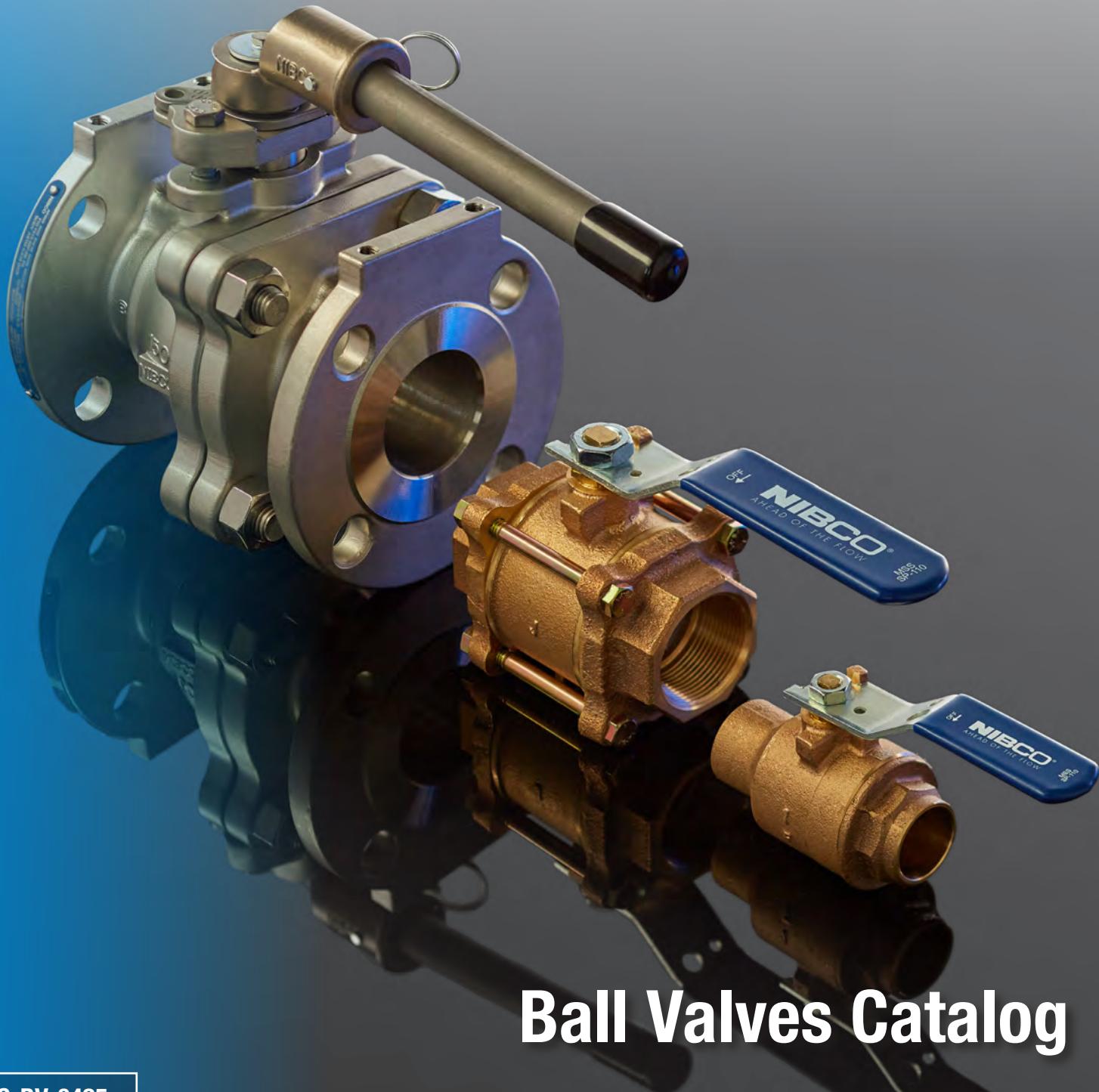


NIBCO®



Ball Valves Catalog

C-BV-0425

Bronze, Carbon Steel, and Stainless Steel Ball Valves
for Commercial Construction and Industrial Applications



QUALITY PRODUCTS SINCE 1904

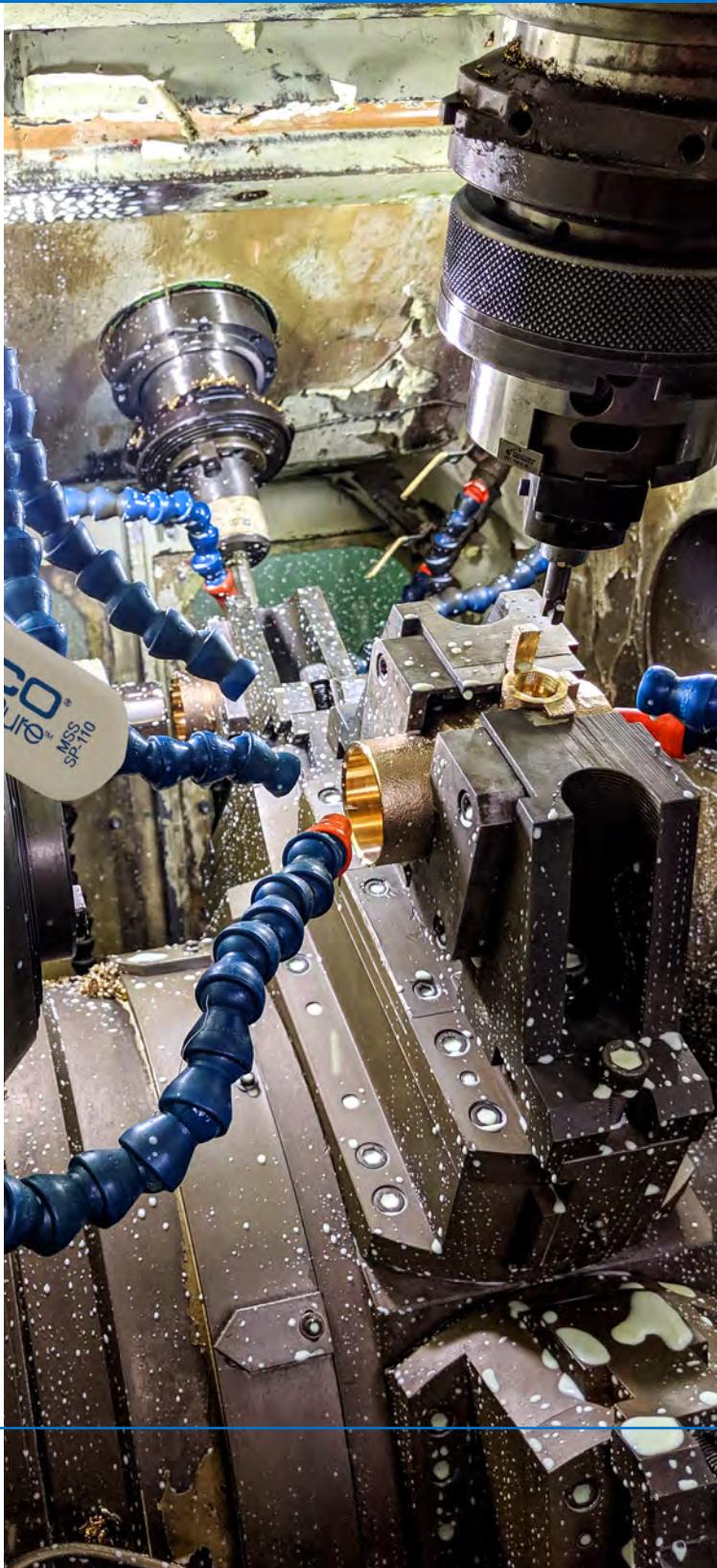
A recognized brand leader bringing flow control products and technologies to market, NIBCO has a history of success and innovation in the plumbing industry.

Headquartered in Elkhart, Indiana, we operate multiple manufacturing plants and distribution centers strategically located throughout the United States and globally, and offer more than 36,000 SKUs, including our NIBCO® family brands, Webstone®, Chemtrol® and Sure Seal®.

We have vertically integrated manufacturing, distribution and networked communications to provide a seamless source of information and service, 24/7. We place great emphasis on personal connections with our factory direct sales, live customer service and technical service support. We also offer unique programs to support our customers' success, including our NIBCO Partner program, Vendor Managed Inventory and EDI for wholesalers.

More than 90 percent of NIBCO-branded products are manufactured in the U.S. using high-quality materials and innovative processes and technologies to improve product performance and quality. For every high-quality valve or fitting made at NIBCO, each is made with pride by the hundreds of NIBCO associates who work there.

Today, NIBCO is a fifth-generation, family- and associate-owned business. Since 1904, we've pioneered many products and processes. As the flow control industry continues to become more demanding, we remain focused on what has made us successful: delivering more than a product and making business better for each of our customers.



[VISIT OUR WEBSITE TO LEARN MORE](#)



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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	560 - One-Piece Body Reduced Port 600 PSI	*BR - Bronze	R - Reinforced	20 - Bronze	BSP - British Standard Thread (Parallel)
G - Grooved			Y - Virgin PTFE	66 - Stainless Steel	BST - British Thread (Taper)
GM - Grooved ISO Mount	580 - Two-Piece Conventional Port 400 PSI			**70 - Bronze/Chrome Plated Ball	CP - Chrome Plated
KM - Socket Weld ISO Mount					EL - Extended Lever
MTT - Male x Female Thread	580-70 - Two-Piece Conventional Port 600 PSI				HC - Hose Cap
S - Solder	585-70 - Two-Piece Full Port 600 PSI				HCL - Horizontal Chain Lever
ST - Solder x Thread					IC - Integral Check
T - Thread	585-CV - Two-Piece with a Flow Control Port				LL - Locking Lever
TC - Thread (investment cast carbon body)	590 - Three-Piece Body Conventional Port 600 PSI				M - Memory Stop
TM - Thread ISO Mount					NS - NIB-SEAL® Handle
TS - Thread x Solder	595 - Three-Piece Body Full Port 600 PSI				LX - NIB-SEAL® Locking Extended 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>T-560-BR-R/Y-20 T-560-BR-R/Y-66 Sizes 1/4" thru 2" Threaded Ends Page 7, 8</p>	<p>Two-Piece Bronze Ball Valve 600 lb. CWP</p>  <p>T/S-580-70 T/S-580-70-66 Sizes 1/4" thru 3" T/S-585-70 T/S-585-70-66 Sizes 1/4" thru 2" Threaded or Solder Ends • Other End Connections Page 9-14</p>	<p>Two-Piece Bronze Hose End w/ Cap Ball Valve 600 lb. CWP</p>  <p>T/S-585-70-HC T/S-585-70-66-HC Sizes 1/2" thru 3/4" Threaded or Solder Ends Page 15, 16</p>
<p>Two-Piece Bronze Single Union Ball Valve 600 lb. CWP</p>  <p>T/S-585-70-SU T/S-585-70-66-SU TS/ST-585-70-SU Sizes 1/2" thru 2" Threaded or Solder Ends Page 17, 18, 19</p>	<p>Two-Piece Bronze 250 Steam Ball Valve 250 lb. SWP 600 lb. CWP</p>  <p>T-585-70-66-ST Sizes 1/2" thru 2" Threaded Ends Page 20</p>	<p>Two-Piece Safety Vent Bronze Ball Valve 600 lb. CWP</p>  <p>T-580-70-SV Sizes 1 1/4" thru 2" T-585-70-SV Sizes 1/4" thru 1" Threaded Ends Page 21</p>
<p>Two-Piece UL/LP Gas Bronze Ball Valve 250 lb. CWP</p>  <p>T-580-70-UL Sizes 1 1/4" thru 3" T-585-70-UL Sizes 1/4" thru 1" Threaded Ends Page 22</p>	<p>Two-Piece Act. Mount Bronze Ball Valve 600 lb. CWP</p>  <p>TM-585-70-66 Sizes 1/2" thru 2 1/2" Threaded Ends Page 23</p>	<p>Bronze 3-Way Ball Valve 400 lb. CWP</p>  <p>T/S-585-70-W3 T/S-585-70-66-W3 Sizes 1/2" thru 2" Threaded or Solder Ends Page 24, 25</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>T/S-590-Y T/S-590-Y-66 Sizes $\frac{1}{4}$" thru 3" Threaded or Solder Ends Page 26, 27</p>	<p>Three-Piece Bronze Ball Valve 600 lb. CWP 175 PSI LP Gas</p> <p>T-590-Y-UL Sizes $\frac{1}{4}$" thru 3" Threaded Ends Page 28</p>	<p>Three-Piece Bronze Ball Valve 600 lb. CWP</p> <p>G-590-Y G-590-Y-66 Sizes $1\frac{1}{2}$" thru 3" Grooved Ends Page 29, 30</p>
<p>Three-Piece Bronze Ball Valve 600 lb. CWP</p> <p>T/S-595-Y T-595-Y-SS T/S-595-Y-66 T-595-Y-66-SS Sizes $\frac{1}{4}$" thru $2\frac{1}{2}$" Threaded or Solder Ends Page 31-34</p>	<p>Three-Piece Bronze Ball Valve 600 lb. CWP</p> <p>TS-595-Y Sizes $\frac{1}{4}$" thru 2" Threaded x Solder Ends Page 35</p>	<p>Three-Piece Bronze Ball Valve 600 lb. CWP</p> <p>G-595-Y G-595-Y-66 Sizes $1\frac{1}{2}$" thru $2\frac{1}{2}$" Grooved Ends Page 36, 37</p>
<p>Three-Piece Bronze Ball Valve 600 lb. CWP 175 PSI LP Gas</p> <p>T-595-Y-UL Sizes $\frac{1}{4}$" thru 2" Threaded Ends Page 38</p>	<p>Three-Piece Bronze Ball Valve 200 lb. PSI Medical Gas</p> <p>CS-595-YX-EC CS-595-YX-66-EC Sizes $\frac{1}{2}$" thru 2" Solder Ends Page 39, 40</p>	<p>Pressure Temperature Chart</p> <p>Page 41</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

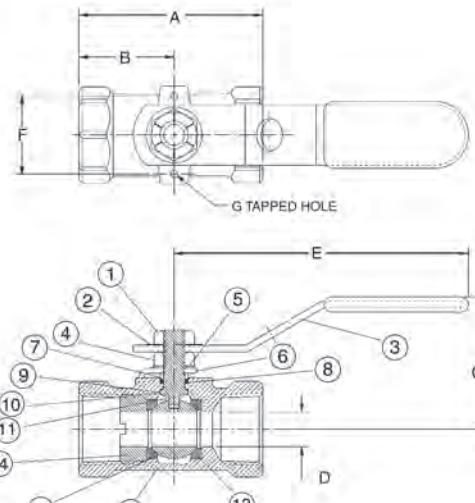
PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Identification Plate	Aluminum
3. Handle	Zinc Plated Steel Clear Chromate Plastiol Coated
4. 1Packing Nut	Stainless Steel
5. Belleville Washer	Zinc Plated Steel
6. Travel Stop	Zinc Dichromate Plated Steel
7. Pack Gland	Brass ASTM B 16 Alloy C36000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

* 1/4"-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.	In.	In.	In.	In.	In.	In.	In.	In.	In.								
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 41.

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.

Bronze Ball Valves

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

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

CONFORMS TO MSS SP-110



MATERIAL LIST

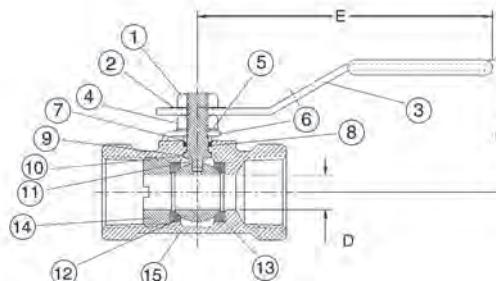
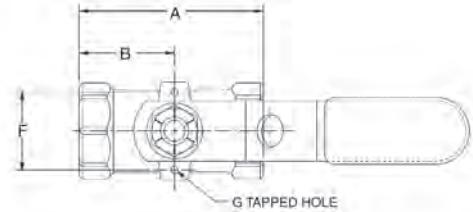
PART	SPECIFICATION
1. Handle Nut	Stainless Steel 300 Series
2. Identification Plate	Aluminum
3. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
4. 1 st Packing Nut	Stainless Steel
5. Belleville Washer	Zinc Plated Steel
6. Travel Stop	Zinc Dichromate Plated Steel
7. Pack Gland	Stainless Steel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

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



T-560-BR-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							
	A	B	C	D	E	F	G	Lbs.	Kg.	Ctn. Qty.							
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	.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
5/8	20	2.88	73	1.50	38	1.71	43	.50	13	4.00	102	1.22	31	10-24	.82	.37	50
1	25	3.31	84	1.71	43	2.00	51	.63	16	4.69	119	1.34	34	1/4-20	1.36	.62	40
1 1/4	32	3.84	98	1.97	50	2.06	52	.81	21	4.69	119	1.50	38	1/4-20	2.01	.91	20
1 1/2	40	4.03	102	2.03	52	2.56	65	1.00	25	6.75	171	1.63	41	1/4-20	2.75	1.25	20
2	50	4.59	117	2.28	58	2.75	70	1.25	32	6.75	171	2.06	52	1/4-20	4.16	1.89	10

Note: G holes are only tapped for actuated valves.

*For detailed operating pressure, refer to pressure temperature chart on page 41.

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.

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, C69300 or ASTM B 99 Alloy C65100
6. Thrust Washer	Reinforced PTFE
7. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
8. Seat Ring (2)	Reinforced PTFE
9. Body	Cast Red Bronze ASTM B 584 Alloy C84400
10. Body End Piece	Cast Red Bronze ASTM B 584 Alloy C84400

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



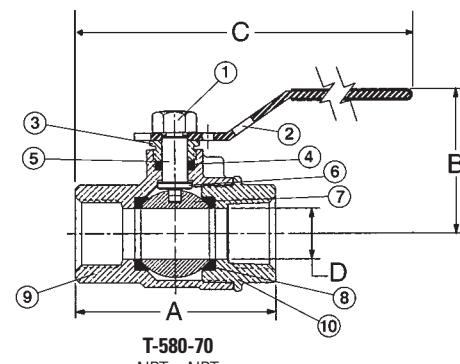
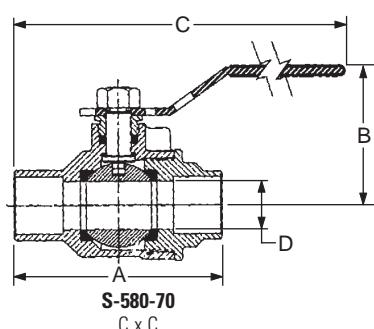
T-580-70

Threaded



S-580-70

Solder



DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions

Size	T-580-70		S-580-70		T-580-70		S-580-70		T-580-70 Lbs. Kg.	S-580-70 Lbs. Kg.	Master Ctn. Qty.	
	In.	mm.	In.	mm.	In.	mm.	In.	mm.				
1 1/4	8	2.00	51	1.75	44	1.75	44	5.00	127	.45	.21	100
1 3/8	10	2.00	51	1.84	47	1.75	44	5.00	127	.45	.21	100
1 1/2	15	2.44	62	2.56	65	1.88	48	5.19	132	.50	.29	100
1 3/4	20	2.94	75	3.25	83	2.25	57	6.25	159	.75	.40	50
2	25	3.34	85	3.75	95	2.38	60	6.44	164	1.00	.58	40
1 1/4	32	3.94	100	4.00	102	2.63	67	6.75	171	2.17	.81	20
1 1/2	40	4.31	109	4.44	113	3.00	76	8.88	226	3.27	1.48	20
2	50	4.63	118	5.50	140	3.16	80	9.06	230	5.09	2.31	10
2 1/2	65	5.84	148	7.28	185	3.50	89	9.66	245	10.38	4.60	6
3	80	7.09	180	8.78	223	4.41	112	11.53	293	12.38	8.18	4

*NIBCO supplies full port T or S-585-70 on this size.

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

*For detailed operating pressure, refer to pressure temperature chart on page 41.

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.

*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

Two-Piece Body • Full Port $\frac{1}{4}$ "-1" • Conventional Port $1\frac{1}{4}$ "-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

$\frac{1}{4}$ " size only has a 304 stainless steel grounding washer.



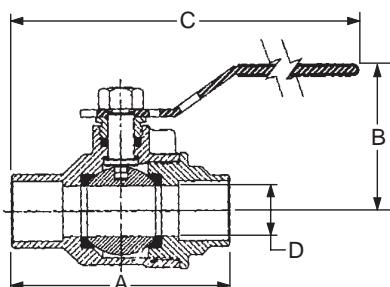
T-580-70-66

Threaded

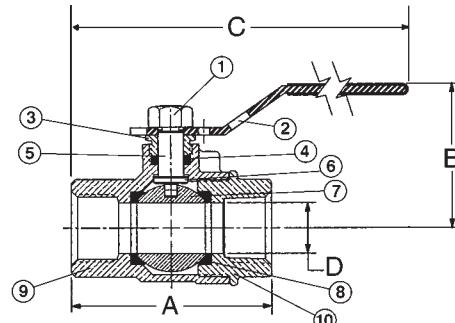


S-580-70-66

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		T-580-70-66	S-580-70-66	Master Ctn. Qty.	
	In.	mm.	In.	mm.	In.	mm.	In.	mm.				
$\frac{1}{4}$	8	2.00	51	1.75	44	1.75	44	5.00	127	.45	.21	100
$\frac{3}{8}$	10	2.00	51	1.84	47	1.75	44	5.00	127	.45	.21	100
$\frac{1}{2}$	15	2.44	62	2.56	65	1.88	48	5.19	132	.50	.13	100
$\frac{3}{4}$	20	2.94	75	3.25	83	2.25	57	6.25	159	.75	.19	50
$1\frac{1}{2}$	25	3.34	85	3.75	95	2.38	60	6.44	164	1.00	.25	40
$1\frac{1}{4}$	32	3.94	100	4.00	102	2.63	67	6.75	171	1.00	.25	20
$1\frac{1}{2}$	40	4.31	109	4.44	113	3.00	76	8.88	226	1.25	.32	20
2	50	4.63	118	5.50	140	3.16	80	9.06	230	1.50	.38	10
$2\frac{1}{2}$	65	5.84	148	7.28	185	3.50	89	9.66	245	2.00	.51	6
3	80	7.09	180	8.78	223	4.41	112	11.53	293	2.50	.64	4

*NIBCO supplies full port T or S-580-70-66 on this size.

Note: solder end is designed to be soft-soldered into lines using solders with the melting point not exceeding 500°F.

Higher temperature solders will damage the seat material. See installation sheet packaged with valves.

*For detailed operating pressure, refer to pressure temperature chart on page 41.

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.

*Weighted average lead content $\leq 0.25\%$

Dezinification
Resistant

**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

Dezinification
Resistant

MATERIAL LIST

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

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



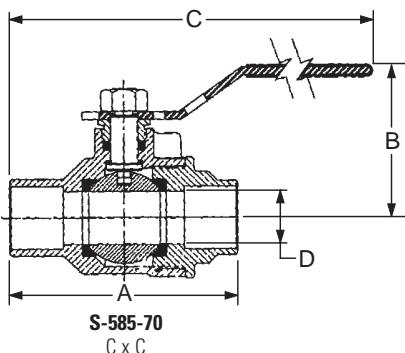
T-585-70

Threaded

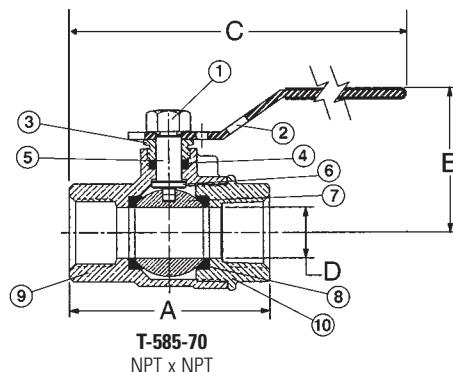


S-585-70

Solder



S-585-70
C x C



T-585-70
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions

Size	T-585-70		S-585-70		T-585-70		S-585-70		T-585-70	S-585-70	Master Ctn. Qty.	
	In.	mm.	In.	mm.	In.	mm.	In.	mm.				
1/4	8	2.00	51	1.75	44	1.75	44	5.00	127	4.75	121	.38
3/8	10	2.00	51	1.84	47	1.75	44	5.00	127	4.81	122	.38
1/2	15	2.44	62	2.56	65	1.88	48	5.19	132	5.25	133	.50
3/4	20	2.94	75	3.25	82	2.25	57	6.25	159	6.25	159	.75
1	25	3.34	85	3.75	95	2.38	60	6.44	164	6.63	168	1.00
1 1/4	32	4.19	106	5.06	128	3.00	76	6.75	171	7.19	183	1.25
1 1/2	40	4.72	120	5.99	151	3.16	80	9.06	230	9.69	246	1.50
2	50	5.16	131	6.72	170	3.50	89	9.25	235	10.06	256	2.00

Note: solder end is designed to be soft-soldered into lines using solders with the melting point not exceeding 500°F.

Higher temperature solders will damage the seat material. See installation sheet packaged with valves.

*For detailed operating pressure, refer to pressure temperature chart on page 41.

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.

*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

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

600 PSI/41.4 bar non-shock cold working pressure

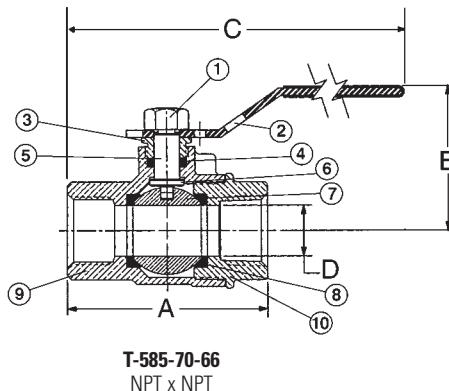
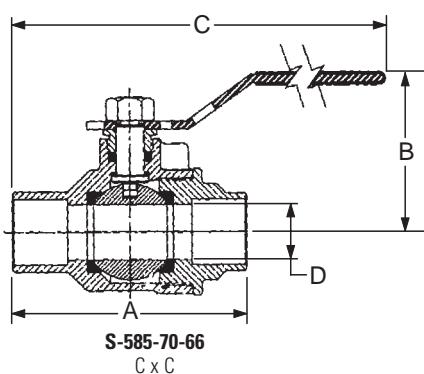
150 PSI/10.3 bar saturated steam*

CONFORMS TO MSS SP-110

MATERIAL LIST

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

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



DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions

Size	T-585-70-66		S-585-70-66		T-585-70-66		S-585-70-66		Master Ctn. Qty.									
	In.	mm.	In.	mm.	In.	mm.	In.	mm.										
1/4	8	2.00	51	1.75	44	1.75	44	5.00	127	.38	10	.45	.21	.42	.19	100		
3/8	10	2.00	51	1.84	47	1.75	44	5.00	127	.48	122	.38	10	.45	.21	.42	.19	100
1/2	15	2.44	62	2.56	65	1.88	48	5.19	132	.52	133	.50	13	.64	.29	.60	.27	100
3/4	20	2.94	75	3.25	82	2.25	57	6.25	159	.62	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	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
1 1/2	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 41.

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Visit our website for the most current information.

*Weighted average lead content ≤ 0.25%

Dezinification
Resistant



T-585-70-66

Threaded



S-585-70-66

Solder

LEAD FREE*
OPTION
AVAILABLE

OXYGEN
SERVICE
OPTION
AVAILABLE

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

Dezinification
Resistant

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



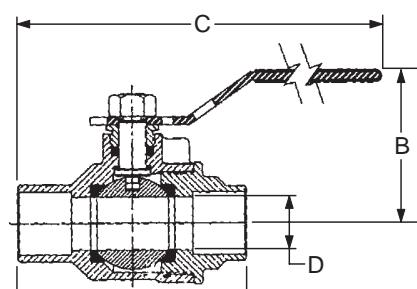
TS-585-70

Threaded x Solder

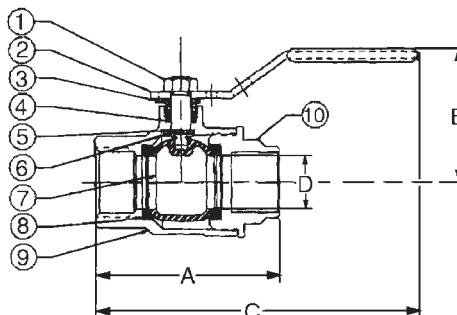


ST-585-70

Solder x Threaded



ST-585-70
NPT x C



TS-585-70
NPT x C

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions

Size	TS-585-70		ST-585-70		TS-585-70		ST-585-70		D	TS-585-70	ST-585-70	Master Ctn. Qty.						
	In.	mm.	In.	mm.	In.	mm.	In.	mm.										
1/2	15	2.55	65	2.40	61	1.88	48	5.19	132	5.25	133	.50	13	.71	.32	.62	.28	100
3/4	20	3.06	78	3.09	78	2.25	57	6.25	159	6.25	159	.75	19	1.31	.60	1.29	.59	50
1	25	3.53	90	3.53	90	2.38	60	6.44	164	6.63	168	1.00	25	2.36	1.07	2.35	1.07	40
1 1/4	32	4.61	117	4.63	118	3.00	76	6.75	171	7.19	183	1.25	32	3.11	1.41	3.18	1.44	20
1 1/2	40	5.32	135	5.32	135	3.16	80	9.06	230	9.69	246	1.50	38	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	2.00	51	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 41.

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.

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

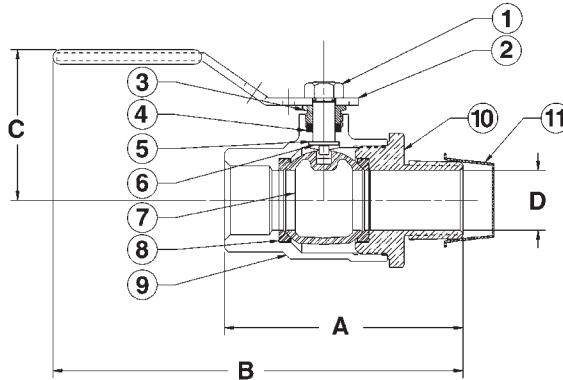


MTT-585-70

Male x Female NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						MTT-585-70	Master Ctn. Qty.				
	A In. mm.	B In. mm.	C In. mm.	D In. mm.	A In. mm.	B In. mm.						
1/4	8	2.41	61	5.30	135	1.75	.44	.38	10	.43	.19	40
5/8	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



*For detailed operating pressure, refer to pressure temperature chart on page 41.

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.

Bronze Ball Valves

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

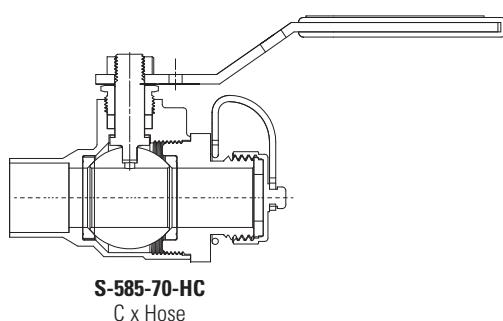
600 PSI/41.4 bar non-shock cold working pressure*

CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastiisol 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	Brass ASTM B 124 Alloy C37700
11. ¹ Cap	Die Cast Brass
12. Gasket	EPDM Rubber
13. Retainer	Soft PVC

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



S-585-70-HC
C x Hose



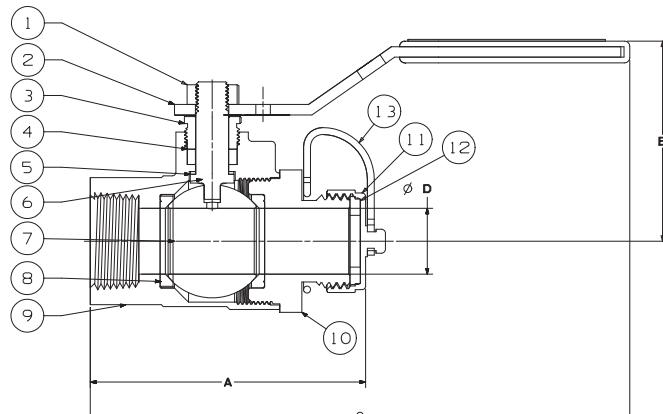
T-585-70-HC

Threaded x Hose



S-585-70-HC

Solder x Hose



T-585-70-HC
NPT x Hose

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions										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
	In. mm.	A In. mm.	A In. mm.	B In. mm.	C In. mm.	C In. mm.	D 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
3/4 20	3.31	84	3.47	88	2.25	57	6.25	159	6.25	159	.75 19

Note: solder end is designed to be soft-soldered into lines using solders with the melting point not exceeding 500°F.

Higher temperature solders will damage the seat material. See installation sheet packaged with valves.

*For detailed operating pressure, refer to pressure temperature chart on page 41.

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.

*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 • Stainless Trim • 3/4" Hose Connection with Cap • Blowout-Proof Stem

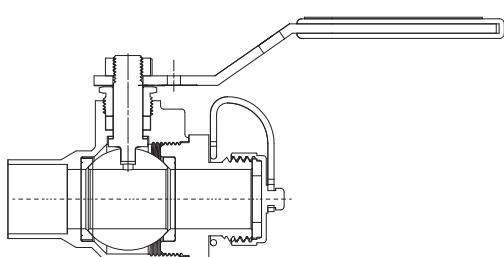
600 PSI/41.4 bar non-shock cold working pressure*

CONFORMS TO MSS SP-110

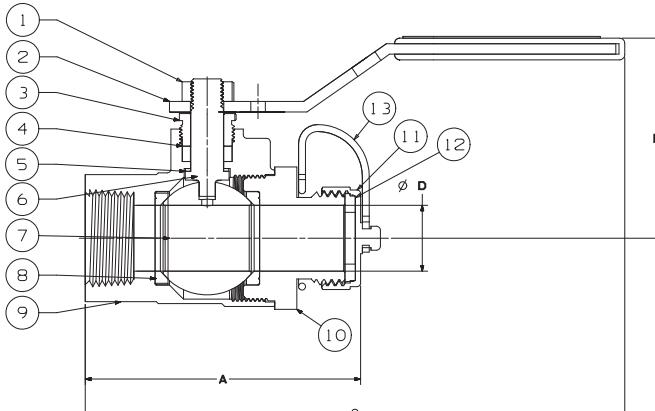
MATERIAL LIST

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	Brass ASTM B 124 Alloy C37700
11. Cap	Die Cast Brass
12. Gasket	EPDM Rubber
13. Retainer	Soft PVC

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



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

Note: solder end is designed to be soft-soldered into lines using solders with the melting point not exceeding 500°F.

Higher temperature solders will damage the seat material. See installation sheet packaged with valves.

*For detailed operating pressure, refer to pressure temperature chart on page 41.

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.

**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

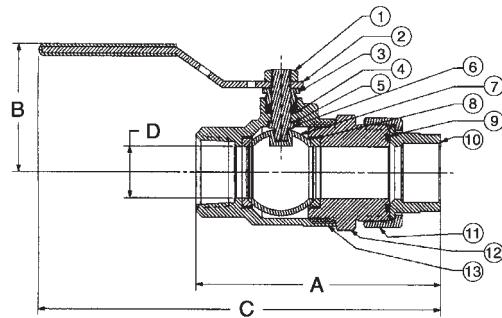
600 PSI/41.4 bar non-shock cold working pressure

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 Plastiisol 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	Brass ASTM B 124 Alloy C37700 or Copper ASTM B75 Alloy C12200
11. Union Nut	Brass ASTM B 124 Alloy C37700 or Bronze ASTM B 584 Alloy C84400
12. Body End	Brass ASTM B 124 Alloy C37700
13. Body	Bronze ASTM B 584 Alloy C84400



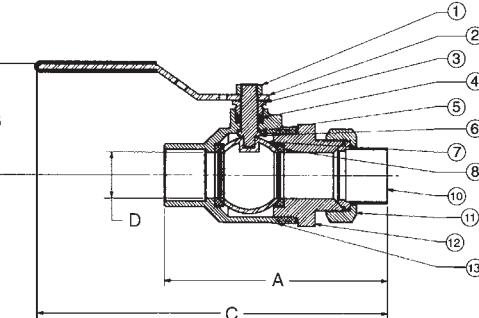
T-585-70-SU
NPT x NPT



T-585-70-SU
NPT x NPT



S-585-70-SU
C x C



S-585-70-SU
C x C

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions

Size	T-585-70-SU		S-585-70-SU		T-585-70-SU		S-585-70-SU		Master Ctn. Qty.									
	In.	mm.	In.	mm.	In.	mm.	In.	mm.										
1/2	15	3.57	91	3.32	84	1.88	48	6.22	158	6.00	152	.50	13	1.21	.59	.84	.38	40
3/4	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
1 1/4	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
1 1/2	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

*SP123 is for unions for use with copper water tube

♦For detailed operating pressure, refer to pressure temperature chart on page 41.

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.

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

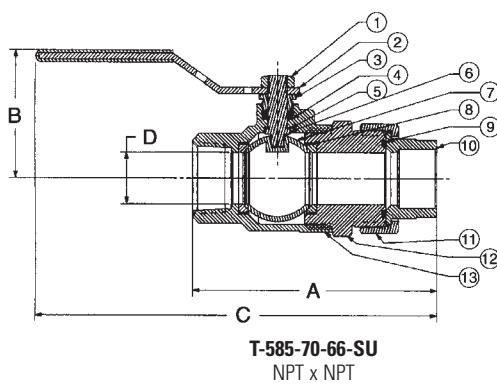
PART	SPECIFICATION
1. Handle Nut	Stainless Steel 300 Series
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Thrust Washer	Reinforced PTFE
6. Stem	Stainless Steel ASTM A 276 Type 316
7. Ball	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
8. Seat Ring (2)	Reinforced PTFE
9. O-Ring	FKM
10. Tail Piece	Brass ASTM B 124 Alloy C37700 or Copper ASTM B75 Alloy C12200
11. Union Nut	Brass ASTM B 124 Alloy C37700 or Bronze ASTM B 584 Alloy C84400
12. Body End	Brass ASTM B 124 Alloy C37700
13. Body	Bronze ASTM B 584 Alloy C84400



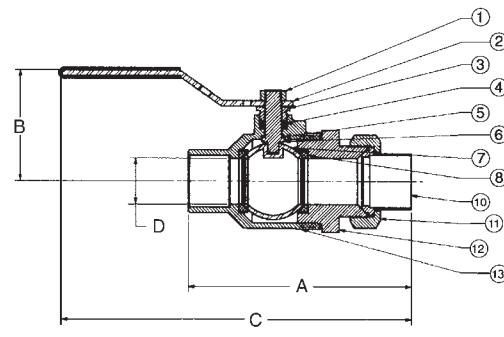
T-585-70-66-SU
NPT x NPT



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

Dimensions

Size	T-585-70-66-SU		S-585-70-66-SU		T-585-70-66-SU		S-585-70-66-SU		Master									
	In.	mm.	In.	mm.	In.	mm.	In.	mm.										
1/2	15	3.57	91	3.32	84	1.88	48	6.22	158	6.00	152	.50	13	1.21	.59	.84	.38	40
3/4	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
1 1/4	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
1 1/2	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

*SP123 is for unions for use with copper water tube

♦For detailed operating pressure, refer to pressure temperature chart on page 41.

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.

Bronze Ball Valves

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

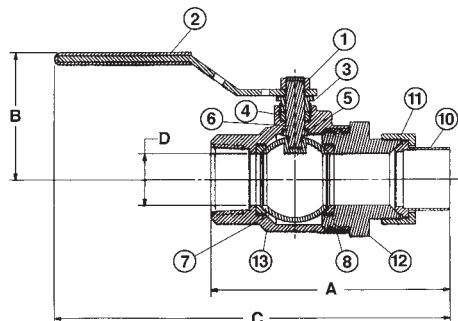
600 PSI/41.4 bar non-shock cold working pressure

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 Plastiol 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	Brass ASTM B 124 Alloy C37700 or Copper ASTM B75 C12200
11. Union Nut	Brass ASTM B 124 Alloy C37700 or Bronze ASTM B 584 Alloy C84400
12. Body End	Brass ASTM B 124 Alloy C37700
13. Body	Bronze ASTM B 584 Alloy C84400



TS-585-70-SU
NPT x C



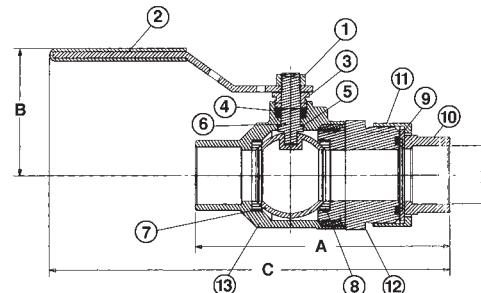
TS-585-70-SU

Threaded x Solder



ST-585-70-SU

Solder x Threaded



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		ST-585-70-SU	TS-585-70-SU	Master Ctn. Qty.	
	In.	mm.	In.	mm.	In.	mm.	In.	mm.				
1/2	15	3.53	90	3.21	82	1.88	48	6.22	158	6.00	152	.50
3/4	20	4.22	107	4.10	104	2.25	57	7.28	185	7.25	184	.75
1	25	4.86	123	4.91	125	2.38	60	7.66	195	7.83	199	1.00
1 1/4	32	5.79	147	5.63	143	3.00	76	9.97	253	10.23	260	1.25
1 1/2	40	6.63	168	6.28	160	3.16	80	10.40	264	10.81	275	1.50
2	50	7.10	180	6.89	175	3.50	89	10.50	267	10.91	277	2.00
												51
												6
												4

* SP123 is for unions for use with copper water tube

♦For detailed operating pressure, refer to pressure temperature chart on page 41.

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.

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

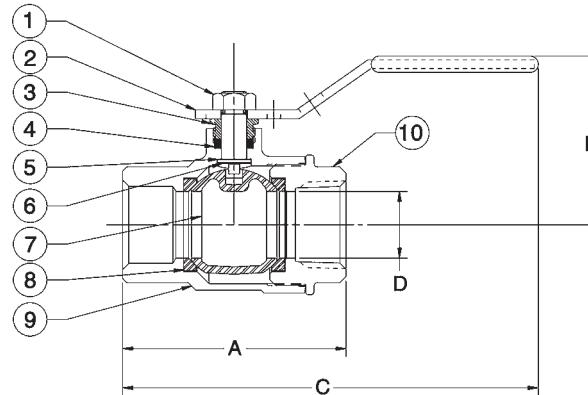
Threaded

DIMENSIONS—WEIGHTS—QUANTITIES

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

*For detailed operating pressure, refer to pressure temperature chart on page 41.

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.



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

Visit our website for the most current information.

Bronze Ball Valves

Two-Piece Body • Full Port $\frac{1}{4}$ "-1" • Conventional Port $1\frac{1}{4}$ "-2" • Bronze Trim • Safety Vent® for Pneumatic Applications • Blowout-Proof Stem



200 PSI/41.4 bar non-shock cold working pressure
Service Temperature Range: 35°F to 125°F

O.S.H.A. 1910.147

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastiol 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 ($\frac{3}{4}$ " - 2").
 Maximum temperature of Buna is 180° F. (not shown)

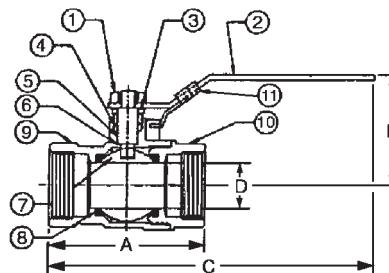


T-585-70-SV

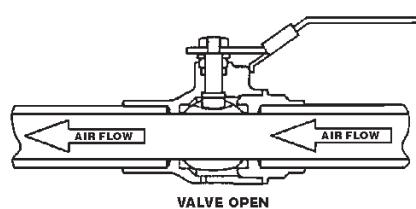
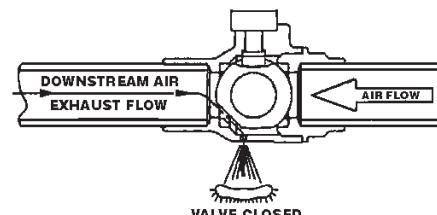
$\frac{1}{4}$ "-1" Full Port
 Threaded

T-580-70-SV

$1\frac{1}{4}$ "-2" Conventional Port
 Threaded



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



VALVE OPEN

Visit our website for the most current information.

Bronze Ball Valves

Two-Piece Body • Full Port $\frac{1}{4}$ "-1" • Conventional Port $\frac{1}{4}$ "-3" •
Bronze Trim • Blowout-Proof Stem • UL listed

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

CONFORMS TO MSS SP-110
CSA CERTIFIED TO ANSI/ASME B 16.33
FOR NATURAL AND PROPANE GAS TO 125 PSIG ($\frac{1}{2}$ "-1")



T-585-70-UL

$\frac{1}{4}$ "-1" Full Port CSA
Threaded



T-580-70-UL

$\frac{1}{4}$ "-3" Conventional Port
Threaded
UL Only



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	Bronze ASTM B 584 Alloy C84400
10. Body End Piece	Bronze ASTM B 584 Alloy C84400

UL Listed For:

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

Service

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

CUL Listed For:

YSDT7 LP gas shut-off for Canada

DIMENSIONS—WEIGHTS—QUANTITIES

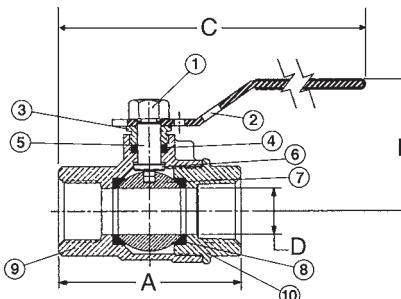
Size In. mm.	Dimensions				T-585-70-UL T-580-70-UL	Master Ctn. Qty.	
	A In. mm.	B In. mm.	C In. mm.	D In. mm.			
$\frac{1}{4}$ 8	2.00	51	1.75	44	.50	127	.38 10 .45 .21 100
$\frac{3}{8}$ 10	2.00	51	1.75	44	.50	127	.38 10 .45 .20 100
$\frac{1}{2}$ 15	2.44	62	1.88	48	5.19	132	.50 13 .64 .29 100
$\frac{3}{4}$ 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
$\frac{1}{4}$ 32	3.94	100	2.63	67	6.75	171	1.00 25 2.17 .98 20
$\frac{1}{2}$ 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
$\frac{3}{4}$ 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.

Visit our website for the most current information.



T-585-70-UL

T-580-70-UL

NPT x NPT

Bronze Ball Valves

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



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

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

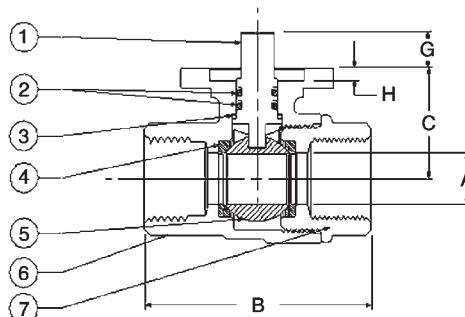
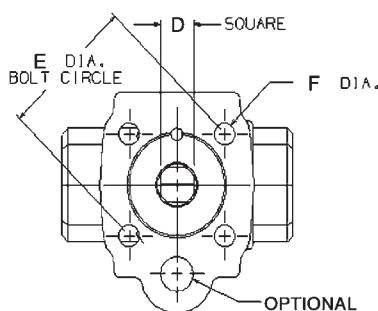
MATERIAL LIST

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



TM-585-70-66

Threaded
with Mounting Pads



TM-585-70-66
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size In. mm.	Flange Size	Dimensions										TM-585-70-66 Lbs. Kg.	Master Ctn. Qty.							
		A In. mm.	B In. mm.	C In. mm.	D In. mm.	E In. mm.	F In. mm.	G In. mm.	H In. mm.											
1/2 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
3/4 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
1 1/4 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
1 1/2 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
2 1/2 65	F05	2.00	51	5.84	148	2.50	64	.55	14	1.97	50	.27	6.8	.63	16	.16	4	9.00	4.06	1

* NIBCO supplies TM-580-70-66 conventional port valves.

♦ For detailed operating pressure, refer to pressure temperature chart on page 41.

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.

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



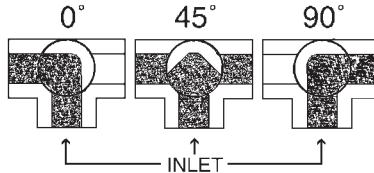
T-585-70-W3

Threaded



S-585-70-W3

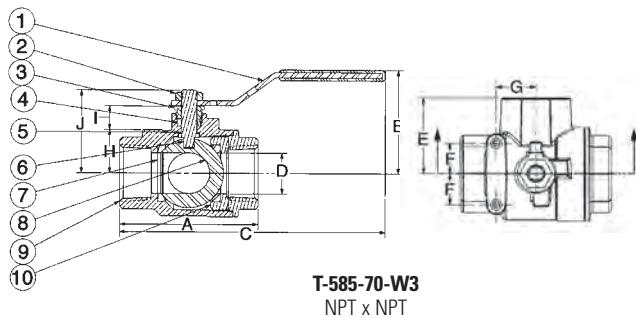
Solder



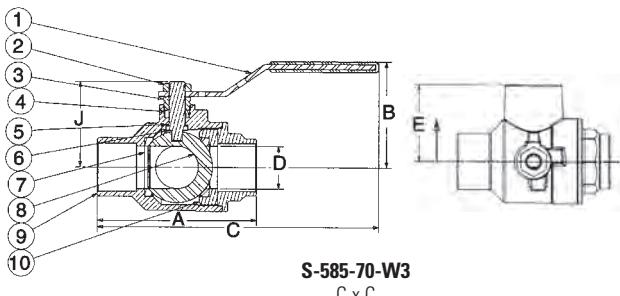
Flow Pattern

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.	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 .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
In. mm.	Lbs. Kg. Ctn. Qty.						
1/2 15	2.56	65	1.88	48	5.19	132	.50 .30 50
3/4 20	3.25	83	2.25	57	6.25	159	.75 .46 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.

Visit our website for the most current information.



Bronze Ball Valves

Three-Way Body • Full Port $\frac{1}{2}$ "-1" • Conventional Port $1\frac{1}{4}$ "-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 Plastiol 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



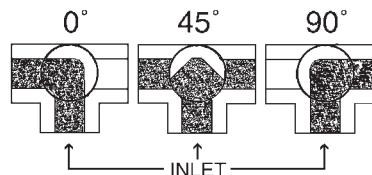
T-585-70-66-W3

Threaded



S-585-70-66-W3

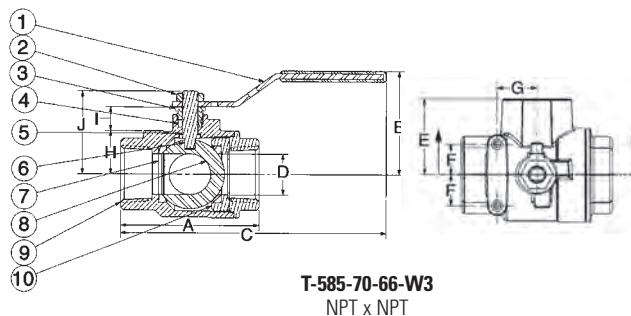
Solder



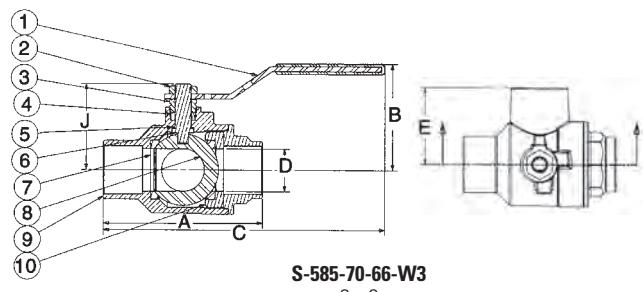
Flow Pattern

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	
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.		In. mm.	In. mm.	In. mm.	In. mm.	Lbs. Kg.	Ctn. Qty.	
$\frac{1}{2}$ 15	2.44	62	1.88	48	5.19	132	.50	13	1.22	31	.69	18	.84 .38	50
$\frac{3}{4}$ 20	2.94	75	2.25	57	6.25	159	.75	19	1.45	37	.69	18	1.62 .73	25
1 25	3.34	85	2.38	60	6.44	164	1.00	25	1.69	43	.69	18	2.28 1.03	20
$1\frac{1}{4}$ 32	4.19	106	3.00	76	6.75	171	1.12	28	1.98	50	.75	19	4.19 1.90	10
$1\frac{1}{2}$ 40	4.72	120	3.16	80	9.06	230	1.38	35	2.38	60	.75	19	6.00 2.72	8
2 50	5.31	135	3.50	89	9.25	235	1.88	48	2.75	70	.75	19	9.03 4.09	4

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

S-585-70-66-W3 Dimensions

Size	A	B	C	D	E	J	S-585-70-66-W3	Master						
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs. Kg.	Ctn. Qty.						
$\frac{1}{2}$ 15	2.56	65	1.88	48	5.19	132	.50	13	1.08	27	1.45	37	.67 .30	50
$\frac{3}{4}$ 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.

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*

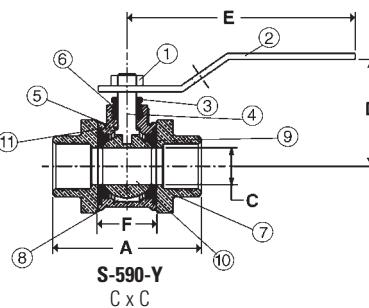
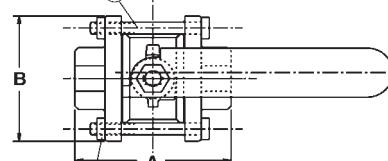
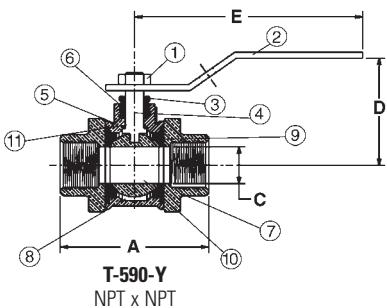
CONFORMS TO MSS SP-110

Dezinification
Resistant

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, C69300 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)	FKM
9. Seat Ring (2)	PTFE
10. Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
11. Thrust Washer	Reinforced PTFE
12. Body Bolts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
13. Body Nuts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5

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



DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions

Size	T-590-Y		S-590-Y		D	E	S-590-Y		T-590-Y	S-590-Y	Master Ctn. Qty.									
	In.	mm.	In.	mm.			In.	mm.												
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
5/16	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
3/8	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
7/16	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
1/2	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
5/8	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
3/4	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
7/8	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
1	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
1 1/2	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 41.

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.

OXYGEN
SERVICE
OPTION
AVAILABLE

Bronze Ball Valves

Three-Piece Body • Full Port $\frac{1}{4}$ "-1" • Conventional Port $1\frac{1}{4}$ "-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*

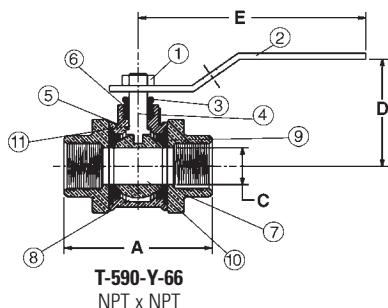
CONFORMS TO MSS SP-110

Dezinification
Resistant

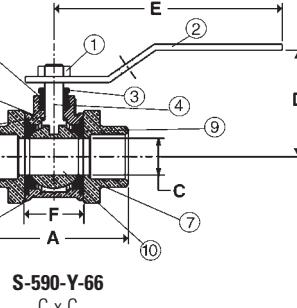
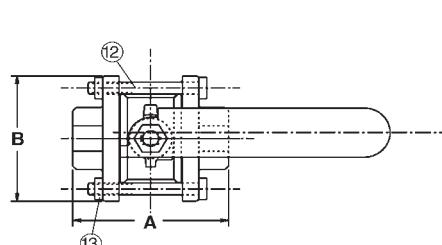
MATERIAL LIST

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)	FKM
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
NPT x NPT



S-590-Y-66
C x C

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions												Master Ctn. Qty.
	T-590-Y-66		S-590-Y-66		S-590-Y-66		T-590-Y-66		S-590-Y-66		T-590-Y-66		
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.
$\frac{1}{4}$	8	2.50	64	1.69	43	1.81	46	.38	10	1.69	43	3.91	99
$\frac{3}{8}$	10	2.50	64	1.81	46	1.81	46	.38	10	1.69	43	3.91	99
$\frac{1}{2}$	15	2.50	64	2.06	52	1.81	46	.50	13	1.69	43	3.91	99
$\frac{3}{4}$	20	3.00	76	2.94	75	1.94	49	.75	19	2.00	51	4.66	118
$1\frac{1}{2}$	25	3.69	94	3.66	93	2.50	64	1.00	25	2.25	57	4.66	118
$1\frac{1}{4}$	32	3.69	94	3.84	98	2.50	64	1.00	25	2.25	57	4.66	118
$1\frac{1}{2}$	40	4.09	104	4.25	108	2.69	68	1.25	32	2.75	70	6.69	170
2	50	4.81	122	5.25	133	3.00	76	1.50	38	2.97	75	6.69	170
$2\frac{1}{2}$	65	6.16	157	6.12	155	4.00	102	2.00	51	3.63	92	6.69	170
3	80	6.84	174	7.44	189	5.00	127	2.50	64	4.09	104	8.00	203

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

*For detailed operating pressure, refer to pressure temperature chart on page 41.

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.

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,
	C69300 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)	FKM
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 - Liquified petroleum gas, 175 PSI max.

02 - No. 1 and 2 fuel oil

04 - No. 4 fuel oil

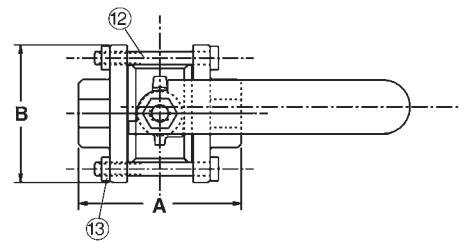
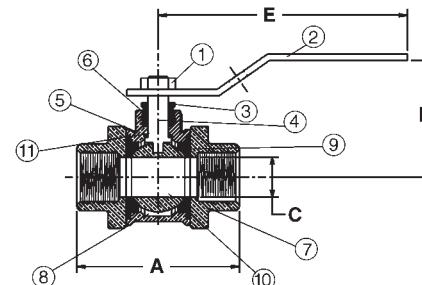
05 - No. 5 fuel oil

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 Ctn. Qty.					
	A In. mm.	B In. mm.	C In. mm.	D In. mm.	E In. mm.	Lbs. Kg.								
1/4	8	2.50	64	1.81	46	.38	10	1.06	27	3.90	.99	.94	.43	50
5/8	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.

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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

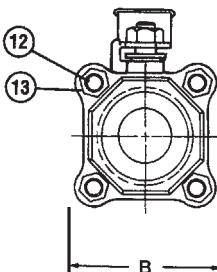
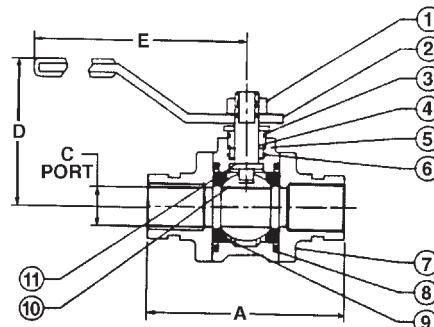
MATERIAL LIST

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, C69300 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)	FKM
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



G-590-Y
GRVD x GRVD

DIMENSIONS—WEIGHTS—QUANTITIES

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



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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

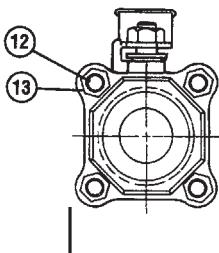
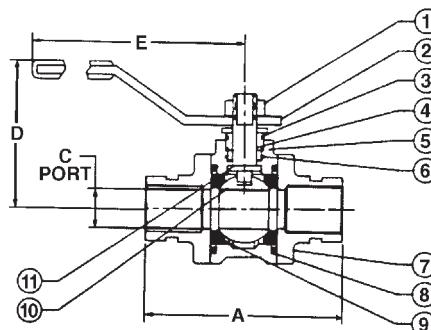
PART	SPECIFICATION
1. Handle Nut	Stainless Steel 300 Series
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	FKM
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 Ctn. Qty.	
	In. mm.	A In. mm.	B In. mm.	C In. mm.	D In. mm.	E In. mm.			
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.

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*

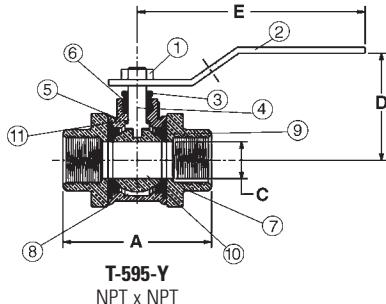


CONFORMS TO MSS SP-110

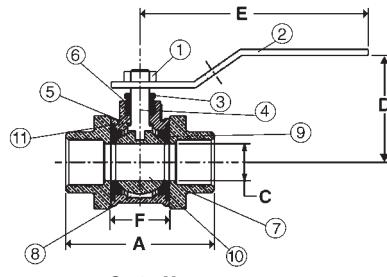
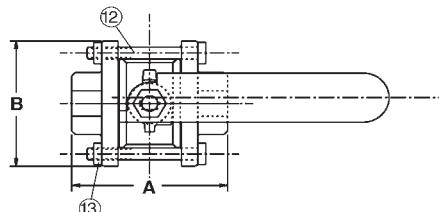
MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastiisol 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)	FKM
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
NPT x NPT



S-595-Y
C x C

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						S-595-Y						Master Ctn. Qty.						
	T-595-Y	S-595-Y	A	A	B	C	D	E	F	T-595-Y	S-595-Y	Lbs.	Kg.	Lbs.	Kg.				
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	T-595-Y	S-595-Y									
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
5/16 10	2.50	64	1.81	46	1.81	46	.38	10	1.69	43	3.91	.99	.875	.29	9.8	.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 41.

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.

*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

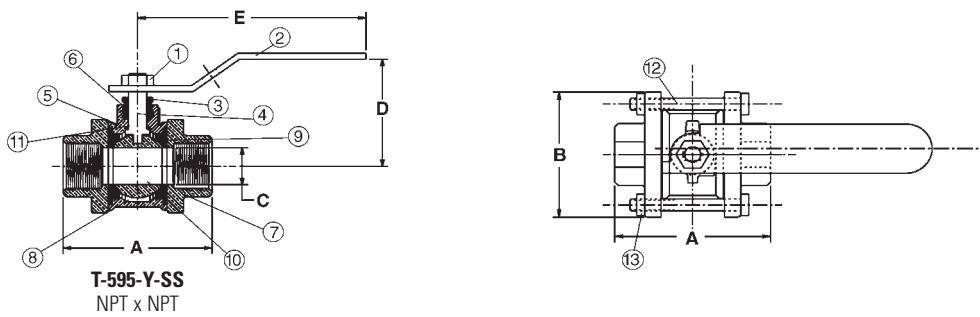
PART	SPECIFICATION
1. Handle Nut	300 Series Stainless Steel
2. Handle	300 Series Stainless Steel with Plastisol Grip
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Silicon Bronze ASTM B 371 Alloy C69430 or ASTM B 99 Alloy C65100
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	FKM
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
	A In. mm.	B In. mm.	C In. mm.	D In. mm.	E In. mm.	Lbs. Kg.		
1/4 8	2.50 64	1.81 46	.38 10	1.69 43	3.91 99	1.03 .47	50	
5/8 10	2.50 64	1.81 46	.38 10	1.69 43	3.91 99	.98 .44	50	
1/2 15	2.50 64	1.81 46	.50 13	1.69 43	3.91 99	1.03 .47	50	
3/4 20	3.00 76	1.94 49	.75 19	2.00 51	4.66 118	1.70 .77	30	
1 25	3.69 94	2.50 64	1.00 25	2.25 57	4.66 118	2.82 1.28	20	
1 1/4 32	4.09 104	2.69 68	1.25 32	2.75 70	6.69 170	3.96 1.80	10	
1 1/2 40	4.56 116	3.00 76	1.50 38	2.97 75	6.69 170	5.68 2.57	10	
2 50	6.16 156	4.00 102	2.00 51	3.63 92	6.69 170	11.40 5.17	4	
2 1/2 65	6.84 174	5.00 127	2.50 64	4.09 104	8.00 203	21.07 9.56	2	

*For detailed operating pressure, refer to pressure temperature chart on page 41.

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.

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 Plastiol 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)	FKM
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)



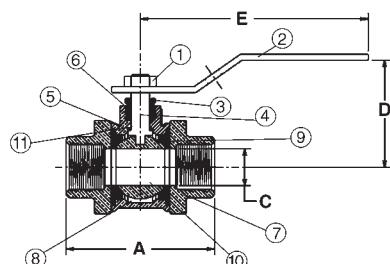
T-595-Y-66

Threaded

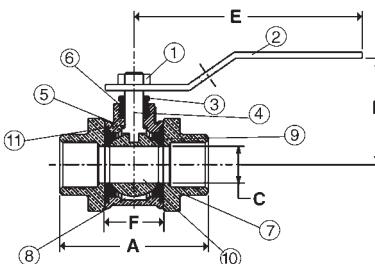
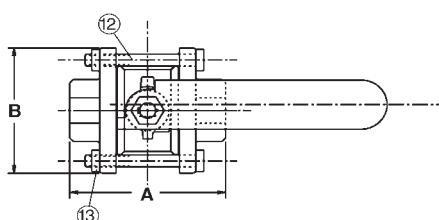


S-595-Y-66

Solder



T-595-Y-66
NPT x NPT



S-595-Y-66
C x C

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						S-595-Y-66				Master Ctn. Qty.							
	A	A	B	C	D	E	F	T-595-Y-66	S-595-Y-66									
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	.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 41.

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.

**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

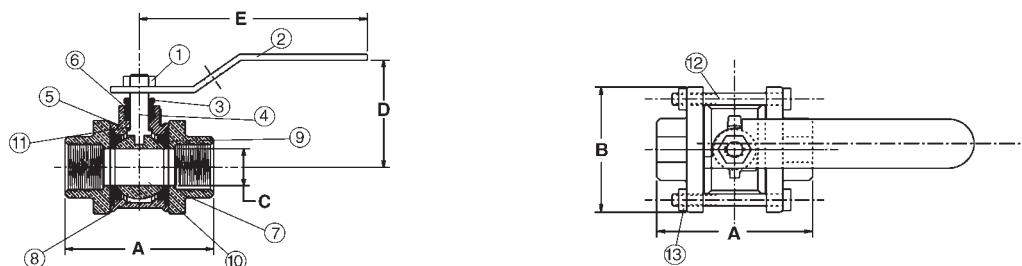
150 PSI/10.3 bar saturated steam*

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)	FKM
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
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

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

*For detailed operating pressure, refer to pressure temperature chart on page 41.

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.



T-595-Y-66-SS

Threaded

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

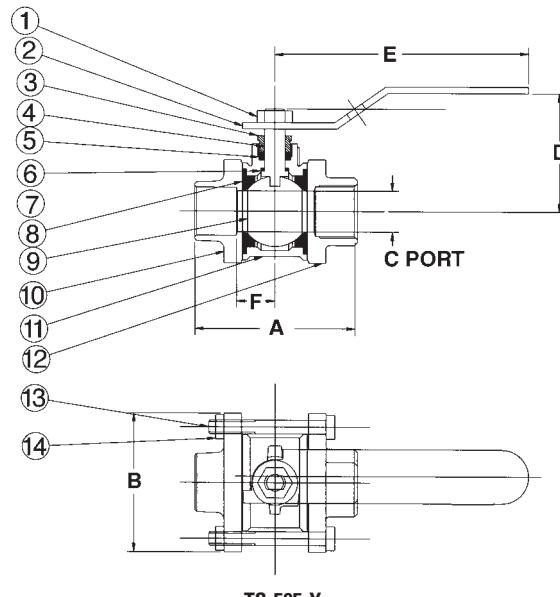
PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastiol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Silicon Bronze ASTM B 371 Alloy C69430 or ASTM B 99 Alloy C65100
5. Packing	PTFE
6. Thrust Washer	Reinforced PTFE
7. O-Ring Seal (2)	FKM
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 In. mm.	Dimensions						TS-595-Y Lbs. Kg.	Box Qty.	Master Ctn. Qty.							
	A In. mm.	B In. mm.	C In. mm.	D In. mm.	E In. mm.	F In. mm.										
1/4 8	2.09	53	1.81	46	.38	10	.69	43	3.90	.99	.56	14	.94	.43	5	50
5/16 10	2.16	55	1.81	46	.38	10	.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 41.

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.

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

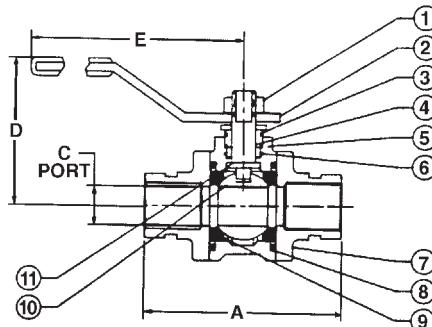
PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Silicon Bronze ASTM B 371 Alloy C69430 or ASTM B 99 Alloy C65100
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	FKM
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

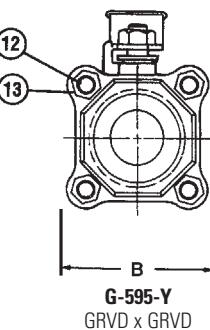


DIMENSIONS—WEIGHTS—QUANTITIES

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



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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

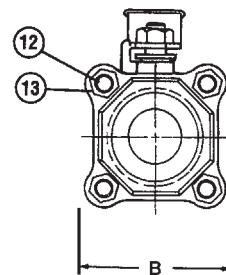
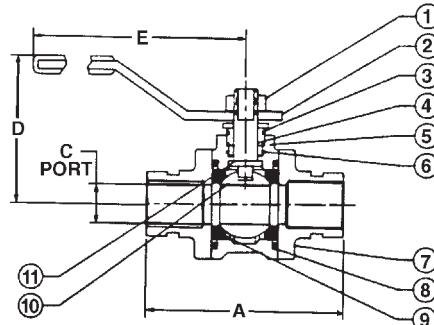
PART	SPECIFICATION
1. Handle Nut	Stainless Steel 300 Series
2. Handle	Zinc Plated Steel Clear Chromate Plastiol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Stainless Steel ASTM A 276 Type 316
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Cast Bronze ASTM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

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



G-595-Y-66

Grooved



G-595-Y-66
GRVD x GRVD

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						G-595-Y-66	Master Ctn. Qty.			
	A	B	C	D	E	G-595-Y-66					
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs. Kg.				
1½ 40	5.87	149	3.00	76	1.50	38	2.97	75	6.69 170	6.02 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.

Visit our website for the most current information.

Bronze Ball Valves

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

175 PSI/12.1 bar non-shock LP gas per UL842

CONFORMS TO MSS SP-110 • UL842

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Zinc Plated Steel
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Stem	Silicon Bronze ASTM B 371 Alloy C69400 or ASTM B 99 Alloy C65100
5. Body	Bronze ASTM B 584 Alloy C84400
6. Packing	PTFE
7. Body End (2)	Bronze ASTM B 584 Alloy C84400
8. O-Ring Seal (2)	FKM
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

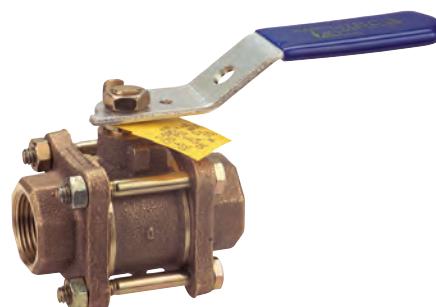
LP - Liquified petroleum gas, 175 PSI max.

02 - No. 1 and 2 fuel oil

04 - No. 4 fuel oil

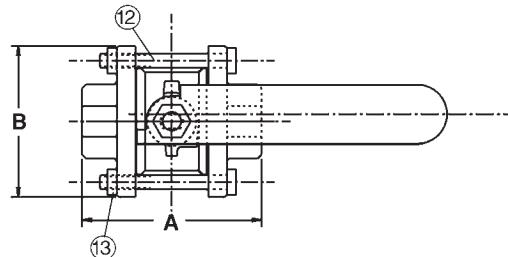
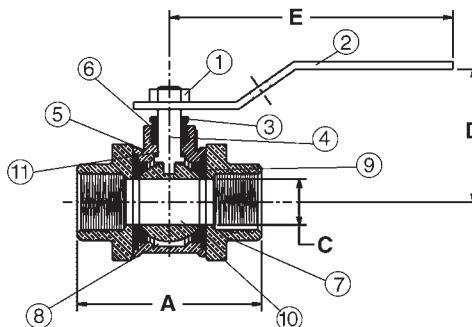
05 - No. 5 fuel oil

06 - No. 6 fuel oil



T-595-Y-UL

Threaded



T-595-Y-UL
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions							T-595-Y-UL	Master Ctn. Qty.					
	A In. mm.	B In. mm.	C In. mm.	D In. mm.	E In. mm.	Lbs. Kg.								
1/4	8	2.50	64	1.81	46	.38	10	1.69	43	3.90	99	.94	.43	50
5/16	10	2.50	64	1.81	46	.38	10	1.69	43	3.90	99	.94	.43	50
1/2	15	2.50	64	1.81	46	.50	13	1.69	43	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	4.09	104	2.69	68	1.25	32	2.75	70	6.69	170	3.90	1.77	10
1 1/2	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.

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 Plastiol 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)	FKM
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.

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.

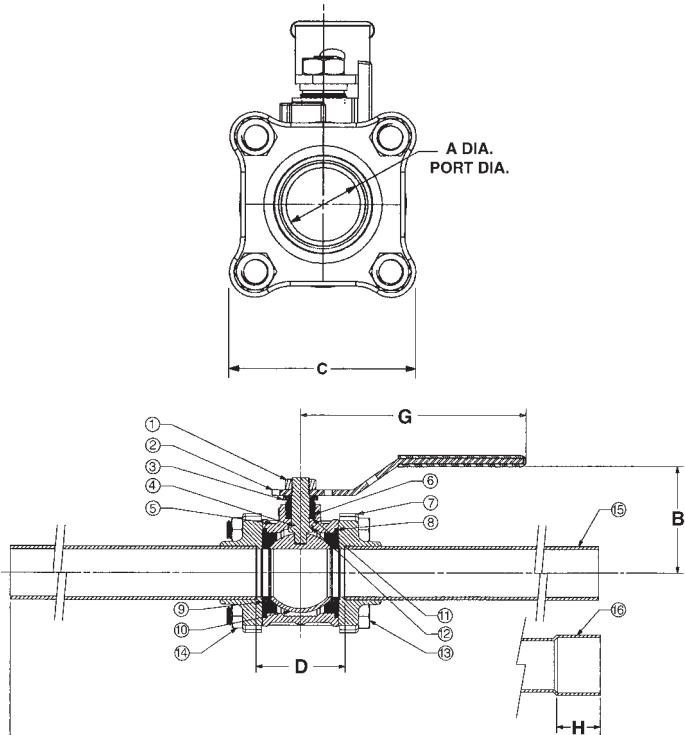
Medical Gas Service

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

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.

**OXYGEN
SERVICE
OPTION
AVAILABLE**

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)	FKM
9. Seat Ring (2)	PTFE
10. Ball	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
11. Ground Washer	Stainless Steel ASTM A 167 Type 304
12. Thrust Washer	Reinforced PTFE
13. Body Bolts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
14. Body Nuts	Zinc Dichromate Plated Steel ASTM A 449 Grade 5
15. Straight Stub Out (2)	6" Copper Tube Type K
16. Expanded Stub Out (2)	6" Copper Tube Type L (Specify EC)

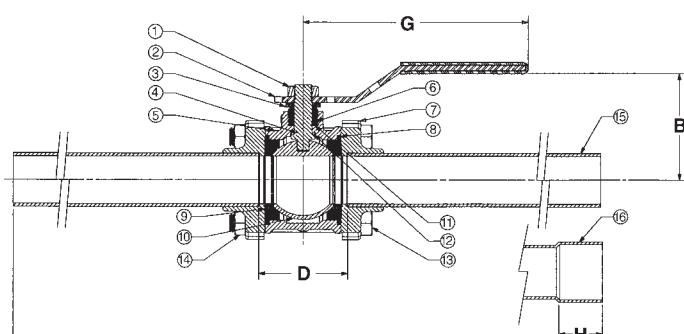
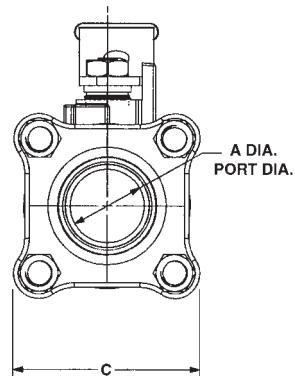
Note: valves are static grounded by a grounding washer. (not shown)



CS-595-YX-66-EC

(316SS Trim)

Copper Stub Ends



CS-595-YX-66/CS-595-YX-66-EC

CSE x CSE

DIMENSIONS—WEIGHTS—QUANTITIES

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

**OXYGEN
SERVICE
OPTION
AVAILABLE**

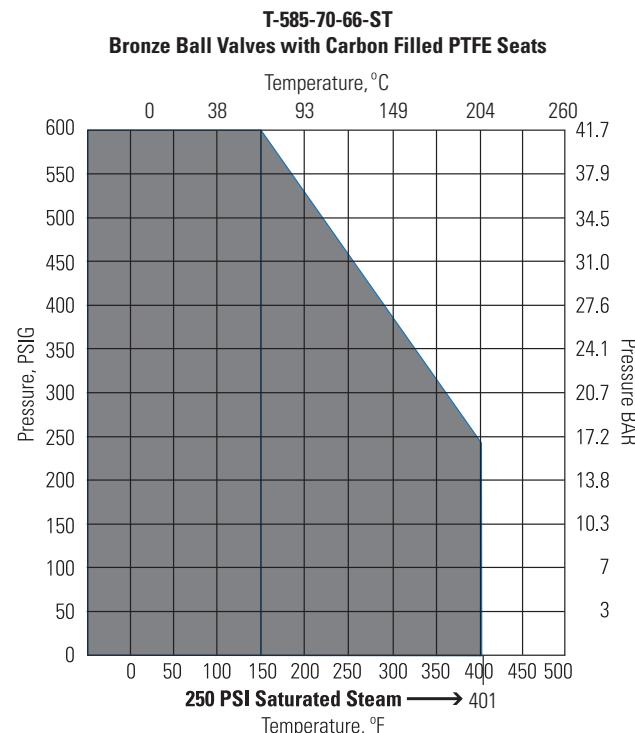
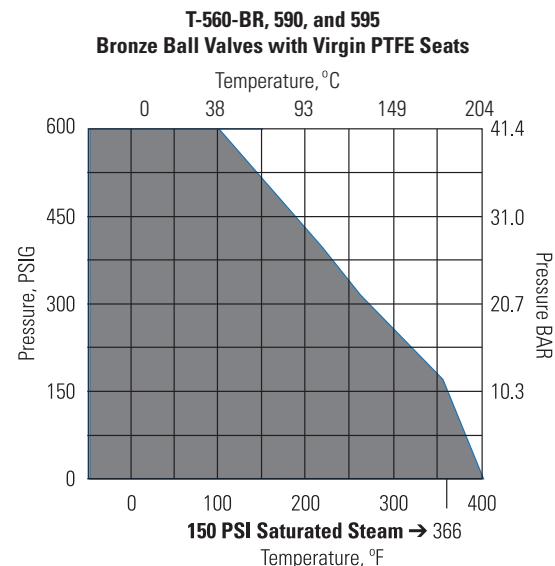
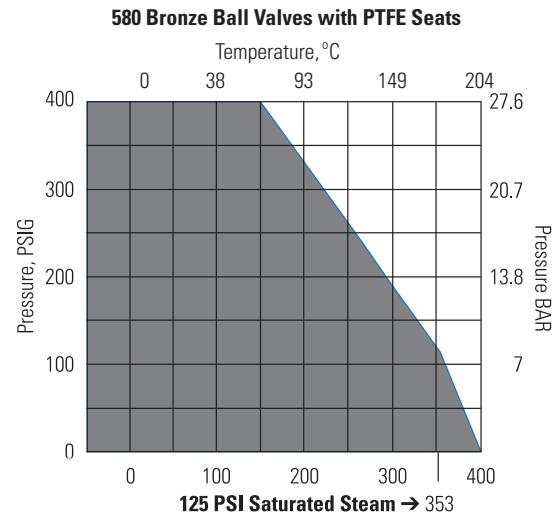
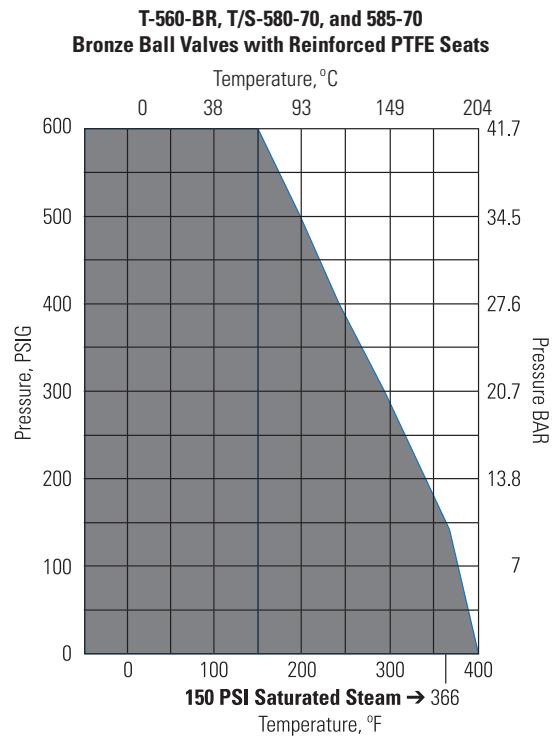


WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Visit our website for the most current information.

Pressure Temperature Ratings

Bronze Ball Valves



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	560 - One-Piece Body (Casting)	CS - Carbon Steel	Y - Virgin PTFE	25 - Carbon Steel	FS - Fire Safe
T - Threaded				R - Reinforced PTFE	OL - Oval Locking Hdle
TC - Threaded (Investment Cast Carbon Body)	570 - One-Piece Body (Bar Stock)	S6 - Stainless Steel		66 - Stainless Steel	LL - Locking Lever Hdle
BM - Butt Weld ISO Mount	580 - Two-Piece Body Conventional Port				OV - Oval Hdle
KM - Socket Weld ISO Mount	585 - Two-Piece Body Full Port				SR - Spring Return Hdle
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 $\frac{1}{4}$ " thru 2"

T-560-CS-R-25/66-FS-LL

Sizes $\frac{1}{2}$ " thru 2"

Threaded Ends

Pages 45-48

One-Piece Bar Stock Carbon Steel Ball Valve
2000 lb. CWP $\frac{1}{2}$ "-1"
1500 lb. CWP $1\frac{1}{4}$ "-2"



T-570-CS-R-25/66

Sizes $\frac{1}{2}$ " thru 2"

Threaded Ends

Page 49, 50

Two-Piece Carbon Steel Ball Valve
2000 lb. CWP



TC-580-CS-R-25/66-LL

Sizes $\frac{1}{4}$ " 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 $\frac{1}{4}$ " 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 $\frac{1}{4}$ "-1"
1500 lb. CWP $1\frac{1}{4}$ "-2"



T-580-CS-R-25

Sizes $\frac{3}{8}$ " thru 2"

T-580-CS-R-66

Sizes $\frac{1}{4}$ " 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 $\frac{1}{2}$ " 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 $\frac{1}{4}$ " 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 $\frac{1}{4}$ " 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*

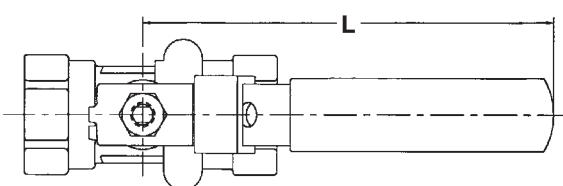
CONFORMS TO MSS SP-110

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. 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

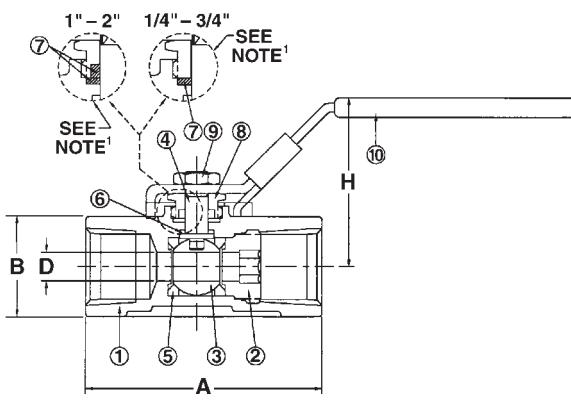
1/4" - 3/4" one each, 1" - 2" two each.

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 In. mm.	B In. mm.	D In. mm.	L In. mm.	H In. mm.	Lbs. Kg.		
1/4 8	2.28	58	1.10	28	.31	8	4.29	.68 .31 50
3/8 10	2.28	58	1.10	28	.31	8	4.29	.68 .31 50
1/2 15	2.60	66	1.10	28	.31	8	4.29	.66 .30 50
3/4 20	2.83	72	1.34	34	.47	12	4.29	.93 .42 50
1 25	3.23	82	1.61	41	.62	16	5.75	1.59 .72 40
1 1/4 32	3.54	90	1.97	50	.81	21	5.75	2.22 1.01 20
1 1/2 40	3.86	98	2.24	57	1.00	25	7.40	3.22 1.46 20
2 50	4.33	110	2.76	70	1.25	32	7.40	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*

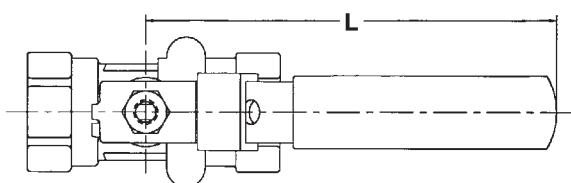
CONFORMS TO API-607 FOURTH EDITION FIRE SAFE
• MSS SP-110

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. Stem Packing	Graphoil
8. Threaded Pack Gland	Carbon Steel ASTM A 108 Type 1045
9. Handle Nut	Carbon Steel ASTM A 283
10. Handle	Carbon Steel ASTM A 283

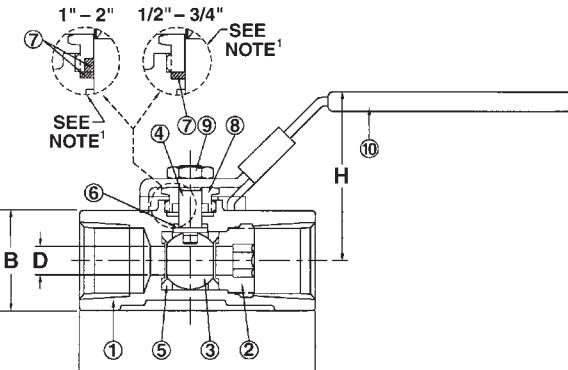
1 1/2"-3/4" one each, 1"-2" two each.

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	T-560-CS-R-25-FS-LL		
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs. Kg.		
1/2 15	2.60	66	1.10	.28	.31	8	4.29 109	50
3/4 20	2.83	72	1.34	.34	.47	12	4.29 109	56
1 25	3.23	82	1.61	.41	.62	16	5.75 146	65
1 1/4 32	3.54	90	1.97	.50	.81	21	5.75 146	70
1 1/2 40	3.86	98	2.24	.57	1.00	25	7.40 188	84
2 50	4.33	110	2.76	.70	1.25	32	7.40 188	89

*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*

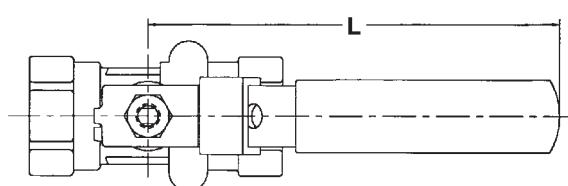
CONFORMS TO MSS SP-110

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. ¹ Stem Packing	Graphoil
8. Threaded Pack Gland	Carbon Steel ASTM A 108 Type 1045
9. Handle Nut	Carbon Steel ASTM A 283
10. Handle	Carbon Steel ASTM A 283

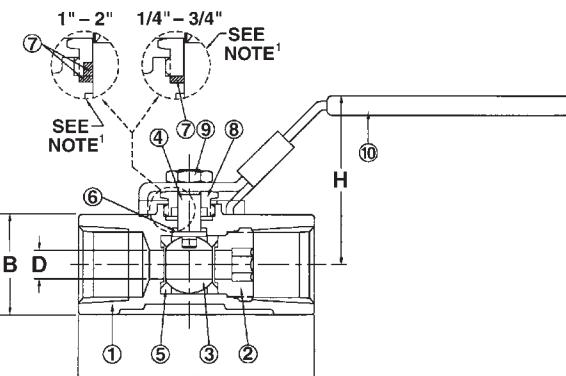
¹1/4"-3/4" one each, 1"-2" two each.

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



T-560-CS-R-66-LL

Threaded



T-560-CS-R-66-LL

NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

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.							
1/4	8	2.28	58	1.10	28	.31	8	4.29	109	1.97	50	.68	.31	50
5/16	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*

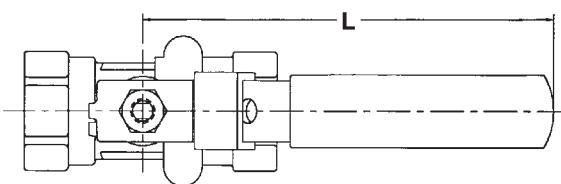
CONFORMS TO API-607 FOURTH EDITION FIRE SAFE
MSS SP-110

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. ¹ Stem Packing	Graphoil
8. Threaded Pack Gland	Carbon Steel ASTM A 108 Type 1045
9. Handle Nut	Carbon Steel ASTM A 283
10. Handle	Carbon Steel ASTM A 283

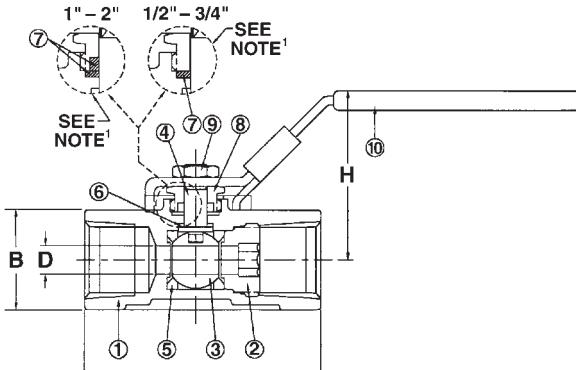
¹ 1/2"-3/4" one each, 1"-2" two each.

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	T-560-CS-R-66-FS-LL		
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs. Kg.		
1/2 15	2.60	66	1.10	28	.31	8	4.29 109	.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

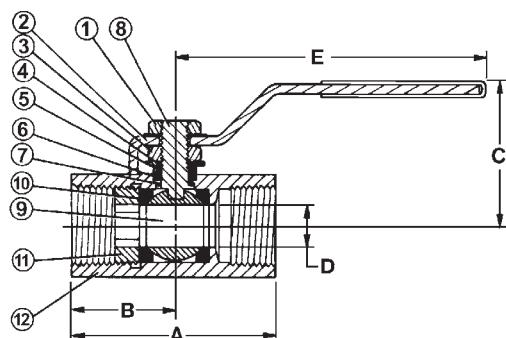
PART	SPECIFICATION
1. Handle Nut	Carbon Steel ASTM A 283 Zinc Plated
2. Handle	Carbon Steel ASTM A 283 Zinc Plated
3. Packing Nut	Carbon Steel ASTM A 283 Zinc Plated
4. Belleville Washer (2)	Carbon Steel Black Oxide ASTM A 686
5. Pack Gland	Stainless Steel ASTM A 240 Type 304
6. Stem Packing	Reinforced 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.						
1/2 15	2.19	.56	1.10	.28	1.37	.60	.35	9	.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	1.02	2.00	.51	2.75	.83	1.00	25	7.00	175	3.47	1.58	8
2 50	4.50	1.14	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 (1 1/4"-2")*

CONFORMS TO MSS SP-110

MATERIAL LIST

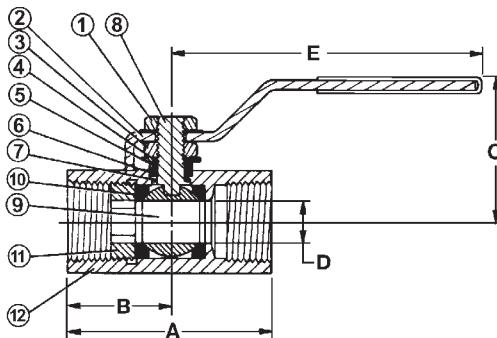
PART	SPECIFICATION
1. Handle Nut	Carbon Steel ASTM A 283 Zinc Plated
2. Handle	Carbon Steel ASTM A 283 Zinc Plated
3. Packing Nut	Carbon Steel ASTM A 283 Zinc Plated
4. Belleville Washer (2)	Carbon Steel Black Oxide ASTM A 686
5. Pack Gland	Stainless Steel ASTM A 240 Type 304
6. Stem Packing	Reinforced PTFE
7. Thrust Washer	Reinforced PTFE
8. Stem	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 Lbs.	Master Ctn. Qty.				
	A In. mm.	B In. mm.	C In. mm.	D In. mm.	E In. mm.	T-570-CS-R-66 Kg.							
1/2 15	2.19	56	1.10	28	1.63	41	.35	9	4.17	102	.55	.25	80
3/4 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
1 1/4 32	3.62	92	1.81	46	2.31	59	.81	21	5.83	145	2.35	1.07	8
1 1/2 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

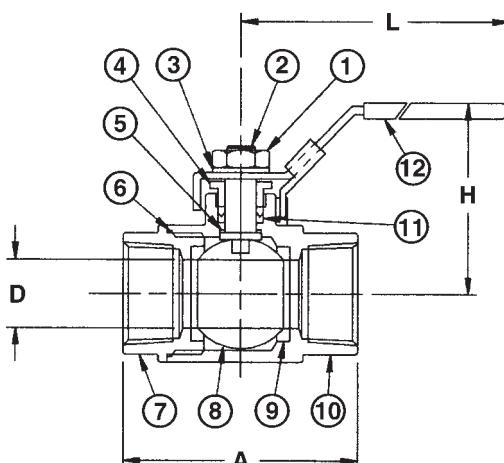
PART	SPECIFICATION
1. Handle Nut	Carbon Steel ASTM A 283
2. Stem	Carbon Steel ASTM A 108 Type 1045
3. Lock Washer	Carbon Steel
4. Threaded Pack Gland	Carbon Steel ASTM A 108 Type 1045
5. Thrust Washer	Carbon Filled PTFE
6. Gasket	PTFE
7. Body End Piece	Carbon Steel ASTM A 216 Grade WCB (Investment Cast)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

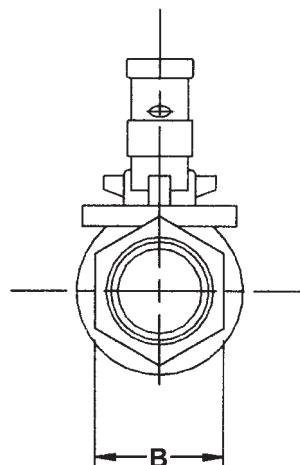


TC-580-CS-R-25-LL
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						TC-580-CS-R-25-LL	Master Ctn. Qty.						
	A	B	D	H	L	TC-580-CS-R-25-LL								
In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.							
1/4	8	2.07	53	.83	21	.37	9	1.76	45	4.33	110	.51	.23	10
3/8	10	2.07	53	.83	21	.37	9	1.76	45	4.33	110	.48	.22	10
1/2	15	2.34	59	1.06	27	.50	13	1.92	47	4.33	110	.66	.30	10
5/8	20	2.80	71	1.34	34	.69	18	2.40	61	5.83	148	1.30	.59	10
1	25	3.23	82	1.61	41	.87	22	2.56	65	5.83	148	1.79	.81	10
1 1/4	32	3.57	91	1.89	48	1.00	25	2.74	70	7.76	197	2.52	1.14	5
1 1/2	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

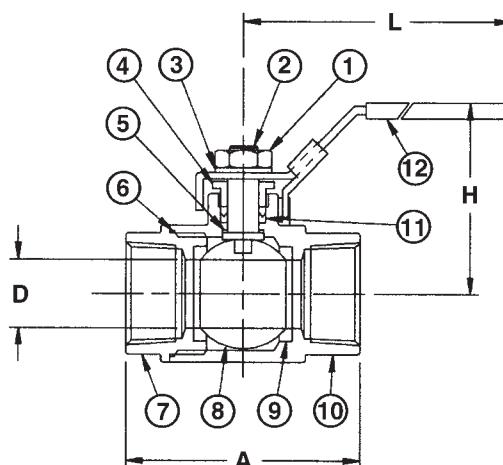
PART	SPECIFICATION
1. Handle Nut	Carbon Steel ASTM A 283
2. Stem	Stainless Steel ASTM A 276 Type 316
3. Lock Washer	Carbon Steel
4. Threaded Pack Gland	Carbon Steel ASTM A 108 Type 1045
5. Thrust Washer	Carbon Filled PTFE
6. Gasket	PTFE
7. Body End Piece	Carbon Steel ASTM A 216 Grade WCB (Investment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

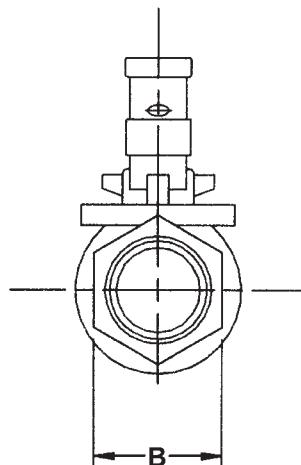


TC-580-CS-R-66-LL
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions							TC-580-CS-R-66-LL	Master Ctn. Qty.
	A	B	D	L	H	T.C. Lbs.	Kg.		
1/4 8	2.07	.53	.90	.23	.37	.9	1.76	.45	.433 110 .51 .23 10
5/8 10	2.07	.53	.90	.23	.37	.9	1.76	.45	.433 110 .48 .22 10
1/2 15	2.34	.59	1.06	.27	.50	.13	1.92	.49	.433 110 .66 .30 10
3/4 20	2.80	.71	1.34	.34	.69	.18	2.40	.61	.583 148 1.30 .59 10
1 25	3.23	.82	1.61	.41	.87	.22	2.56	.65	.583 148 1.79 .81 10
1 1/4 32	3.57	.91	1.89	.48	1.00	.25	2.74	.70	7.76 197 2.52 1.14 5
1 1/2 40	4.04	1.03	2.26	.57	1.25	.32	2.98	.76	7.76 197 3.75 1.70 5
2 50	4.63	1.18	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 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

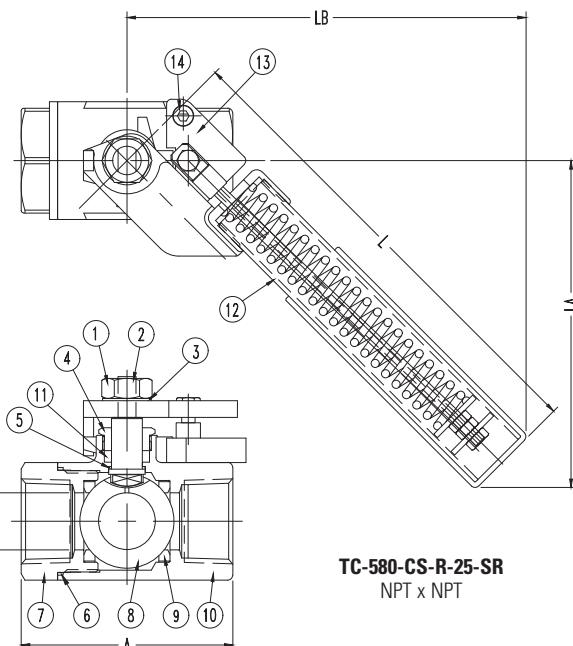
NOTE: Valves are static grounded by thrust washer and packing.

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								TC-580-CS-R-25-SR Master		
	A In. mm.	B In. mm.	D In. mm.	H In. mm.	L In. mm.	LA In. mm.	LB In. mm.	Lbs. Kg.	Ctn. Qty.		
1/4 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
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
1/2 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
3/4 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
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
1 1/4 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
1 1/2 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
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	4.66 2.11
									6.71	170.50	4.66 2.11
									6.71	170.50	4.66 2.11
									6.71	170.50	4.66 2.11
									6.71	170.50	4.66 2.11

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

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

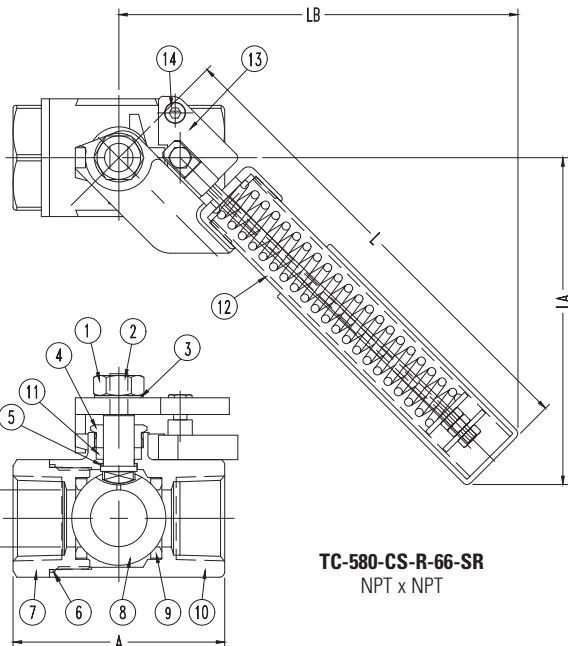
NOTE: Valves are static grounded by thrust washer and packing.

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 In. mm.	Dimensions								TC-580-CS-R-66-SR Master		
	A In. mm.	B In. mm.	D In. mm.	H In. mm.	L In. mm.	LA In. mm.	LB In. mm.	Lbs. Kg.	Ctn. Qty.		
1/4 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
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
1/2 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
3/4 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
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
1 1/4 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
1 1/2 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
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	4.66 2.11
									6.71	170.50	6.44 2.92
											2

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

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. Thrust Washer (2)	Reinforced PTFE
6. Stem Seal	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

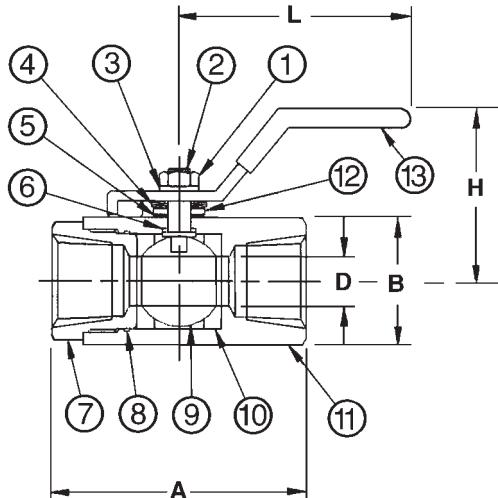
3/8"-1" 2000 PSI CWP, 1-1/4"-2" 1500 PSI CWP.

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 Ctn. Qty.
	A	B	D	H	L	T-580-CS-R-25			
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	1.04	2.64	.67	1.25	32	3.25	.83	7.00 182 4.86 2.20 5
2 50	4.61	1.17	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. Thrust Washer (2)	Reinforced PTFE
6. Stem Packing	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.

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						T-580-CS-R-66	Master Ctn. Qty.					
	A	B	D	H	L								
In. mm.	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
5/8 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	1.04	2.64	.67	1.25	32	3.25	.83	7.00	182	4.80	2.20	5
2 50	4.61	1.17	3.03	.77	1.50	38	3.54	.90	7.24	185	6.62	3.00	5

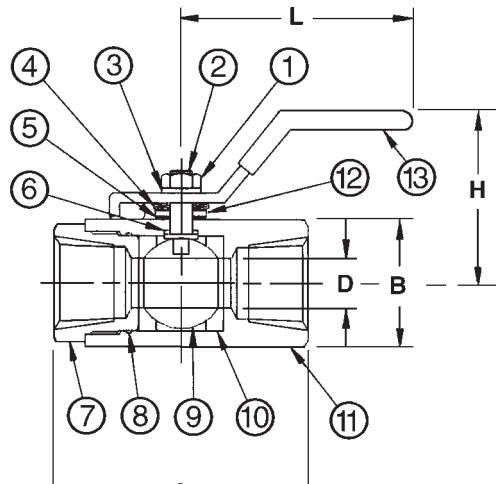
♦For detailed operating pressure, refer to pressure temperature chart on pages 71 and 72.

Visit our website for the most current information.



T-580-CS-R-66

Threaded



T-580-CS-R-66
NPT x NPT

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

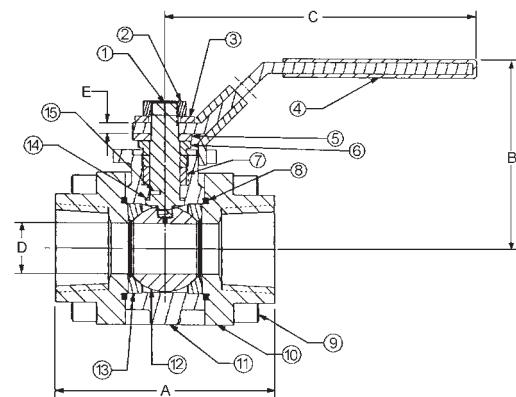
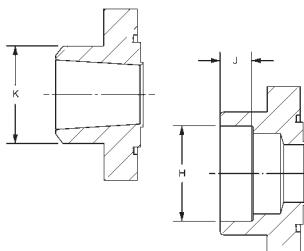
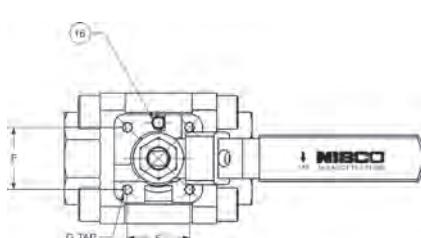
2000 PSI/138 Bar Non-Shock Cold Working Pressure*

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.



DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions												H Socket Weld Type	J Socket Weld Type	K Butt Weld Type	Threaded Weight	Socket Weld Weight	Butt Weld Weight									
	A	B	C	D	E	F	G Thread Tap	G Flange Type	H Socket Weld Type	J Socket Weld Type	K Butt Weld Type	Lbs. Kg.															
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.																
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.

Carbon Steel Ball Valves

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

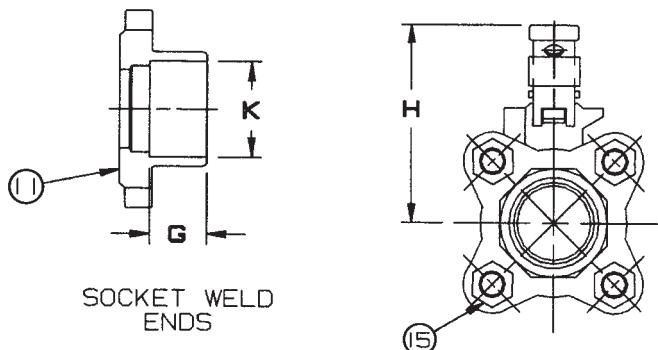
1000 PSI/69 bar non-shock cold working pressure*

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.

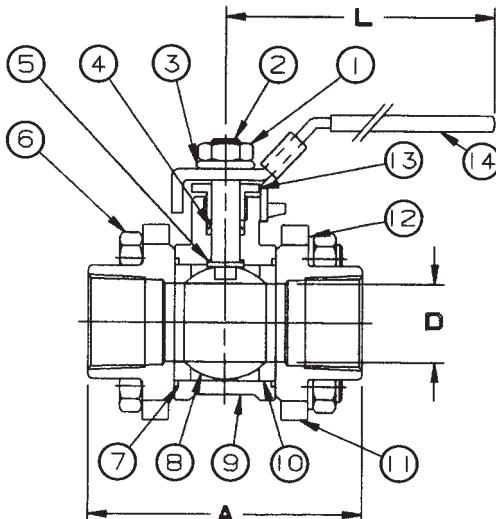


T-595-CS-R-66-LL

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	B	C	D	G	K	H								
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	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.

Carbon Steel Ball Valves

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

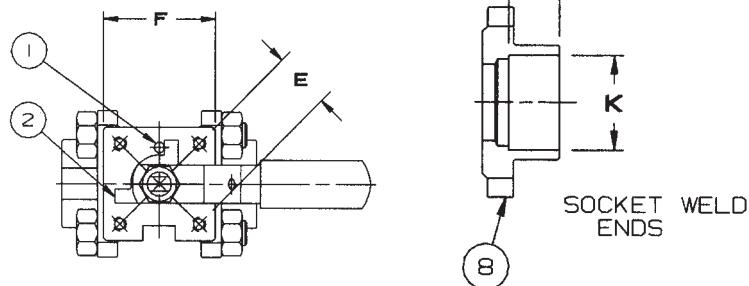
1000 PSI/69 bar non-shock cold working pressure*

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.

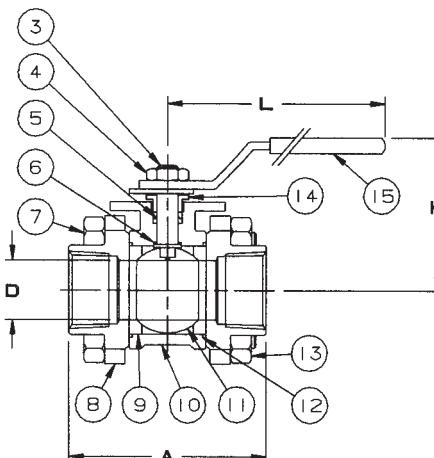


TM-595-CS-R-66

Threaded
ISO Mount Pad

KM-595-CS-R-66

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



DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions											ISO 5211	TM or KM-595-CS-R-66	Master Ctn. Qty.						
	A	B	D	E	F	G	K	H	L	M	N									
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	.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	560 - One-Piece Body (Casting)	CS - Carbon Steel	Y - Virgin PTFE	25 - Carbon Steel	FS - Fire Safe
T - Threaded				R - Reinforced PTFE	OL - Oval Locking Handle
TC - Threaded (Investment Cast Carbon Body)	570 - One-Piece Body (Bar Stock)	S6 - Stainless Steel		66 - Stainless Steel	LL - Locking Lever Handle
BM - Butt Weld ISO Mount	580 - Two-Piece Body Conventional Port				OV - Oval Handle
KM - Socket Weld ISO Mount	585 - Two-Piece Body Full Port				SR - Spring Return Handle
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 Stainless Steel Ball Valves

Illustrated Index

<p>One-Piece Stainless Steel Ball Valve 2000 lb. CWP</p>  <p>T-560-S6-R-66-LL Sizes $\frac{1}{4}$" thru 2" T-560-S6-R-66-FS-LL Sizes $\frac{1}{2}$" thru 2" Threaded Ends Page 62, 63</p>	<p>Two-Piece Stainless Steel Ball Valve 2000 lb. CWP</p>  <p>T-580-S6-R-66-LL Sizes $\frac{1}{4}$" thru 2" Threaded Ends Page 64</p>	<p>Spring Return Handle Two-Piece Stainless Steel Ball Valve 2000 lb. CWP</p>  <p>T-580-S6-R-66-SR Sizes $\frac{1}{4}$" thru 2" Threaded Ends Page 65</p>
<p>Two-Piece Stainless Steel Ball Valve 1000 lb. CWP</p>  <p>T-585-S6-R-66-LL Sizes $\frac{1}{4}$" thru 2" Threaded Ends Page 66</p>	<p>Spring Return Handle Full Port Two-Piece Stainless Steel Ball Valve 1000 lb. CWP</p>  <p>T-585-S6-R-66-SR Sizes $\frac{1}{4}$" thru 1" Threaded Ends Page 67</p>	<p>Three-Piece Stainless Steel Ball Valve 2000 lb. CWP</p>  <p>BM/KM/TM-590-S6-R-66-FS-LL Sizes $\frac{1}{2}$" thru 2" Threaded, Butt or Socket Weld Page 68</p>
<p>Three-Piece Stainless Steel Ball Valve 1000 lb. CWP</p>  <p>T/K-595-S6-R-66-LL Sizes $\frac{1}{4}$ thru 2" Threaded or Socket Weld Page 69</p>	<p>Three-Piece Stainless Steel Ball Valve 1000 lb. CWP</p>  <p>TM/KM-595-S6-R-66 Sizes $\frac{1}{4}$" thru 2" Threaded or Socket Weld Page 70</p>	<p>Pressure Temperature Chart</p> <p>Page 71, 72</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

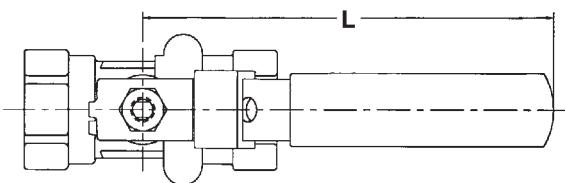
MATERIAL LIST

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	Carbon Filled PTFE
7. 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

* $\frac{1}{4}$ "- $\frac{3}{4}$ " one each, 1"-2" two each.

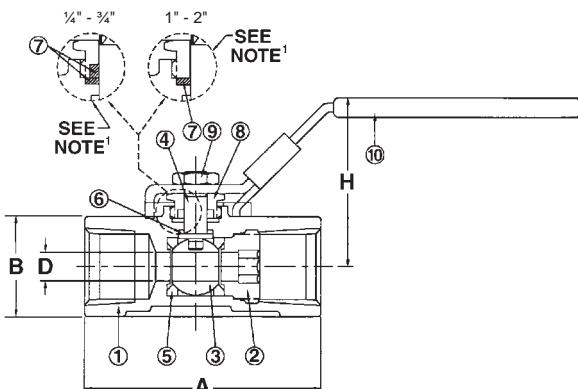
NOTE: valves are static grounded by thrust washer and packing.

Valves tested in accordance with ASME B16.34



T-560-S6-R-66-LL

Threaded



T-560-S6-R-66-LL
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size In. mm.	Dimensions						T-560-S6-R-66-LL Lbs. Kg.	Master Ctn. Qty.
	A In. mm.	B In. mm.	D In. mm.	L In. mm.	H In. mm.			
$\frac{1}{4}$ 8	2.28	58	1.10	28	.31	8	4.29 109	1.97 50 .68 .31 50
$\frac{3}{8}$ 10	2.28	58	1.10	28	.31	8	4.29 109	1.97 50 .68 .31 50
$\frac{1}{2}$ 15	2.60	66	1.10	28	.31	8	4.29 109	1.97 50 .66 .30 50
$\frac{3}{4}$ 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
$1\frac{1}{4}$ 32	3.54	90	1.97	50	.81	21	5.75 146	2.76 70 2.22 1.01 20
$1\frac{1}{2}$ 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.

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*

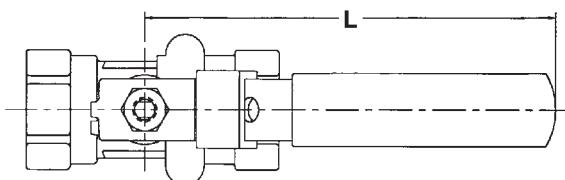
CONFORMS TO API-607 FIFTH EDITION FIRE SAFE MSS SP-110

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	Carbon Filled PTFE
7. ¹ Stem Packing	Graphoil
8. Threaded Pack Gland	Stainless Steel ASTM A 276 Type 316
9. Handle Nut	Stainless Steel ASTM A 276 Type 304
10. Locking Handle	Stainless Steel ASTM A 240 Type 304

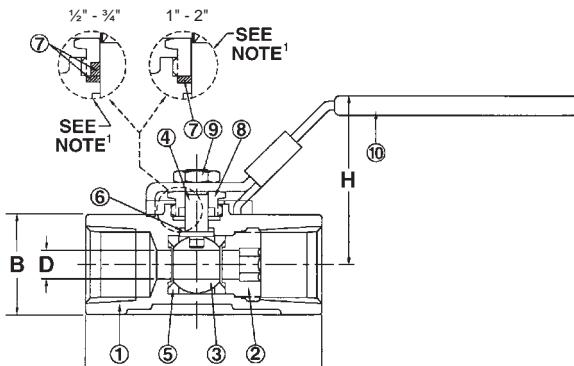
¹ $\frac{1}{2}''$ - $\frac{3}{4}''$ one each, $1''$ - $2''$ two each.

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



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

Threaded



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

NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						T-560-S6-R-66-FS-LL	Master Ctn. Qty.					
	A	B	D	L	H	lbs.							
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.

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

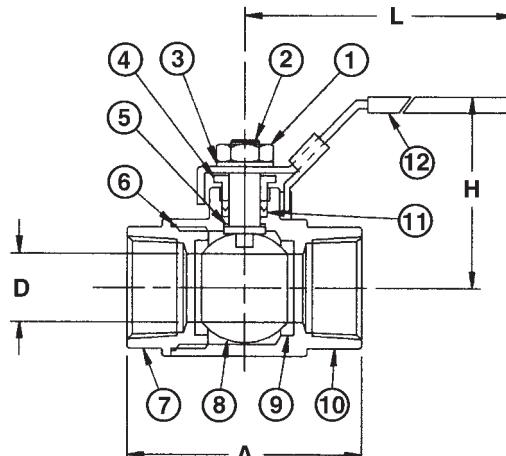
NOTE: valves are static grounded by thrust washer and packing.

Valves tested in accordance with ASME B16.34

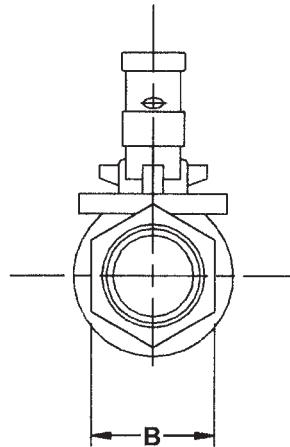


T-580-S6-R-66-LL

Threaded



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



DIMENSIONS—WEIGHTS

SIZE	Dimensions						Weight	Master Ctn. Qty.						
	In.	mm.	In.	mm.	In.	mm.								
1/4	8	20.7	53	0.83	21	0.37	9	4.33	110	1.76	45	0.51	0.23	10
5/16	10	20.7	53	0.83	21	0.37	9	4.33	110	1.76	45	0.48	0.22	10
1/2	15	2.34	59	1.06	27	0.5	13	4.33	110	1.92	49	0.66	0.3	10
3/4	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 1/4	32	3.57	91	1.89	48	1	25	7.76	197	2.74	70	2.52	1.14	5
1 1/2	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.

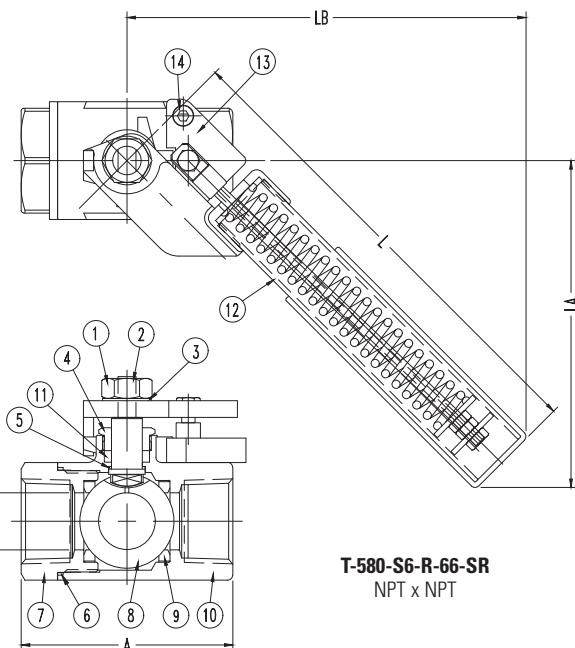
Valves tested in accordance with ASME B16.34

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 In. mm.	B In. mm.	D In. mm.	H In. mm.	L In. mm.	LA In. mm.	LB In. mm.	Lbs. Ctn. Qty.	Kg. Ctn. Qty.								
1/4 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
1/2 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
5/8 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 1/4 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 1/2 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 71 and 72 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

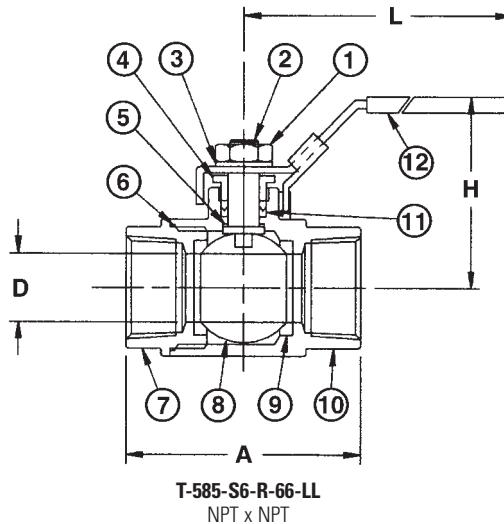
NOTE: valves are static grounded by thrust washer and packing.

Valves tested in accordance with ASME B16.34



T-585-S6-R-66-LL

Threaded

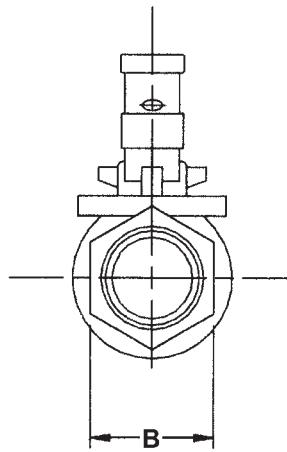


T-585-S6-R-66-LL
NPT x NPT

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						T-585-S6-R-66-LL	Master Ctn. Qty.
	A	B	D	H	L	T-585-S6-R-66-LL		
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs. Kg.		
1/4 8	2.21	56	.83	21	.43	11	2.20	.59 .27 10
3/8 10	2.21	56	.83	21	.43	11	2.20	.56 .25 10
1/2 15	2.60	66	1.02	26	.56	14	2.30	.75 .34 10
3/4 20	2.99	76	1.28	33	.81	21	2.79	.73 1.47 10
1 25	3.54	90	1.56	40	1.00	25	2.96	.75 1.47 10
1 1/4 32	3.94	100	1.97	50	1.25	35	3.56	1.00 2.21 10
1 1/2 40	4.41	112	2.20	66	1.50	38	3.84	1.55 3.42 5
2 50	5.00	127	2.76	69	2.00	50	4.24	1.00 2.36 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.

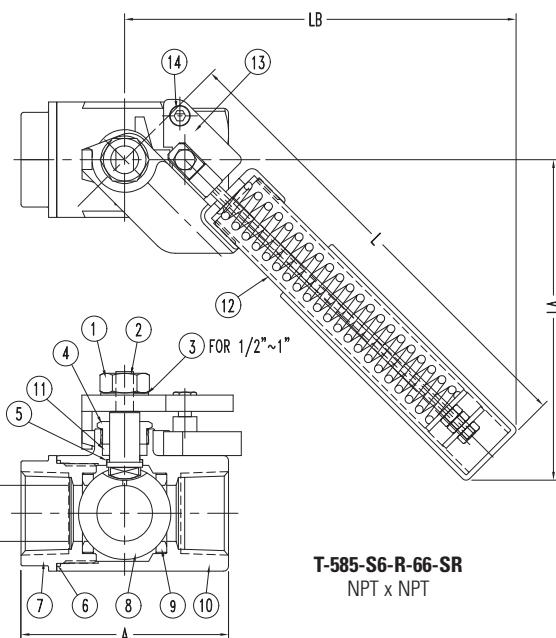
Valves tested in accordance with ASME B16.34

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

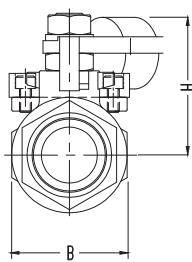


T-585-S6-R-66-SR

Threaded



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



DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions								T-585-S6-R-66-SR Master		
	A In. mm.	B In. mm.	D In. mm.	H In. mm.	L In. mm.	LA In. mm.	LB In. mm.	Lbs. Kg.	Ctn. Qty.		
1/4 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
3/8 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
1/2 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
3/4 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
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 71 and 72 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.

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*

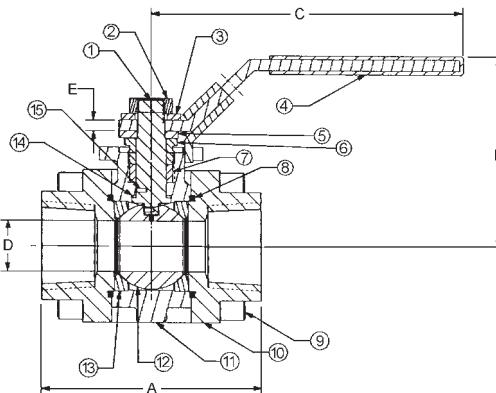
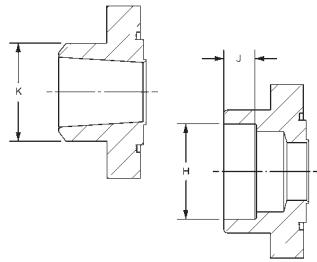
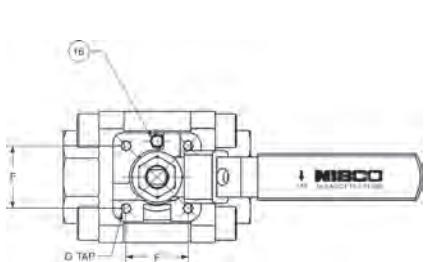
CONFORMS TO API-607 FOURTH EDITION FIRE SAFE •
MSS SP-110 • MSS SP-72 (BUTT WELD) •
API 608 ANTI-STATIC FEATURE

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. ¹ Body End	Stainless Steel ASTM A 351 Type CF8M
11. Body	Stainless Steel ASTM A 351 Type CF8M
12. Ball (Vented)	Stainless Steel ASTM A 351 Type CF8M or ASTM A 276 Type 316
13. Seat	Reinforced PTFE 15% Glass
14. Thrust Washer	Reinforced PTFE 15% Glass
15. Static Grounding Device	Stainless Steel ASTM A 276 Type 304
16. Stop Pin	Stainless Steel ASTM A 276 Type 304

¹ Threaded connections: CF8M, weld connections: CF3M.

Note: valves are static grounded by two ball detents that 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.



DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions

Size In. mm.	Dimensions												Socket Weld Weight Lbs. Kg.	Butt Weld Weight Lbs. Kg.												
	A In. mm.	B In. mm.	C In. mm.	D In. mm.	E In. mm.	F In. mm.	G Thread Tap	H Socket Flange Type	J Socket Weld Type	K Butt Weld Type	L Threaded Weight 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	1.12	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	1.28	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*

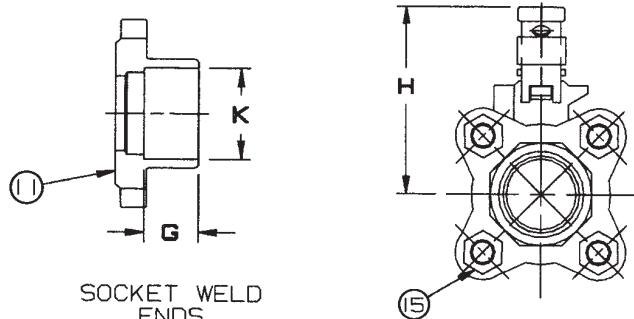
CONFORMS TO MSS SP-110

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. ¹ Body End (2)	Stainless Steel ASTM A 351 Type CF8M
12. Lock Washer (4)	Stainless Steel 304
13. Threaded Pack Gland	Stainless Steel ASTM A 276 Type 316
14. Locking Handle	Stainless Steel ASTM A 240 Type 304
15. Cap Nut (4)	Stainless Steel 304

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

¹ Threaded ends: CF8M, socket weld ends: CF3M.

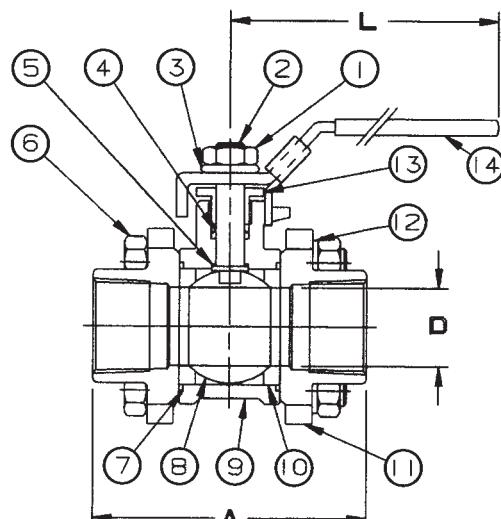


T-595-S6-R-66-LL

Threaded

K-595-S6-R-66-LL

Socket Weld (1/2"-2")



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

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions								T or K-595-S6-R-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	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*

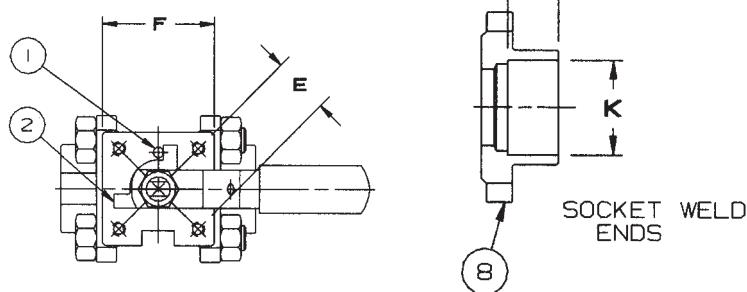
CONFORMS TO MSS SP-110

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. ¹ Body End (2)	Stainless Steel ASTM A 351 Type CF8M
9. Seat (2)	Reinforced PTFE
10. Body	Stainless Steel ASTM A 351 Type CF8M
11. Ball (Vented)	Stainless Steel ASTM A 351 Type CF8M or ASTM A 276 Type 316
12. Union Seal (2)	Reinforced PTFE
13. Cap Nut (4)	Stainless Steel 304
14. Threaded Pack Gland	Stainless Steel ASTM A 276 Type 316
15. Handle	Stainless Steel ASTM A 240 Type 304

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

¹ Threaded ends: CF8M, socket weld ends: CF3M.

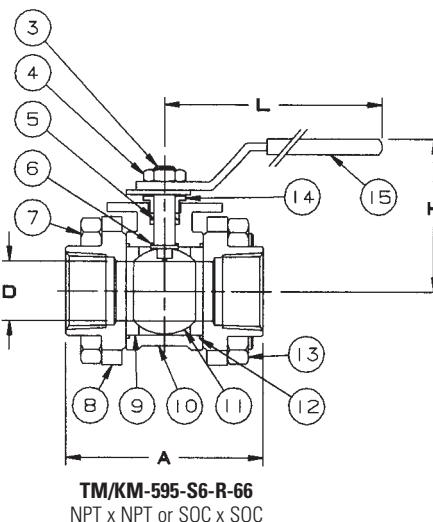


TM-595-S6-R-66

Threaded
ISO Mount

KM-595-S6-R-66

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



DIMENSIONS—WEIGHTS—QUANTITIES

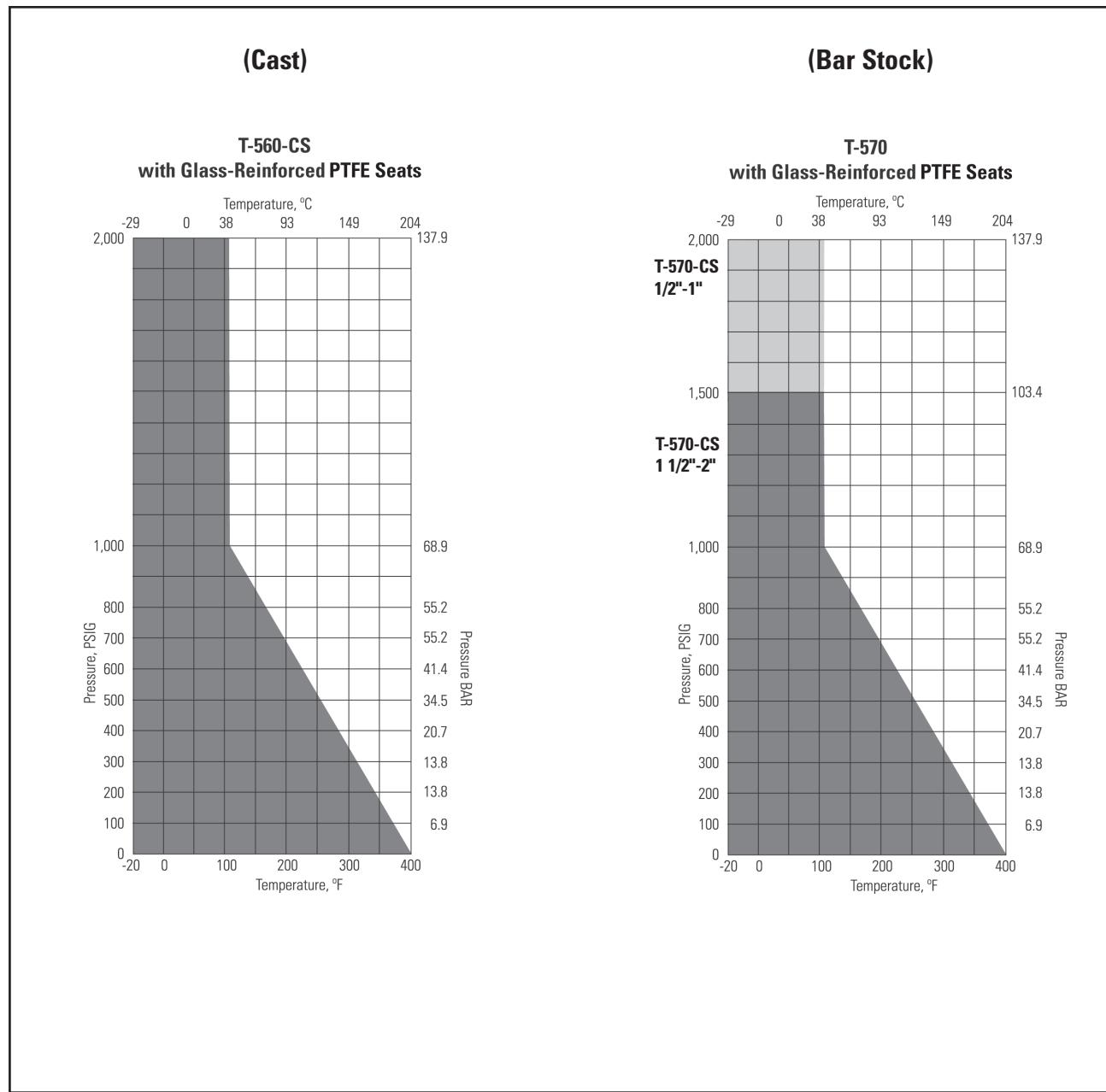
Size	Dimensions												ISO 5211	TM or KM-595-S6-R-66	Master Ctn. Qty.	
	In. mm.	A In. mm.	D In. mm.	E In. mm.	F In. mm.	G In. mm.	K In. mm.	H In. mm.	L In. mm.	ISO 5211	TM or KM-595-S6-R-66					
													Lbs.	Kg.		
1/4 8	2.49	63	.34	9	.71	18	1.42	36	—	—	—	—	1.00	.45	10	
5/16 10	2.49	63	.34	9	.71	18	1.42	36	—	—	—	—	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
5/8 20	3.03	77	.81	21	.83	21	1.65	42	.50	13	1.08	27	2.83	72	5.04	128
1 25	3.63	92	1.00	25	.88	22	1.65	42	.50	13	1.34	34	3.07	78	5.04	128
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
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
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.

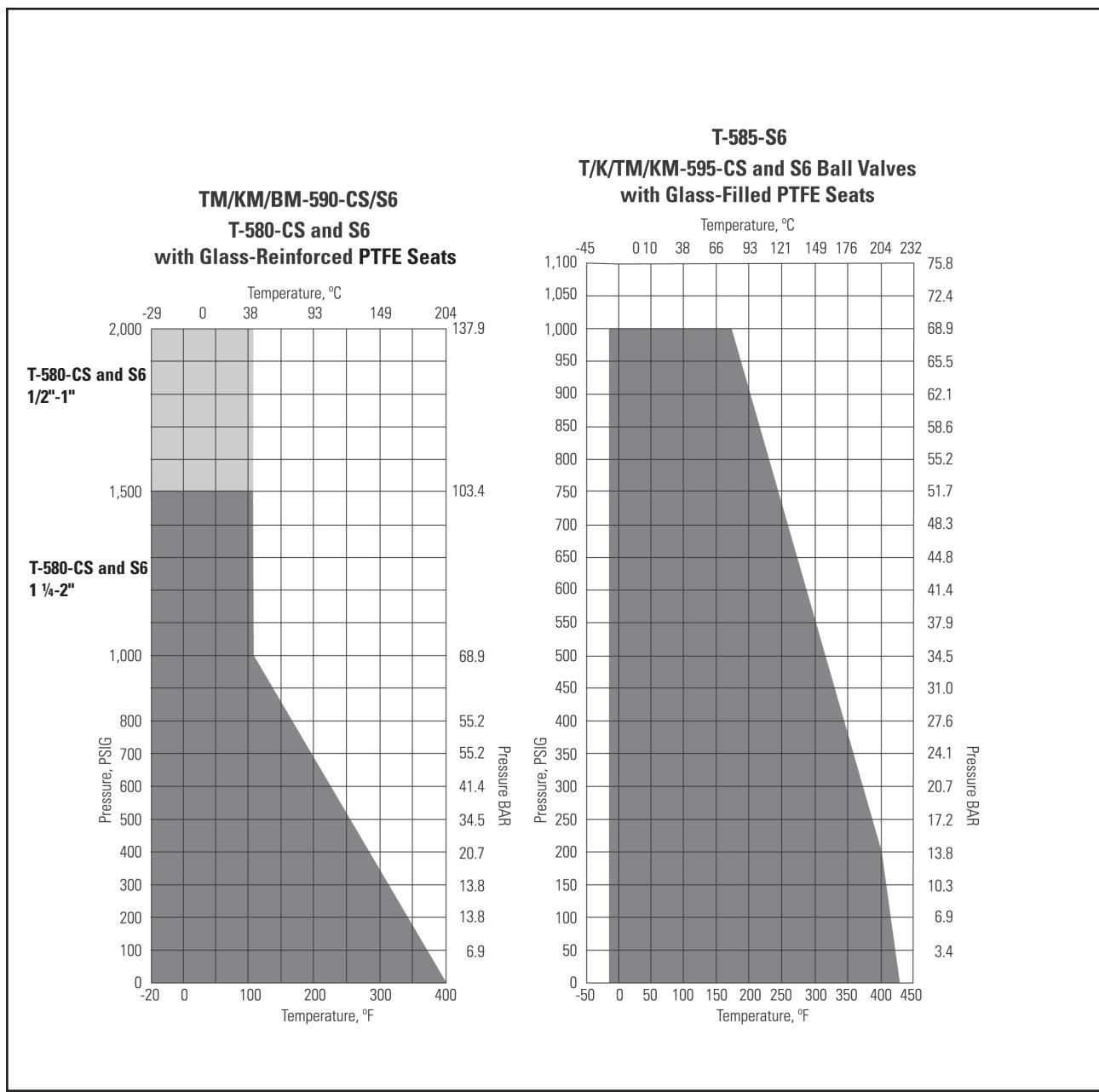
Galvanic Potential in Piping Systems

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

Visit our website for the most current information.

Flanged Ball Valves

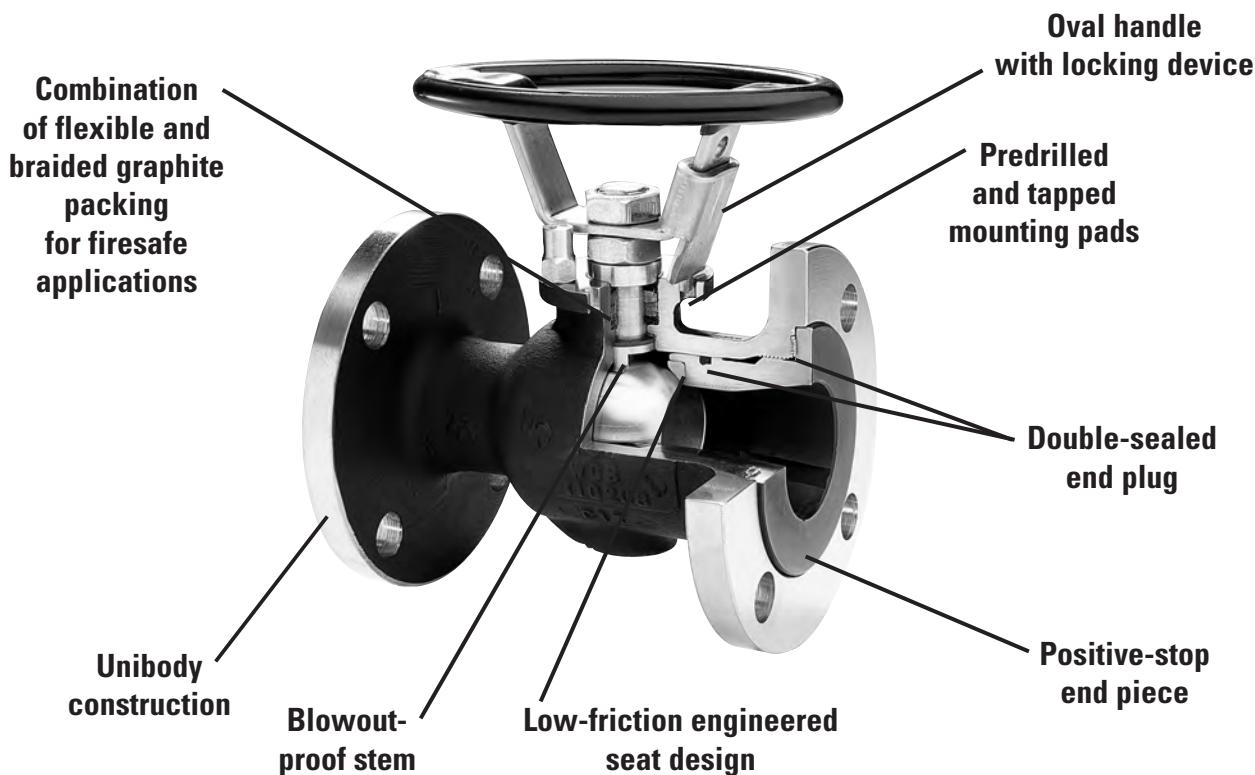
The positive solution for all your flow control applications.

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.

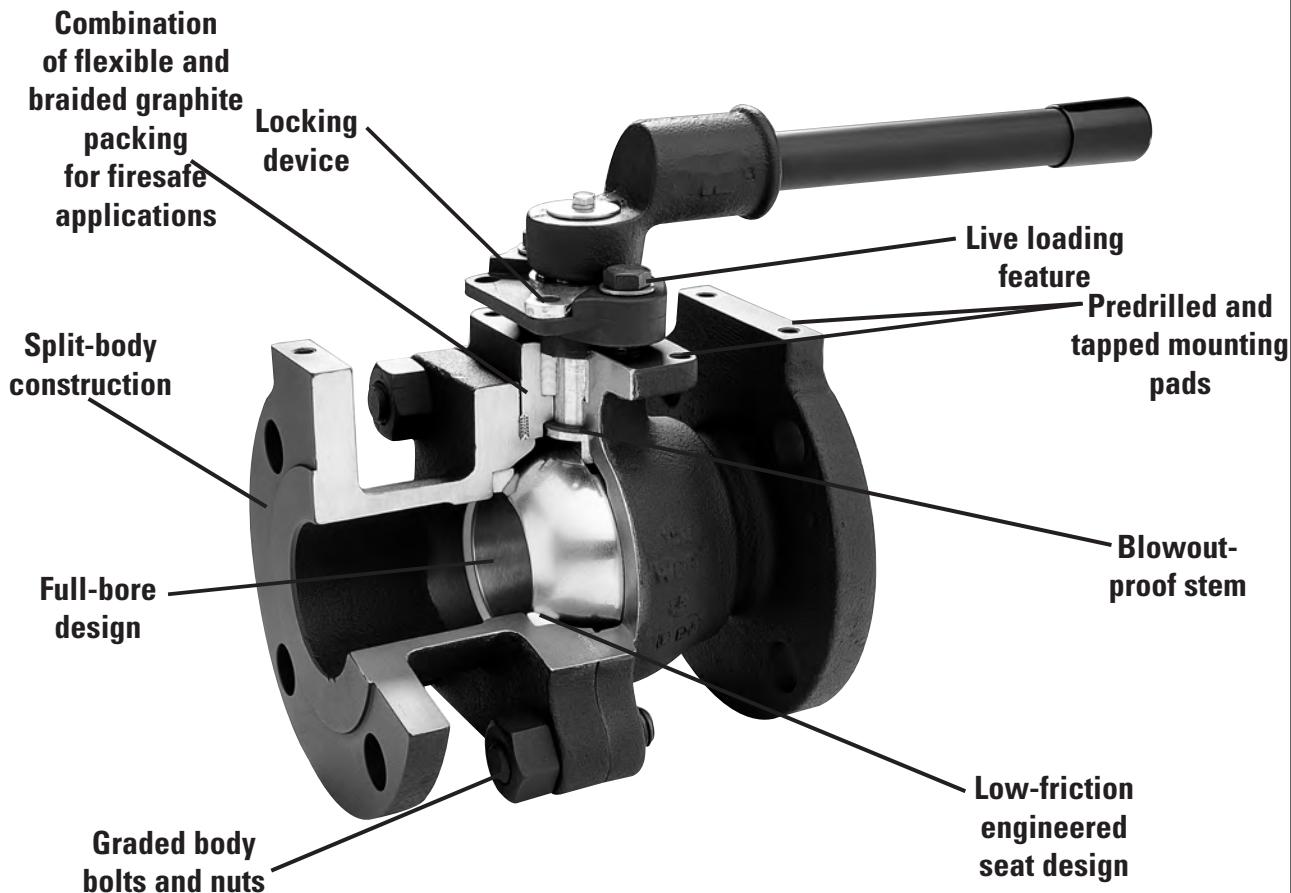
Applicable Standards

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

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

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions							
	A	B	C	D	E	F	G	H
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
3/4 20	4.63	118	2.31	50	.47	12	3.94	100
1 25	5.00	127	2.50	54	.47	12	4.31	109
1 1/2 40	6.50	165	3.25	83	.56	14	5.00	127
2 50	7.00	178	3.00	76	.62	16	6.00	132
3 80	8.00	203	4.00	102	.75	19	7.50	191
4 100	9.00	229	4.25	108	.94	24	9.00	229
6 150	10.50	267	5.25	133	1.00	25	11.00	279
8 200	11.50	297	5.50	140	1.13	29	13.50	343
10 250	13.00	330	6.50	165	1.19	30	16.00	406
12 300	14.00	356	7.38	187	1.25	32	19.00	483

Size	Dimensions												F-510-CS-R-66-FS								
	G	H	I	J	K	L	M	O	P	Lbs.	Kg.										
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

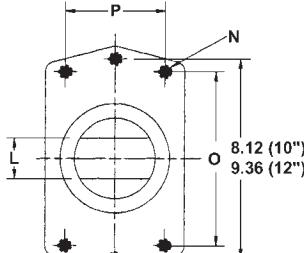
Note: valves are static grounded by thrust washer.

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

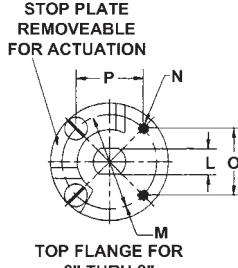
WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.



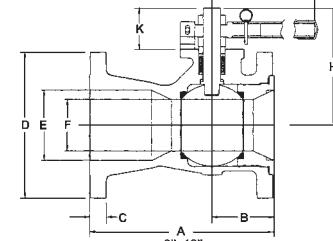
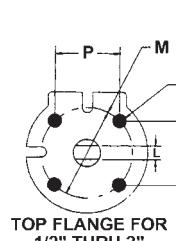
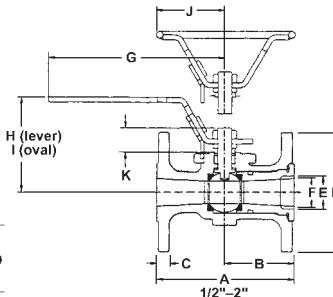
F-510-CS-R-66-FS
Carbon x Stainless
Flanged



TOP FLANGE FOR
10" & 12"



TOP FLANGE FOR
3" THRU 8"



F-510-CS-R-66-FS	Lbs.	Kg.
1.19	30	13.6
1.19	30	2.27
1.19	30	2.72
1.46	37	5.91
1.46	37	7.73
2.12	54	19.09
2.12	54	29.09
3.18	81	57.27
3.18	81	90.00
4.68	119	134.55
4.68	119	216.82

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

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

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions											
	A	B	C	D	E	F	G	H	I	J	K	L
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	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

Dimensions

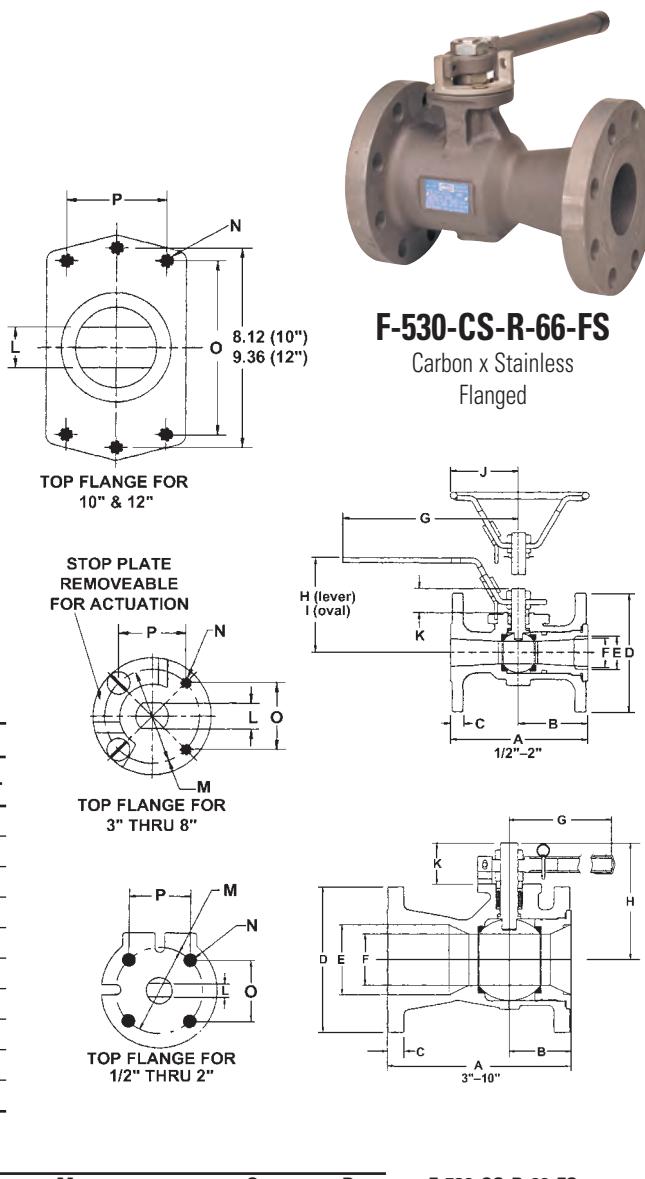
Size	G	H	I	J	K	L	M	O	P	F-530-CS-R-66-FS		
										N	In. mm.	
1/2 15	6.63	168	2.84	72	3.16	80	2.56	65	.59	15	.25	6
3/4 20	6.63	168	3.20	81	3.58	91	2.56	65	.76	19	.25	6
1 25	6.63	168	3.45	88	3.83	97	2.56	65	.93	24	.31	8
1 1/2 40	9.13	232	4.75	121	5.25	133	3.31	84	1.22	31	.56	14
2 50	9.13	232	4.88	124	5.38	137	3.31	84	1.36	35	.56	14
3 80	16.60	422	6.16	156	—	—	—	—	1.97	50	.68	17
4 100	16.60	422	7.22	183	—	—	—	—	2.16	55	.68	17
6 150	32.80	833	10.09	256	—	—	—	—	3.59	91	1.13	29
8 200	—	—	—	—	—	—	3.43	87	1.13	29	4.50	114
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.

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

MATERIAL LIST

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

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

DIMENSIONS—WEIGHTS—QUANTITIES

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

Size	Dimensions										F-515-CS-F-66-FS	Lbs.	Kg.
	G	H	J	K	L	N	O	*P	Q	R			
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	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.

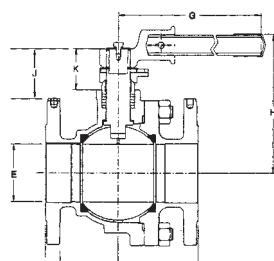
◆ For detailed operating pressure, refer to pressure temperature chart on page 86.

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.

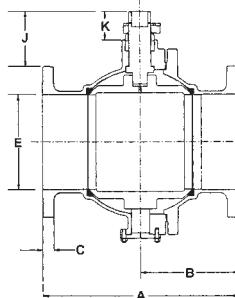


F-515-CS-F-66-FS

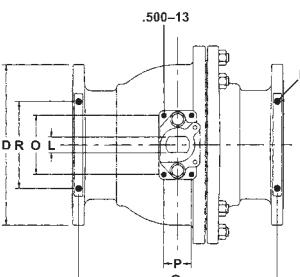
Carbon x Stainless
Flanged



1/2"-8"



10"-12"



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

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

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions					
	A	B	C	D	E	
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	
1/2 15	5.50	140	3.14	80	.56	14
3/4 20	6.00	152	3.43	87	.62	16
1 25	6.50	165	3.55	90	.69	18
1 1/2 40	7.50	191	4.13	105	.81	21
2 50	8.50	216	4.74	120	.88	22
3 80	11.12	253	5.56	141	1.12	28
4 100	12.00	305	6.01	156	1.25	32
6 150	15.87	403	7.96	202	1.44	37
8 200	19.75	502	9.87	251	1.62	41
10 250	22.38	569	11.19	234	1.88	48
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	O	*P	Q	R	Lbs.	
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Kg.	
1/2 15	5.12	130	3.52	89	.34	9	1.00	.25	.19	5	.250-20	7.00 3.18
3/4 20	6.10	155	4.13	105	.43	11	1.26	.32	.31	8	.250-20	9.00 4.09
1 25	6.10	155	4.25	109	.45	11	1.26	.32	.31	8	.312-18	11.00 5.00
1 1/2 40	9.06	230	4.97	126	.92	23	1.68	.43	.47	12	.312-18	24.50 11.14
2 50	9.06	230	5.66	144	1.58	40	1.66	.42	.63	16	.312-18	33.00 15.00
3 80	15.75	400	7.38	187	2.26	57	2.13	.54	.78	20	.375-16	72.00 32.73
4 100	15.75	400	8.09	205	2.10	53	2.13	.54	.78	20	.437-14	116.00 52.73
6 150	—	—	—	—	2.93	74	2.58	.66	1.10	28	.437-14	228.00 103.64
8 200	—	—	—	—	4.43	113	2.53	.65	1.17	30	.500-13	352.00 160.00
10 250	—	—	—	—	5.08	129	3.01	.76	1.57	40	.625-11	560.00 254.53
12 300	—	—	—	—	4.97	126	3.01	.76	1.57	40	.625-11	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.

Visit our website for the most current information.

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

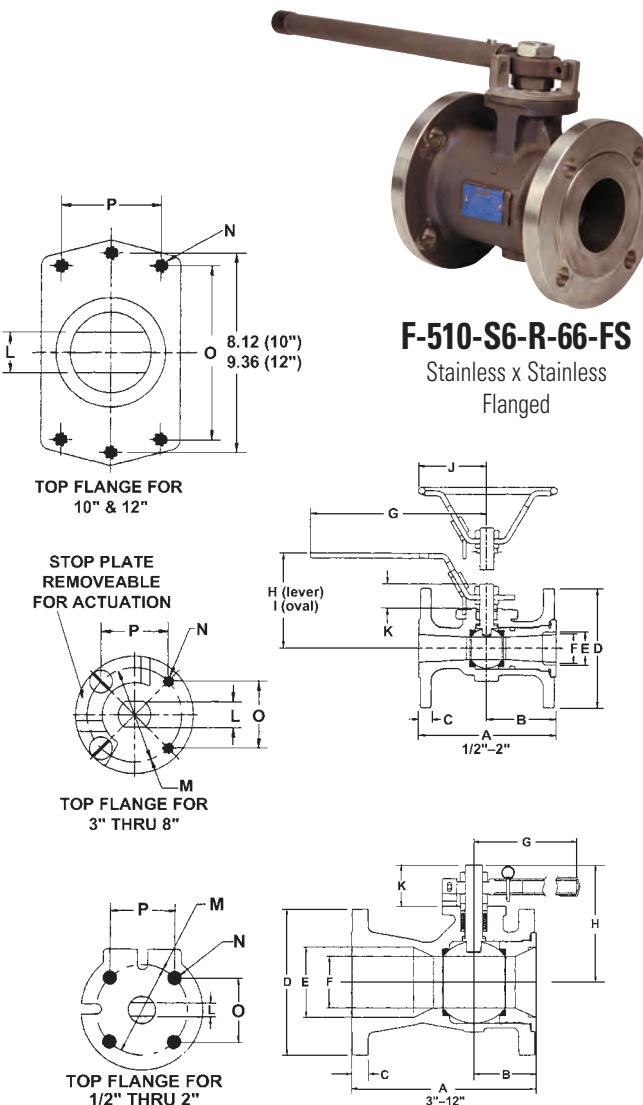
MATERIAL LIST

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

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

DIMENSIONS—WEIGHTS—QUANTITIES

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



Size	Dimensions													F-510-S6-R-66-FS								
	G		H		I		J		K		L		M		O		P		Lbs.	Kg.		
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	N	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.

Visit our website for the most current information.

Class 300 Stainless Steel Flanged Ball Valves

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

720 PSI/50 bar non-shock cold working pressure*

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

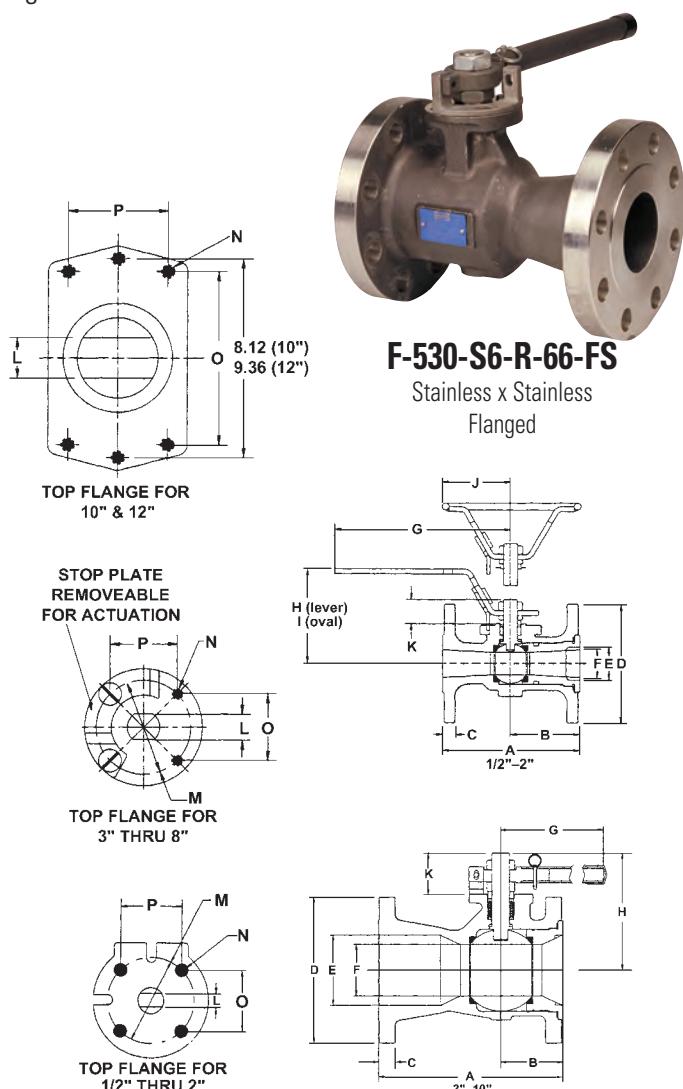
MATERIAL LIST

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

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

DIMENSIONS—WEIGHTS—QUANTITIES

Size	Dimensions						
	A	B	C	D	E	F	
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	
1/2 15	5.50	140	2.13	54	.59	15	3.81
3/4 20	6.00	152	2.31	59	.65	17	4.68
1 25	6.50	165	2.50	64	.71	18	4.94
1 1/2 40	7.50	191	3.25	83	.81	21	6.13
2 50	8.50	216	3.00	76	.87	22	6.50
3 80	11.13	283	4.00	102	1.13	29	8.25
4 100	12.00	305	4.25	108	1.25	32	10.00
6 150	15.88	403	5.25	133	1.44	37	12.50
8 200	16.50	419	5.50	140	1.63	41	15.00
10 250	18.00	457	6.50	165	1.88	48	17.50



Size	Dimensions												F-530-S6-R-66-FS	Lbs.	Kg.						
	G	H	I	J	K	L	M	N	O	P											
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	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.

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

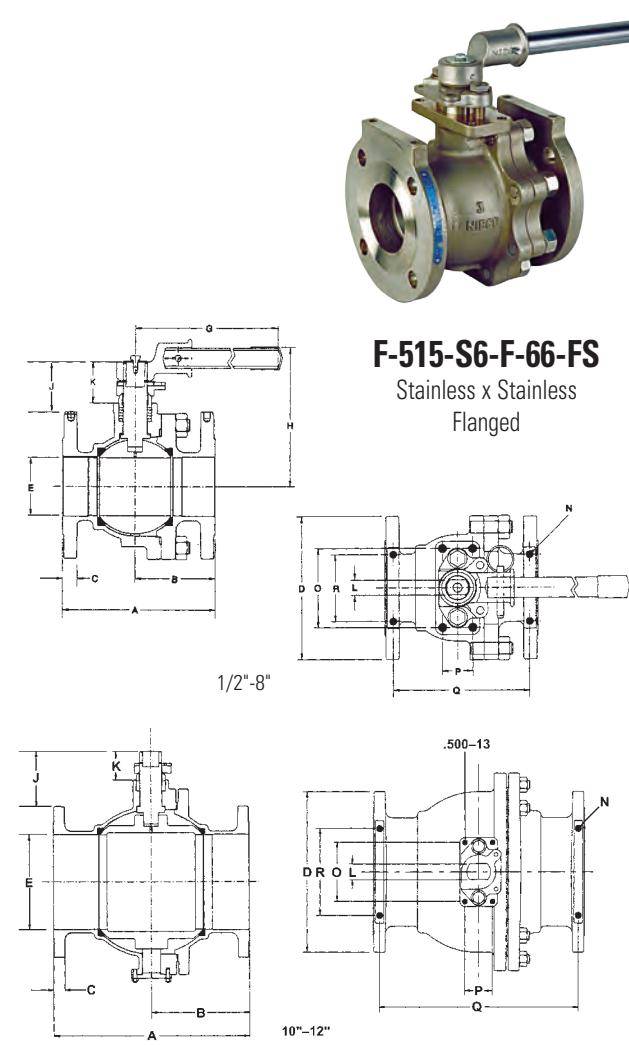
MATERIAL LIST

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

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

DIMENSIONS—WEIGHTS—QUANTITIES

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



Size	Dimensions												F-515-S6-F-66-FS
	G	H	J	K	L	N	O	*P	Q	R			
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	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.

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

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

DIMENSIONS—WEIGHTS—QUANTITIES

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

Size	Dimensions										F-535-S6-F-66-FS	Lbs. Kg.
	G	H	J	K	L	N	O	*P	Q	R		
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.		In. mm.	In. mm.	In. mm.	In. mm.		
1/2 15	5.12	130	3.52	89	.34 9	1.00 25	.19	5	.250-20	—	4.85 123	2.00 51
3/4 20	6.10	155	4.13	105	.43 11	1.26 32	.31	8	.250-20	—	5.28 134	2.00 51
1 25	6.10	155	4.25	108	.45 11	1.26 32	.31	8	.312-18	—	5.69 145	1.75 44
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
2 50	9.06	230	5.66	144	1.58 40	1.66 42	.63	16	.312-18	—	7.50 191	2.25 57
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
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
6 150	—	—	—	—	2.93 74	2.58 66	1.10	28	.437-14	4.96 126	2.36 60	14.38 365
8 200	—	—	—	—	4.43 113	2.53 65	1.17	30	.500-13	4.96 126	2.36 60	18.06 459
10 250	—	—	—	—	5.08 129	3.01 76	1.57	40	.625-11	5.90 150	2.75 70	20.43 514
12 300	—	—	—	—	4.97 126	3.01 76	1.57	40	.625-11	5.90 150	2.75 70	23.44 595

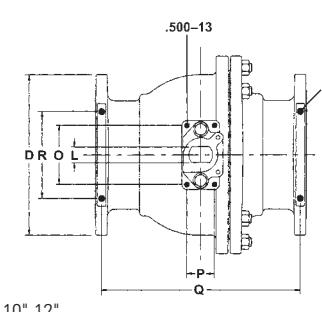
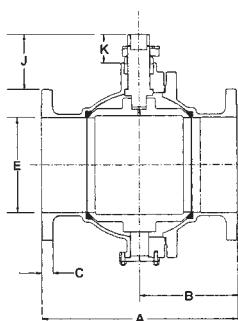
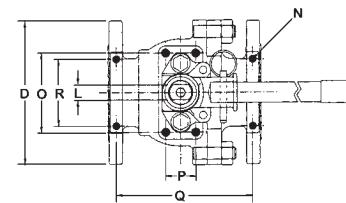
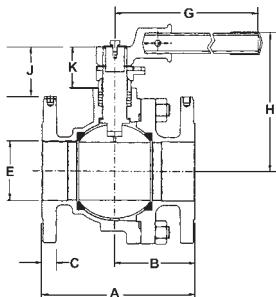
*Not drilled and tapped on 1/2"-2". Note: valves are static grounded by thrust washer.

◆ 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.



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

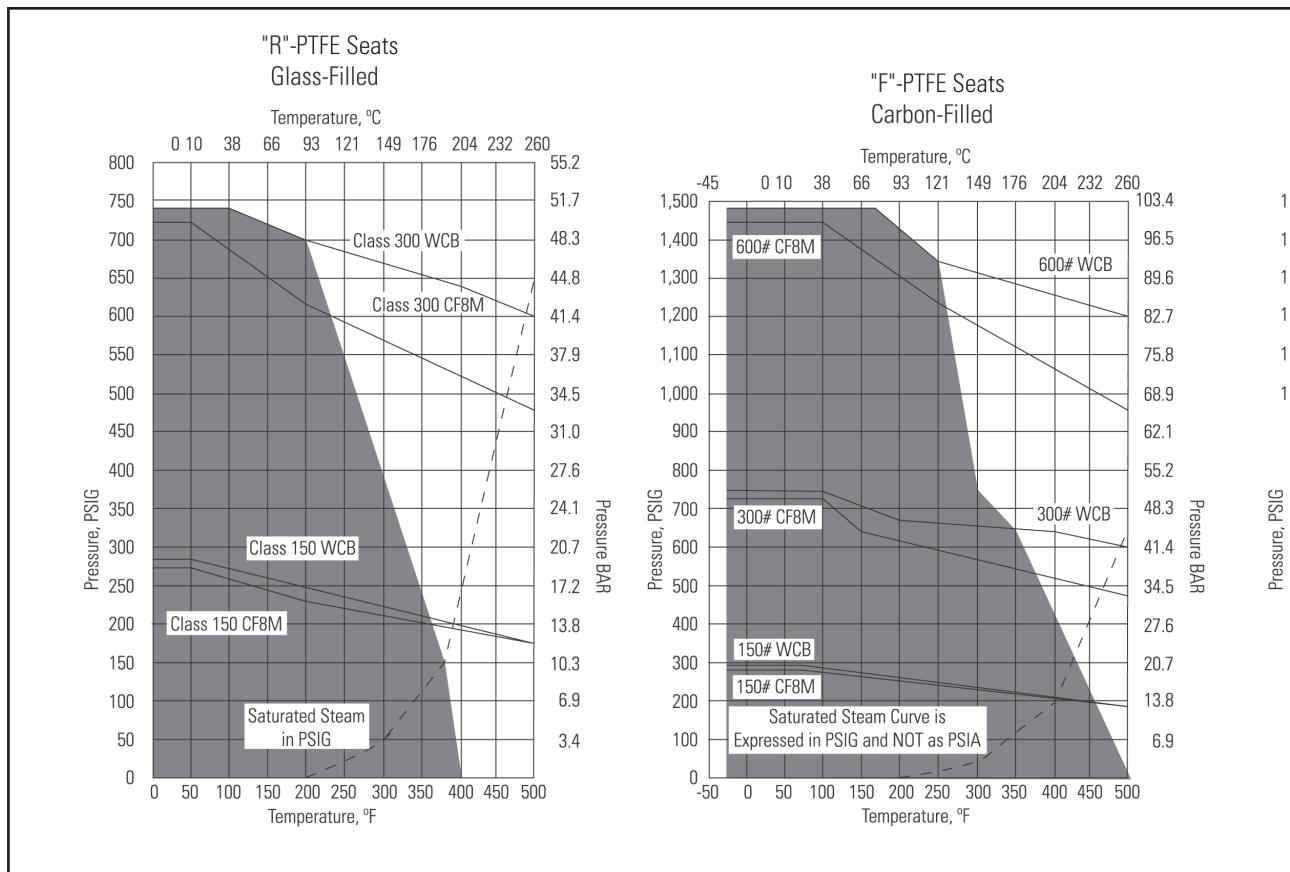


10"-12"

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

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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.

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

Visit our website for the most current information.

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

NIB-SEAL® Technical Data

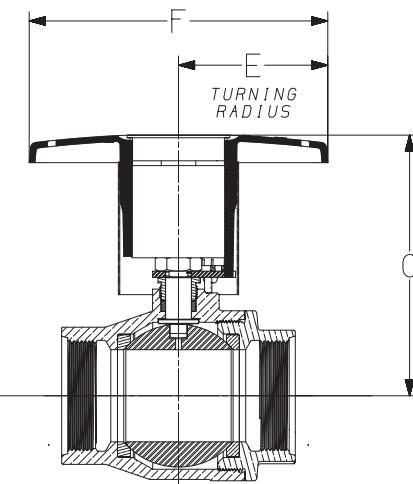
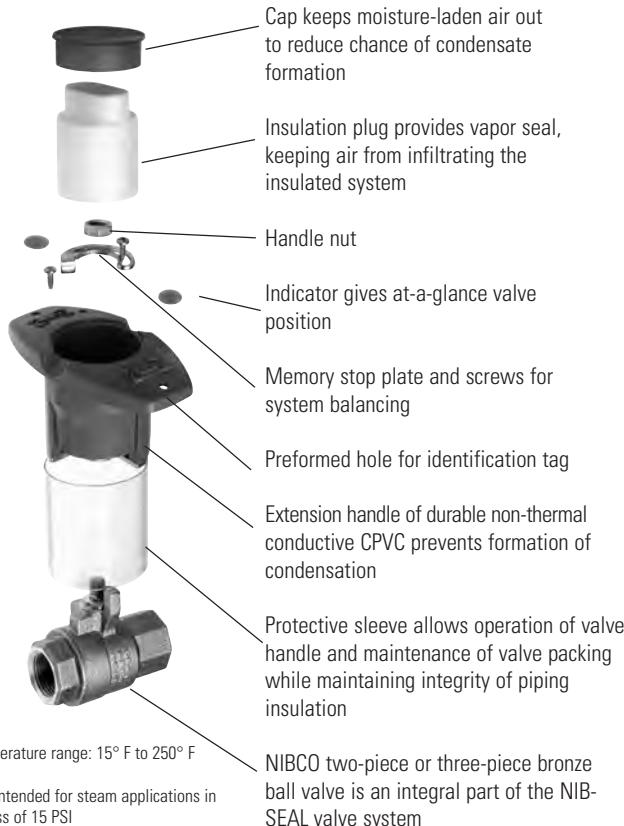
NIBCO bronze ball valves installed with NIB-SEAL® insulated handles are the only approach that keeps your insulated piping system completely intact.

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.



Size	Dimensions			Dimensions		
	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.

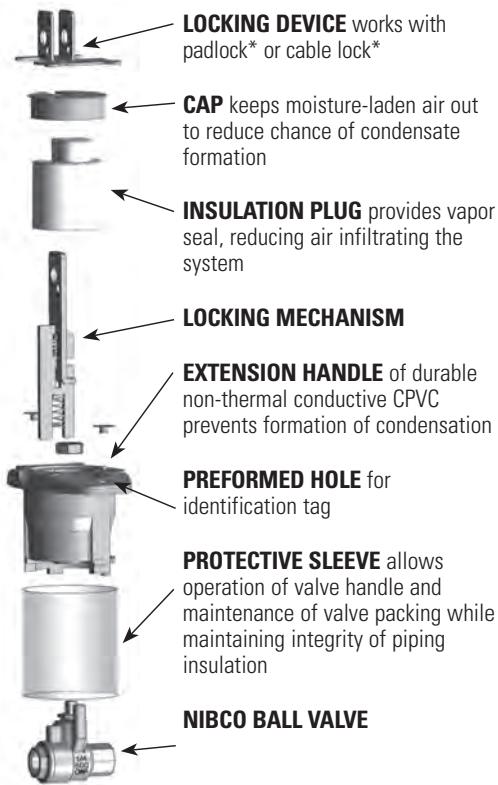
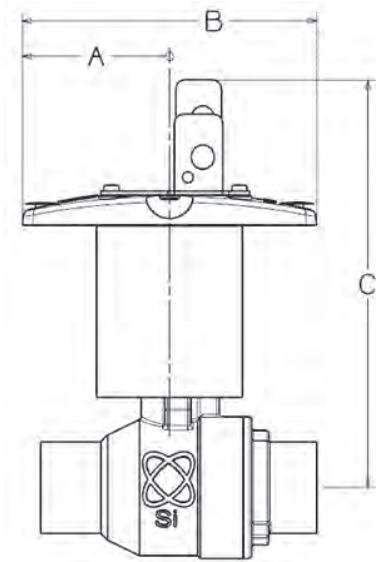
Approvals: UL 2043

Safety Lock Compatibility: Cable lock as small as $\frac{1}{8}$ " 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.

Factory installed only.



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

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, NIBCO® Press System

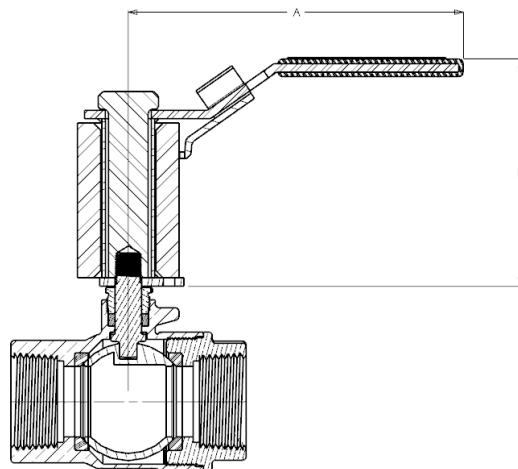
Extended Metal Locking Lever Technical Data

NIBCO bronze and leadfree* bronze ball valves installed with NIBCO Extended Metal Locking Lever handles are more heat resistant and suitable for soldering applications.

The Extended Metal Locking Lever is made for your more durable applications. Paired with a series 580, 585, 590, or 595 NIBCO ball valve, this handle extends for those hard-to-reach places and locks to prevent tampering. The metal handle provides a higher heat resistance making this a solution suitable for soldering applications

Safety Lock Compatibility: Cable lock as small as $\frac{1}{8}$ " diameter to padlock as big as $\frac{1}{4}$ " diameter shackle.

Material of Construction: MPIF 35 F-0008-30 Carbon Steel and AISI 1215 Carbon Steel components



Dimensions

Series 585				
Sizes	A		B	
	In.	mm.	In.	mm.
$\frac{1}{4}$ "	3.96	101	3.15	80
$\frac{3}{8}$ "	3.96	101	3.15	80
$\frac{1}{2}$ "	3.96	101	3.15	80
$\frac{3}{4}$ "	4.75	121	3.22	82
1"	4.75	121	3.22	82
$1\frac{1}{4}$ "	6.75	171	3.36	85
$1\frac{1}{2}$ "	6.75	171	3.36	85
2"	6.75	171	3.36	85

Order appropriate factory installed NIBCO valve figure number with suffix "EMLL". Example: T-585-70-EMLL, $\frac{1}{2}$ "

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. Stainless steel trim components are recommended for all elevated temperature applications, including but not limited to steam service.

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 airborne 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	580 570	TC -CS	590 -580	595 -CS	560 -S6	580 -S6	585 -S6	590 -S6	595 -S6	510	515	530	535
End-Type																	
Threaded	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.
Seat Material																	
PTFE (Virgin) (-Y)	Std.		Std.														
RPTFE (Glass Filled) (-R)	Std.	Std.		Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.		
FPTFE (Carbon Graphite) (-F)															Std.		Std.
Nylon (-N)																	
Handles																	
CS Standard Lever Hdle.	Std.	Std.	Std.	Std.	Std.	Std.			Std.						*	*	*
CS Locking Lever Hdle.		●	●	●	*		Std.	Std.	Std.								
CS Extended Lever Hdle.		*	*1														
CS Extended Lever Hdle. w/memory stop		*1	*1														
CS Round Hdle.	*	*	*1														
CS Extended Round Hdle.		*	*1														
CS Oval Hdle.				●													
CS Locking Oval Hdle.				●										*2	*2		
CS Extended T Hdle.		*	*1														
CS Horizontal Chain Lever Hdle.		●	*														
CS Vertical Chain Lever Hdle.		●	*														
CS Wing Hdle.		*1	*1														
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								*			*	*					
Other Options																	
Actuation		*3	*					*	*3	*			*	*3	*	*	*
Anti-Static/Grounded Stem				Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.
Fire Rated					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.

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.

Typical Applications

High pressure steam and thermal fluids.

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.

NIBCO Figure Number Designation

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

Unique Features

Higher cycle life than other PTFE resins.

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

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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.

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

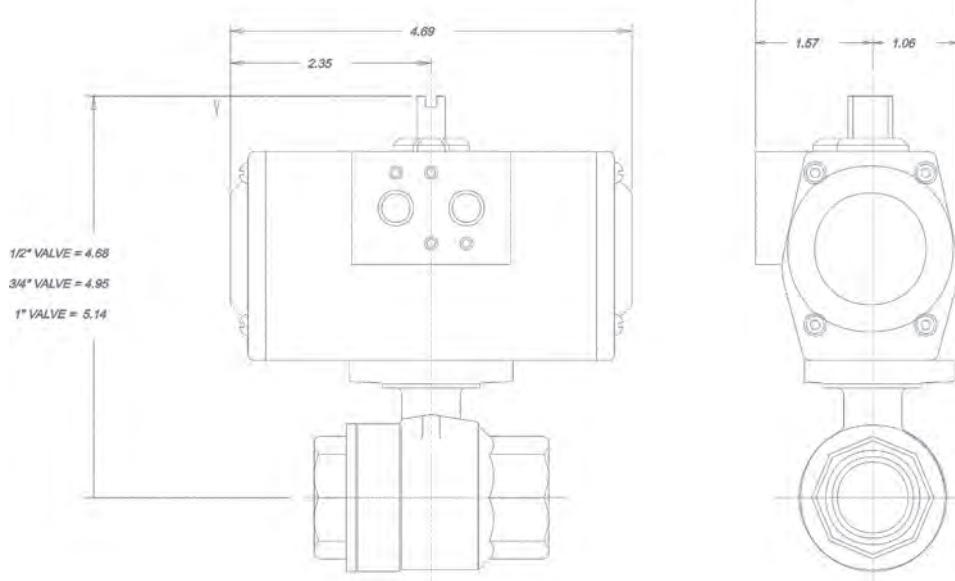
CONFORMS TO MSS SP-110,
ACTUATOR MOUNT PER ISO 5211

MATERIAL LIST

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



TM-585-70-66-AP



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

Note:

1. Spring return actuators are set for 80PSI air supply standard.

2. Spring return actuators are set for fail to close as standard.

3. Specify size and figure number when ordering.

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.

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

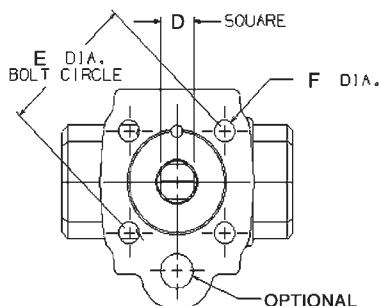
MATERIAL LIST

PART	SPECIFICATION
1. Stem	Stainless Steel ASTM A 276 Type 316
2. O-Ring (2)	FKM
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

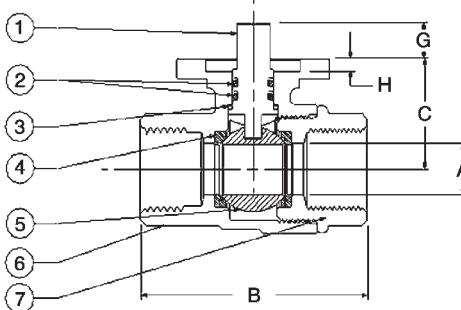


Reduced Orifice Ball – CV Ratings

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	I	Lbs. Kg.									
1/2	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	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.

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
T-560-BR-R/Y One-Piece Bronze Reduced Port	1/4"	35	65	65
	5/8"	35	65	65
	1/2"	35	65	65
	3/4"	70	100	100
	1"	130	175	175
	1 1/4"	175	230	230
	1 1/2"	225	265	265
	2"	370	510	510
580-70 Two-Piece Bronze Conventional Port	1/4"	N/A	N/A	N/A
	5/8"	N/A	N/A	N/A
	1/2"	N/A	N/A	N/A
	3/4"	N/A	N/A	N/A
	1"	N/A	N/A	N/A
	1 1/4"	120	185	185
	1 1/2"	185	240	240
	2"	220	300	300
	2 1/2"	250	410	410
	3"	370	540	540
585-70 Two-Piece Bronze Full Port	1/4"	30	50	50
	5/8"	30	50	50
	1/2"	30	50	50
	3/4"	55	75	75
	1"	90	130	130
	1 1/4"	120	185	185
	1 1/2"	185	240	240
	2"	220	300	300
	2 1/2"	N/A	N/A	N/A
	3"	N/A	N/A	N/A

Figure #	Size	0-100 PSI	101-500 PSI	501-600 PSI
585-70-W3 Three-Way Bronze Full Port Maximum Rating is 400 PSI CWP	1/2"	42	42	N/A
	5/8"	67	67	N/A
	1"	114	114	N/A
	1 1/4"	159	159	N/A
	1 1/2"	218	218	N/A
	2"	268	268	N/A
TM-585-70-66 Two-Piece w/Pad Bronze Full Port	1/2"	25	—	30
	5/8"	30	—	40
	1"	30	—	50
	1 1/4"	55	—	70
	1 1/2"	55	—	110
	2"	110	—	260
590-Y Three-Piece Bronze Conventional Port	1/4"	N/A	N/A	N/A
	5/8"	N/A	N/A	N/A
	1/2"	N/A	N/A	N/A
	3/4"	N/A	N/A	N/A
	1"	N/A	N/A	N/A
	1 1/4"	125	230	230
	1 1/2"	150	275	275
	2"	170	300	300
	2 1/2"	250	410	410
	3"	370	540	540
595-Y Three-Piece Bronze Full Port	1/4"	45	65	65
	5/8"	45	65	65
	1/2"	45	65	65
	3/4"	50	80	80
	1"	125	230	230
	1 1/4"	150	275	275
	1 1/2"	170	300	300
	2"	250	410	410
	2 1/2"	370	540	540
	3"	N/A	N/A	N/A

Figure #	Size	0-100 PSI	101-500 PSI	501-600 PSI	601-1000 PSI	1001-1500 PSI	1501-2000 PSI
T-560-CS/S6-R One-Piece CS/SS Reduced Port	1/4"	40	70	75	80	85	100
	5/8"	40	70	75	80	85	100
	1/2"	40	70	80	85	90	110
	3/4"	75	100	105	110	125	140
	1"	135	190	200	215	245	275
	1 1/4"	180	240	250	270	290	330
	1 1/2"	225	300	310	330	365	410
	2"	370	460	490	580	685	790
T-570-CS-R One-Piece Bar Stock CS Reduced Port	1/2"	40	65	70	80	90	105
	5/8"	70	95	100	105	120	135
	1"	125	180	190	205	240	270
	1 1/4"	170	230	240	260	285	320
	1 1/2"	210	285	295	320	355	395
	2"	350	440	470	560	665	770
T-580-CS-R Two-Piece CS Conventional Port	1/4"	40	40	50	55	65	80
	5/8"	40	40	50	55	65	80
	1/2"	75	75	85	95	105	125
	3/4"	100	100	110	120	130	150
	1"	120	130	140	150	170	215
	1 1/4"	165	175	185	200	250	300
	1 1/2"	200	200	220	250	300	350
	2"	290	300	320	350	400	450

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Ball Valve Torque Charts

Ball Valve Torque Requirements Operating Torque in Inch/Pounds

Figure #	Size	0-100 PSI	101-500 PSI	501-600 PSI	601-1000 PSI	1001-1500 PSI	1501-2000 PSI
T-580-S6-R	1/4"	65	70	75	90	105	125
TC-580-CS-R	5/8"	65	70	75	90	105	125
Two-Piece	1/2"	65	75	80	95	110	130
CS/SS	3/4"	85	100	105	115	130	150
Conventional	1"	100	125	135	150	180	215
Port	1 1/4"	135	160	170	195	250	300
	1 1/2"	175	200	210	250	300	350
	2"	245	290	305	335	390	450
TM/KM-595-CS/S6-R	1/4"	65	70	75	80	—	—
T/K-595-CS/S6-R	5/8"	65	70	75	80	—	—
Three-Piece	1/2"	75	80	85	100	—	—
CS/SS	3/4"	130	150	165	180	—	—
Full Port	1"	150	220	230	250	—	—
	1 1/4"	250	290	300	325	—	—
	1 1/2"	310	350	365	400	—	—
	2"	390	480	495	550	—	—
TM/KM/BM-590-CS/S6-R	1/2"	50	50	55	60	75	90
Three-Piece	3/4"	85	90	95	100	120	150
CS/SS	1"	130	140	145	150	170	200
Conventional	1 1/4"	175	180	190	210	230	280
Port	1 1/2"	275	300	310	325	360	400
	2"	325	350	360	385	440	500

Figure #	Size	0-100 PSI	101-285 PSI
F-510	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
F-515	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
F-530	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
F-535	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

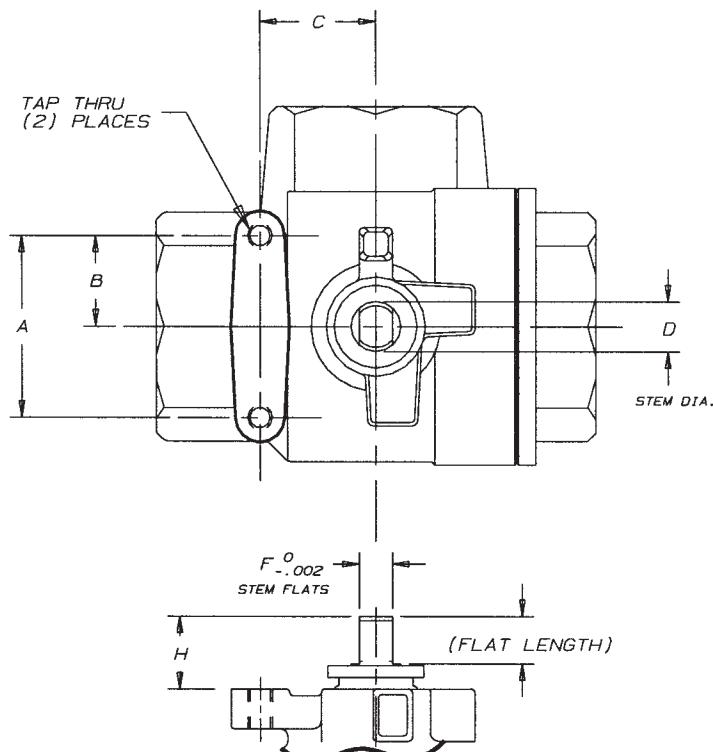
Notes:

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.

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Three-Way Bronze Ball Valves Data for Actuation

NIBCO® T-585-W3 Series



T-585-W3
3-Way Ball Valve

Dimensions

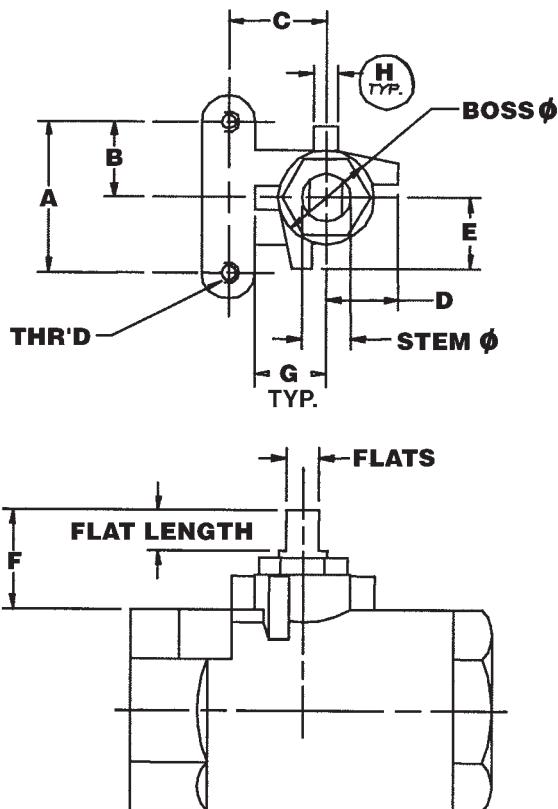
Size	A	B	C	Tap Thru	D	F	H	Flat Length
In. mm.	In. mm.	In. mm.	In. mm.		In. mm.	In. mm.	In. mm.	In. mm.
1/2 15	1.38	.35	.69	17	.88	.22	#10-24	.31 8 .22 6 .81 21 .30 8
3/4 20	1.38	.35	.69	17	.88	.22	#10-24	.38 10 .25 6 .95 24 .38 10
1 25	1.38	.35	.69	17	.88	.22	#10-24	.38 10 .25 6 .93 24 .36 9
1 1/4 32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

Actuator mounting data for two-piece bronze ball valves with mounting pads – TM-585 series page 23.

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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

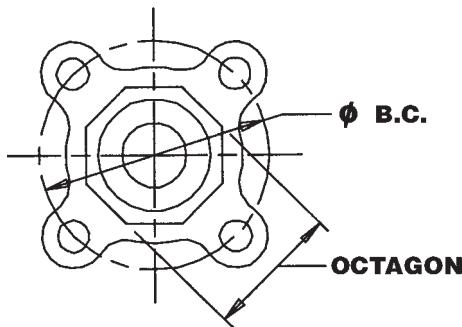
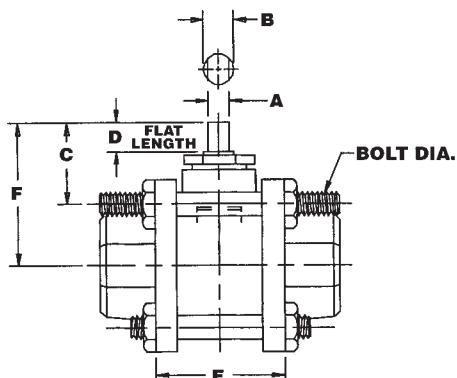
Dimensions

Size In. mm.	Dimensions												Lb/in Torque 0 PSI													
	A In. mm.	B In. mm.	C In. mm.	D In. mm.	E In. mm.	F In. mm.	G In. mm.	H In. mm.	Flat Length In. mm.	Stem Ø In. mm.	Boss Ø In. mm.	Thr'd														
1/2 15	1.13	.29	.56	.14	.50	.13	.55	.14	.94	.24	.50	.24	.25	.6	.20	.5	.39	.10	.31	.8	.71	.18	10-24	69		
3/4 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
1 1/4 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
1 1/2 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

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Three-Piece Bronze Ball Valves Data for Actuation

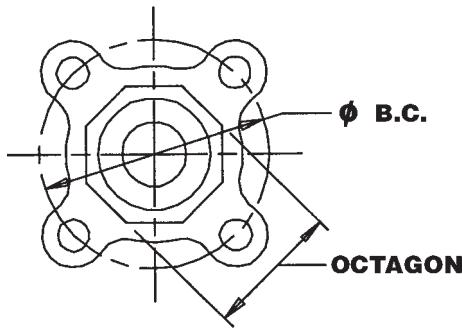
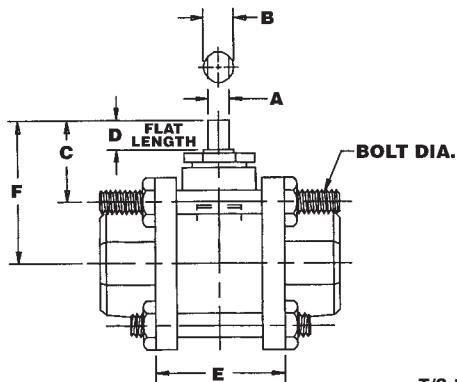
NIBCO® T/S-590 and TS-595 Series



T/S-590 Series

Dimensions

Size	A ^{±.002}	B	C ^{±.03}	D	E ^{±.03}	F	Bolt Dia.	Octagon	Ø BC
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.		In. mm.	In. mm.
1 1/4 32	.25	.38	10	1.09	.28	.38	10	2.32 59	2.00 51 5/16-18
1 1/2 38	.38	.56	14	1.59	.40	.50	13	2.63 67	2.62 66 5/16-18
2 50	.38	.56	14	1.62	.41	.50	13	3.12 79	2.81 71 5/16-18
2 1/2 63	.38	.56	14	1.56	.40	.56	14	3.88 99	3.12 79 3/8-16
3 76	.44	.75	19	2.09	.53	.81	20	4.72 120	4.03 105 7/16-14



T/S-595 Series

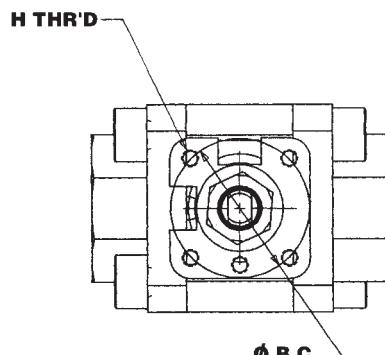
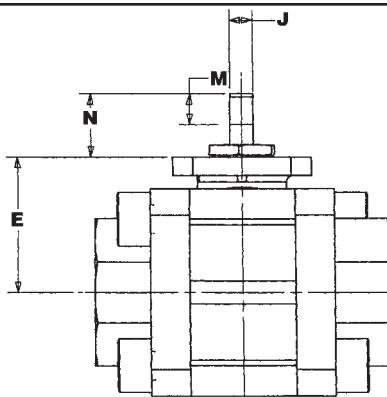
Dimensions

Size	A ^{±.002}	B	C ^{±.03}	D	E ^{±.03}	F	Bolt Dia.	Octagon	Ø BC
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.		In. mm.	In. mm.
1/2 13	.22	.5	.31	.8	.84	.21	.30	.8	1.38 35
3/4 19	.25	.6	.38	10	1.09	.28	.38	10	1.87 47
1 25	.25	.6	.38	10	1.09	.28	.38	10	2.00 51 5/16-18
1 1/4 32	.38	.56	14	1.59	.40	.50	13	2.62 67	2.62 66 5/16-18
1 1/2 38	.38	.56	14	1.62	.41	.50	13	3.12 79	2.81 71 5/16-18
2 50	.38	.56	14	1.56	.40	.56	14	3.88 99	3.12 79 3/8-16
2 1/2 63	.44	.75	19	2.09	.53	.81	20	4.72 120	4.03 105 7/16-14

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Three-Piece CS/SS Ball Valves Data for Actuation

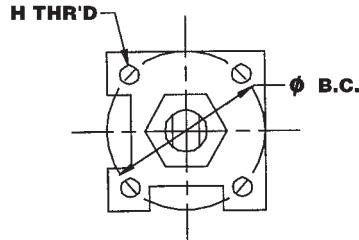
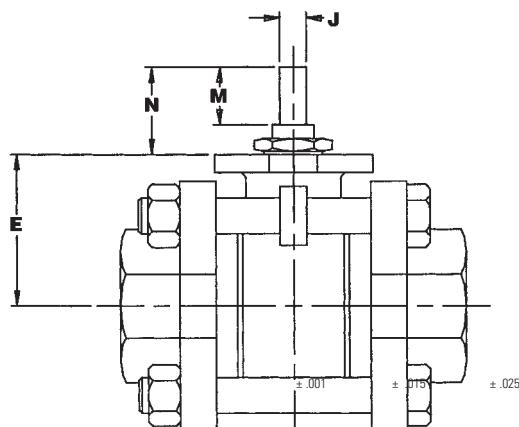
NIBCO® TM/KM/BM-590 and TM/KM-595 Series



TM/KM/BM-590 Series

Dimensions

Size	J	M	N	E	H	BC						
In. mm.	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.	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

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Engineering Data Index



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Specifications

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

Ball Valves

MSS SP-110	Ball valves threaded, socket-welding, solder joint, grooved and flared ends.
FED SPEC WW-V-35C, Type II, Class C, D, Style 1 and 3	Ball valves threaded, socket-welding, solder joint, grooved and flared ends were discontinued in 1998. (for reference only)
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.

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Temperature Limits of Materials

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

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

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

^AIncluding other non-corrosive liquids and gases.

^BASTM B 32, Alloy Grade Sn50.

^CASTM B 32, Alloy Grade Sb5.

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

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

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

^G 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%.

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

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

Temperature ¹ Temperature	Gray Iron			Ductile Iron Class 150	
	Class 125 200 WOG		Class 250 500 WOG		
	°F	°C	2"-12" 14"-24" 30"-48"	2"-12" 14"-24"	
-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.

¹Buna-N Disc Valves limited to 180° F temperatures.

*Maximum temperature for bronze trim or PTFE

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

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

³PTFE disc valves limited to 450° F temperatures.

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

†Tables from MSS SP-80

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Flow Data

C_v 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_v 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
GATES																
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
GLOBES																
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
CHECKS																
S/T-413, 433, 473 (Swing)	—	1.3	2.5	4.8	14.3	24	43	60	102	150	238	315	435	675	1,000	
S/T-480 (Poppet)	—	—	3.7	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
F-910, 960 (Poppet)										110	155	—	278	431	625	1,115
W-910, 960 (Poppet)										66	88	130	—	228	350	520
G-920-W, KG-900-W										77	129	209	—	358	573	898
W-920-W, KW-900-W										76	161	224	—	400	648	1,060
BALL																
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	—	—					
BUTTERFLY																
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

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Gas Flow:

$$Q = 1360 C_V \sqrt{\frac{\Delta P \times P_1}{ST}}$$

where . . . Q = gas flow (SCFH—std. cu. ft/hr)
 S = specific gravity of gas (air = 1.0)
 T = temp—degrees Rankine ($^{\circ}\text{F} + 460$)
 ΔP = pressure drop across valve (psi)
 P_1 = upstream pressure (psia) absolute

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

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Properties of Valve Materials

Type	Alloy	ASTM No.	Other Alloy Designation	Nominal or Maximum Chemical Composition							
				AL	C	Cr	Co	Copper Cu	Iron Fe	Lead Pb	Manga-
											Denum 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 87500	.500				79.0		.09	
	Copper-Silicon Alloy	B 584	UNS 87600					89.0			
Copper	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 (Wrot)	B 75	UNS C12200					99.9			
	Gray Iron	A 126	Class B								
	3% Ni Gray Iron (Modified)	A 126	Class B								
Iron	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)	A 536	65-45-12								
	(Ductile)	A 536	80-55-06								
Alum.	(Ni-Resist)	A 439	D2C		2.9	.5			2.4	1.0	
	Commercial Aluminum 380	SC 84 A modified	UNS A38000	87.0				1.0	1.3	.35	

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NOMINAL OR MAXIMUM CHEMICAL COMPOSITION								NOMINAL PHYSICAL PROPERTIES			
NICKEL NI	PHOS P	SILICON Si	SULFUR S	TIN Sn	TITAN- IUM Ti	TUNG- STEN W	ZINC Zn	TENSILE STRENGTH Psi	YIELD STRENGTH Psi	% ELONGATION	HARDNESS
							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
		3.0–5.0					12.0–16.0	67,000	30,000	21	115 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
24.0	.08	3.0						80,000	55,000	6	160 HB
								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

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Properties of Valve Materials

NOMINAL OR MAXIMUM CHEMICAL COMPOSITION										
ALLOY	ASTM NO.	OTHER ALLOY DESIGNATION							MANGANESE Mn	MOLYBDENUM Mo
			AL	CARBON C	CHROME Cr	COBALT Co	COPPER Cu	IRON Fe	LEAD Pb	
Stainless Steel	Wrot 304	A 167 304	UNS S30400	.08	19					2
	Cast 316	A 351 CF8M	UNS S31600	.08	20					1.5 2.5
	Cast 316	A 743 CF16F		.16	20					1.5 1.5
	Cast 316	A 743 CF8M		.08	20					1.5 2.5
	Wrot 316	A 276 316	UNS S31600	.08	17					2
	Cast 410	A 217 CA 15		.15	13					1 2.5
	Forged 410	A 182 F6A2		.15	13					1
	Wrot 410	A 276 410	UNS S41000	.15	13					1
	Wrot 416	A 582	UNS S41600	.15	13					1.25
	Wrot 420	A 276 420	UNS S42000	.15	13					1
Steel	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
Trim Steels	B-7 Alloy Steel Studs	A 193 B7		.4	1					.85 .2
	304 SS Nuts	A 194 GR8		.08	19					2
	2-H Alloy Steel Nuts	A 194 2H		.4						
	Reg. Steel Bolting	A 307 Gr. B		.2						.45
	Steel Bolting	A 449		.4						.6
	304SS Bolting	A 493 304	UNS S30400	.08	19					2
	Eyebolts	A 489		.48						1.0
	Gland Nuts	A 563 Gr. A		.37	.55		.35			1.0
	H/W Nuts	A 108 1020	UNS G10200	.20						.45
	Swing Bolt Pin	A 108 1212	UNS G12120	.13						.85
Monel H.F.	Yoke Bushing Caps	A108 12L14		.15					.25	1.0
	Seat Ring Base	A 519 1026		.25						.75
	(Trademark Materials like, Stellite 6*, Stoody 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

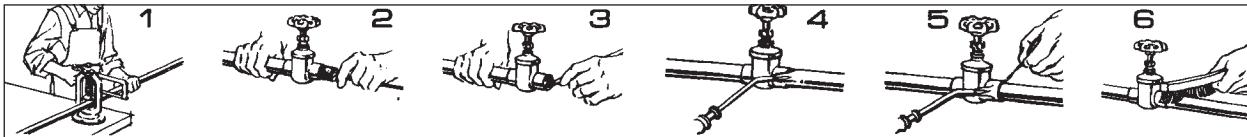
*Trademark by Cabot Corp.

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NOMINAL OR MAXIMUM CHEMICAL COMPOSITION								NOMINAL PHYSICAL PROPERTIES			
NICKEL NI	PHOS P	SILICON Si	SULFUR S	TIN Sn	TITAN- IUM Ti	TUNG- STEN W	ZINC Zn	TENSILE STRENGTH Psi	YIELD STRENGTH Psi	% ELONGATION	HARDNESS
9	.045	1.0	.03					75,000	30,000	40	202 HB
11	.04	2.0	.04					70,000	30,000	25	
11	.04	2.0	.04					70,000	30,000	30	
12	.045	1.0	.03					75,000	30,000	30	
12	.045	1.0	.03					75,000	30,000	30	
1	.04	1.5	.04					90,000	65,000	18	
	.04	1.0	.03					85,000	55,000	18	200/225 HB
.5	.04	1.0	.03					100,000	80,000	15	
	.06	1.0	.15					114,000	95,000	17	235 HB
	.04	1.0	.03								250/450 HB
28	.04	1.5	.04					62,000	25,000	35	
35	.045	1.0	.035					85,000	35,000	30	
4	.04	1.0	.03					115,000	75,000	18	255 HB
	.04	.035	.05					70,000	36,000	22	187 HB
	.04	.6	.045					70,000	36,000	22	
	.04	.6	.04					70,000	40,000	22	
	.04	.06	.045								
	.04	.75	.045								
2.5	.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
9	.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								
	.04		.05					55,000	35,000	25	
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

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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.
- 5a. 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 $\frac{3}{4}$ " for a $\frac{3}{4}$ " 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.

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.

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NIBCO[®] Pressure Rated Metal Valves

Limited Warranty



NIBCO INC. 125% LIMITED WARRANTY

Applicable to NIBCO Pressure Rated Metal Valves

NIBCO INC. warrants each NIBCO pressure rated metal valve ("Valves") to be free from defects in materials and workmanship under normal use, service, and maintenance in accordance with the product specifications (including, but not limited to installation recommendations) for a period of five (5) years from the Warranty Commencement Date. The Warranty Commencement Date shall be the date upon which a Valve is installed.

NIBCO will repair or replace – at its option and at no charge – Valves that have been determined by NIBCO, or an authorized representative or agent thereof, to have failed solely because of a defect in materials or workmanship under normal use, service, and maintenance during the warranty period. Replacements shall be shipped free of charge to the owner. In the event of the replacement of any Valve, NIBCO 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 in effect at the time of purchase, or ten (\$10.00) dollars, to apply on the cost of the installation of said replacement Valve.

This limited warranty applies to all Valves installed, tested, applied, and used in accordance with NIBCO's approved and published recommendations and instructions.

This warranty does not cover any failure or damage for or caused by:

1. any product, parts, or systems which are not manufactured or sold by NIBCO;
2. any Valve which is used for purposes other than a purpose authorized by NIBCO;
3. any Valve not installed, tested, applied, used, or maintained in accordance with NIBCO's recommended installation guidelines and instructions;
4. any Valve not installed or used in accordance with applicable codes;
5. any damage caused by, contributed in whole or in part by, or resulting from, any of the following:
 - a. abuse, misuse, mishandling, alteration, tampering, neglect, or accidental damage such as, without limitation, vandalism;
 - b. natural disasters, such as, without limitation, flooding, windstorm, and lightning;
 - c. attachments or modifications not authorized by NIBCO;
 - d. external, physical or chemical qualities, or an unsuitable or hostile environment,;
 - e. any defects other than those in material or workmanship; or
 - f. any other cause beyond the control of NIBCO.

NIBCO DISCLAIMS ANY AND ALL LIABILITY FOR ANY OTHER DIRECT OR INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING BUT NOT LIMITED TO, ECONOMIC LOSS, LOSS OF BUSINESS, LOST PROFITS, PUNITIVE DAMAGES, MOLD INTRUSION, WATER DAMAGE, ETC.

Some states do not allow the exclusion or limitation of damages, so the above limitation or exclusion may not apply to you.

THIS WARRANTY IS THE ONLY WARRANTY FOR THE VALVES PROVIDED BY NIBCO, AND IS AND SHALL BE IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, AN IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND FOR ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF A MANUFACTURER. NO EMPLOYEE OF NIBCO, OR ANY OTHER DISTRIBUTOR, AGENT, OR OTHER PERSON OR BUSINESS, IS AUTHORIZED TO MAKE ANY OTHER WARRANTY ON BEHALF OF NIBCO.

Some states do not allow limitations on implied warranties, so the above limitation may not apply to you.

In the event any defect occurs which is believed to be covered by this warranty, NIBCO Technical Services must immediately be contacted by calling 888.446.4226 or emailing CS-TechnicalServices@nibco.com. NIBCO Technical Services after being contacted will make further arrangements for the product's return to NIBCO at the customer's expense for review and evaluation.

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



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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.

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Phone: 1.574.295.3000

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Fax: 1.888.336.4226

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