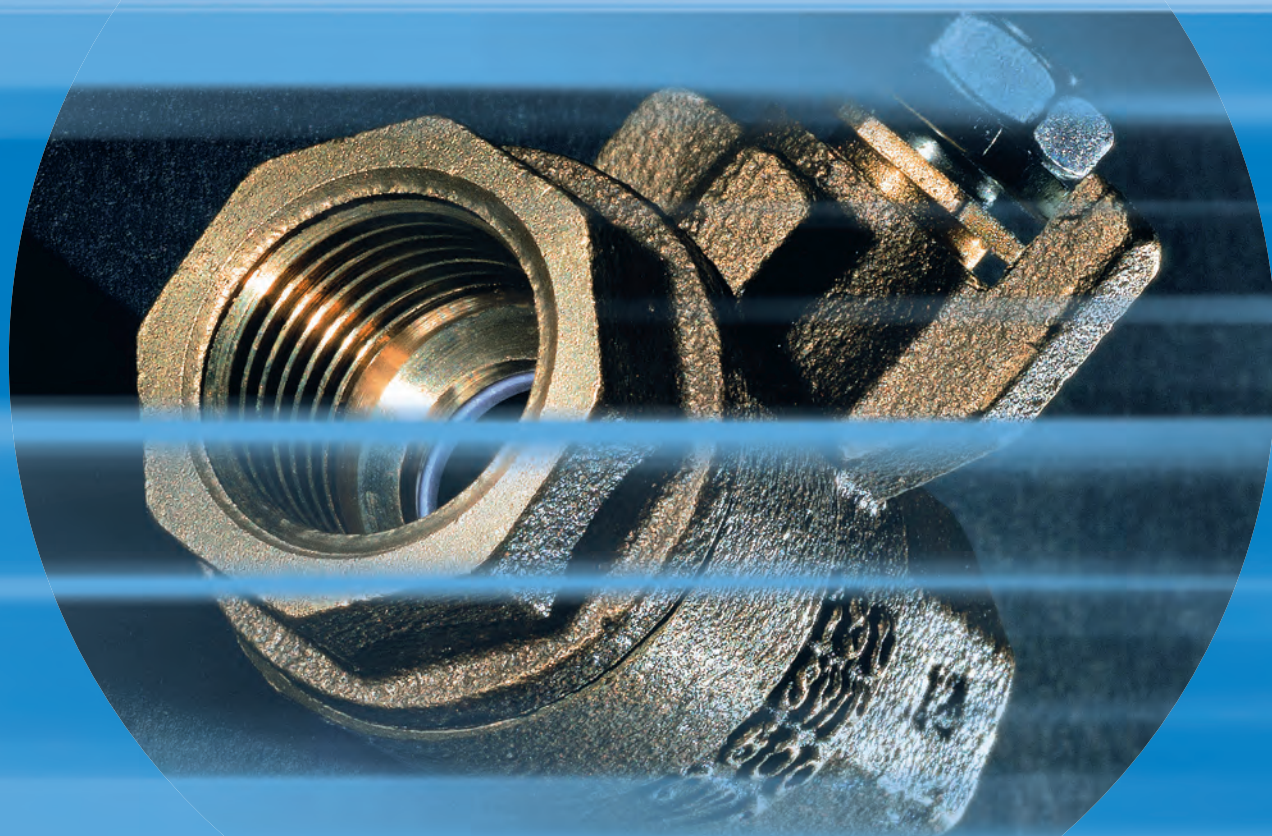


# NIBCO®

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.com<sup>sm</sup> 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



# Table of Contents



<b>Bronze Ball Valves</b> .....	<b>4-42</b>	T-580-S6-R-66-SR.....	65
Figure Number Key.....	4	T-585-S6-R-66-LL.....	66
Illustrated Index 1 and 2-Pc. Ball Valves.....	5	T-585-S6-R-66-SR.....	67
Illustrated Index 3-Pc. Ball Valves.....	6	TM/KM/BM-590-S6-R-66-FS-LL.....	68
T-560-BR-R-20/Y-20.....	7	T/K-595-S6-R-66-LL.....	69
T-560-BR-R-66/Y-66.....	8	TM/KM-595-S6-R-66.....	70
T/S-580-70.....	9	Pressure/Temperature Ratings.....	71-72
T/S-580-70-66.....	10		
T/S-585-70.....	11	<b>Carbon Flanged Ball Valves</b> .....	<b>73-80</b>
T/S-585-70-66.....	12	Figure Number Key.....	73
TS/ST-585-70.....	13	Illustrated Index Flanged Ball Valves.....	74
MTT-585-70.....	14	Flanged Detail of Unibody Design.....	75
T/S-585-70-HC w/Hose Cap.....	15	Flanged Detail of Split-Body Design.....	76
T/S-585-70-66-HC w/Hose Cap.....	16	F-510-CS-R-66-FS.....	77
T/S-585-70-SU w/Single Union.....	17	F-530-CS-R-66-FS.....	78
T/S-585-70-66-SU w/Single Union.....	18	F-515-CS-F-66-FS.....	79
TS/ST-585-70-SU w/Single Union.....	19	F-535-CS-F-66-FS.....	80
T-585-70-66-ST 250# Steam Rated.....	20		
T-585/580-70-SV w/Safety Vent.....	21	<b>Stainless Flanged Ball Valves</b> .....	<b>81-86</b>
T-585/580-70-UL.....	22	Illustrated Index Flanged Ball Valves.....	81
TM-585-70-66 w/ Mounting Pads.....	23	F-510-S6-R-66-FS.....	82
T/S-585-70-W3 Three-Way Valve.....	24	F-530-S6-R-66-FS.....	83
T/S-585-70-66-W3 Three-Way Valve.....	25	F-515-S6-F-66-FS.....	84
T/S-590-Y.....	26	F-535-S6-F-66-FS.....	85
T/S-590-Y-66.....	27	Pressure/Temperature Ratings.....	86
T-590-Y-UL.....	28		
G-590-Y.....	29	<b>Options and Accessories</b> .....	<b>87-95</b>
G-590-Y-66.....	30	Options and Accessories Index.....	87
T/S-595-Y/R.....	31	Bronze Ball Valves Options and Accessories.....	88
T-595-Y-SS.....	32	NIB-SEAL® Technical Data.....	89
T/S-595-Y-66.....	33	NIB-SEAL® Locking Extended Handle Technical Data.....	90
T-595-Y-66-SS.....	34	Bronze Ball Valves Options and Accessories (continued).....	91
TS-595-Y.....	35	CS/SS Ball Valves Options and Accessories.....	92
G-595-Y.....	36	CS/SS Flanged Ball Valves Options and Accessories.....	93
G-595-Y-66.....	37	Quick Reference for Ball Valve Options.....	94
T-595-Y-UL.....	38	Seat Materials – PTFE and 15% RPTFE.....	95
CS-595-YX-EC.....	39	Seat Materials – 25% RPTFE, Carbon PTFE and Nylon.....	96
CS-595-YX-66-EC.....	40		
Pressure/Temperature Ratings.....	41	<b>System Control Products</b> .....	<b>97-108</b>
		System Control Products Index.....	97
<b>Carbon Steel Ball Valves (Thd, SW, BW)</b> .....	<b>42-59</b>	Ball Valve Actuation and Control.....	98
Figure Number Key.....	42	Ball Valve Actuation Data Sheet.....	99
Illustrated Index 1, 2 and 3-Pc. Ball Valves.....	43-44	TM/585-70-66-AP w/Pneumatic Actuator.....	100
T-560-CS-R-25-LL.....	45	TM-585-CV w/Reduced Orifice Ball.....	101
T-560-CS-R-25-FS-LL.....	46	Torque Charts for Ball Valves.....	102-103
T-560-CS-R-66-LL.....	45	Two-Piece and Three-Way Actuator Mounting Data.....	
T-560-CS-R-66-FS-LL.....	48	Bronze T-585-W3.....	104
T-570-CS-R-25.....	49	Two-Piece Actuator Mounting Data CS/SS T/TC-580 Series.....	105
T-570-CS-R-66.....	50	Three-Piece Actuator Mounting Data Bronze 590/595 Series.....	106
TC-580-CS-R-25-LL.....	51	Three-Piece Actuator Mounting Data CS/SS TM/KM-595 Series.....	107
TC-580-CS-R-66-LL.....	52		
TC-580-CS-R-25-SR.....	53	<b>Engineering Data</b> .....	<b>108-119</b>
TC-580-CS-R-66-SR.....	54	Engineering Data Index.....	108
T-580-CS-R-25.....	55	Ball Valve Specifications.....	108
T-580-CS-R-66.....	56	Temperature Limits of Material.....	109
TM/KM/BM-590-CS-R-66-FS-LL.....	57	Flow Data.....	110-111
T/K-595-CS-R-66-LL.....	58	Valve Properties Bronze, Brass, Copper and Iron.....	112-113
TM/KM-595-CS-R-66.....	59	Valve Properties Steel, SS and Alloys.....	114-115
		Valve Installation Tips.....	116
		Valve Warranty.....	118
<b>Stainless Steel Ball Valves (Thd, SW, BW)</b> .....	<b>60-72</b>		
Figure Number Key.....	60		
Illustrated Index 1, 2 and 3-Pc. Ball Valves.....	61		
T-560-S6-R-66-LL.....	62		
T-560-S6-R-66-FS-LL.....	63		
T-580-S6-R-66-LL.....	64		

Visit our website for the most current information.

# 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 G - Grooved GM - Grooved ISO Mount KM - Socket Weld ISO Mount MTT - Male x Female Thread S - Solder ST - Solder x Thread T - Thread TC - Thread (investment cast carbon body) TM - Thread ISO Mount TS - Thread x Solder	560 - One-Piece Body Reduced Port 600 PSI 580 - Two-Piece Conventional Port 400 PSI 580-70 - Two-Piece Conventional Port 600 PSI 585-70 - Two-Piece Full Port 600 PSI 585-CV - Two-Piece with a Flow Control Port 590 - Three-Piece Body Conventional Port 600 PSI 595 - Three-Piece Body Full 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 HCL - Horizontal Chain Lever IC - Integral Check LL - Locking Lever M - Memory Stop NS - NIB-SEAL® Handle LX - NIB-SEAL® Locking Extended 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 SR - Spring Return Handle

\* 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.

### Chemical Compatibility

Please consult the most current edition of the NIBCO Chem-Guide for recommendations regarding chemical compatibility of material exposure to specific media and media-treatment additives. The NIBCO Chem-Guide is a general guide on the topic of chemical compatibility and is by no means an exhaustive resource on the subject. Ultimately, proper material selection is the responsibility of the installer and/or end-user, taking into account all aspects of a system's design and intended use.



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.**

Visit our website for the most current information.







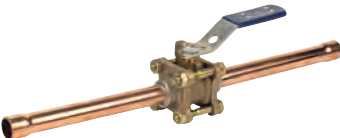
# One-Piece and Two-Piece Bronze Ball Valves Illustrated Index

<p>One-Piece Bronze Ball Valve 600 lb. CWP</p>  <p><b>T-560-BR-R/Y-20</b> <b>T-560-BR-R/Y-66</b> Sizes 1/4" thru 2" Threaded Ends <b>Page 7, 8</b></p>	<p>Two-Piece Bronze Ball Valve 600 lb. CWP</p>  <p><b>T/S-580-70</b> <b>T/S-580-70-66</b> Sizes 1/4" thru 3" <b>T/S-585-70</b> <b>T/S-585-70-66</b> Sizes 1/4" thru 2" Threaded or Solder Ends • Other End Connections <b>Page 9-15</b></p>	<p>Two-Piece Bronze Hose End w/ Cap Ball Valve 600 lb. CWP</p>  <p><b>T/S-585-70-HC</b> <b>T/S-585-70-66-HC</b> Sizes 1/2" thru 3/4" Threaded or Solder Ends <b>Page 16, 17</b></p>
<p>Two-Piece Bronze Single Union Ball Valve 600 lb. CWP</p>  <p><b>T/S-585-70-SU</b> <b>T/S-585-70-66-SU</b> <b>TS/ST-585-70-SU</b> Sizes 1/2" thru 2" Threaded or Solder Ends <b>Page 18, 19, 20</b></p>	<p>Two-Piece Bronze 250 Steam Ball Valve 250 lb. SWP 600 lb. CWP</p>  <p><b>T-585-70-66-ST</b> Sizes 1/2" thru 2" Threaded Ends <b>Page 21</b></p>	<p>Two-Piece Safety Vent Bronze Ball Valve 600 lb. CWP</p>  <p><b>T-580-70-SV</b> Sizes 1 1/4" thru 2" <b>T-585-70-SV</b> Sizes 1/4" thru 1" Threaded Ends <b>Page 22</b></p>
<p>Two-Piece UL/LP Gas Bronze Ball Valve 250 lb. CWP</p>  <p><b>T-580-70-UL</b> Sizes 1 1/4" thru 3" <b>T-585-70-UL</b> Sizes 1/4" thru 1" Threaded Ends <b>Page 23</b></p>	<p>Two-Piece Act. Mount Bronze Ball Valve 600 lb. CWP</p>  <p><b>TM-585-70-66</b> Sizes 1/2" thru 2 1/2" Threaded Ends <b>Page 24</b></p>	<p>Bronze 3-Way Ball Valve 400 lb. CWP</p>  <p><b>T/S-585-70-W3</b> <b>T/S-585-70-66-W3</b> Sizes 1/2" thru 2" Threaded or Solder Ends <b>Page 25, 26</b></p>

Visit our website for the most current information.

# Three-Piece Bronze Ball Valve Illustrated Index



<p>Three-Piece Bronze Ball Valve 600 lb. CWP</p>  <p><b>T/S-590-Y</b> <b>T/S-590-Y-66</b> Sizes ¼" thru 3" Threaded or Solder Ends <b>Page 27, 28</b></p>	<p>Three-Piece Bronze Ball Valve 600 lb. CWP 175 PSI LP Gas</p>  <p><b>T-590-Y-UL</b> Sizes ¼" thru 3" Threaded Ends <b>Page 29</b></p>	<p>Three-Piece Bronze Ball Valve 600 lb. CWP</p>  <p><b>G-590-Y</b> <b>G-590-Y-66</b> Sizes 1½" thru 3" Grooved Ends <b>Page 30, 31</b></p>
<p>Three-Piece Bronze Ball Valve 600 lb. CWP</p>  <p><b>T/S-595-Y</b> <b>T-595-Y-SS</b> <b>T/S-595-Y-66</b> <b>T-595-Y-66-SS</b> Sizes ¼" thru 2½" Threaded or Solder Ends <b>Page 32-35</b></p>	<p>Three-Piece Bronze Ball Valve 600 lb. CWP</p>  <p><b>TS-595-Y</b> Sizes ¼" thru 2" Threaded x Solder Ends <b>Page 36</b></p>	<p>Three-Piece Bronze Ball Valve 600 lb. CWP</p>  <p><b>G-595-Y</b> <b>G-595-Y-66</b> Sizes 1½" thru 2½" Grooved Ends <b>Page 37, 38</b></p>
<p>Three-Piece Bronze Ball Valve 600 lb. CWP 175 PSI LP Gas</p>  <p><b>T-595-Y-UL</b> Sizes ¼" thru 2" Threaded Ends <b>Page 39</b></p>	<p>Three-Piece Bronze Ball Valve 200 lb. PSI Medical Gas</p>  <p><b>CS-595-YX-EC</b> <b>CS-595-YX-66-EC</b> Sizes ½" thru 2" Solder Ends <b>Page 40, 41</b></p>	<p><b>Pressure Temperature Chart</b></p> <p><b>Page 42</b></p>

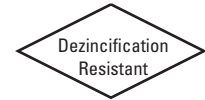
Visit our website for the most current information.

# 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



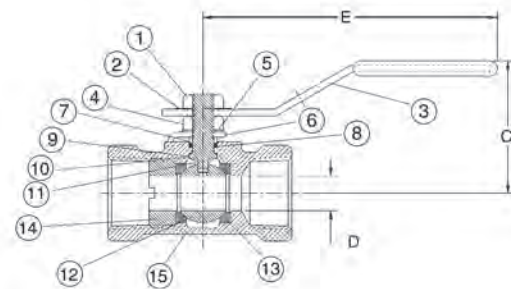
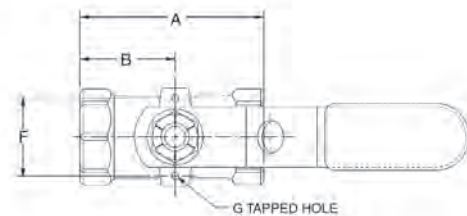
## MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Identification Plate	Aluminum
3. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
4. <sup>1</sup> 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

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



**T-560-BR-R/Y-20**  
Threaded



**T-560-BR-R/Y-20**  
NPT x NPT

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions								T-560-BR-R/Y-20 Master		
	A	B	C	D	E	F	G	Lbs.	Kg.	Ctn. Qty.	
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	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	.28	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 42.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# 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

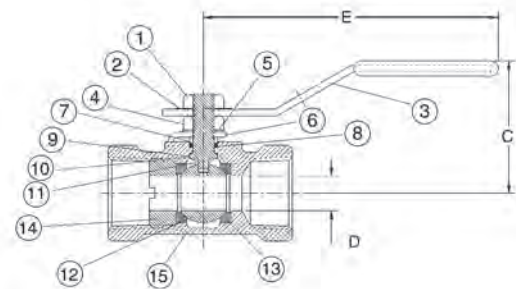
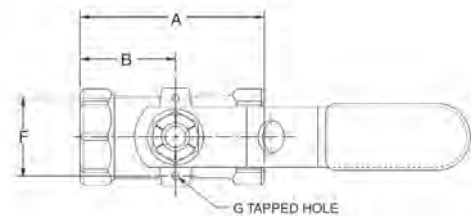
PART	SPECIFICATION
1. Handle Nut	Stainless Steel 300 Series
2. Identification Plate	Aluminum
3. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
4. <sup>1</sup> Packing Nut	Stainless Steel
5. Belleville Washer	Zinc Plated Steel
6. Travel Stop	Zinc Dichromate Plated Steel
7. Pack Gland	Stainless 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 or ASTM A 351 Type CF8M
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

<sup>1</sup> 1/4"-3/4" ASTM A 582 type 416. 1"-2" 300 series.



**T-560-BR-R/Y-66**

Threaded



**T-560-BR-R/Y-66**  
NPT x NPT

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions												T-560-BR-R/Y-66 Master				
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	Lbs.	Kg.	Ctn. Qty.	
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 42.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.



# 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

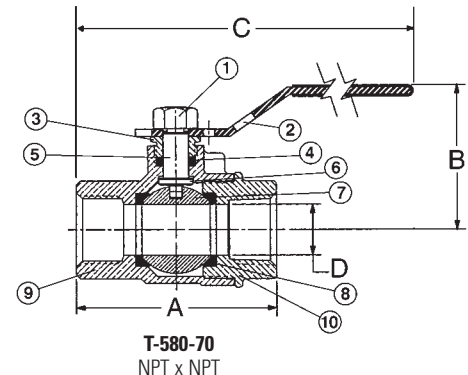
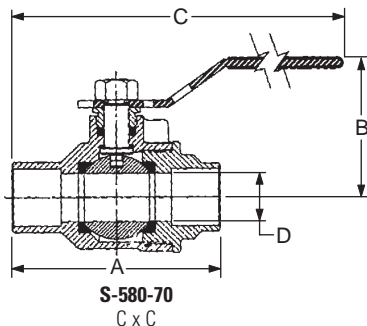
1/4" size only has a 304 stainless steel grounding washer.



**T-580-70**  
Threaded



**S-580-70**  
Solder



## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions				D	T-580-70		S-580-70		Master Ctn. Qty.								
	A	B	C	C		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
† 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
† 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
† 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
† 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 1/4	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 1/2	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 1/2	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 42.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

\*Weighted average lead content ≤ 0.25%

**LEAD FREE\*  
OPTION  
AVAILABLE**

**OXYGEN  
SERVICE  
OPTION  
AVAILABLE**

Visit our website for the most current information.

# 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

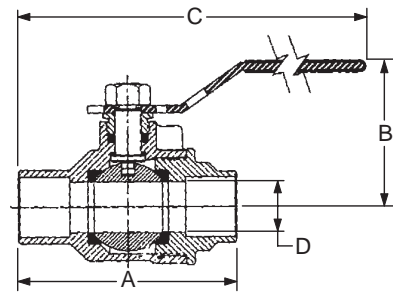
1/4" size only has a 304 stainless steel grounding washer.



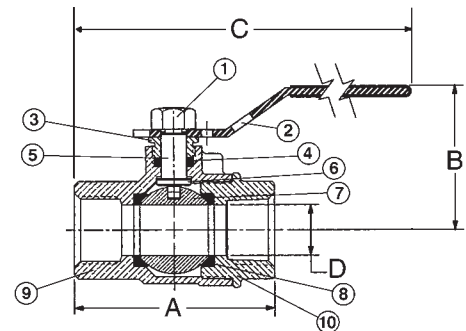
**T-580-70-66**  
Threaded



**S-580-70-66**  
Solder



**S-580-70-66**  
C x C



**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		D	T-580-70-66		S-580-70-66		Master Ctn. Qty.				
	A	A	B	C	C	D	D	Lbs.		Kg.	Lbs.	Kg.						
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	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
†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
†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
†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
†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 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
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
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
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
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

† 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 42.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

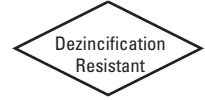
\*Weighted average lead content ≤ 0.25%

**LEAD FREE\*  
OPTION  
AVAILABLE**

**OXYGEN  
SERVICE  
OPTION  
AVAILABLE**

# 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

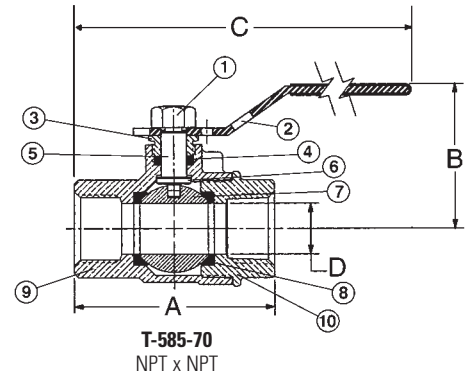
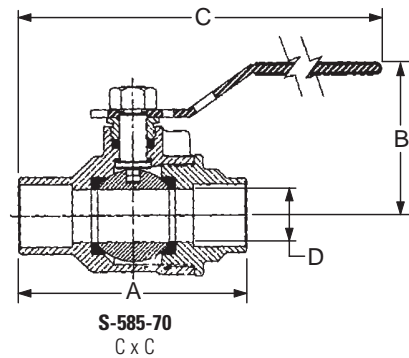
¼" size only has a 304 stainless steel grounding washer.



**T-585-70**  
Threaded



**S-585-70**  
Solder



## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions														Master Ctn.	Qty.		
	T-585-70		S-585-70		T-585-70		S-585-70		D		T-585-70		S-585-70					
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.			
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	82	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
1¼	32	4.19	106	5.06	128	3.00	76	6.75	171	7.19	183	1.25	32	3.12	1.41	3.18	1.44	20
1½	40	4.72	120	5.99	151	3.16	80	9.06	230	9.69	246	1.50	38	4.78	2.17	5.12	2.32	10
2	50	5.16	131	6.72	170	3.50	89	9.25	235	10.06	256	2.00	51	6.68	3.03	7.10	3.22	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 42.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

\*Weighted average lead content ≤ 0.25%

**LEAD FREE\*  
OPTION  
AVAILABLE**

**OXYGEN  
SERVICE  
OPTION  
AVAILABLE**

Visit our website for the most current information.

# 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

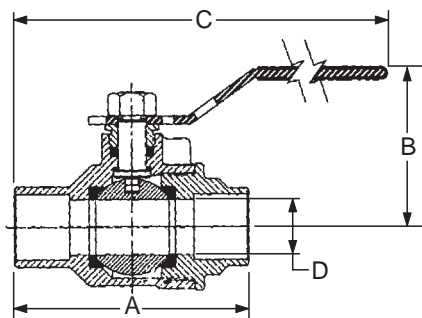
¼" size only has a 304 stainless steel grounding washer.



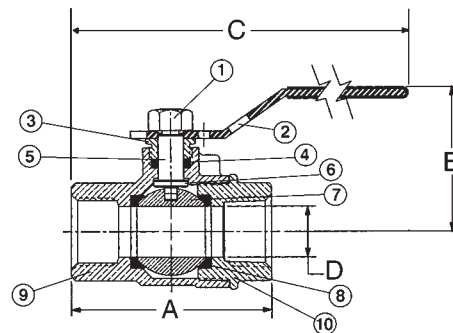
**T-585-70-66**  
Threaded



**S-585-70-66**  
Solder



**S-585-70-66**  
C x C



**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 Ctn. Qty.			
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.				
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	82	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
1¼	32	4.19	106	5.06	128	3.00	76	6.75	171	7.19	183	1.25	32	3.34	1.52	3.40	1.55	20
1½	40	4.72	120	5.99	151	3.16	80	9.06	230	9.69	246	1.50	38	4.84	2.20	5.18	2.35	10
2	50	5.16	131	6.72	170	3.50	89	9.25	235	10.06	256	2.00	51	7.41	3.37	7.83	3.56	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 42.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**LEAD FREE\*  
OPTION  
AVAILABLE**

**OXYGEN  
SERVICE  
OPTION  
AVAILABLE**

Visit our website for the most current information.

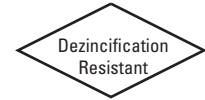
\*Weighted average lead content ≤ 0.25%

# 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

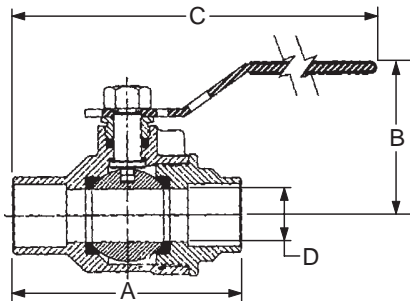
PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Stem	Silicon Bronze ASTM B 371 Alloy C69300 or ASTM B99 Alloy C65100
6. Thrust Washer	Reinforced PTFE
7. Ball	Brass ASTM 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



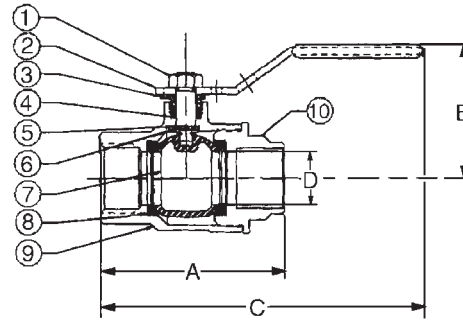
**TS-585-70**  
Threaded x Solder



**ST-585-70**  
Solder x Threaded



**ST-585-70**  
NPT x C



**TS-585-70**  
NPT x C

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions																Master Ctn.	Qty.
	TS-585-70 A		ST-585-70 A		TS-585-70 B		ST-585-70 C		TS-585-70 C		D		TS-585-70		ST-585-70			
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.	Lbs.	Kg.	Lbs.	Kg.		
½	15 2.55	65 2.40	61 1.88	48 5.19	132 6.25	133 6.25	133 6.25	133 6.25	133 6.25	133 6.25	133 6.25	133 6.25	.71	.32	.62	.28	100	
¾	20 3.06	78 3.09	78 2.25	57 6.25	159 6.25	159 6.25	159 6.25	159 6.25	159 6.25	159 6.25	159 6.25	159 6.25	1.31	.60	1.29	.59	50	
1	25 3.53	90 3.53	90 2.38	60 6.44	164 6.63	168 6.63	168 6.63	168 6.63	168 6.63	168 6.63	168 6.63	168 6.63	2.36	1.07	2.35	1.07	40	
1¼	32 4.61	117 4.63	118 3.00	76 6.75	171 7.19	183 7.19	183 7.19	183 7.19	183 7.19	183 7.19	183 7.19	183 7.19	3.11	1.41	3.18	1.44	20	
1½	40 5.32	135 5.32	135 3.16	80 9.06	230 9.69	246 9.69	246 9.69	246 9.69	246 9.69	246 9.69	246 9.69	246 9.69	4.82	2.18	5.07	2.30	10	
2	50 5.93	151 5.93	151 3.50	89 9.25	235 10.06	256 10.06	256 10.06	256 10.06	256 10.06	256 10.06	256 10.06	256 10.06	6.59	2.99	6.34	2.87	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 42.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# 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

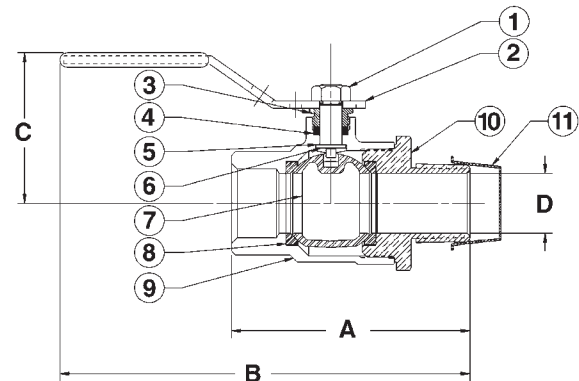
PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Thrust Washer	Reinforced PTFE
6. Stem	Silicon Bronze ASTM B 371 Alloy C69300 or ASTM B 99 Alloy C65100
7. Ball	Brass ASTM 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

Size	Dimensions				MTT-585-70	Master	
	A	B	C	D			Lbs.
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.			
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 42.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# Bronze Ball Valves

Two-Piece Body • Full Port • Bronze Trim • 3/4" Hose Connection with Cap • 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. <sup>1</sup> Cap	Die Cast Brass
12. Gasket	EPDM Rubber
13. Retainer	Soft PVC

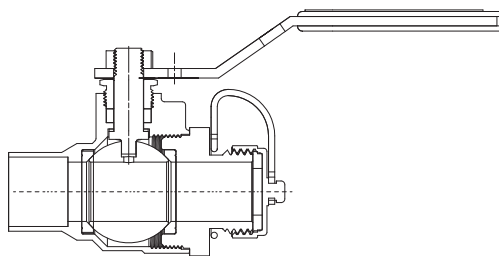
<sup>1</sup> Cap is for hose end thread protection only. Not to be used for pressure containing purposes.



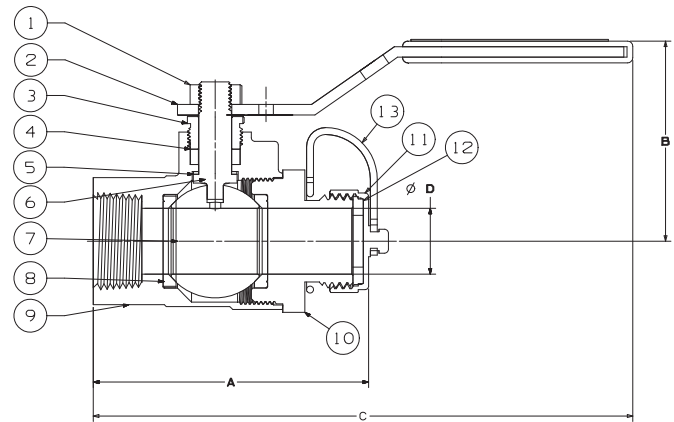
**T-585-70-HC**  
Threaded x Hose



**S-585-70-HC**  
Solder x Hose



**S-585-70-HC**  
C x Hose



**T-585-70-HC**  
NPT x Hose

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions												T-585-70-HC		S-585-70-HC		Master Ctn. Qty.	
	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							
	A	B	A	B	C	C	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 42.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**LEAD FREE\*  
OPTION  
AVAILABLE**

\*Weighted average lead content ≤ 0.25%

Visit our website for the most current information.

# Bronze Ball Valves

Two-Piece Body • Full Port • Stainless Trim • 3/4" Hose Connection with Cap • Blowout-Proof Stem

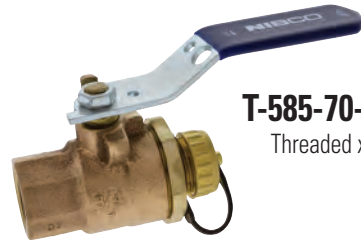
**600 PSI/41.4 bar non-shock cold working pressure\***

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	EPDM Rubber
13. Retainer	Soft PVC

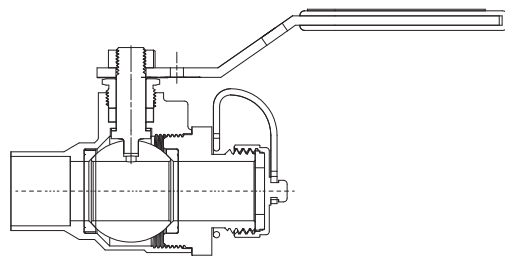
<sup>1</sup> Cap is for hose end thread protection only. Not to be used for pressure containin purposes.



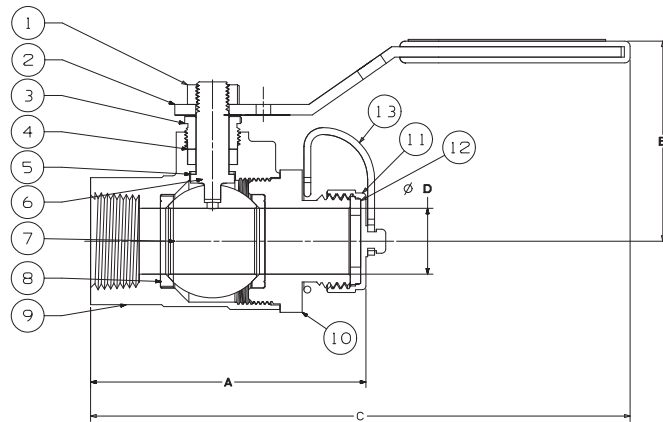
**T-585-70-66-HC**  
Threaded x Hose



**S-585-70-66-HC**  
C x Hose



**S-585-70-66-HC**  
C x Hose



**T-585-70-66-HC**  
NPT x Hose

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions												Master Ctn. Qty.					
	T-585-70-66-HC		S-585-70-66-HC		T-585-70-66-HC		S-585-70-66-HC		D		T-585-70-66-HC			S-585-70-66-HC				
In. mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	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 42.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

\*Weighted average lead content ≤ 0.25%

**LEAD FREE\*  
OPTION  
AVAILABLE**

Visit our website for the most current information.



# 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

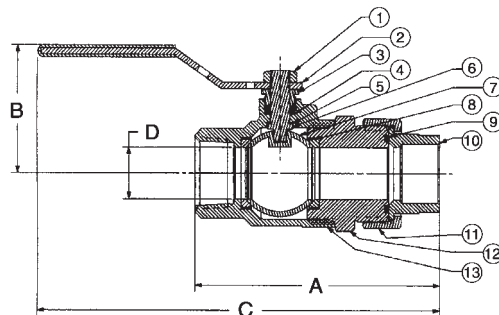
PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Thrust Washer	Reinforced PTFE
6. Stem	Silicon Bronze ASTM B 371 Alloy C69300 or ASTM B 99 Alloy C65100
7. Ball	Brass ASTM 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



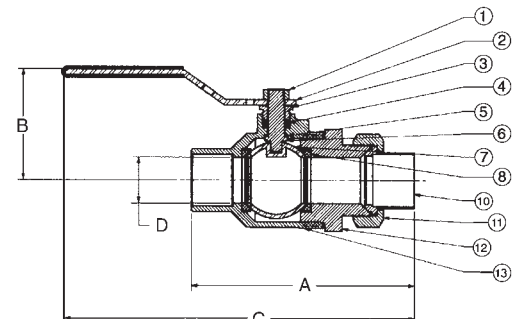
**T-585-70-SU**  
NPT x NPT



**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 Ctn. Qty.	
	A		A		B		C		C		D		Lbs.	Kg.	Lbs.	Kg.		
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.	
½	15	3.57	91	3.32	84	1.88	48	6.22	158	6.00	152	.50	13	1.21	.59	.84	.38	40
¾	20	4.13	105	4.20	107	2.25	57	7.28	185	7.25	184	.75	19	1.84	.83	1.84	.83	20
1	25	4.70	119	5.00	127	2.38	60	7.66	195	7.83	199	1.00	25	2.91	1.32	2.97	1.34	20
1¼	32	5.38	137	6.09	155	3.00	76	9.97	253	10.23	260	1.25	32	4.40	2.00	4.40	2.00	10
1½	40	6.06	154	7.09	180	3.16	80	10.40	264	10.81	275	1.50	38	6.44	2.92	5.53	2.5	6
2	50	6.38	162	7.66	195	3.50	89	10.50	267	10.97	279	2.00	51	9.44	4.28	7.40	3.35	4

\* Consult MSS SP123 for pressure temperature limitations

† For detailed operating pressure, refer to pressure temperature chart on page 42.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# Bronze Ball Valves

Two-Piece Body • Full Port • Stainless Steel 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

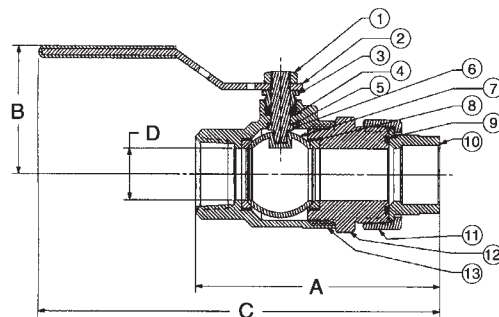
PART	SPECIFICATION
1. Handle Nut	Stainless Steel 300 Series
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Thrust Washer	Reinforced PTFE
6. Stem	Stainless Steel ASTM A 276 Type 316
7. Ball	Stainless Steel ASTM A 276 Type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



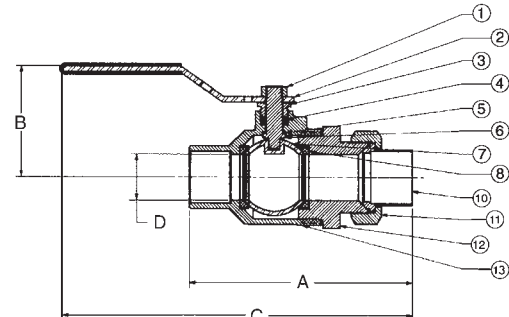
**T-585-70-66-SU**  
NPT x NPT



**S-585-70-66-SU**  
C x C



**T-585-70-66-SU**  
NPT x NPT



**S-585-70-66-SU**  
C x C

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions								Weights				Master Ctn.	Qty.	
	T-585-70-66-SU		S-585-70-66-SU		T-585-70-66-SU		S-585-70-66-SU		T-585-70-66-SU		S-585-70-66-SU				
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.		
½	15	3.57	91	3.32	84	1.88	48	6.22	158	6.00	1.21	.59	.84	.38	40
¾	20	4.13	105	4.20	107	2.25	57	7.28	185	7.25	1.84	.83	1.84	.83	20
1	25	4.70	119	5.00	127	2.38	60	7.66	195	7.83	2.91	1.32	2.97	1.34	20
1¼	32	5.38	137	6.09	155	3.00	76	9.97	253	10.23	4.40	2.00	4.40	2.00	10
1½	40	6.06	154	7.09	180	3.16	80	10.40	264	10.81	6.44	2.92	5.53	2.5	6
2	50	6.38	162	7.66	195	3.50	89	10.50	267	10.97	9.44	4.28	7.40	3.35	4

\* Consult MSS SP123 for pressure temperature limitations

♦ For detailed operating pressure, refer to pressure temperature chart on page 42.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# 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

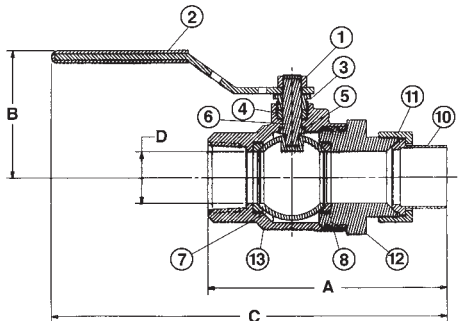
PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Thrust Washer	Reinforced PTFE
6. Stem	Silicon Bronze ASTM B 371 Alloy C69300 or ASTM B 99 Alloy C65100
7. Ball	Brass ASTM 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



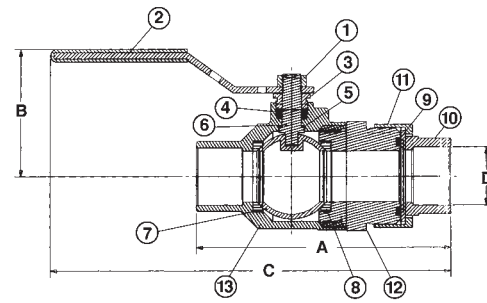
**TS-585-70-SU**  
Threaded x Solder



**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

Size	ST-585-70-SU		TS-585-70-SU		ST-585-70-SU		TS-585-70-SU		D	ST-585-70-SU		TS-585-70-SU		Master Ctn. Qty.
	In.	mm.	In.	mm.	In.	mm.	In.	mm.		Lbs.	Kg.	Lbs.	Kg.	
½	15	3.53	90	3.21	82	1.88	48	6.22	158	6.00	152	1.21	.55	40
¾	20	4.22	107	4.10	104	2.25	57	7.28	185	7.25	184	1.84	.84	20
1	25	4.86	123	4.91	125	2.38	60	7.66	195	7.83	199	2.91	1.32	20
1¼	32	5.79	147	5.63	143	3.00	76	9.97	253	10.23	260	4.39	2.00	10
1½	40	6.63	168	6.28	160	3.16	80	10.40	264	10.81	275	6.44	2.93	6
2	50	7.10	180	6.89	175	3.50	89	10.50	267	10.91	277	9.44	4.29	4

\* Consult MSS SP123 for pressure temperature limitations

♦ For detailed operating pressure, refer to pressure temperature chart on page 42.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# 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

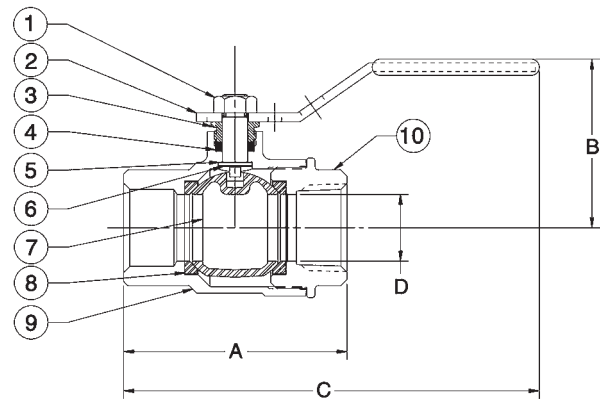
PART	SPECIFICATION
1. Handle Nut	300 Series Stainless Steel
2. Handle	Stainless Steel Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	Carbon Filled PTFE
5. Thrust Washer	Carbon Filled PTFE
6. Stem	Stainless Steel ASTM A 276 Type 316
7. Ball (Vented)	Stainless Steel ASTM 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

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions					T-585-70-66-ST		Master Ctn. Qty.
	A	B	C	D	Lbs.	Kg.		
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.				
½ 15	2.44 62	1.88 48	5.19 132	.50 13	.64	.29	10	
¾ 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	
1¼ 32	4.19 106	3.00 76	6.75 171	1.25 32	2.17	.98	5	
1½ 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	



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

\*For detailed operating pressure, refer to pressure temperature chart on page 42.

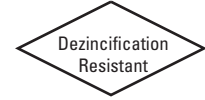


**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# 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 (3/4" - 2").  
Maximum temperature of Buna is 180° F. (not shown)

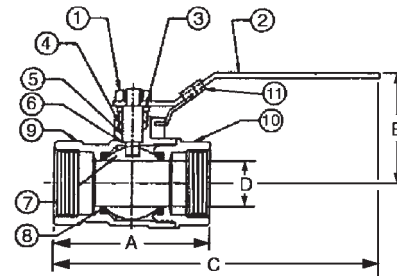


### T-585-70-SV

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

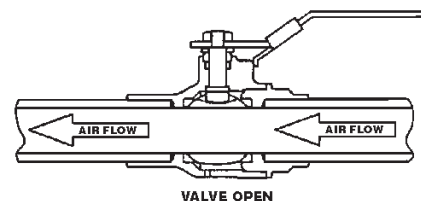
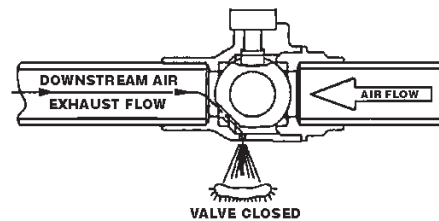
## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions				T-585-70-SV			T-580-70-SV			Master Ctn. Qty.
	A	B	C	D	T-585-70-SV	T-580-70-SV	Lbs.	Kg.	Ctn.		
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs.	Kg.	Lbs.	Kg.	Ctn.		
† 1/4 8	2.00 51	1.75 44	5.00 127	.38 10	.49	.22	100				
† 3/8 10	2.00 51	1.75 44	5.00 127	.38 10	.48	.22	100				
† 1/2 15	2.44 62	1.88 48	5.19 132	.50 13	.68	.31	100				
† 3/4 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 1/4 32	3.94 100	2.63 67	6.75 171	1.00 25	2.37	1.07	20				
1 1/2 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.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



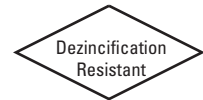
Visit our website for the most current information.

# Bronze Ball Valves

Two-Piece Body • Full Port ¼"-1" • Conventional Port 1¼"-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  
FOR NATURAL AND PROPANE GAS TO 125 PSIG (½"-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



**T-585-70-UL**  
¼"-1" Full Port CSA  
Threaded



**T-580-70-UL**  
1¼"-3" Conventional Port  
Threaded  
UL Only



### 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 - Liquefied 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

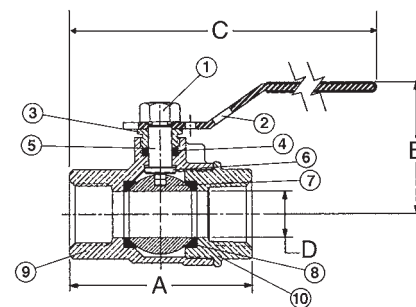
## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions				T-585-70-UL			T-580-70-UL			Master Ctn.	Qty.
	A	B	C	D	Lbs.	Kg.	Lbs.	Kg.				
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs.	Kg.	Lbs.	Kg.				
†¼	8 2.00	51 1.75	44 5.00	127 .38	10 .45	.21	100					
†⅜	10 2.00	51 1.75	44 5.00	127 .38	10 .45	.20	100					
†½	15 2.44	62 1.88	48 5.19	132 .50	13 .64	.29	100					
†¾	20 2.94	75 2.25	57 6.25	159 .75	19 1.33	.60	50					
†1	25 3.34	85 2.38	60 6.44	164 1.00	25 1.79	.81	40					
1¼	32 3.94	100 2.63	67 6.75	171 1.00	25 2.17	.98	20					
1½	40 4.31	109 3.00	76 8.88	226 1.25	32 3.27	1.48	20					
2	50 4.63	118 3.16	80 9.06	230 1.50	38 5.09	2.31	10					
2½	65 5.84	148 3.50	89 9.66	245 2.00	51 8.25	3.74	6					
3	80 7.09	180 4.41	112 11.53	293 2.50	64 15.65	7.10	4					

† NIBCO supplies full port T-585-70-UL on this size.

\*NOTE: CSA Certified to ASME B16.33 (1/2" - 1")

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



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

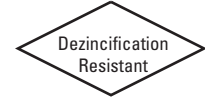
Visit our website for the most current information.

# 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

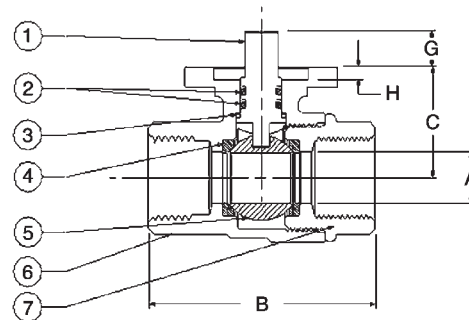
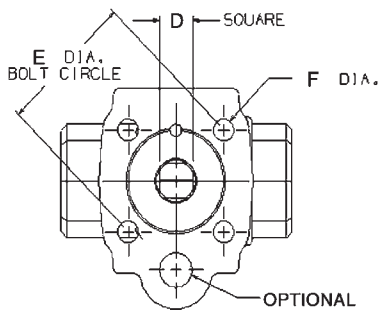


## MATERIAL LIST

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.	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 42.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# Bronze Ball Valves

Three-Way Body • Full Port 1/2"-1" • Conventional Port 1 1/4"-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

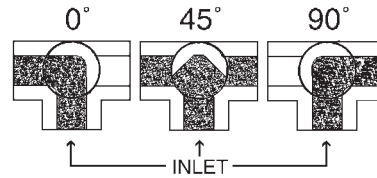
PART	SPECIFICATION
1. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
2. Handle Nut	Stainless Steel 300 Series
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Thrust Washer	Reinforced PTFE
6. Stem	Brass ASTM B 16 Alloy C36000
7. Seat Ring (2)	Reinforced PTFE
8. Ball	Brass 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

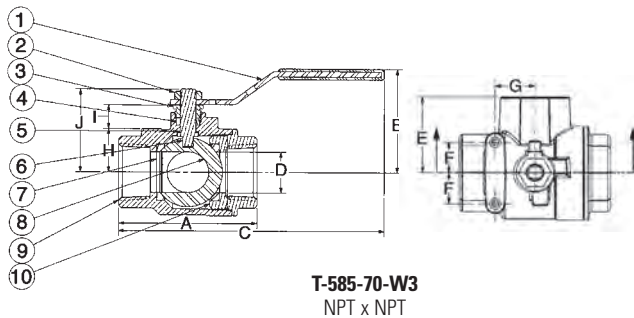


**S-585-70-W3**  
Solder

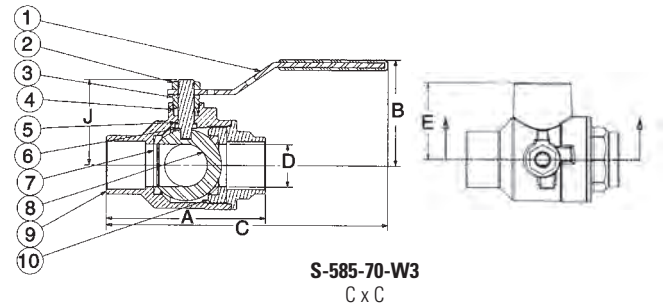


**Flow Pattern**  
Lever Position

**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.	Lbs.	Kg.	Ctn.	Qty.
1/2	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
3/4	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
†1 1/4	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
†1 1/2	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 Ctn.	Qty.
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.		
1/2	15	2.56	65	1.88	48	5.19	132	.50	13	1.08	27	1.45	37	.67	.30	50
3/4	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



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.



# Bronze Ball Valves

Three-Way Body • Full Port 1/2"-1" • Conventional Port 1 1/4"-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

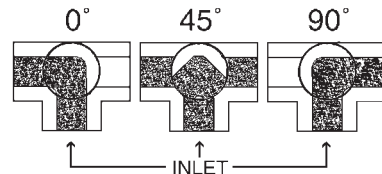
PART	SPECIFICATION
1. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
2. Handle Nut	Stainless Steel 300 Series
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Thrust Washer	Reinforced PTFE
6. Stem	Stainless Steel ASTM A 276 Type 316
7. Seat Ring (2)	Reinforced PTFE
8. 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

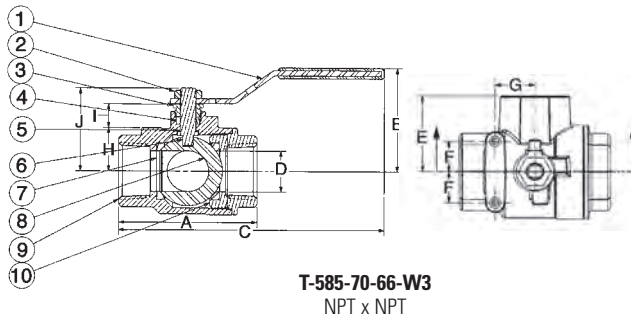


**S-585-70-66-W3**  
Solder

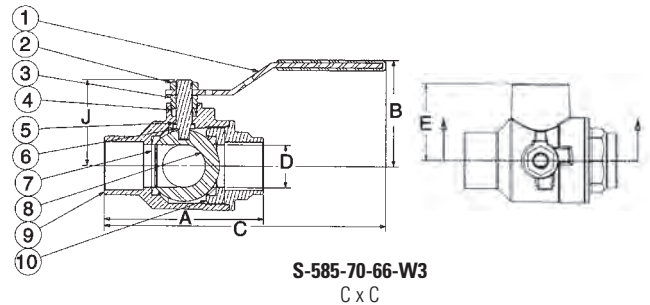


**Flow Pattern**  
Lever Position

**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		Thread	G		H		I		J	T-585-70-66-W3		Master Ctn. Qty.		
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	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	1.22	31	.69	18	10-24	.88	22	.65	17	.51	13	1.45	37	.84	.38	50
3/4	20	2.94	75	2.25	57	6.25	159	.75	19	1.45	37	.69	18	10-24	.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	10-24	.88	22	1.05	27	.57	14	1.97	50	2.28	1.03	20
†1 1/4	32	4.19	106	3.00	76	6.75	171	1.12	28	1.98	50	.75	19	1/4-20	.94	24	1.23	31	.87	22	2.60	66	4.19	1.90	10
†1 1/2	40	4.72	120	3.16	80	9.06	230	1.38	35	2.38	60	.75	19	1/4-20	.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	1/4-20	.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 Ctn. Qty.	
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.		
1/2	15	2.56	65	1.88	48	5.19	132	.50	13	1.08	27	1.45	37	.67	.30	50
3/4	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



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# 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

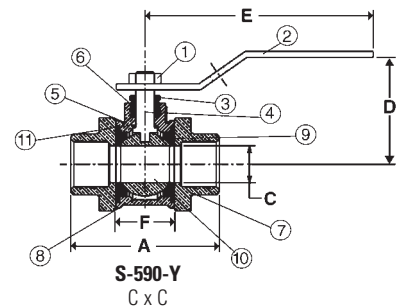
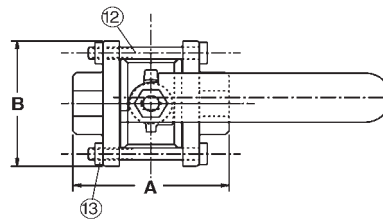
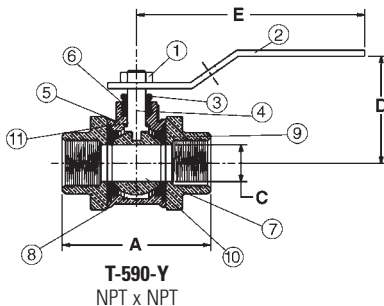


**T-590-Y**  
Threaded



**S-590-Y**  
Solder

Note: valves are static grounded by grounding washer. (not shown)



## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions										T-590-Y		S-590-Y		Master Ctn. Qty.					
	A		A		B		C		D		E		F			T-590-Y	S-590-Y			
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.	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	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-595-Y on this size.

\*For detailed operating pressure, refer to pressure temperature chart on page 42.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

**OXYGEN SERVICE OPTION AVAILABLE**

# 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

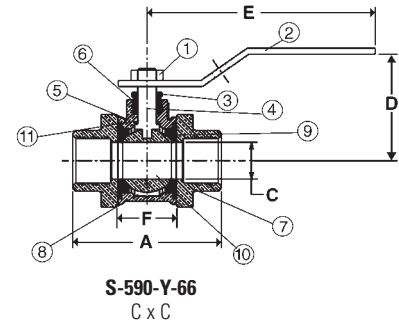
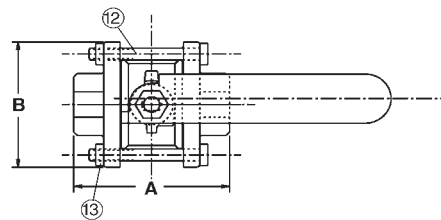
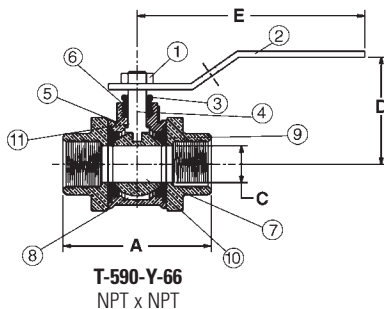
Note: valves are static grounded by a grounding washer. (not shown)



**T-590-Y-66**  
Threaded



**S-590-Y-66**  
Solder



## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions												Weights				Master Ctn. Qty.			
	T-590-Y-66		S-590-Y-66		T-590-Y-66		S-590-Y-66		T-590-Y-66		S-590-Y-66									
In. mm.	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	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-66 on this size.

†For detailed operating pressure, refer to pressure temperature chart on page 42.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**OXYGEN SERVICE OPTION AVAILABLE**

Visit our website for the most current information.

# 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

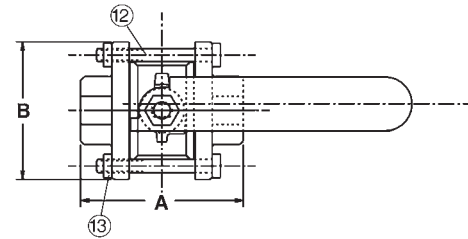
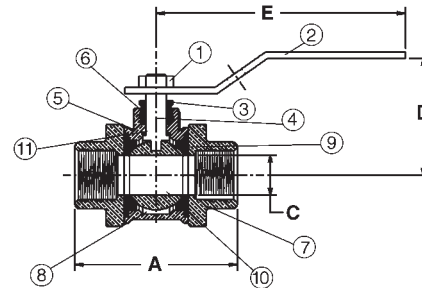
### Service

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

Size	Dimensions						T-590-Y-UL	Master						
	A	B	C	D	E	Lbs.			Kg.	Ctn. Qty.				
† 1/4	8	2.50	64	1.81	46	.38	10	1.06	27	3.90	99	.94	.43	50
† 3/8	10	2.50	64	1.81	46	.38	10	1.06	27	3.90	99	.94	.43	50
† 1/2	15	2.50	64	1.81	46	.50	13	1.06	27	3.90	99	1.01	.47	50
† 3/4	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 1/4	32	3.69	94	2.50	64	1.00	25	2.25	57	4.66	118	2.65	1.20	20
1 1/2	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 1/2	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.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# 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

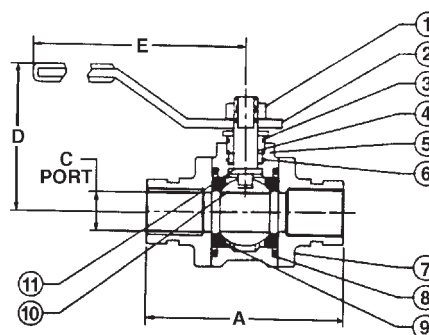
### MATERIAL LIST

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)

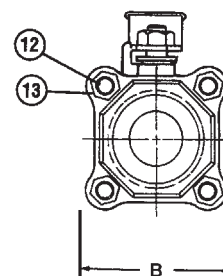


**G-590-Y**  
Grooved



### DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						G-590-Y	Master						
	A		B		C				D		E			
In. mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Ctn.	Qty.		
1 1/2	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
2 1/2	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



**G-590-Y**  
GRVD x GRVD

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# Bronze Ball Valves

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

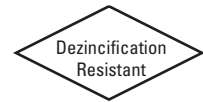
**600 PSI/41.4 bar non-shock cold working pressure**

CONFORMS TO MSS SP-110

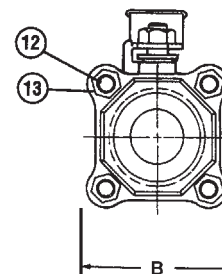
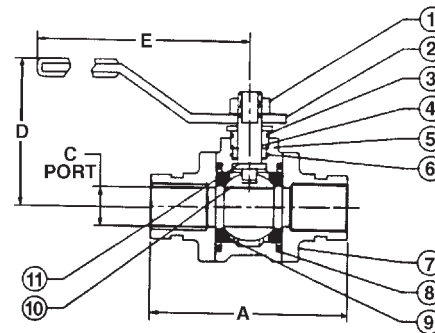
## MATERIAL LIST

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.	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



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# 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 (Y) or Reinforced PTFE (R)
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

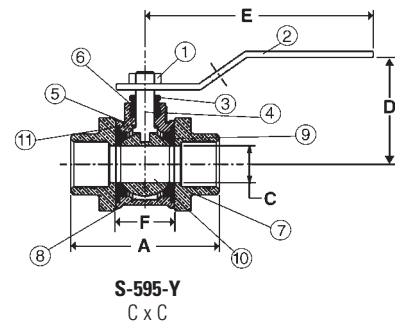
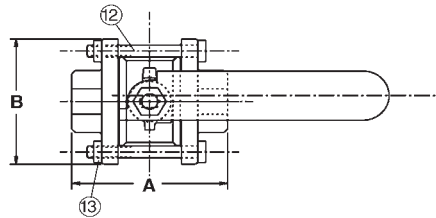
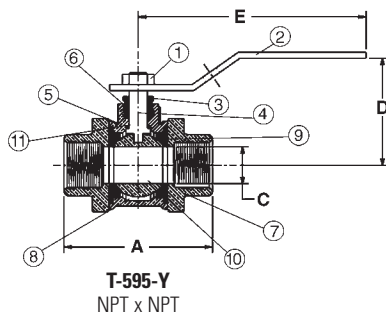
Note: valves are static grounded by a grounding washer. (not shown)



**T-595-Y/R**  
Threaded



**S-595-Y/R**  
Solder



## DIMENSIONS—WEIGHTS—QUANTITIES

Size	T-595-Y		S-595-Y		Dimensions					S-595-Y		Master Ctn. Qty.								
	In. mm.	In. mm.	In. mm.	In. mm.	A	B	C	D	E	F	Lbs. Kg.		Lbs. Kg.							
1/4	8	2.50	64	1.69	43	1.81	46	.38	10	1.69	43	3.91	99	.875	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	.875	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	.875	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	1.190	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	1.563	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	1.750	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	2.125	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	2.640	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	3.463	102	21.07	9.56	19.30	8.75	2

\*For detailed operating pressure, refer to pressure temperature chart on page 42.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

\*Weighted average lead content ≤ 0.25%

Visit our website for the most current information.

**LEAD FREE\*  
OPTION  
AVAILABLE**

**OXYGEN  
SERVICE  
OPTION  
AVAILABLE**

# 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

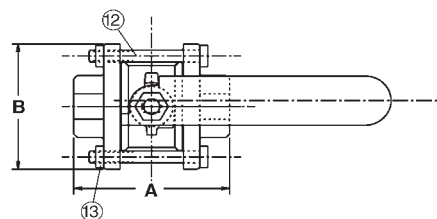
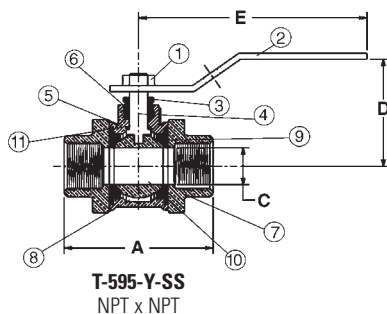
## MATERIAL LIST

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

Size	Dimensions										T-595-Y-SS		Master Ctn. Qty.
	A	B	C	D	E	Lbs.	Kg.						
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.								
¼	8 2.50 64	1.81 46	.38 10	1.69 43	3.91 99	1.03	.47	50					
⅜	10 2.50 64	1.81 46	.38 10	1.69 43	3.91 99	.98	.44	50					
½	15 2.50 64	1.81 46	.50 13	1.69 43	3.91 99	1.03	.47	50					
¾	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					
1¼	32 4.09 104	2.69 68	1.25 32	2.75 70	6.69 170	3.96	1.80	10					
1½	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					
2½	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 42.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.



# 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

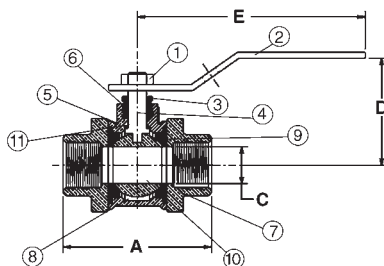
Note: valves are static grounded by a grounding washer. (not shown)



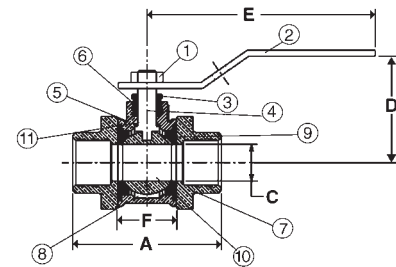
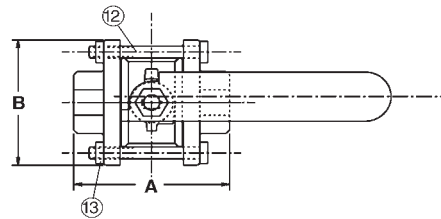
**T-595-Y-66**  
Threaded



**S-595-Y-66**  
Solder



**T-595-Y-66**  
NPT x NPT



**S-595-Y-66**  
C x C

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	T-595-Y-66		S-595-Y-66		Dimensions						S-595-Y-66				Master Ctn. Qty.					
	A	A	B	C	D	E	F	T-595-Y-66	S-595-Y-66	Lbs.	Kg.	Lbs.	Kg.							
1/4	8	2.50	64	1.69	43	1.81	46	.38	10	1.69	43	3.91	99	.875	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	.875	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	.875	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	1.190	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	1.563	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	1.750	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	2.125	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	2.640	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	3.463	102	21.07	9.56	19.30	8.75	2

\*For detailed operating pressure, refer to pressure temperature chart on page 42.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**LEAD FREE\*  
OPTION  
AVAILABLE**

**OXYGEN  
SERVICE  
OPTION  
AVAILABLE**

\*Weighted average lead content ≤ 0.25%

Visit our website for the most current information.

# 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

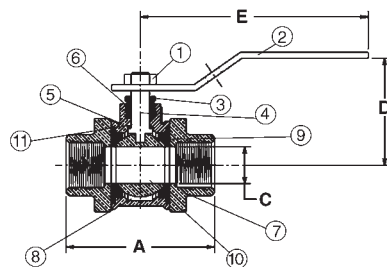
PART	SPECIFICATION
1. Handle Nut	300 Series Stainless Steel
2. Handle	300 Series Stainless Steel with Plastisol Grip
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Cast Bronze ASTM 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)

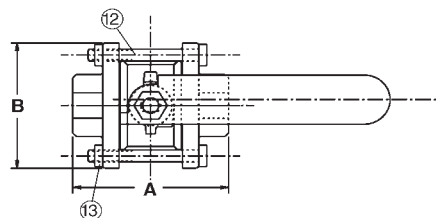


**T-595-Y-66-SS**

Threaded



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



## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions										T-595-Y-66-SS		Master Ctn. Qty.	
	A		B		C		D		E		Lbs.	Kg.		
In. mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	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

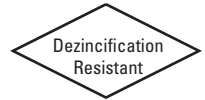
\*For detailed operating pressure, refer to pressure temperature chart on page 42.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# Bronze Ball Valves

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



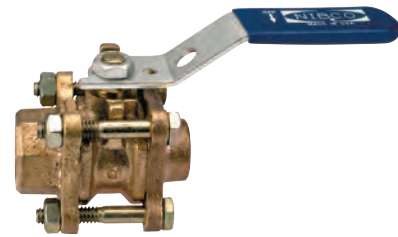
**600 PSI/41.4 bar non-shock cold working pressure**  
**150 PSI/10.3 bar saturated steam\***

CONFORMS TO MSS SP-110

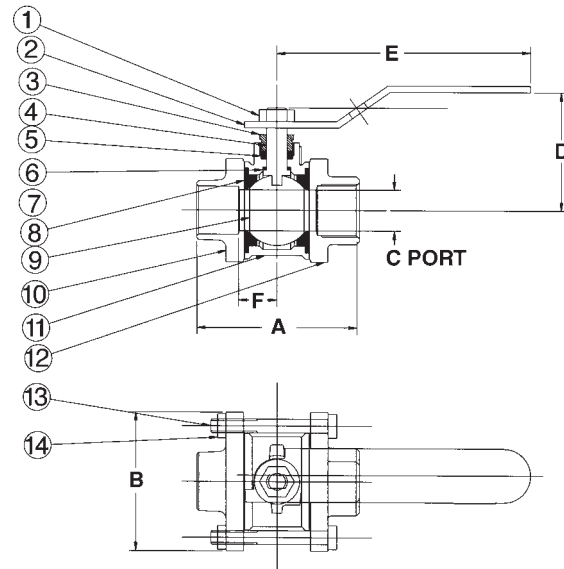
## MATERIAL LIST

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

Size	Dimensions						TS-595-Y Lbs.	Kg.	Box Qty.	Master Ctn. Qty.							
	A	B	C	D	E	F											
1/4	8	2.09	53	1.81	46	.38	10	1.69	43	3.90	99	.56	14	.94	.43	5	50
3/8	10	2.16	55	1.81	46	.38	10	1.69	43	3.90	99	.56	14	.94	.43	5	50
1/2	15	2.28	58	1.81	46	.50	13	1.69	43	3.90	99	.56	14	1.01	.47	5	50
3/4	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
1 1/4	32	3.97	101	2.69	68	1.25	32	2.75	70	6.69	170	.98	24	3.90	1.77	2	10
1 1/2	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 42.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# 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

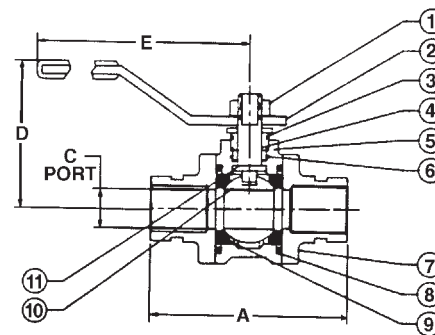
## MATERIAL LIST

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

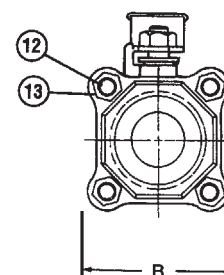


## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						G-595-Y	Master						
	A		B		C				D		E			
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Ctn.	Qty.	
1½	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
2½	65	7.78	198	5.00	127	2.50	64	4.09	104	8.00	203	18.30	8.30	2



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



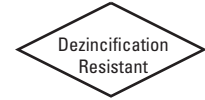
**G-595-Y**  
GRVD x GRVD

Visit our website for the most current information.

# 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

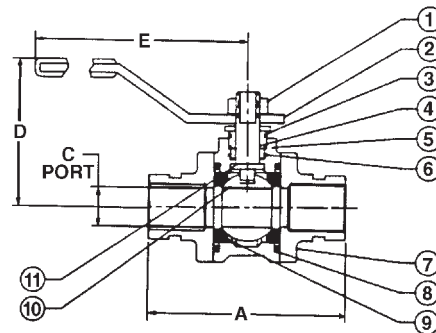
## MATERIAL LIST

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)

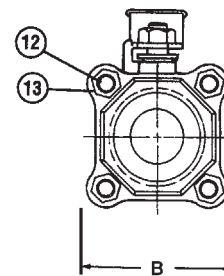


**G-595-Y-66**  
Grooved



## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						G-595-Y-66		Master Ctn. Qty.
	A	B	C	D	E	Lbs.	Kg.		
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.				
1½ 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	
2½ 65	7.78 198	5.00 127	2.50 64	4.09 104	8.00 203	18.30	8.30	2	



**G-595-Y-66**  
GRVD x GRVD

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# Bronze Ball Valves

Three-Piece Body • Full Port ¼"-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

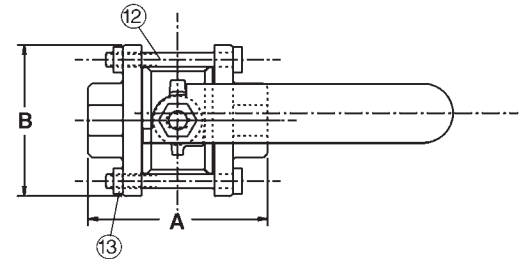
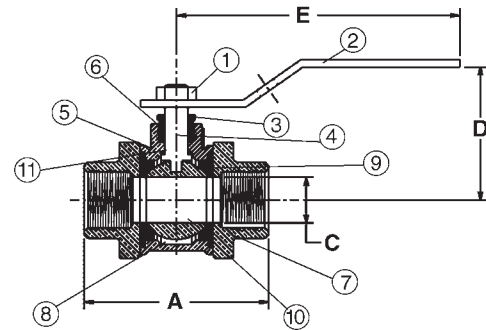


Dezincification Resistant



**T-595-Y-UL**

Threaded



**T-595-Y-UL**  
NPT x NPT

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						T-595-Y-UL	Master						
	A	B	C	D	E	Lbs.			Kg.	Ctn.	Qty.			
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

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# 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.

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

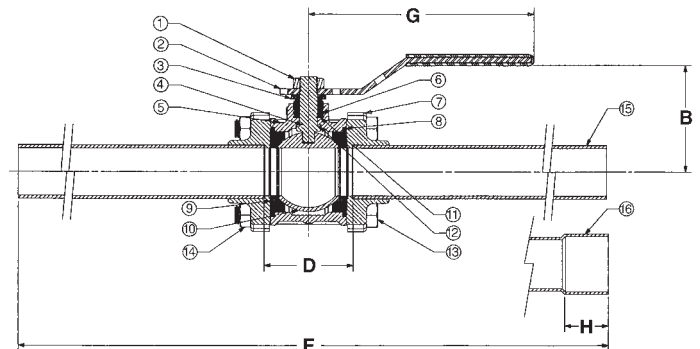
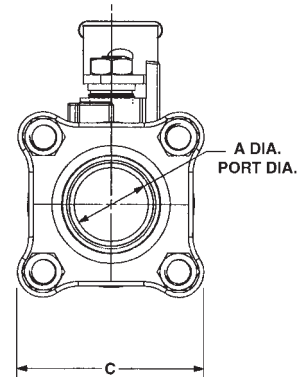
NIBCO's internal cleaning procedure for cleaned and bagged bronze ball valves meets the requirements of NFPA99 and CGA Pamphlet G-4-1.

### Medical Gas Service

NFPA 99 sets a maximum operating limit for medical gases of 185 PSI.



**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	Lbs.			Kg.	Ctn. Qty.
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.			
½	15 .50	13 1.69	43 1.81	46 1.11	28 13.11	333 3.91	99 .50	13 1.22	.55	10		
¾	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		
1¼	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		
1½	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		

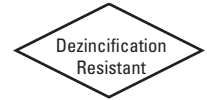
**OXYGEN  
SERVICE  
OPTION  
AVAILABLE**

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# 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**

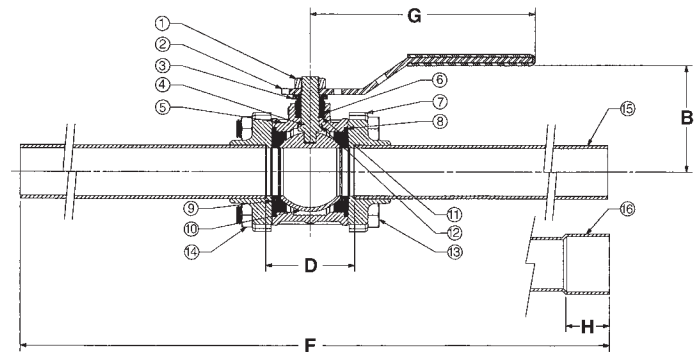
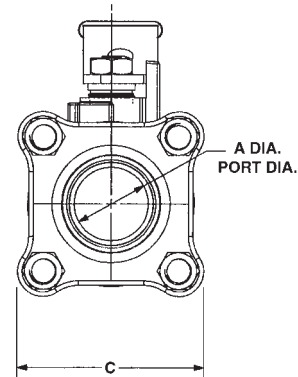
CONFORMS TO MSS SP-110

## 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)



**CS-595-YX-66-EC**  
(316SS Trim)  
Copper Stub Ends



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

**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.

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.

### Medical Gas Service

NFPA 99 sets a maximum operating limit for medical gases of 185 PSI.

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions								CS-595-YX-66/EC		Master Ctn. Qty.
	A	B	C	D	F	G	H	Lbs.	Kg.		
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.		
½	15 .50	13 1.69	43 1.81	46 1.11	28 13.11	333 3.91	99 .50	13 1.22	.55	10	
¾	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	
1¼	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	
1½	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	

**OXYGEN SERVICE OPTION AVAILABLE**



**WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.**

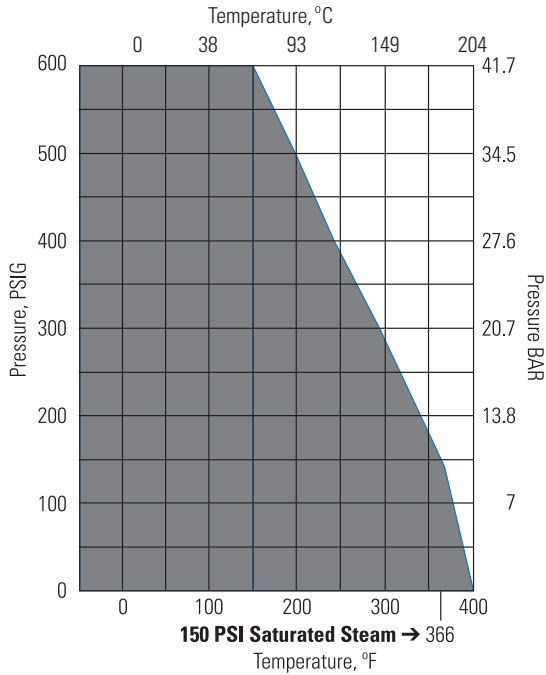
Visit our website for the most current information.



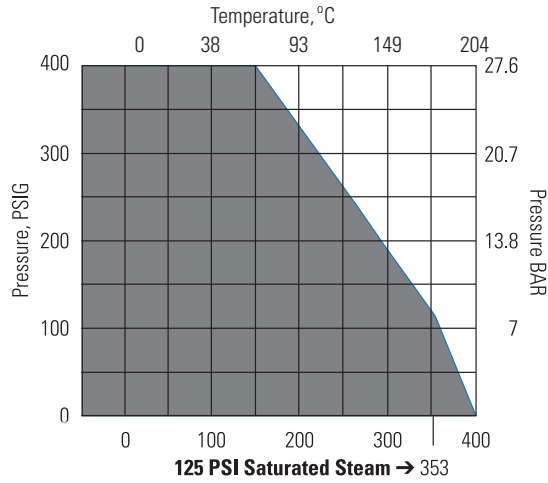
# Pressure Temperature Ratings

## Bronze Ball Valves

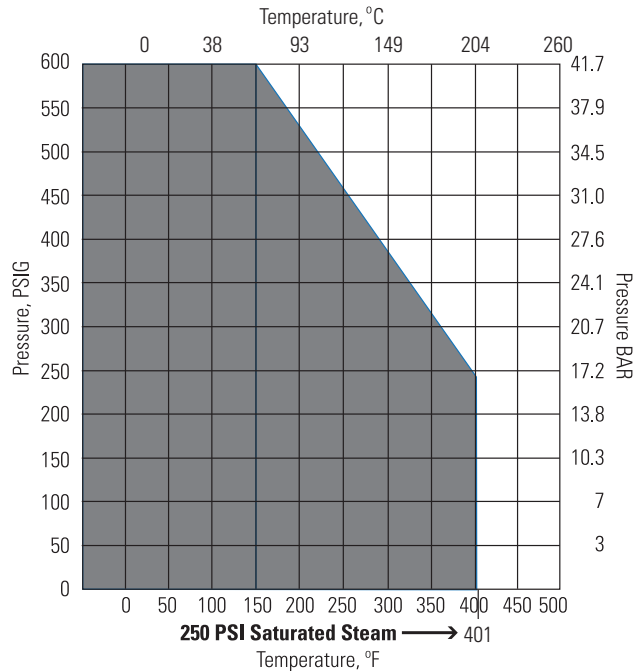
**T-560-BR, T/S-580-70, and 585-70**  
Bronze Ball Valves with Reinforced PTFE Seats



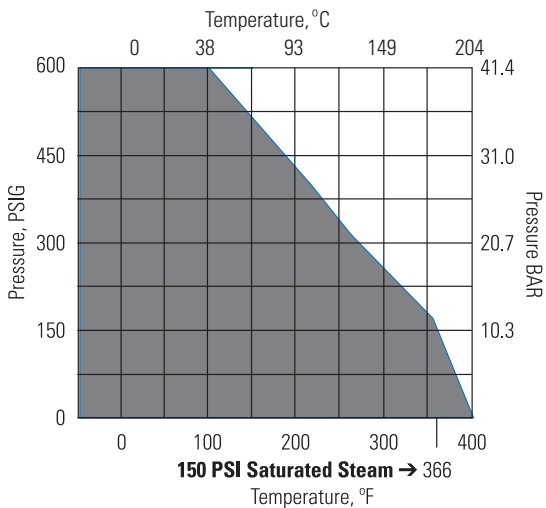
**580 Bronze Ball Valves with PTFE Seats**



**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.

### Chemical Compatibility

Please consult the most current edition of the NIBCO Chem-Guide for recommendations regarding chemical compatibility of material exposure to specific media and media-treatment additives. The NIBCO Chem-Guide is a general guide on the topic of chemical compatibility and is by no means an exhaustive resource on the subject. Ultimately, proper material selection is the responsibility of the installer and/or end-user, taking into account all aspects of a system's design and intended use.

Visit our website for the most current information.

# 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	560 - One-Piece Body (Casting)	CS - Carbon 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 SR - Spring Return Hdle
TC - Threaded (Investment Cast Carbon Body)	570 - One-Piece Body (Bar Stock)	S6 - Stainless Steel			
BM - Butt Weld ISO Mount	580 - Two-Piece Body Conventional Port				
KM - Socket Weld ISO Mount	585 - Two-Piece Body Full Port				
TM - Threaded ISO Mount	590 - Three-Piece Body Conventional Port				
	595 - Three-Piece Body Full Port				

#### Chemical Compatibility

Please consult the most current edition of the NIBCO® Chem-Guide for recommendations regarding chemical compatibility of material exposure to specific media and media-treatment additives. The NIBCO Chem-Guide is a general guide on the topic of chemical compatibility and is by no means an exhaustive resource on the subject. Ultimately, proper material selection is the responsibility of the installer and/or end-user, taking into account all aspects of a system's design and intended use.

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

Visit our website for the most current information.

# 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-LL**  
Sizes ¼" thru 2"  
**T-560-CS-R-25/66-FS-LL**  
Sizes ½" thru 2"  
Threaded Ends  
**Pages 45-48**

One-Piece Bar Stock Carbon Steel Ball Valve  
2000 lb. CWP ½"-1"  
1500 lb. CWP 1¼"-2"



**T-570-CS-R-25/66**  
Sizes ½" thru 2"  
Threaded Ends  
**Page 49, 50**

Two-Piece Carbon Steel Ball Valve  
2000 lb. CWP



**TC-580-CS-R-25/66-LL**  
Sizes ¼" thru 2"  
Threaded Ends  
**Page 51, 52**

Spring Return Handle Two-Piece Carbon Steel Ball Valve  
2000 lb. CWP



**TC-580-CS-R-25-SR/66-SR**  
Sizes ¼" thru 2"  
Threaded Ends  
**Page 53, 54**

Visit our website for the most current information.

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

Two-Piece Bar Stock Carbon Steel Ball Valve  
2000 lb. CWP ¼"-1"  
1500 lb. CWP 1¼"-2"



**T-580-CS-R-25**  
Sizes ¾" thru 2"  
**T-580-CS-R-66**  
Sizes ¼" thru 2"  
Threaded Ends  
**Page 55, 56**

Three-Piece Carbon Steel Ball Valve  
2000 lb. CWP



**TM/KM/BM-590-CS-R-66-FS-LL**  
Sizes ½" thru 2"  
Threaded, Socket or Butt Weld Ends  
**Page 57**

Three-Piece Carbon Steel Ball Valve  
1000 lb. CWP



**T/K-595-CS-R-66-LL**  
Sizes ¼" thru 2"  
Threaded or Socket Weld Ends  
**Page 58**

Three-Piece Carbon Steel Ball Valve  
1000 lb. CWP



**TM/KM-595-CS-R-66**  
Sizes ¼" thru 2"  
Threaded or Socket Weld Ends  
**Page 59**

Visit our website for the most current information.

# 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

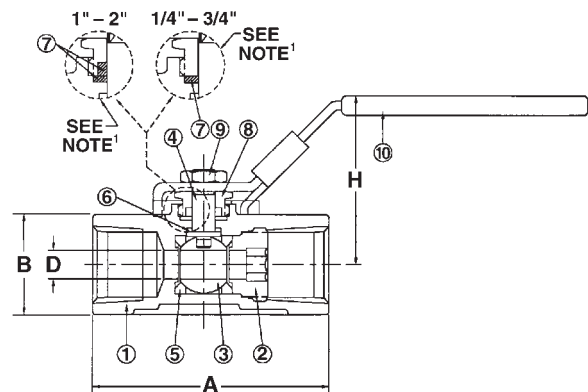
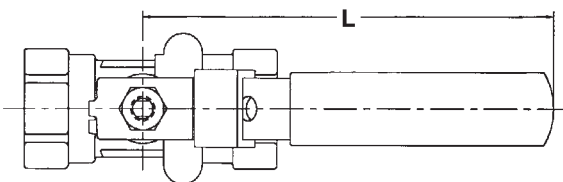
PART	SPECIFICATION
1. Body	Carbon Steel ASTM A 216 Grade WCB
2. Body Insert	Carbon Steel ASTM A 216 Grade WCB
3. Ball (Vented)	Stainless Steel ASTM A 276 or ASTM A 351 Type CF8
4. Stem	Carbon Steel ASTM A 108 Type 1045
5. Seat	Reinforced PTFE
6. Thrust Washer	Carbon Filled PTFE
7. <sup>1</sup> Stem Packing	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

<sup>1</sup>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-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	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 71 and 72.

Visit our website for the most current information.

# 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

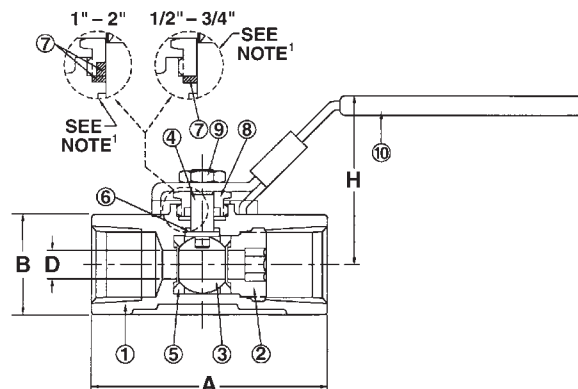
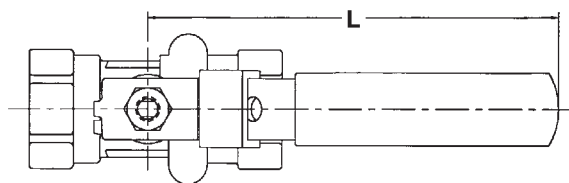
PART	SPECIFICATION
1. Body	Carbon Steel ASTM A 216 Grade WCB
2. Body Insert	Carbon Steel ASTM A 216 Grade WCB
3. Ball (Vented)	Stainless Steel ASTM A 276 or ASTM A 351 Type CF8
4. Stem	Carbon Steel ASTM A 108 Type 1045
5. Seat	Reinforced PTFE
6. Thrust Washer	Carbon Filled PTFE
7. <sup>1</sup> Stem Packing	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

<sup>1</sup> 1/2"-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	Lbs.	Kg.		
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.				
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 71 and 72.

Visit our website for the most current information.

# 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

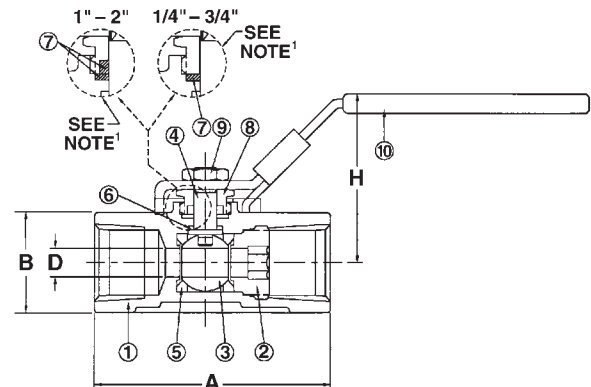
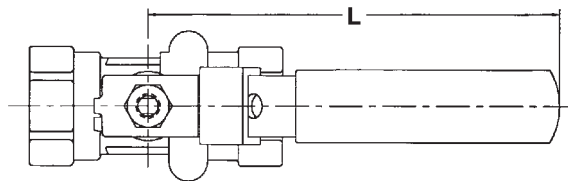
PART	SPECIFICATION
1. Body	Carbon Steel ASTM A 216 Grade WCB
2. Body Insert	Carbon Steel ASTM A 216 Grade WCB
3. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Seat	Reinforced PTFE
6. Thrust Washer	Carbon Filled PTFE
7. Stem Packing	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

<sup>1</sup> 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-LL**  
Threaded



**T-560-CS-R-66-LL**  
NPT x NPT

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						T-560-CS-R-66-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 71 and 72.

Visit our website for the most current information.

# 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. <sup>1</sup> 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

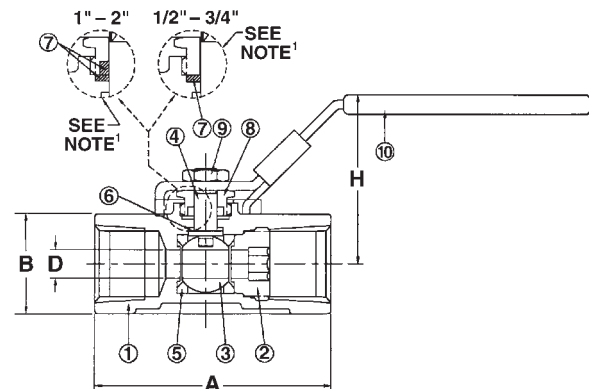
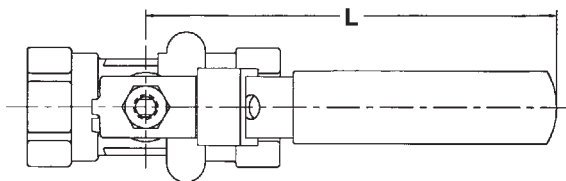
<sup>1</sup> 1/2"-3/4" one each, 1"-2" two each.

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.				
1/2 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 71 and 72.

Visit our website for the most current information.



# 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 (1/2"-1")**  
**1500 PSI/103 bar non-shock cold working pressure (1 1/4"-2")♦**

CONFORMS TO MSS SP-110

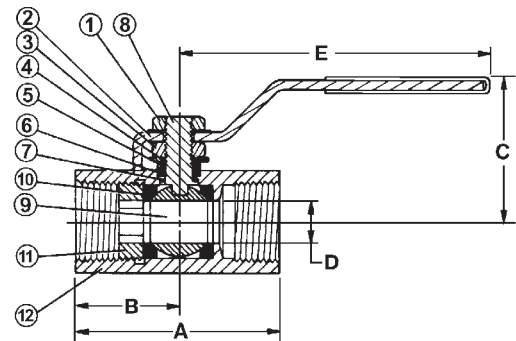
## MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Carbon Steel ASTM A 283 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

Size	Dimensions										T-570-CS-R-25		Master Ctn. Qty.
	A	B	C	D	E	Lbs.	Kg.						
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.								
1/2 15	2.19 56	1.10 28	1.37 60	.35 9	4.17 102	.55	.25	80					
3/4 20	2.63 67	1.32 34	2.50 64	.47 12	4.17 102	.77	.35	80					
1 25	3.15 80	1.58 40	2.89 73	.62 16	5.83 145	1.60	.73	40					
1 1/4 32	3.62 92	1.81 46	3.08 78	.81 21	5.83 145	2.35	1.07	8					
1 1/2 40	4.00 102	2.00 51	2.75 83	1.00 25	7.00 175	3.47	1.58	8					
2 50	4.50 114	2.25 57	3.52 89	1.25 32	7.24 175	5.50	2.50	8					

♦For detailed operating pressure, refer to pressure temperature chart on pages 71 and 72.

Visit our website for the most current information.

# 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 (1/2"-1")**  
**1500 PSI/103 bar non-shock cold working pressure (1¼"-2")**†

CONFORMS TO MSS SP-110

## MATERIAL LIST

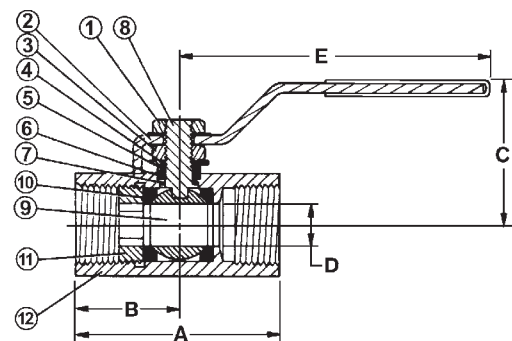
PART	SPECIFICATION
1. Handle Nut	Carbon Steel ASTM A 283 Zinc Plated
2. Handle	Carbon Steel ASTM A 283 Zinc Plated
3. Packing Nut	Carbon Steel ASTM A 283 Zinc Plated
4. Belleville Washer (2)	Carbon Steel Black Oxide ASTM A 686
5. Pack Gland	Stainless Steel ASTM A 240 Type 304
6. Stem Packing	Reinforced 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 Ctn. Qty.
	A	B	C	D	E	Lbs.	Kg.		
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.				
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 71 and 72.

Visit our website for the most current information.

# 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

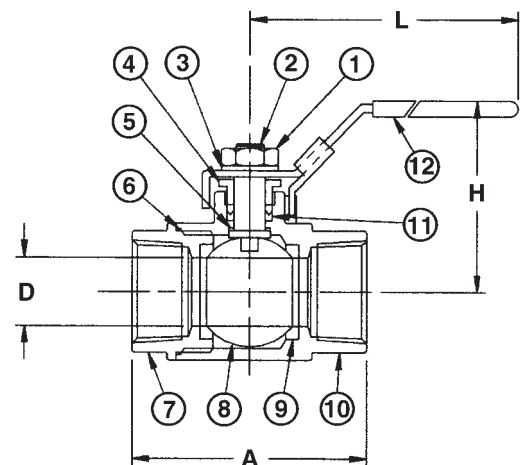
## MATERIAL LIST

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

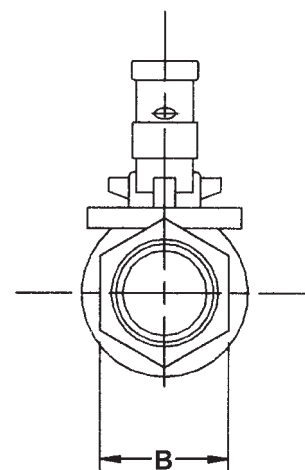


**TC-580-CS-R-25-LL**  
NPT x NPT

## DIMENSIONS—WEIGHTS—QUANTITIES

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	
1¼ 32	3.57 91	1.89 48	1.00 25	2.74 70	7.76 197	2.52 1.14	5	
1½ 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 71 and 72.



Visit our website for the most current information.

# 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

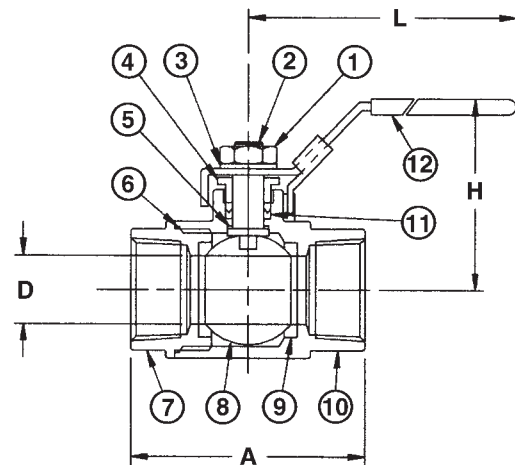
PART	SPECIFICATION
1. Handle Nut	Carbon Steel ASTM A 283
2. Stem	Stainless Steel ASTM A 276 Type 316
3. Lock Washer	Carbon Steel
4. Threaded Pack Gland	Carbon Steel ASTM A 108 Type 1045
5. Thrust Washer	Carbon Filled PTFE
6. Gasket	PTFE
7. Body End Piece	Carbon Steel ASTM A 216 Grade WCB (Investment 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

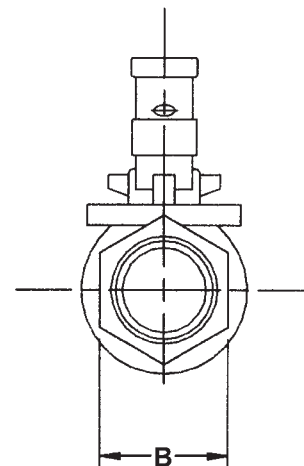


**TC-580-CS-R-66-LL**  
NPT x NPT

## DIMENSIONS—WEIGHTS—QUANTITIES

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.	In. mm.	Lbs.	Kg.	
¼ 8	2.07 53	.90 23	.37 9	1.76 45	4.33 110	.51 13	.23		10
⅜ 10	2.07 53	.90 23	.37 9	1.76 45	4.33 110	.48 12	.22		10
½ 15	2.34 59	1.06 27	.50 13	1.92 49	4.33 110	.66 17	.30		10
¾ 20	2.80 71	1.34 34	.69 18	2.40 61	5.83 148	1.30 33	.59		10
1 25	3.23 82	1.61 41	.87 22	2.56 65	5.83 148	1.79 40	.81		10
1¼ 32	3.57 91	1.89 48	1.00 25	2.74 70	7.76 197	2.52 56	1.14		5
1½ 40	4.04 103	2.26 57	1.25 32	2.98 76	7.76 197	3.75 84	1.70		5
2 50	4.63 118	2.76 70	1.50 38	3.17 81	7.76 197	5.80 130	2.63		5

◆ For detailed operating pressure, refer to pressure temperature chart on pages 71 and 72.



Visit our website for the most current information.

# Carbon Steel Ball Valves with Spring Return Handle

Spring Return Handle to Close • Two-Piece Investment Cast Body • Conventional Port •  
Blowout-Proof Stem • CS Trim • Vented Ball

**2000 PSI/138 bar non-shock cold working pressure\***

CONFORMS TO MSS SP-110 & NACE MR0175

## MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Stainless Steel Type 304
2. Stem	Carbon Steel ASTM A108 Type 1045
3. Lock Washer	Stainless Steel Type 304
4. Threaded Pack Gland	Stainless Steel Type 316
5. Thrust Washer	Carbon Filled PTFE
6. Gasket	Reinforced PTFE
7. Body End Piece	Carbon Steel ASTM A216 Grade WCB (Investment Cast)
8. Ball (Vented)	Stainless Steel ASTM A276 Type 304
9. Seats (2)	Reinforced PTFE
10. Body	Carbon Steel ASTM A216 Grade WCB (Investment Cast)
11. Stem Packing	Carbon Filled PTFE
12. Handle	Stainless Steel Type 316 & 304 w/Vinyl Cover
13. Mounting Plate	Stainless Steel ASTM A351 Type CF8M
14. Socket Head Cap Screw (2)	Stainless Steel Type 304

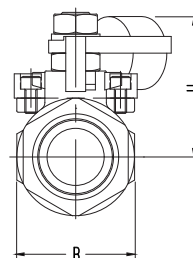
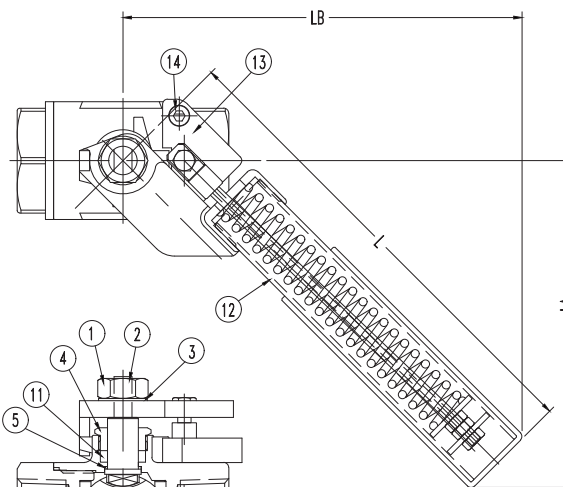
**NOTE: Valves are static grounded by thrust washer and packing.**

**Threaded and Press Lead Free  
Bronze Ball Valve options available.  
See Lead-free Valve Catalog.**



**TC-580-CS-R-25-SR**

Threaded



**TC-580-CS-R-25-SR**  
NPT x NPT

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions								T-580-S6-R-66-SR Master									
	A		B		D		H		L		LA		LB	Lbs.	Kg.	Ctn. Qty.		
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.					
¼	8	2.08	52.80	0.94	24.00	0.37	9.50	1.54	39.25	7.09	180.00	4.88	123.93	5.74	145.85	0.60	0.27	10
3/8	10	2.08	52.80	0.94	24.00	0.37	9.50	1.54	39.25	7.09	180.00	4.88	123.93	5.74	145.85	0.75	0.34	10
½	15	2.34	59.50	1.18	30.00	0.50	12.70	1.69	42.95	7.09	180.00	4.88	123.93	5.74	145.85	1.34	0.61	8
¾	20	2.80	71.00	1.50	38.00	0.69	17.50	2.02	51.25	7.28	185.00	4.92	124.99	5.98	151.86	2.05	0.93	8
1	25	3.26	82.70	1.81	46.00	0.87	22.20	2.16	54.85	7.28	185.00	4.92	124.99	5.98	151.86	2.05	0.93	8
1 ¼	32	3.60	91.4	2.09	53.00	1.00	24.40	2.41	61.21	9.25	235.00	6.30	160.00	6.71	170.50	3.42	1.55	2
1 ½	40	4.06	103.0	2.52	64.00	1.25	31.75	2.60	66.01	9.25	235.00	6.30	160.00	6.71	170.50	4.66	2.11	2
2	50	4.65	118.0	3.03	77.00	1.50	38.10	2.87	72.81	9.25	235.00	6.30	160.00	6.71	170.50	6.44	2.92	2

◆ For detailed operating pressure, refer to pressure temperature chart on pages 66 and 67 in the Ball catalog.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# Carbon Steel Ball Valves with Spring Return Handle

Spring Return Handle to Close • Two-Piece Investment Cast Body • Conventional Port •  
Blowout-Proof Stem • 316 SS Trim • Vented Ball

**2000 PSI/138 Bar Non-Shock Cold Working Pressure\***

CONFORMS TO MSS SP-110 & NACE MR0175

## MATERIAL LIST

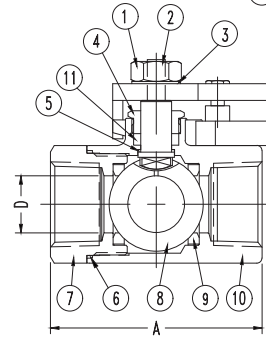
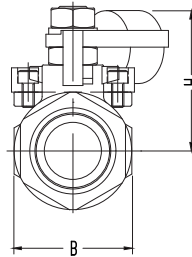
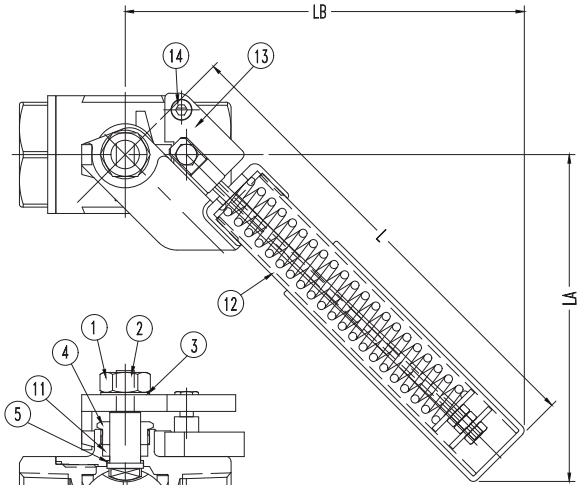
PART	SPECIFICATION
1. Handle Nut	Stainless Steel Type 304
2. Stem	Stainless Steel Type 316
3. Lock Washer	Stainless Steel Type 304
4. Threaded Pack Gland	Stainless Steel Type 316
5. Thrust Washer	Carbon Filled PTFE
6. Gasket	Reinforced PTFE
7. Body End Piece	Carbon Steel ASTM A216 Grade WCB (Investment Cast)*
8. Ball (Vented)	Stainless Steel ASTM A276 Type 316 or ASTM A351 Type CF8M**
9. Seats (2)	Reinforced PTFE
10. Body	Carbon Steel ASTM A216 Grade WCB (Investment Cast)
11. Stem Packing	Carbon Filled PTFE
12. Handle	Stainless Steel Type 316 & 304 w/Vinyl Cover
13. Mounting Plate	Stainless Steel ASTM A351 Type CF8M
14. Socket Head Cap Screw (2)	Stainless Steel Type 304

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

**Threaded and Press Lead Free  
Bronze Ball Valve options available.  
See Lead-free Valve Catalog.**



**TC-580-CS-R-66-SR**  
Threaded



**TC-580-CS-R-66-SR**  
NPT x NPT

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions								T-580-S6-R-66-SR Master									
	A		B		D		H		L	LA	LB	Lbs.	Kg.	Ctn. Qty.				
In. mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In. mm.	In. mm.	In. mm.							
¼	8	2.08	52.80	0.94	24.00	0.37	9.50	1.54	39.25	7.09	180.00	4.88	123.93	5.74	145.85	0.60	0.27	10
¾	10	2.08	52.80	0.94	24.00	0.37	9.50	1.54	39.25	7.09	180.00	4.88	123.93	5.74	145.85	0.75	0.34	10
½	15	2.34	59.50	1.18	30.00	0.50	12.70	1.69	42.95	7.09	180.00	4.88	123.93	5.74	145.85	1.34	0.61	8
¾	20	2.80	71.00	1.50	38.00	0.69	17.50	2.02	51.25	7.28	185.00	4.92	124.99	5.98	151.86	2.05	0.93	8
1	25	3.26	82.70	1.81	46.00	0.87	22.20	2.16	54.85	7.28	185.00	4.92	124.99	5.98	151.86	2.05	0.93	8
1 ¼	32	3.60	91.4	2.09	53.00	1.00	24.40	2.41	61.21	9.25	235.00	6.30	160.00	6.71	170.50	3.42	1.55	2
1 ½	40	4.06	103.0	2.52	64.00	1.25	31.75	2.60	66.01	9.25	235.00	6.30	160.00	6.71	170.50	4.66	2.11	2
2	50	4.65	118.0	3.03	77.00	1.50	38.10	2.87	72.81	9.25	235.00	6.30	160.00	6.71	170.50	6.44	2.92	2

◆ For detailed operating pressure, refer to pressure temperature chart on pages 66 and 67 in the Ball catalog.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# 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 (3/8"-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

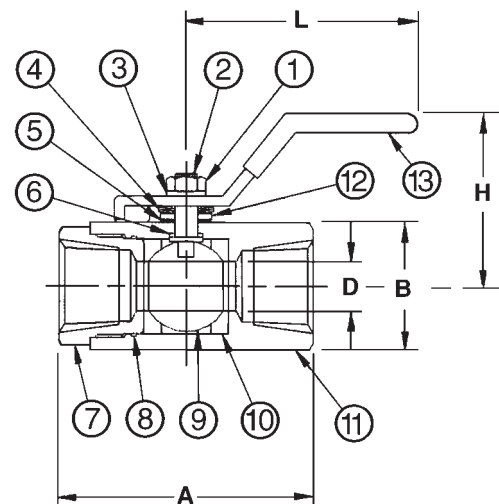
3/8"-1" 2000 PSI CWP, 1-1/4"-2" 1500 PSI CWP.

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
	A	B	D	H	L		
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs. Kg.	
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 71 and 72.

Visit our website for the most current information.

# Carbon Steel Ball Valves

Two-Piece Bar Stock Body • Conventional Port •  
Blowout-roof 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

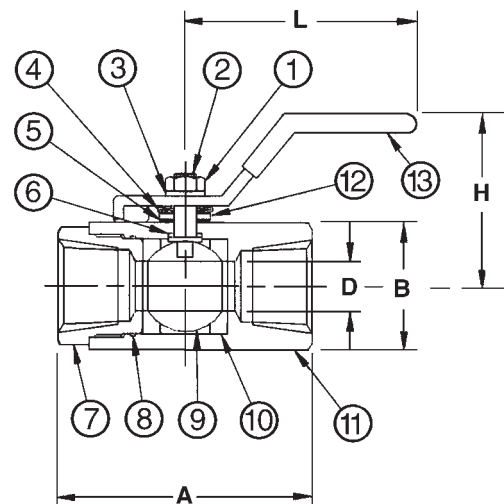
PART	SPECIFICATION
1. Handle Nut	Carbon Steel ASTM A 283
2. Stem	Stainless Steel ASTM A 276 Type 316
3. Lock Washer	Carbon Steel
4. Belleville Washer (2)	Carbon Steel ASTM A 686
5. Stem Packing (2)	Reinforced PTFE
6. Thrust Washer	Carbon Filled PTFE
7. Body End Piece	Carbon Steel ASTM A 108 Type 1018
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 Lbs.	Kg.	Master Ctn. Qty.					
	A	B	D	H	L									
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.					
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 71 and 72.

Visit our website for the most current information.



# 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

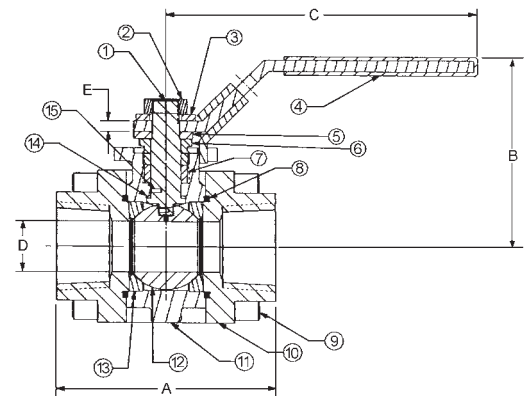
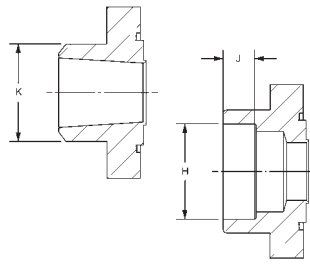
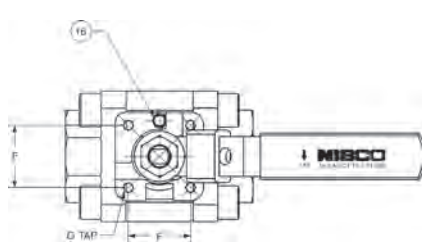
Threaded  
Stainless Steel Trim  
ISO Mount Pad

### 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



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

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions												Threaded Weight Lbs. Kg.	Socket Weld Weight Lbs. Kg.	Butt Weld Weight Lbs. Kg.												
	A	B	C	D	E	F	G	H	J	K																	
1/2	15	2.72	69	2.47	63	4.07	103	.43	11	.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
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 71 and 72.

Visit our website for the most current information.

# Carbon Steel Ball Valves

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

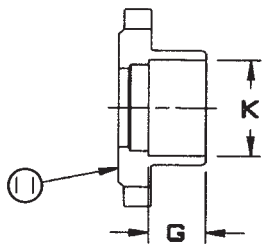
**1000 PSI/69 bar non-shock cold working pressure\***

CONFORMS TO MSS SP-110

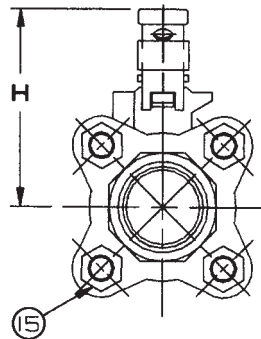
## MATERIAL LIST

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

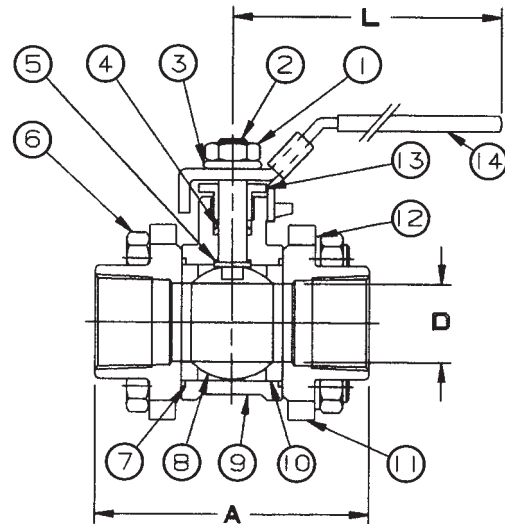


**T-595-CS-R-66-LL**

Threaded

**K-595-CS-R-66-LL**

Socket Weld  
(1/2" - 2")



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	Lbs.	Kg.		
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.				
1/4	8 2.36	60 .34	9 —	— —	2.18 55	4.17 106	.97	.44	10	
3/8	10 2.36	60 .34	9 —	— —	2.18 55	4.17 106	.97	.44	10	
1/2	15 2.76	70 .56	14 .38	10 .86	2.38 60	4.17 106	1.23	.56	10	
3/4	20 3.03	77 .81	21 .50	13 1.07	2.87 73	5.71 145	1.91	.87	10	
1	25 3.62	92 1.00	25 .50	13 1.34	3.4 75	5.71 145	2.93	1.33	8	
1 1/4	32 4.13	105 1.25	32 .50	13 1.69	4.3 93	7.36 187	4.27	1.94	5	
1 1/2	40 4.72	110 1.50	38 .50	13 1.93	4.9 100	7.36 187	6.01	2.73	5	
2	50 5.43	138 1.97	50 .62	16 2.42	6.1 108	7.95 202	9.50	4.32	5	

◆ For detailed operating pressure, refer to pressure temperature chart on pages 71 and 72.

Visit our website for the most current information.

# 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.

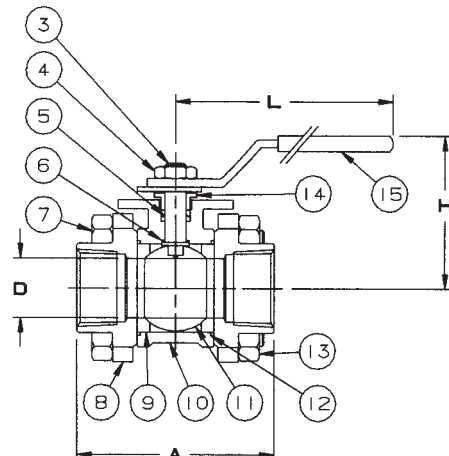
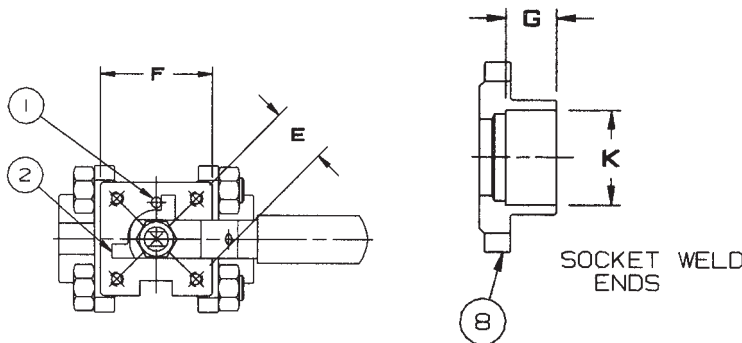


**TM-595-CS-R-66**

Threaded  
ISO Mount Pad

**KM-595-CS-R-66**

Socket Weld (1/2"-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.	In. mm.	In. mm.				
1/4	8 2.49 63	.34 9	.71 18	1.42 36	— —	— —	2.36 60	4.17 106	F03	1.00	.45	10		
3/8	10 2.49 63	.34 9	.71 18	1.42 36	— —	— —	2.36 60	4.17 106	F03	1.00	.45	10		
1/2	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		
3/4	20 3.03 77	.83 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	.83 21	1.65 42	.50 13	1.34 34	3.07 78	5.04 128	F04	2.90	1.31	8		
1 1/4	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		
1 1/2	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 71 and 72.

Visit our website for the most current information.

# 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 T - Threaded	560 - One-Piece Body (Casting)	CS - Carbon Steel	Y - Virgin PTFE R - Reinforced PTFE	25 - Carbon Steel 66 - Stainless Steel	FS - Fire Safe OL - Oval Locking Handle LL - Locking Lever Handle OV - Oval Handle SR - Spring Return Handle
TC - Threaded (Investment Cast Carbon Body)	570 - One-Piece Body (Bar Stock)	S6 - Stainless Steel			
BM - Butt Weld ISO Mount KM - Socket Weld ISO Mount TM - Threaded ISO Mount	580 - Two-Piece Body Conventional Port 585 - Two-Piece Body Full Port 590 - Three-Piece Body Conventional Port 595 - Three-Piece Body Full Port				

### Chemical Compatibility

Please consult the most current edition of the NIBCO® Chem-Guide for recommendations regarding chemical compatibility of material exposure to specific media and media-treatment additives. The NIBCO Chem-Guide is a general guide on the topic of chemical compatibility and is by no means an exhaustive resource on the subject. Ultimately, proper material selection is the responsibility of the installer and/or end-user, taking into account all aspects of a system's design and intended use.

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

Visit our website for the most current information.

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

<p>One-Piece Stainless Steel Ball Valve 2000 lb. CWP</p>  <p><b>T-560-S6-R-66-LL</b> Sizes ¼" thru 2" <b>T-560-S6-R-66-FS-LL</b> Sizes ½" thru 2" Threaded Ends <b>Page 62, 63</b></p>	<p>Two-Piece Stainless Steel Ball Valve 2000 lb. CWP</p>  <p><b>T-580-S6-R-66-LL</b> Sizes ¼" thru 2" Threaded Ends <b>Page 64</b></p>	<p>Spring Return Handle Two-Piece Stainless Steel Ball Valve 2000 lb. CWP</p>  <p><b>T-580-S6-R-66-SR</b> Sizes ¼" thru 2" Threaded Ends <b>Page 65</b></p>
<p>Two-Piece Stainless Steel Ball Valve 1000 lb. CWP</p>  <p><b>T-585-S6-R-66-LL</b> Sizes ¼" thru 2" Threaded Ends <b>Page 66</b></p>	<p>Spring Return Handle Full Port Two-Piece Stainless Steel Ball Valve 1000 lb. CWP</p>  <p><b>T-585-S6-R-66-SR</b> Sizes ¼" thru 1" Threaded Ends <b>Page 67</b></p>	<p>Three-Piece Stainless Steel Ball Valve 2000 lb. CWP</p>  <p><b>BM/KM/TM-590-S6-R-66-FS-LL</b> Sizes ½" thru 2" Threaded, Butt or Socket Weld <b>Page 68</b></p>
<p>Three-Piece Stainless Steel Ball Valve 1000 lb. CWP</p>  <p><b>T/K-595-S6-R-66-LL</b> Sizes ¼" thru 2" Threaded or Socket Weld <b>Page 69</b></p>	<p>Three-Piece Stainless Steel Ball Valve 1000 lb. CWP</p>  <p><b>TM/KM-595-S6-R-66</b> Sizes ¼" thru 2" Threaded or Socket Weld <b>Page 70</b></p>	<p><b>Pressure Temperature Chart</b></p> <p><b>Page 71, 72</b></p>

Visit our website for the most current information.

# 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

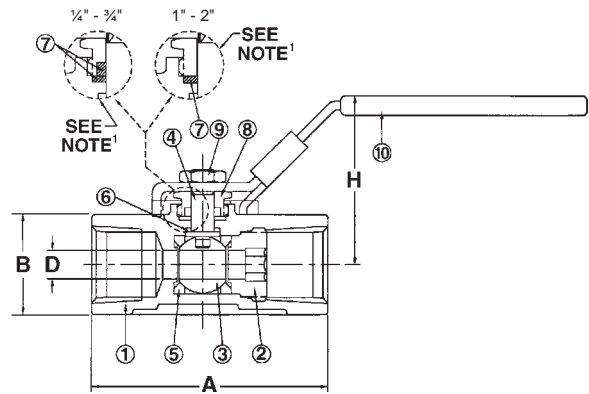
PART	SPECIFICATION
1. Body	Stainless Steel ASTM A 351 Type CF8M
2. Body Insert	Stainless Steel ASTM A 351 Type CF8M or ASTM A 351 Type CF8M
3. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Seat	Reinforced PTFE
6. Thrust Washer	Reinforced PTFE (Carbon 25% + PTFE 75%)
7. <sup>1</sup> 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

<sup>1</sup> ¼"-¾" one each, 1"-2" two each.

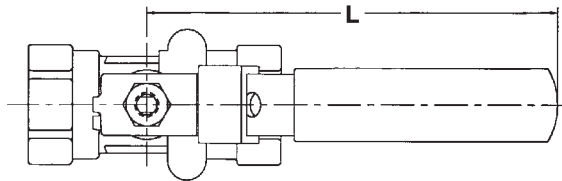
NOTE: valves are static grounded by thrust washer and packing.  
Valves tested in accordance with ASME B16.34



**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	Lbs.	Kg.		
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.				
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 71 and 72.

Visit our website for the most current information.

# 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

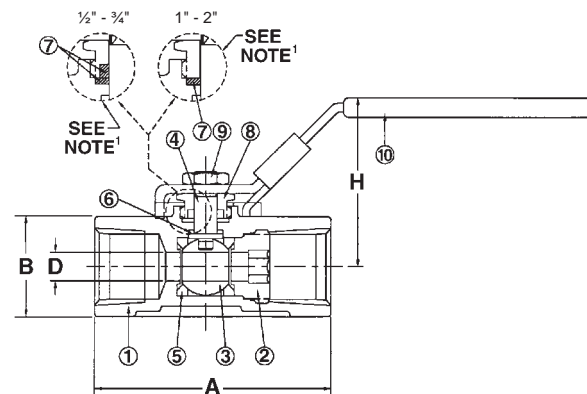
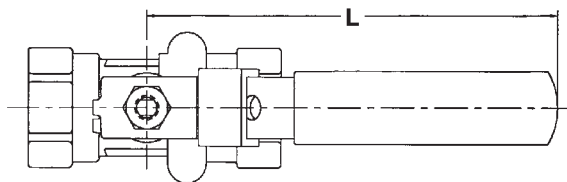
PART	SPECIFICATION
1. Body	Stainless Steel ASTM A 351 Type CF8M
2. Body Insert	Stainless Steel ASTM A 351 Type CF8M or ASTM A 276 Type 316
3. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Seat	Reinforced PTFE
6. Thrust Washer	Reinforced PTFE (Carbon 25% + PTFE 75%)
7. <sup>1</sup> 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

<sup>1</sup> ½"-¾" 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

Size	Dimensions						T-560-S6-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.				
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 71 and 72.

Visit our website for the most current information.

# 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

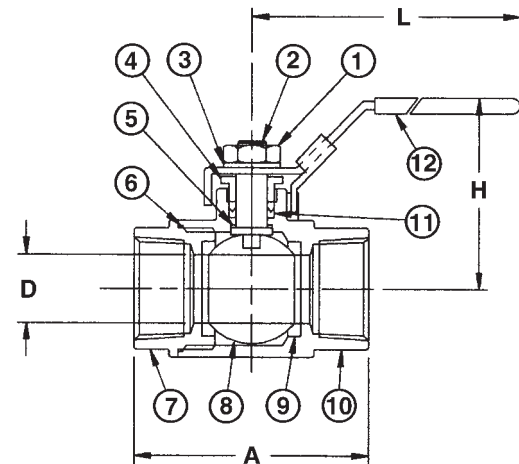
PART	SPECIFICATION
1. Handle Nut	Stainless Steel ASTM A 276 Type 304
2. Stem	Stainless Steel ASTM A 276 Type 316
3. Lock Washer	Stainless Steel 304 SS
4. Threaded Pack Gland	Stainless Steel ASTM A 276 Type 316
5. Thrust Washer	Carbon Filled PTFE
6. Gasket	PTFE
7. Body End Piece	Stainless Steel ASTM A 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

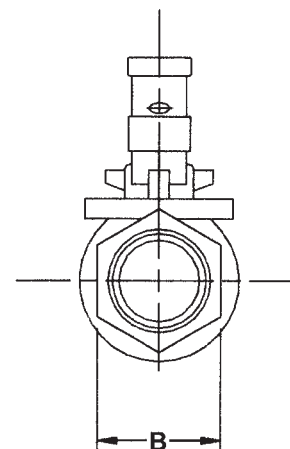


**T-580-S6-R-66-LL**

Threaded



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



## DIMENSIONS—WEIGHTS

SIZE	Dimensions						Weight		Master Ctn. Qty.	
	A		B		D		H			L
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs.	Kg.	
¼ 8	2.07 53	0.83 21	0.37 9	4.33 110	1.76 45	0.51 0.23	10			
⅜ 10	2.07 53	0.83 21	0.37 9	4.33 110	1.76 45	0.48 0.22	10			
½ 15	2.34 59	1.06 27	0.5 13	4.33 110	1.92 49	0.66 0.3	10			
¾ 20	2.8 71	1.34 34	0.69 18	5.83 148	2.4 61	1.3 0.59	10			
1 25	3.23 82	1.61 41	0.87 22	5.83 148	2.56 65	1.79 0.81	10			
1 ¼ 32	3.57 91	1.89 48	1 25	7.76 197	2.74 70	2.52 1.14	5			
1 ½ 40	4.04 103	2.26 57	1.25 32	7.76 197	2.98 76	3.75 1.7	5			
2 50	4.63 118	2.76 70	1.5 38	7.76 197	3.17 81	5.8 2.63	5			

◆For detailed operating pressure, refer to pressure temperature chart on pages 71 and 72.

Visit our website for the most current information.



# Stainless Steel Ball Valves with Spring Return Handle

Spring Return Handle to Close • Two-Piece Body • Conventional Port • Blowout-Proof Stem •  
316 SS Trim • Vented Ball

**2000 PSI/138 bar non-shock cold working pressure\***

CONFORMS TO MSS SP-110 & NACE MR0175

## MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Stainless Steel Type 304
2. Stem	Stainless Steel Type 316
3. Lock Washer	Stainless Steel Type 304
4. Threaded Pack Gland	Stainless Steel Type 316
5. Thrust Washer	Carbon Filled PTFE
6. Gasket	Reinforced PTFE
7. Body End Piece	Stainless Steel ASTM A351 Type CF8M
8. Ball (Vented)	Stainless Steel ASTM A276 Type 316 or ASTM A351 Type CF8M
9. Seats (2)	Reinforced PTFE
10. Body	Stainless Steel ASTM A351 Type CF8M
11. Stem Packing	Carbon Filled PTFE
12. Handle	Stainless Steel Type 316 & 304 w/Vinyl Cover
13. Mounting Plate	Stainless Steel ASTM A351 Type CF8M
14. Socket Head Cap Screw (2)	Stainless Steel Type 304

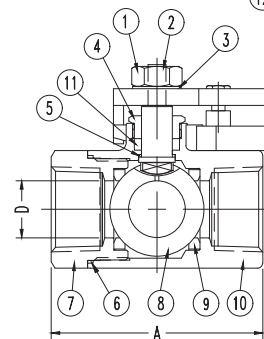
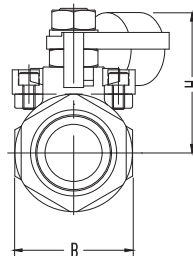
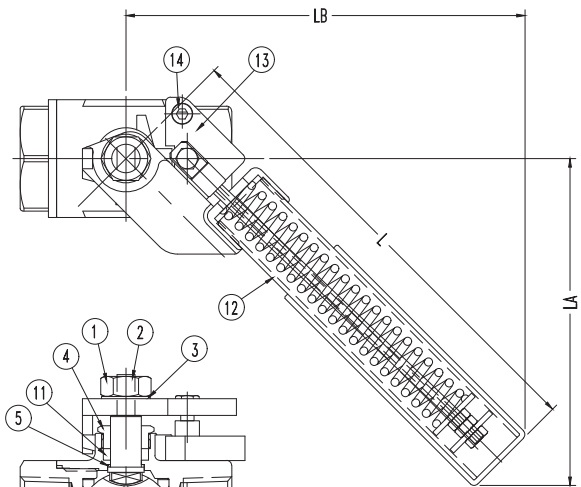
**NOTE: Valves are static grounded by thrust washer and packing.  
Valves tested in accordance with ASME B16.34**

**Threaded and Press Lead Free  
Bronze Ball Valve options available.  
See Lead-free Valve Catalog.**



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

Threaded



**T-580-S6-R-66-SR**  
NPT x NPT

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions								T-580-S6-R-66-SR Master									
	A		B		D		H		L	LA	LB	Lbs.	Kg.	Ctn. Qty.				
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.						
¼	8	2.08	52.80	0.94	24.00	0.37	9.50	1.54	39.25	7.09	180.00	4.88	123.93	5.74	145.85	0.60	0.27	10
⅜	10	2.08	52.80	0.94	24.00	0.37	9.50	1.54	39.25	7.09	180.00	4.88	123.93	5.74	145.85	0.75	0.34	10
½	15	2.34	59.50	1.18	30.00	0.50	12.70	1.69	42.95	7.09	180.00	4.88	123.93	5.74	145.85	1.34	0.61	8
¾	20	2.80	71.00	1.50	38.00	0.69	17.50	2.02	51.25	7.28	185.00	4.92	124.99	5.98	151.86	2.05	0.93	8
1	25	3.26	82.70	1.81	46.00	0.87	22.20	2.16	54.85	7.28	185.00	4.92	124.99	5.98	151.86	2.53	1.15	8
1 ¼	32	3.60	91.4	2.09	53.00	1.00	24.40	2.41	61.21	9.25	235.00	6.30	160.00	6.71	170.50	3.42	1.55	2
1 ½	40	4.06	103.0	2.52	64.00	1.25	31.75	2.60	66.01	9.25	235.00	6.30	160.00	6.71	170.50	4.66	2.11	2
2	50	4.65	118.0	3.03	77.00	1.50	38.10	2.87	72.81	9.25	235.00	6.30	160.00	6.71	170.50	6.44	2.92	2

◆ For detailed operating pressure, refer to pressure temperature chart on pages 66 and 67 in the Ball catalog.

Visit our website for the most current information.

# 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

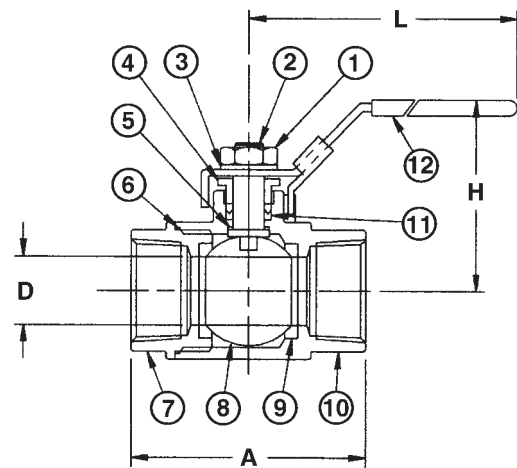
## MATERIAL LIST

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

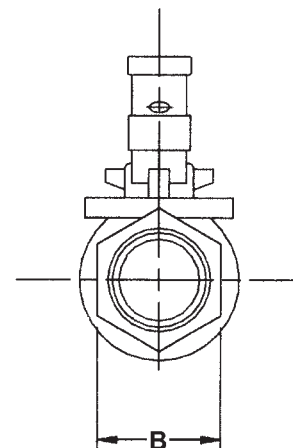
**NOTE:** valves are static grounded by thrust washer and packing.  
Valves tested in accordance with ASME B16.34



**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	Lbs.	Kg.			
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.					
1/4	8 2.21	56 .83	21 .43	11 .20	56 4.21	107 .59	.27	10		
3/8	10 2.21	56 .83	21 .43	11 2.20	56 4.21	107 .56	.25	10		
1/2	15 2.60	66 1.02	26 .56	14 2.30	58 4.21	107 .75	.34	10		
3/4	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 1/4	32 3.94	100 1.97	50 1.25	35 3.56	90 7.45	189 3.42	1.55	5		
1 1/2	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 71 and 72.

Visit our website for the most current information.

# Stainless Steel Ball Valves with Spring Return Handle

Spring Return Handle to Close • Two-Piece Investment Cast Body • Full Port •  
Blowout-Proof Stem • 316 SS Trim • Vented Ball

**1000 PSI/69 bar non-shock cold working pressure\***

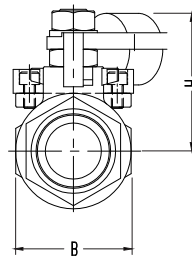
CONFORMS TO MSS SP-110 & NACE MR0175

## MATERIAL LIST

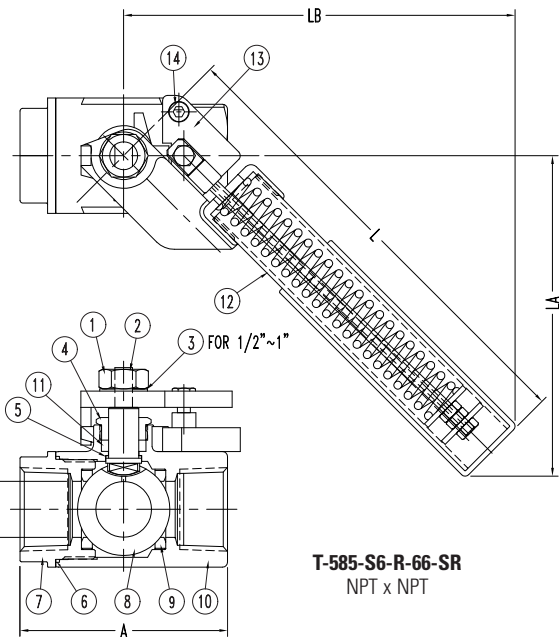
PART	SPECIFICATION
1. Handle Nut	Stainless Steel Type 304
2. Stem	Stainless Steel Type 316
3. Lock Washer	Stainless Steel Type 304
4. Threaded Pack Gland	Stainless Steel Type 316
5. Thrust Washer	Carbon Filled PTFE
6. Gasket	Reinforced PTFE
7. Body End Piece	Stainless Steel ASTM A351 Type CF8M
8. Ball (Vented)	Stainless Steel ASTM A276 Type 316 or ASTM A351 Type CF8M
9. Seats (2)	Reinforced PTFE
10. Body	Stainless Steel ASTM A351 Type CF8M
11. Stem Packing	Carbon Filled PTFE
12. Handle	Stainless Steel Type 316 & 304 w/Vinyl Cover
13. Mounting Plate	Stainless Steel ASTM A351 Type CF8M
14. Socket Head Cap Screw (2)	Stainless Steel Type 304

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

**Threaded and Press Lead Free  
Bronze Ball Valve options available.  
See Lead-free Valve Catalog.**



**T-585-S6-R-66-SR**  
Threaded



**T-585-S6-R-66-SR**  
NPT x NPT

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions								T-585-S6-R-66-SR Master									
	A		B		D		H		L		LA		LB		Lbs.	Kg.	Ctn. Qty.	
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.			
¼	8	2.20	56.00	1.10	28.00	0.43	11.00	1.68	42.75	7.09	180.00	4.88	123.93	5.74	145.85	0.60	0.27	10
¾	10	2.20	56.00	1.10	28.00	0.43	11.00	1.68	42.75	7.09	180.00	4.88	123.93	5.74	145.85	0.75	0.34	10
½	15	2.60	66.00	1.26	32.00	0.56	14.20	1.75	44.65	7.09	180.00	4.88	123.93	5.74	145.85	1.34	0.61	8
¾	20	2.99	76.00	1.65	42.00	0.81	20.50	2.10	53.25	7.28	185.00	4.92	124.99	5.98	151.86	2.05	0.93	6
1	25	3.54	90.00	2.05	52.00	1.00	25.40	2.27	57.65	7.28	185.00	4.92	124.99	5.98	151.86	2.05	0.93	6

◆ For detailed operating pressure, refer to pressure temperature chart on pages 66 and 67 in the Ball catalog.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# 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. <sup>1</sup> 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

<sup>1</sup> Threaded connections: CF8M, weld connections: CF3M.

**Note:** valves are static grounded by two ball detents that ensure 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**

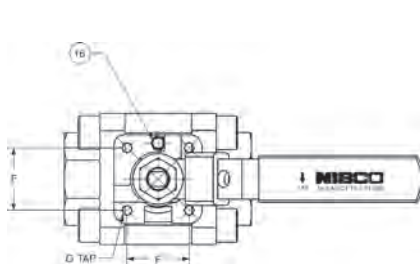
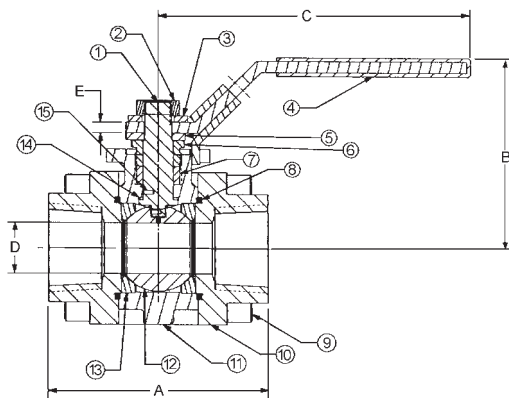
Threaded  
ISO Mount Pad

**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 Weight		Socket Weld Weight		Butt Weld Weight								
							Thread Tap	Flange Type	Socket Weld	Socket Weld	Butt Weld	Butt Weld	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 71 and 72.

Visit our website for the most current information.

# 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. <sup>1</sup> 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.

<sup>1</sup> Threaded ends: CF8M, socket weld ends: CF3M.

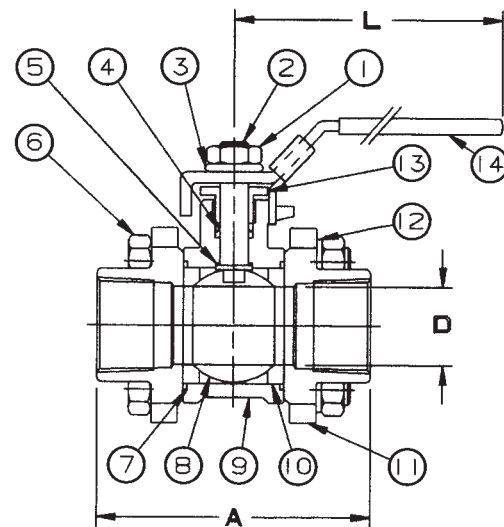


**T-595-S6-R-66-LL**

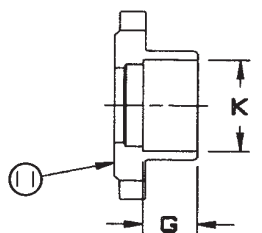
Threaded

**K-595-S6-R-66-LL**

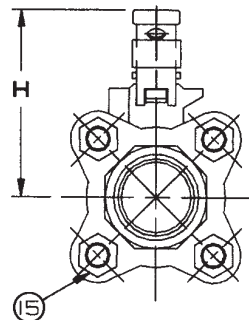
Socket Weld (1/2"-2")



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



SOCKET WELD ENDS



## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						T or K-595-S6-R-66-LL		Master Ctn. Qty.							
	A	D	G	K	H	L	Lbs.	Kg.								
1/4	8	2.36	60	.34	9	—	—	—	—	2.18	55	4.17	106	.97	.44	10
3/8	10	2.36	60	.34	9	—	—	—	—	2.18	55	4.17	106	.97	.44	10
1/2	15	2.76	70	.56	14	.38	10	.86	22	2.38	60	4.17	106	1.23	.56	10
3/4	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
1 1/4	32	4.13	105	1.25	32	.50	13	1.69	43	3.66	93	7.36	187	4.27	1.94	5
1 1/2	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 71 and 72.

Visit our website for the most current information.

# 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. <sup>1</sup> 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



**TM-595-S6-R-66**

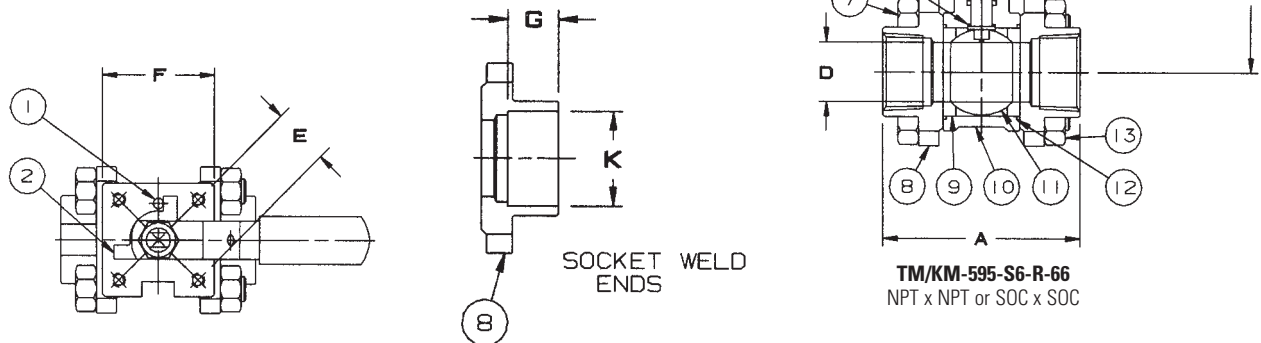
Threaded  
ISO Mount

**KM-595-S6-R-66**

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

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

<sup>1</sup> Threaded ends: CF8M, socket weld ends: CF3M.



**TM/KM-595-S6-R-66**  
NPT x NPT or SOC x SOC

## DIMENSIONS—WEIGHTS—QUANTITIES

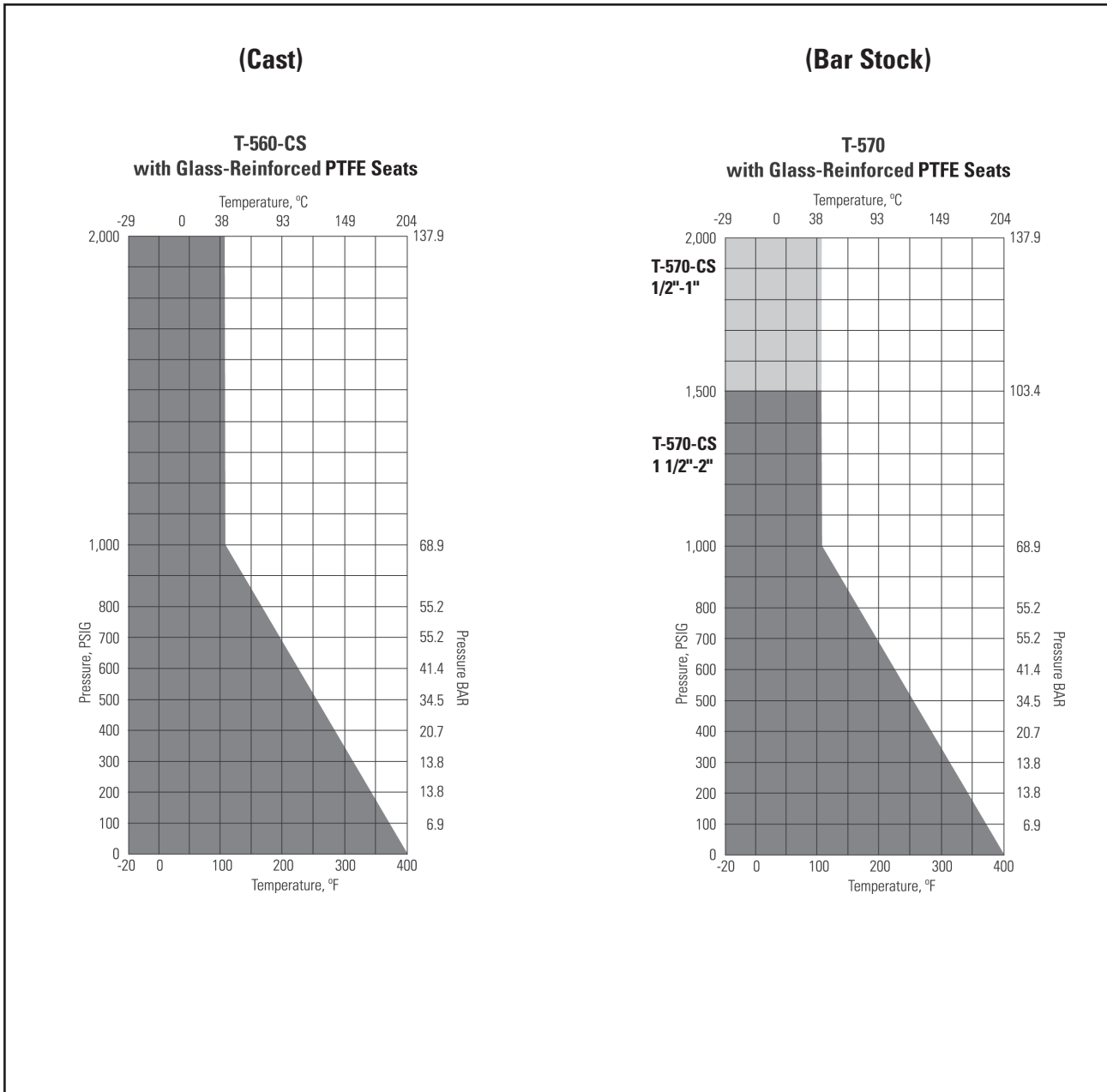
Size	Dimensions														ISO 5211	TM or KM-595-S6-R-66		Master Ctn. Qty.
	A	D	E	F	G	K	H	L	Lbs.	Kg.								
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.					
1/4	8 2.49	63 .34	9 .71	18 1.42	36 —	— —	— —	2.36	60	4.17	106	F03	1.00	.45	10			
3/8	10 2.49	63 .34	9 .71	18 1.42	36 —	— —	— —	2.36	60	4.17	106	F03	1.00	.45	10			
1/2	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				
3/4	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					
1 1/4	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					
1 1/2	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 71 and 72.

Visit our website for the most current information.

# Pressure Temperature Ratings

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



Shaded area refers to recommended seat rating.

## Chemical Compatibility

Please consult the most current edition of the NIBCO Chem-Guide for recommendations regarding chemical compatibility of material exposure to specific media and media-treatment additives. The NIBCO Chem-Guide is a general guide on the topic of chemical compatibility and is by no means an exhaustive resource on the subject. Ultimately, proper material selection is the responsibility of the installer and/or end-user, taking into account all aspects of a system's design and intended use.

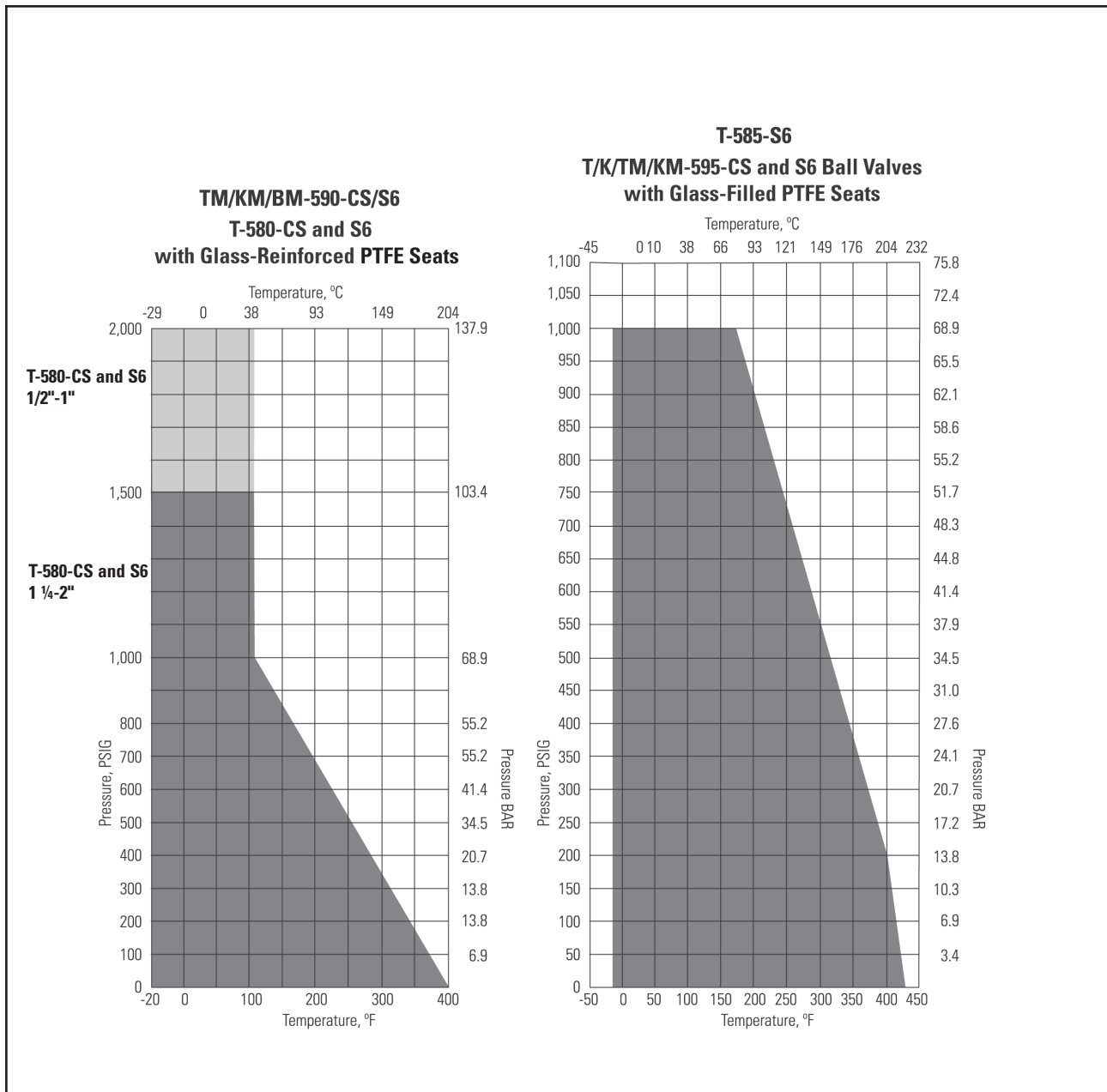
## Galvanic Potential in Piping Systems

Galvanic corrosion or dissimilar metal corrosion is an electrochemical process that is created through the electrical interaction of two different metals under the influence of a conductive media (i.e. an electrolyte). An electrolytic cell, much like a battery, is generated by these dissimilar metals using water as the electrolyte. The electrical charge, developed within the electrolytic cell, drives a preferential attack on the more electrically active metal with the water acting as the recipient of the discarded metal ions. Such galvanic attack is often encountered in service where iron or steel components are installed, and later corrode, in a largely copper piping system. Please consult NIBCO Technical Bulletin NTB-0714-01 Dielectric Products Relative to Electrolysis and Galvanic Corrosion.

Visit our website for the most current information.

# Pressure/Temperature Ratings

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



Shaded area refers to recommended seat rating.

## Chemical Compatibility

Please consult the most current edition of the NIBCO Chem-Guide for recommendations regarding chemical compatibility of material exposure to specific media and media-treatment additives. The NIBCO Chem-Guide is a general guide on the topic of chemical compatibility and is by no means an exhaustive resource on the subject. Ultimately, proper material selection is the responsibility of the installer and/or end-user, taking into account all aspects of a system's design and intended use.

## Galvanic Potential in Piping Systems

Galvanic corrosion or dissimilar metal corrosion is an electrochemical process that is created through the electrical interaction of two different metals under the influence of a conductive media (i.e. an electrolyte). An electrolytic cell, much like a battery, is generated by these dissimilar metals using water as the electrolyte. The electrical charge, developed within the electrolytic cell, drives a preferential attack on the more electrically active metal with the water acting as the recipient of the discarded metal ions. Such galvanic attack is often encountered in service where iron or steel components are installed, and later corrode, in a largely copper piping system. Please consult NIBCO Technical Bulletin NTB-0714-01 Dielectric Products Relative to Electrolysis and Galvanic Corrosion.

Visit our website for the most current information.



# 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 607 Fire Safe	LL - Locking Lever OV - Oval LO - Locking Oval GO - Gear Operator

### Chemical Compatibility

Please consult the most current edition of the NIBCO® Chem-Guide for recommendations regarding chemical compatibility of material exposure to specific media and media-treatment additives. The NIBCO Chem-Guide is a general guide on the topic of chemical compatibility and is by no means an exhaustive resource on the subject. Ultimately, proper material selection is the responsibility of the installer and/or end-user, taking into account all aspects of a system's design and intended use.


**\* 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.**

Visit our website for the most current information.

# One and Two-Piece Carbon Steel Flanged Ball Valves Illustrated Index

<p><b>Unibody Design Detail Split-Body Design Detail</b></p> <p><b>Page 75, 76</b></p>	<p>Unibody Carbon Steel Flanged Ball Valve ASME/ANSI Class 150</p>  <p><b>F-510-CS-R-66-FS</b> Sizes 1/2" thru 12" Flanged <b>Page 77</b></p>	<p>Unibody Carbon Steel Flanged Ball Valve ASME/ANSI Class 300</p>  <p><b>F-530-CS-R-66-FS</b> Sizes 1/2" thru 10" Flanged <b>Page 78</b></p>
<p>Split-Body Carbon Steel Flanged Ball Valve ASME/ANSI Class 150</p>  <p><b>F-515-CS-F-66-FS</b> Sizes 1/2" thru 12" Flanged <b>Page 79</b></p>	<p>Split-Body Carbon Steel Flanged Ball Valve ASME/ANSI Class 300</p>  <p><b>F-535-CS-F-66-FS</b> Sizes 1/2" thru 12" Flanged <b>Page 80</b></p>	

Visit our website for the most current information.

# Flanged Ball Valves

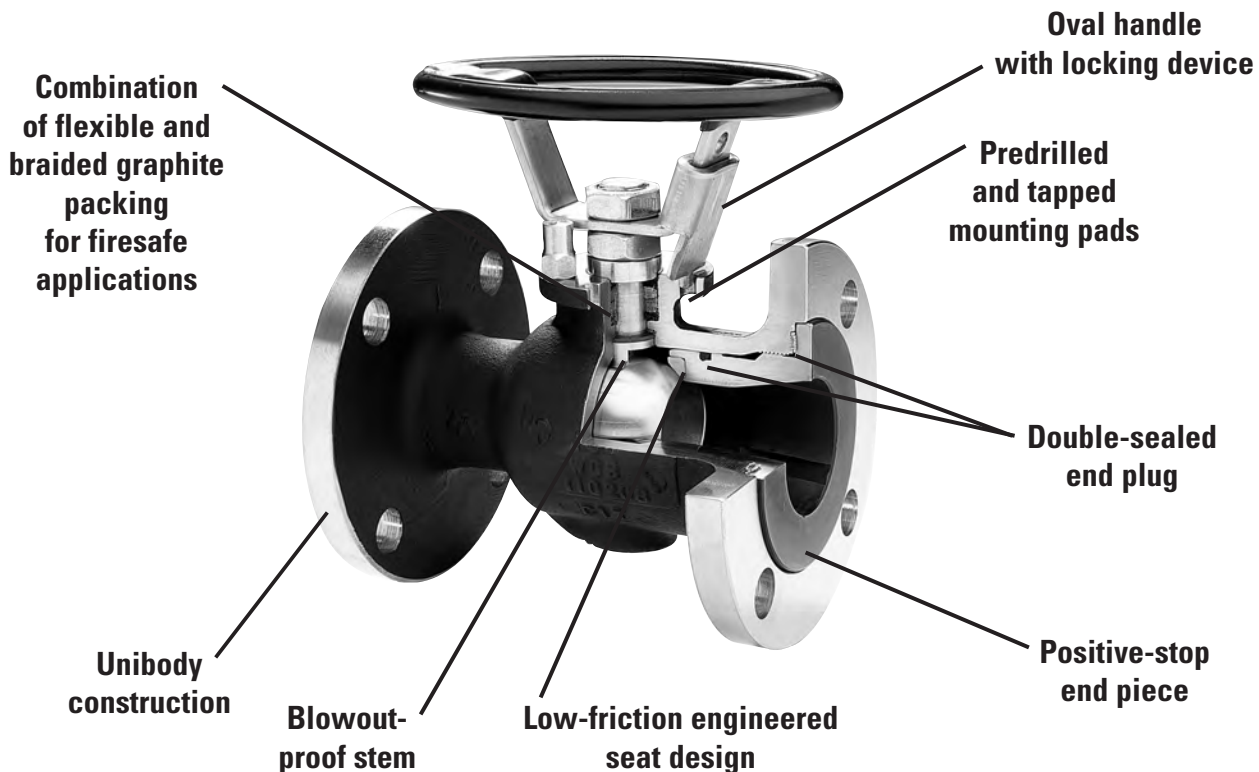
## The positive solution for all your flow control applications.

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 packing to prevent leakage around the stem.
- Large-diameter stem provides extra protection from stresses that cause failure in smaller stems.



Visit our website for the most current information.

# 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.
- Increased packing depth allows adequate packing to prevent leakage around the stem.

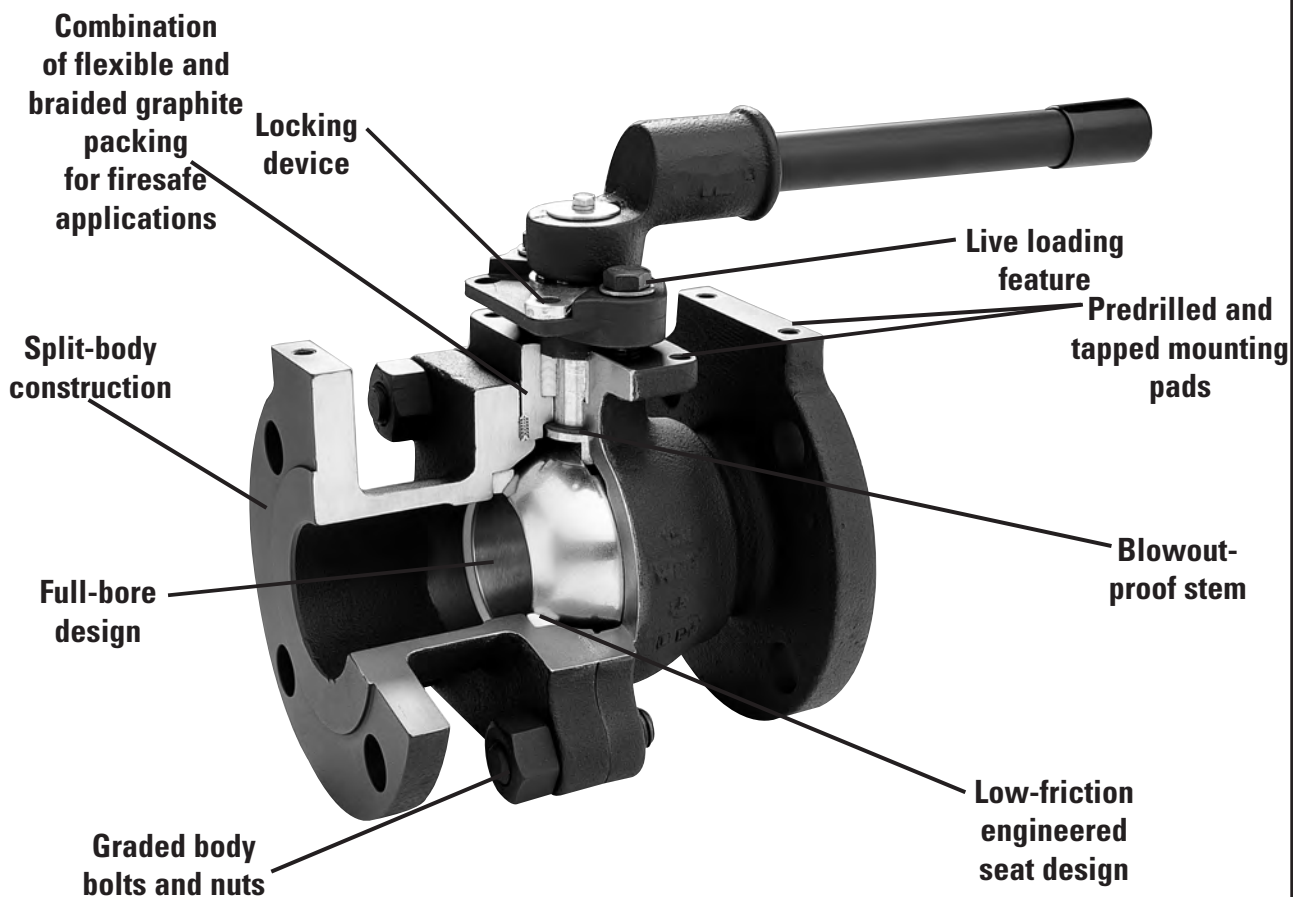
## Applicable Standards

NIBCO® flanged ball valves conform to ASME/ANSI B16.34, ASME B16.5, ASME 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.



Visit our website for the most current information.

# 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

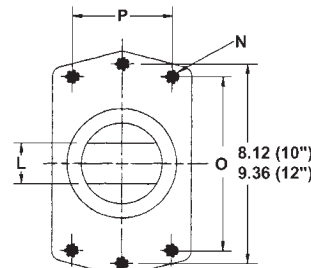
## MATERIAL LIST

PART	SPECIFICATION
1. <sup>1</sup> Body and End Piece	Carbon Steel ASTM A 216 Type WCB
2. <sup>1</sup> 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

<sup>1</sup> Cast specifications shown. Smaller sizes may be manufactured from equivalent bar stock specifications.

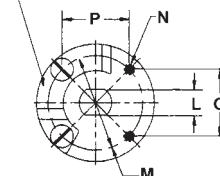


**F-510-CS-R-66-FS**  
Carbon x Stainless  
Flanged

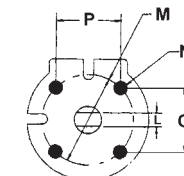


TOP FLANGE FOR  
10" & 12"

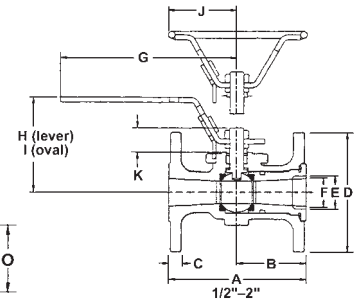
STOP PLATE  
REMOVABLE  
FOR ACTUATION



TOP FLANGE FOR  
3" THRU 8"



TOP FLANGE FOR  
1/2" THRU 2"



## 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.	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.	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 86.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# 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

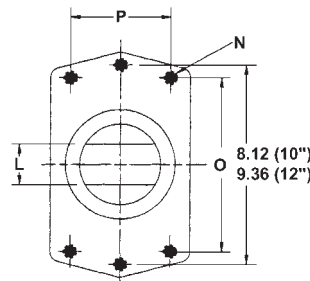
## MATERIAL LIST

PART	SPECIFICATION
1. <sup>1</sup> Body and End Piece	Carbon Steel ASTM A 216 Type WCB
2. <sup>1</sup> 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

<sup>1</sup> Cast specifications shown. Smaller sizes may be manufactured from equivalent bar stock specifications.

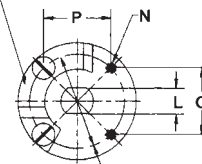


**F-530-CS-R-66-FS**  
Carbon x Stainless  
Flanged

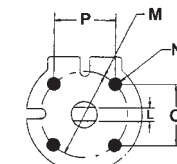


TOP FLANGE FOR  
10" & 12"

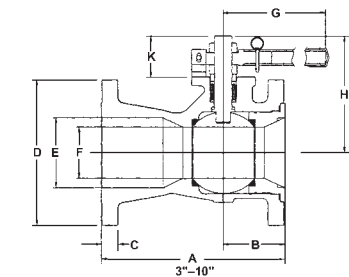
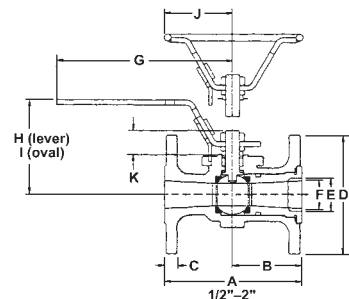
STOP PLATE  
REMOVABLE  
FOR ACTUATION



TOP FLANGE FOR  
3" THRU 8"



TOP FLANGE FOR  
1/2" THRU 2"



## 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.	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	Lbs.	Kg.							
	G		H		I		J		K		L					M		O		P		
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.	N	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	5.00	2.27
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	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
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	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.

♦ For detailed operating pressure, refer to pressure temperature chart on page 86.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# Class 150 Carbon Steel Flanged Ball Valves

Split-Body, Full-Bore 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

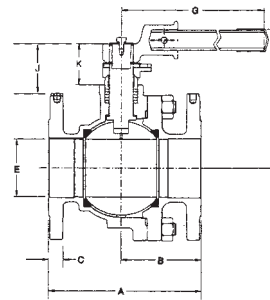


**F-515-CS-F-66-FS**  
Carbon x Stainless  
Flanged

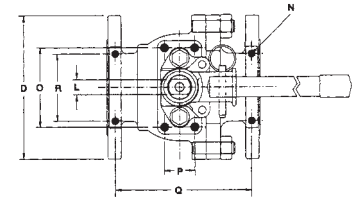
## MATERIAL LIST

PART	SPECIFICATION
1. <sup>1</sup> Body and End Piece	Carbon Steel ASTM A 216 Type WCB
2. <sup>1</sup> 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

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



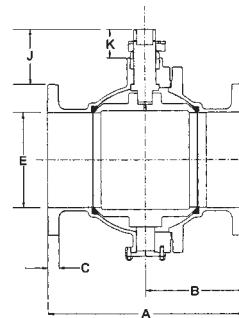
1/2"-8"



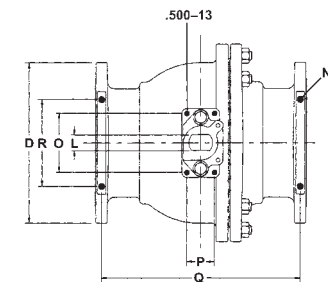
## DIMENSIONS—WEIGHTS—QUANTITIES

### Dimensions

Size	Dimensions					
	A	B	C	D	E	
In. mm.	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



10"-12"



### Dimensions

Size	Dimensions											F-515-CS-F-66-FS	
	G	H	J	K	L	N	O	*P	Q	R	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 5.12	130 3.52	89 .47	12 1.00	25 .19	5 .250-20	—	—	—	3.75 95	2.00 51	4.00 1.82	
3/4	20 6.10	155 4.13	105 .69	18 1.26	32 .31	8 .250-20	—	—	—	3.94 100	2.00 51	6.00 2.72	
1	25 6.10	155 4.25	109 .63	17 1.26	32 .31	8 .312-18	—	—	—	4.19 105	1.75 44	8.00 3.64	
1 1/2	40 9.06	230 4.97	126 1.50	38 1.68	43 .47	12 .312-18	—	—	—	5.63 143	1.75 44	17.00 7.73	
2	50 9.03	230 5.66	144 1.81	46 1.66	42 .63	16 .312-18	—	—	—	6.32 161	2.25 57	26.00 11.82	
3	80 12.63	321 7.38	187 2.65	67 2.13	54 .78	20 .375-16	4.13 105	1.57 40	7.12 181	3.50 89	49.00 22.27		
4	100 15.75	400 8.09	205 2.59	66 2.13	54 .78	20 .437-14	4.13 105	1.57 40	8.00 203	4.00 102	75.00 34.09		
6	150 31.50	800 10.65	271 3.68	93 2.58	66 1.10	28 .437-14	4.96 126	2.36 60	14.44 367	4.00 102	171.00 77.73		
8	200 —	—	—	4.53 115	2.53 65	1.17 30	.500-13	4.96 126	2.36 60	16.81 427	7.62 104	322.00 146.36	
10	250 —	—	—	5.83 148	3.01 76	1.57 40	.625-11	5.90 150	2.75 70	19.75 502	8.66 220	483.00 219.55	
12	300 —	—	—	5.69 145	3.01 76	1.57 40	.625-11	5.90 150	2.75 70	22.69 576	9.45 240	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 86.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# Class 300 Carbon Steel Flanged Ball Valves

Split-Body, Full-Bore 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. <sup>1</sup> Body and End Piece	Carbon Steel ASTM A 216 Type WCB
2. <sup>1</sup> 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

<sup>1</sup> 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.	
½	15	5.50	140	3.14	80	.56	14	3.75	95	.59	15
¾	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
1½	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-CS-F-66-FS										
	G		H		J		K		L		N	*P		Q	R		Lbs.	Kg.				
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.		In.	mm.		In.	mm.						
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	109	.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 ½"-2". Note: valves are static grounded by thrust washer.

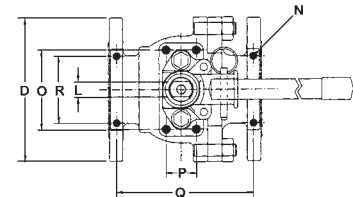
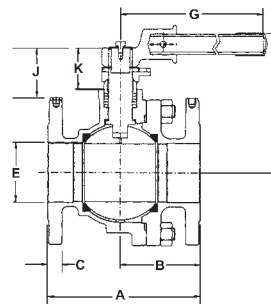
♦For detailed operating pressure, refer to pressure temperature chart on page 86.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

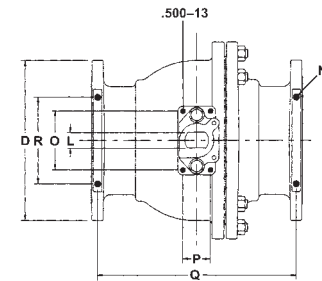
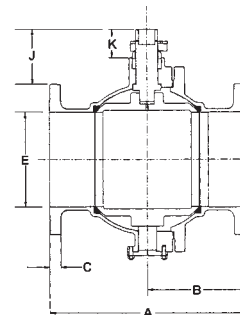
Visit our website for the most current information.



**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  
ASME/ANSI Class 150



**F-510-S6-R-66-FS**  
Sizes 1/2" thru 12"  
Flanged  
Page 82

Unibody Stainless Steel Flanged Ball Valve  
ASME/ANSI Class 300



**F-530-S6-R-66-FS**  
Sizes 1/2" thru 10"  
Flanged  
Page 83

Split-Body Stainless Steel Flanged Ball Valve  
ASME/ANSI Class 150



**F-515-S6-F-66-FS**  
Sizes 1/2" thru 12"  
Flanged  
Page 84

Split-Body Stainless Steel Flanged Ball Valve  
ASME/ANSI Class 300



**F-535-S6-F-66-FS**  
Sizes 1/2" thru 12"  
Flanged  
Page 85

**Pressure  
Temperature  
Chart**

Page 86

Visit our website for the most current information.

# 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. <sup>1</sup> Body and End Piece	Stainless Steel ASTM A 351 Type CF8M
2. <sup>1</sup> 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

<sup>1</sup> 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.	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 Lbs. Kg.									
	G		H		I		J		K		L				M		O		P			
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.	N	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.

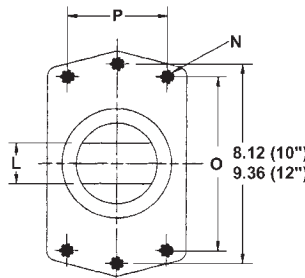
♦ For detailed operating pressure, refer to pressure temperature chart on page 86.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

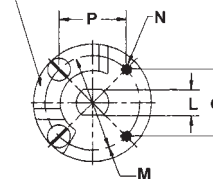


**F-510-S6-R-66-FS**  
Stainless x Stainless  
Flanged

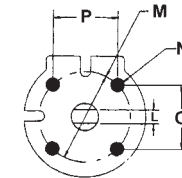


TOP FLANGE FOR  
10" & 12"

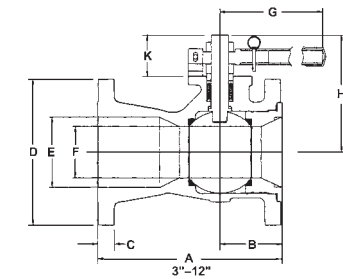
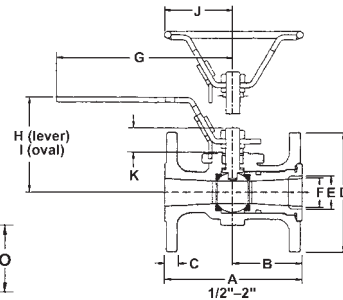
STOP PLATE  
REMOVEABLE  
FOR ACTUATION



TOP FLANGE FOR  
3" THRU 8"



TOP FLANGE FOR  
1/2" THRU 2"



# 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

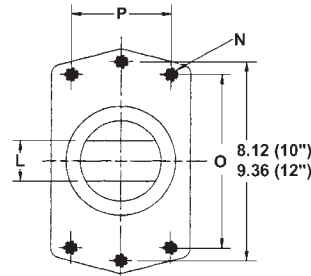
## MATERIAL LIST

PART	SPECIFICATION
1. <sup>1</sup> Body and End Piece	Stainless Steel ASTM A 351 Type CF8M
2. <sup>1</sup> 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

<sup>1</sup> Cast specifications shown. Smaller sizes may be manufactured from equivalent bar stock specifications.

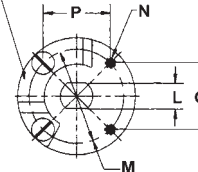


**F-530-S6-R-66-FS**  
Stainless x Stainless  
Flanged

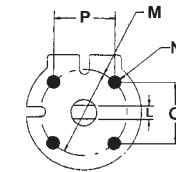


TOP FLANGE FOR  
10" & 12"

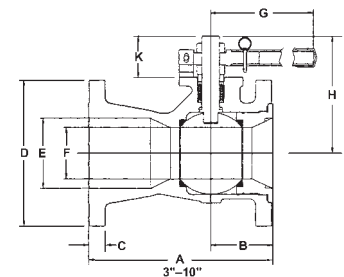
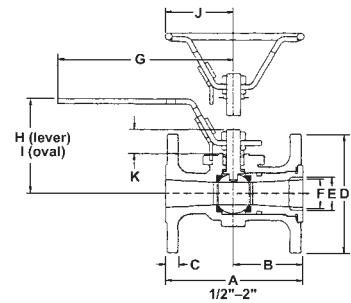
STOP PLATE  
REMOVEABLE  
FOR ACTUATION



TOP FLANGE FOR  
3" THRU 8"



TOP FLANGE FOR  
1/2" THRU 2"



## 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.	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	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		Lbs.	Kg.
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.	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	5.00	2.27
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	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
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	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.

\*For detailed operating pressure, refer to pressure temperature chart on page 86.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# Class 150 Stainless Steel Flanged Ball Valves

Split-Body, Full-Bore 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

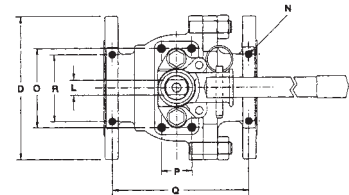
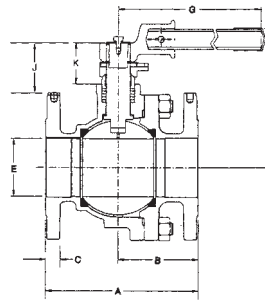
## MATERIAL LIST

PART	SPECIFICATION
1. Body and End Piece	Stainless Steel ASTM A 351 Type CF8M
2. <sup>1</sup> 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

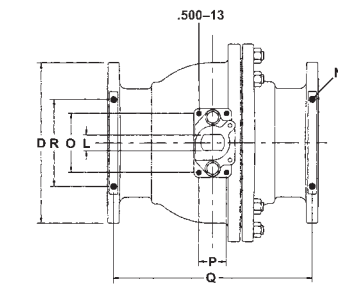
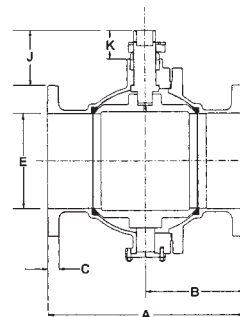
<sup>1</sup> Cast specifications shown. Smaller sizes may be manufactured from equivalent bar stock specifications.



**F-515-S6-F-66-FS**  
Stainless x Stainless  
Flanged



1/2"-8"



10"-12"

## DIMENSIONS—WEIGHTS—QUANTITIES

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

Size	Dimensions											F-515-S6-F-66-FS								
	G	H	J	K	L	N	O	*P	Q	R	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 5.12	130 3.52	89 .47	12 1.00	25 .19	5 .250-20	—	—	—	—	3.75	95	2.00	51	4.00	1.82				
3/4	20 6.10	155 4.13	105 .69	18 1.26	32 .31	8 .250-20	—	—	—	—	3.94	100	2.00	51	6.00	2.72				
1	25 6.10	155 4.25	108 .63	17 1.26	32 .31	8 .312-18	—	—	—	—	4.19	105	1.75	44	8.00	3.64				
1 1/2	40 9.06	230 4.97	126 1.50	38 1.68	43 .47	12 .312-18	—	—	—	—	5.63	143	1.75	44	17.00	7.73				
2	50 9.06	230 5.66	144 1.81	46 1.66	42 .63	16 .312-18	—	—	—	—	6.32	161	2.25	57	26.00	11.82				
3	80 12.63	321 7.38	187 2.65	67 2.13	54 .78	20 .375-16	4.13	105	1.57	40	7.12	181	3.50	89	49.00	22.27				
4	100 15.75	400 8.09	205 2.59	66 2.13	54 .78	20 .437-14	4.13	105	1.57	40	8.00	203	4.00	102	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	126	2.36	60	14.44	367	4.00	102	171.00	77.73				
8	200 —	—	—	4.53	115	2.53	65	1.17	30	.500-13	4.96	126	2.36	60	16.81	427	7.62	104	322.00	146.36
10	250 —	—	—	5.83	148	3.01	76	1.57	40	.625-11	5.90	150	2.75	70	19.75	502	8.66	220	483.00	219.55
12	300 —	—	—	5.69	145	3.01	76	1.57	40	.625-11	5.90	150	2.75	70	22.69	576	9.45	240	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 86.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# Class 300 Stainless Steel Flanged Ball Valves

Split-Body, Full-Bore 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

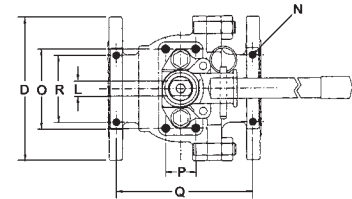
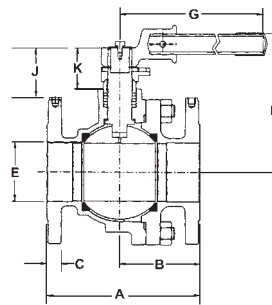
## MATERIAL LIST

PART	SPECIFICATION
1. Body and End Piece	Stainless Steel ASTM A 351 Type CF8M
2. <sup>1</sup> 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

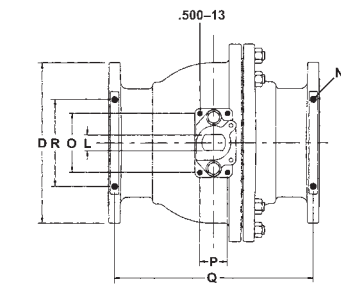
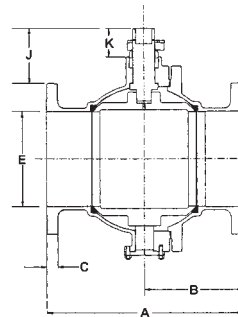
<sup>1</sup> Cast specifications shown. Smaller sizes may be manufactured from equivalent bar stock specifications.



**F-535-S6-F-66-FS**  
Stainless x Stainless  
Flanged



1/2"-8"



10"-12"

## DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions										
	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.	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		Lbs.	Kg.
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.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.		
1/2	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
3/4	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
1 1/2	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

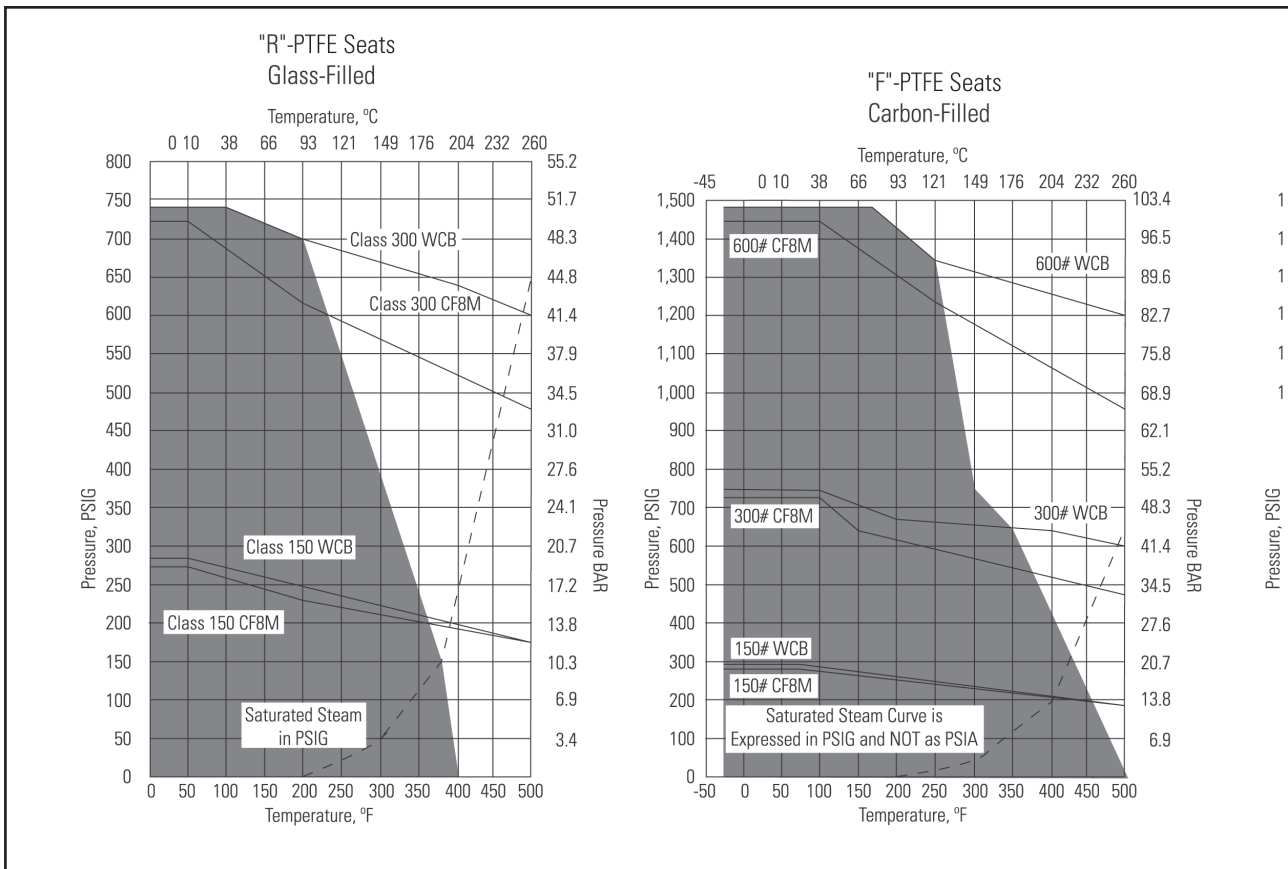
\*Not drilled and tapped on 1/2"-2". Note: valves are static grounded by thrust washer.

♦ For detailed operating pressure, refer to pressure temperature chart on page 86.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# Pressure Temperature Ratings for NIBCO® Flanged Ball Valve Seat Materials



Shaded area refers to recommended seat rating.

## Chemical Compatibility

Please consult the most current edition of the NIBCO Chem-Guide for recommendations regarding chemical compatibility of material exposure to specific media and media-treatment additives. The NIBCO Chem-Guide is a general guide on the topic of chemical compatibility and is by no means an exhaustive resource on the subject. Ultimately, proper material selection is the responsibility of the installer and/or end-user, taking into account all aspects of a system's design and intended use.

## Galvanic Potential in Piping Systems

Galvanic corrosion or dissimilar metal corrosion is an electrochemical process that is created through the electrical interaction of two different metals under the influence of a conductive media (i.e. an electrolyte). An electrolytic cell, much like a battery, is generated by these dissimilar metals using water as the electrolyte. The electrical charge, developed within the electrolytic cell, drives a preferential attack on the more electrically active metal with the water acting as the recipient of the discarded metal ions. Such galvanic attack is often encountered in service where iron or steel components are installed, and later corrode, in a largely copper piping system. Please consult NIBCO Technical Bulletin NTB-0714-01 Dielectric Products Relative to Electrolysis and Galvanic Corrosion.

Visit our website for the most current information.

# Bronze, Carbon and Stainless Steel Ball Valves

## Options and Accessories Index








<b>Bronze Threaded, Solder and Grooved Ball Valves</b> .....	<b>88-90</b>
Handle Options and Accessories .....	88
NIB-SEAL® Technical Data .....	89
NIB-SEAL® Locking Extended Handle Technical Data .....	90
Stainless Steel Ball and Stem .....	91
Oxygen Service .....	91
Vented Ball .....	91
Static Grounding .....	91
Actuation .....	91
Use of Silicone .....	91
<b>Carbon and Stainless Steel Threaded, Socket and Butt Weld Ball Valves</b> .....	<b>92</b>
Handle Options .....	92
Stainless Steel Ball and Stem .....	92
Vented Ball .....	92
Fire Rated .....	92
Static Grounding .....	92
Actuation .....	92
Use of Silicone .....	92
<b>Carbon and Stainless Steel Flanged Ball Valves</b> .....	<b>93</b>
Handle Options .....	93
Stainless Steel Ball and Stem .....	93
Oxygen Service .....	93
Vented Ball .....	93
Fire Rated .....	93
Static Grounding .....	93
Actuation .....	93
Use of Silicone .....	93
<b>Quick Reference Chart for Ball Valve Options and Accessories</b> .....	<b>94</b>
<b>Ball Valve Seat Materials</b> .....	<b>95-96</b>

Visit our website for the most current information.

# Bronze Threaded, Solder, Press 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.

 <p><b>CS Standard Lever Handle</b></p>	 <p><b>CS Extended Lever Handle with Memory Stop</b> Allows for 2" of Insulation</p>	 <p><b>NIB-SEAL® Handle</b> Allows for 2" of Insulation</p>
 <p><b>CS Locking Lever Handle</b></p>	 <p><b>CS Round Handle</b></p>	 <p><b>NIB-SEAL® Locking Extended Handle</b></p>
 <p><b>SS Standard Lever Handle</b></p>	 <p><b>CS Extended Round Handle</b> Allows for 2" of Insulation</p>	 <p><b>Vertical Chain Lever</b> Works with 4/0 Chain or Smaller</p>
 <p><b>SS Locking Lever Handle</b></p>	 <p><b>CS Wing Handle</b></p>	 <p><b>Horizontal Chain Lever</b> Works with 4/0 Chain or Smaller</p>
 <p><b>CS Extended Lever Handle</b> Allows for 2" of Insulation</p>	 <p><b>Seat and Seal Kit</b></p>	 <p><b>Memory Stop Kit</b></p>

Visit our website for the most current information.



# Bronze Threaded, Solder, NIBCO® Press System and Grooved Ball Valves

## NIB-SEAL® Technical Data

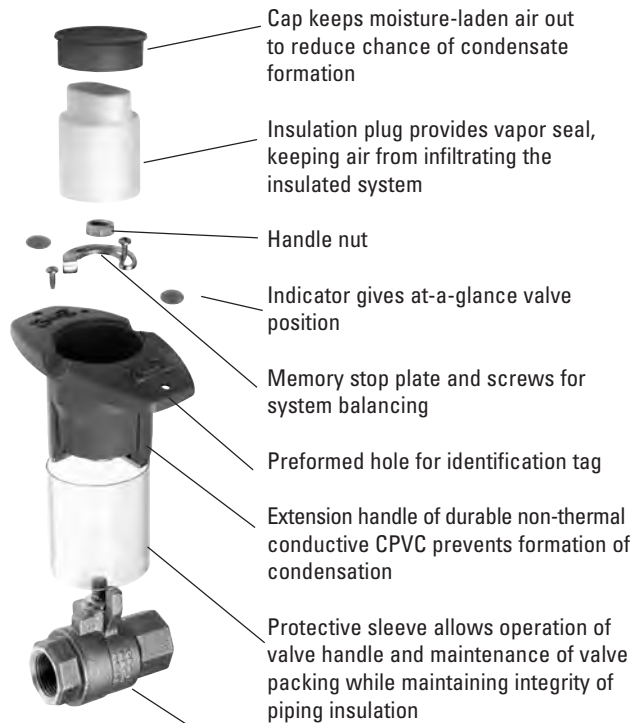
**NIBCO bronze ball valves installed with NIB-SEAL® insulated handles are the only approach that keeps your insulated piping system completely intact.**

The revolutionary NIB-SEAL insulated handle system used with a NIBCO 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.

In addition, the NIB-SEAL handle was tested to UL 2043 and is UL listed for installation in air-handling spaces (plenums).

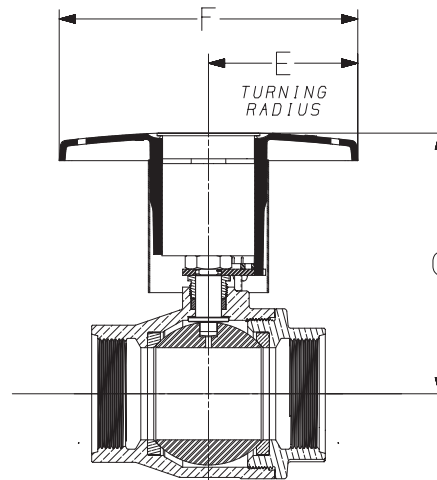
- Protective sleeve provides a stationary surface to affix the insulation, allowing operation of the valve without destroying the integrity of the insulated system.
- High-strength cylindrical handle design features easy access to standard adjustable memory stop for system balancing.
- Cap and insulating 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



Size	Dimensions					
	Valve Series 580-70*/590*			Valve Series 585-70/595		
	C	E	F	C	E	F
.250	—	—	—	3.750	2.188	4.25
.375	—	—	—	3.750	2.188	4.25
.500	3.750	2.188	4.25	3.750	2.188	4.25
.750	3.750	2.188	4.25	4.000	2.188	4.25
1.000	4.000	2.188	4.25	4.25	2.188	4.25
1.250	4.250	2.188	4.25	5.375	3.375	6.50
1.500	5.375	3.375	6.50	5.563	3.375	6.50
2.000	5.563	3.375	6.50	5.875	3.375	6.50
2.500	5.875	3.375	6.50	—	—	—

\*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 a non-conductive CPVC extended-handle bronze ball valve tested to UL 2043, is UL listed for installation in air handling spaces (plenums), that offers a vapor seal, adjustable memory stop, position indicators and convenient valve packing maintenance—all without disturbing the insulation. Specify NIB-SEAL insulated handle.

Example: T-585-70-NS

Visit our website for the most current information.

# NIB-SEAL® Locking Handle

U.S. PATENT 9,810,344

The patented technology of the 3-in-1 NIB-SEAL locking handle solves three problems at once: **it extends, it insulates, and it locks**. The innovative locking handle design extends valve actuation to provide ample room for insulating around piping systems, and its unique thermal barrier system prevents heat transfer and condensate development. The NIB-SEAL locking handle also allows the valve to be locked in the full open or closed position to prevent incidental actuation.

Designed for new installations, the NIB-SEAL locking handle is engineered to work with NIBCO® bronze ball valves.\*\*

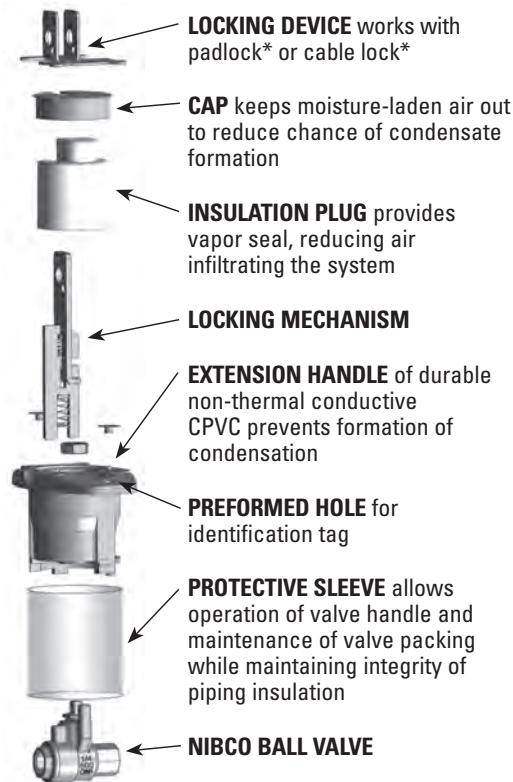
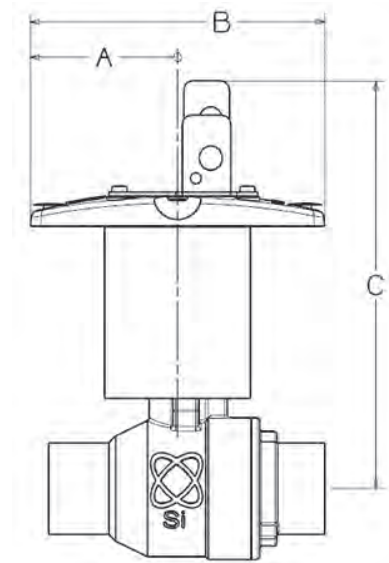
**Applications:** For piping systems requiring up to 2" of insulation, specify a non-conductive CPVC extended-locking handle bronze ball valve tested to UL 2043, and UL listed for installation in air handling spaces. The assembly offers a vapor seal, position indicators, locking device, and actuation without disturbing the insulation. Designed for new installations, the NIB-SEAL locking handle installed on bronze ball valves offers a wide range of advantages for typical commercial HVAC systems as well as industrial applications where insulated piping with a locking device is desirable. Specify NIB-SEAL insulated locking handle.

**Approvals:** UL 2043

**Safety Lock Compatibility:** Cable lock as small as 1/8" diameter to padlock as big as 0.33" diameter shackle.

**Temperature Range:** 15° F to 250° F

Not intended for steam applications in excess of 15 PSI.



## Dimensions

Series 585						
Sizes	A		B		C	
	In.	mm.	In.	mm.	In.	mm.
1/4"	2.19	55.58	4.25	107.95	5.30	134.59
3/8"	2.19	55.58	4.25	107.95	5.30	134.58
1/2"	2.19	55.58	4.25	107.95	5.42	137.56
3/4"	2.19	55.58	4.25	107.95	5.69	144.50
1"	2.19	55.58	4.25	107.95	5.88	149.40
1 1/4"	3.38	85.73	6.50	165.10	6.84	173.67
1 1/2"	3.38	85.73	6.50	165.10	7.06	179.33
2"	3.38	85.73	6.50	165.10	7.30	185.44

Factory installed only.

Order appropriate factory installed NIBCO valve figure number with suffix "LX". Example: T-585-70-LX, 1/2"

NIB-SEAL on solder/sweat ball valves are shipped unassembled.

\* Padlock and cable lock not included

\*\* Valve type showing above is just for handle representation

Visit our website for the most current information.

# 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 185 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® 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 at NIBCO plants in Nacogdoches, Texas, and Reynosa, Mexico. 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.

*Visit our website for the most current information.*

# 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")      Spring Return Handle

**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 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® 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.

Visit our website for the most current information.

# Carbon and Stainless Steel Flanged Ball Valves

## Options and Accessories



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 185 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® 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.

Visit our website for the most current information.

# 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
<b>End-Type</b>																		
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.
<b>Seat Material</b>																		
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)																		
<b>Handles</b>																		
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															
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															
NIB-SEAL® Locking Ext. Hdle.		•																
Memory Stop		•	*1															
SS Spring Return Handle							*				*	*						
<b>Other Options</b>																		
Actuation		*3	*					*	*3	*			*	*3	*	*	*	*
Anti-Static/Grounded Stem			Std. <sub>2</sub>	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.

Visit our website for the most current information.

# 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

### Chemical Compatibility

Please consult the most current edition of the NIBCO Chem-Guide for recommendations regarding chemical compatibility of material exposure to specific media and media-treatment additives. The NIBCO Chem-Guide is a general guide on the topic of chemical compatibility and is by no means an exhaustive resource on the subject. Ultimately, proper material selection is the responsibility of the installer and/or end-user, taking into account all aspects of a system's design and intended use.

### Galvanic Potential in Piping Systems

Galvanic corrosion or dissimilar metal corrosion is an electrochemical process that is created through the electrical interaction of two different metals under the influence of a conductive media (i.e. an electrolyte). An electrolytic cell, much like a battery, is generated by these dissimilar metals using water as the electrolyte. The electrical charge, developed within the electrolytic cell, drives a preferential attack on the more electrically active metal with the water acting as the recipient of the discarded metal ions. Such galvanic attack is often encountered in service where iron or steel components are installed, and later corrode, in a largely copper piping system. Please consult NIBCO Technical Bulletin NTB-0714-01 Dielectric Products Relative to Electrolysis and Galvanic Corrosion.

Visit our website for the most current information.

# 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

### Chemical Compatibility

Please consult the most current edition of the NIBCO Chem-Guide for recommendations regarding chemical compatibility of material exposure to specific media and media-treatment additives. The NIBCO Chem-Guide is a general guide on the topic of chemical compatibility and is by no means an exhaustive resource on the subject. Ultimately, proper material selection is the responsibility of the installer and/or end-user, taking into account all aspects of a system's design and intended use.

### Galvanic Potential in Piping Systems

Galvanic corrosion or dissimilar metal corrosion is an electrochemical process that is created through the electrical interaction of two different metals under the influence of a conductive media (i.e. an electrolyte). An electrolytic cell, much like a battery, is generated by these dissimilar metals using water as the electrolyte. The electrical charge, developed within the electrolytic cell, drives a preferential attack on the more electrically active metal with the water acting as the recipient of the discarded metal ions. Such galvanic attack is often encountered in service where iron or steel components are installed, and later corrode, in a largely copper piping system. Please consult NIBCO Technical Bulletin NTB-0714-01 Dielectric Products Relative to Electrolysis and Galvanic Corrosion.

Visit our website for the most current information.



# System Control Products Index

<b>Ball Valve Actuation and Control</b> .....	<b>98</b>
<b>Ball Valve Actuation Data Sheet</b> .....	<b>99</b>
<b>System Control Ball Valves</b> .....	<b>100-101</b>
<b>Torque Charts</b> .....	<b>102-103</b>
<b>Actuator Mounting Data</b> .....	<b>104-107</b>
Three-Way Bronze Full Port T/S-585-W3 Series .....	104
Two-Piece SS/CS Reduced Port T-580-S6/TC-580-CS-R .....	105
Three-Piece Bronze Reduced/Full Port T/S-590/595 Series .....	106
Three-Piece SS/CS Full Port TM/KM/BM-590/595 Series .....	107

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 77-80.

*Visit our website for the most current information.*

## Ball Valve Actuation and Control

### Flexible, Reliable Actuation

Engineered with a modular approach, NIBCO® 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



Visit our website for the most current information.

# Ball and/or Butterfly 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.

NIBCO recommends having the valve and actuators assembled and tested at the factory, rather than assembled in the field. Please indicate whether this inquiry is for an assembled and tested package or field assembly:

**Assemble and test**     **Field assembly**

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: \_\_\_\_\_

D. **Service and Modulating Service:** On/Off  Throttled/Modulating

II. Actuator Information:

A. **Electric:** Voltage: 115VAC  220VAC  12VDC  24VDC

Time for 90° rotation cycle time\* (open/close): 2 secs  4 secs  10 secs  12 secs

13 secs  15 secs  30 secs

\*NIBCO recommends utilizing the longest cycle time available in order to reduce the incidence of hydraulic shock

Type Enclosure: NEMA 4  NEMA 7

Special Requirements: Brake  Thermostat

Heater and Thermostat  Manual Override

Extended Duty Motor  Position Transmitter

Extra SPDT Switches

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 4/4x  NEMA 7/9

Switch Box: If so: NEMA 4/4x  NEMA 7/9

Type: SPDT  DPDT  (two each is standard)

Pneumatic Positioner: 3-15  4-20 MA

III. Special Notes:

**Note:** Not all configurations are available.

NEMA 4/4x enclosures are for use in non-hazardous/unclassified locations, indoors or outdoors.

NEMA 7 enclosures are for use in hazardous (classified) indoor locations as Class I, Division I, Group C or D as defined in NFPA 70.

NEMA 9 enclosures are for use in hazardous (classified) indoor locations as Class II, Division I, Groups E, F, or G.

Visit our website for the most current information.

# 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**

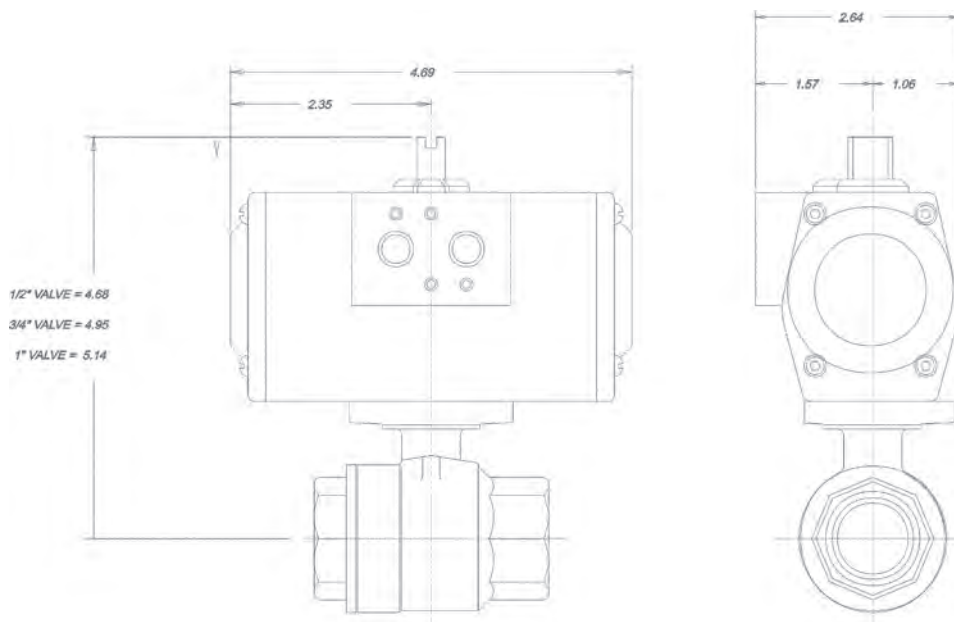
CONFORMS TO MSS SP-110,  
ACTUATOR MOUNT PER ISO 5211

## 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-585-70-66-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.

**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# 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



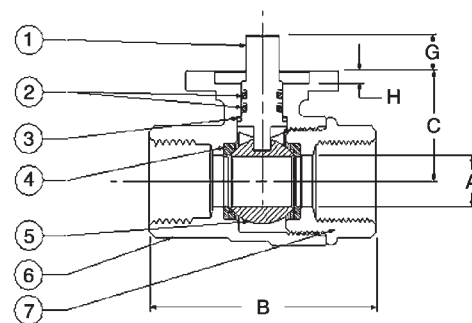
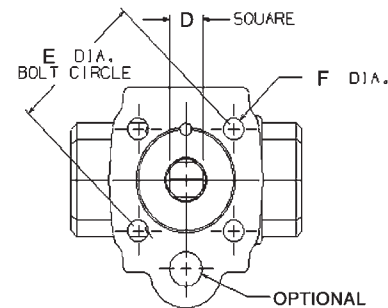
**TM-585-CV**  
Shown with 24 VDC  
Electric Actuator and Universal Mount

### Reduced Orifice Ball – CV Ratings

Size	Figure #	Material #	CV
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.	In.	mm.	In.	mm.	Lbs.	Kg.				
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	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	25



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Visit our website for the most current information.

# Ball Valve Torque Charts

## Ball Valve Torque Requirements Operating Torque in Inch/Pounds

Figure #	Size	0-100 PSI	101-500 PSI	501-600 PSI
<b>T-560-BR-R/Y</b> One-Piece Bronze Reduced Port	¼"	35	65	65
	⅜"	35	65	65
	½"	35	65	65
	¾"	70	100	100
	1"	130	175	175
	1¼"	175	230	230
	1½"	225	265	265
	2"	370	510	510
<b>580-70</b> Two-Piece Bronze Conventional Port	¼"	N/A	N/A	N/A
	⅜"	N/A	N/A	N/A
	½"	N/A	N/A	N/A
	¾"	N/A	N/A	N/A
	1"	N/A	N/A	N/A
	1¼"	120	185	185
	1½"	185	240	240
	2"	220	300	300
	2½"	250	410	410
3"	370	540	540	
<b>585-70</b> Two-Piece Bronze Full Port	¼"	30	50	50
	⅜"	30	50	50
	½"	30	50	50
	¾"	55	75	75
	1"	90	130	130
	1¼"	120	185	185
	1½"	185	240	240
	2"	220	300	300
	2½"	N/A	N/A	N/A
	3"	N/A	N/A	N/A

Figure #	Size	0-100 PSI	101-500 PSI	501-600 PSI
<b>585-70-W3</b> Three-Way Bronze Full Port Maximum Rating is 400 PSI CWP	½"	42	42	N/A
	¾"	67	67	N/A
	1"	114	114	N/A
	1¼"	159	159	N/A
	1½"	218	218	N/A
	2"	268	268	N/A
<b>TM-585-70-66</b> Two-Piece w/Pad Bronze Full Port	½"	25	—	30
	¾"	30	—	40
	1"	30	—	50
	1¼"	55	—	70
	1½"	55	—	110
<b>590-Y</b> Three-Piece Bronze Conventional Port	¼"	N/A	N/A	N/A
	⅜"	N/A	N/A	N/A
	½"	N/A	N/A	N/A
	¾"	N/A	N/A	N/A
	1"	N/A	N/A	N/A
	1¼"	125	230	230
	1½"	150	275	275
	2"	170	300	300
	2½"	250	410	410
	3"	370	540	540
	<b>595-Y</b> Three-Piece Bronze Full Port	¼"	45	65
⅜"		45	65	65
½"		45	65	65
¾"		50	80	80
1"		125	230	230
1¼"		150	275	275
1½"		170	300	300
2"		250	410	410
2½"		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
<b>T-560-CS/S6-R</b> One-Piece CS/SS Reduced Port	¼"	40	70	75	80	85	100
	⅜"	40	70	75	80	85	100
	½"	40	70	80	85	90	110
	¾"	75	100	105	110	125	140
	1"	135	190	200	215	245	275
	1¼"	180	240	250	270	290	330
	1½"	225	300	310	330	365	410
	2"	370	460	490	580	685	790
<b>T-570-CS-R</b> One-Piece Bar Stock CS Reduced Port	½"	40	65	70	80	90	105
	¾"	70	95	100	105	120	135
	1"	125	180	190	205	240	270
	1¼"	170	230	240	260	285	320
	1½"	210	285	295	320	355	395
2"	350	440	470	560	665	770	
<b>T-580-CS-R</b> Two-Piece CS Conventional Port	¼"	40	40	50	55	65	80
	⅜"	40	40	50	55	65	80
	½"	75	75	85	95	105	125
	¾"	100	100	110	120	130	150
	1"	120	130	140	150	170	215
	1¼"	165	175	185	200	250	300
	1½"	200	200	220	250	300	350
	2"	290	300	320	350	400	450

Visit our website for the most current information.

# 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
<b>T-580-S6-R</b>	1/4"	65	70	75	90	105	125
<b>TC-580-CS-R</b>	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
<b>TM/KM-595-CS/S6-R</b>	1/4"	65	70	75	80	—	—
	3/8"	65	70	75	80	—	—
<b>T/K-595-CS/S6-R</b>	1/2"	75	80	85	100	—	—
Three-Piece	3/4"	130	150	165	180	—	—
CS/SS	1"	150	220	230	250	—	—
Full Port	1 1/4"	250	290	300	325	—	—
	1 1/2"	310	350	365	400	—	—
	2"	390	480	495	550	—	—
<b>TM/KM/BM-590-CS/S6-R</b>	1/2"	50	50	55	60	75	90
	3/4"	85	90	95	100	120	150
Three-Piece	1"	130	140	145	150	170	200
CS/SS	1 1/4"	175	180	190	210	230	280
Conventional	1 1/2"	275	300	310	325	360	400
Port	2"	325	350	360	385	440	500

Figure #	Size	0-100 PSI	101-285 PSI
<b>F-510</b>	1/2"	84	98
ANSI Class 150	3/4"	120	144
CS/SS	1"	156	180
Uni-Body	1 1/2"	216	240
Flanged	2"	240	336
	3"	480	840
	4"	720	1260
	6"	2220	3540
	8"	5520	8400
	10"	9600	15000
	12"	12000	19500
<b>F-515</b>	1/2"	108	126
ANSI Class 150	3/4"	153	184
CS/SS	1"	186	214
Split-Body	1 1/2"	279	311
Flanged	2"	343	480
	3"	735	1150
	4"	1042	2176
	6"	3182	5303
	8"	7557	14375
	10"	13810	19729
	12"	18859	52804

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

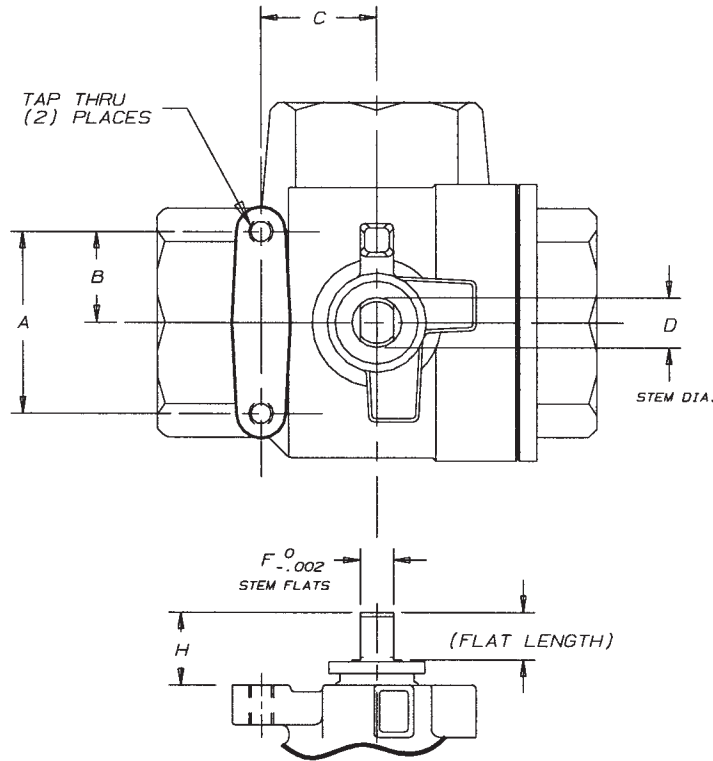
**Notes:**

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.

Visit our website for the most current information.

# Three-Way Bronze Ball Valves Data for Actuation

## NIBCO® T-585-W3 Series



**T-585-W3**  
3-Way Ball Valve

Size	Dimensions															
	A		B		C		Tap Thru	D $\pm .003$		F $\pm .002$		H $\pm .030$		Flat Length		
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.		
½	15	1.38	35	.69	17	.88	22	#10-24	.31	8	.22	6	.81	21	.30	8
¾	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
1¼	32	1.50	38	.75	19	.94	24	.250-20	.56	14	.38	10	1.37	35	.50	13
1½	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

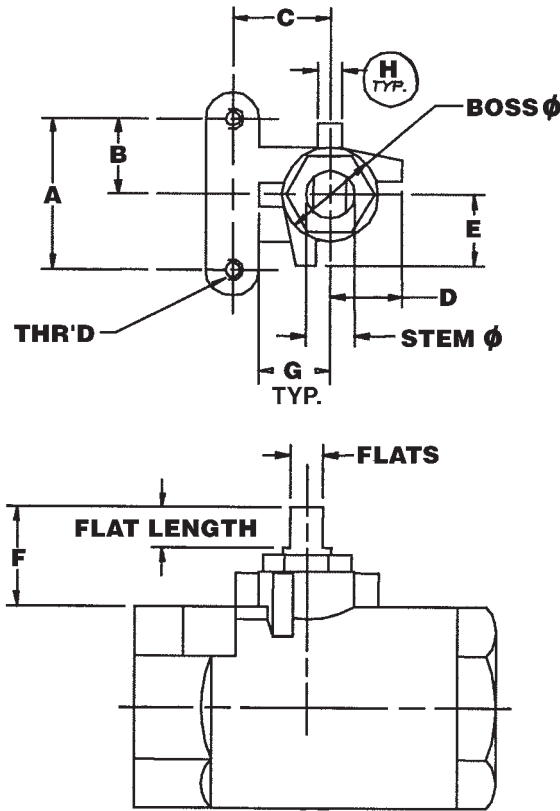
Actuator mounting data for two-piece bronze ball valves with mounting pads – TM-585 series page 24.

Visit our website for the most current information.



# Two-Piece SS/CS Ball Valves Data for Actuation

## NIBCO® T-580-S6-R and TC-580-CS-R Series



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

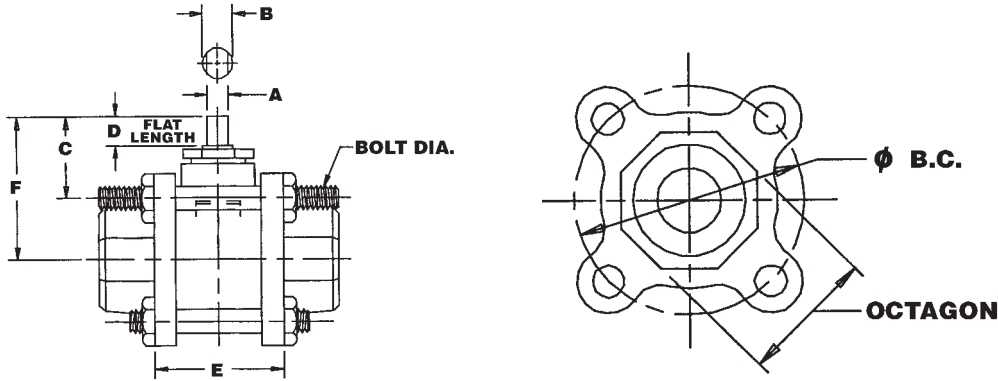
**Dimensions**

Size	A		B		C		D		E		F		G		H		Flat Length		Stem Ø		Boss Ø		Thr'd	Lb/In Torque			
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.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Ø PSI				
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

Visit our website for the most current information.

# Three-Piece Bronze Ball Valves Data for Actuation

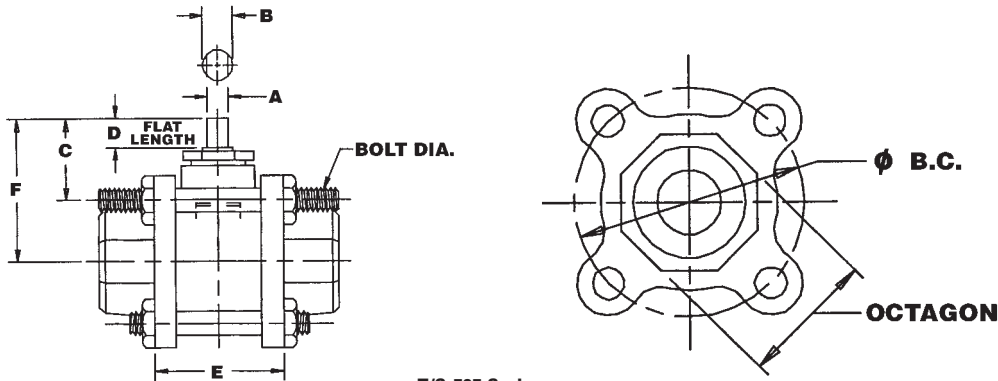
## NIBCO® T/S-590 and TS-595 Series



T/S-590 Series

**Dimensions**

Size	A <sup>+0.002</sup>		B		C <sup>±.03</sup>		D		E <sup>+.03</sup>		F		Bolt Dia.	Octagon		Ø BC	
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.		In.	mm.	In.	mm.
1 ¼	.32	.25	.06	.38	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	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	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	1.56	.40	.56	14	3.88	.99	3.12	.79	3/8-16	3.50	.89	4.39	1.12
3	.76	.44	.11	.75	2.09	.53	.81	20	4.72	1.20	4.03	1.05	7/16-14	4.12	1.05	5.47	1.39



T/S-595 Series

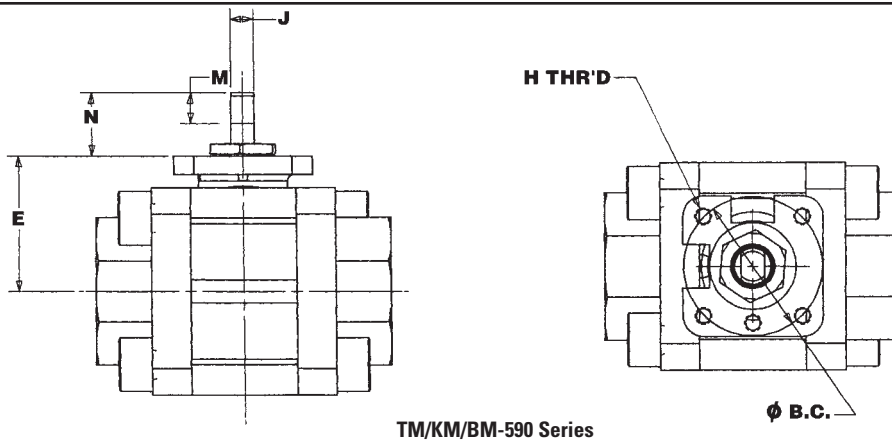
**Dimensions**

Size	A <sup>+0.002</sup>		B		C <sup>±.03</sup>		D		E <sup>+.03</sup>		F		Bolt Dia.	Octagon		Ø BC	
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.		In.	mm.	In.	mm.
½	.13	.22	.05	.31	.84	.21	.30	8	1.38	.35	1.47	.37	1/4-20	1.06	.24	1.79	.45
¾	.19	.25	.06	.38	1.09	.28	.38	10	1.87	.47	1.81	.46	1/4-20	1.25	.32	2.05	.52
1	.25	.25	.06	.38	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	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	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	1.56	.40	.56	14	3.88	.99	3.12	.79	3/8-16	2.75	.70	4.39	1.12
2 ½	.63	.44	.11	.75	2.09	.53	.81	20	4.72	1.20	4.03	1.05	7/16-14	3.50	.89	5.47	1.39

Visit our website for the most current information.

# Three-Piece CS/SS Ball Valves Data for Actuation

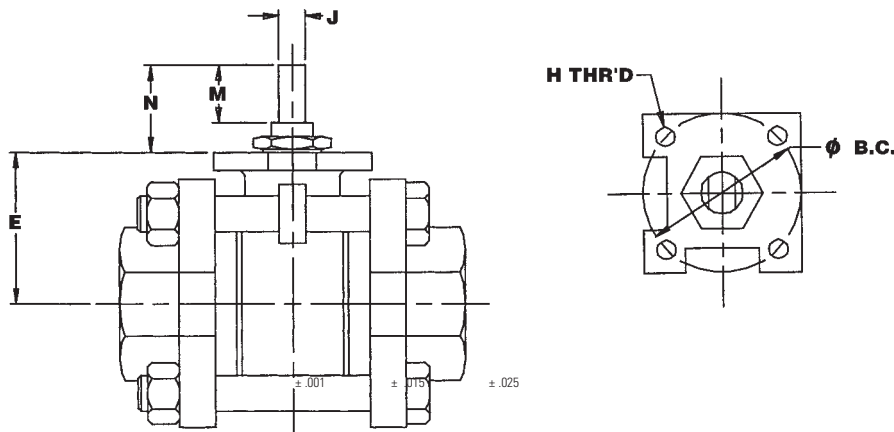
## NIBCO® TM/KM/BM-590 and TM/KM-595 Series



TM/KM/BM-590 Series

**Dimensions**

Size	J		M		N		E		H	BC		
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	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	.32	8	.63	16	.87	22	1.81	46	M5	1.65	42
1 1/2	.40	.39	10	.69	18	.97	25	1.95	50	M6	1.96	50
2	.50	.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.	In. mm.	In. mm.	In. mm.	Thr'd	In.	mm.		
1/4	8	.20	5	.41	10	.60	15	1.15	29	M5	1.42	36
3/8	10	.20	5	.41	10	.60	15	1.15	29	M5	1.42	36
1/2	15	.20	5	.41	10	.60	15	1.15	29	M5	1.42	36
3/4	20	.28	7	.60	15	.85	22	1.34	34	M5	1.65	42
1	25	.28	7	.60	15	.91	23	1.58	40	M5	1.65	42
1 1/4	32	.352	9	.64	16	.87	22	1.82	46	M6	1.97	50
1 1/2	40	.35	9	.64	16	.89	22	2.07	53	M6	1.97	50
2	50	.35	9	.64	16	.92	23	2.40	61	M6	1.97	50

Visit our website for the most current information.

# Engineering Data Index



<b>Specifications</b> .....	<b>108</b>
<b>Temperature Limits of Material</b> .....	<b>109</b>
<b>Flow Data</b> .....	<b>110-111</b>
<b>Properties of Valve Materials</b> .....	<b>112-115</b>
Bronze, Brass, Copper and Iron.....	112-113
Steel, Stainless Steel and Alloys.....	114-115
<b>Valve Installation Tips</b> .....	<b>116</b>
<b>Valve Warranty</b> .....	<b>118</b>

## 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.

Visit our website for the most current information.

# 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"	
50- 50 Tin-Lead <sup>B, G</sup>	100 (38)		200 (14)	175 (12)	150 (10)	135 (9)	100 (7)	15 <sup>D</sup> (6.8) <sup>D</sup>
	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 <sup>C</sup>	100 (38)		635 (43)	560 (39)	375 (26)	340 (23)	150 (10)	15 <sup>D</sup> (6.8) <sup>D</sup>
	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 <sup>E</sup> (54.4) <sup>E</sup>
	250 <sup>F</sup> (121) <sup>F</sup>		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.

<sup>A</sup>Including other non-corrosive liquids and gases.

<sup>B</sup>ASTM B 32, Alloy Grade Sn50.

<sup>C</sup>ASTM B 32, Alloy Grade Sb5.

<sup>D</sup>This pressure is determined by the temperature of saturated steam at 15 lb. (6.8 kg) pressure at 250° F (121° C).

<sup>E</sup>This pressure is determined by the temperature of saturated steam at 120 lb. (54.4 kg) pressure at 350° F (177° C).

<sup>F</sup> For service temperatures lower than 250° F (121° C), the solders as above may be used.

<sup>G</sup> The 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%.

<sup>H</sup> Rated internal pressure is that of the tube being joined. While solders can be used, brazing alloys are recommended.

### Pressure/Temperature Ratings for Bronze Pressure Rated Valves†

Temperature		Pressure – PSI			
Press. Class		125 <sup>2,3</sup>	150 <sup>3</sup>	200 <sup>3</sup>	300 <sup>3</sup>
End Conn.		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 <sup>1</sup>	145 <sup>1</sup>	250	375
500	260.0	–	–	225	340
550	287.7	–	–	200	300

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

<sup>2</sup> Buna-N disc valves limited to 180° F temperatures.

<sup>3</sup> PTFE disc valves limited to 450° F temperatures.

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

† Tables from MSS SP-80

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

Temperature		Gray Iron				Ductile Iron	
		Class 125 200 WOG		Class 250 500 WOG		Class 150	
		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.

<sup>1</sup> Buna-N Disc Valves limited to 180° F or EPDM Disc Valves limited to 250° F.

\*Maximum temperature for bronze trim or PTFE

Visit our website for the most current information.

# Flow Data

## C<sub>v</sub> Values for Valves

### 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.

(C<sub>v</sub> 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). )

Valve Size	4	8	10	15	20	25	32	40	50	65	80	90	100	125	150	200
Size (mm.)	4	8	10	15	20	25	32	40	50	65	80	90	100	125	150	200
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	8
<b>GATES</b>																
S/T-29	0.5	2	4.9	9.1	22	40	65	95	175							
S/T-111, 113, 131, 133, 134, 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	4,150
<b>GLOBES</b>																
S/T-211, 235, 256, 275-Y	0.61	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, F-768									45	70	105	—	195	315	465	860
<b>CHECKS</b>																
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)	—	—	3.7	6.86	16.3	30	49	72	130							
F-908 (Swing)										243	356	—	665	1,073	1,584	2,937
T/F-918, 968, 938 (Swing)									137	221	327	—	605	975	1,440	2,670
F-910, 960 (Poppet)										110	155	—	278	431	625	1,115
W-910, 960 (Poppet)									66	88	130	—	228	350	520	900
G-920-W, KG-900-W									77	129	209	—	358	573	898	1,740
W-920-W, KW-900-W									76	161	224	—	400	648	1060	1,890
<b>BALL</b>																
F-510, 530	—	—	—	11	25	45	—	137	217	—	482	—	790	—	1,144	2,164
F-515, 535	—	—	—	25	50	85	—	259	440	840	1,400	—	2,350	—	5,200	10,200
T-560-BR/CS/S6	—	4	4	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	—	—					
<b>BUTTERFLY</b>																
LD/WD-1000, 2000, 3000									166	247	340	—	660	1,080	1,613	3,759
GD-4765, 4775 FC-2700, FD-5700									145	195	290	—	600	930	1,600	3,450

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

Visit our website for the most current information.

**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)
- P<sub>1</sub> = upstream pressure (psia) absolute

**NOTE:** ΔP must be less than .5 P<sub>1</sub>. (Flow is critical when ΔP is greater than .5 P<sub>1</sub>.)

									<b>Throttling Factors</b>										
									For throttling use with disc partially open. Multiply C <sub>v</sub> by factor.										
									<b>NOTE: gate valves are not throttled.</b>										
250	300	350	400	450	500	600	750	900	0	10	20	30	40	50	60	70	80	90	100
10	12	14	16	18	20	24	30	36											
6,700	9,925	13,800	18,375	23,600	29,600	43,570													
									0	0.35	0.65	0.90	0.93	0.96	0.98	0.99	1.00	1.00	1.00
									0	0.030	0.035	0.06	0.10	0.16	0.24	0.32	0.47	0.68	1.00
1,390									0	0.35	0.65	0.90	0.93	0.96	0.98	0.99	1.00	1.00	1.00
									<b>WARNING</b> 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.										
4,730	6,985								<b>0°</b>	<b>10°</b>	<b>20°</b>	<b>30°</b>	<b>40°</b>	<b>45°</b>	<b>50°</b>	<b>60°</b>	<b>70°</b>	<b>80°</b>	<b>90°</b>
4,300	6,350								0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
1,770	2,500	3400	4400	5600	6900	10000	15400	22400	0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
1,450									0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
3,180	4,950								0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
3,340	5,270	5,700	7,200	9,400	12,000	18,500	33,000	50,000	0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
									0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
3,507	5,516								0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
14,400	25,300								0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
									0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
									0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
									0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
									0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
									0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
									0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
									0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
									0	0.01	0.05	0.16	0.3	0.37	0.45	0.58	0.71	0.87	1
5,300	7,969	11,917	16,383	21,705	27,908	43,116	63,328	86,375	0	0.03	0.06	0.12	0.18	0.22	0.27	0.4	0.56	0.8	1
5,800	8,950								0	0.03	0.06	0.12	0.18	0.22	0.27	0.4	0.56	0.8	1

Visit our website for the most current information.

# Properties of Valve Materials

Type	ALLOY	ASTM NO.	OTHER ALLOY DESIGNATION	NOMINAL OR MAXIMUM CHEMICAL COMPOSITION								
				AL	CARBON C	CHROME Cr	COBALT Co	COPPER Cu	IRON Fe	LEAD Pb	MANGANESE Mn	MOLYBDENUM Mo
Brass	Brass Wire (Red Brass)	B 134	UNS C23000					85.0	.05	.05		
	Leaded Red Brass	B 140	UNS C31400					89.0	.10	1.9		
	Free Cutting Brass	B 16	UNS C36000					61.5		3.0		
	Forging Brass	B 124	UNS C37700					60.0	.3	2.0		
	Forging Brass	B 283	UNS C37700					58.0	.3	2.5		
	Leaded Brass (Semi-Red Brass)	B 584	UNS C84400	.005				81.0	.40	7.0		
	Leaded Brass (Red Brass)	B 584	UNS C84500	.005				78.0	.40	7.0		
Bronze	Aluminum Bronze (Rod)	B 150	UNS C64200	7.0				91.0	.30	.05	.10	
	Copper-Silicon Alloy (Alloy B)	B 98/B 99	UNS C65100					96.0	.8	.05	.7	
	Copper-Silicon Alloy (Rod Lead-Free - DZR)		UNS C69300					75.0				
	Copper-Silicon Alloy	B 371	UNS C69400					81.5	.20	.30		
	Composition Bronze (Ounce Metal)	B 62	UNS C83600	.005				85.0	.30	5.0		
	Copper-Silicon Alloy	B 584	UNS 87600					89.0				
	Copper-Silicon Alloy (Cast Lead-Free - DZR)	B 584	UNS 87850					76.0				
	Navy "M" (Steam Bronze)	B 61	UNS C92200	.005				88.0	.25	1.5		
	Aluminum Bronze (Cast)	B 148	UNS C95400	11.0				85.0	4.0			
	Nickel Bronze (Leaded)	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 (Modified)	A 126	Class B									
	Austenitic Gray Iron (Ni-Resist)	A 436	Type 2		3.00	2.0		.5			1.0	
	Ductile Iron (DI) (Ferritic)	A 395			3.20	2.0		.5				
	Austenitic Ductile Iron (Ductile) (Ductile) (Ni-Resist)	A 536 A 536 A 439	65-45-12 80-55-06 D2C			2.9	.5				2.4	1.0
Alum.	Commercial Aluminum 380	SC 84 A modified	UNS A38000	87.0				1.0	1.3		.35	

Visit our website for the most current information.



NOMINAL OR MAXIMUM CHEMICAL COMPOSITION							NOMINAL PHYSICAL PROPERTIES				
NICKEL Ni	PHOS P	SILICON Si	SULFUR S	TIN Sn	TITANIUM Ti	TUNGSTEN W	ZINC Zn	TENSILE STRENGTH Psi	YIELD STRENGTH Psi	% ELONGATION	HARDNESS
							15.0	56,000			60 HRB
.7							9.1	50,000	30,000	7	60 HRB
							35.5	50,000	20,000	15	75 HRB
							38.0	52,000	20,000	45	80 HRB
							38.0	52,000	20,000	45	78 HRB
	.02	.005	.08	3.0			9.0	29,000	13,000	18	55 HB
1.0	.02	.005	.08	3.0			12.0	29,000	13,000	16	55 HRB * 500 kg
.25		2.0		.20			.50	90,000	45,000	9	80 HRB
		1.6					1.5	86,000**	20,000	11	65 HRB
	.10	3.0					21.9	80,000	48,000	5	80 HRB
		4.0					14.5	80,000	40,000	15	80 HRB
1.0	.05	.005	.08	5.0			5.0	30,000	14,000	20	60 HB * 500 kg
		4.5					5.5	66,000	32,000	20	110 HB
	.12	3.0					20.9	68,000	22,000	16	70 HRB
1.0	.05	.005	.05	6.0			4.5	34,000	16,000	22	65 HRB * 500 kg
								75,000	30,000	12	170 HB * 3000 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
								65,000	45,000	12	160 HB
								80,000	55,000	6	160 HB
24.0	.08	3.0						58,000	28,000	20	146 HB
.5		12.0		.15			.50	42,000	19,000	3.5	

\*Load applied during testing

\*\*Allowable range is 75,000 to 95,000

Visit our website for the most current information.

# Properties of Valve Materials

ALLOY	ASTM NO.	OTHER ALLOY DESIGNATION	NOMINAL OR MAXIMUM CHEMICAL COMPOSITION									
			CARBON		CHROME	COBALT	COPPER	IRON	LEAD	MANGANESE	MOLYBDENUM	
			AL	C	Cr	Co	Cu	Fe	Pb	Mn	Mo	
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	
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	
11/4 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	
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	
Yoke Bushing Caps	A108 12L14		.15							.25	1.0	
Seat Ring Base	A 519 1026		.25								.75	
Monel H.F.	(Trademark Materials like, Stellite 6*, Stooddy 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	

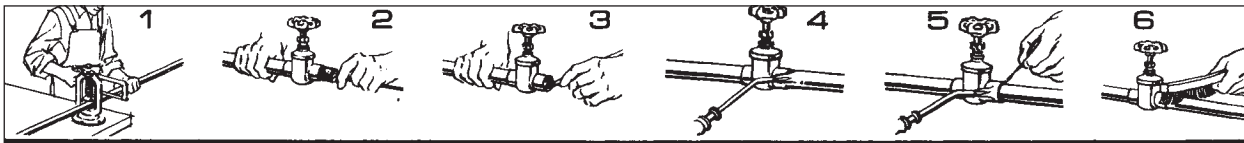
\*Trademark by Cabot Corp.

Visit our website for the most current information.

NOMINAL OR MAXIMUM CHEMICAL COMPOSITION								NOMINAL PHYSICAL PROPERTIES			
NICKEL	PHOS	SILICON	SULFUR	TIN	TITAN- IUM	TUNG- STEN	ZINC	TENSILE	YIELD	%	HARDNESS
Ni	P	Si	S	Sn	Ti	W	Zn	Strength Psi	Strength Psi	ELONGATION	
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

Visit our website for the most current information.

# 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. Ball valves should be in the closed position and gate valves 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.

† For lead-free\* soldering instructions or NIBCO® lead-free\* silicon bronze alloys soldering & brazing recommendations, please refer to Technical Bulletin NTB-0910-08 at [www.nibco.com/Resources/Technical-Bulletins](http://www.nibco.com/Resources/Technical-Bulletins).

## Chemical Compatibility

Please consult the most current edition of the NIBCO Chem-Guide for recommendations regarding chemical compatibility of material exposure to specific media and media-treatment additives. The NIBCO Chem-Guide is a general guide on the topic of chemical compatibility and is by no means an exhaustive resource on the subject. Ultimately, proper material selection is the responsibility of the installer and/or end-user, taking into account all aspects of a system's design and intended use.

## Galvanic Potential in Piping Systems

Galvanic corrosion or dissimilar metal corrosion is an electrochemical process that is created through the electrical interaction of two different metals under the influence of a conductive media (i.e. an electrolyte). An electrolytic cell, much like a battery, is generated by these dissimilar metals using water as the electrolyte. The electrical charge, developed within the electrolytic cell, drives a preferential attack on the more electrically active metal with the water acting as the recipient of the discarded metal ions. Such galvanic attack is often encountered in service where iron or steel components are installed, and later corrode, in a largely copper piping system. Please consult NIBCO Technical Bulletin NTB-0714-01 Dielectric Products Relative to Electrolysis and Galvanic Corrosion.

Visit our website for the most current information.

# Notes

*Visit our website for the most current information.*

**5** year  
**125%**  
warranty

**NIBCO INC. 125% LIMITED WARRANTY**

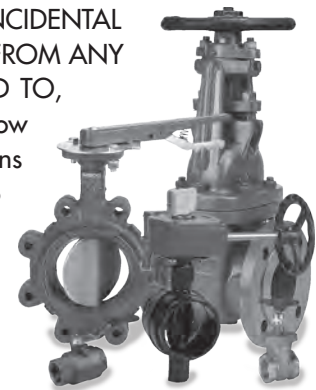
Applicable to NIBCO INC. Pressure Rated Metal Valves

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 the satisfaction of NIBCO INC. that said valve is defective, it will be replaced at the expense of NIBCO INC.. 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 the published suggested list price schedule of NIBCO INC. in effect at the time of purchase, or Ten (\$10.00) Dollars, to apply on the cost of the installation of said replacement valve.

TO THE EXTENT PERMITTED BY LAW, THIS WARRANTY SPECIFICALLY EXCLUDES INCIDENTAL AND CONSEQUENTIAL DAMAGES OF EVERY TYPE AND DESCRIPTION RESULTING FROM ANY CLAIMED DEFECT IN MATERIAL OR WORKMANSHIP, INCLUDING BUT NOT LIMITED TO, PERSONAL INJURIES AND PROPERTY DAMAGES. Some states or countries do not allow the exclusion or limitation of incidental or consequential damages so these limitations may not apply to you. TO THE EXTENT PERMITTED BY LAW, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and country to country.



## how to order

State quantity, figure number and size for each valve you wish to order. See individual valve catalog pages for specific or special product designations.

### HOW MANY TO ORDER

NIBCO valves are decimal packed for your convenience in handling, shipping and stock-keeping. Number in master carton varies with item.

### POLICY ON RETURNS TO FACTORY

NO NIBCO valves are to be returned without prior written agreement. Transportation must be prepaid. A 20% charge will be made to cover cost of rehandling and reinspection.

### TECHNICAL ASSISTANCE

Engineers, contractors, wholesalers or manufacturers may obtain special or technical assistance from any factory representative of NIBCO. Write, fax or phone.

NIBCO INC.  
World Headquarters  
1516 Middlebury Street  
Elkhart, IN 46516-4740  
USA

Phone: 1.574.295.3000

Fax: 1.574.295.3307

Technical Service Phone: 1.888.446.4226

Fax: 1.888.336.4226

To the best of our knowledge, the information contained in this publication is accurate. However, NIBCO® does not assume any liability whatsoever for the accuracy or completeness of such information. Final determinations of the suitability of any information or product for the use to be contemplated is the sole responsibility of the user. The manner of that use, and whether there is any infringement of patents, is also the sole responsibility of the user.

Visit our website for the most current information.

# globally connecting you at all levels



It's a new age of business, and a new way at NIBCO. From Elkhart, Indiana to Lodz, Poland, and points beyond, our company has integrated manufacturing, distribution, and networked communications to provide a seamless source of information and service, 24 hours a day, 7 days a week. But this integration hasn't happened overnight. It's been part of a long-term strategic process that has pushed us to reconsider every aspect of our business. The result? We're a vertically integrated manufacturer with the products and systems in place to deliver low cost and high quality. NIBCO products are manufactured under a Quality Management System conforming to the current revision of ISO-9001 International Standards. We know the flow control industry is only going to get more demanding, and we are more than ready. We will continue to lead. That's what NIBCO is all about.

World Headquarters



Elkhart, Indiana

## MANUFACTURING

Metal Valves and Fittings



Blytheville, Arkansas



McAllen, Texas



Nacogdoches, Texas



Stuarts Draft, Virginia



Worcester, Massachusetts

Plastic Pipe, Valves, and Fittings



Greensboro, Georgia



Goshen, Indiana



Lebanon, Ohio

Industrial Plastics



Charlestown, Indiana

## DISTRIBUTION

International



Reynosa, Mexico



Lodz, Poland

U.S. Distribution Centers



Elkhart, Indiana

## INTERNATIONAL

Global Offices



Elkhart, Indiana



Lodz, Poland

\*Denotes U.S. and International Direct Shipping Locations

## VALVES

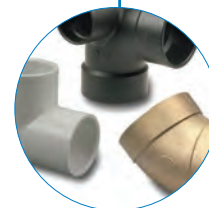


Pressure-rated bronze, iron and alloy-iron gate, globe and check valves • Pressure-rated bronze ball valves • Boiler specialty valves • Commercial and industrial butterfly valves • Lined butterfly valves • Circuit balancing valves and kits • Carbon and stainless steel ball valves • ANSI flanged steel ball valves • Lined ball valves • Pneumatic and electric actuators and controls • Grooved ball and butterfly valves • High performance butterfly valves • UL/FM fire protection valves • MSS specification valves • Bronze specialty valves • Low pressure gate, globe, check and ball valves • Frostproof sillcocks • Quarter-turn supply stops • Quarter-turn low pressure valves • PVC and CPVC plumbing and industrial ball valves • Bronze and iron y-strainers • Sample valves • Sanitary valves • Lead-free valves • Hydronic valves • Labor saving valves • Manifold systems • Water temperature control valves • System quality valves • Press x PEX transition valves

## FITTINGS

Wrot and cast copper pressure and drainage fittings • Cast copper alloy flanges • Powder coated steel companion flanges • Wrot and cast press fittings • ABS and PVC DWV fittings • Schedule 40 PVC pressure fittings • CPVC CTS fittings • CPVC CTS-to-metal transition fittings • Schedule 80 PVC and CPVC systems • Lead-free fittings • Press x PEX transition fittings • Cast bronze push fittings

LEAD-FREE: Weighted average lead content  $\leq 0.25\%$



## FLEXIBLE PIPING SYSTEMS



PE-RT and PEX tubing for potable and radiant applications • Insulated tubing • Risers • Ice maker tubing • Silicon Performance Bronze® fittings • Poly alloy fittings • Home Run Manifold® • Radiant heat manifolds • Ball valves and supply stops • Connections, tools and accessories • Radiant heat controls and panels

## INDUSTRIAL PLASTICS

PVC and Corzan® CPVC schedule 80 fittings, true union ball and ball check valves, butterfly valves, and specialty valves • Polypropylene and Kynar® PVDF schedule 80 pipe, fittings, and true union ball and ball check valves • Pneumatic and electric actuation systems

Corzan® CPVC is a registered trademark of Lubrizol Advanced Materials.  
Kynar® is a registered trademark of Arkema Inc.



## eNIBCO

EDI—Electronic Data Interchange • VMI—Vendor Managed Inventory • NIBCO.com • NIBCOpartner.com



**NIBCO®**  
AHEAD OF THE FLOW®

**NIBCO INC.**

**WORLD HEADQUARTERS**

WEB: [www.nibco.com](http://www.nibco.com)

1516 MIDDLEBURY STREET  
ELKHART, IN 46516-4740  
USA

DOMESTIC CUSTOMER SERVICE  
PHONE: 800.234.0227  
FAX: 800.234.0557

TECHNICAL SERVICE  
PHONE: 888.446.4226  
FAX: 888.336.4226

INTERNATIONAL OFFICE  
PHONE: +1/574.295.3327  
FAX: +1/574.295.3455