	.22 5.6	.39 10	.12 3	1.23 .56			25
1	25	F04	1.00 25	3.33 85	1.56 40	.43 11	1.65 42	.22 5.6	.47 12	.12 3	1.88 .85			20
1¼	32	F04	1.25 32	4.19 106	2.04 52	.43 11	1.65 42	.22 5.6	.47 12	.16 4	3.06 1.39			10
1½	40	F04	1.50 38	4.70 119	2.27 58	.43 11	1.65 42	.22 5.6	.47 12	.16 4	4.45 2.02			10
2	50	F05	2.00 51	5.15 131	2.50 64	.55 14	1.97 50	.27 6.8	.63 16	.16 4	6.85 3.11			6
†2½	65	F05	2.00 51	5.84 148	2.50 64	.55 14	1.97 50	.27 6.8	.63 16	.16 4	9.00 4.06			1

† NIBCO Supplies TM-580-70-66 Conventional Port Valves.

♦ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Three-Way Body • Full Port ½"-1" • Conventional Port 1¼"-2" •
3-Way Bronze Ball Valve • Bronze Trim • Blowout-Proof Stem



400 PSI/27.6 Bar Non-Shock Cold Working Pressure

CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
2. Handle Nut	Stainless Steel 300 Series
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Thrust Washer	Reinforced PTFE
6. Stem	Brass ASTM B 16 Alloy C36000
7. Seat Ring (2)	Reinforced PTFE
8. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
9. Body	Bronze ASTM B 584 Alloy C84400
10. Body End Piece	Bronze ASTM B 584 Alloy C84400



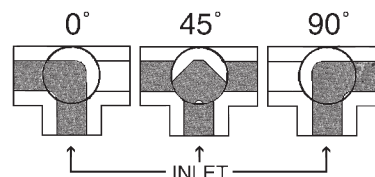
T-585-70-W3

Threaded



S-585-70-W3

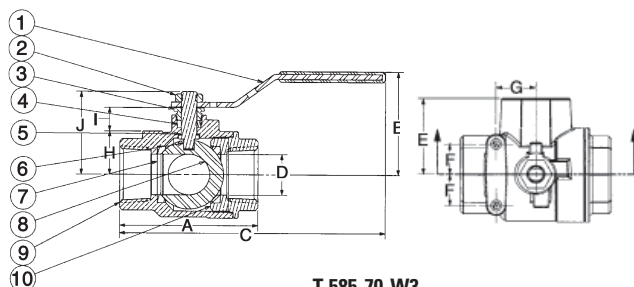
Solder



Flow Pattern

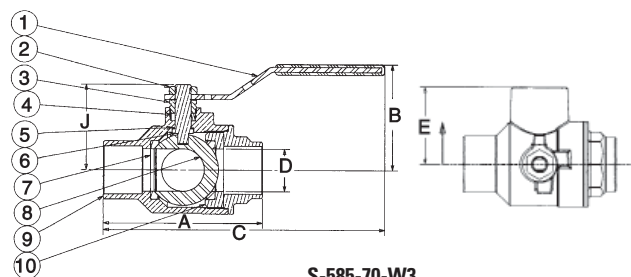
Lever Position

Note: Open port pressure must exceed closed port pressure. If closed port pressure exceeds open port pressure, ball may be forced off of the seat ring which could allow mixing from all ports.



T-585-70-W3

NPT x NPT



S-585-70-W3

C x C

DIMENSIONS—WEIGHTS—QUANTITIES

T-585-70-W3 Dimensions

Size	A	B	C	D	E	F	G	H	I	J	T-585-70-W3 Master			
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs.	Kg.	Ctn.	Qty.
½	15 2.44	62 1.88	48 5.19	132 .50	13 1.22	31 .69	18 .88	22 .65	17 .51	13 1.45	37 .84	.38	50	
¾	20 2.94	75 2.25	57 6.25	159 .75	19 1.45	37 .69	18 .88	22 .85	22 .57	14 1.80	46 1.62	.73	25	
1	25 3.34	85 2.38	60 6.44	164 1.00	25 1.69	43 .69	18 .88	22 1.05	27 .57	14 1.97	50 2.28	1.03	20	
†1¼	32 4.19	106 3.00	76 6.75	171 1.12	28 1.98	50 .75	19 .94	24 1.23	31 .87	22 2.60	66 4.19	1.90	10	
†1½	40 4.72	120 3.16	80 9.06	230 1.38	35 2.38	60 .75	19 .94	24 1.48	38 .87	22 2.84	72 6.00	2.72	8	
†2	50 5.31	135 3.50	89 9.25	235 1.88	48 2.75	70 .75	19 .94	24 1.88	48 .70	18 3.14	80 9.03	4.09	4	

† NIBCO supplies conventional port T-580-70-W3 on this size.

S-585-70-W3 Dimensions

Size	A	B	C	D	E	J	S-585-70-W3		Master
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs.	Kg.	Ctn. Qty.
½	15 2.56	65 1.88	48 5.19	132 .50	13 1.08	27 1.45	37 .67	.30	50
¾	20 3.25	83 2.25	57 6.25	159 .75	19 1.50	38 1.80	46 1.35	.61	25
1	25 3.75	95 2.38	60 6.63	168 1.00	25 1.85	47 1.97	50 2.07	.94	20

Bronze Ball Valves

Three-Way Body • Full Port ½"-1" • Conventional Port 1¼"-2" •
3-Way Bronze Ball Valve • 316SS Trim • Blowout-Proof Stem •
Vented Ball



400 PSI/27.6 Bar Non-Shock Cold Working Pressure

CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
2. Handle Nut	Stainless Steel 300 Series
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Thrust Washer	Reinforced PTFE
6. Stem	Stainless Steel ASTM A 276 Type 316
7. Seat Ring (2)	Reinforced PTFE
8. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
9. Body	Bronze ASTM B 584 Alloy C84400
10. Body End Piece	Bronze ASTM B 584 Alloy C84400



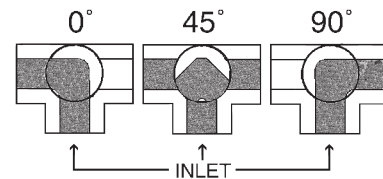
T-585-70-66-W3

Threaded



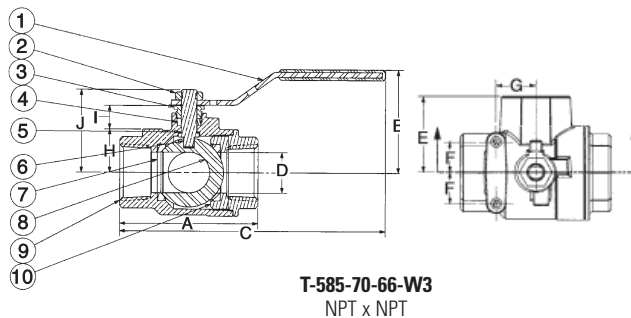
S-585-70-66-W3

Solder

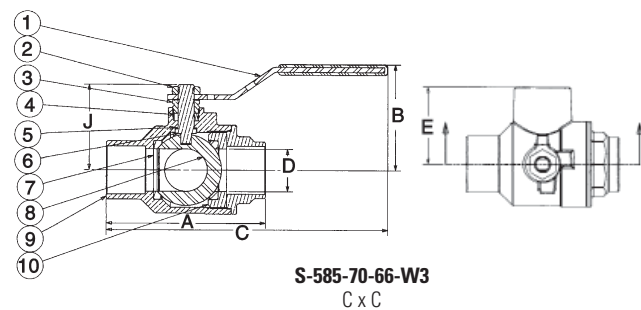


Flow Pattern
Lever Position

Note: Open port pressure must exceed closed port pressure. If closed port pressure exceeds open port pressure, ball may be forced off of the seat ring which could allow mixing from all ports.



T-585-70-66-W3
NPT x NPT



S-585-70-66-W3
C x C

DIMENSIONS—WEIGHTS—QUANTITIES

T-585-70-66-W3 Dimensions														
Size	A	B	C	D	E	F	G	H	I	J	T-585-70-66-W3		Master	
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs.	Kg.	Ctn.	Qty.
½ 15	2.44 62	1.88 48	5.19 132	.50 13	1.22 31	.69 18	.88 22	.65 17	.51 13	1.45 37	.84	.38	50	
¾ 20	2.94 75	2.25 57	6.25 159	.75 19	1.45 37	.69 18	.88 22	.85 22	.57 14	1.80 46	1.62	.73	25	
1 25	3.34 85	2.38 60	6.44 164	1.00 25	1.69 43	.69 18	.88 22	1.05 27	.57 14	1.97 50	2.28	1.03	20	
1¼ 32	4.19 106	3.00 76	6.75 171	1.12 28	1.98 50	.75 19	.94 24	1.23 31	.87 22	2.60 66	4.19	1.90	10	
1½ 40	4.72 120	3.16 80	9.06 230	1.38 35	2.38 60	.75 19	.94 24	1.48 38	.87 22	2.84 72	6.00	2.72	8	
2 50	5.31 135	3.50 89	9.25 235	1.88 48	2.75 70	.75 19	.94 24	1.88 48	.70 18	3.14 80	9.03	4.09	4	

† NIBCO supplies conventional port T-580-70-66-W3 on this size.

S-585-70-66-W3 Dimensions									
Size	A	B	C	D	E	J	S-585-70-66-W3		Master
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs.	Kg.	Ctn. Qty.
½ 15	2.56 65	1.88 48	5.19 132	.50 13	1.08 27	1.45 37	.67	.30	50
¾ 20	3.25 83	2.25 57	6.25 159	.75 19	1.50 38	1.80 46	1.35	.61	25
1 25	3.75 95	2.38 60	6.63 168	1.00 25	1.85 47	1.97 50	2.07	.94	20

Bronze Ball Valves

Three-Piece Body • Full Port 1/4"-1" • Conventional Port 1 1/4"-3" •
Bronze Trim • Blowout-Proof Stem

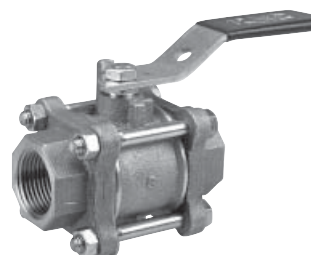
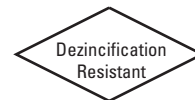
600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Bar Saturated Steam ◆

CONFORMS TO MSS SP-110

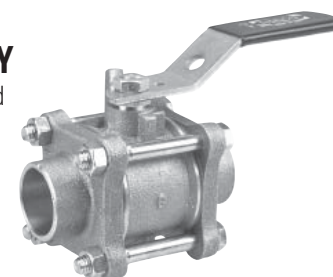
MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Silicon Bronze ASTM B 371 Alloy C69430 or ASTM B 99 Alloy C65100
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	Fluorocarbon Rubber
9. Seat Ring (2)	PTFE
10. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
11. Thrust Washer	Reinforced PTFE
12. Body Bolts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
13. Body Nuts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5

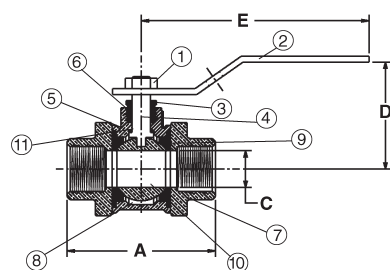
Note: Valves are static grounded by grounding washer. (Not Shown)



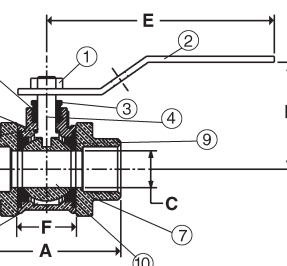
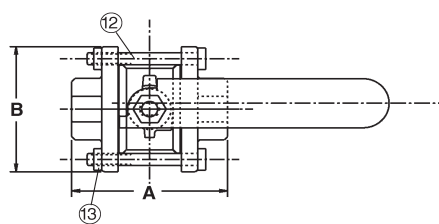
T-590-Y
Threaded



S-590-Y
Solder



T-590-Y
NPT x NPT



S-590-Y
C x C

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions														
Size	T-590-Y		S-590-Y						S-590-Y					
	A	A	A	A	B	C	D	E	F	F	T-590-Y	S-590-Y	Master	
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs. Kg.	Lbs. Kg.	Lbs. Kg.	Ctn. Qty.	
† 1/4 8	2.50 64	1.69 43	1.81 46	.38 10	1.69 43	3.91 99	1.13 29	1.03 .47	.89 .40	50				
† 3/8 10	2.50 64	1.81 46	1.81 46	.38 10	1.69 43	3.91 99	1.13 29	.98 .44	.89 .40	50				
† 1/2 15	2.50 64	2.06 52	1.81 46	.50 13	1.69 43	3.91 99	1.13 29	1.03 .47	.89 .40	50				
† 3/4 20	3.00 76	2.94 75	1.94 49	.75 19	2.00 51	4.66 118	1.44 37	1.70 .77	1.59 .72	30				
† 1 25	3.69 94	3.66 93	2.50 64	1.00 25	2.25 57	4.66 118	1.84 47	2.82 1.28	2.55 1.15	20				
1 1/4 32	3.69 94	3.84 98	2.50 64	1.00 25	2.25 57	4.66 118	1.88 48	2.65 1.20	2.38 1.08	20				
1 1/2 40	4.09 104	4.25 108	2.69 68	1.25 32	2.75 70	6.69 170	2.03 52	3.77 1.71	3.42 1.55	10				
2 50	4.81 122	5.25 133	3.00 76	1.50 38	2.97 75	6.69 170	2.56 65	5.78 2.62	5.31 2.41	10				
2 1/2 65	6.16 157	6.12 155	4.00 102	2.00 51	3.63 92	6.69 170	3.19 81	10.75 4.88	9.92 4.50	4				
3 80	6.84 174	7.44 189	5.00 127	2.50 64	4.09 104	8.00 203	4.13 105	19.14 8.68	17.93 8.13	2				

†NIBCO supplies full port T or S-590-Y on this size.

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Three-Piece Body • Full Port 1/4"-1" • Conventional Port 1 1/4"-3" •
316SS Trim • Blowout-Proof Stem • Vented Ball

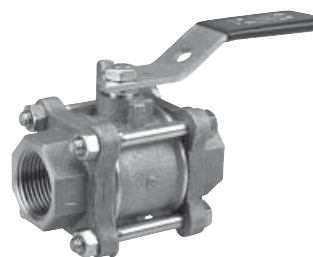
600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Bar Saturated Steam ◆

CONFORMS TO MSS SP-110

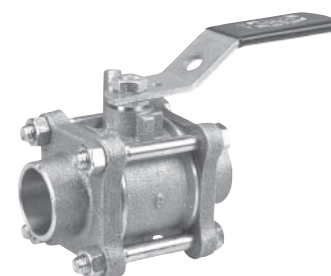
MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Stainless Steel 300 Series
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	Fluorocarbon Rubber
9. Seat Ring (2)	PTFE
10. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
11. Thrust Washer	Reinforced PTFE
12. Body Bolts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
13. Body Nuts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5

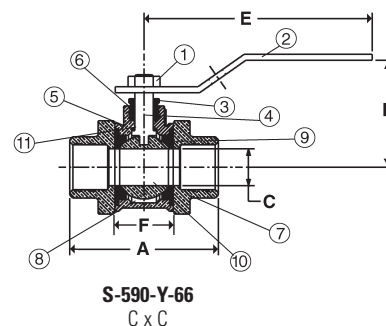
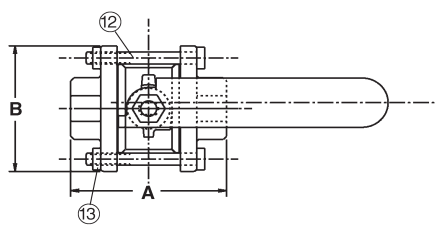
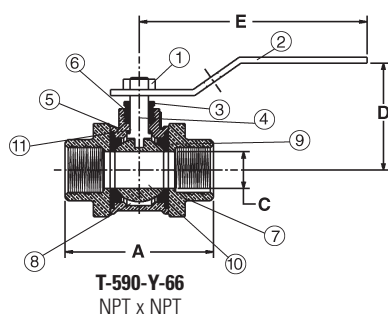
Note: Valves are static grounded by a grounding washer. (Not Shown)



T-590-Y-66
Threaded



S-590-Y-66
Solder



DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions

Size		T-590-Y-66		S-590-Y-66		B		C		D		E		S-590-Y-66		T-590-Y-66		S-590-Y-66		Master	
		A	A	F	F																
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.	Ctn.	Qty.
† ¼	8	2.50	64	1.69	43	1.81	46	.38	10	1.69	43	3.91	99	1.13	29	1.03	.47	.89	.40		50
† ⅝	10	2.50	64	1.81	46	1.81	46	.38	10	1.69	43	3.91	99	1.13	29	.98	.44	.89	.40		50
† ½	15	2.50	64	2.06	52	1.81	46	.50	13	1.69	43	3.91	99	1.13	29	1.03	.47	.89	.40		50
† ¾	20	3.00	76	2.94	75	1.94	49	.75	19	2.00	51	4.66	118	1.44	37	1.70	.77	1.59	.72		30
† 1	25	3.69	94	3.66	93	2.50	64	1.00	25	2.25	57	4.66	118	1.84	47	2.82	1.28	2.55	1.15		20
1 ¼	32	3.69	94	3.84	98	2.50	64	1.00	25	2.25	57	4.66	118	1.88	48	2.65	1.20	2.38	1.08		20
1 ½	40	4.09	104	4.25	108	2.69	68	1.25	32	2.75	70	6.69	170	2.03	52	3.77	1.71	3.42	1.55		10
2	50	4.81	122	5.25	133	3.00	76	1.50	38	2.97	75	6.69	170	2.56	65	5.78	2.62	5.31	2.41		10
2 ½	65	6.16	157	6.12	155	4.00	102	2.00	51	3.63	92	6.69	170	3.19	81	10.75	4.88	9.92	4.50		4
3	80	6.84	174	7.44	189	5.00	127	2.50	64	4.09	104	8.00	203	4.13	105	19.14	8.68	17.93	8.13		2

†NIBCO supplies full port T or S-595-Y-66 on this size.

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Three-Piece Body • Full Port 1/4"-1" • Conventional Port 1 1/4"-3" •
UL Listed for Flammable Liquids • Blowout-Proof Stem

175 PSI/12.1 Bar Non-Shock LP Gas per UL842

CONFORMS TO MSS SP-110 • UL842

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Silicon Bronze ASTM B 371 Alloy C69430 or ASTM B 99 Alloy C65100
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	Fluorocarbon Rubber
9. Seat Ring (2)	PTFE
10. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
11. Thrust Washer	Reinforced PTFE
12. Body Bolts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
13. Body Nuts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5

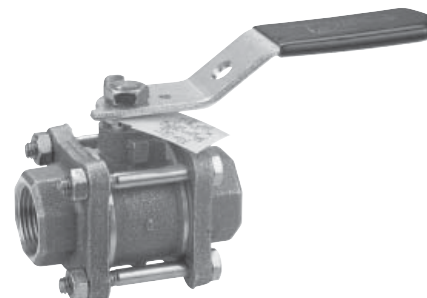
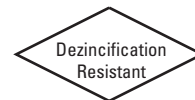
Note: Valves are static grounded by a grounding washer. (Not Shown)

UL Listed For:

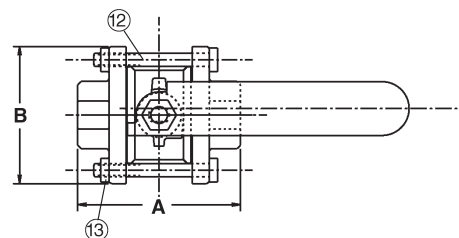
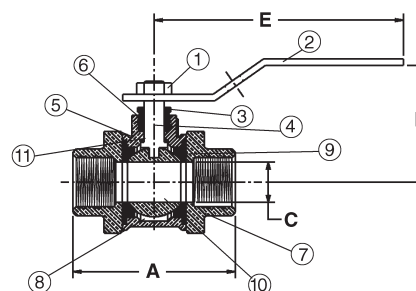
YQNZ Compressed gas shut-off
YRPV Gas shut-off
YRBX Flammable liquid shut-off
MHKZ Manual valves

Service

A - Air or non-toxic, non-flammable gas
G - City gas supplied by public utilities
GA - Gasoline
LP - Liquefied petroleum gas, 175 PSI max.
02 - No. 1 and 2 fuel oil
04 - No. 4 fuel oil
05 - No. 5 fuel oil
06 - No. 6 fuel oil



T-590-Y-UL
Threaded



T-590-Y-UL
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions														
Size		A		B		C		D		E		T-590-Y-UL		Master Ctn. Qty.
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	
† ¼	8	2.50	64	1.81	46	.38	10	1.06	27	3.90	99	.94	.43	50
† ⅜	10	2.50	64	1.81	46	.38	10	1.06	27	3.90	99	.94	.43	50
† ½	15	2.50	64	1.81	46	.50	13	1.06	27	3.90	99	1.01	.47	50
† ¾	20	3.00	76	1.94	49	.75	19	2.00	51	4.66	118	1.73	.79	30
† 1	25	3.69	94	2.50	64	1.00	25	2.25	57	4.66	118	2.75	1.25	20
1 ¼	32	3.69	94	2.50	64	1.00	25	2.25	57	4.66	118	2.65	1.20	20
1 ½	40	4.09	104	2.69	68	1.25	32	2.75	70	6.69	170	3.77	1.71	10
2	50	4.56	116	3.00	76	1.50	38	2.97	75	6.69	170	5.78	2.62	10
2 ½	65	6.16	156	4.00	102	2.00	51	3.63	92	6.69	170	10.75	4.88	4
3	80	6.90	175	5.00	127	2.50	64	4.09	104	8.00	203	19.14	8.68	2

†NIBCO supplies full port T-595-Y-UL on this size.



Bronze Ball Valves

Three-Piece Body • Conventional Port • Grooved Ends •
Bronze Trim • Blowout-Proof Stem

600 PSI/41.4 Bar Non-Shock Cold Working Pressure

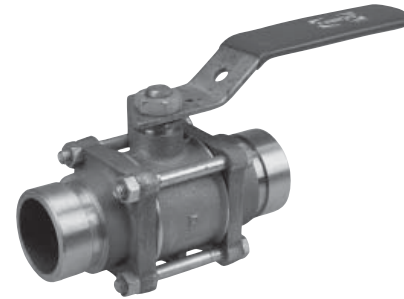
CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Silicon Bronze ASTM B 371 Alloy C69430 or ASTM B 99 Alloy C65100
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	Fluorocarbon Rubber
9. Seat Ring (2)	PTFE
10. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
11. Thrust Washer	Reinforced PTFE
12. Body Bolts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
13. Body Nuts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5

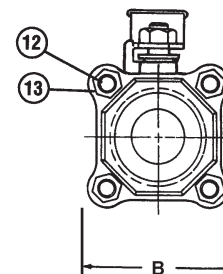
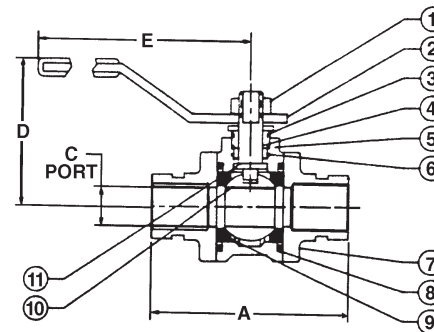
Note: Valves are static grounded by a grounding washer. (Not Shown)

Dezincification
Resistant



G-590-Y

Grooved



G-590-Y
GRVD x GRVD

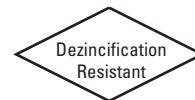
DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						G-590-Y		Master Ctn. Qty.
	A	B	C	D	E				
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.		Lbs. Kg.		
1½ 40	5.37 144	2.37 68	1.25 32	2.75 70	6.69 170	4.20 1.91	10		
2 50	5.87 149	3.00 76	1.50 38	2.97 75	6.69 170	6.14 2.79	10		
2½ 65	6.64 169	4.00 102	2.00 51	3.62 92	6.69 170	10.80 4.91	4		
3 80	7.78 198	5.00 127	2.50 64	4.09 104	6.69 170	19.01 8.64	2		

Bronze Ball Valves

Three-Piece Body • Conventional Port • Grooved Ends •
316SS Trim • Blowout-Proof Stem • Vented Ball

600 PSI/41.4 Bar Non-Shock Cold Working Pressure

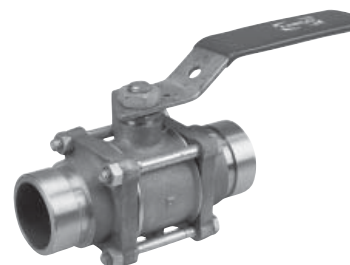


CONFORMS TO MSS SP-110

MATERIAL LIST

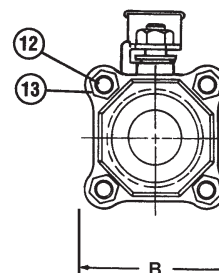
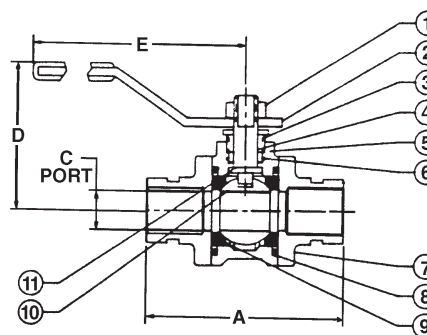
PART	SPECIFICATION
1. Handle Nut	Stainless Steel 300 Series
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	Fluorocarbon Rubber
9. Seat Ring (2)	PTFE
10. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
11. Thrust Washer	Reinforced PTFE
12. Body Bolts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
13. Body Nuts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5

Note: Valves are static grounded by a grounding washer. (Not Shown)



G-590-Y-66

Grooved



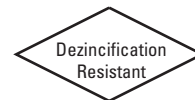
G-590-Y-66
GRVD x GRVD

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						G-590-Y-66 Master			
	A	B	C	D	E					
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.		Lbs.	Kg.	Ctn.	Qty.
1½ 40	5.37 144	2.37 68	1.25 32	2.75 70	6.69 170		4.20	1.91	10	
2 50	5.87 149	3.00 76	1.50 38	2.97 75	6.69 170		6.14	2.79	10	
2½ 65	6.64 169	4.00 102	2.00 51	3.62 92	6.69 170		10.80	4.91	4	
3 80	7.78 198	5.00 127	2.50 64	4.09 104	6.69 170		19.01	8.64	2	

Bronze Ball Valves

Three-Piece Body • Full Port • Bronze Trim • Blowout-Proof Stem



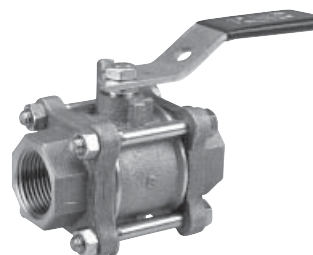
600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Bar Saturated Steam ◆

CONFORMS TO MSS SP-110

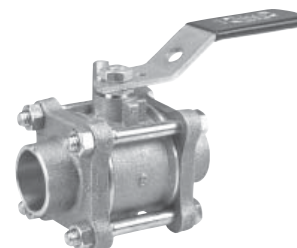
MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Silicon Bronze ASTM B 371 Alloy C69430 or ASTM B 99 Alloy C65100
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	Fluorocarbon Rubber
9. Seat Ring (2)	PTFE
10. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
11. Thrust Washer	Reinforced PTFE
12. Body Bolts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
13. Body Nuts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5

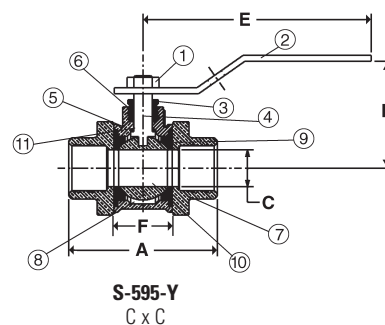
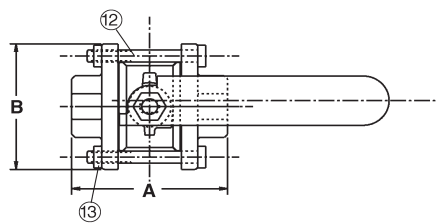
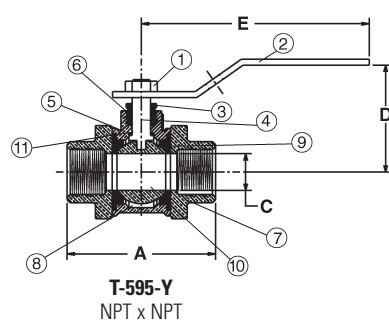
Note: Valves are static grounded by a grounding washer. (Not Shown)



T-595-Y
Threaded



S-595-Y
Solder



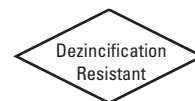
DIMENSIONS—WEIGHTS—QUANTITIES

Size	T-595-Y		S-595-Y		Dimensions						S-595-Y				Master Ctn. Qty.
	A	B	A	B	C	D	E	F	G	H	I	J	K	L	
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs.	Kg.	Lbs.	Kg.	
1/4 8	2.50 64	1.69 43	1.81 46	.38 10	1.69 43	3.91 99	1.13 29	1.03 .47	.89 .40	50					
3/8 10	2.50 64	1.81 46	1.81 46	.38 10	1.69 43	3.91 99	1.13 29	.98 .44	.89 .40	50					
1/2 15	2.50 64	2.06 52	1.81 46	.50 13	1.69 43	3.91 99	1.13 29	1.03 .47	.89 .40	50					
3/4 20	3.00 76	2.94 75	1.94 49	.75 19	2.00 51	4.66 118	1.44 37	1.70 .77	1.59 .72	30					
1 25	3.69 94	3.66 93	2.50 64	1.00 25	2.25 57	4.66 118	1.84 47	2.82 1.28	2.55 1.15	20					
1 1/4 32	4.09 104	3.91 99	2.69 68	1.25 32	2.75 70	6.69 170	1.97 50	3.96 1.80	3.61 1.64	10					
1 1/2 40	4.56 116	4.60 117	3.00 76	1.50 38	2.97 75	6.69 170	2.38 60	5.68 2.57	5.31 2.41	10					
2 50	6.16 156	5.78 147	4.00 102	2.00 51	3.63 92	6.69 170	3.06 78	11.40 5.17	10.60 4.81	4					
2 1/2 65	6.84 174	6.94 176	5.00 127	2.50 64	4.09 104	8.00 203	4.00 102	21.07 9.56	19.30 8.75	2					

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Three-Piece Body • Full Port • Bronze Trim • 300 Series External Trim •
Blowout-Proof Stem



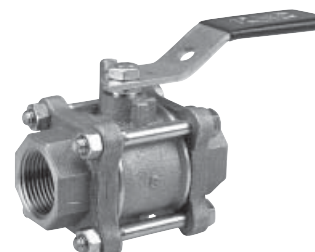
600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Bar Saturated Steam ◆

CONFORMS TO MSS SP-110

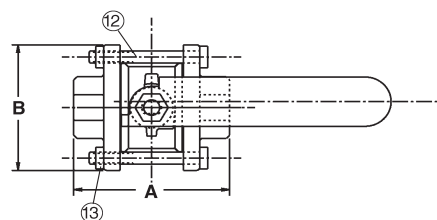
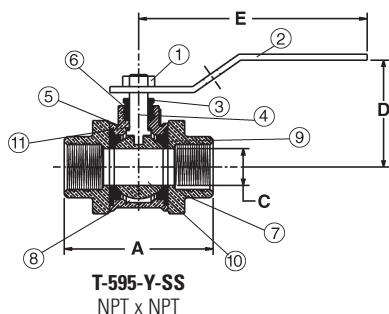
MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	300 Series Stainless Steel
2. Handle	300 Series Stainless Steel with Plastisol Grip
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Silicon Bronze ASTM B 371 Alloy C69430 or ASTM B 99 Alloy C65100
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	Fluorocarbon Rubber
9. Seat Ring (2)	PTFE
10. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B 16 Alloy C36000 with Hard Chrome Plate
11. Thrust Washer	Reinforced PTFE
12. Body Bolts	300 Series Stainless Steel
13. Body Nuts	300 Series Stainless Steel

Note: Valves are static grounded by a grounding washer. (Not Shown)



T-595-Y-SS
Threaded



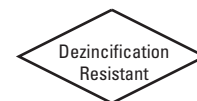
DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions - Metric - Continues													
Size	Dimensions										T-595-Y-SS		Master
	A		B		C		D		E				
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs.	Kg.	Ctn. Qty.	
1/4 8	2.50 64	1.81 46	.38 10	1.69 43	3.91 99	1.03 .47	50						
3/8 10	2.50 64	1.81 46	.38 10	1.69 43	3.91 99	.98 .44	50						
1/2 15	2.50 64	1.81 46	.50 13	1.69 43	3.91 99	1.03 .47	50						
3/4 20	3.00 76	1.94 49	.75 19	2.00 51	4.66 118	1.70 .77	30						
1 25	3.69 94	2.50 64	1.00 25	2.25 57	4.66 118	2.82 1.28	20						
1 1/4 32	4.09 104	2.69 68	1.25 32	2.75 70	6.69 170	3.96 1.80	10						
1 1/2 40	4.56 116	3.00 76	1.50 38	2.97 75	6.69 170	5.68 2.57	10						
2 50	6.16 156	4.00 102	2.00 51	3.63 92	6.69 170	11.40 5.17	4						
2 1/2 65	6.84 174	5.00 127	2.50 64	4.09 104	8.00 203	21.07 9.56	2						

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Three-Piece Body • Full Port • 316SS Trim • Blowout-Proof Stem • Vented Ball



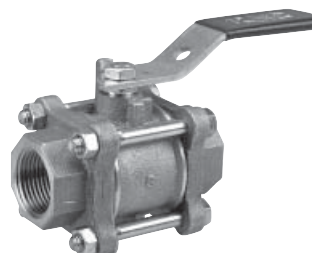
600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Bar Saturated Steam

CONFORMS TO MSS SP-110

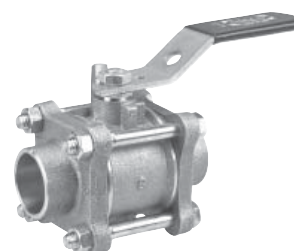
MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Stainless Steel 300 Series
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Cast Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	Fluorocarbon Rubber
9. Seat Ring (2)	PTFE
10. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
11. Thrust Washer	Reinforced PTFE
12. Body Bolts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
13. Body Nuts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5

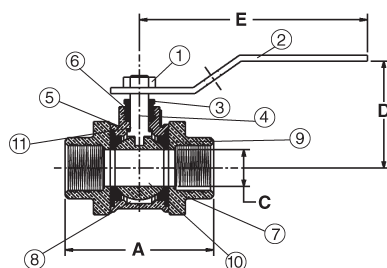
Note: Valves are static grounded by a grounding washer. (Not Shown)



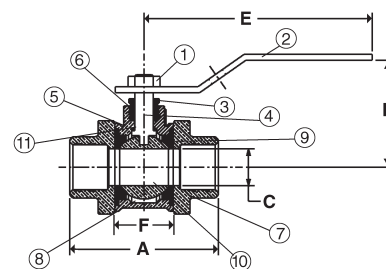
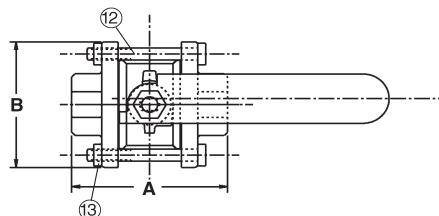
T-595-Y-66
Threaded



S-595-Y-66
Solder



T-595-Y-66
NPT x NPT



S-595-Y-66
C x C

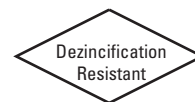
DIMENSIONS—WEIGHTS—QUANTITIES

T-595-Y-66				S-595-Y-66				Dimensions								S-595-Y-66									
Size		A		A		B		C		D		E		F		T-595-Y-66		S-595-Y-66		Master					
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.	Ctn.	Qty.				
¼	8	2.50	64	1.69	43	1.81	46	.38	10	1.69	43	3.91	99	1.13	29	1.03	.47	.89	.40	50					
⅜	10	2.50	64	1.81	46	1.81	46	.38	10	1.69	43	3.91	99	1.13	29	.98	.44	.89	.40	50					
½	15	2.50	64	2.06	52	1.81	46	.50	13	1.69	43	3.91	99	1.13	29	1.03	.47	.89	.40	50					
¾	20	3.00	76	2.94	75	1.94	49	.75	19	2.00	51	4.66	118	1.44	37	1.70	.77	1.59	.72	30					
1	25	3.69	94	3.66	93	2.50	64	1.00	25	2.25	57	4.66	118	1.84	47	2.82	1.28	2.55	1.15	20					
1¼	32	4.09	104	3.91	99	2.69	68	1.25	32	2.75	70	6.69	170	1.97	50	3.96	1.80	3.61	1.64	10					
1½	40	4.56	116	4.60	117	3.00	76	1.50	38	2.97	75	6.69	170	2.38	60	5.68	2.57	5.31	2.41	10					
2	50	6.16	156	5.78	147	4.00	102	2.00	51	3.63	92	6.69	170	3.06	78	11.40	5.17	10.60	4.81	4					
2½	65	6.84	174	6.94	176	5.00	127	2.50	64	4.09	104	8.00	203	4.00	102	21.07	9.56	19.30	8.75	2					

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Three-Piece Body • Full Port • 316SS Internal Trim • 300 Series
External Trim • Blowout-Proof Stem • Vented Ball



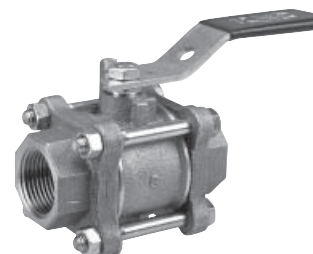
600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Bar Saturated Steam ◆

CONFORMS TO MSS SP-110

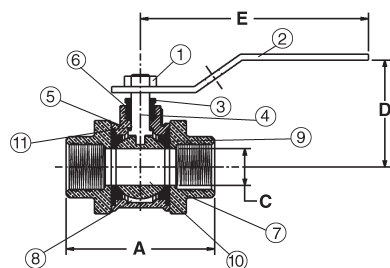
MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	300 Series Stainless Steel
2. Handle	300 Series Stainless Steel with Plastisol Grip
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Cast Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	Fluorocarbon Rubber
9. Seat Ring (2)	PTFE
10. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
11. Thrust Washer	Reinforced PTFE
12. Body Bolts	300 Series Stainless Steel
13. Body Nuts	300 Series Stainless Steel

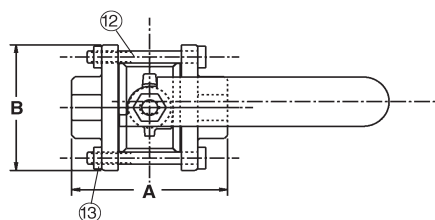
Note: Valves are static grounded by a grounding washer. (Not Shown)



T-595-Y-66-SS
Threaded



T-595-Y-66-SS
NPT x NPT



DIMENSIONS—WEIGHTS—QUANTITIES

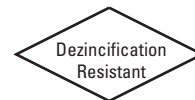
Dimensions - TRENDS CONTINUED															
Size In. mm.		Dimensions										T-595-Y-66-SS Lbs. Kg.		Master Ctn. Qty.	
		A In. mm.		B In. mm.		C In. mm.		D In. mm.		E In. mm.					
1/4	8	2.50	64	1.81	46	.38	10	1.69	43	3.91	99	1.03	.47	50	
3/8	10	2.50	64	1.81	46	.38	10	1.69	43	3.91	99	.98	.44	50	
1/2	15	2.50	64	1.81	46	.50	13	1.69	43	3.91	99	1.03	.47	50	
3/4	20	3.00	76	1.94	49	.75	19	2.00	51	4.66	118	1.70	.77	30	
1	25	3.69	94	2.50	64	1.00	25	2.25	57	4.66	118	2.82	1.28	20	
1 1/4	32	4.09	104	2.69	68	1.25	32	2.75	70	6.69	170	3.96	1.80	10	
1 1/2	40	4.56	116	3.00	76	1.50	38	2.97	75	6.69	170	5.68	2.57	10	
2	50	6.16	156	4.00	102	2.00	51	3.63	92	6.69	170	11.40	5.17	4	
2 1/2	65	6.84	174	5.00	127	2.50	64	4.09	104	8.00	203	21.07	9.56	2	

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Three-Piece Body • Full Port • Thread x Solder End Connections •
Blowout-Proof Stem

600 PSI/41.4 Bar Non-Shock Cold Working Pressure
150 PSI/10.3 Bar Saturated Steam ♦

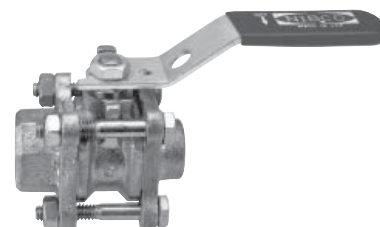


CONFORMS TO MSS SP-110

MATERIAL LIST

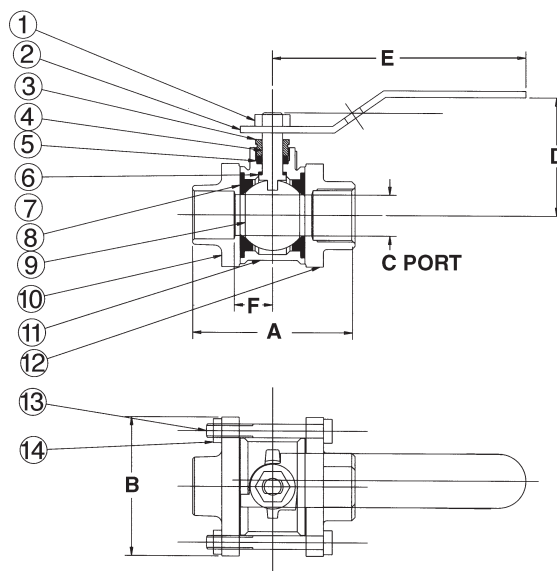
PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Silicon Bronze ASTM B 371 Alloy C69430 or ASTM B 99 Alloy C65100
5. Packing	PTFE
6. Thrust Washer	Reinforced PTFE
7. O-Ring Seal (2)	Fluorocarbon Rubber
8. Seat Ring (2)	PTFE
9. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
10. Solder Body End	Cast Bronze ASTM B 584 Alloy C84400
11. Body	Bronze ASTM B 584 Alloy C84400
12. Threaded Body End	Bronze ASTM B 584 Alloy C84400
13. Body Bolts (4)	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
14. Body Nuts (4)	Zinc Dichromate Plated Steel

Note: Valves are static grounded by a grounding washer. (Not Shown)



TS-595-Y

Threaded x Solder



TS-595-Y
C x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

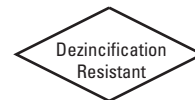
Dimensions - Metric Equivalents																	
Size		Dimensions												TS-595-Y		Box	Master
		A		B		C		D		E		F					
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Qty.	Ctn. Qty.
¼	8	2.09	53	1.81	46	.38	10	1.69	43	3.90	99	.56	14	.94	.43	5	50
⅜	10	2.16	55	1.81	46	.38	10	1.69	43	3.90	99	.56	14	.94	.43	5	50
½	15	2.28	58	1.81	46	.50	13	1.69	43	3.90	99	.56	14	1.01	.47	5	50
¾	20	2.97	75	1.94	49	.75	19	2.00	51	4.66	118	.72	18	1.73	.79	5	30
1	25	3.67	93	2.50	64	1.00	25	2.25	57	4.66	118	.92	23	2.75	1.25	5	20
1¼	32	3.97	101	2.69	68	1.25	32	2.75	70	6.69	170	.98	24	3.90	1.77	2	10
1½	40	4.57	116	3.00	76	1.50	38	2.97	75	6.69	170	1.19	30	5.50	2.49	2	10
2	50	5.97	152	4.00	102	2.00	51	3.63	92	6.69	170	1.54	39	10.27	4.66	2	4

♦ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 41.

Bronze Ball Valves

Three-Piece Body • Full Port • Grooved End • Bronze Trim •
Blowout-Proof Stem

600 PSI/41.4 Bar Non-Shock Cold Working Pressure

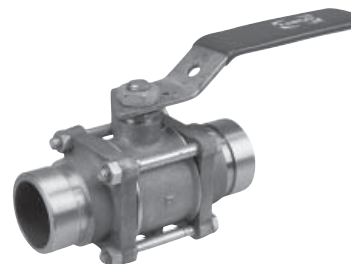


CONFORMS TO MSS SP-110

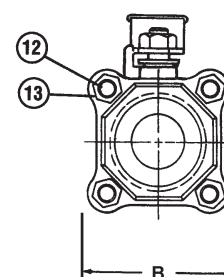
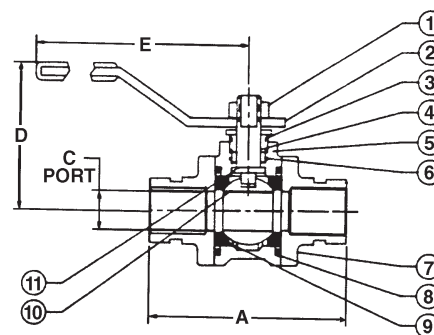
MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Silicon Bronze ASTM B 371 Alloy C69430 or ASTM B 99 Alloy C65100
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	Fluorocarbon Rubber
9. Seat Ring (2)	PTFE
10. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
11. Thrust Washer	Reinforced PTFE
12. Body Bolts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
13. Body Nuts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5

Note: Valves are static grounded by a grounding washer. (Not Shown)



G-595-Y
Grooved



G-595-Y
GRVD x GRVD

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						G-595-Y		Master Ctn. Qty.
	A	B	C	D	E				
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.		Lbs.	Kg.	
1½ 40	5.87 149	3.00 76	1.50 38	2.97 75	6.69 170	6.02 273	10		
2 50	6.64 169	4.00 102	2.00 51	3.63 92	6.69 170	10.48 476	4		
2½ 65	7.78 198	5.00 127	2.50 64	4.09 104	8.00 203	18.30 830	2		

Bronze Ball Valves

Three-Piece Body • Full Port • Grooved End • 316SS Trim •
Blowout-Proof Stem • Vented Ball

600 PSI/41.4 Bar Non-Shock Cold Working Pressure

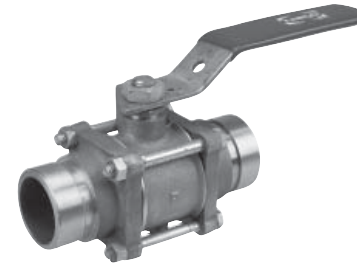


CONFORMS TO MSS SP-110

MATERIAL LIST

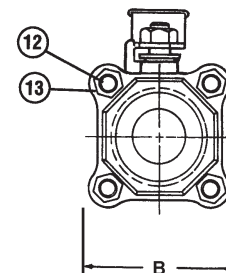
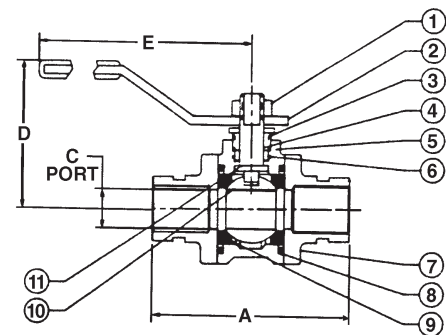
PART	SPECIFICATION
1. Handle Nut	Stainless Steel 300 Series
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Cast Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	Fluorocarbon Rubber
9. Seat Ring (2)	PTFE
10. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
11. Thrust Washer	Reinforced PTFE
12. Body Bolts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
13. Body Nuts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5

Note: Valves are static grounded by a grounding washer. (Not Shown)



G-595-Y-66

Grooved



G-595-Y-66
GRVD x GRVD

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						G-595-Y-66		Master Ctn. Qty.
	A	B	C	D	E				
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.		Lbs.	Kg.	
1 1/2 40	5.87 149	3.00 76	1.50 38	2.97 75	6.69 170		6.02	2.73	10
2 50	6.64 169	4.00 102	2.00 51	3.63 92	6.69 170		10.48	4.76	4
2 1/2 65	7.78 198	5.00 127	2.50 64	4.09 104	8.00 203		18.30	8.30	2

Bronze Ball Valves

Three-Piece Body • Full Port 1/4"-2" • UL Listed for Flammable Liquids and LP Gas • Blowout-Proof Stem

175 PSI/12.1 Bar Non-Shock LP Gas per UL842

CONFORMS TO MSS SP-110 • UL842

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Silicon Bronze ASTM B 371 Alloy C69400 or ASTM B 99 Alloy C65100
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	Fluorocarbon Rubber
9. Seat Ring (2)	PTFE
10. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
11. Thrust Washer	Reinforced PTFE
12. Body Bolts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
13. Body Nuts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5

Note: Valves are static grounded by a grounding washer. (Not Shown)

UL Listed For:

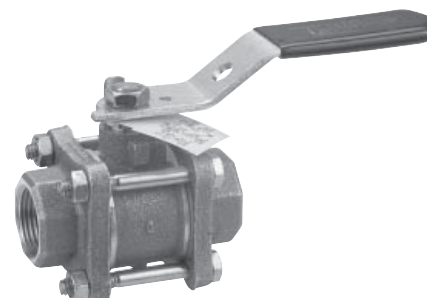
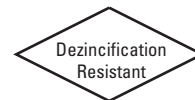
YQNZ Compressed gas shut-off
YRPV Gas shut-off
YRBX Flammable liquid shut-off
MHKZ Manual valves

Service

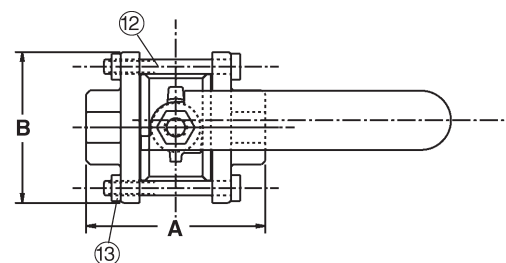
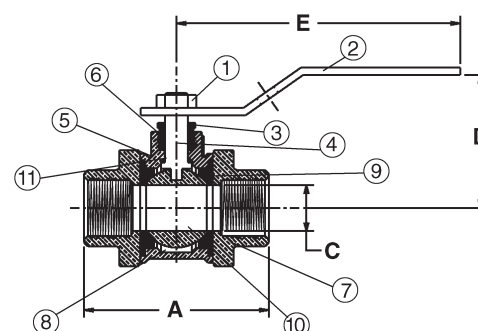
A - Air or non-toxic, non-flammable gas
G - City gas supplied by public utilities
GA - Gasoline
LP - Liquefied petroleum gas, 175 PSI max.
02 - No. 1 and 2 fuel oil
04 - No. 4 fuel oil
05 - No. 5 fuel oil
06 - No. 6 fuel oil

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions														
Size		A		B		C		D		E		T-595-Y-UL		Master Ctn. Qty.
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	
¼	8	2.50	64	1.81	46	.38	10	1.69	43	3.90	99	.94	.43	50
⅜	10	2.50	64	1.81	46	.38	10	1.69	43	3.90	99	.94	.43	50
½	15	2.50	64	1.81	46	.50	13	1.69	43	3.90	99	1.01	.47	50
¾	20	3.00	76	1.94	49	.75	19	2.00	51	4.66	118	1.73	.79	30
1	25	3.69	94	2.50	64	1.00	25	2.25	57	4.66	118	2.75	1.25	20
1¼	32	4.09	104	2.69	68	1.25	32	2.75	70	6.69	170	3.90	1.77	10
1½	40	4.56	116	3.00	76	1.50	38	2.97	75	6.69	170	5.50	2.49	10
2	50	6.16	156	4.00	102	2.00	51	3.63	92	6.69	170	10.27	4.66	4



T-595-Y-UL
Threaded



T-595-Y-UL
NPT x NPT



Bronze Ball Valves

Three-Piece Body • Full Port • Copper Stub Ends •
Type K (Straight) • Type L (Expanded) • Cleaned and
Bagged for OX Service • Bronze Trim • Blowout-Proof Stem

600 PSI/41.4 Bar Non-Shock Cold Working Pressure

200 PSI/13.8 Bar for Medical Gas

CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Silicon Bronze ASTM B 371 Alloy C69430 or ASTM B 99 Alloy C65100
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	Fluoroelastomer Rubber
9. Seat Ring (2)	PTFE
10. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
11. Ground Washer	Stainless Steel ASTM A 167 Type 304
12. Thrust Washer	Reinforced PTFE
13. Body Bolts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
14. Body Nuts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
15. Straight Stub Out (2)	6" Copper Tube Type K
16. Expanded Stub Out (2)	6" Copper Tube Type L (Specify EC)

Note: Valves are static grounded by a grounding washer. (Not Shown)

Testing

The CS-595-YX series are tested to MSS SP-110. For applications that require a 150 PSI dry nitrogen test, please contact NIBCO Technical Services for pricing and availability.

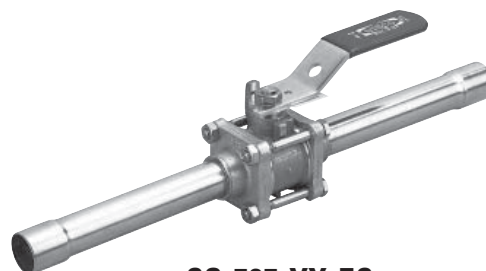
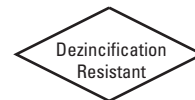
MSS SP-110 Test parameters are as follows:

Shell Test = 80 PSI air under water for 5 seconds or 1.5 x CWP hydrostatic for 15 seconds.

Seat Test = 80 PSI air under water for 5 seconds or 1.1 CWP hydrostatic for 15 seconds.

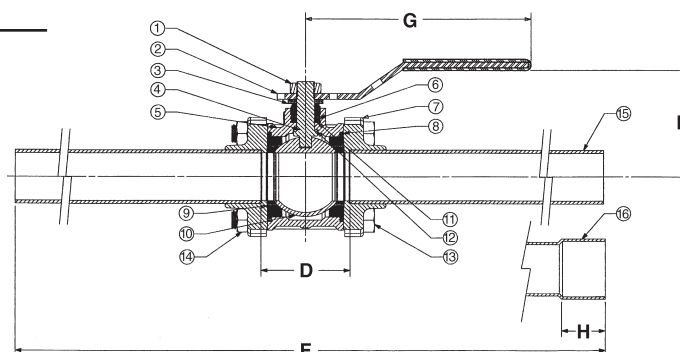
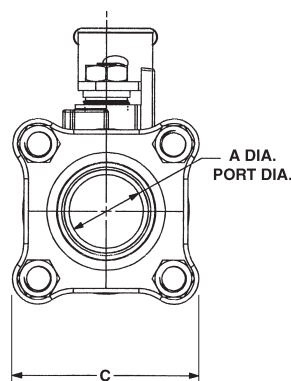
Oxygen Cleaning

NIBCO's internal cleaning procedure for cleaned and bagged bronze ball valves meets the requirements of NFPA99 and CGA Pamphlet G-4-1.



CS-595-YX-EC

Copper Stub Ends



CS-595-YX/CS-595-YX-EC

CSE x CSE

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions								CS-595-YX/EC	Master
	A	B	C	D	F	G	H			
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.		Lbs. Kg.	Ctn. Qty.
1/2 15	.50 13	1.69 43	1.81 46	1.11 28	13.11 333	3.91 99	.50 13	1.22 .55		10
3/4 20	.75 19	2.00 51	1.94 50	1.41 36	13.41 341	4.66 118	.75 19	2.25 1.02		10
1 25	1.00 25	2.25 57	2.50 64	1.81 46	13.81 351	4.66 118	.91 23	3.23 1.47		10
1 1/4 32	1.25 32	2.75 70	2.69 68	1.96 50	13.96 355	6.69 170	.97 25	4.41 2.00		4
1 1/2 40	1.50 38	2.97 75	3.00 76	2.39 61	14.39 366	6.69 170	1.09 28	6.61 3.00		4
2 50	2.00 51	3.63 92	4.00 102	3.04 77	15.04 382	6.69 170	1.34 34	11.67 5.29		4

Bronze Ball Valves

Three-Piece Body • Full Port • 6" Copper Stub Ends •
Type K (Straight) • Type L (Expanded) • Cleaned and
Bagged for OX Service • 316SS Trim • Blowout-Proof

600 PSI/41.4 Bar Non-Shock Cold Working Pressure
200 PSI/13.8 Bar for Medical Gas

CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	Fluoroelastomer Rubber
9. Seat Ring (2)	PTFE
10. Ball	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
11. Ground Washer	Stainless Steel ASTM A 167 Type 304
12. Thrust Washer	Reinforced PTFE
13. Body Bolts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
14. Body Nuts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
15. Straight Stub Out (2)	6" Copper Tube Type K
16. Expanded Stub Out (2)	6" Copper Tube Type L (Specify EC)

Note: Valves are static grounded by a grounding washer. (Not Shown)

Testing

The CS-595-YX series are tested to MSS SP-110. For applications that require a 150 PSI dry nitrogen test, please contact NIBCO Technical Services for pricing and availability.

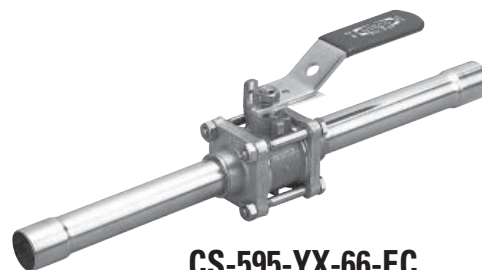
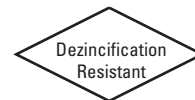
MSS SP-110 Test parameters are as follows:

Shell Test = 80 PSI air under water for 5 seconds or 1.5 x CWP hydrostatic for 15 seconds.

Seat Test = 80 PSI air under water for 5 seconds or 1.1 CWP hydrostatic for 15 seconds.

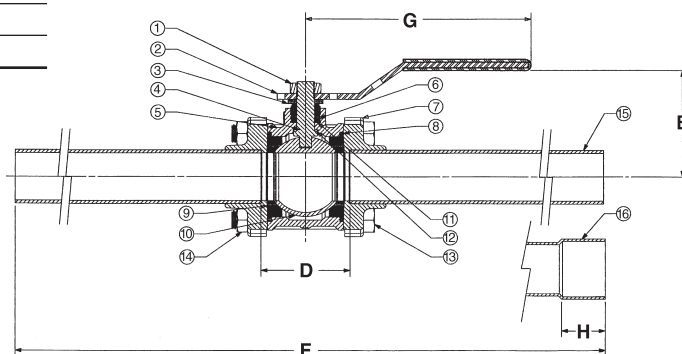
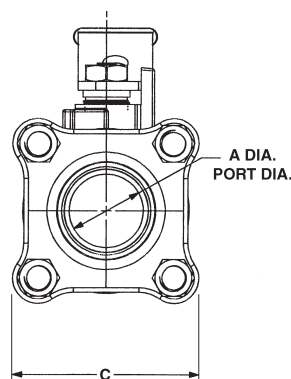
Oxygen Cleaning

NIBCO's internal cleaning procedure for cleaned and bagged bronze ball valves meets the requirements of NFPA99 and CGA Pamphlet G-4-1.



CS-595-YX-66-EC

(316SS Trim)
Copper Stub Ends



CS-595-YX-66/CS-595-YX-66-EC
CSE x CSE

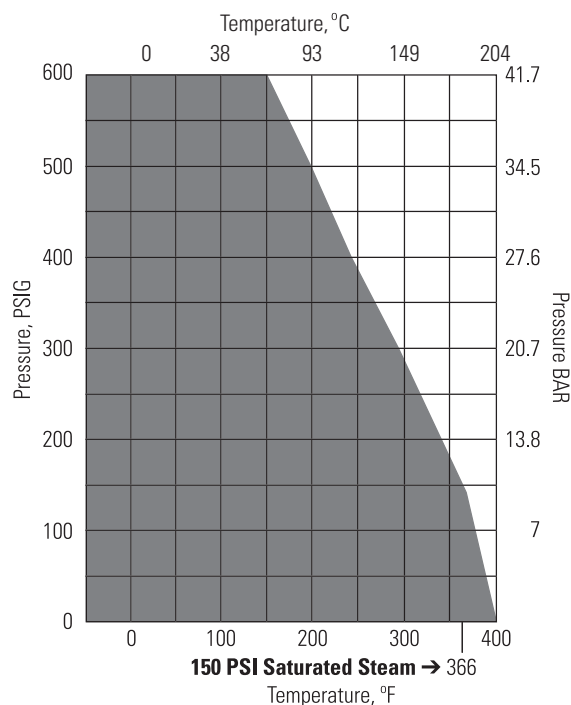
DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions								CS-595-YX-66/EC Master		
	A	B	C	D	F	G	H		Lbs.	Kg.	Ctn. Qty.
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.				
1/2 15	.50 13	1.69 43	1.81 46	1.11 28	13.11 333	3.91 99	.50 13	1.22 .55	10		
3/4 20	.75 19	2.00 51	1.94 50	1.41 36	13.41 341	4.66 118	.75 19	2.25 1.02	10		
1 25	1.00 25	2.25 57	2.50 64	1.81 46	13.81 351	4.66 118	.91 23	3.23 1.47	10		
1 1/4 32	1.25 32	2.79 40	2.69 68	1.96 50	13.96 355	6.69 170	.97 25	4.41 2.00	4		
1 1/2 40	1.50 38	2.97 75	3.00 76	2.39 61	14.39 366	6.69 170	1.09 28	6.61 3.00	4		
2 50	2.00 51	3.63 92	4.00 102	3.04 77	15.04 382	6.69 170	1.34 34	11.67 5.29	4		

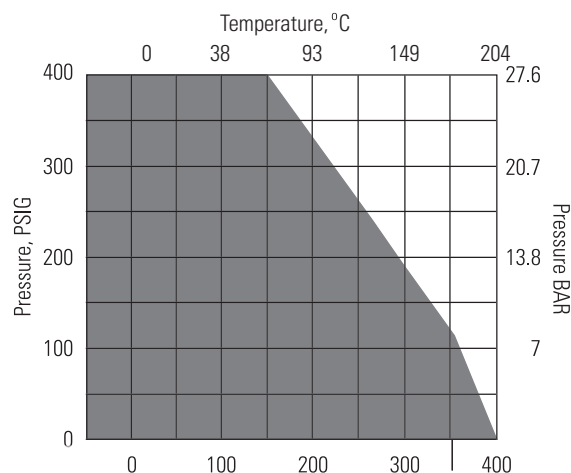
Pressure Temperature Ratings

Bronze Ball Valves

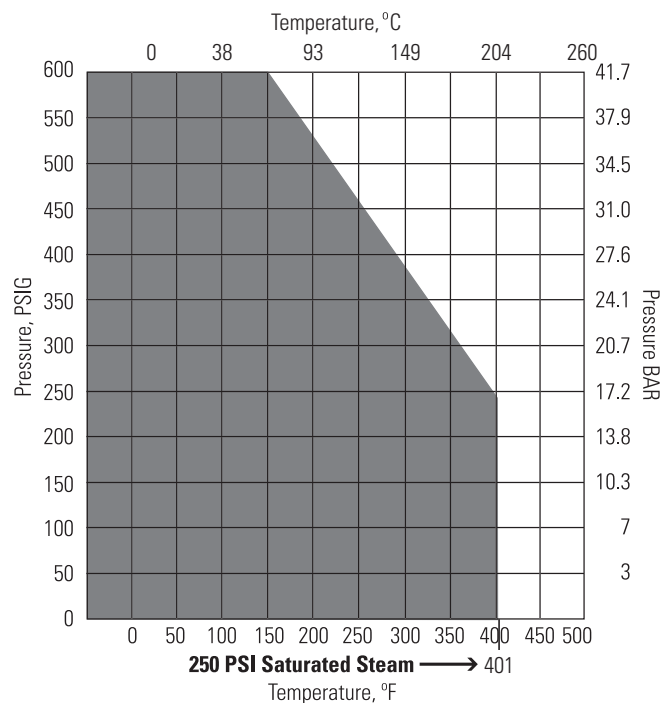
T-560-BR, T/S-580-70, and 585-70
Bronze Ball Valves with Reinforced PTFE Seats



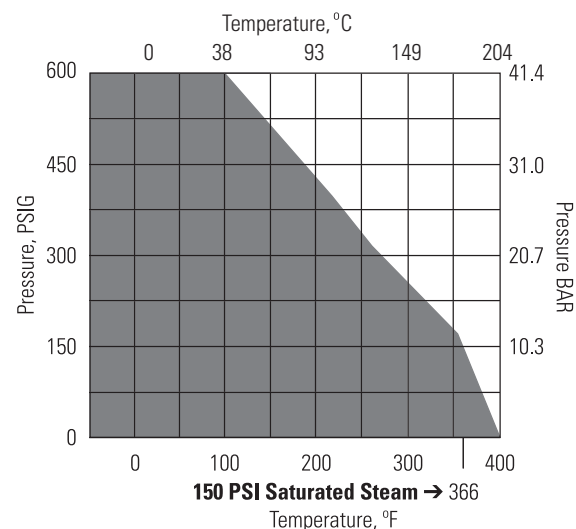
580 Bronze Ball Valves with PTFE Seats



T-585-70-66-ST
Bronze Ball Valves with Carbon Filled PTFE Seats



T-560-BR, 590, and 595
Bronze Ball Valves with Virgin PTFE Seats



Shaded area refers to recommended seat rating.

*NIBCO recommends stainless steel trim where heat is a significant factor due to its hardness and pressure relief vented ball.

Carbon Steel Ball Valves

One, Two, and Three-Piece Body
Threaded, Butt or Socket Weld Ends

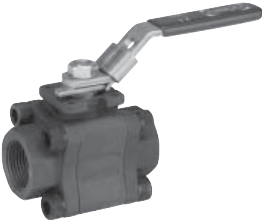
Carbon Steel Ball Valve Figure Number Key

T-560-CS-R-25--****

End Connection	Valve Style	Basic Material	Seat Material	Trim Material	Options
K - Socket Weld T - Threaded TC - Threaded (Investment Cast Carbon Body) BM - Butt Weld ISO Mount KM - Socket Weld ISO Mount TM - Threaded ISO Mount	560 - One-Piece Body (Casting) 570 - One-Piece Body (Bar Stock) 580 - Two-Piece Body Conventional Port 585 - Two-Piece Body Full Port 590 - Three-Piece Body Conventional Port 595 - Three-Piece Body Full Port	CS - Carbon Steel S6 - Stainless Steel	Y - Virgin PTFE R - Reinforced PTFE	25 - Carbon Steel 66 - Stainless Steel	FS - Fire Safe OL - Oval Locking Hdle LL - Locking Lever Hdle OV - Oval Hdle

* This key is a guide only and is not intended to infer that every valve combination will be produced.

One, Two, and Three-Piece Carbon Steel Ball Valves Illustrated Index

One-Piece Carbon Steel Ball Valve 2000 lb. CWP  T-560-CS-R-25/66-FS Sizes 1/4" thru 2" Threaded Ends Page 44-47	One-Piece Bar Stock Carbon Steel Ball Valve 2000 lb. CWP 1/2"-1" 1500 lb. CWP 1 1/4"-2"  T-570-CS-R-25/66 Sizes 1/2" thru 2" Threaded Ends Page 48, 49	Two-Piece Carbon Steel Ball Valve 2000 lb. CWP  TC-580-CS-R-25-LL/66-LL Sizes 1/4" thru 2" Threaded Ends Page 50, 51
Two-Piece Bar Stock Carbon Steel Ball Valve 2000 lb. CWP 1/4"-1" 1500 lb. CWP 1 1/4"-2"  T-580-CS-R-25/66 Sizes 1/4" thru 2" Threaded Ends Page 52, 53	Three-Piece Carbon Steel Ball Valve 2000 lb. CWP  TM/KM/BM-590-CS-R-66-FS-LL Sizes 1/2" thru 2" Threaded, Socket or Butt Weld Ends Page 54	Three-Piece Carbon Steel Ball Valve 1000 lb. CWP  T/K-595-CS-R-66-LL Sizes 1/4" thru 2" Threaded or Socket Weld Ends Page 55
Three-Piece Carbon Steel Ball Valve 1000 lb. CWP  TM/KM-595-CS-R-66 Sizes 1/4" thru 2" Threaded or Socket Weld Ends Page 56		

Carbon Steel Ball Valves

One-Piece Body • Reduced Port • Blowout-Proof Stem •
CS Trim • Vented Ball

2000 PSI/138 Bar Non-Shock Cold Working Pressure

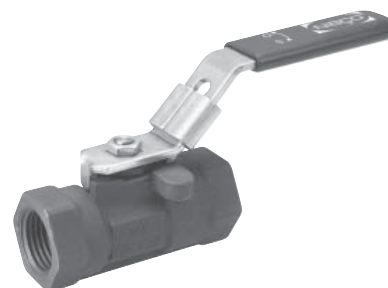
CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Body	Carbon Steel ASTM A 216 Grade WCB
2. Body Insert	Carbon Steel ASTM A 216 Grade WCB
3. Ball (Vented)	Stainless Steel ASTM A 276 or ASTM A 351 Type CF8
4. Stem	Carbon Steel ASTM A 108 Type 1045
5. Seat	Reinforced PTFE
6. Thrust Washer	Carbon Filled PTFE
7. ¹ Stem Packing	PTFE
8. Threaded Pack Gland	Carbon Steel ASTM A 108 Type 1045
9. Handle Nut	Carbon Steel ASTM A 283
10. Handle	Carbon Steel ASTM A 283

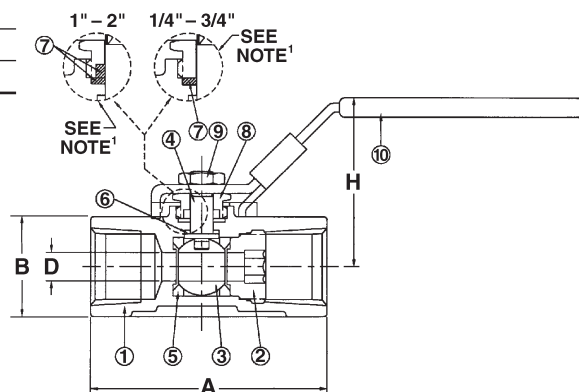
¹1/4"-3/4" one each, 1"-2" two each.

NOTE: Valves are static grounded by thrust washer and packing.



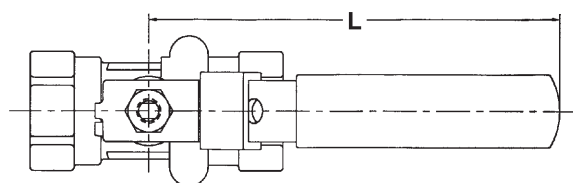
T-560-CS-R-25-LL

Threaded



T-560-CS-R-25-LL

NPT x NPT



DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions										T-560-CS-R-25-LL		Master Ctn. Qty.
		A		B		D		L		H				
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	
1/4	8	2.28	58	1.10	28	.31	8	4.29	109	1.97	50	.68	.31	50
3/8	10	2.28	58	1.10	28	.31	8	4.29	109	1.97	50	.68	.31	50
1/2	15	2.60	66	1.10	28	.31	8	4.29	109	1.97	50	.66	.30	50
3/4	20	2.83	72	1.34	34	.47	12	4.29	109	2.20	56	.93	.42	50
1	25	3.23	82	1.61	41	.62	16	5.75	146	2.56	65	1.59	.72	40
1 1/4	32	3.54	90	1.97	50	.81	21	5.75	146	2.76	70	2.22	1.01	20
1 1/2	40	3.86	98	2.24	57	1.00	25	7.40	188	3.29	84	3.22	1.46	20
2	50	4.33	110	2.76	70	1.25	32	7.40	188	3.49	89	4.65	2.11	10

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67

Carbon Steel Ball Valves

One-Piece Body • Reduced Port • Blowout-Proof Stem •
CS Trim • Vented Ball • Fire Safe

2000 PSI/138 Bar Non-Shock Cold Working Pressure

CONFORMS TO API-607 FOURTH EDITION FIRE SAFE

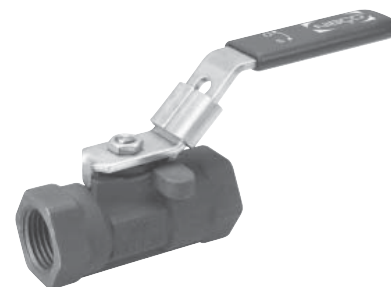
• MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Body	Carbon Steel ASTM A 216 Grade WCB
2. Body Insert	Carbon Steel ASTM A 216 Grade WCB
3. Ball (Vented)	Stainless Steel ASTM A 276 or ASTM A 351 Type CF8
4. Stem	Carbon Steel ASTM A 108 Type 1045
5. Seat	Reinforced PTFE
6. Thrust Washer	Carbon Filled PTFE
7. ¹ Stem Packing	Graphoil
8. Threaded Pack Gland	Carbon Steel ASTM A 108 Type 1045
9. Handle Nut	Carbon Steel ASTM A 283
10. Handle	Carbon Steel ASTM A 283

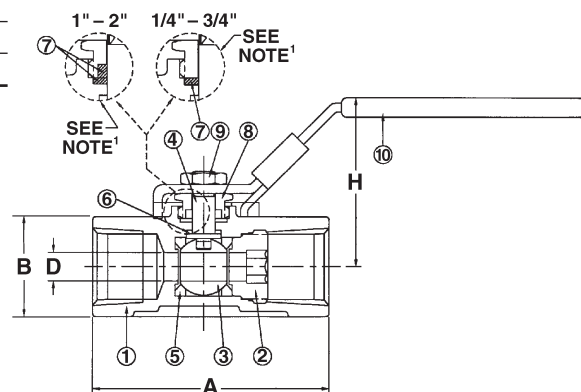
¹ 1/4"-3/4" one each, 1"-2" two each.

NOTE: Valves are static grounded by thrust washer and packing.



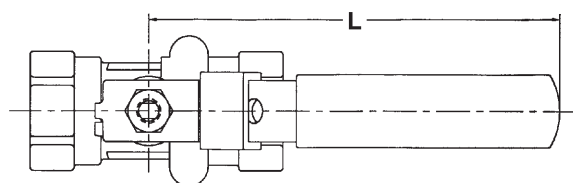
T-560-CS-R-25-FS-LL

Threaded



T-560-CS-R-25-FS-LL

NPT x NPT



DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions										T-560-CS-R-25-FS-LL		Master Ctn.	Qty.
		A		B		D		L		H					
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.		
¼	8	2.28	58	1.10	28	.31	8	4.29	109	1.97	50	.68	.31		50
⅜	10	2.28	58	1.10	28	.31	8	4.29	109	1.97	50	.68	.31		50
½	15	2.60	66	1.10	28	.31	8	4.29	109	1.97	50	.66	.30		50
¾	20	2.83	72	1.34	34	.47	12	4.29	109	2.20	56	.93	.42		50
1	25	3.23	82	1.61	41	.62	16	5.75	146	2.56	65	1.59	.72		40
1¼	32	3.54	90	1.97	50	.81	21	5.75	146	2.76	70	2.22	1.01		20
1½	40	3.86	98	2.24	57	1.00	25	7.40	188	3.29	84	3.22	1.46		20
2	50	4.33	110	2.76	70	1.25	32	7.40	188	3.49	89	4.65	2.11		10

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Carbon Steel Ball Valves

One-Piece Body • Reduced Port • Blowout-Proof Stem •
316 SS Trim • Vented Ball

2000 PSI/138 Bar Non-Shock Cold Working Pressure

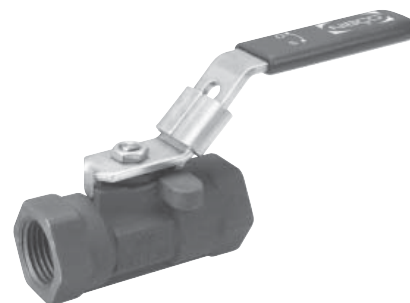
CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Body	Carbon Steel ASTM A 216 Grade WCB
2. Body Insert	Carbon Steel ASTM A 216 Grade WCB
3. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Seat	Reinforced PTFE
6. Thrust Washer	Carbon Filled PTFE
7. ¹ Stem Packing	Graphoil
8. Threaded Pack Gland	Carbon Steel ASTM A 108 Type 1045
9. Handle Nut	Carbon Steel ASTM A 283
10. Handle	Carbon Steel ASTM A 283

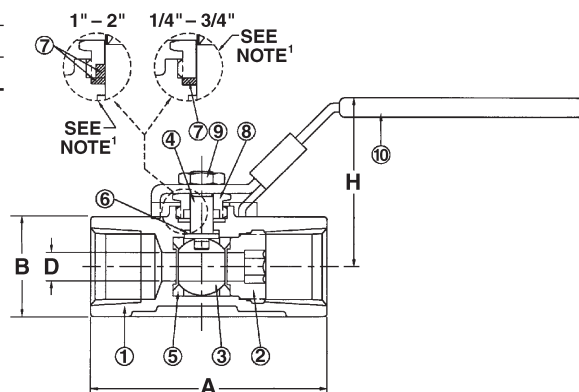
¹1/4"-3/4" one each, 1"-2" two each.

NOTE: Valves are static grounded by thrust washer and packing.



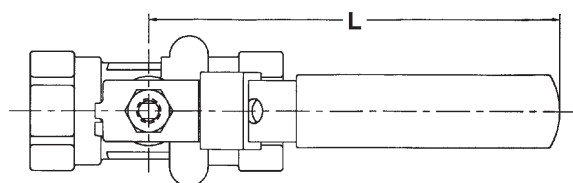
T-560-CS-R-66-LL

Threaded



T-560-CS-R-66-LL

NPT x NPT



DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions														
Size		A		B		D		L		H		T-560-CS-R-66-LL		Master Ctn. Qty.
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	
¼	8	2.28	58	1.10	28	.31	8	4.29	109	1.97	50	.68	.31	50
⅜	10	2.28	58	1.10	28	.31	8	4.29	109	1.97	50	.68	.31	50
½	15	2.60	66	1.10	28	.31	8	4.29	109	1.97	50	.66	.30	50
¾	20	2.83	72	1.34	34	.47	12	4.29	109	2.20	56	.93	.42	50
1	25	3.23	82	1.61	41	.62	16	5.75	146	2.56	65	1.59	.72	40
1 ¼	32	3.54	90	1.97	50	.81	21	5.75	146	2.76	70	2.22	1.01	20
1 ½	40	3.86	98	2.24	57	1.00	25	7.40	188	3.29	84	3.22	1.46	20
2	50	4.33	110	2.76	70	1.25	32	7.40	188	3.49	89	4.65	2.11	10

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Carbon Steel Ball Valves

One-Piece Body • Reduced Port • Blowout-Proof Stem •
316 SS Trim • Vented Ball • Fire Safe

2000 PSI/138 Bar Non-Shock Cold Working Pressure

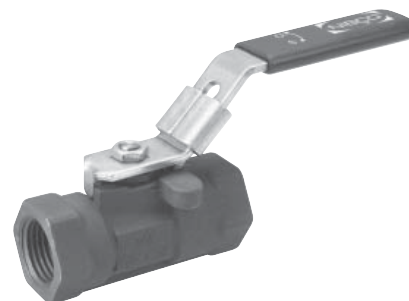
CONFORMS TO API-607 FOURTH EDITION FIRE SAFE
MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Body	Carbon Steel ASTM A 216 Grade WCB
2. Body Insert	Carbon Steel ASTM A 216 Grade WCB
3. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Seat	Reinforced PTFE
6. Thrust Washer	Carbon Filled PTFE
7. ¹ Stem Packing	Graphoil
8. Threaded Pack Gland	Carbon Steel ASTM A 108 Type 1045
9. Handle Nut	Carbon Steel ASTM A 283
10. Handle	Carbon Steel ASTM A 283

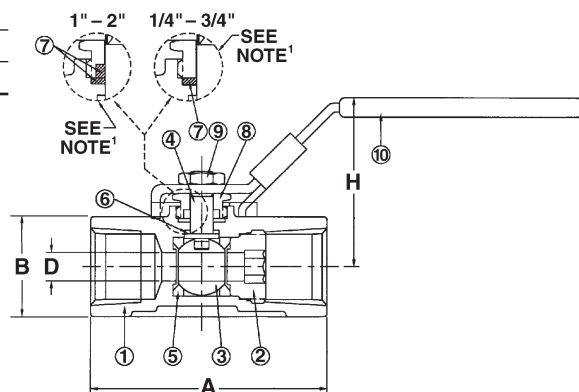
¹ 1/4"-3/4" one each, 1"-2" two each.

NOTE: Valves are static grounded by thrust washer and packing.



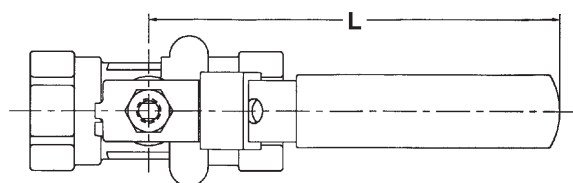
T-560-CS-R-66-FS-LL

Threaded



T-560-CS-R-66-FS-LL

NPT x NPT



DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						T-560-CS-R-66-FS-LL		Master Ctn. Qty.
	A	B	D	L	H		Lbs.	Kg.	
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.				
1/4 8	2.28 58	1.10 28	.31 8	4.29 109	1.97 50	.68	.31		50
3/8 10	2.28 58	1.10 28	.31 8	4.29 109	1.97 50	.68	.31		50
1/2 15	2.60 66	1.10 28	.31 8	4.29 109	1.97 50	.66	.30		50
3/4 20	2.83 72	1.34 34	.47 12	4.29 109	2.20 56	.93	.42		50
1 25	3.23 82	1.61 41	.62 16	5.75 146	2.56 65	1.59	.72		40
1 1/4 32	3.54 90	1.97 50	.81 21	5.75 146	2.76 70	2.22	1.01		20
1 1/2 40	3.86 98	2.24 57	1.00 25	7.40 188	3.29 84	3.22	1.46		20
2 50	4.33 110	2.76 70	1.25 32	7.40 188	3.49 89	4.65	2.11		10

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Carbon Steel Ball Valves

One-Piece Bar Stock Body • Blowout-Proof Stem •
CS Trim • Vented Ball

2000 PSI/138 Bar Non-Shock Cold Working Pressure (½"-1")
1500 PSI/103 Bar Non-Shock Cold Working Pressure (1¼"-2")◆

CONFORMS TO MSS SP-110

MATERIAL LIST

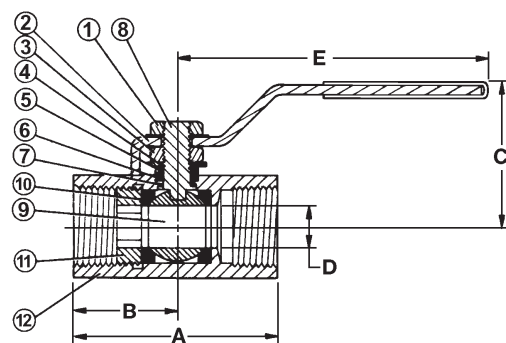
PART	SPECIFICATION
1. Handle Nut	Carbon Steel ASTM A 283 Zinc Plated
2. Handle	Carbon Steel ASTM A 283 Zinc Plated
3. Packing Nut	Carbon Steel ASTM A 283 Zinc Plated
4. Belleville Washer (2)	Carbon Steel Black Oxide ASTM A 686
5. Pack Gland	Stainless Steel ASTM A 240 Type 304
6. Stem Packing	Reinforced PTFE
7. Thrust Washer	Reinforced PTFE
8. Stem	Carbon Steel ASTM A 108 Type 1045
9. Ball (Vented) Chrome Plated	Carbon Steel ASTM 108 Type 1015/1045
10. Seat Ring (2)	Reinforced PTFE
11. Body Insert	Carbon Steel ASTM A 108 Type 1018 Phosphate Coated
12. Body	Carbon Steel ASTM A 108 Type 1018 Phosphate Coated

NOTE: Valves are not available static grounded.



T-570-CS-R-25

Threaded



T-570-CS-R-25

NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions														
Size		A		B		C		D		E		T-570-CS-R-25		Master
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Ctn. Qty.
½	15	2.19	56	1.10	28	1.63	41	.35	9	4.17	102	.55	.25	80
¾	20	2.63	67	1.32	34	1.75	44	.47	12	4.17	102	.77	.35	80
1	25	3.15	80	1.58	40	2.13	54	.62	16	5.83	145	1.60	.73	40
1 ¼	32	3.62	92	1.81	46	2.31	59	.81	21	5.83	145	2.35	1.07	8
1 ½	40	4.00	102	2.00	51	2.75	70	1.00	25	7.00	175	3.47	1.58	8
2	50	4.50	114	2.25	57	3.00	76	1.25	32	7.24	175	5.50	2.50	8

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Carbon Steel Ball Valves

One-Piece Bar Stock Body • Blowout-Proof Stem • 316
SS Trim • Vented Ball

2000 PSI/138 Bar Non-Shock Cold Working Pressure (½"-1")
1500 PSI/103 Bar Non-Shock Cold Working Pressure (1¼"-2")◆

CONFORMS TO MSS SP-110

MATERIAL LIST

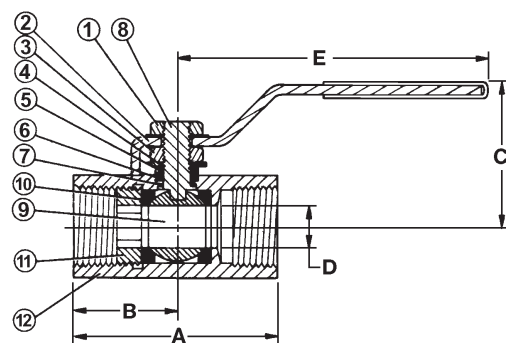
PART	SPECIFICATION
1. Handle Nut	Carbon Steel ASTM A 283 Zinc Plated
2. Handle	Carbon Steel ASTM A 283 Zinc Plated
3. Packing Nut	Carbon Steel ASTM A 283 Zinc Plated
4. Belleville Washer (2)	Carbon Steel Black Oxide ASTM A 686
5. Pack Gland	Stainless Steel ASTM A 240 Type 304
6. Stem Packing	Reinforced PTFE
7. Thrust Washer	Reinforced PTFE
8. Stem	Stainless Steel ASTM A 276 Type 316
9. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
10. Seat Ring (2)	Reinforced PTFE
11. Body Insert	Carbon Steel ASTM A 108 Type 1018 Phosphate Coated
12. Body	Carbon Steel ASTM A 108 Type 1018 Phosphate Coated

NOTE: Valves are not available static grounded.



T-570-CS-R-66

Threaded
Reinforced PTFE Seats and Seals
with SS Trim



T-570-CS-R-66
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions										T-570-CS-R-66		Master
		A		B		C		D		E				
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	
½	15	2.19	56	1.10	28	1.63	41	.35	9	4.17	102	.55	.25	80
¾	20	2.63	67	1.32	34	1.75	44	.47	12	4.17	102	.77	.35	80
1	25	3.15	80	1.58	40	2.13	54	.62	16	5.83	145	1.60	.74	40
1¼	32	3.62	92	1.81	46	2.31	59	.81	21	5.83	145	2.35	1.07	8
1½	40	4.00	102	2.00	51	2.75	70	1.00	25	7.00	175	3.47	1.58	8
2	50	4.50	114	2.25	57	3.00	76	1.25	32	7.24	175	5.50	2.50	8

◆For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Carbon Steel Ball Valves

Two-Piece Body • Conventional Port • Blowout-Proof Stem •
CS Trim • Cast Mounting Pad • Vented Ball

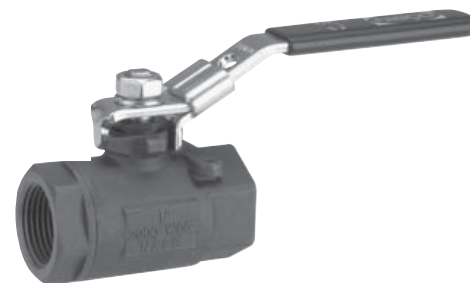
2000 PSI/138 Bar Non-Shock Cold Working Pressure

CONFORMS TO MSS SP-110

MATERIAL LIST

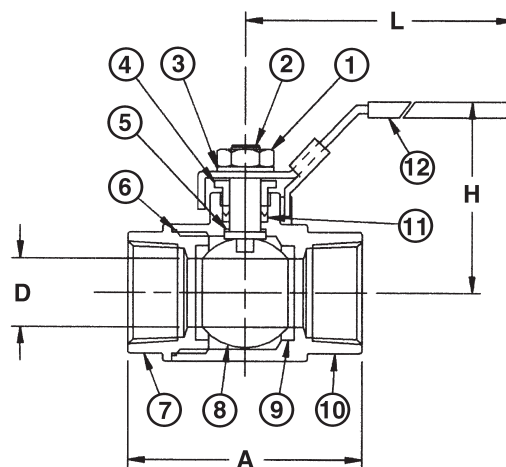
PART	SPECIFICATION
1. Handle Nut	Carbon Steel ASTM A 283
2. Stem	Carbon Steel ASTM A 108 Type 1045
3. Lock Washer	Carbon Steel
4. Threaded Pack Gland	Carbon Steel ASTM A 108 Type 1045
5. Thrust Washer	Carbon Filled PTFE
6. Gasket	PTFE
7. Body End Piece	Carbon Steel ASTM A 216 Grade WCB (Investment Cast)
8. Ball (Vented)	Stainless Steel ASTM A 276 Type 304 or ASTM A 351 Type CF8M
9. Seat (2)	Reinforced PTFE
10. Body	Carbon Steel ASTM A 216 Grade WCB
11. Stem Packing (2)	Carbon Filled PTFE
12. Locking Handle	Carbon Steel ASTM A 283

NOTE: Valves are static grounded by thrust washer and packing.



TC-580-CS-R-25-LL

Threaded

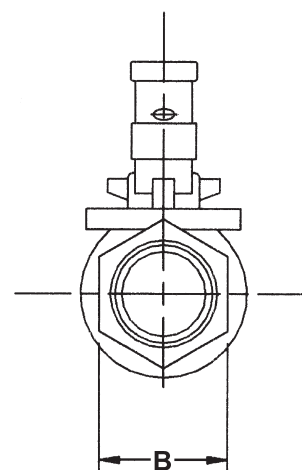


TC-580-CS-R-25-LL

NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions - Weight - Examples														
Size		Dimensions										TC-580-CS-R-25-LL		Master Ctn. Qty.
		A		B		D		H		L				
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	
¼	8	2.07	53	.83	21	.37	9	1.76	45	4.33	110	.51	.23	10
⅜	10	2.07	53	.83	21	.37	9	1.76	45	4.33	110	.48	.22	10
½	15	2.34	59	1.06	27	.50	13	1.92	47	4.33	110	.66	.30	10
¾	20	2.80	71	1.34	34	.69	18	2.40	61	5.83	148	1.30	.59	10
1	25	3.23	82	1.61	41	.87	22	2.56	65	5.83	148	1.79	.81	10
1 ¼	32	3.57	91	1.89	48	1.00	25	2.74	70	7.76	197	2.52	1.14	5
1 ½	40	4.04	103	2.26	57	1.25	32	2.98	76	7.76	197	3.75	1.70	5
2	50	4.63	118	2.76	70	1.50	38	3.17	81	7.76	197	5.80	2.63	5



◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Carbon Steel Ball Valves

Two-Piece Body • Conventional Port • Blowout-Proof Stem •
316 SS Trim • Cast Mounting Pad • Vented Ball

2000 PSI/138 Bar Non-Shock Cold Working Pressure

CONFORMS TO MSS SP-110

MATERIAL LIST

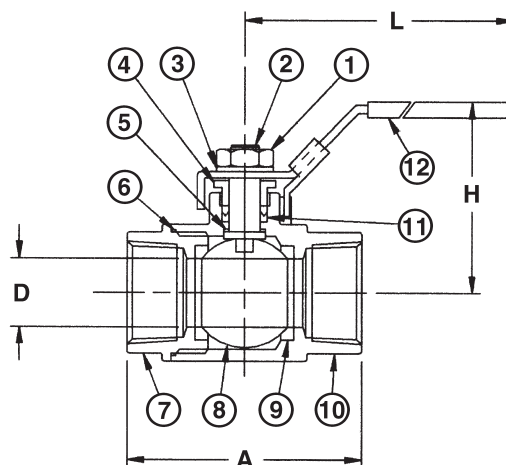
PART	SPECIFICATION
1. Handle Nut	Carbon Steel ASTM A 283
2. Stem	Stainless Steel ASTM A 276 Type 316
3. Lock Washer	Carbon Steel
4. Threaded Pack Gland	Carbon Steel ASTM A 108 Type 1045
5. Thrust Washer	Carbon Filled PTFE
6. Gasket	PTFE
7. Body End Piece	Carbon Steel ASTM A 216 Grade WCB (Investment Cast)
8. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
9. Seat (2)	Reinforced PTFE
10. Body	Carbon Steel ASTM A 216 Grade WCB
11. Stem Packing (2)	Carbon Filled PTFE
12. Locking Handle	Carbon Steel ASTM A 283

NOTE: Valves are static grounded by thrust washer and packing.



TC-580-CS-R-66-LL

Threaded

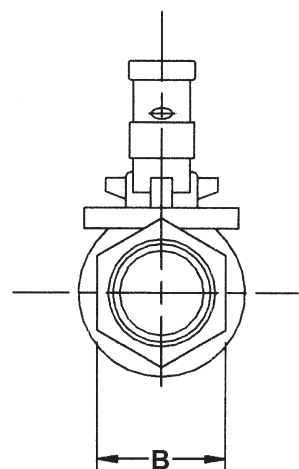


TC-580-CS-R-66-LL

NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions - Weight Examples														
Size		Dimensions										TC-580-CS-R-66-LL		Master Ctn. Qty.
		A		B		D		L		H				
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	
¼	8	2.07	53	.90	23	.37	9	1.76	45	4.33	110	.51	.23	10
⅜	10	2.07	53	.90	23	.37	9	1.76	45	4.33	110	.48	.22	10
½	15	2.34	59	1.06	27	.50	13	1.92	49	4.33	110	.66	.30	10
¾	20	2.80	71	1.34	34	.69	18	2.40	61	5.83	148	1.30	.59	10
1	25	3.23	82	1.61	41	.87	22	2.56	65	5.83	148	1.79	.81	10
1 ¼	32	3.57	91	1.89	48	1.00	25	2.74	70	7.76	197	2.52	1.14	5
1 ½	40	4.04	103	2.26	57	1.25	32	2.98	76	7.76	197	3.75	1.70	5
2	50	4.63	118	2.76	70	1.50	38	3.17	81	7.76	197	5.80	2.63	5



◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Carbon Steel Ball Valves

Two-Piece Bar Stock Body • Conventional Port •
Blowout-Proof Stem • CS Trim • Vented Ball

2000 PSI/138 Bar Non-Shock Cold Working Pressure (1/4"-1")

1500 PSI/103 Bar Non Shock Cold Working Pressure (1 1/4"-2") ♦

CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Carbon Steel ASTM A 283
2. Stem	Carbon Steel ASTM A 108 Type 1045
3. Spring Washer	Carbon Steel
4. Belleville Washer (2)	Carbon Steel ASTM A 686
5. Stem Packing (2)	Reinforced PTFE
6. Thrust Washer	Carbon Filled PTFE
7. Body End Piece	Carbon Steel ASTM A 108 Type 1018
8. Spacer Seal	PTFE
9. Ball (Vented)	Stainless Steel ASTM A 276 Type 304 or ASTM A 351 Type CF8M
10. Seat (2)	Reinforced PTFE
11. Body	Carbon Steel ASTM A 108 Type 1018
12. Gland Washer	Stainless Steel ASTM A 240 Type 304
13. Handle	Carbon Steel ASTM A 283

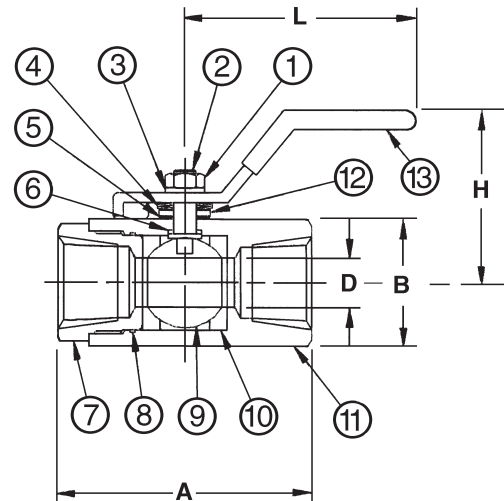
1/4"-1" 2000 PSI CWP, 1 1/4"-2" 1500 PSI CWP.

NOTE: Valves are static grounded by thrust washer and packing.



T-580-CS-R-25

Threaded



T-580-CS-R-25

NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions										T-580-CS-R-25		Master Ctn. Qty.
		A		B		D		H		L				
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	
1/4	8	2.30	58	1.02	26	.38	9	2.22	56	4.13	105	.59	.27	10
3/8	10	2.30	58	1.02	26	.38	9	2.22	56	4.13	105	.55	.25	10
1/2	15	2.52	64	1.26	32	.50	9	2.44	62	4.17	105	.79	.36	10
3/4	20	2.95	75	1.61	41	.69	13	2.64	67	4.17	105	1.43	.65	10
1	25	3.35	85	1.97	50	.87	18	2.83	72	5.83	148	2.40	1.08	10
1 1/4	32	3.66	93	2.17	55	1.00	25	2.97	75	5.83	148	3.01	1.37	5
1 1/2	40	4.11	104	2.64	67	1.25	32	3.25	83	7.00	182	4.86	2.20	5
2	50	4.61	117	3.03	77	1.50	38	3.54	90	7.24	198	6.62	3.00	5

♦ For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Carbon Steel Ball Valves

Two-Piece Bar Stock Body • Conventional Port •
Blowout-Proof Stem • 316 SS Trim • Vented Ball

2000 PSI/138 Bar Non-Shock Cold Working Pressure (1/4"-1")
1500 PSI/103 Bar Non Shock Cold Working Pressure (1 1/4"-2") ♦

CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Carbon Steel ASTM A 283
2. Stem	Stainless Steel ASTM A 276 Type 316
3. Lock Washer	Carbon Steel
4. Belleville Washer (2)	Carbon Steel ASTM A 686
5. Stem Packing (2)	Reinforced PTFE
6. Thrust Washer	Carbon Filled PTFE
7. Body End Piece	Carbon Steel ASTM A 108 Type 1018
8. Spacer Seal	PTFE
9. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
10. Seat (2)	Reinforced PTFE
11. Body	Carbon Steel ASTM A 108 Type 1018
12. Gland Washer	Stainless Steel ASTM A 240 Type 304
13. Handle	Carbon Steel ASTM A 283

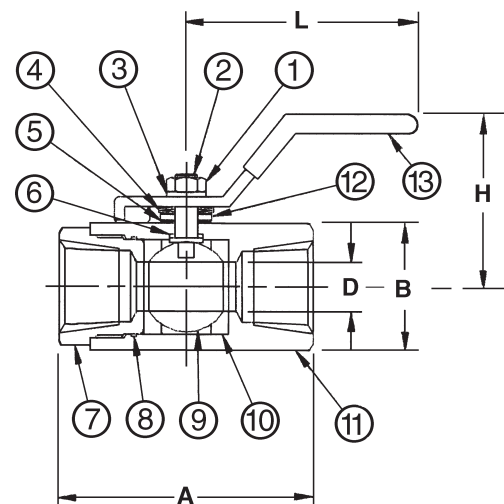
1/4"-1" 2000 PSI CWP, 1 1/4"-2" 1500 PSI CWP.

NOTE: Valves are static grounded by thrust washer and packing.



T-580-CS-R-66

Threaded



T-580-CS-R-66

NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						T-580-CS-R-66		Master
	A	B	D	H	L				
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.		Lbs.	Kg.	Ctn. Qty.
1/4 8	2.30 58	1.02 26	.38 10	2.22 56	4.13 105		.59	.27	10
3/8 10	2.30 58	1.02 26	.38 10	2.22 56	4.13 105		.55	.25	10
1/2 15	2.52 64	1.26 32	.50 10	2.44 62	4.17 105		.79	.36	10
3/4 20	2.95 75	1.61 41	.69 13	2.64 66	4.17 105	1.43	.65		10
1 25	3.35 85	1.97 50	.89 18	2.83 72	5.83 148	2.40	1.08		10
1 1/4 32	3.66 93	2.17 55	1.00 25	2.97 75	5.83 148	3.01	1.37		5
1 1/2 40	4.11 104	2.64 67	1.25 32	3.25 83	7.00 182	4.80	2.20		5
2 50	4.61 117	3.03 77	1.50 38	3.54 90	7.24 185	6.62	3.00		5

♦ For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Carbon Steel Ball Valves

Three-Piece Body • Threaded, Butt or Socket Weld Ends • Blowout-Proof Stem • Conventional Port •
Enclosed Bolt Design • PTFE Seats • SS Trim • Cast ISO Mounting Pad • Vented Ball • Fire Safe

2000 PSI/138 Bar Non-Shock Cold Working Pressure

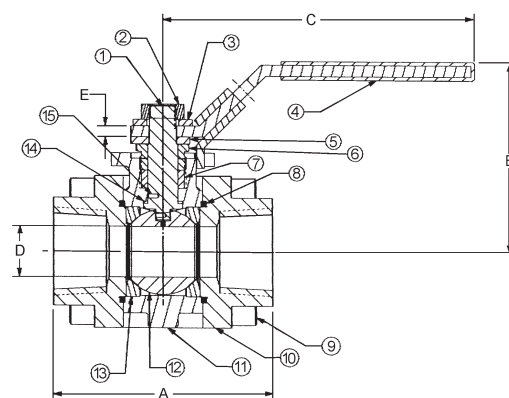
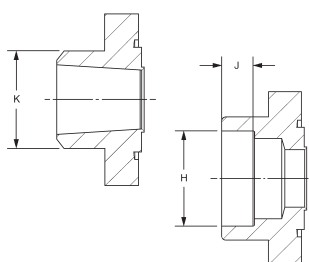
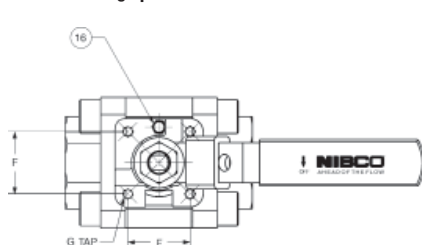
CONFORMS TO API-607 FOURTH EDITION FIRE
SAFE • MSS SP-110 • MSS SP-72 (BUTT WELD) •
API 608 ANTI-STATIC FEATURE



MATERIAL LIST

PART	SPECIFICATION
1. Stem	Stainless Steel ASTM A 276 Type 316
2. Handle Nut	Stainless Steel ASTM A 276 Type 304
3. Lock Washer	Stainless Steel ASTM A 240 Type 304
4. Locking Handle	Stainless Steel ASTM A 240 Type 304
5. Stop Plate	Stainless Steel ASTM A 240 Type 304
6. Pack Gland	Stainless Steel ASTM A 276 Type 316
7. Stem Packing	Graphite
8. Body End Seal	Graphite
9. Bolt	Carbon Steel ASTM A 193 Grade B7
10. Body End	Carbon Steel ASTM A 216 Grade WCB Phosphate Coated
11. Body	Carbon Steel ASTM A 216 Grade WCB Phosphate Coated
12. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
13. Seat	Reinforced PTFE 15% Glass
14. Thrust Washer	Reinforced PTFE 15% Glass
15. Static Grounding Devices	Stainless Steel ASTM A 276 Type 304
16. Stop Pin	Stainless Steel ASTM A 276 Type 304

Note: Valves are static grounded by two ball detents that insure electro-continuity between the stem body and ball. The valve has electro-continuity across the discharge path with a resistance of not more than 10 ohms.



TM 590-CS-R-66-FS-LL
NPT x NPT

TM-590-CS-R-66-FS-LL

Threaded
Stainless Steel Trim
ISO Mount Pad

KM-590-CS-R-66-FS-LL

Socket Weld
Stainless Steel Trim
ISO Mount Pad

BM-590-CS-R-66-FS-LL

Butt Weld
Stainless Steel Trim
ISO Mount Pad

DIMENSIONS—WEIGHTS—QUANTITIES

		Dimensions																											
		Size		A		B		C		D		E		F		G		H		J				K		Threaded Weight		Socket Weld Weight	
		In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Tap	Type	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.
1/2	15	2.72	69	2.47	63	4.07	103	.43	11	.12	3	1.00	25	M5	F03	.86	22	.38	10	.84	21	1.80	.82	1.70	.78	1.60	.73		
3/4	20	2.94	75	2.70	69	4.07	103	.57	14	.12	3	1.00	25	M5	F03	1.08	27	.50	13	1.05	27	2.40	1.09	2.30	1.05	2.20	1.00		
1	25	3.50	89	3.19	81	4.92	125	.81	21	.18	5	1.17	30	M5	F04	1.34	34	.50	13	1.32	34	3.80	1.73	3.60	1.64	3.50	1.59		
1 1/4	32	3.90	99	3.64	92	5.91	150	.98	25	.20	5	1.17	30	M5	F04	1.69	43	.50	13	1.66	42	5.90	2.68	5.70	2.59	5.60	2.55		
1 1/2	40	4.42	112	3.88	99	7.68	195	1.25	32	.23	8	1.39	35	M6	F05	1.93	49	.50	13	1.90	48	7.60	3.45	7.40	3.36	7.30	1.61		
2	50	5.04	128	4.09	104	7.68	195	1.50	38	.23	8	1.39	35	M6	F05	2.42	61	.62	16	2.38	60	10.50	4.77	10.30	4.68	10.20	4.64		

◆For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Carbon Steel Ball Valves

Three-Piece Body • Full Port • Blowout-Proof Stem •
316 SS Trim • Vented Ball

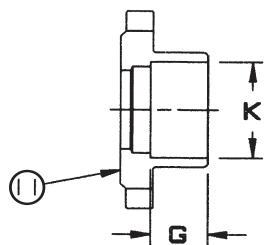
1000 PSI/69 Bar Non-Shock Cold Working Pressure

CONFORMS TO MSS SP-110

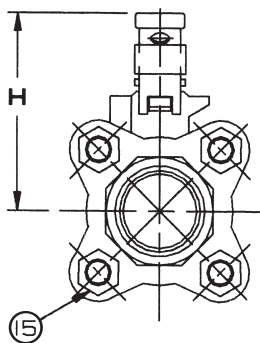
MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Carbon Steel ASTM A 283
2. Stem	Stainless Steel ASTM A 276 Type 316
3. Lock Washer	Carbon Steel
4. Stem Packing (1 Set)	Carbon Filled PTFE
5. Thrust Washer	Carbon Filled PTFE
6. Cap Bolt (4)	Carbon Steel ASTM A 193 Grade B7
7. Union Seal (2)	Reinforced PTFE
8. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
9. Body	Carbon Steel ASTM A 216 Grade WCB
10. Seat (2)	Reinforced PTFE
11. Body End (2)	Carbon Steel ASTM A 216 Grade WCB
12. Lock Washer (4)	Carbon Steel
13. Threaded Pack Gland	Carbon Steel ASTM A 108 Type 1045
14. Handle	Carbon Steel ASTM A 283
15. Cap Nut (4)	Carbon Steel ASTM A 283

NOTE: Valves are static grounded by thrust washer and packing.



SOCKET WELD
ENDS

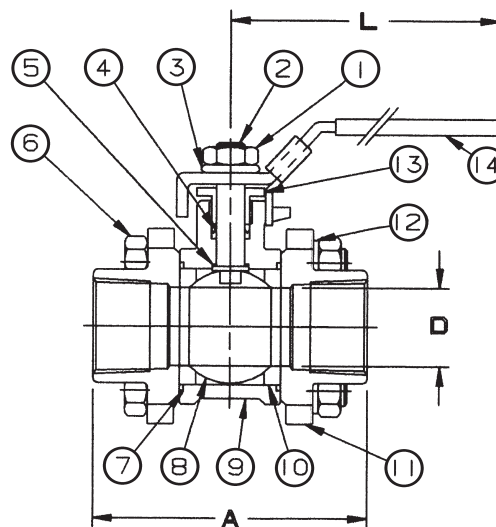


T-595-CS-R-66-LL

Threaded

K-595-CS-R-66-LL

Socket Weld



T or K 595-CS-R-66-LL
NPT x NPT or SOC x SOC

DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions												T or K-595-CS-R-66-LL		Master Ctn. Qty.
		A		D		G		K		H		L				
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	
¼	8	2.36	60	.34	9	—	—	—	—	2.18	55	4.17	106	.97	.44	10
⅜	10	2.36	60	.34	9	—	—	—	—	2.18	55	4.17	106	.97	.44	10
½	15	2.76	70	.56	14	.38	10	.86	22	2.38	60	4.17	106	1.23	.56	10
¾	20	3.03	77	.81	21	.50	13	1.07	27	2.87	73	5.71	145	1.91	.87	10
1	25	3.62	92	1.00	25	.50	13	1.34	34	2.95	75	5.71	145	2.93	1.33	8
1¼	32	4.13	105	1.25	32	.50	13	1.69	43	3.66	93	7.36	187	4.27	1.94	5
1½	40	4.72	110	1.50	38	.50	13	1.93	49	3.94	100	7.36	187	6.01	2.73	5
2	50	5.43	138	1.97	50	.62	16	2.42	61	4.25	108	7.95	202	9.50	4.32	5

◆For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Carbon Steel Ball Valves

Three-Piece Body • Full Port • Cast ISO Mounting Pad •
Blowout-Proof Stem • 316 SS Trim • Vented Ball

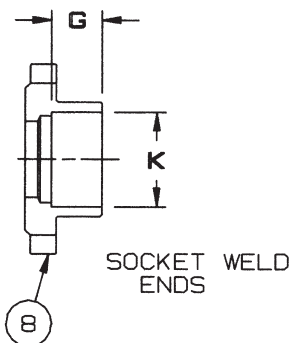
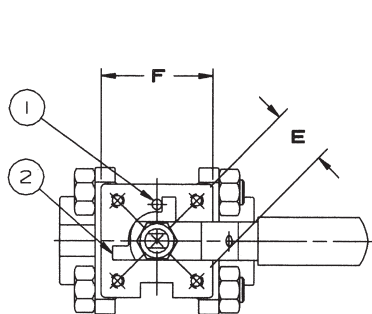
1000 PSI/69 Bar Non-Shock Cold Working Pressure

CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Stop Pin	Stainless Steel ASTM A 276 Type 304
2. Stop Plate	Carbon Steel ASTM A 283
3. Stem	Stainless Steel ASTM A 276 Type 316
4. Handle Nut	Carbon Steel A 283
5. Stem Packing (1 Set)	Carbon Filled PTFE
6. Thrust Washer	Carbon Filled PTFE
7. Cap Bolt (4)	Carbon Steel ASTM A 193 Grade B7
8. Body Ends (2)	Carbon Steel ASTM A 216 Grade WCB
9. Seat (2)	Reinforced PTFE
10. Body	Carbon Steel ASTM A 216 Grade WCB
11. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
12. Union Seal (2)	Reinforced PTFE
13. Cap Nut (4)	Carbon Steel A 283
14. Threaded Pack Gland	Carbon Steel ASTM A 108 Type 1045
15. Handle	Carbon Steel ASTM A 283

NOTE: Valves are static grounded by thrust washer and packing.

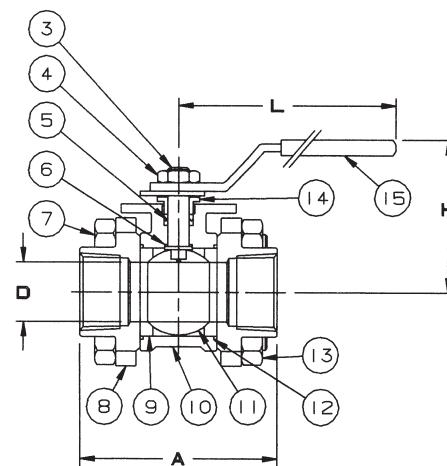


TM-595-CS-R-66

Threaded
ISO Mount Pad

KM-595-CS-R-66

Socket Weld (½"-2")
ISO Mount Pad



TM or KM-595-CS-R-66
NPT x NPT or SOC x SOC

DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions														ISO 5211	TM or KM-595-CS-R-66		Master Ctn. Qty.		
		A		D		E		F		G		K		H			L			Lbs.	Kg.
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.				
¼	8	2.49	63	.34	9	.71	18	1.42	36	—	—	—	—	2.36	60	4.17	106	F03	1.00	.45	10
⅜	10	2.49	63	.34	9	.71	18	1.42	36	—	—	—	—	2.36	60	4.17	106	F03	1.00	.45	10
½	15	2.76	70	.56	14	.71	18	1.42	36	.38	10	.87	22	2.36	60	4.17	106	F03	1.20	.54	10
¾	20	3.03	77	.81	21	.83	21	1.65	42	.50	13	1.08	27	2.83	72	5.04	128	F04	1.90	.86	10
1	25	3.63	92	1.00	25	.88	22	1.65	42	.50	13	1.34	34	3.07	78	5.04	128	F04	2.90	1.31	8
1¼	32	4.14	105	1.25	32	.98	25	1.97	50	.50	13	1.69	43	3.35	85	7.83	199	F05	4.30	1.93	5
1½	40	4.73	120	1.50	38	.98	25	1.97	50	.50	13	1.93	49	3.66	93	7.83	199	F05	6.00	2.70	5
2	50	5.43	138	1.97	50	.98	25	1.97	50	.62	16	2.42	61	4.09	104	7.83	199	F05	9.50	4.28	2

◆For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Stainless Steel Ball Valves

One, Two, and Three-Piece Body
Threaded, Butt or Socket Weld Ends

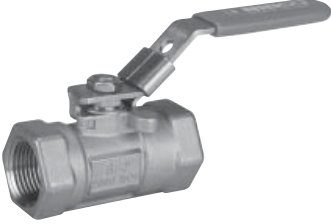
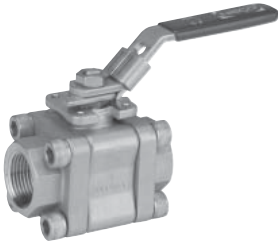
Stainless Steel Ball Valve Figure Number Key

T-580-S6-R-66-**

End Connection	Valve Style	Basic Material	Seat Material	Trim Material	Options
K - Socket Weld	560 - One-Piece Body (Casting)	CS - Carbon Steel	Y - Virgin PTFE	25 - Carbon Steel	FS - Fire Safe
T - Threaded	570 - One-Piece Body (Bar Stock)	S6 - Stainless Steel	R - Reinforced PTFE	66 - Stainless Steel	OL - Oval Locking Handle
TC - Threaded (Investment Cast Carbon Body)	580 - Two-Piece Body Conventional Port				LL - Locking Lever Handle
BM - Butt Weld ISO Mount	585 - Two-Piece Body Full Port				OV - Oval Handle
KM - Socket Weld ISO Mount	590 - Three-Piece Body Conventional Port				
TM - Threaded ISO Mount	595 - Three-Piece Body Full Port				

* This key is a guide only and is not intended to infer that every valve combination will be produced.

One, Two, and Three-Piece Stainless Steel Ball Valves Illustrated Index

One-Piece Stainless Steel Ball Valve 2000 lb. CWP  T-560-S6-R-66-LL/FS Sizes 1/4" thru 2" Threaded Ends Page 59, 60	Two-Piece Stainless Steel Ball Valve 2000 lb. CWP  T-580-S6-R-66-LL Sizes 1/4" thru 2" Threaded Ends Page 61	Two-Piece Stainless Steel Ball Valve 1000 lb. CWP  T-585-S6-R-66-LL Sizes 1/4" thru 2" Threaded Ends Page 62
Three-Piece Stainless Steel Ball Valve 2000 lb. CWP  BM/KM/TM-590-S6-R-66-FS-LL Sizes 1/2" thru 2" Threaded, Butt or Socket Weld Page 63	Three-Piece Stainless Steel Ball Valve 1000 lb. CWP  T/K-595-S6-R-66-LL Sizes 1/4" thru 2" Threaded or Socket Weld Page 64	Three-Piece Stainless Steel Ball Valve 1000 lb. CWP  TM/KM-595-S6-R-66 Sizes 1/4" thru 2" Threaded or Socket Weld Page 65
Pressure Temperature Chart Page 66, 67		

Stainless Steel Ball Valves

One-Piece Body • Reduced Port • Blowout-Proof Stem •
316 SS Trim • Vented Ball

2000 PSI/138 Bar Non-Shock Cold Working Pressure

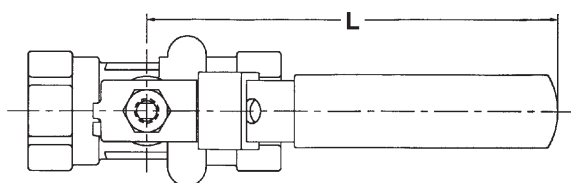
CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Body	Stainless Steel ASTM A 351 Type CF8M
2. Body Insert	Stainless Steel ASTM A 351 Type CF8M or ASTM A 351 Type CF8M
3. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Seat	Reinforced PTFE
6. Thrust Washer	Reinforced PTFE (Carbon 25% + PTFE 75%)
7. ¹ Stem Packing	PTFE
8. Threaded Pack Gland	Stainless Steel ASTM A 276 Type 316
9. Handle Nut	Stainless Steel ASTM A 276 Type 304
10. Locking Handle	Stainless Steel ASTM A 240 Type 304

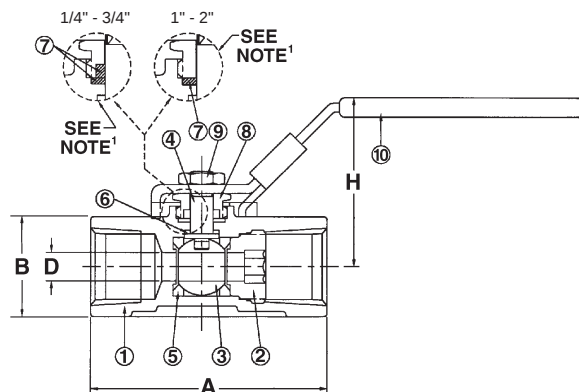
¹ 1/4"-3/4" one each, 1"-2" two each.

NOTE: Valves are static grounded by thrust washer and packing.
Valves tested in accordance with ASME B16.34



T-560-S6-R-66-LL

Threaded



T-560-S6-R-66-LL

NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions										T-560-S6-R-66-LL		Master Ctn. Qty.
		A		B		D		L		H				
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	
1/4	8	2.28	58	1.10	28	.31	8	4.29	109	1.97	50	.68	.31	50
3/8	10	2.28	58	1.10	28	.31	8	4.29	109	1.97	50	.68	.31	50
1/2	15	2.60	66	1.10	28	.31	8	4.29	109	1.97	50	.66	.30	50
3/4	20	2.83	72	1.34	34	.47	12	4.29	109	2.20	56	.93	.42	50
1	25	3.23	82	1.61	41	.62	16	5.75	146	2.56	65	1.59	.72	40
1 1/4	32	3.54	90	1.97	50	.81	21	5.75	146	2.76	70	2.22	1.01	20
1 1/2	40	3.86	98	2.24	57	1.00	25	7.40	188	3.29	84	3.22	1.46	20
2	50	4.33	110	2.76	70	1.25	32	7.40	188	3.49	89	4.65	2.11	10

◆For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Stainless Steel Ball Valves

One-Piece Body • Reduced Port • Blowout-Proof Stem •
316 SS Trim • Vented Ball • Fire Safe

2000 PSI/138 Bar Non-Shock Cold Working Pressure

CONFORMS TO API-607 FIFTH EDITION FIRE SAFE MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Body	Stainless Steel ASTM A 351 Type CF8M
2. Body Insert	Stainless Steel ASTM A 351 Type CF8M or ASTM A 276 Type 316
3. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Seat	Reinforced PTFE
6. Thrust Washer	Reinforced PTFE (Carbon 25% + PTFE 75%)
7. ¹ Stem Packing	Graphoil
8. Threaded Pack Gland	Stainless Steel ASTM A 276 Type 316
9. Handle Nut	Stainless Steel ASTM A 276 Type 304
10. Locking Handle	Stainless Steel ASTM A 240 Type 304

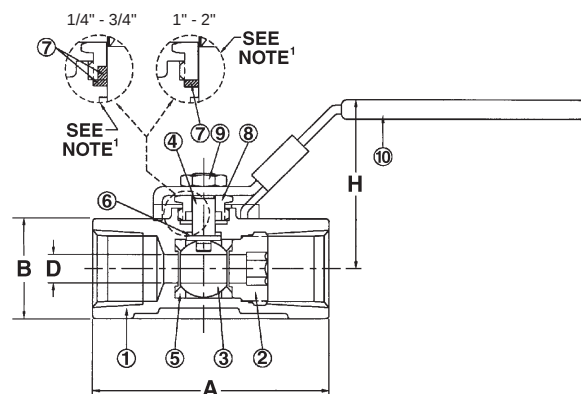
¹ 1/4"-3/4" one each, 1"-2" two each.

NOTE: Valves are static grounded by thrust washer and packing.



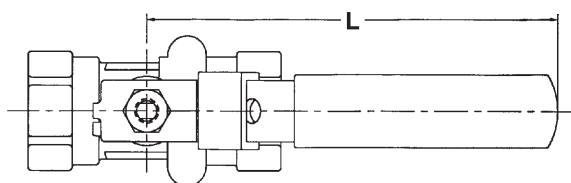
T-560-S6-R-66-FS-LL

Threaded



T-560-S6-R-66-FS-LL

NPT x NPT



DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions															Master Ctn. Qty.
Size		Dimensions										T-560-S6-R-66-FS-LL			
		A		B		D		L		H					
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.		
¼	8	2.28	58	1.10	28	.31	8	4.29	109	1.97	50	.68	.31	50	
⅜	10	2.28	58	1.10	28	.31	8	4.29	109	1.97	50	.68	.31	50	
½	15	2.60	66	1.10	28	.31	8	4.29	109	1.97	50	.66	.30	50	
¾	20	2.83	72	1.34	34	.47	12	4.29	109	2.20	56	.93	.42	50	
1	25	3.23	82	1.61	41	.62	16	5.75	146	2.56	65	1.59	.72	40	
1¼	32	3.54	90	1.97	50	.81	21	5.75	146	2.76	70	2.22	1.01	20	
1½	40	3.86	98	2.24	57	1.00	25	7.40	188	3.29	84	3.22	1.46	20	
2	50	4.33	110	2.76	70	1.25	32	7.40	188	3.49	89	4.65	2.11	10	

◆For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Stainless Steel Ball Valves

Two-Piece Body • Conventional Port • Blowout-Proof Stem •
316 SS Trim • Cast Mounting Pad • Vented Ball

2000 PSI/138 Bar Non-Shock Cold Working Pressure

CONFORMS TO MSS SP-110

MATERIAL LIST

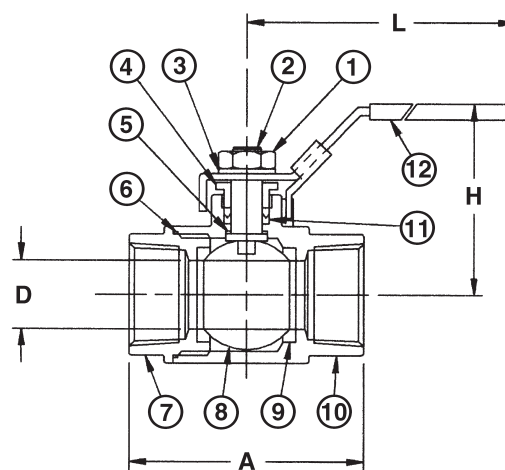
PART	SPECIFICATION
1. Handle Nut	Stainless Steel ASTM A 276 Type 304
2. Stem	Stainless Steel ASTM A 276 Type 316
3. Lock Washer	Stainless Steel 304 SS
4. Threaded Pack Gland	Stainless Steel ASTM A 276 Type 316
5. Thrust Washer	Carbon Filled PTFE
6. Gasket	PTFE
7. Body End Piece	Stainless Steel ASTM A 351 Type CF8M
8. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
9. Seat (2)	Reinforced PTFE
10. Body	Stainless Steel ASTM A 351 Type CF8M
11. Stem Packing (2)	Carbon Filled PTFE
12. Locking Handle	Stainless Steel ASTM A 240 Type 304

NOTE: Valves are static grounded by thrust washer and packing.
Valves tested in accordance with ASME B16.34



T-580-S6-R-66-LL

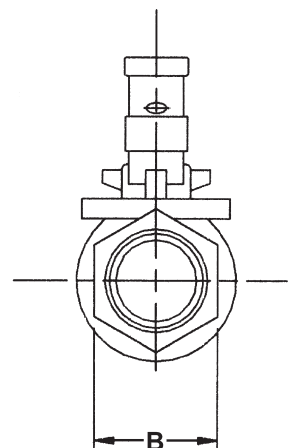
Threaded



T-580-S6-R-66-LL
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions - Metric - Examples														
Size		Dimensions										T-580-S6-R-66-LL		Master Ctn. Qty.
		A		B		D		L		H				
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	
¼	8	2.07	53	.83	21	.37	9	1.76	45	4.33	110	.51	.23	10
⅜	10	2.07	53	.83	21	.37	9	1.76	45	4.33	110	.48	.22	10
½	15	2.34	59	1.06	27	.50	13	1.92	49	4.33	110	.66	.30	10
¾	20	2.80	71	1.34	34	.69	18	2.40	61	5.83	148	1.30	.59	10
1	25	3.23	82	1.61	41	.87	22	2.56	65	5.83	148	1.79	.81	10
1 ¼	32	3.57	91	1.89	48	1.00	25	2.74	70	7.76	197	2.52	1.14	5
1 ½	40	4.04	103	2.26	57	1.25	32	2.98	76	7.76	197	3.75	1.70	5
2	50	4.63	118	2.76	70	1.50	38	3.17	81	7.76	197	5.80	2.63	5



◆For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Stainless Steel Ball Valves

Two-Piece Body • Full Port • Blowout-Proof Stem •
316 SS Trim • Cast Mounting Pad • Vented Ball

1000 PSI/69 Bar Non-Shock Cold Working Pressure

CONFORMS TO MSS SP-110

MATERIAL LIST

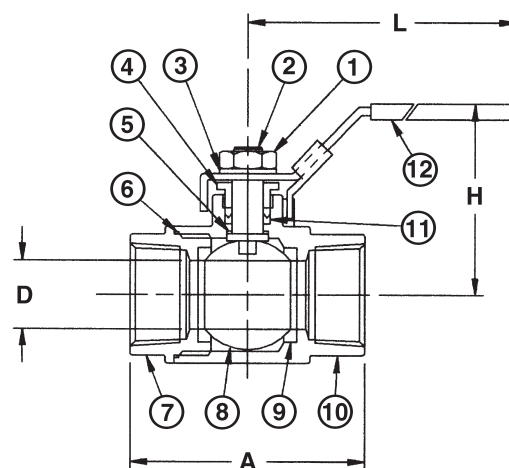
PART	SPECIFICATION
1. Handle Nut	Stainless Steel ASTM A 276 Type 304
2. Stem	Stainless Steel ASTM A 276 Type 316
3. Spring Washer	Stainless Steel 304
4. Threaded Pack Gland	Stainless Steel ASTM A 276 Type 316
5. Thrust Washer	Carbon Filled PTFE
6. Gasket	PTFE
7. Body End Piece	Stainless Steel ASTM A 351 Type CF8M
8. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
9. Seat (2)	Reinforced PTFE
10. Body	Stainless Steel ASTM A 351 Type CF8M
11. Stem Packing (2)	Carbon Filled PTFE
12. Locking Handle	Stainless Steel ASTM A 240 Type 304

NOTE: Valves are static grounded by thrust washer and packing.
Valves tested in accordance with ASME B16.34



T-585-S6-R-66-LL

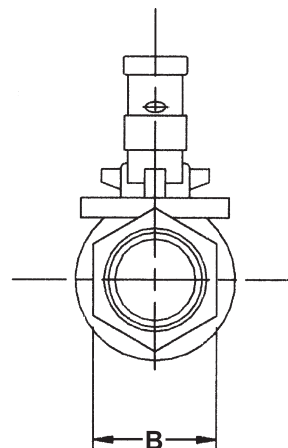
Threaded



T-585-S6-R-66-LL
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions										T-585-S6-R-66-LL		Master Ctn. Qty.
		A		B		D		H		L				
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	
¼	8	2.21	56	.83	21	.43	11	2.20	56	4.21	107	.59	.27	10
⅜	10	2.21	56	.83	21	.43	11	2.20	56	4.21	107	.56	.25	10
½	15	2.60	66	1.02	26	.56	14	2.30	58	4.21	107	.75	.34	10
¾	20	2.99	76	1.28	33	.81	21	2.79	71	5.73	146	1.47	.67	10
1	25	3.54	90	1.56	40	1.00	25	2.96	75	5.73	146	2.21	1.00	10
1 ¼	32	3.94	100	1.97	50	1.25	35	3.56	90	7.45	189	3.42	1.55	5
1 ½	40	4.41	112	2.20	66	1.50	38	3.84	98	7.45	189	5.20	2.36	5
2	50	5.00	127	2.76	69	2.00	50	4.24	108	8.08	205	7.99	3.63	5



◆For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Stainless Steel Ball Valves

Three-Piece Body • Threaded, Butt or Socket Weld Ends • Blowout-Proof Stem • Conventional Port •
Enclosed Bolt Design • PTFE Seats • SS Trim • Cast ISO Mounting Pad • Vented Ball • Fire Safe

2000 PSI/138 Bar Non-Shock Cold Working Pressure

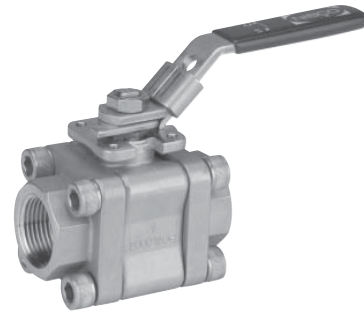
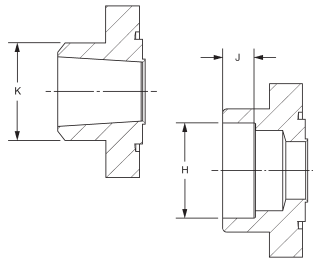
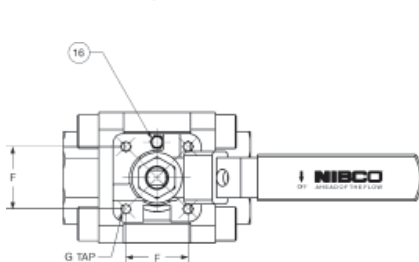
CONFORMS TO API-607 FOURTH EDITION FIRE SAFE •
MSS SP-110 • MSS SP-72 (BUTT WELD) •
API 608 ANTI-STATIC FEATURE

MATERIAL LIST

PART	SPECIFICATION
1. Stem	Stainless Steel ASTM A 276 Type 316
2. Handle Nut	Stainless Steel ASTM A 276 Type 304
3. Lock Washer	Stainless Steel ASTM A 240 Type 304
4. Locking Handle	Stainless Steel ASTM A 240 Type 304
5. Stop Plate	Stainless Steel ASTM A 240 Type 304
6. Pack Gland	Stainless Steel ASTM A 276 Type 316
7. Stem Packing	Graphite
8. Body End Seal	Graphite
9. Bolt	Stainless Steel ASTM A 193 B8 Type 304
10. ¹ Body End	Stainless Steel ASTM A 351 Type CF8M
11. Body	Stainless Steel ASTM A 351 Type CF8M
12. Ball (Vented)	Stainless Steel ASTM A 351 Type CF8M or ASTM A 276 Type 316
13. Seat	Reinforced PTFE 15% Glass
14. Thrust Washer	Reinforced PTFE 15% Glass
15. Static Grounding Device	Stainless Steel ASTM A 276 Type 304
16. Stop Pin	Stainless Steel ASTM A 276 Type 304

¹ Threaded Connections: CF8M, Weld Connections: CF3M.

Note: Valves are static grounded by two ball detents that insure electro-continuity between the stem body and ball. The valve has electro-continuity across the discharge path with a resistance of not more than 10 ohms.



TM-590-S6-R-66-FS-LL

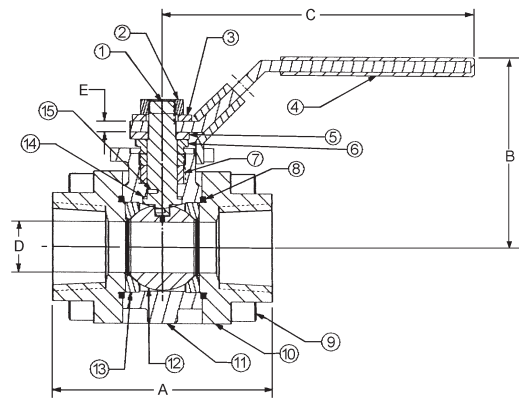
Threaded
ISO Mount Pad

KM-590-S6-R-66-FS-LL

Socket Weld
ISO Mount Pad

BM-590-S6-R-66-FS-LL

Butt Weld
ISO Mount Pad



DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions															
Size	A	B	C	D	E	F	G	H	J	K	Threaded	Socket	Butt	Weight	Butt
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Thread	Socket	Socket	Butt	Weight	Weld	Weld	Lbs. Kg.	Weight
1/2	15	2.72 69	2.47 63	4.07 103	.43 11	.12 3	1.00 25	M5	F03	.86 22	.38 10	.84 21	1.80 .82	1.70 1.60	.73
3/4	20	2.94 75	2.70 69	4.07 103	.57 14	.12 3	1.00 25	M5	F03	1.08 27	.50 13	1.05 27	2.40 1.09	2.30 1.05	2.20 1.00
1	25	3.50 89	3.19 81	4.92 125	.81 21	.18 5	1.17 30	M5	F04	1.34 34	.50 13	1.32 34	3.80 1.73	3.60 1.64	3.50 1.59
1 1/4	32	3.90 99	3.64 92	5.91 150	.98 25	.20 5	1.17 30	M5	F04	1.69 43	.50 13	1.66 42	5.90 2.68	5.70 2.59	5.60 2.55
1 1/2	40	4.42 112	3.88 99	7.68 195	1.25 32	.23 8	1.39 35	M6	F05	1.93 49	.50 13	1.90 48	7.60 3.45	7.40 3.36	7.30 1.61
2	50	5.04 128	4.09 104	7.68 195	1.50 38	.23 8	1.39 35	M6	F05	2.42 61	.62 16	2.38 60	10.50 4.77	10.30 4.68	10.20 4.64

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 69 and 70.

Stainless Steel Ball Valves

Three-Piece Body • Full Port • Blowout-Proof Stem • Full Port • 316 SS Trim • Vented Ball

1000 PSI/69 Bar Non-Shock Cold Working Pressure

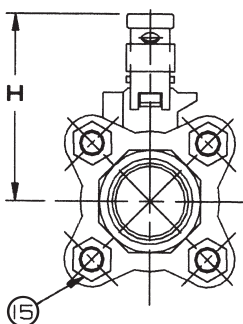
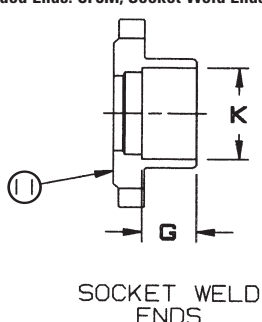
CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Stainless Steel ASTM A 276 Type 304
2. Stem	Stainless Steel ASTM A 276 Type 316
3. Lock Washer	Stainless Steel 304
4. Stem Packing (1 Set)	Carbon Filled PTFE
5. Thrust Washer	Carbon Filled PTFE
6. Cap Bolt (4)	Stainless Steel ASTM A 193 B8 Type 304
7. Union Seal (2)	Reinforced PTFE
8. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
9. Body	Stainless Steel ASTM A 351 Type CF8M
10. Seat (2)	Reinforced PTFE
11. ¹ Body End (2)	Stainless Steel ASTM A 351 Type CF8M
12. Lock Washer (4)	Stainless Steel 304
13. Threaded Pack Gland	Stainless Steel ASTM A 276 Type 316
14. Locking Handle	Stainless Steel ASTM A 240 Type 304
15. Cap Nut (4)	Stainless Steel 304

NOTE: Valves are static grounded by thrust washer and packing.

¹ Threaded Ends: CF8M, Socket Weld Ends: CF3M.

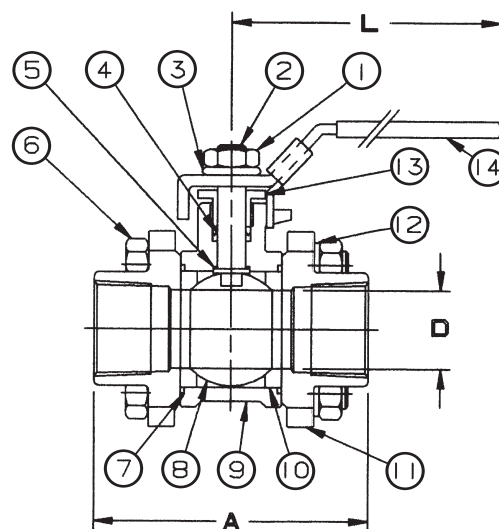


T-595-S6-R-66-LL

Threaded

K-595-S6-R-66-LL

Socket Weld



T/K-595-S6-R-66-LL
NPT x NPT or SOC x SOC

DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions												T or K-595-S6-R-25-LL		Master Ctn. Qty.
		A		D		G		K		H		L				
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	
¼	8	2.36	60	.34	9	—	—	—	—	2.18	55	4.17	106	.97	.44	10
⅜	10	2.36	60	.34	9	—	—	—	—	2.18	55	4.17	106	.97	.44	10
½	15	2.76	70	.56	14	.38	10	.86	22	2.38	60	4.17	106	1.23	.56	10
¾	20	3.03	77	.81	21	.50	13	1.07	27	2.87	73	5.71	145	1.91	.87	10
1	25	3.62	92	1.00	25	.50	13	1.34	34	2.95	75	5.71	145	2.93	1.33	8
1¼	32	4.13	105	1.25	32	.50	13	1.69	43	3.66	93	7.36	187	4.27	1.94	5
1½	40	4.72	110	1.50	38	.50	13	1.93	49	3.94	100	7.36	187	6.01	2.73	5
2	50	5.43	138	1.97	50	.62	16	2.42	61	4.25	108	7.95	202	9.50	4.32	5

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

Stainless Steel Ball Valves

Three-Piece Body • Full Port • Cast ISO Mounting Pad •
Blowout-Proof Stem • 316 SS Trim • Vented Ball

1000 PSI/69 Bar Non-Shock Cold Working Pressure

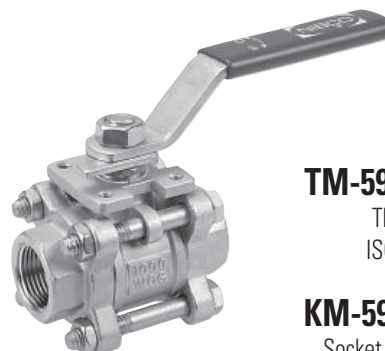
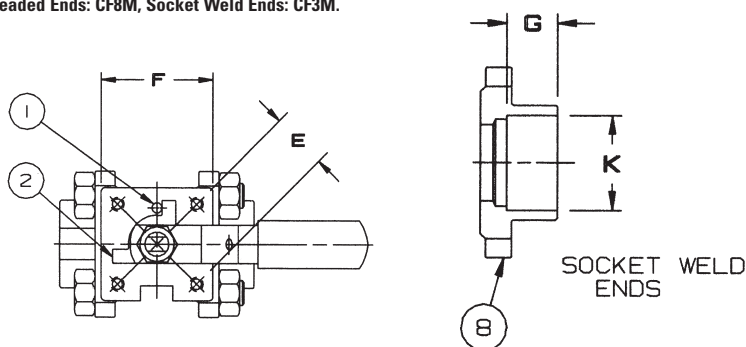
CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Stop Pin	Stainless Steel ASTM A 276 Type 304
2. Stop Plate	Stainless Steel ASTM A 240 Type 304
3. Stem	Stainless Steel ASTM A 276 Type 316
4. Handle Nut	Stainless Steel 304
5. Stem Packing (1 Set)	Carbon Filled PTFE
6. Thrust Washer	Carbon Filled PTFE
7. Cap Bolt	Stainless Steel ASTM A 193 B8 Type 304
8. ¹ Body End (2)	Stainless Steel ASTM A 351 Type CF8M
9. Seat (2)	Reinforced PTFE
10. Body	Stainless Steel ASTM A 351 Type CF8M
11. Ball (Vented)	Stainless Steel ASTM A 351 Type CF8M or ASTM A 276 Type 316
12. Union Seal (2)	Reinforced PTFE
13. Cap Nut (4)	Stainless Steel 304
14. Threaded Pack Gland	Stainless Steel ASTM A 276 Type 316
15. Handle	Stainless Steel ASTM A 240 Type 304

NOTE: Valves are static grounded by thrust washer and packing.

¹ Threaded Ends: CF8M, Socket Weld Ends: CF3M.

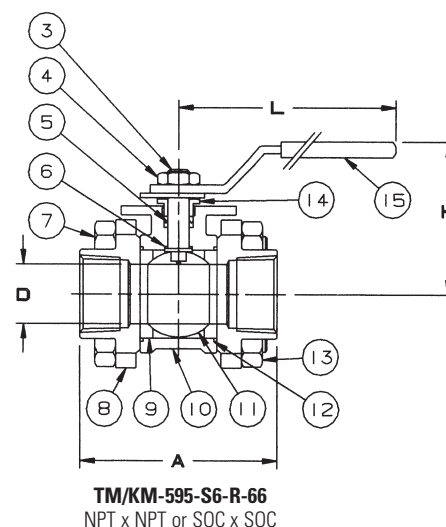


TM-595-S6-R-66

Threaded
ISO Mount

KM-595-S6-R-66

Socket Weld (1/2"-2")
ISO Mount



DIMENSIONS—WEIGHTS—QUANTITIES

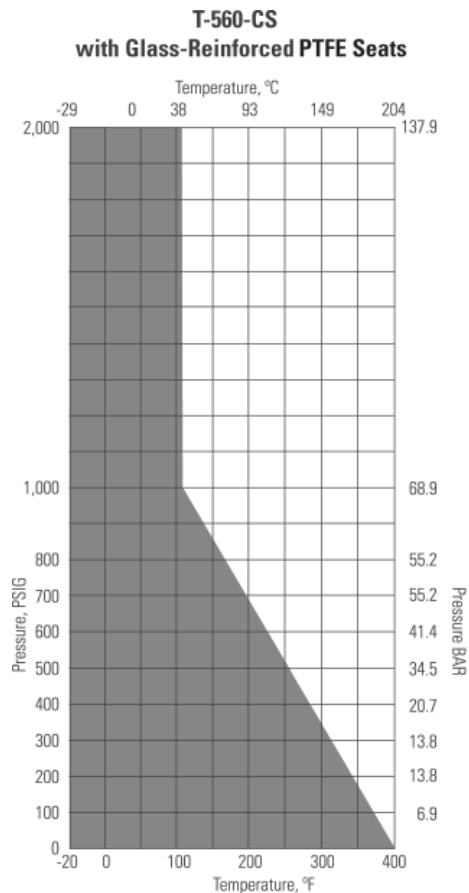
Size		Dimensions										ISO 5211	TM or KM-595-S6-R-66 Lbs. Kg.		Master Ctn. Qty.						
		A		D		E		F		G						K		H		L	
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.				
¼	8	2.49	63	.34	9	.71	18	1.42	36	—	—	—	—	2.36	60	4.17	106	F03	1.00	.45	10
⅜	10	2.49	63	.34	9	.71	18	1.42	36	—	—	—	—	2.36	60	4.17	106	F03	1.00	.45	10
½	15	2.76	70	.56	14	.71	18	1.42	36	.38	10	.87	22	2.36	60	4.17	106	F03	1.20	.54	10
¾	20	3.03	77	.81	21	.83	21	1.65	42	.50	13	1.08	27	2.83	72	5.04	128	F04	1.90	.86	10
1	25	3.63	92	1.00	25	.88	22	1.65	42	.50	13	1.34	34	3.07	78	5.04	128	F04	2.90	1.31	8
1¼	32	4.14	105	1.25	32	.98	25	1.97	50	.50	13	1.69	43	3.35	85	7.83	199	F05	4.30	1.93	5
1½	40	4.73	120	1.50	38	.98	25	1.97	50	.50	13	1.93	49	3.66	93	7.83	199	F05	6.00	2.70	5
2	50	5.43	138	1.97	50	.98	25	1.97	50	.62	16	2.42	61	4.09	104	7.83	199	F05	9.50	4.28	2

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on pages 66 and 67.

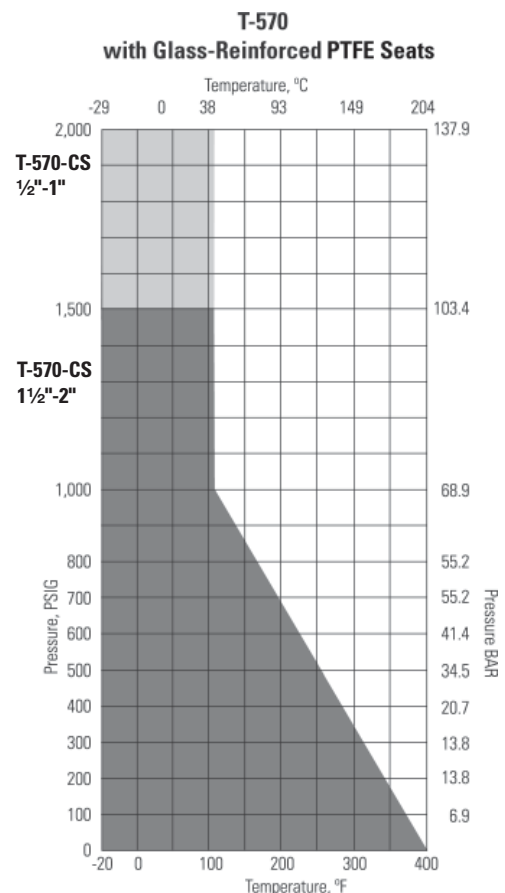
Pressure Temperature Ratings

Carbon and Stainless Steel Ball Valves • Threaded and Socket Weld Ends • One-Piece Carbon/Stainless

(Cast)



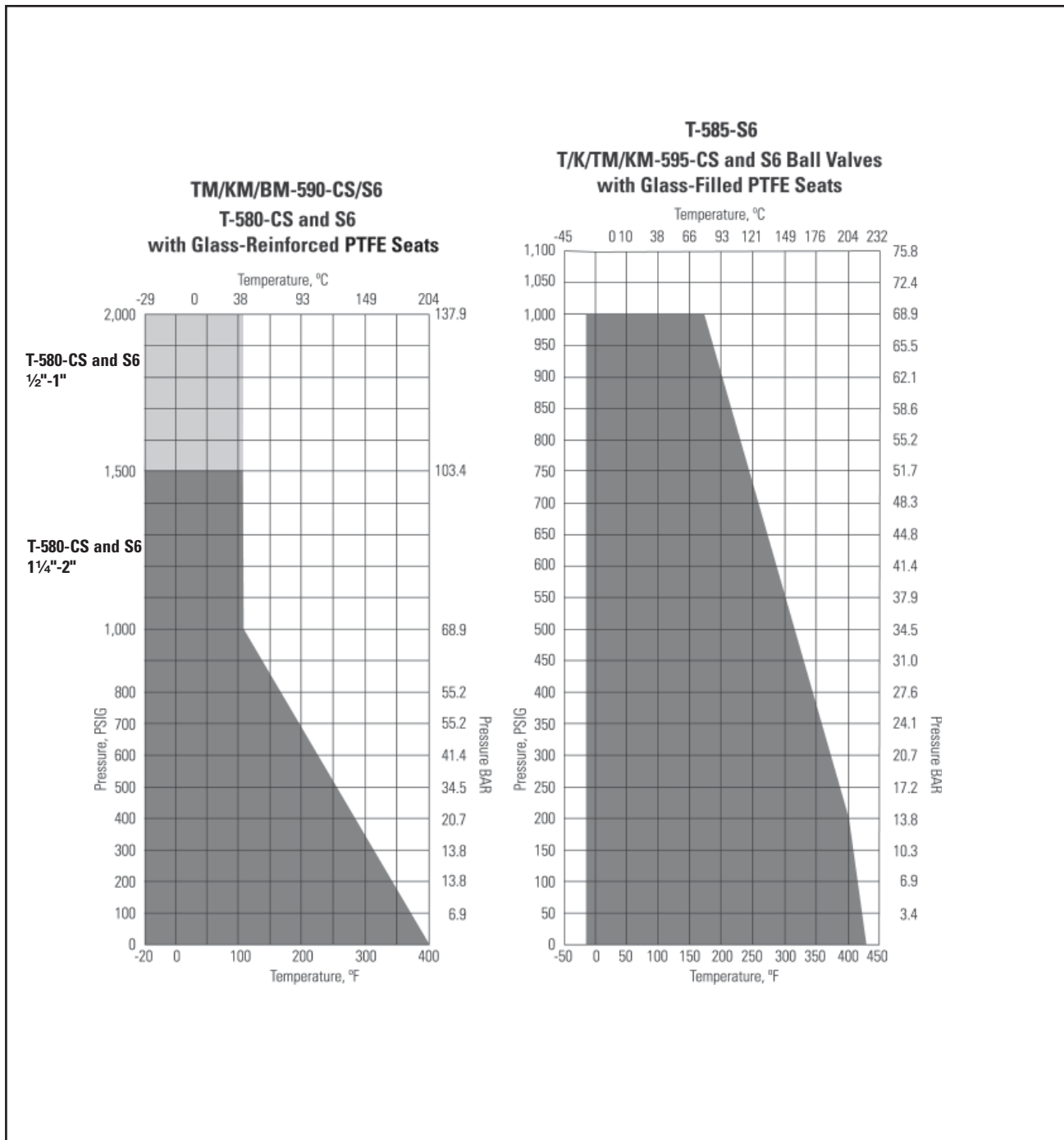
(Bar Stock)



Shaded area refers to recommended seat rating.

Pressure/Temperature Ratings

Carbon and Stainless Steel Ball Valves • Threaded, Socket, and Butt Weld Ends
Two and Three-Piece Carbon/Stainless



Carbon and Stainless Steel Flanged Ball Valves

Unibody and Split-Body Full Bore

Carbon and Stainless Steel Flanged Ball Valve Figure Number Key

F-510-CS-R-66--****

End Connection	Valve Type	Pressure Rating	Bore Size	Body Material	Seat	Trim Material	Service Prep	Operator
F - Flanged	5 - Floating Ball	1 - Class 150 3 - Class 300	0 - Reduced 5 - Full	CS - A 216 WCB Carbon Steel S6 - A 351 CF8M Stainless Steel	R - Reinforced PTFE F - Filled PTFE	66 - Stainless Steel	FS - AP 1607 Fire Safe	LL - Locking Lever OV - Oval LO - Locking Oval GO - Gear Operator

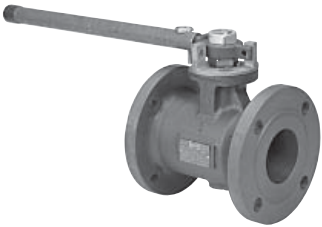
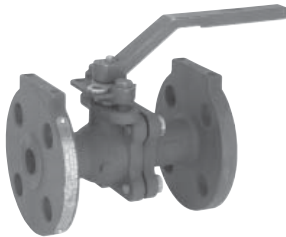
* This key is a guide only and is not intended to infer that every valve combination will be produced.

Packing and seal materials are controlled by service preparation.

Oxygen Service Valves are available, consult factory.

One and Two-Piece Carbon Steel Flanged Ball Valves

Illustrated Index

Unibody Design Detail Split-Body Design Detail Page 70, 71	Unibody Carbon Steel Flanged Ball Valve ANSI Class 150  F-510-CS-R-66-FS Sizes 1/2" thru 12" Flanged Page 72	Unibody Carbon Steel Flanged Ball Valve ANSI Class 300  F-530-CS-R-66-FS Sizes 1/2" thru 10" Flanged Page 73
Split-Body Carbon Steel Flanged Ball Valve ANSI Class 150  F-515-CS-F-66-FS Sizes 1/2" thru 12" Flanged Page 74	Split-Body Carbon Steel Flanged Ball Valve ANSI Class 300  F-535-CS-F-66-FS Sizes 1/2" thru 12" Flanged Page 75	

Flanged Ball Valves

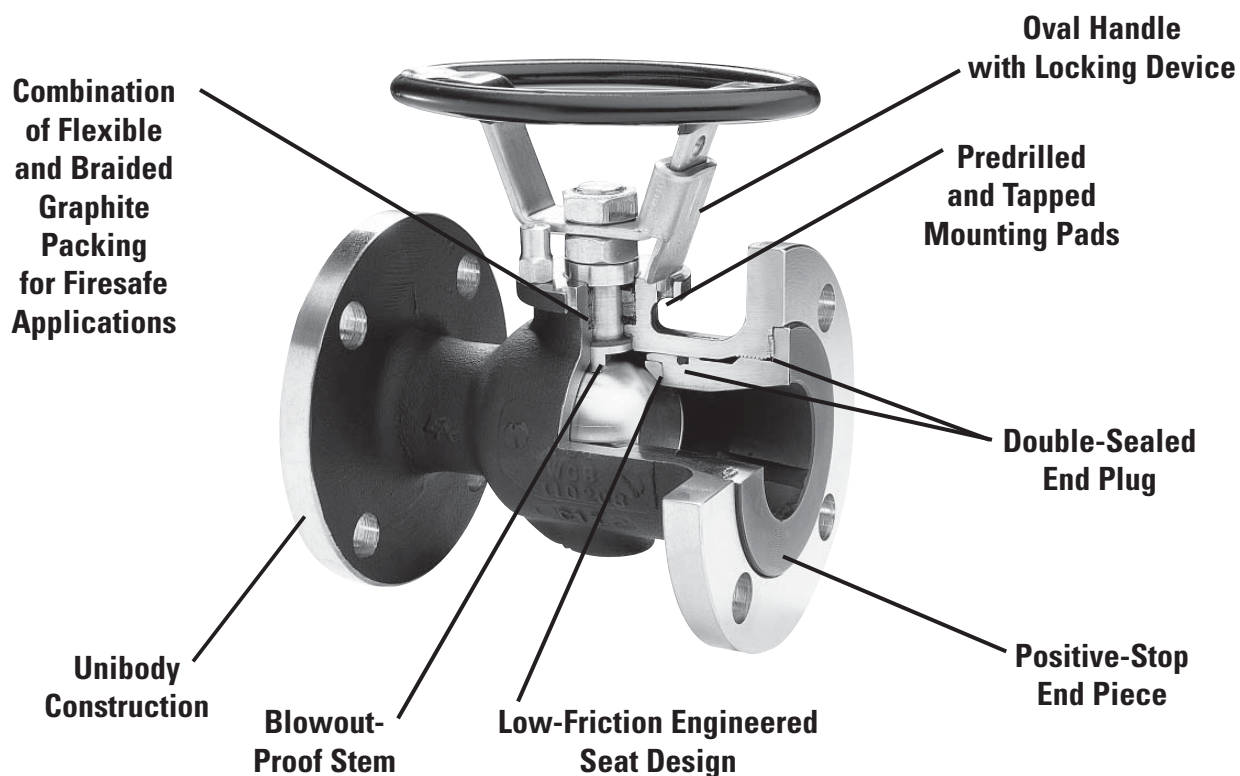
The Positive Solution For All Your Flow Control Applications.

NIBCO flanged ball valves provide precision, performance and value for industrial flow control applications. The unibody and split-body valves are designed and manufactured to meet or exceed ANSI, MSS and API specifications. And both styles offer these outstanding features:

- A pressure-safe stem shoulder design that protects against failure under excess pressure.
- Tight, leakproof engineered seals and bi-directional operation.
- Low-friction engineered seat design for consistent and predictable low-torque operation.
- Pre-drilled and tapped mounting pads that allow universal mounting of actuators.
- Lock-out capability in either open or closed position for added safety.
- Available in a wide range of materials and sizes.

Unibody Flanged Ball Valves

- A unibody design eliminates unnecessary joint faces where leakage may occur, and features a double-sealed end plug.
- Increased packing depth allows adequate V-ring packing to prevent leakage around the stem.
- Large-diameter stem provides extra protection from stresses that cause failure in smaller stems.



Flanged Ball Valves

The Positive Solution For All Your Flow Control Applications.

Split-Body Full-Bore Flanged Ball Valves

- Split-body design allows greater serviceability – disassembles easily for repair or replacement of internal components.
- Full-bore design provides exceptional flow control.
- Multiple V-ring packing, combined with live loading, maintains packing compression under high-cycle and severe service applications.

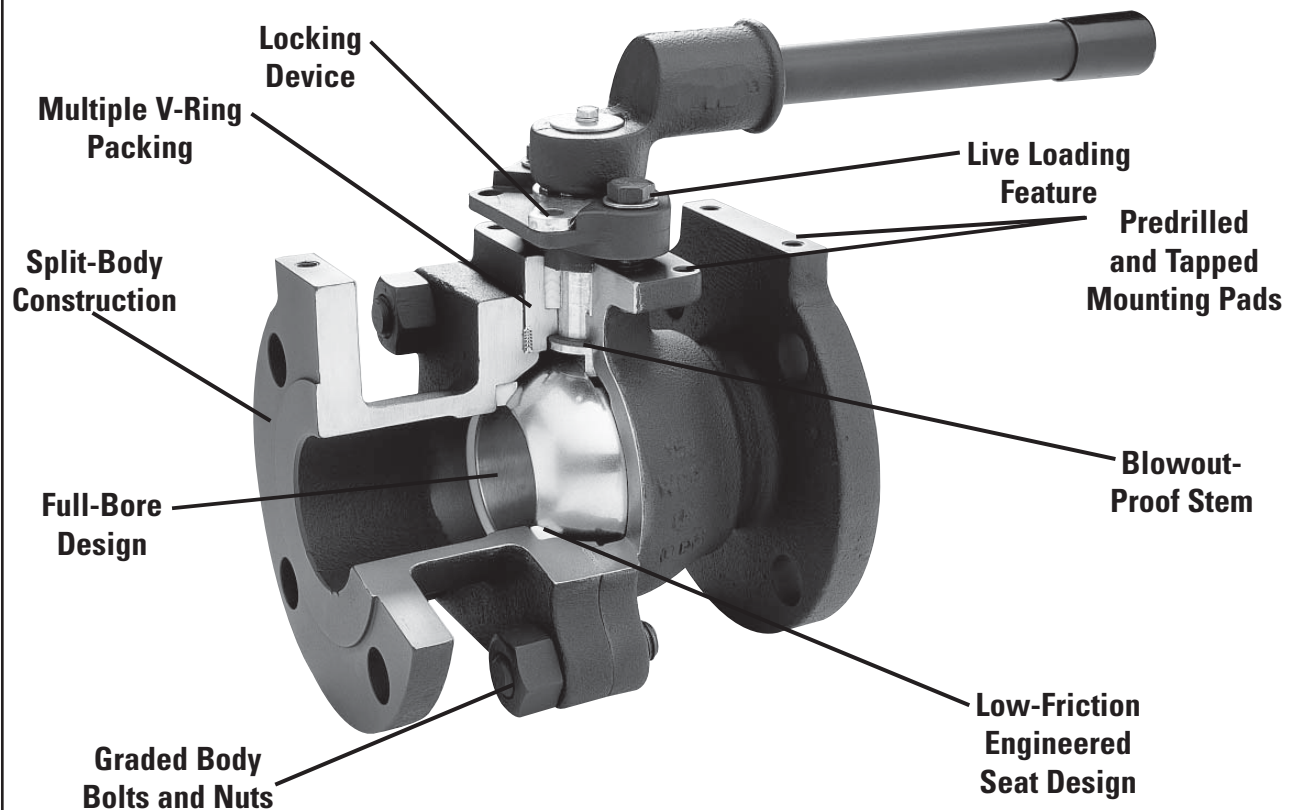
Applicable Standards

NIBCO flanged ball valves conform to ASME/ANSI B16.34, ANSI B16.5, ANSI B16.10, MSS SP 72, API 598, API 607, API 608 and MSS SP 25.

Special Service Applications

Fire Safe – Secondary metal-to-metal seal acts as backup if primary seal is destroyed by fire. Valves ordered for compliance with API 607 will be provided with graphite packing and gaskets.

Oxygen Service – Valves can be provided cleaned and bagged for oxygen or other special services.



Class 150 Carbon Steel Flanged Ball Valves

Unibody Design • Blowout-Proof Stem • 316 SS Trim • Mounting Pad • Fire Safe • Vented Ball

285 PSI/19.7 Bar Non-Shock Cold Working Pressure

CONFORMS TO ASME/ANSI B16.34, B16.5, MSS SP 72,
API 607 FOURTH EDITION, API 608, API 598,
MSS SP 25

MATERIAL LIST

PART	SPECIFICATION
1. ¹ Body and End Piece	Carbon Steel ASTM A 216 Type WCB
2. ¹ Ball (Vented)	Stainless Steel ASTM A 351 Type CF8M
3. Stem	Stainless Steel ASTM A 276 Type 316
4. Seat	Reinforced PTFE
5. Packing Set	Graphite and Braided Graphite
6. Pack Gland	Stainless Steel 304 SS
7. Pack Gland Nut	Carbon Steel Plated
8. O-Ring	Fluorocarbon Encapsulated
9. Gasket	304 SS/Graphite Spiral Wound

¹ Cast specifications shown. Smaller sizes may be manufactured from equivalent bar stock specifications.

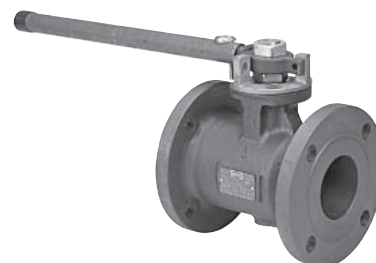
DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions											
	A	B	C	D	E	F						
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.						
1/2 15	4.25 108	2.13 54	.47 12	3.56 90	.50 13	.43 11						
3/4 20	4.63 118	2.31 50	.47 12	3.94 100	.75 19	.63 16						
1 25	5.00 127	2.50 54	.47 12	4.31 109	1.00 25	.81 21						
1 1/2 40	6.50 165	3.25 83	.56 14	5.00 127	1.50 38	1.19 30						
2 50	7.00 178	3.00 76	.62 16	6.00 132	2.00 51	1.50 38						
3 80	8.00 203	4.00 102	.75 19	7.50 191	3.00 76	2.38 60						
4 100	9.00 229	4.25 108	.94 24	9.00 229	4.00 102	3.00 76						
6 150	10.50 267	5.25 133	1.00 25	11.00 279	6.00 152	4.38 111						
8 200	11.50 297	5.50 140	1.13 29	13.50 343	8.00 203	5.68 144						
10 250	13.00 330	6.50 165	1.19 30	16.00 406	10.00 254	7.50 190						
12 300	14.00 356	7.38 187	1.25 32	19.00 483	12.00 305	9.50 241						

Size	Dimensions												F-510-CS-R-66-FS	
	G	H	I	J	K	L	M	N	O	P			Lbs.	Kg.
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.				
1/2 15	6.63 168	2.84 72	3.16 80	2.56 65	.59 15	.25 6	1.68 43	.250-20	1.19 30	1.19 30			3.00	1.36
3/4 20	6.63 168	3.20 81	3.58 91	2.56 65	.76 19	.25 6	1.68 43	.250-20	1.19 30	1.19 30			5.00	2.27
1 25	6.63 168	3.45 88	3.83 97	2.56 65	.93 24	.31 8	1.68 43	.250-20	1.19 30	1.19 30			6.00	2.72
1 1/2 40	9.13 232	4.75 121	5.25 133	3.31 84	1.22 31	.56 14	2.06 52	.250-20	1.46 37	1.46 37			13.00	5.91
2 50	9.13 232	4.88 124	5.38 137	3.31 84	1.36 35	.56 14	2.06 52	.250-20	1.46 37	1.46 37			17.00	7.73
3 80	16.60 422	6.16 156	— — —	— — —	1.97 50	.68 17	3.00 76	.375-16	2.12 54	2.12 54			42.00	19.09
4 100	16.60 422	7.22 183	— — —	— — —	2.16 55	.68 17	3.00 76	.375-16	2.12 54	2.12 54			64.00	29.09
6 150	32.80 833	10.09 256	— — —	— — —	3.59 91	1.13 29	4.50 114	.500-13	3.18 81	3.18 81			126.00	57.27
8 200	— — —	— — —	— — —	— — —	3.43 87	1.13 29	4.50 114	.500-13	3.18 81	3.18 81			198.00	90.00
10 250	— — —	— — —	— — —	— — —	5.56 141	1.75 44	— — —	.625-11	7.24 184	3.66 93			296.00	134.55
12 300	— — —	— — —	— — —	— — —	5.63 143	2.00 31	— — —	.625-11	8.10 205	4.68 119			477.00	216.82

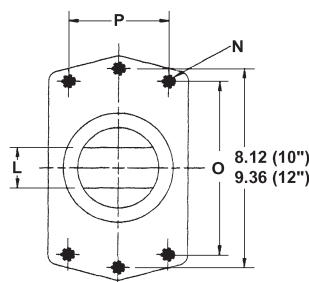
Note: Valves are static grounded by thrust washer.

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 81.



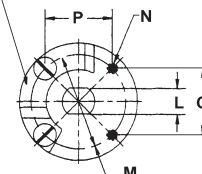
F-510-CS-R-66-FS

Carbon x Stainless
Flanged

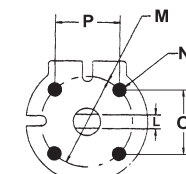


TOP FLANGE FOR
10" & 12"

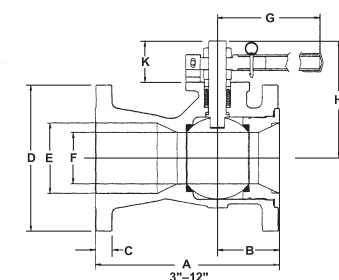
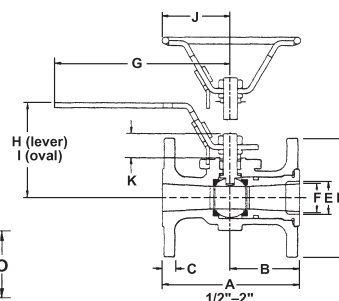
STOP PLATE
REMOVEABLE
FOR ACTUATION



TOP FLANGE FOR
3" THRU 8"



TOP FLANGE FOR
1/2" THRU 2"



Class 300 Carbon Steel Flanged Ball Valves

Unibody Design • Blowout-Proof Stem • 316 SS Trim • Mounting Pad • Fire Safe • Vented Ball

740 PSI/51 Bar Non-Shock Cold Working Pressure

CONFORMS TO ASME/ANSI B16.34, B16.5, MSS SP 72,
API 607 FOURTH EDITION, API 608, API 598,
MSS SP 25

MATERIAL LIST

PART	SPECIFICATION
1. ¹ Body and End Piece	Carbon Steel ASTM A 216 Type WCB
2. ¹ Ball (Vented)	Stainless Steel ASTM A 351 Type CF8M
3. Stem	Stainless Steel ASTM A 276 Type 316
4. Seat	Reinforced PTFE
5. Packing Set	Graphite and Braided Graphite
6. Pack Gland	Stainless Steel 304 SS
7. Pack Gland Nut	Carbon Steel Plated
8. O-Ring	Fluorocarbon Encapsulated
9. Gasket	304 SS/Graphite Spiral Wound

¹ Cast specifications shown. Smaller sizes may be manufactured from equivalent bar stock specifications.

DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions											
		A	B	C	D	E	F						
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.
1/2	15	5.50	140	2.13	54	.59	15	3.81	97	.50	13	.43	11
3/4	20	6.00	152	2.31	59	.65	17	4.68	119	.75	19	.63	16
1	25	6.50	165	2.50	64	.71	18	4.94	125	1.00	25	.81	21
1 1/2	40	7.50	191	3.25	83	.81	21	6.13	156	1.50	33	1.19	30
2	50	8.50	216	3.00	76	.87	22	6.50	165	2.00	51	1.50	38
3	80	11.13	283	4.00	102	1.13	29	8.25	210	3.00	76	2.38	60
4	100	12.00	305	4.25	103	1.25	32	10.00	254	4.00	102	3.00	76
6	150	15.88	403	5.25	133	1.44	37	12.50	318	6.00	152	4.38	111
8	200	16.50	419	5.50	140	1.63	41	15.00	381	8.00	203	5.68	144
10	250	18.00	457	6.50	165	1.88	48	17.50	443	10.00	254	7.50	190

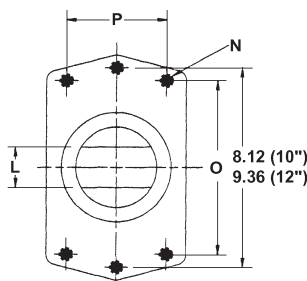
Size		Dimensions																		F-530-CS-R-66-FS		
		G		H		I		J		K		L		M		N		O				P
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	N	In.	mm.	In.	mm.	Lbs.	Kg.
½	15	6.63	168	2.84	72	3.16	80	2.56	65	.59	15	.25	6	1.68	43	.250-20	1.19	30	1.19	30	5.00	2.27
¾	20	6.63	168	3.20	81	3.58	91	2.56	65	.76	19	.25	6	1.68	43	.250-20	1.19	30	1.19	30	8.00	3.64
1	25	6.63	168	3.45	88	3.83	97	2.56	65	.93	24	.31	8	1.68	43	.250-20	1.19	30	1.19	30	10.00	4.55
1½	40	9.13	232	4.75	121	5.25	133	3.31	84	1.22	31	.56	14	2.06	52	.250-20	1.46	37	1.46	37	20.00	9.09
2	50	9.13	232	4.88	124	5.38	137	3.31	84	1.36	35	.56	14	2.06	52	.250-20	1.46	37	1.46	37	23.00	10.45
3	80	16.60	422	6.16	156	—	—	—	—	1.97	50	.68	17	3.00	76	.375-16	2.12	54	2.12	54	54.00	24.55
4	100	16.60	422	7.22	183	—	—	—	—	2.16	55	.68	17	3.00	76	.375-16	2.12	54	2.12	54	91.50	41.59
6	150	32.80	833	10.09	256	—	—	—	—	3.59	91	1.13	29	4.50	114	.500-13	3.18	81	3.18	81	181.50	82.50
8	200	—	—	—	—	—	—	—	—	3.43	87	1.13	29	4.50	114	.500-13	3.18	81	3.18	81	257.00	116.82
10	250	—	—	—	—	—	—	—	—	5.56	141	1.75	44	—	—	.625-11	7.24	184	3.66	93	429.00	195.00

Note: Valves are static grounded by thrust washer.



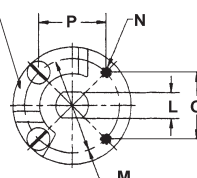
F-530-CS-R-66-FS

Carbon x Stainless
Flanged

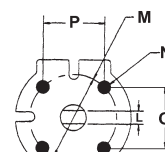


TOP FLANGE FOR
10" & 12"

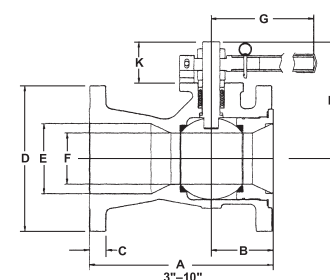
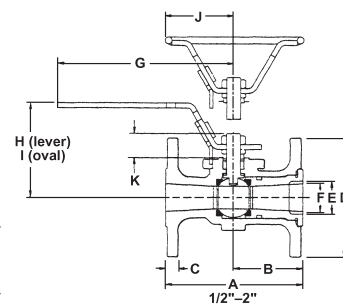
STOP PLATE
REMOVEABLE
FOR ACTUATION



TOP FLANGE FOR
3" THRU 8"



TOP FLANGE FOR
1/2" THRU 2"



◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 81.

Class 150 Carbon Steel Flanged Ball Valves

Split-Body, Full-Bore Design • Blowout-Proof Stem • 316 SS Trim •
Multiple V-Ring Packing • Mounting Pad • Fire Safe • Vented Ball

285 PSI/19.7 Bar Non-Shock Cold Working Pressure

CONFORMS TO ASME/ANSI B16.34, B16.5, MSS SP 72,
API 607 FOURTH EDITION, API 608, API 598,
MSS SP 25

MATERIAL LIST

PART	SPECIFICATION
1. ¹ Body and End Piece	Carbon Steel ASTM A 216 Type WCB
2. ¹ Ball (Vented)	Stainless Steel ASTM A 351 Type CF8M
3. Stem	Stainless Steel ASTM A 276 Type 316
4. Seat	Carbon Filled PTFE
5. Packing Set	Graphite and Braided Graphite
6. Pack Gland	Carbon Steel Plated
7. Gasket	304 SS/Graphite Spiral Wound
8. Body Stud	Carbon Steel A 193 Grade B7M
9. Heavy Hex Body Nut	Carbon Steel A 194 Grade 2HM
10. Belleville Washer	Stainless Steel

¹Cast specifications shown. Smaller sizes may be manufactured from equivalent bar stock specifications.

DIMENSIONS—WEIGHTS—QUANTITIES

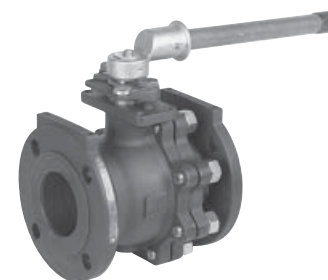
		Dimensions									
Size		A	B	C	D	E					
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.
1/2	15	4.25	108	2.52	64	.44	11	3.50	89	.59	15
3/4	20	4.63	118	2.74	70	.50	13	3.88	99	.78	20
1	25	5.00	127	2.80	71	.56	14	4.25	109	.98	25
1 1/2	40	6.50	165	3.54	90	.56	14	5.00	127	1.57	40
2	50	7.00	178	3.99	101	.62	16	6.00	152	2.00	51
3	80	8.00	203	4.19	106	.75	19	7.50	190	3.00	76
4	100	9.00	229	4.50	114	.94	24	9.00	229	4.00	102
6	150	15.50	394	8.00	203	1.00	25	11.00	279	6.00	152
8	200	18.00	457	9.00	229	1.12	28	13.50	343	8.00	203
10	250	21.00	533	10.50	267	1.19	30	16.00	406	10.08	256
12	300	24.00	670	12.00	305	1.25	32	19.00	483	12.09	307

		Dimensions													
Size		G	H	J	K	L	N	O	*P	Q	R			F-515-CS-F-66-FS	
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.
1/2	15	5.12	130	3.52	89	.47	12	1.00	25	.19	5	.250-20	—	4.00	1.82
3/4	20	6.10	155	4.13	105	.69	18	1.26	32	.31	8	.250-20	—	6.00	2.72
1	25	6.10	155	4.25	109	.63	17	1.26	32	.31	8	.312-18	—	8.00	3.64
1 1/2	40	9.06	230	4.97	126	1.50	38	1.68	43	.47	12	.312-18	—	17.00	7.73
2	50	9.03	230	5.66	144	1.81	46	1.66	42	.63	16	.312-18	—	26.00	11.82
3	80	12.63	321	7.38	187	2.65	67	2.13	54	.78	20	.375-16	4.13	49.00	22.27
4	100	15.75	400	8.09	205	2.59	66	2.13	54	.78	20	.437-14	4.13	75.00	34.09
6	150	31.50	800	10.65	271	3.68	93	2.58	66	1.10	28	.437-14	4.96	171.00	77.73
8	200	—	—	—	—	4.53	115	2.53	65	1.17	30	.500-13	4.96	322.00	146.36
10	250	—	—	—	—	5.83	148	3.01	76	1.57	40	.625-11	5.90	483.00	219.55
12	300	—	—	—	—	5.69	145	3.01	76	1.57	40	.625-11	5.90	659.00	298.55

*Not drilled and tapped on 1/2"-2".

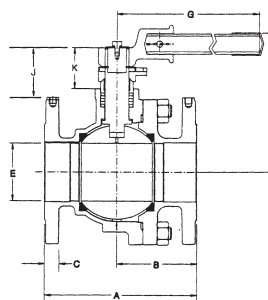
Note: Valves are static grounded by thrust washer.

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 81.

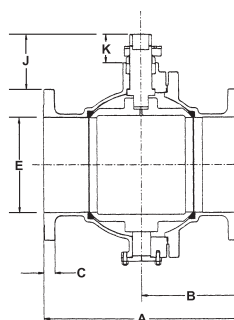
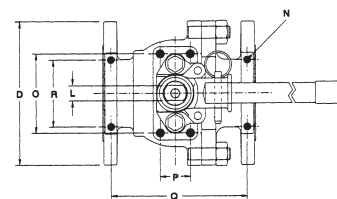


F-515-CS-F-66-FS

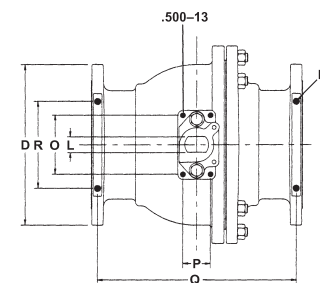
Carbon x Stainless
Flanged



1/2"-8"



10"-12"



Class 300 Carbon Steel Flanged Ball Valves

Split-Body, Full-Bore Design • Blowout-Proof Stem • 316 SS Trim •
Multiple V-Ring Packing • Mounting Pad • Fire Safe • Vented Ball

740 PSI/51 Bar Non-Shock Cold Working Pressure

CONFORMS TO ASME/ANSI B16.34, B16.5, MSS SP 72,
API 607 FOURTH EDITION, API 608, API 598,
MSS SP 25

MATERIAL LIST

PART	SPECIFICATION
1. ¹ Body and End Piece	Carbon Steel ASTM A 216 Type WCB
2. ¹ Ball (Vented)	Stainless Steel ASTM A 351 Type CF8M
3. Stem	Stainless Steel ASTM A 276 Type 316
4. Seat	Carbon Filled PTFE
5. Packing Set	Graphite and Braided Graphite
6. Pack Gland	Carbon Steel Plated
7. Gasket	304 SS/Graphite Spiral Wound
8. Body Stud	Carbon Steel A 193 Grade B7M
9. Heavy Hex Body Nut	Carbon Steel A 194 Grade 2HM
10. Belleville Washer	Stainless Steel

¹ Cast specifications shown. Smaller sizes may be manufactured from equivalent bar stock specifications.

DIMENSIONS—WEIGHTS—QUANTITIES

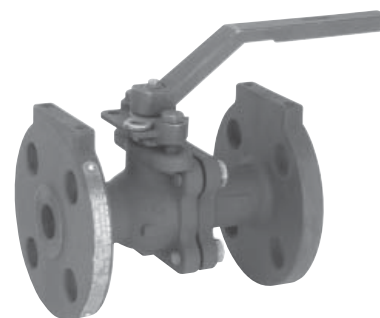
		Dimensions									
Size		A	B	C	D	E					
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.
1/2	15	5.50	140	3.14	80	.56	14	3.75	95	.59	15
3/4	20	6.00	152	3.43	87	.62	16	4.63	118	.78	20
1	25	6.50	165	3.55	90	.69	18	4.88	124	.98	25
1 1/2	40	7.50	191	4.13	105	.81	21	6.13	156	1.57	40
2	50	8.50	216	4.74	120	.88	22	6.50	165	2.00	51
3	80	11.12	253	5.56	141	1.12	28	8.25	210	3.00	76
4	100	12.00	305	6.01	156	1.25	32	10.00	254	4.00	102
6	150	15.87	403	7.96	202	1.44	37	12.50	318	6.00	152
8	200	19.75	502	9.87	251	1.62	41	15.00	381	8.00	203
10	250	22.38	569	11.19	234	1.88	48	17.50	445	10.08	256
12	300	25.50	649	12.75	324	2.00	51	20.50	521	12.09	307

		Dimensions													
Size		G	H	J	K	L		O	*P	Q	R			F-535-CS-F-66-FS	
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.
1/2	15	5.12	130	3.52	89	.34	9	1.00	25	.19	5	.250-20	—	4.85	7.00
3/4	20	6.10	155	4.13	105	.43	11	1.26	32	.31	8	.250-20	—	5.28	9.00
1	25	6.10	155	4.25	109	.45	11	1.26	32	.31	8	.312-18	—	5.69	11.00
1 1/2	40	9.06	230	4.97	126	.92	23	1.68	43	.47	12	.312-18	—	6.56	24.50
2	50	9.06	230	5.66	144	1.58	40	1.66	42	.63	16	.312-18	—	7.50	33.00
3	80	15.75	400	7.38	187	2.26	57	2.13	54	.78	20	.375-16	4.13	9.94	72.00
4	100	15.75	400	8.09	205	2.10	53	2.13	54	.78	20	.437-14	4.13	10.69	116.00
6	150	—	—	—	—	2.93	74	2.58	66	1.10	28	.437-14	4.96	14.38	228.00
8	200	—	—	—	—	4.43	113	2.53	65	1.17	30	.500-13	4.96	18.06	352.00
10	250	—	—	—	—	5.08	129	3.01	76	1.57	40	.625-11	5.90	20.43	560.00
12	300	—	—	—	—	4.97	126	3.01	76	1.57	40	.625-11	5.90	23.44	765.00

*Not drilled and tapped on 1/2"-2".

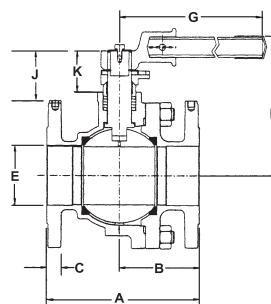
Note: Valves are static grounded by thrust washer.

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 81.

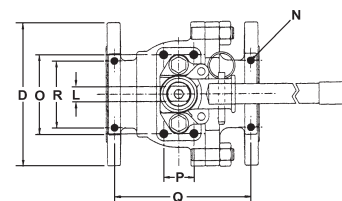


F-535-CS-F-66-FS

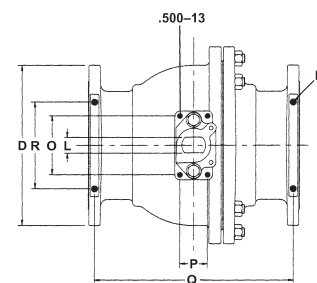
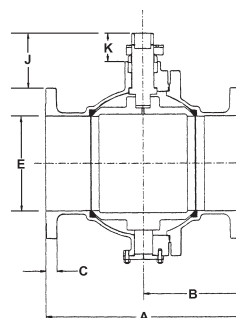
Carbon x Stainless
Flanged



1/2"-8"



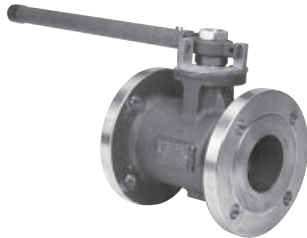
10"-12"



One and Two-Piece Stainless Steel Ball Valves

Illustrated Index

Unibody Stainless Steel Flanged Ball Valve
ANSI Class 150



F-510-S6-R-66-FS
Sizes ½" thru 12"
Flanged
Page 77

Unibody Stainless Steel Flanged Ball Valve
ANSI Class 300



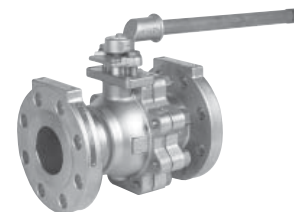
F-530-S6-R-66-FS
Sizes ½" thru 12"
Flanged
Page 78

Split-Body Stainless Steel Flanged Ball Valve
ANSI Class 150



F-515-S6-F-66-FS
Sizes ½" thru 12"
Flanged
Page 79

Split-Body Stainless Steel Flanged Ball Valve
ANSI Class 300



F-535-S6-F-66-FS
Sizes ½" thru 12"
Flanged
Page 80

**Pressure
Temperature
Chart**

Page 81

Class 150 Stainless Steel Flanged Ball Valves

Unibody Design • Blowout-Proof Stem • 316 SS Trim • Mounting Pad • Fire Safe • Vented Ball

275 PSI/19 Bar Non-Shock Cold Working Pressure

CONFORMS TO ASME/ANSI B16.34, B16.5, MSS SP 72,
API 607 FOURTH EDITION, API 608, API 598,
MSS SP 25

MATERIAL LIST

PART	SPECIFICATION
1. ¹ Body and End Piece	Stainless Steel ASTM A 351 Type CF8M
2. ¹ Ball (Vented)	Stainless Steel ASTM A 351 Type CF8M
3. Stem	Stainless Steel ASTM A 276 Type 316
4. Seat	Reinforced PTFE
5. Packing Set	Graphite and Braided Graphite
6. Pack Gland	Stainless Steel 304 SS
7. Pack Gland Nut	Stainless Steel
8. O-Ring	Fluorocarbon Encapsulated
9. Gasket	304 SS/Graphite Spiral Wound

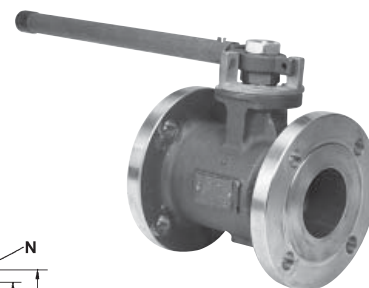
¹ Cast specifications shown. Smaller sizes may be manufactured from equivalent bar stock specifications.

DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions											
		A	B	C	D	E	F						
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.
1/2	15	4.25	108	2.13	54	.47	12	3.56	90	.50	13	.43	11
3/4	20	4.63	118	2.31	50	.47	12	3.94	100	.75	19	.63	16
1	25	5.00	127	2.50	54	.47	12	4.31	109	1.00	25	.81	21
1 1/2	40	6.50	165	3.25	83	.56	14	5.00	127	1.50	38	1.19	30
2	50	7.00	178	3.00	76	.62	16	6.00	132	2.00	51	1.50	38
3	80	8.00	203	4.00	102	.75	19	7.50	191	3.00	76	2.38	60
4	100	9.00	229	4.25	108	.94	24	9.00	229	4.00	102	3.00	76
6	150	10.50	267	5.25	133	1.00	25	11.00	279	6.00	152	4.38	111
8	200	11.50	297	5.50	140	1.13	29	13.50	343	8.00	203	5.68	144
10	250	13.00	330	6.50	165	1.19	30	16.00	406	10.00	254	7.50	190
12	300	14.00	356	7.38	187	1.25	32	19.00	483	12.00	305	9.50	241

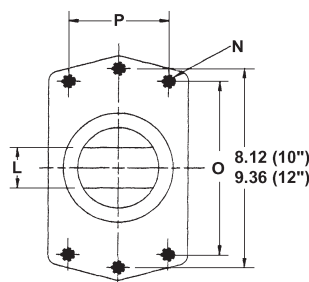
Size		Dimensions																		F-510-S6-R-66-FS		
		G		H		I		J		K		L		M		N		O				P
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	N	In.	mm.	In.	mm.	Lbs.	Kg.
½	15	6.63	168	2.84	72	3.16	80	2.56	65	.59	15	.25	6	1.68	43	.250-20	1.19	30	1.19	30	3.00	1.36
¾	20	6.63	168	3.20	81	3.58	91	2.56	65	.76	19	.25	6	1.68	43	.250-20	1.19	30	1.19	30	5.00	2.27
1	25	6.63	168	3.45	88	3.83	97	2.56	65	.93	24	.31	8	1.68	43	.250-20	1.19	30	1.19	30	6.00	2.72
1½	40	9.13	232	4.75	121	5.25	133	3.31	84	1.22	31	.56	14	2.06	52	.250-20	1.46	37	1.46	37	13.00	5.91
2	50	9.13	232	4.88	124	5.38	137	3.31	84	1.36	35	.56	14	2.06	52	.250-20	1.46	37	1.46	37	17.00	7.73
3	80	16.60	422	6.16	156	—	—	—	—	1.97	50	.68	17	3.00	76	.375-16	2.12	54	2.12	54	42.00	19.09
4	100	16.60	422	7.22	183	—	—	—	—	2.16	55	.68	17	3.00	76	.375-16	2.12	54	2.12	54	64.00	29.09
6	150	32.80	833	10.09	256	—	—	—	—	3.59	91	1.13	29	4.50	114	.500-13	3.18	81	3.18	81	126.00	57.27
8	200	—	—	—	—	—	—	—	—	3.43	87	1.13	29	4.50	114	.500-13	3.18	81	3.18	81	198.00	90.00
10	250	—	—	—	—	—	—	—	—	5.56	141	1.75	44	—	—	.625-11	7.24	184	3.66	93	296.00	134.55
12	300	—	—	—	—	—	—	—	—	5.63	143	2.00	31	—	—	.625-11	8.10	205	4.68	119	477.00	216.82

Note: Valves are static grounded by thrust washer.



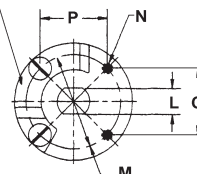
F-510-S6-R-66-FS

Stainless x Stainless
Flanged

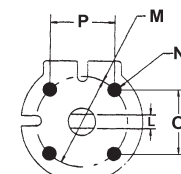


TOP FLANGE FOR
10" & 12"

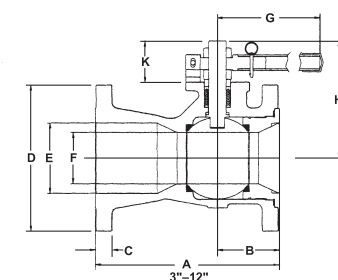
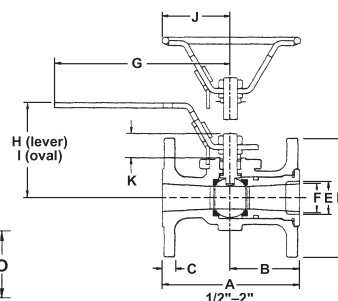
STOP PLATE
REMOVEABLE
FOR ACTUATION



TOP FLANGE FOR
3" THRU 8"



TOP FLANGE FOR
1/2" THRU 2"



◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 81.

Class 300 Stainless Steel Flanged Ball Valves

Unibody Design • Blowout-Proof Stem • 316 SS Trim • Mounting Pad • Fire Safe • Vented Ball

720 PSI/50 Bar Non-Shock Cold Working Pressure

CONFORMS TO ASME/ANSI B16.34, B16.5, MSS SP 72,
API 607 FOURTH EDITION, API 608, API 598,
MSS SP 25

MATERIAL LIST

PART	SPECIFICATION
1. ¹ Body and End Piece	Stainless Steel ASTM A 351 Type CF8M
2. ¹ Ball (Vented)	Stainless Steel ASTM A 351 Type CF8M
3. Stem	Stainless Steel ASTM A 276 Type 316
4. Seat	Reinforced PTFE
5. Packing Set	Graphite and Braided Graphite
6. Pack Gland	Stainless Steel 304 SS
7. Pack Gland Nut	Stainless Steel
8. O-Ring	Fluorocarbon Encapsulated
9. Gasket	304 SS/Graphite Spiral Wound

¹ Cast specifications shown. Smaller sizes may be manufactured from equivalent bar stock specifications.

DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions											
		A		B		C		D		E		F	
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.
½	15	5.50	140	2.13	54	.59	15	3.81	97	.50	13	.43	11
¾	20	6.00	152	2.31	59	.65	17	4.68	119	.75	19	.63	16
1	25	6.50	165	2.50	64	.71	18	4.94	125	1.00	25	.81	21
1½	40	7.50	191	3.25	83	.81	21	6.13	156	1.50	33	1.19	30
2	50	8.50	216	3.00	76	.87	22	6.50	165	2.00	51	1.50	38
3	80	11.13	283	4.00	102	1.13	29	8.25	210	3.00	76	2.38	60
4	100	12.00	305	4.25	108	1.25	32	10.00	254	4.00	102	3.00	76
6	150	15.88	403	5.25	133	1.44	37	12.50	318	6.00	152	4.38	111
8	200	16.50	419	5.50	140	1.63	41	15.00	381	8.00	203	5.68	144
10	250	18.00	457	6.50	165	1.88	48	17.50	443	10.00	254	7.50	190

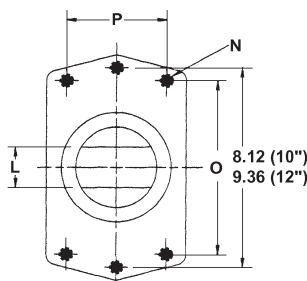
Size		Dimensions																		F-530-S6-R-66-FS		
		G		H		I		J		K		L		M		N	O		P			
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.		In.	mm.	In.	mm.	Lbs.	Kg.
½	15	6.63	168	2.84	72	3.16	80	2.56	65	.59	15	.25	6	1.68	43	.250-20	1.19	30	1.19	30	5.00	2.27
¾	20	6.63	168	3.20	81	3.58	91	2.56	65	.76	19	.25	6	1.68	43	.250-20	1.19	30	1.19	30	8.00	3.64
1	25	6.63	168	3.45	88	3.83	97	2.56	65	.93	24	.31	8	1.68	43	.250-20	1.19	30	1.19	30	10.00	4.55
1½	40	9.13	232	4.75	121	5.25	133	3.31	84	1.22	31	.56	14	2.06	52	.250-20	1.46	37	1.46	37	20.00	9.09
2	50	9.13	232	4.88	124	5.38	137	3.31	84	1.36	35	.56	14	2.06	52	.250-20	1.46	37	1.46	37	23.00	10.45
3	80	16.60	422	6.16	156	—	—	—	—	1.97	50	.68	17	3.00	76	.375-16	2.12	54	2.12	54	54.00	24.55
4	100	16.60	422	7.22	183	—	—	—	—	2.16	55	.68	17	3.00	76	.375-16	2.12	54	2.12	54	91.50	41.59
6	150	—	—	—	—	—	—	—	—	3.59	91	1.13	29	4.50	114	.500-13	3.18	81	3.18	81	181.50	82.50
8	200	—	—	—	—	—	—	—	—	3.43	87	1.13	29	4.50	114	.500-13	3.18	81	3.18	81	257.00	116.82
10	250	—	—	—	—	—	—	—	—	5.56	141	1.75	44	—	—	.625-11	7.24	184	3.66	93	429.00	195.00

Note: Valves are static grounded by thrust washer.



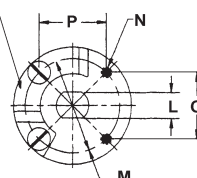
F-530-S6-R-66-FS

Stainless x Stainless
Flanged

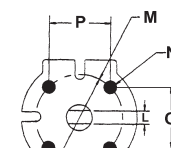


TOP FLANGE FOR
10" & 12"

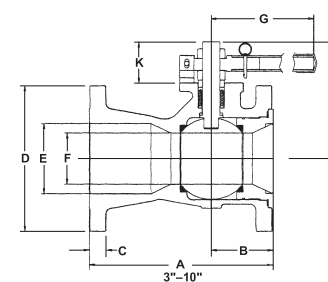
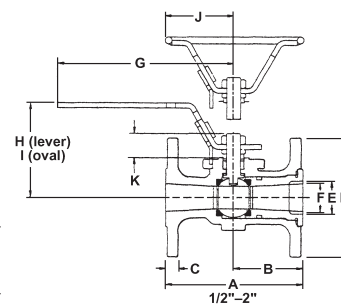
STOP PLATE
REMOVEABLE
FOR ACTUATION



TOP FLANGE FOR
3" THRU 8"



TOP FLANGE FOR
1/2" THRU 2"



◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 81.

Class 150 Stainless Steel Flanged Ball Valves

Split-Body, Full-Bore Design • Blowout-Proof Stem • 316 SS Trim •
Multiple V-Ring Packing • Mounting Pad • Fire Safe • Vented Ball

275 PSI/19 Bar Non-Shock Cold Working Pressure

CONFORMS TO ASME/ANSI B16.34, B16.5, MSS SP 72,
API 607 FOURTH EDITION, API 608, API 598,
MSS SP 25

MATERIAL LIST

PART	SPECIFICATION
1. Body and End Piece	Stainless Steel ASTM A 351 Type CF8M
2. ¹ Ball (Vented)	Stainless Steel ASTM A 351 Type CF8M
3. Stem	Stainless Steel ASTM A 276 Type 316
4. Seat	Reinforced PTFE
5. Packing Set	Graphite and Braided Graphite
6. Pack Gland	Stainless Steel ASTM A 276 Type 316
7. Gasket	304 SS/Graphite Spiral Wound
8. Body Stud	Stainless Steel ASTM A 193 Grade B8 SS
9. Heavy Hex Body Nut	Stainless Steel ASTM A 194 Grade 8 SS
10. Belleville Washer	Stainless Steel

¹ Cast specifications shown. Smaller sizes may be manufactured from equivalent bar stock specifications.

DIMENSIONS—WEIGHTS—QUANTITIES

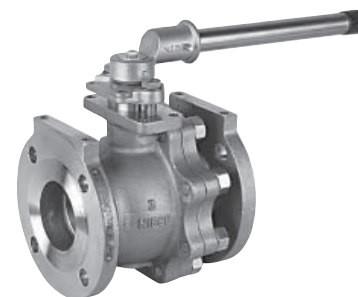
		Dimensions									
Size		A	B	C	D	E					
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.
1/2	15	4.25	108	2.52	64	.44	11	3.50	89	.59	15
3/4	20	4.63	118	2.74	70	.50	13	3.88	99	.78	20
1	25	5.00	127	2.80	71	.56	14	4.25	108	.98	25
1 1/2	40	6.50	165	3.54	90	.56	14	5.00	127	1.57	40
2	50	7.00	178	3.99	101	.62	16	6.00	152	2.00	51
3	80	8.00	203	4.19	106	.75	19	7.50	190	3.00	76
4	100	9.00	229	4.50	114	.94	24	9.00	229	4.00	102
6	150	15.50	394	8.00	203	1.00	25	11.00	279	6.00	152
8	200	18.00	457	9.00	229	1.12	28	13.50	343	8.00	203
10	250	21.00	533	10.50	267	1.19	30	16.00	406	10.08	256
12	300	24.00	670	12.00	305	1.25	32	19.00	483	12.09	307

		Dimensions													
Size		G	H	J	K	L	N	O	*P	Q	R			F-515-S6-F-66-FS	
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.
1/2	15	5.12	130	3.52	89	.47	12	1.00	25	.19	5	.250-20	—	4.00	1.82
3/4	20	6.10	155	4.13	105	.69	18	1.26	32	.31	8	.250-20	—	6.00	2.72
1	25	6.10	155	4.25	108	.63	17	1.26	32	.31	8	.312-18	—	8.00	3.64
1 1/2	40	9.06	230	4.97	126	1.50	38	1.68	43	.47	12	.312-18	—	17.00	7.73
2	50	9.06	230	5.66	144	1.81	46	1.66	42	.63	16	.312-18	—	26.00	11.82
3	80	12.63	321	7.38	187	2.65	67	2.13	54	.78	20	.375-16	4.13	49.00	22.27
4	100	15.75	400	8.09	205	2.59	66	2.13	54	.78	20	.437-14	4.13	75.00	34.09
6	150	31.50	800	10.65	271	3.68	93	2.58	66	1.10	28	.500-13	4.96	171.00	77.73
8	200	—	—	—	—	4.53	115	2.53	65	1.17	30	.500-13	4.96	322.00	146.36
10	250	—	—	—	—	5.83	148	3.01	76	1.57	40	.625-11	5.90	483.00	219.55
12	300	—	—	—	—	5.69	145	3.01	76	1.57	40	.625-11	5.90	659.00	298.55

*Not drilled and tapped on 1/2"-2".

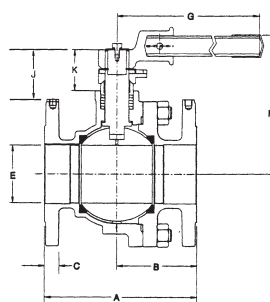
Note: Valves are static grounded by thrust washer.

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 81.

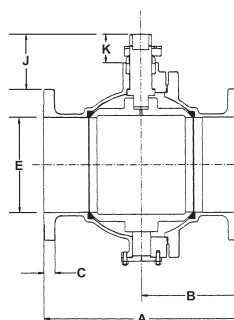
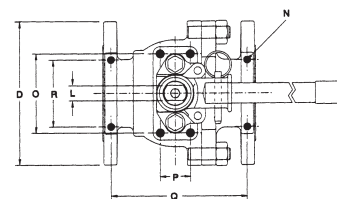


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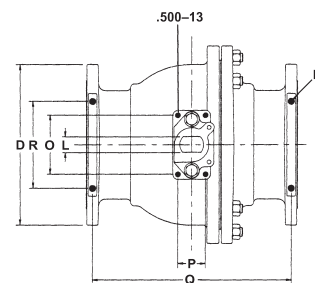
Stainless x Stainless
Flanged



1/2"-8"



10"-12"



Class 300 Stainless Steel Flanged Ball Valves

Split-Body, Full-Bore Design • Blowout-Proof Stem • 316 SS Trim •
Multiple V-Ring Packing • Mounting Pad • Fire Safe • Vented Ball

720 PSI/50 Bar Non-Shock Cold Working Pressure

CONFORMS TO ASME/ANSI B16.34, B16.5, MSS SP 72,
API 607 FOURTH EDITION, API 608, API 598,
MSS SP 25

MATERIAL LIST

PART	SPECIFICATION
1. Body and End Piece	Stainless Steel ASTM A 351 Type CF8M
2. ¹ Ball (Vented)	Stainless Steel ASTM A 351 Type CF8M
3. Stem	Stainless Steel ASTM A 276 Type 316
4. Seat	Carbon Filled PTFE
5. Packing Set	Graphite and Braided Graphite
6. Pack Gland	Stainless Steel ASTM A 276 Type 316
7. Gasket	304 SS/Graphite Spiral Wound
8. Body Stud	Stainless Steel ASTM A 193 Grade B8 SS
9. Heavy Hex Body Nut	Stainless Steel ASTM A 194 Grade 8 SS
10. Belleville Washer	Stainless Steel

¹ Cast specifications shown. Smaller sizes may be manufactured from equivalent bar stock specifications.

DIMENSIONS—WEIGHTS—QUANTITIES

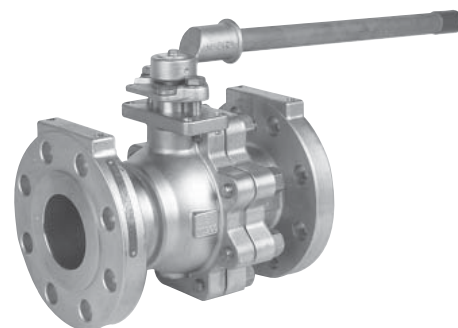
Size	Dimensions									
	A	B	C	D	E					
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.					
1/2	15 5.50	140 3.14	80 .56	14 3.75	95 .59	15				
3/4	20 6.00	152 3.43	81 .62	16 4.63	118 .78	20				
1	25 6.50	165 3.55	90 .69	18 4.88	124 .98	25				
1 1/2	40 7.50	191 4.13	105 .81	21 6.13	156 1.57	40				
2	50 8.50	216 4.74	120 .88	22 6.50	165 2.00	51				
3	80 11.12	253 5.56	141 1.12	28 8.25	210 3.00	76				
4	100 12.00	305 6.01	156 1.25	32 10.00	254 4.00	102				
6	150 15.87	403 7.96	202 1.44	37 12.50	318 6.00	152				
8	200 19.75	502 9.87	251 1.62	41 15.00	381 8.00	203				
10	250 22.38	569 11.19	234 1.88	48 17.50	445 10.08	256				
12	300 25.50	649 12.75	324 2.00	51 20.50	521 12.09	307				

Size		Dimensions																		F-535-S6-F-66-FS		
		G		H		J		K		L		N	O		*P		Q		R			
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.			In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.
½	15	5.12	130	3.52	89	.34	9	1.00	25	.19	5	.250-20	—	—	—	—	4.85	123	2.00	51	7.00	3.18
¾	20	6.10	155	4.13	105	.43	11	1.26	32	.31	8	.250-20	—	—	—	—	5.28	134	2.00	51	9.00	4.09
1	25	6.10	155	4.25	108	.45	11	1.26	32	.31	8	.312-18	—	—	—	—	5.69	145	1.75	44	11.00	5.00
1½	40	9.06	230	4.97	126	.92	23	1.68	43	.47	12	.312-18	—	—	—	—	6.56	167	1.75	44	24.50	11.14
2	50	9.06	230	5.66	144	1.58	40	1.66	42	.63	16	.312-18	—	—	—	—	7.50	191	2.25	57	33.00	15.00
3	80	15.75	400	7.38	187	2.26	57	2.13	54	.78	20	.375-16	4.13	105	1.57	40	9.94	252	3.50	89	72.00	32.73
4	100	15.75	400	8.09	205	2.10	53	2.13	54	.78	20	.437-14	4.13	105	1.57	40	10.69	272	4.00	102	116.00	52.73
6	150	—	—	—	—	2.93	74	2.58	66	1.10	28	.437-14	4.96	126	2.36	60	14.38	365	4.00	102	228.00	103.64
8	200	—	—	—	—	4.43	113	2.53	65	1.17	30	.500-13	4.96	126	2.36	60	18.06	459	6.46	154	352.00	160.00
10	250	—	—	—	—	5.08	129	3.01	76	1.57	40	.625-11	5.90	150	2.75	70	20.43	514	8.66	220	560.00	254.53
12	300	—	—	—	—	4.97	126	3.01	76	1.57	40	.625-11	5.90	150	2.75	70	23.44	595	9.45	240	765.00	347.73

*Not drilled and tapped on 1/2"-2".

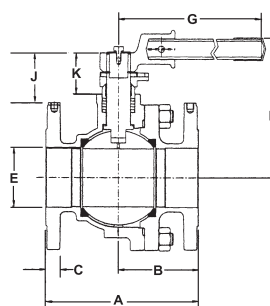
Note: Valves are static grounded by thrust washer.

◆ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 81.

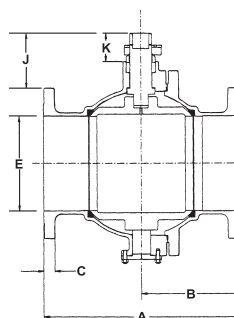
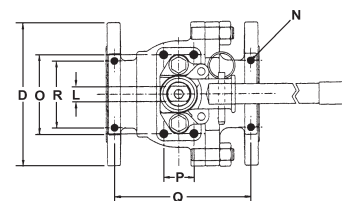


F-535-S6-F-66-FS

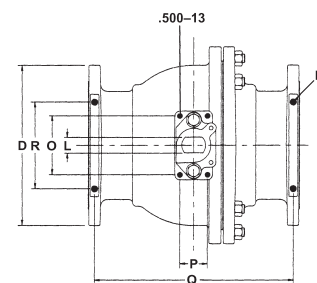
Stainless x Stainless
Flanged



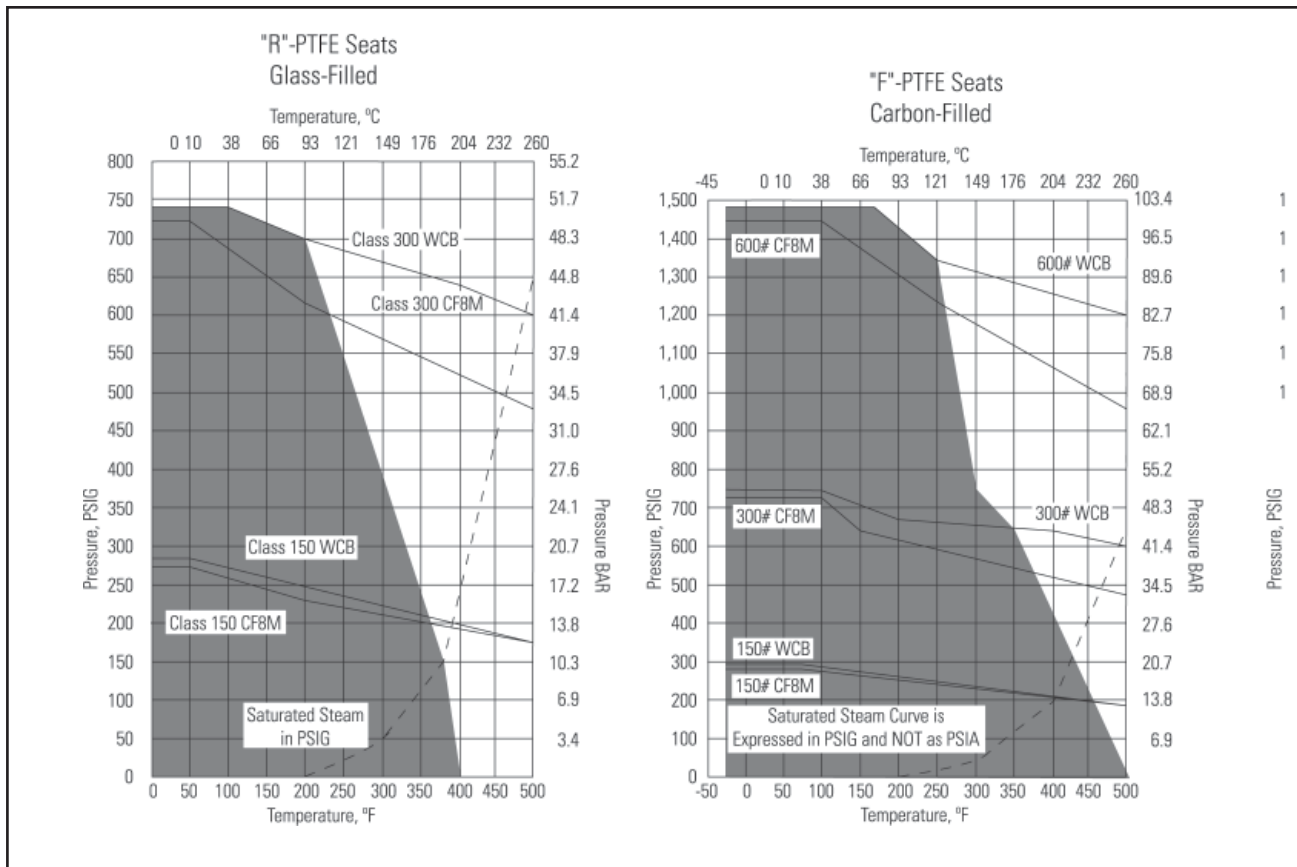
1/2"-8"



10"-12"



Pressure Temperature Ratings for NIBCO Flanged Ball Valve Seat Materials



Shaded area refers to recommended seat rating.

Bronze, Carbon and Stainless Steel Ball Valves

Options and Accessories Index

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Bronze Threaded, Solder and Grooved Ball Valves

Handle Options and Accessories

A wide variety of handles are available to fulfill safety and operation requirements in various processing and manufacturing industries. The lever handle with plastic cover is standard. Other handle options are shown. Stainless steel lever handles are available, as an option, also with plastic covers. If an optional handle is desired, please indicate which one when ordering. Many of these options are field assembly only.

 CS Standard Lever Handle	 CS Extended Lever Handle with Memory Stop Allows for 2" of Insulation	 NIB-SEAL® Handle Allows for 2" of Insulation
 CS Locking Lever Handle	 CS Round Handle	 Vertical Chain Lever
 SS Standard Lever Handle	 CS Extended Round Handle Allows for 2" of Insulation	 Horizontal Chain Lever
 SS Locking Lever Handle	 CS Wing Handle	 Memory Stop Kit
 CS Extended Lever Handle Allows for 2" of Insulation	 Aluminum Extended T Handle Allows for 2" of Insulation	 Seat and Seal Kit

Bronze Threaded, Solder and Grooved Ball Valves

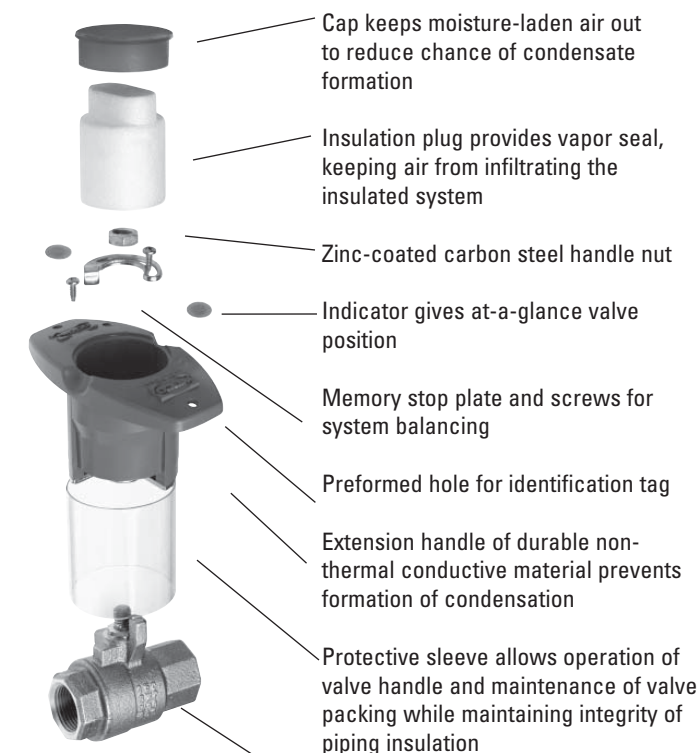
NIB-SEAL® Technical Data

NIBCO bronze ball valves installed with NIB-SEAL® insulated handles are the only approach that keeps your insulated piping system completely intact.

The revolutionary NIB-SEAL bronze ball valve stops condensate, cold. Its unique thermal barrier design keeps moisture from infiltrating your insulated system while preventing thermal energy loss through exposed metal handles.

Designed for new installations or retrofitting existing systems, NIB-SEAL bronze ball valves offer a wide range of advantages for typical commercial HVAC systems as well as industrial applications where insulated piping is desirable.

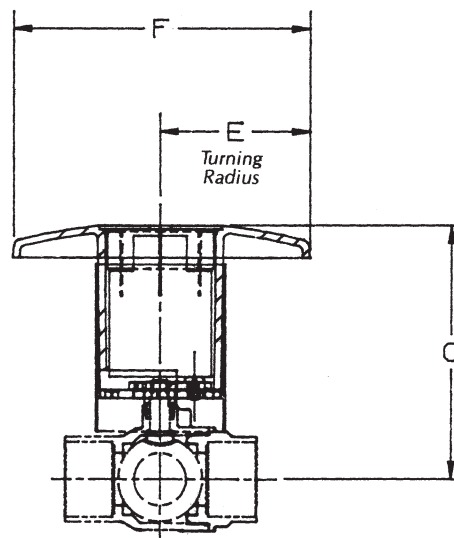
- Protective sleeve provides a stationary surface to affix the insulation, allowing operation and maintenance of the valve without destroying the integrity of the insulated system.
- High-strength cylindrical handle design features easy access to standard adjustable memory stop for system balancing. The valve packing is also readily accessible for routine maintenance.
- Cap and insulating plug provide a vapor seal to prevent exchange of air, to maximize the efficiency of your insulated piping system.
- Position indicators allow at-a-glance determination of whether valve is in open or closed position.
- Preformed hole allows for convenient tagging.



Temperature range: 15° F to 250° F

Not intended for steam applications in excess of 15 PSI

NIBCO two-piece or three-piece bronze ball valve is an integral part of the NIB-SEAL valve system



Dimensions

Size	Valve Series 580-70*/590*			Valve Series 585-70/595		
	C	E	F	C	E	F
1/4	—	—	—	3/4	2 3/16	4 1/4
3/8	—	—	—	3/4	2 3/16	4 1/4
1/2	3 3/4	2 3/16	4 1/4	3 3/4	2 3/16	4 1/4
3/4	3 3/4	2 3/16	4 1/4	4	2 3/16	4 1/4
1	4	2 3/16	4 1/4	4 1/4	2 3/16	4 1/4
1 1/4	4 1/4	2 3/16	4 1/4	5 5/8	3 3/8	6 1/2
1 1/2	5 5/8	3 3/8	6 1/2	5 9/16	3 3/8	6 1/2
2	5 9/16	3 3/8	6 1/2	5 5/8	3 3/8	6 1/2
2 1/2	5 5/8	3 3/8	6 1/2	—	—	—

*Use 585-70/595 for 1/4" - 1"

For bronze ball valves with factory-installed NIB-SEAL insulated handle, order appropriate NIBCO valve figure number with suffix "NS."

Example: T-585-70-NS, 1/2"

NIB-SEAL on sweat ball valves are shipped unassembled.

Sample Specification

For piping systems requiring up to 2" of insulation, specify an extended-handle bronze ball valve that offers a vapor seal, adjustable memory stop and convenient valve packing maintenance—all without disturbing the insulation. Specify NIB-SEAL insulated handle.

Example: T-585-70-NS

U.S. PATENT 5,236,006

Bronze Threaded, Solder and Grooved Ball Valves

Options and Accessories (continued)

Stainless Steel Ball and Stem

316 stainless steel ball and stem are available on many NIBCO ball valves – see catalog specification sheets to identify what valves are available or consult factory.

Oxygen Service

Many NIBCO ball valves are available for oxygen service. Cleaned and packaged in durable, sealed plastic bags to avoid contamination. Oxygen cleaned valves are not recommended for pressures exceeding 200 PSI. The steps involved are as follows: 1) Clean ultrasonically all component parts with a degreaser in a warm water solution. 2) Rinse with warm water in an ultrasonic bath. Rinse again in cold water. 3) Put all component parts under black light for inspection of any carbon. If carbon is found, repeat steps above. 4) Assemble and test valves. 5) Package the valves in a sealed plastic bag to avoid contamination.

Vented Ball

NIBCO provides vented balls as standard on all carbon and stainless steel ball valves and bronze T-560s with stainless steel balls. For other bronze ball valves, vented balls are only available with stainless steel trim option – see catalog specification sheets to identify what valves are available or consult factory.

Static Grounding

NIBCO provides static grounding standard on most carbon, stainless steel and bronze three-piece ball valves. See product pages for availability.

Actuation

Engineered with a modular approach, NIBCO's electric and pneumatic actuation systems give you flexibility to actuate new valves or retrofit existing valves. NIBCO electric actuators, and NDA and NSR pneumatic actuators feature ISO standard mount and drive (exception is 800 series).

No Silicone Used – Silicone Free Issue

All NIBCO pressure-rated bronze gate, globe, check and bronze ball valves are manufactured in NIBCO's Nacogdoches, Texas, and Reynosa, Mexico, plants. Silicone is not used in these plants in the production of valves or assembly of any component parts of the above listed products.

Note: Valves that are assembled and tested without silicone lubricants in these plants have a potential exposure to air-borne silicone as well as during shipping after they leave the plant. Therefore, NIBCO cannot certify valves produced in the Nacogdoches or Reynosa plants to be 100% silicone free.

Carbon and Stainless Steel Threaded, Socket and Butt Weld Ball Valves Options and Accessories



CS Standard Lever Hdle.



CS Locking Lever Hdle.



SS Standard Lever Hdle.



SS Locking Lever Hdle.



SS Oval Hdle.



SS Locking Oval Hdle.



Seat and Seal Kit
(available for fire safe, "R")

Handle Options

A wide variety of handles are available to fulfill safety and operations requirements in various processing and manufacturing industries. All handles come standard with plastic covers. All carbon steel body ball valves come with carbon steel handles. All stainless steel body ball valves come with stainless steel handles. Many of these options are field assembly only.

Stainless Steel Ball and Stem

316 stainless steel ball and stem are available on many NIBCO ball valves – see catalog specification sheets to identify what valves are available or consult factory.

Vented Ball

NIBCO provides vented balls as standard on all carbon and stainless steel ball valves and bronze T-560s with stainless steel balls. For other bronze ball valves, vented balls may be available – see catalog specification sheets to identify what valves are available or consult factory.

Fire Rated

Valves feature as standard secondary metal-to-metal seal in the event of the primary seat being destroyed by fire. Valves ordered for compliance with API 607 will be provided with graphite packing. Fire rated/fire safe valves are available in NIBCO models #s 510, 515, 530, 535, 560, 565 and 590.

Static Grounding

NIBCO provides static grounding standard on most carbon, stainless steel and bronze three-piece ball valves.

Actuation

Engineered with a modular approach, NIBCO's electric and pneumatic actuation systems give you flexibility to actuate new valves or retrofit existing valves. NIBCO electric actuators, and NDA and NSR pneumatic actuators feature ISO standard mount and drive (exception is 800 series).

No Silicone Used – Silicone Free Issue

All NIBCO pressure rated carbon and stainless steel ball valves are manufactured with no silicone used in the production of valves or assembly of any component parts.

Note: Valves that are assembled and tested without silicone lubricants have a potential exposure to air-borne silicone as well as during shipping after they leave the plant. Therefore, NIBCO cannot certify that our carbon and stainless steel ball valves are 100% silicone free.

Carbon and Stainless Steel Flanged Ball Valves

Options and Accessories



CS Oval Locking Hdle.



SS Oval Locking Hdle.



Gear Operator



Seat and Seal Kit
(available in fire safe "F", "N")

Handle Options

A wide variety of handles are available to fulfill safety and operations requirements in various processing and manufacturing industries. All handles come standard with plastic covers. All carbon steel body ball valves come with carbon steel lever handles. All stainless steel body ball valves come with stainless steel lever handles. Many of these options may be field assembly only.

Stainless Steel Ball and Stem

316 stainless steel ball and stem are available on many NIBCO ball valves – see catalog specification sheets to identify what valves are available or consult factory.

Oxygen Service

Many NIBCO ball valves are available for oxygen service. Cleaned and packaged in durable, sealed plastic bags to avoid contamination. Oxygen cleaned valves are not recommended for pressures exceeding 200 PSI. The steps involved are as follows: 1) Clean ultrasonically all component parts with a degreaser in a warm water solution. 2) Rinse with warm water in an ultrasonic bath. Rinse again in cold water. 3) Put all component parts under black light for inspection of any carbon. If carbon is found, repeat steps above. 4) Assemble and test valves. 5) Package the valves in a sealed plastic bag to avoid contamination.

Vented Ball

NIBCO provides vented balls as standard on all carbon and stainless steel ball valves and bronze T-560s with stainless steel balls. For other bronze ball valves, vented balls may be available – see catalog specification sheets to identify what valves are available or consult factory.

Fire Rated

Valves feature as standard secondary metal-to-metal seal in the event of the primary seat being destroyed by fire. Valves ordered for compliance with API 607 will be provided with graphite packing. Fire rated/fire safe valves are available in NIBCO models #s 510, 515, 530, 535, 560, 565 and 590.

Static Grounding

NIBCO provides static grounding standard on most carbon, stainless steel and bronze three-piece ball valves.

Actuation

Engineered with a modular approach, NIBCO's electric and pneumatic actuation systems give you flexibility to actuate new valves or retrofit existing valves. NIBCO electric actuators, and NDA and NSR pneumatic actuators feature ISO standard mount and drive (exception is 800 series).

No Silicone Used – Silicone Free Issue

At times NIBCO standard flanged ball valves may incorporate the use of silicone during assembly. Flanged ball valves can be special ordered as "Assemble-Dry without test." These valves will be assembled not using silicone in the form of grease or aerosol spray.

Note: Even though provisions are made to assemble valves and not incorporate the use of silicone lubricants, the potential for it to be present as air-borne particles prevents us from certifying that our valves are 100% silicone free.

Ball Valve Options

Quick Reference

Std. = Standard

• = Factory Installed

* = Field Retrofit

1 = Not all sizes available, consult factory.

2 = Available on certain models, consult factory.

3 = Specify TM, KM or BM

Option	Bronze			Carbon Steel					Stainless Steel					Flanged					
	560 -BR	580-70 585-70	590-Y 595-Y	560 -CS	570	580 -CS	TC -580	590 -CS	595 -CS	560 -S6	580 -S6	585 -S6	590 -S6	595 -S6	510	515	530	535	565
End-Type																			
Threaded	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.					
Solder		Std.	Std.																
Grooved			Std.																
Socket Weld								Std.	Std.				Std.	Std.					
Butt Weld								Std.					Std.						
Flanged															Std.	Std.	Std.	Std.	Std.
Seat Material																			
PTFE (Virgin) (-Y)	Std.		Std.																
RPTFE (Glass Filled) (-R)	Std.	Std.		Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.		Std.		
FPTFE (Carbon Graphite) (-F)																Std.		Std.	
Nylon (-N)																			Std.
Handles																			
CS Standard Lever Hdle.	Std.	Std.	Std.	Std.	Std.	Std.			Std.						*	*	*	*	*
CS Locking Lever Hdle.		•	•	•	*		Std.	Std.	Std.										
CS Extended Lever Hdle.		*	*1																
CS Extended Lever Hdle. w/memory stop		*1	*1																
CS Round Hdle.	*	*	*1																
CS Extended Round Hdle.		*	*1																
CS Oval Hdle.				•															
CS Locking Oval Hdle.				•											*2		*2		
CS Extended T Hdle.		*	*1																
CS Horizontal Chain Lever Hdle.		•	*																
CS Vertical Chain Lever Hdle.		•	*																
CS Wing Hdle.	*1	*1	*1																
SS Standard Lever Hdle.		*	*						*	Std.		*		Std.	*	*	*	*	*
SS Locking Lever Hdle.	*	*	*	*			*	*	*	•	Std.	Std.	Std.	Std.					
SS Oval Hdle.				*			*	*	*	*	*	*	*	*					
SS Locking Oval Hdle.							*	*	*	•	*	*	*	*	*2		*2		
NIB-SEAL® Hdle.		•	•1																
Memory Stop		•	*1																
Other Options																			
Actuation		*3	*					*	*3	*			*	*3	*	*	*	*	*
Anti-Static/Grounded Stem			Std.2	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.
Fire Rated				Std.				Std.		Std.			Std.		•	•	•	•	•
Gear Operator															*	*	*	*	*
No Silicone Used	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	•	•	•	•	•
Oxygen Cleaned		•	•												•	•	•	•	•
Seat and Seal Kit Non FS			*						*				*	*					
Seat and Seal Kit FS								*							*	*	*	*	*
SS Trim	•	•	•	•	•	•	•	•	•	Std.	Std.	Std.	Std.	Std.	•	•	•	•	•
Vented Ball		*2		Std.	*1	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.

Ball Valve Seat Materials

Virgin PTFE

Virgin PTFE is a good all-around, general purpose seating material. PTFE has outstanding resistance to chemical attack by a broad spectrum of organic chemicals, inorganic chemicals and solvents and is generally considered chemically inert. PTFE is a self-lubricating polymer with a very low coefficient of friction, which makes an excellent seating material for quarter-turn ball valves.

Color Code

Virgin PTFE resin has a natural pigment of WHITE.

Temperature Range

-20° to +400° F temperature range in ball valve applications.

Pressure Range

27" vacuum to 600 PSI non-shock water, oil or gas.

Unique Features

Best choice for low pressure sealing, lowest torque of all PTFE polymers.

Typical Applications

Cold and hot potable water, HVAC chilled and hot water. Evaporative cooling systems. Medical gas valves.

NIBCO Figure Number Designation "Y"

Product Availability

T/S-580/580-66
T/S-590/595-Y/66
T-560-BR-Y-20/66
T/S-FP-600

15% Reinforced PTFE

NIBCO uses short strand fiberglass as a reinforcement for our mid-range ball valve products. Adding reinforcement increases the pressure containing capabilities of PTFE by reducing its tendency to cold-flow.

Color Code

15% reinforced PTFE is color coded BLUE. This pigment is permanently molded into the PTFE polymer matrix.

Temperature Range

-20° to +400° F temperature range in ball valve applications.

Pressure Range

27" vacuum to 1,000 PSI non-shock water, oil or gas.

Unique Features

Greater resistance to cold-flow than virgin PTFE.

Typical Applications

Mid-range steam applications. Throttling and balancing of hydronic heating and cooling systems.

NIBCO Figure Number Designation "R"

Product Availability

T/S-580-70/70-66
T/S-585-70/70-66
F-510/530-CS-R/S6-R
TC-580-CS-R
T-560-BR-R-20/66
T-570-CS-R/S6-R
T-580-CS-R/S6-R
T/K-595-CS-R/S6-R
TM/KM/BM-590/595-CS-R/S6-R

Ball Valve Seat Materials

25% Reinforced PTFE

NIBCO uses short strand fiberglass as a reinforcement for our higher pressure carbon steel and alloy ball valve products. Adding reinforcement increases the pressure containing capabilities of PTFE by reducing its tendency to cold-flow.

Color Code

25% reinforced PTFE resin has a color code of RED. This pigment is permanently molded into the PTFE resin matrix.

Temperature Range

-20° to +400° F temperature range in ball valve applications.

Pressure Range

27" vacuum to 2,000 PSI non-shock water, oil or gas.

Unique Features

Improved dimensional stability. Good wear properties.

Typical Applications

Steam service, natural and bottled gas distribution.

NIBCO Figure Number Designation "R"

Product Availability

T-560-CS-R/S6-R

Carbon-Filled PTFE

Carbon-filled PTFE is an excellent seat material for steam applications as well as high efficiency oil-based thermal fluids. Other fillers, including graphite, enable this seat material to have better cycle life than other filled or reinforced PTFE seats. Chemical resistance equal to other PTFE and filled PTFE products.

Color Code

Carbon filled PTFE has a natural pigment of BLACK.

Temperature Range

-20° to +500° F temperature range in ball valve applications.

Pressure Range

27" vacuum to 2,000 PSI non-shock water, oil or gas.

Unique Features

Higher cycle life than other PTFE resins.

Typical Applications

High pressure steam and thermal fluids.

NIBCO Figure Number Designation

"F" (in flanged) and "C" (in threaded).

Product Availability

F-510/530-CS-F/S6-F-66

F-515/535-CS-F/S6-F-66

AT-585-70-66

TM-585-70-66

System Control Products Index

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Three-Piece SS/CS Full Port TM/KM/BM-590/595 Series.....	101

For individual sizing of actuators to ball valves consult your NIBCO technical service representative.

Torque:

Torque is the effective rotary power required by a valve and/or delivered by an actuator. Torque is normally stated in inch/pounds or foot/pounds. This turning force in a ball valve is affected by three factors:

1. Friction of the ball to seat
2. Bearing friction (packing)
3. Dynamic forces (pressure)

Torque = Distance x Force

Breakaway Torque is the total of the three factors listed above. This value is normally the highest required torque to operate a valve and is used in sizing actuators. The torque values listed in the corresponding charts are valid for water and lubricating fluids at ambient temperature. For dry and non-lubricating fluids, consult your NIBCO technical service representative.

Actuator mounting dimensions for flanged ball valves, see pages 71-74.

Ball Valve Actuation and Control

Flexible, Reliable Actuation

Engineered with a modular approach, NIBCO's electric and pneumatic actuation systems give you the flexibility to actuate new valves or to retrofit existing valves with unprecedented ease. Both electric and pneumatic actuation systems feature an ISO standard mounting design, assuring long-term industry acceptance.

Pneumatic Actuation Systems

Ideally suited for most quarter-turn valves, NIBCO NDA and NSR pneumatic actuators offer exceptional starting and ending torque in a compact design. They consistently meet the demand for high torque, even in applications where the valve has been closed for an extended period.



Engineered for a long, lubrication-free service life, NIBCO NDA and NSR actuators combine O-rings and PTFE seals to create a durable, low-friction seal. They are designed for either on-off duty, modulation or proportional control in industries ranging from chemical processing and pulp and paper, to petroleum refining, production industries, marine applications, and commercial construction applications.

Pneumatic Accessories:

- Three and four way solenoids
- Switch box with limit switches and beacon
- Positioners for throttling service—air or electric signal
- Speed controls

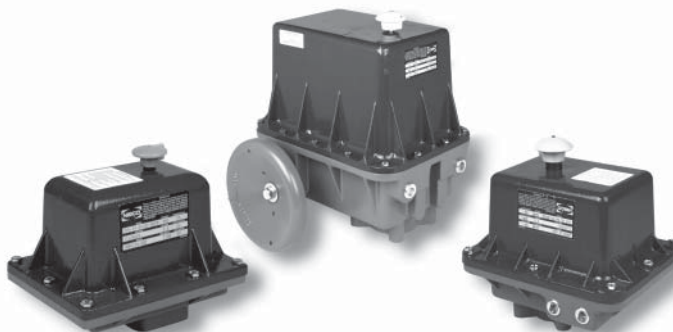
Electric Actuation Systems

For automated or computer-controlled flow control systems, NIBCO electric actuators offer exceptional convenience and flexibility. Ideal for applications where the valve is not readily accessible, these actuators provide a labor-saving alternative to manual flow control regulation.

NIBCO electric actuators operate on the gear reduction motor principle, which allows opening and closing speeds ranging from two seconds to one minute or longer. With reversible motors that are rated for continuous duty, NIBCO electric actuators provide maximum torque output and longer life. They also feature thermal overload protection to safeguard the motor from extreme temperatures.

Electric Actuator Accessories:

- Servo controls
- Extra SPDT switches
- Position transmitter
- Heater and thermostat
- Brake



Circuit Balancing Valves

NIBCO Puts You In Control.....

With Circuit Balancing Valves

NIBCO's new Circuit Balancing Valves control and maintain a comfortable indoor climate while saving energy and reducing costs. These control valves ensure trouble-free operation and ease of maintenance.

Why Balance Your System?

Whether a system is designed for heating, cooling or water distribution, it must be properly adjusted and balanced for optimum design performance. An unbalanced system may produce temperature variations of up to 14° F between rooms, which can add up to 35% to energy costs.

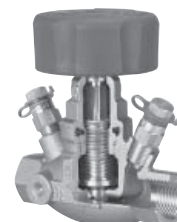
What are the Benefits?

- A balanced system ensures a comfortable indoor climate
- The correct flow in boilers and chillers
- The desired flow distribution throughout the building
- Energy savings and cost savings
- Trouble-free operation and ease of maintenance
- Lower capital cost

Series 1710 – DZR Brass Balancing Valves

The 1710 series threaded and solder end range are "T" pattern globe style valves. Unique design features in the 1710 give improved flow measurement accuracy as well as a lower head loss characteristic compared to other valves.

- Memory stop feature provides repeatable regulation and control
- Valve position clearly visible in the hand-wheel display window
- Accurate across all valve positions
- Positive shut-off and isolation
- Dezincification resistant alloy
- ½" through 2" size range



Series 1709 – DZR Brass (Mini) Balancing Valves

Offered in ½" and ¾" solder end configuration only the 1709 series valve is an economical option for circuit balancing. Used in applications where standard size valves just won't fit.

- Globe style for greater control
- Integral test points
- Memory stop feature
- Dezincification resistant alloy



Series 737A – Iron Balancing Valves

The 737A series flanged and grooved end range is from 2½" through 12". Cast iron bodies and ductile iron bonnets are standard.

- Non-rising stem design
- Positive shut-off with EPDM elastomer disc
- Graphite stem sealing
- Linear scale with subdivision increments for accurate position indication
- Discrete memory stop
- Extended test points for easy access of balancing devices



Ball Valve Actuation Data Sheet

To actuate all valves it is necessary to provide certain data to assure proper sizing and prevent damage to the system. Please supply as much data as possible.

I. Valve Information:

A. **Type:** Butterfly ☐ Ball ☐

B. **Fig. No.** _____ **Size** _____ **Qty.** _____

C. **Type of Fluid in Valve:** _____ **Inlet Pressure:** _____ **Is Fluid:** Dry ☐ Wet ☐

Differential Pressure: _____ **System Velocity:** _____

System GPM: _____ **Temperature:** _____

II. Actuator Information:

A. **Electric:** Voltage: _____ Time for 90° rotation: _____

Type Enclosure: NEMA 4 ☐ NEMA 7 ☐ Other _____

Special Requirements: Brake ☐ Thermostat ☐ Heater and Thermostat ☐

Manual Override ☐ Extended Duty Motor ☐

Modulating Control ☐ Position Transmitter ☐

Extra SPDT Switches ☐ Potentiometer ☐

B. **Pneumatic:** Air supply to actuator: _____ PSI (**Min. 40 psi, Max. 120 psi**)

Actuator Type: Air-to-Air ☐

Air-to-Spring ☐ Failsafe: Open ☐ Closed ☐

Solenoid: NEMA 4 ☐ NEMA 7 ☐

Switch Box: If so: NEMA 4 ☐ NEMA 7 ☐

Type: SPDT ☐ DPDT ☐ (two each is standard)

Pneumatic Positioner: 3-15 ☐ 4-20 MA ☐

III. **Special Notes:** _____

Note: If special features are required for actuators such as modulating positioners either for electric or pneumatic actuators, consult factory.

Bronze Ball Valves for System Controls Applications

Two-Piece Body • Full Port • 316SS Trim • Blowout-Proof Stem
Pre-assembled with NIBCO Series 2000 Thermoplastic Housed Pneumatic Actuator

600 PSI/41.4 Bar Non-Shock Cold Working Pressure

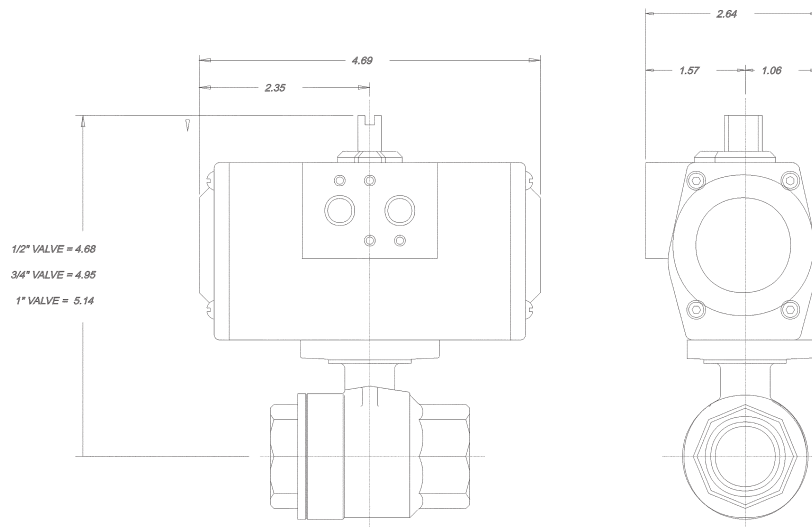
CONFORMS TO MSS SP-110,
ACTUATOR MOUNT PER ISO 5211

MATERIAL LIST

PART	SPECIFICATION
1. Stem	Stainless Steel ASTM A 276 Type 316
2. O-Ring	Fluoroelastomer
3. Thrust Washer	Reinforced PTFE
4. Seat Ring (2)	Carbon Filled PTFE
5. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
6. Body	Bronze ASTM B 584 Alloy C84400
7. Body End Piece	Bronze ASTM B 584 Alloy C84400
8. Actuator	Glass Reinforced Polyacrylamide



TM-585-70-66-AP



Size	Pressure	Figure Number	Double Acting Actuator	Mount Kit	Figure Number	Spring Return Actuator	Mount Kit
1/2"	100PSI	TM-585-70-66-AP-NDA	NDA2011F03	T117042	TM-585-70-60-AP-NSR	NSR2011F03 3+3	T117042
1/2"	600PSI	TM-585-70-66-AP-NDA	NDA2011F03	T117042	TM-585-70-66-AP-NSR	NSR2011F03 3+3	T117042
3/4"	100PSI	TM-585-70-66-AP-NDA	NDA2011F03	T117042	TM-585-70-66-AP-NSR	NSR2011F03 3+3	T117042
3/4"	600PSI	TM-585-70-66-AP-NDA	NDA2011F03	T117042	TM-585-70-66-AP-NSR	NSR2011F03 3+3	T117042
1"	100PSI	TM-585-70-66-AP-NDA	NDA2011F04	T117043	TM-585-70-66-AP-NSR	NSR2011F04 3+3	T117043
1"	600PSI	TM-585-70-66-AP-NDA	NDA2011F04	T117043	TM-585-70-66-AP-NSR	NSR2011F04 3+3	T117043

Note:

1. Spring Return Actuators are set for 80PSI Air Supply Standard
2. Spring Return Actuators are set for Fail to Close as Standard
3. Specify Size and Figure Number when Ordering

Bronze Ball Valves for System Controls Applications

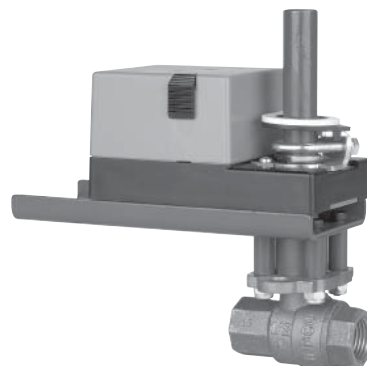
Two-Piece Body • Reduced Port • 316SS Trim • Blowout-Proof Stem
Reduced Orifice Ball for HVAC Control Applications

600 PSI/41.4 Bar Non-Shock Cold Working Pressure

CONFORMS TO MSS SP-110,
ACTUATOR MOUNT PER ISO 5211

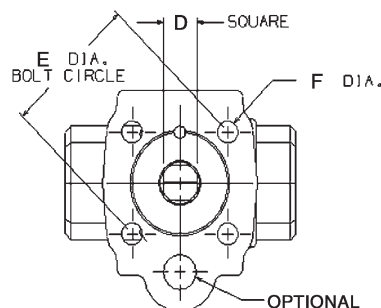
MATERIAL LIST

PART	SPECIFICATION
1. Stem	Stainless Steel ASTM A 276 Type 316
2. O-Ring (2)	Fluoroelastomer
3. Thrust Washer	Reinforced PTFE
4. Seat Ring (2)	Carbon Filled PTFE
5. Ball	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
6. Body	Bronze ASTM B 584 Alloy C84400
7. Body End Piece	Bronze ASTM B 584 Alloy C84400



TM-585-CV

Shown with 24 VDC
Electric Actuator and Universal Mount

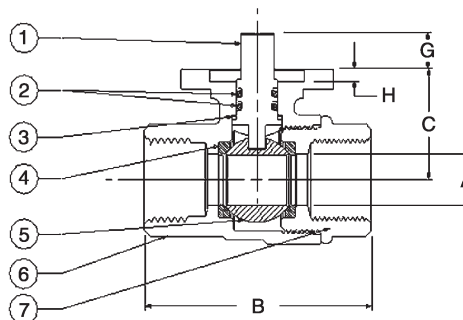


Reduced Orifice Ball – CV Ratings

Size	Figure #	Material #	CV
1/2"	TM-585-CV-200	WL95H16	1
1/2"	TM-585-CV-300	WL95H26	3
1/2"	TM-585-CV-400	WL95H36	7
1/2"	TM-585-CV-450	WL95H46	10
3/4"	TM-585-CV-640	WL95H18	20

Standard Valve

Size	Figure #	Material #	CV
1/2"	TM-585-70-66	—	15.3
3/4"	TM-585-70-66	—	30.4



TM-585-CV

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Flange Size	Dimensions										TM-585-70-66		Master Ctn. Qty.
		A	B	C	D	E	F	G	H			Lbs.	Kg.	
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.			
1/2	15	F03	.50 13	2.43 62	1.10 28	.35 9	1.42 36	.22 51	.39 10	.12 3	.82 37	.82	.37	50
3/4	20	F03	.75 19	2.94 75	1.37 35	.35 9	1.42 36	.22 51	.39 10	.12 3	1.23 .56	1.23	.56	25

Ball Valve Torque Charts

Ball Valve Torque Requirements Operating Torque in Inch/Pounds

Figure #	Size	0-100 PSI	101-500 PSI	501-600 PSI
T-560-BR-R/Y One-Piece Bronze Reduced Port	1/4"	35	65	65
	3/8"	35	65	65
	1/2"	35	65	65
	3/4"	70	100	100
	1"	130	175	175
	1 1/4"	175	230	230
	1 1/2"	225	265	265
	2"	370	510	510
580-70 Two-Piece Bronze Conventional Port	1/4"	N/A	N/A	N/A
	3/8"	N/A	N/A	N/A
	1/2"	N/A	N/A	N/A
	3/4"	N/A	N/A	N/A
	1"	N/A	N/A	N/A
	1 1/4"	120	185	185
	1 1/2"	185	240	240
	2"	220	300	300
	2 1/2"	250	410	410
	3"	370	540	540
585-70 Two-Piece Bronze Full Port	1/4"	30	50	50
	3/8"	30	50	50
	1/2"	30	50	50
	3/4"	55	75	75
	1"	90	130	130
	1 1/4"	120	185	185
	1 1/2"	185	240	240
	2"	220	300	300
	2 1/2"	N/A	N/A	N/A
	3"	N/A	N/A	N/A

Figure #	Size	0-100 PSI	101-500 PSI	501-600 PSI
585-70-W3 Three-Way Bronze Full Port Maximum Rating is 400 PSI CWP	1/2"	42	42	N/A
	3/4"	67	67	N/A
	1"	114	114	N/A
	1 1/4"	159	159	N/A
	1 1/2"	218	218	N/A
	2"	268	268	N/A
TM-585-70-66 Two-Piece w/Pad Bronze Full Port	1/2"	25	—	30
	3/4"	30	—	40
	1"	30	—	50
	1 1/4"	55	—	70
	1 1/2"	55	—	110
	2"	110	—	260
590-Y Three-Piece Bronze Conventional Port	1/4"	N/A	N/A	N/A
	3/8"	N/A	N/A	N/A
	1/2"	N/A	N/A	N/A
	3/4"	N/A	N/A	N/A
	1"	N/A	N/A	N/A
	1 1/4"	125	230	230
	1 1/2"	150	275	275
	2"	170	300	300
	2 1/2"	250	410	410
	3"	370	540	540
595-Y Three-Piece Bronze Full Port	1/4"	45	65	65
	3/8"	45	65	65
	1/2"	45	65	65
	3/4"	50	80	80
	1"	125	230	230
	1 1/4"	150	275	275
	1 1/2"	170	300	300
	2"	250	410	410
	2 1/2"	370	540	540
	3"	N/A	N/A	N/A

Figure #	Size	0-100 PSI	101-500 PSI	501-600 PSI	601-1000 PSI	1001-1500 PSI	1501-2000 PSI
T-560-CS/S6-R One-Piece CS/SS Reduced Port	1/4"	40	70	75	80	85	100
	3/8"	40	70	75	80	85	100
	1/2"	40	70	80	85	90	110
	3/4"	75	100	105	110	125	140
	1"	135	190	200	215	245	275
	1 1/4"	180	240	250	270	290	330
	1 1/2"	225	300	310	330	365	410
	2"	370	460	490	580	685	790
T-570-CS-R One-Piece Bar Stock CS Reduced Port	1/2"	40	65	70	80	90	105
	3/4"	70	95	100	105	120	135
	1"	125	180	190	205	240	270
	1 1/4"	170	230	240	260	285	320
	1 1/2"	210	285	295	320	355	395
	2"	350	440	470	560	665	770
T-580-CS-R Two-Piece CS Conventional Port	1/4"	40	40	50	55	65	80
	3/8"	40	40	50	55	65	80
	1/2"	75	75	85	95	105	125
	3/4"	100	100	110	120	130	150
	1"	120	130	140	150	170	215
	1 1/4"	165	175	185	200	250	300
	1 1/2"	200	200	220	250	300	350
	2"	290	300	320	350	400	450

Ball Valve Torque Charts

Ball Valve Torque Requirements Operating Torque in Inch/Pounds

Figure #	Size	0-100 PSI	101-500 PSI	501-600 PSI	601-1000 PSI	1001-1500 PSI	1501-2000 PSI
T-580-S6-R	1/4"	65	70	75	90	105	125
TC-580-CS-R	3/8"	65	70	75	90	105	125
Two-Piece	1/2"	65	75	80	95	110	130
CS/SS	3/4"	85	100	105	115	130	150
Conventional	1"	100	125	135	150	180	215
Port	1 1/4"	135	160	170	195	250	300
	1 1/2"	175	200	210	250	300	350
	2"	245	290	305	335	390	450
TM/KM-595-CS/S6-R	1/4"	65	70	75	80	—	—
T/K-595-CS/S6-R	3/8"	65	70	75	80	—	—
Three-Piece	1/2"	75	80	85	100	—	—
CS/SS	3/4"	130	150	165	180	—	—
Full Port	1"	150	220	230	250	—	—
	1 1/4"	250	290	300	325	—	—
	1 1/2"	310	350	365	400	—	—
	2"	390	480	495	550	—	—
TM/KM/BM-590-CS/S6-R	1/2"	50	50	55	60	75	90
Three-Piece	3/4"	85	90	95	100	120	150
CS/SS	1"	130	140	145	150	170	200
Conventional	1 1/4"	175	180	190	210	230	280
Port	1 1/2"	275	300	310	325	360	400
	2"	325	350	360	385	440	500

Figure #	Size	0-100 PSI	101-285 PSI	Figure #	Size	0-100 PSI	101-285 PSI	286-740 PSI
F-510	1/2"	84	98	F-530	1/2"	84	98	144
ANSI Class 150	3/4"	120	144	ANSI Class 300	3/4"	120	144	216
CS/SS	1"	156	180	CS/SS	1"	156	180	252
Uni-Body	1 1/2"	216	240	Uni-Body	1 1/2"	216	240	456
Flanged	2"	240	336	Flanged	2"	240	336	684
	3"	480	840		3"	480	840	3300
	4"	720	1260		4"	720	1260	4860
	6"	2220	3540		6"	2220	3540	11520
	8"	5520	8400		8"	5520	8400	24600
	10"	9600	15000		10"	9600	15000	37200
	12"	12000	19500		12"	12000	19500	N/A
F-515	1/2"	108	126	F-535	1/2"	108	126	185
ANSI Class 150	3/4"	153	184	ANSI Class 300	3/4"	153	184	276
CS/SS	1"	186	214	CS/SS	1"	186	214	300
Split-Body	1 1/2"	279	311	Split-Body	1 1/2"	279	311	590
Flanged	2"	343	480	Flanged	2"	343	480	938
	3"	735	1150		3"	735	1151	4219
	4"	1042	2176		4"	1042	2176	6221
	6"	3182	5303		6"	3182	5303	15273
	8"	7557	14375		8"	7557	14375	33678
	10"	13810	19729		10"	13810	19729	48927
	12"	18859	52804		12"	18859	52804	56000

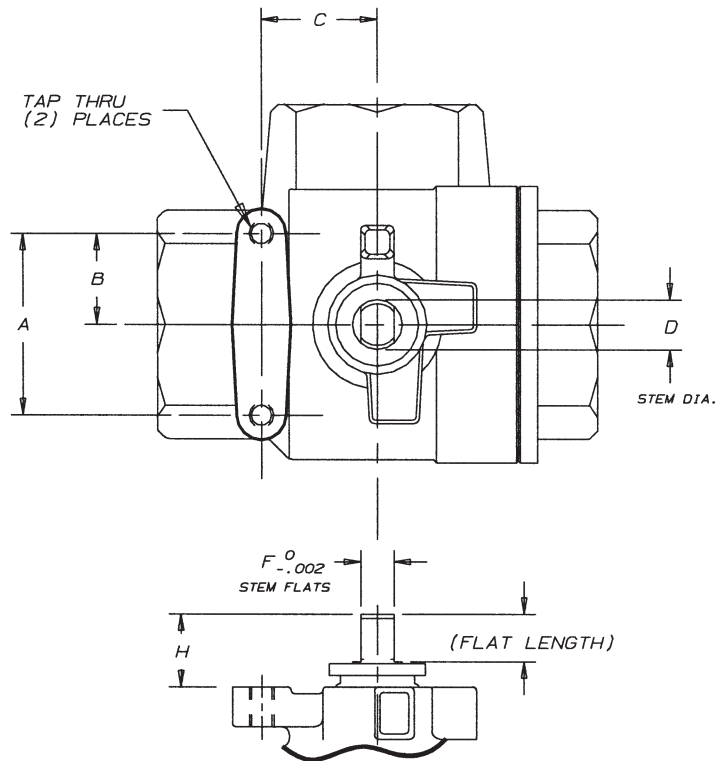
Figure #	Size	0-100 PSI	101-285 PSI	286-740 PSI	741-1500 PSI
F-565	1" x 1"	180	—	—	500
ANSI Class 600	1 1/2" x 1 1/2"	250	—	—	700
CS/SS	2" x 2"	350	—	—	1100
Split-Body	3" x 3"	425	—	—	2100
Flanged	4" x 4"	500	—	—	3500

Notes:

1. Torque values apply to clean fluid at ambient temperatures.
2. Other applications may affect above listed values.
3. Consult factory for torque values for seat materials other than those listed.
4. Handles are not recommended for valves larger than 6". Gear operators or other actuators are recommended.
5. This chart is to be used as a guide only. Some variation is possible based on application.

Three-Way Bronze Ball Valves Data for Actuation

NIBCO No. T-585-W3 Series



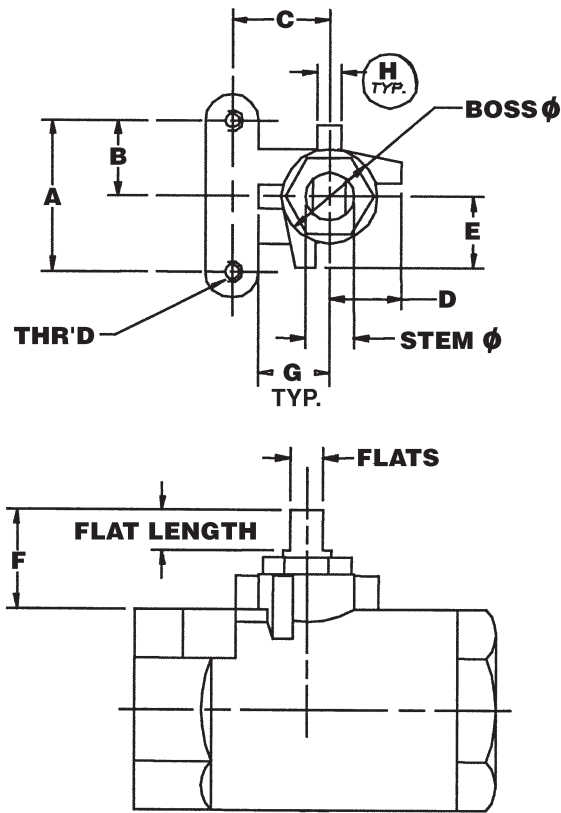
T-585-W3
3-Way Ball Valve

Size		Dimensions											Flat Length			
		A		B		C		Tap Thru	D ^{+0.003} _{-0.002}		F ^{+0.002} _{-0.002}				H ^{+0.030} _{-0.030}	
In.	mm.	In.	mm.	In.	mm.	In.	mm.			In.	mm.	In.	mm.	In.	mm.	In.
1/2	15	1.38	35	.69	17	.88	22	#10-24	.31	8	.22	6	.81	21	.30	8
3/4	20	1.38	35	.69	17	.88	22	#10-24	.38	10	.25	6	.95	24	.38	10
1	25	1.38	35	.69	17	.88	22	#10-24	.38	10	.25	6	.93	24	.36	9
1 1/4	32	1.50	38	.75	19	.94	24	.250-20	.56	14	.38	10	1.37	35	.50	13
1 1/2	40	1.50	38	.75	19	.94	24	.250-20	.56	14	.38	10	1.36	35	.50	13
2	50	1.50	38	.75	19	.94	24	.250-20	.56	14	.38	10	1.26	32	.57	14

Actuator mounting data for two-piece bronze ball valves with mounting pads – TM-585 series page 24 and AT-580 series page 25.

Two-Piece SS/CS Ball Valves Data for Actuation

NIBCO No. T-580-S6-R and TC-580-CS-R Series



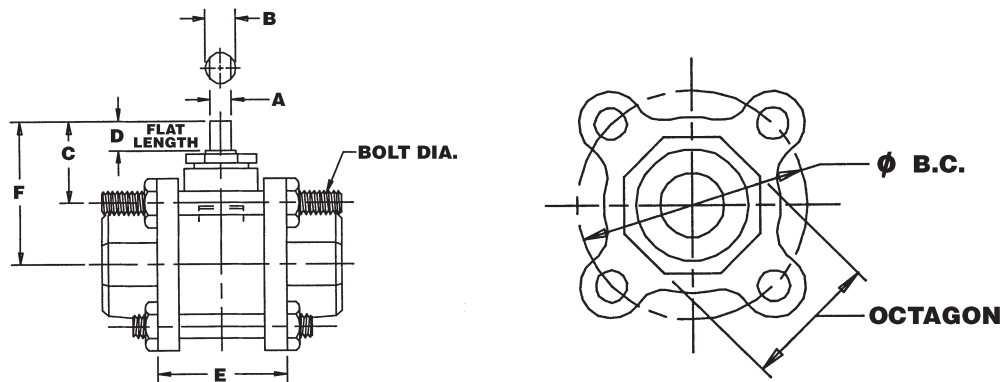
T-580-S6-R and TC-580-CS-R

Dimensions

Size		A		B		C		D		E		F ⁺⁰²		G ⁺⁰²		H		Flats ^{+0/-012}		Flat Length ^{+0/-012}		Stem Ø ^{+0/-012}		Boss Ø		Thr'd	Lb/in Torque 0 PSI
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.		
½	15	1.13	29	.56	14	.50	13	.55	14	.55	14	.94	24	.50	24	.25	6	.20	5	.39	10	.31	8	.71	18	10-24	69
¾	20	1.38	35	.69	17	.87	22	.67	17	.67	17	1.31	33	.67	17	.31	8	.28	7	.60	15	.44	11	.94	24	10-24	122
1	25	1.38	35	.69	17	.87	22	.67	17	.67	17	1.30	33	.67	17	.31	8	.28	7	.60	15	.44	11	.94	24	10-24	148
1¼	32	1.50	38	.75	19	.93	24	.79	20	.79	20	1.41	36	.79	20	.31	8	.35	9	.63	16	.56	14	1.10	28	25-20	252
1½	40	1.50	38	.75	19	.93	24	.79	20	.79	20	1.38	35	.79	20	.31	8	.35	9	.63	16	.56	14	1.10	28	25-20	304
2	50	1.50	38	.75	19	.93	24	.79	20	.79	20	1.41	36	.79	20	.31	8	.35	9	.63	16	.56	14	1.10	28	25-20	321

Three-Piece Bronze Ball Valves Data for Actuation

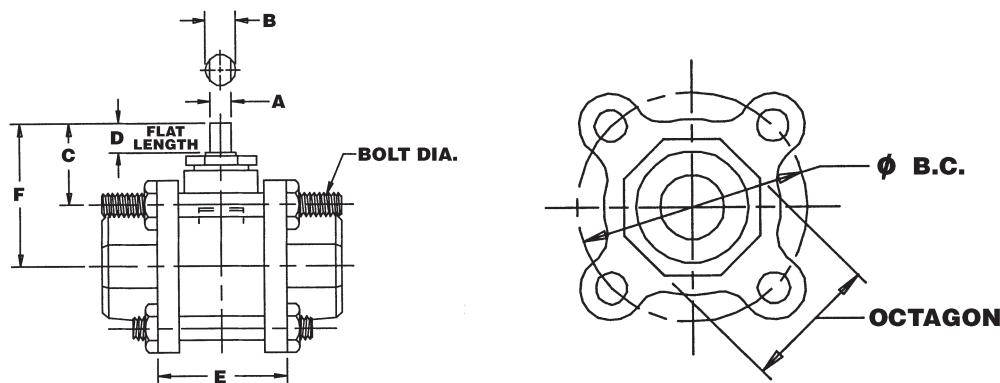
NIBCO No. T/S-590 and TS-595 Series



T/S-590 Series

Dimensions

Size	A ^{+0 -.002}	B	C ^{±.03}	D	E ^{+.03}	F	Bolt Dia.	Octagon	Ø BC
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.		In. mm.	In. mm.
1 ¼ 32	.25 6	.38 10	1.09 28	.38 10	2.32 59	2.00 51	5/16-18	2.00 51	2.56 65
1 ½ 38	.38 10	.56 14	1.59 40	.50 13	2.63 67	2.62 66	5/16-18	2.25 57	2.89 73
2 50	.38 10	.56 14	1.62 41	.50 13	3.12 79	2.81 71	5/16-18	2.75 70	3.37 86
2 ½ 63	.38 10	.56 14	1.56 40	.56 14	3.88 99	3.12 79	3/8-16	3.50 89	4.39 112
3 76	.44 11	.75 19	2.09 53	.81 20	4.72 120	4.03 105	7/16-14	4.12 105	5.47 139



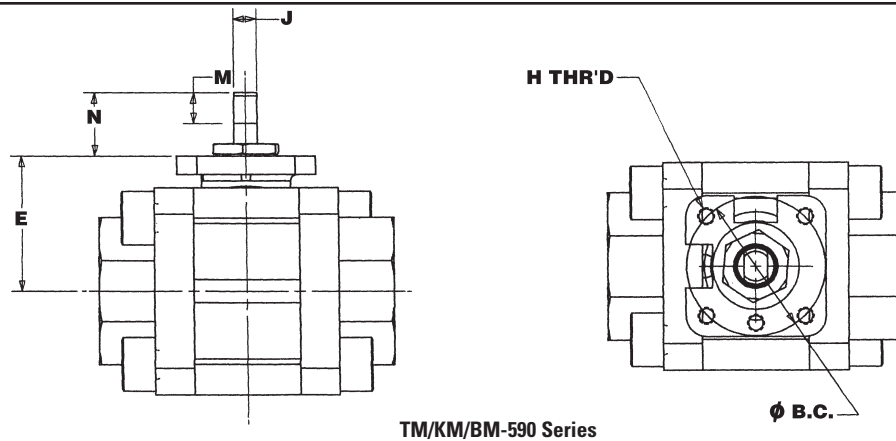
T/S-595 Series

Dimensions

Size	A ^{+0 -.002}	B	C ^{±.03}	D	E ^{+.03}	F	Bolt Dia.	Octagon	Ø BC
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.		In. mm.	In. mm.
½ 13	.22 5	.31 8	.84 21	.30 8	1.38 35	1.47 37	1/4-20	1.06 24	1.79 45
¾ 19	.25 6	.38 10	1.09 28	.38 10	1.87 47	1.81 46	1/4-20	1.25 32	2.05 52
1 25	.25 6	.38 10	1.09 28	.38 10	2.32 59	2.00 51	5/16-18	1.62 41	2.56 65
1 ¼ 32	.38 10	.56 14	1.59 40	.50 13	2.62 67	2.62 66	5/16-18	2.00 51	2.89 73
1 ½ 38	.38 10	.56 14	1.62 41	.50 13	3.12 79	2.81 71	5/16-18	2.25 70	3.37 86
2 50	.38 10	.56 14	1.56 40	.56 14	3.88 99	3.12 79	3/8-16	2.75 70	4.39 112
2 ½ 63	.44 11	.75 19	2.09 53	.81 20	4.72 120	4.03 105	7/16-14	3.50 89	5.47 139

Three-Piece CS/SS Ball Valves Data for Actuation

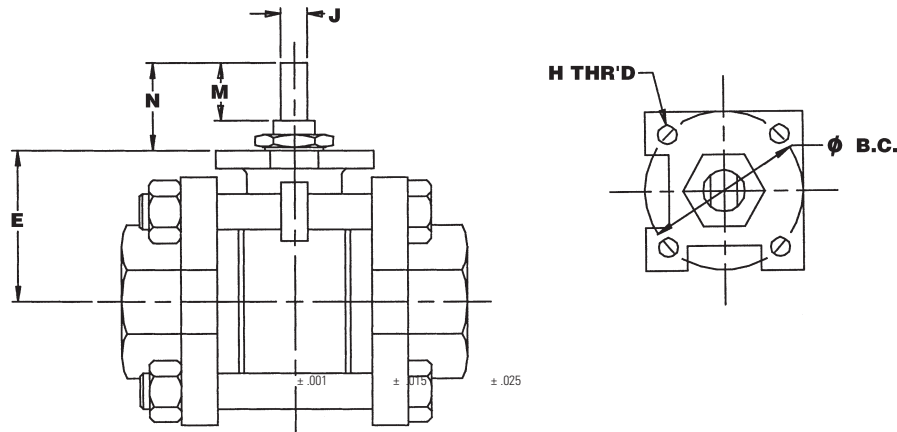
NIBCO No. TM/KM/BM-590 and TM/KM-595 Series



TM/KM/BM-590 Series

Dimensions

Size	J	M	N	E	H	BC
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Thr'd	In. mm.
1/2	.20 50	.41 10	.51 13	1.20 30	M5	1.42 36
3/4	.20 5	.41 10	.51 13	1.36 35	M5	1.42 36
1	.28 7	.60 15	.75 19	1.59 40	M5	1.65 42
1 1/4	.32 8	.63 16	.87 22	1.81 46	M5	1.65 42
1 1/2	.39 10	.69 18	.97 25	1.95 50	M6	1.96 50
2	.39 10	.69 18	.97 25	2.17 55	M6	1.97 50



TM/KM-595 Series

Dimensions

Size	J	M	N	E	H	BC
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Thr'd	In. mm.
1/4	.20 5	.41 10	.60 15	1.15 29	M5	1.42 36
3/8	.20 5	.41 10	.60 15	1.15 29	M5	1.42 36
1/2	.20 5	.41 10	.60 15	1.15 29	M5	1.42 36
3/4	.28 7	.60 15	.85 22	1.34 34	M5	1.42 36
1	.28 7	.60 15	.91 23	1.58 40	M5	1.65 42
1 1/4	.352 9	.64 16	.87 22	1.82 46	M6	1.97 50
1 1/2	.35 9	.64 16	.89 22	2.07 53	M6	1.97 50
2	.35 9	.64 16	.92 23	2.40 61	M6	1.97 50



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Specifications

NIBCO ball valves are designed and manufactured to give maximum performance on recommended service at the lowest possible initial and upkeep cost. They meet or exceed the following specifications developed through years of experience, research and many laboratory tests.

Ball Valves

MSS SP-110 Ball valves threaded, socket-welding, solder joint, grooved and flared ends.

FED SPEC WW-V-35C, Ball valves threaded, socket-welding, solder joint, grooved and flared ends were
Type II, Cass C, D, discontinued in 1998. (for reference only)
Style 1 and 3

MSS SP-25 Standard marking system for valves.

API 598 Valve inspection and testing.

API 607 Fire test for soft seated quarter-turn valves.

API 608 Metal ball valves – flanged, threaded and welding ends.

MSS SP-72 Ball valves with flanged and butt welding ends for general service.

ASME/ANSI B16.34 Valves, flanged, threaded and welding ends.

ASME/ANSI B16.5 Steel pipe flanges, flanged valves and fittings.

The above list of specifications covers a variety of NIBCO ball valves but does not mean that every NIBCO ball valve meets every specification.

For special applications, contact your NIBCO representative.

Temperature Limits of Materials

Rated Internal Working Pressures of Joints made with Copper Water Tube and Solder Type Fittings, PSI (Bar)

Solder or Brazing Alloy Used in Joints	Service Temperature ° F (° C)		Copper Water Tube K, L and M Nominal Sizes, In Inches (mm)						Saturated Steam LB (kg)
			Water A						
			¼" to 1"	1¼" to 2"	2½" to 4"	5" to 8"	10" to 12"	All Sizes	
50- 50 Tin-Lead ^{B, G}	100	(38)	200 (14)	175 (12)	150 (10)	135 (9)	100 (7)	15 ^D (6.8) ^D	
	150	(66)	150 (19)	125 (8)	100 (7)	90 (6)	70 (4)		
	200	(93)	100 (9)	90 (6)	75 (5)	70 (40)	50 (3)		
	250	(121)	85 (6)	75 (5)	50 (3)	45 (3)	40 (2)		
95-5 Tin-Antimony ^C	100	(38)	635 (43)	560 (39)	375 (26)	340 (23)	150 (10)	15 ^D (6.8) ^D	
	150	(66)	635 (43)	560 (39)	375 (26)	340 (23)	150 (10)		
	200	(93)	630 (43)	480 (33)	375 (26)	340 (23)	140 (10)		
	250	(121)	435 (30)	330 (23)	265 (18)	245 (16)	110 (7)		
Brazing Alloys, Melting at or above 1000° F (538° C)	100-150-200	(32-66-93)	H	H	H	H	H	120 ^E (54.4) ^E	
	250 ^F	(121) ^F	H	H	H	H	H		
	350	(177)	H	H	H	H	H		

The values in the above table are based on data in the National Bureau of Standards publications, "Building Materials and Structures Reports" BMS 58 and BMS 83.

^AIncluding other non-corrosive liquids and gases.

^BASTM B 32, Alloy Grade Sn50.

^CASTM B 32, Alloy Grade Sb5.

^DThis pressure is determined by the temperature of saturated steam at 15 lb. (6.8 kg) pressure at 250° F (121° C).

^EThis pressure is determined by the temperature of saturated steam at 120 lb. (54.4 kg) pressure at 350° F (177° C).

^FFor service temperatures lower than 250° F (121° C), the solders as above may be used.

^GThe Safe Drinking Water Act Amendment of 1986 prohibits the use in potable water systems of any solder having a lead content in excess of 0.2%.

^HRated internal pressure is that of the tube being joined. While solders can be used, brazing alloys are recommended.

Pressure/Temperature Ratings for NIBCO Gray Iron and Ductile Iron Valves

Pressure/Temperature Ratings for Bronze Pressure Rated Valves†					
Press. Class		Pressure – PSI			
End Conn.		125 ^{2,3}	150 ³	200 ³	300 ³
Temperature		Thd.	Thd.	Thd.	Thd.
°F	°C	ASTM B 62	ASTM B 61		
-20 to 150	-28.8 to 65.5	200	300	400	600
200	93.3	185	270	375	560
250	121.1	170	240	350	525
300	148.8	155	210	325	490
350	176.6	140	180	300	450
400	204.4	–	–	275	410
406	207.7	125	150	–	–
450	232.2	120 ¹	145 ¹	250	375
500	260.0	–	–	225	340
550	287.7	–	–	200	300

¹ Some codes (i.e. ASME BPVC, SECTION 1) limit the rating temperatures of the indicated material to 406° F temperatures.

² Buna-N disc valves limited to 180° F temperatures.

³ PTFE disc valves limited to 450° F temperatures.

⁴ Solder end valves are limited by temperatures which affect the strength of the solder joint.

† Tables from MSS SP-80

Temperature		Gray Iron				Ductile Iron	
		Class 125 200 WOG		Class 250 500 WOG		Class 150	
°F	°C	2"-12"	14"-24"	30"-48"	2"-12"	14"-24"	2"-12"
-20 to 100	-28.8 to 37.7	200	150	150	500	300	285
150	65.5	200	150	–	500	300	243
200	93.3	190	135	115	460	280	235
225	107.2	180	130	100	440	270	–
250	121.1	175	125	85	415	260	225
275	135.0	170	120	65	395	250	–
300	148.8	165	110	50	375	240	215
325	162.7	155	105	–	355	230	–
350	176.6	150	100	–	335	220	210
375	190.5	145	–	–	315	210	–
400	204.4	140	–	–	290	200	200
425	218.3	130	–	–	270	–	–
*450	232.2	125	–	–	250	–	185
500	260.0	–	–	–	–	–	170
550	287.7	–	–	–	–	–	155
600	315.5	–	–	–	–	–	140
650	343.3	–	–	–	–	–	125

The temperature shown for the corresponding rating shall be the metal temperature of the pressure retaining parts. It shall be assumed that the metal temperature will be the temperature of the contained fluid. Use of a pressure rating at a metal temperature other than that of the contained fluid shall be the responsibility of the user.

¹ Buna-N Disc Valves limited to 180° F or EPDM Disc Valves limited to 250° F.

*Maximum temperature for bronze trim or PTFE

Flow Data

Cv Values for Valves

VALVE SIZE

Size (mm.)	4	8	10	15	20	25	32	40	50	65	80	90	100	125	150
Size (In.)	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
GATES															
S/T-29	.5	2	4.9	9.1	22	40	65	95	175						
S/T-111, 113, 131, 133 134, 135, 136, 154, 174, 176	—	5.6	10.7	17.6	32	54	97	135	230	337	536	710	960	1,525	2,250
T/F-617, 619, 667, 669, 607, 609 F-637, 639									215	335	510	710	945	1,525	2,250
GLOBES															
S/T-211, 235, 256 275-Y	.61	1.16	2.2	3.64	6.65	11.1	20	28	48	70	111	—	198		
T-275-B	—	1.16	2.21	3.64	6.65	11.1	20	28	48	70	111				
F-718, F-738								45	70	105	—	195	315	465	
CHECKS															
S/T-413, 433, 473 (Swing)	—	1.3	2.5	4.8	14.3	24	43	60	102	150	238	315	435	675	1,000
S/T-480 (Poppet)	—	—	3.70	6.86	16.3	30	49	72	130						
F-908 (Swing)									150	243	356	—	665	1,073	1,584
T/F-918, 968, 938 (Swing)									137	221	327	—	605	975	1,440
KW-900-W									48	77	135	—	270	450	720
F-910, 960 (Poppet)											155	—	278	431	625
W-910, 960 (Poppet)									66	88	130	—	228	350	520
W-920-W									71	108	178	—	330	560	840
BALL															
F-510, 530	—	—	—	11	25	45	—	137	217	—	482	—	790	—	1,144
F-515, 535	—	—	—	25	50	85	—	259	440	840	1,400	—	2,350	—	5,200
F-565	—	—	—	—	—	75	—	235	400	—	1,180	—	2,040	—	—
T-560-BR/CS/S6	—	4.0	4.0	5	12	22	35	52	95	—	—				
T-570	—	—	—	7	12	25	38	52	95	—	—				
T/S-580	—	—	—	5.8	13.9	27	44	64	100	—	—				
T/S-580-70	—	—	—	—	—	—	38.5	76	101.4	183	390				
T/S-585-70	—	4.2	6.2	15.3	30.4	48.8	103	143	245	—	—				
TM-585-70-66	—	—	—	15.3	30.4	48.8	103	143	245	—	—				
AT-585-70-66	—	—	—	—	—	—	—	—	183	—	—				
T-580-70-W3	—	—	—	—	—	—	21.6	38	48.5	—	—				
T/S-585-70-W3	—	—	—	6	12	19.5	—	—	—	—	—				
T-580 (CS-S6)	—	6	12	15	23	36	44	64	114	—	—				
T/S-590-Y	—	—	—	—	—	—	44	64	100	183	390				
T/S-595-Y	—	5.9	11.4	18.7	34	57	103	143	245	310	—				
TM/KM-595 (CS-S6)	—	6	12	19	37	64	103	143	245	—	—				
T/K-595 (CS-S6)	—	6	12	19	37	64	103	143	245	—	—				
BUTTERFLY															
LD1000/2000 Large Diameter															
LD/WD-2000, 3000									166	247	340	—	660	1,080	1,613
GD-4765, 4775 FC-2700, FD-5700									145	195	290	—	600	930	1,600

NOTE: Flow data for angle valves use globe Cv times 1.25:
Bronze Angles – 311, 335, 375, 376-AP
Iron Angles – 818, 869, 831

Liquid Flow:

$$Q = C_v \sqrt{\frac{\Delta P}{S}} \quad \text{or} \quad \Delta P = S \left(\frac{Q}{C_v} \right)^2$$

where... Q = flow rate (gallons per minute)
ΔP = pressure drop across valve (psi)
S = specific gravity of media

This equation is good for turbulent flow and for liquids with viscosities near that of water.

(Cv is defined as the flow in GPM that a valve will carry with a pressure drop of 1.0 psi when the media is water at 60°F.) (The specific gravity of water is 1 (one).)

Gas Flow:

$$Q = 1360 C_v \sqrt{\frac{\Delta P \times P_1}{S T}}$$

where... Q = gas flow (SCFH—std. cu. ft/hr)
S = specific gravity of gas (air = 1.0)
T = temp—degrees Rankine (°F + 460)
ΔP = pressure drop across valve (psi)
P₁ = upstream pressure (psia) absolute

NOTE: ΔP must be less than .5 P₁. (Flow is critical when ΔP is greater than .5 P₁.)

											(THROTTLING FACTORS)																								
											For throttling use with disc partially open. Multiply Cv by factor.																								
											NOTE: Gate valves are not throttled.																								
200	250	300	350	400	450	500	600	750	900		0	10	20	30	40	50	60	70	80	90	100														
8	10	12	14	16	18	20	24	30	36																										
4,150	6,700	9,925	13,800	18,375	23,600	29,600	43,570																												
											0	.35	.65	.90	.93	.96	.98	.99	1.00	1.00	1.00														
											0	.03	.035	.06	.1	.16	.24	.32	.47	.68	1.00														
860	1,390										0	.35	.65	.90	.93	.96	.98	.99	1.00	1.00	1.00														
											WARNING																								
											The Fluid Flow factors contained herein are calculated values.																								
											They are, therefore, approximations and cannot be used for highly critical flow																								
											or pressure drop calculations. For very precise flow measurements, tests must																								
											be conducted on any valve mentioned within this catalog. Throttling of ball																								
											valves is not recommended when valves are less than 45° open.																								
2,937	4,730	6,985									0	10	20	30	40	45	50	60	70	80	90														
2,670	4,300	6,350									0	.01	.05	.16	.30	.37	.45	.58	.71	.87	1.00														
2,200	3,550	5,250									0	.01	.05	.16	.30	.37	.45	.58	.71	.87	1.00														
500	1,450	2,500	3,400	4,400							0	.01	.05	.16	.30	.37	.45	.58	.71	.87	1.00														
2,164	3,507	5,516									0	.01	.05	.16	.30	.37	.45	.58	.71	.87	1.00														
10,200	14,400	25,300									0	.01	.05	.16	.30	.37	.45	.58	.71	.87	1.00														
											0	.01	.05	.16	.30	.37	.45	.58	.71	.87	1.00														
											0	.01	.05	.16	.30	.37	.45	.58	.71	.87	1.00														
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											0	.01	.05	.16	.30	.37	.45	.58	.71	.87	1.00														
											0	.01	.05	.16	.30	.37	.45	.58	.71	.87	1.00														

Properties of Valve Materials

			NOMINAL OR MAXIMUM CHEMICAL COMPOSITION								
	ASTM NO.	OTHER ALLOY DESIGNATION	CARBON	CHROME	COBALT	COPPER	IRON	LEAD	MANGA-NESE	MOLYB-DENUM	
			AL	C	Cr	Co	Cu	Fe	Pb	Mn	Mo
Bronze & Brass	Commercial Aluminum 380	SC 84 A (modified)	UNS A38000	87.0			1.0	1.3		.35	
	Free Cutting Brass	B 16	UNS C36000				61.5		3.0		
	Navy "M" (Steam Bronze)	B 61	UNS C92200	.005			88.0	.25	1.5		
	Composition Bronze (Ounce Metal)	B 62	UNS C83600	.005			85.0	.30	5.0		
	Copper-Silicon Alloy B	B 98/B 99	UNS C65100				96.0	.8	.05	.7	
	Forging Brass	B 124	UNS C37700				60.0	.3	2.0		
	Forging Brass	B 283	UNS C37700				58.0	.3	2.5		
	Brass Wire (Red Brass)	B 134	UNS C23000				85.0	.05	.05		
	Leaded Red Brass	B 140	UNS C31400				89.0	.10	1.9		
	Aluminum Bronze (Cast)	B 148	UNS C95400	11.0			85.0	4.0			
	Aluminum Bronze (Rod)	B 150	UNS C64200	7.0			91.0	.30	.05	.10	
	Silicon Red Brass	B 371	UNS C69400				81.5	.20	.30		
	Leaded Semi-Red Brass	B 584	UNS C84400	.005			81.0	.40	7.0		
	Leaded Red Brass		UNS C84500	.005			78.0	.40	7.0		
	Leaded Nickel Bronze	B 584	UNS C97600				64.0		4.0		
Copper	Copper (Wrot)	B 75	UNS C12200				99.9				
Iron	Gray Iron	A 126	Class B								
	3% Ni Gray Iron	A 126 (modified)	Class B								
	Austenitic Gray Iron (Ni-Resist)	A 436	Type 2	3.00	2.0		.5			1.0	
	Ductile Iron (Ferritic)	A 395		3.20							
	Austenitic Ductile Iron (Ductile) (Ductile) (Ni-Resist)	A 536 65-45-12 A 536 80-55-06 A 439 D2C		2.9	.5					2.4	1.0

NOMINAL OR MAXIMUM CHEMICAL COMPOSITION								NOMINAL PHYSICAL PROPERTIES			
NICKEL Ni	PHOS P	SILICON Si	SULFUR S	TIN Sn	TITAN- IUM Ti	TUNG- STEN W	ZINC Zn	TENSILE STRENGTH Psi	YIELD STRENGTH Psi	% ELONGATION	HARDNESS
.50		12.0		.15			.50	42,000	19,000	3.5	
							35.5	50,000	20,000	15	75 HRB
1.0	.05	.005	.05	6.0			4.5	34,000	16,000	22	65 HB *500 kg
1.0	.05	.005	.08	5.0			5.0	30,000	14,000	20	60 HB 500 kg
		1.6					1.5	86,000**	20,000	11	65 HRB
							38.0	52,000	20,000	45	80 HRB
							38.0	52,000	20,000	45	78 HRB
							15.0	56,000			60 HRB
.7							9.1	50,000	30,000	7	60 HRB
								75,000	30,000	12	170 HB *3000 kg
.25		2.0		.20			.50	90,000	45,000	9	80 HRB
		4.0					14.5	80,000	40,000	15	85 HRB
	.02	.005	.08	3.0			9.0	29,000	13,000	18	55 HB *500 kg
1.0	.02	.005	.08	3.0			12.0	29,000	13,000	16	55 HB *500 kg
20.0				4.0			8.0	40,000	17,000	10	80 HB
	.02							36,000	30,000	25	45 T
	.75		.15					31,000			195 HB
3.00	.75		.15					31,000			195 HB
20.0		2.0	.12					25,000			118 HB
	.08	2.50						60,000	40,000	18	167 HB
	.08	2.50						65,000	45,000	12	160 HB
	.08	2.50						80,000	55,000	6	160 HB
24.0	.08	3.0						58,000	28,000	20	146 HB

*Load Applied During Testing
**Allowable Range is 75,000 to 95,000

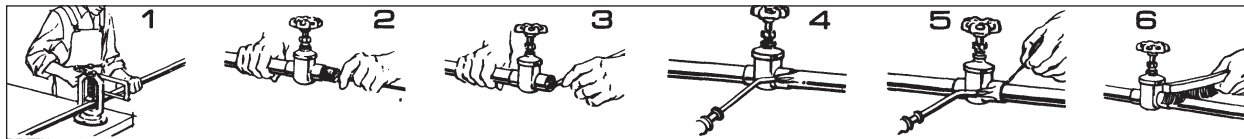
Properties of Valve Materials

	ALLOY	ASTM NO.	OTHER ALLOY DESIGNATION	NOMINAL OR MAXIMUM CHEMICAL COMPOSITION								MANGANESE Mn	MOLYBDENUM Mo
				CARBON AL C	CHROME Cr	COBALT Co	COPPER Cu	IRON Fe	LEAD Pb				
Stainless Steel	Wrot 304	A 167 304	UNS S30400	.08	19						2		
	Cast 316	A 351 CF8M	UNS S31600	.08	20						1.5	2.5	
	Cast 316	A 743 CF16F		.16	20						1.5	1.5	
	Cast 316	A 743 CF8M		.08	20						1.5	2.5	
	Wrot 316	A 276 316	UNS S31600	.08	17						2		
	Cast 410	A 217 CA 15		.15	13						1	2.5	
	Forged 410	A 182 F6A2		.15	13						1		
	Wrot 410	A 276 410	UNS S41000	.15	13						1		
	Wrot 416	A 582	UNS S41600	.15	13						1.25		
	Wrot 420	A 276 420	UNS S42000	.15	13						1		
Steels	Cast Alloy 20	A 743 CN7M		.07	20		3.5				1.5	2.5	
	Wrot Alloy 20	B 473 20C63	UNS N08020	.07	20		3.5				2	2.5	
	Wrot 17-4PH	A 564 630	UNS S17400	.07	16		3.5				1		
	Forged Carbon Steel	A 105		.35							1		
	Cast Carbon Steel	A 216 WCB		.3							1.1		
	Cast Carbon Steel	A 216 WCC		.25							1.2		
	1¼ Cast Cr. Moly Steel	A 217 WC6		.2	1.2						.7	.55	
	Cast Cr. Moly Steel	A 217 C5		.2	5						.55	.55	
	Cast Low Carbon Steel	A 352 LCB		.3							1.0		
	Nickel-Low Carbon Steel	A 352 LC2		.25							.65		
Trim Steels	B-7 Alloy Steel Studs	A 193 B7		.4	1						.85	.2	
	304 SS Nuts	A 194 GR8		.08	19						2		
	2-H Alloy Steel Nuts	A 194 2H		.4									
	Reg. Steel Bolting	A 307 Gr. B		.2							.45		
	Steel Bolting	A 449		.4							.6		
	304SS Bolting	A 493 304	UNS S30400	.08	19						2		
	Eyebolts	A 489		.48							1.0		
	Gland Nuts	A 563 Gr. A		.37	.55		.35				1.0		
	H/W Nuts	A 108 1020	UNS G10200	.20							.45		
	Swing Bolt Pin	A 108 1212	UNS G12120	.13							.85		
Monel H.F.	Yoke Bushing Caps	A108 12L14		.15					.25		1.0		
	Seat Ring Base	A 519 1026		.25							.75		
	(Trademark Materials like, Stellite 6*, Stoddy 6, and Wallex 6)		AWS 5.13	1.25	29	55		2.5					
	Cast Monel		QQ-N-288-E	.5	.3		30	3.5			1.5		
	Wrought Monel (K-500)		QQ-N-286-C1B	3.0	.1		24	2.0			1.5		
*Trademark by Cabot Corp.													

*Trademark by Cabot Corp.

NOMINAL OR MAXIMUM CHEMICAL COMPOSITION								NOMINAL PHYSICAL PROPERTIES			
NICKEL Ni	PHOS P	SILICON Si	SULFUR S	TIN Sn	TITAN- IUM Ti	TUNG- STEN W	ZINC Zn	TENSILE STRENGTH Psi	YIELD STRENGTH Psi	% ELONGATION	HARDNESS
9	.045	1.0	.03					75,000	30,000	40	202 HB
11	.04	2.0	.04					70,000	30,000	25	
11	.04	2.0	.04					70,000	30,000	30	
12	.045	1.0	.03					75,000	30,000	30	
12	.045	1.0	.03					75,000	30,000	30	
1	.04	1.5	.04					90,000	65,000	18	
	.04	1.0	.03					85,000	55,000	18	200/225 HB
.5	.04	1.0	.03					100,000	80,000	15	
	.06	1.0	.15					114,000	95,000	17	235 HB
	.04	1.0	.03								250/450 HB
28	.04	1.5	.04					62,000	25,000	35	
35	.045	1.0	.035					85,000	35,000	30	
4	.04	1.0	.03					115,000	75,000	18	255 HB
	.04	.035	.05					70,000	36,000	22	187 HB
	.04	.6	.045					70,000	36,000	22	
	.04	.6	.04					70,000	40,000	22	
	.04	.06	.045								
	.04	.75	.045								
	.04	.6	.045					65,000	35,000	24	
2.5	.04	.6	.045					70,000	40,000	24	
	.035	.25	.04					125,000	105,000	16	
9	.045	1.0	.03								126/300 HB
	.04		.05								250/300 HB
	.04		.05					100,000		18	121/212 HB
	.04		.05					120,000	92,000	14	
9	.045	1.0	.03					90,000			
	.04	.25	.05					75,000	30,000	30	
.35	.04	.2	.05								
	.04		.05								120/300 HB
	.10		.20								
	.07		.3					55,000	35,000	25	
	.04		.05								
3						5		105,000		10	350 HB
60		1.5						65,000	32,500	25	125/150 HB
67		.5	.01		.5			135,000	95,000	20	255 HB

Valve Installation Tips



SOLDERING AND SILVER BRAZING

Analyze the application to determine which valve is best suited for installations, keeping in mind the service for which the valve is recommended. Before installing the correct valve, review the installation instructions to prevent damage to the valve and to assure its maximum efficiency.

1. Cut tube end square. Ream, burr and size.
2. Use sand cloth or steel wire brush to clean both ends to a bright metal finish. Steel wool is *not* recommended.
3. Apply flux to outside of tube and inside of solder cup. Surfaces to be joined must be completely covered. Use flux sparingly.
4. Be sure that valve is fully open. Apply heat to tube first. Transfer as much heat as possible through tube into valve. Avoid prolonged heating of valve itself.
- 4a. Silver Brazing Method: Assemble parts to be brazed. If fluxed parts are allowed to stand, the water in the flux will evaporate, and dried flux is liable to flake off, exposing metal surfaces to oxidation. Assemble joint by inserting tube into socket hard against the stop. The assembly should be firmly supported so that it will remain in alignment during the brazing operation.

NOTE: On one-inch and larger valves, it is difficult to bring the whole joint up to temperature at one time. It will frequently be found desirable to use a double-tip torch to maintain the proper temperature over the larger area. A mild pre-heating of the whole socket area is recommended. Apply heat to parts to be joined. The preferred method is by oxy-acetylene flame. Heat tube first, beginning one inch from edge of valve. Sweep flame around tube in short strokes up and down at right angles to run of tube. To avoid burning through tube, the flame should be in continuous motion and not allowed to remain on any one point.

Apply flame to valve at base of socket. Heat uniformly, sweeping flame from valve to tube until flux on valve becomes quiet. Avoid excessive heating of valve.

When flux appears liquid and transparent on both tube and valve, start sweeping flame back and forth along axis of joint to maintain heat on parts to be joined, especially toward base of valve socket.

5. Use just enough solder: with wire solder, use 3/4" for a 3/4" valve, etc. If too much solder is used, it may flow past tube stop and clog sealing area. When joint is filled, a continuous run of solder or brazing alloy will be visible.
- 5a. Silver Brazing Method: Apply brazing wire or rod at point where tube enters valve socket. Keep flame away from rod or wire as it is fed into the joint. Move flame back and forth as alloy is drawn into joint. When the proper temperature is reached alloy will flow readily

into space between tube outer wall and valve socket. When joint is filled, a continuous rim of brazing alloy will be visible.

6. Remove excess solder with small brush while plastic, leaving a fillet around end of valve as it cools.

SILVER BRAZING

The strength of a brazed joint does not vary appreciably with the different brazing materials, but depends to a large extent upon the maintenance of proper clearance between the outside of the tube and the valve socket. The interior dimensions of silver brazing valve sockets are machined to the closest tolerances and finished smooth to promote full capillary attraction.

NOTE: Care should be observed in cleaning and in removing residues of the cleaning medium. Attempting to braze a contaminated or improperly cleaned surface will result in an unsatisfactory joint. Silver brazing alloys will not flow over or bond to oxides. Oily or greasy surfaces repel fluxes, leaving bare spots which oxidize and result in voids and inclusions.

THREADING

Grit, dirt or any foreign matter accumulated in the pipe can hinder efficient valve operation and seriously damage vital valve parts. Thoroughly clean pipe internally with air or steam.

When threading pipe, gauge pipe threads for size and length to avoid jamming pipe against seat and disc. Thoroughly clean threaded end to remove any harmful steel or iron deposits. For a good joint, use PTFE tape or pipe dope. If pipe dope is used, apply sparingly on pipe threads, *never* on valve threads. Do not allow any pipe dope into valve body in order to avoid damage to disc and seat.

Before installation, check line of flow through valve so that valve will function properly. Close valve completely before installation. Apply wrench to hex next to pipe and guard against possible distortion. After installation of valve, support line; a sagging pipe line can distort valve and cause failure.

FLANGED

There are several steps to follow to make sure that a flanged joint will be properly assembled. First, clean the joint carefully. Then loosely assemble the joint by putting in the bottom two or three bolts. Then carefully insert the gasket into place. The bottom bolts will help locate the gasket and hold it in position. Then insert the rest of the bolts into place and tighten all of the bolts evenly—not in rotation, but by the cross-over method to load the bolts evenly and eliminate concentrated stresses. The bolts should be checked for tightness after an appropriate interval of use and retightened if necessary.

Figure Number Comparisons

Threaded/Solder/Weld End Ball Valves

	NIBCO	Milwaukee	Apollo (Conbraco)	Watts	Jamesbury	Worcester
One-Pc. Bronze	560-BR	—	9A-100	B6100	—	—
Two-Pc. Bronze Conventional Port	580-70	BA100/150	70-100/200	B6000/6001	A11-TT	4811R
Two-Pc. Bronze Full Port	585-70	—	77-100/200	B6080/6081	—	—
Two-Pc. Brass Full Port	FP-600	BA475/485	64-100	FBV(S)-3	—	—
Three-Pc. Bronze Conventional Port	590-Y	—	—	—	—	411T
Three-Pc. Bronze Full Port	595-Y	BA300/350	82-100/200	B6800/6801	—	5911T
One-Pc. Carbon Steel Cast	560-CS	—	92-100	C-7100	33-2200-ML	—
One-Pc. Carbon Steel Bar Stock	570-CS	—	93-100	—	—	5844R
Two-Pc. Carbon Steel	580-CS	20 CS OR	73-100	C-7000	A22MT	4844R
Three-Pc. Carbon Steel ISO Mtg Conventional Port	TM/KM/BM 590-CS	—	83-300/400	C-7450	4A-2200-MT	444T
Three-Pc. Carbon Steel Full Port	595-CS	BA370	83-500/600	C-7480	4B-2200-MT	5944R
Three-Pc. Carbon Steel ISO Mtg Full Port	TM/KM 595-CS	—	83R-100/200	C-7480 02 Y90 C-7481 02 Y90	4B-2236-MT 4D-2236-MT	—
One-Pc. Stainless Steel Cast	560-S6	—	96-100	S-8100	33-3600-ML	—
Two-Pc. Stainless Steel	580-S6	20 SS OR	76-100	S-8000	A36-MT	4866R
Three-Pc. Stainless Steel Conventional Port	590-S6	—	85-100/200	S-8450	4A-3600-MT	466T
Three-Pc. Stainless Steel Full Port	595-S6	BA360	86-100/200	S-8480	4A-3600-MT	5966R
Three-Pc. Stainless Steel ISO Mtg Full Port	TM/KM 595-S6	—	—	S-8480 02 Y90 S-8481 02 Y90	4B-3636-MT 4D-3636-MT	—

Flanged Ball Valves

Uni-Body Flanged Ball Valves

	NIBCO	Apollo	Jamesbury	Kitz	Velan	Watts	Worcester
Class 150 Carbon x Stainless	F-510-CS-R-66/FS	88-140	5150-31-2236MT	K150-SCTAM	—	CF-1500-150-02-T316	5146RT150
Class 300 Carbon x Stainless	F-530-CS-R-66/FS	88-740	5300-31-2236MT	K300-SCTAM	—	CF-1500-300-02-T316	5246RT300
Class 150 Stainless x Stainless	F-510-S6-R-66/FS	87-100	5150-31-3600MT	K150-UTAM	—	SF-2500-150-02	5166RT150
Class 300 Stainless x Stainless	F-530-S6-R-66/FS	87-700	5300-31-3600MT	K300-UTAM	—	SF-2500-150-02	5266RT300

Split-Body Full Port Flanged Ball Valves

Description	NIBCO	Apollo	Jamesbury	Kitz	Velan	Watts
Class 150 Carbon x Stainless	F-515-CS-F-66/FS	88-240	6150-31-2236MT	K-150-SCTBM	F-01402-SSGA	CF-1500-150-02
Class 300 Carbon x Stainless	F-535-CS-F-66/FS	—	6300-31-2236MT-1	K300-SCTBM	F-11402-SSGA	CF-1500-150-02-T316
Class 150 Stainless x Stainless	F-515-S6-F-66/FS	87-200	6150-31-3600MT	K150-UTBM	F-01413-SSGA	SF-2500-150-02
Class 300 Stainless x Stainless	F-535-S6-F-66/FS	—	6300-31-3600MT	K300-UTBM	F-11413-SSGA	SF-2500-150-02

To be used as a guide only. Some variations in detail are possible.

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NIBCO INC. warrants each NIBCO pressure rated metal valve to be free from defects in materials and workmanship under normal use and service for a period of five (5) years from date put into service.

In the event any defect occurs which the owner believes is covered by this warranty, the owner should immediately contact NIBCO Technical Services, either in writing or by telephone at (888) 446-4226 or (574) 295-3000. The owner will be instructed to return said product, at the owner's expense, to NIBCO INC., or an authorized representative for inspection. In the event said inspection discloses to NIBCO INC.'s satisfaction that said valve is defective, it will be replaced at NIBCO INC.'s expense. Replacements shall be shipped free of charge to the owner. In the event of the replacement of any valve, NIBCO INC. shall further pay the owner the greater of Twenty-Five (25%) Percent of the price of the valve according to NIBCO INC.'s published suggested list price schedule in effect at the time of purchase, or Ten (\$10.00) Dollars, to apply on the cost of the installation of said replacement valve.

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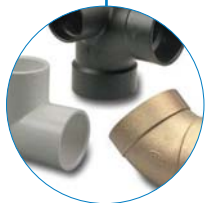


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