

Rail Car Valves



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APOLLO SERIES / PART NO.	SIZE	RATING	PORT	CONNECTIONS	BASE MATERIAL	AAR NO.	PAGE
TWO-PIECE BALL VALVES							
73A Series	1/4" - 2"	2000 psig/ 1500 psig	Standard Port	NPT x NPT	A216 WCB Carbon Steel	E119022	3
76-100 Series	1/4" - 3"	2000 psig/ 1500 psig/ 1000 psig	Standard Port	NPT x NPT	A351-CF8M Stainless Steel	E119022	4
76F-100 Series	1/4" - 3"	1000 psig	Full Port	NPT x NPT	A351-CF8M Stainless Steel	E202151	5
89 Series	1/4" - 3"	2000 psig/ 1500 psig/ 1000 psig	Standard Port	NPT x NPT	A216 WCB Carbon Steel	E119022	6
UNIBODY BALL VALVES							
96 Series	1/4" - 2"	2000 psig/ 1500 psig	Standard Port	NPT x NPT	A351-CF8M Stainless Steel	E202150	7
FLANGE VALVES							
87A-100 Series	1-1/2" - 4"	Class 150	Standard Port	Flange x Flange	A351-CF8M Stainless Steel	E152111	8-9
88A-100 Series	1-1/2" - 4"	Class 150	Standard Port	Flange x Flange	A216 WCB Carbon Steel	E152111	8-9
87A-200 Series	1" - 6"	Class 150	Full Port	Flange x Flange	A351-CF8M Stainless Steel	E152112	10-11
88A-200 Series	1" - 6"	Class 150	Full Port	Flange x Flange	A216 WCB Carbon Steel	E152112	10-11
87A-370 Series	2", 3"	Class 150	Full Port	Flange x Cam	A351-CF8M Stainless Steel	E152113	12-13
87A-380 Series	1", 2", 3"	Class 150	Full Port	Flange x NPT	A351-CF8M Stainless Steel	E152113	14-15
BOTTOM OUTLET VALVES							
87A-TPA Series	4"	-	Full Port	-	A351-CF8M Stainless Steel	E202149	16-17
88A-TPA Series	4"	-	Full Port	-	A216 WCB Carbon Steel	E202149	16-17
REPAIR KITS							
87A-028-01	2"	RPTFE Repair Kit for 87A/88A-200/380 Series			N/A	N/A	N/A
87A-028-24	2"	RPTFE/Graphite Repair Kit for 87A/88A-200/380 Series			N/A	N/A	N/A
87A-020-01	3"	RPTFE Repair Kit for 87A/88A-200/380 Series			N/A	N/A	N/A
87A-020-24	3"	RPTFE/Graphite Repair Kit for 87A/88A-200/380 Series			N/A	N/A	N/A
Pressure/Temperature Charts							19-21
TESTED TO ASTM A262 PRACTICE A							
76F-105-24-27-SP3	1"	1000 psig	Full Port	NPT x NPT	A351-CF8M Stainless Steel	E172108	5
76F-108-24-27-SP3	2"	1000 psig	Full Port	NPT x NPT	A351-CF8M Stainless Steel	E172108	5
76F-100-24-27-SP3	3"	1000 psig	Full Port	NPT x NPT	A351-CF8M Stainless Steel	E172108	5
87A-208-24-SP3	2"	Class 150	Full Port	Flange x Flange	A351-CF8M Stainless Steel	E152112	10
87A-200-24-SP3	3"	Class 150	Full Port	Flange x Flange	A351-CF8M Stainless Steel	E152112	10
87A-385-24-SP3	1"	Class 150	Full Port	Flange x NPT	A351-CF8M Stainless Steel	E152113	14
87A-388-24-SP3	2"	Class 150	Full Port	Flange x NPT	A351-CF8M Stainless Steel	E152113	14
87A-380-24-SP3	3"	Class 150	Full Port	Flange x NPT	A351-CF8M Stainless Steel	E152113	14
87A-TPA-24-SP3	4"	-	Full Port	-	A351-CF8M Stainless Steel	E139507	16

FIRE SAFE (GRAPHITE PACKING AND SEALS) OR FIRE SAFE OPTION

73A-100 SERIES

THREADED, 2-PIECE, STANDARD PORT, FORGED CARBON STEEL BALL VALVE



AAR Approval No. E119022

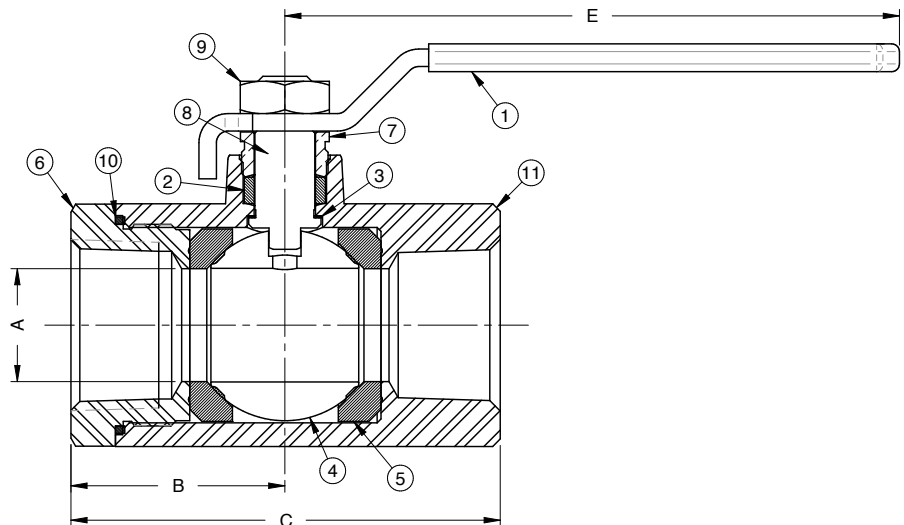
Apollo 73A-100 series valves are two-piece ball valves with a forged body design. Blowout proof stem design is standard, as are RPTFE seats, adjustable graphite packing, and tack welds to ensure the retainer is not removed from the body. For the 1/4" - 1" sizes, the pressure rating is 2000 psig. For the 1-1/4" - 2" sizes, the pressure rating is 1500 psig. This series is API 607 Fire Safe.

MATERIALS

PART		MATERIAL
1	Lever and Grip	Zinc Plated Carbon Steel with Vinyl
2	Stem Packing	Graphite
3	Stem Bearing	RPTFE
4	Ball	A108 Carbon Steel or 316 Stainless Steel
5	Seats	RPTFE
6	Retainer	A108 Carbon Steel
7	Gland Nut	A108 Carbon Steel
8	Stem	A108 Carbon Steel or 316 Stainless Steel
9	Lever Nut	Zinc Plated Carbon Steel
10	Body Seal	PTFE
11	Body	A105 Carbon Steel

DIMENSIONS

PART NO.	SIZE (IN.)	DIMENSIONS (IN.)					WT. (LB.)
		A	B	C	D	E	
73A-101-24-SP1	1/4"	0.38	1.00	2.04	1.72	3.85	0.58
73A-102-24-SP1	3/8"	0.38	1.00	2.04	1.72	3.85	0.54
73A-103-24-SP1	1/2"	0.50	1.12	2.23	1.78	3.88	0.63
73A-104-24-SP1	3/4"	0.68	1.47	2.97	2.05	4.75	1.27
73A-105-24-SP1	1"	0.87	1.65	3.32	2.18	4.75	2.20
73A-106-24-SP1	1-1/4"	1.00	1.99	3.97	2.72	5.50	3.74
73A-107-24-SP1	1-1/2"	1.25	2.17	4.35	3.20	7.75	5.30
73A-108-24-SP1	2"	1.50	2.73	5.44	3.27	7.75	8.03



76-100 SERIES

THREADED, 2-PIECE, STANDARD PORT, STAINLESS STEEL BALL VALVE



AAR Approval No. E119022

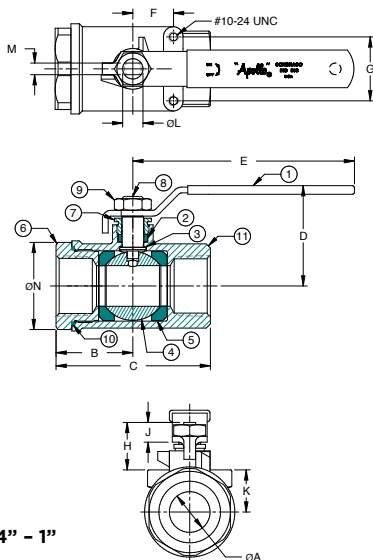
Apollo 76-100 series valves are two-piece ball valves that feature standard ports. This series is an ideal solution for transportation applications. These valves feature an A351 CF8M stainless steel body and investment cast components for high performance and extended service life. The 76-100 series ranges in size from 1/4" - 3". For the 1/4" - 1" sizes, the pressure rating is 2000 psig. For the 1-1/4" - 2" sizes, the pressure rating is 1500 psig. For the 2-1/2" and 3" sizes, the pressure rating is 1000 psig. Blowout proof stem design, adjustable graphite stem packing, stainless steel levers, and tack welds are standard on this series. This series is API 607 Fire Safe.

MATERIALS

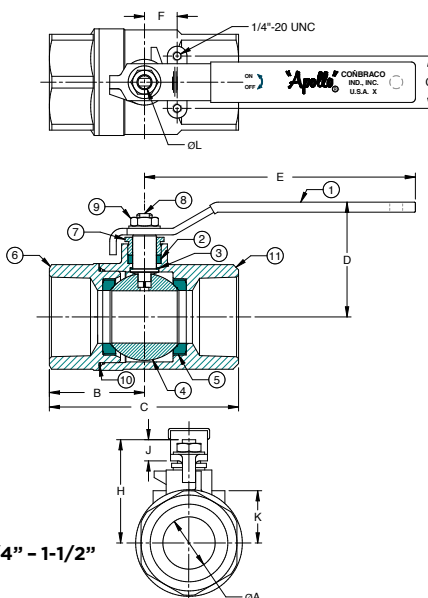
PART		MATERIAL
1	Lever and Grip	304 Stainless Steel with Vinyl
2	Stem Packing	Graphite
3	Stem Bearing	RPTFE
4	Ball	316 Stainless Steel
5	Seats	RPTFE
6	Retainer	A351-CF8M Stainless Steel
7	Gland Nut	316 Stainless Steel
8	Stem	316 Stainless Steel
9	Lever Nut	304 Stainless Steel
10	Body Seal	PTFE
11	Body	A351-CF8M Stainless Steel

DIMENSIONS

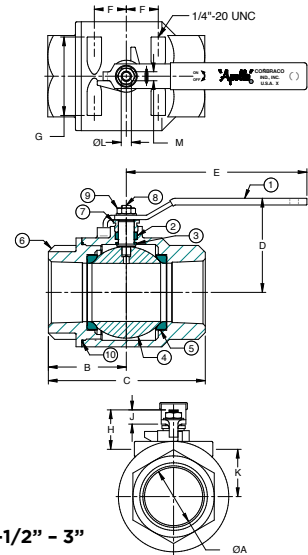
PART NO.	SIZ (IN.)	DIMENSIONS (IN.)													WT. (LB.)
		A	B	C	D	E	F	G	H	J	K	L	M	N	
76-101-24-SP1	1/4"	0.38	1.02	2.05	1.71	3.85	0.50	1.12	1.18	0.35	0.53	0.33	0.23	1.16	0.58
76-102-24-SP1	3/8"	0.38	1.04	2.07	1.71	3.85	0.50	1.12	0.88	0.35	0.53	0.37	0.23	1.16	0.54
76-103-24-SP1	1/2"	0.50	1.12	2.23	1.78	3.85	0.50	1.25	0.90	0.35	0.59	0.38	0.23	1.38	0.63
76-104-24-SP1	3/4"	0.69	1.47	2.96	2.03	4.75	0.87	1.38	1.02	0.42	0.78	0.44	0.25	1.75	1.27
76-105-24-SP1	1"	0.88	1.65	3.32	2.19	4.75	0.87	1.38	1.02	0.42	0.91	0.44	0.25	1.88	1.63
76-106-24-SP1	1-1/4"	1.00	2.00	4.00	2.70	7.77	0.93	1.50	2.57	0.61	1.13	0.44	0.38	2.25	3.06
76-107-24-SP1	1-1/2"	1.25	2.18	4.37	3.05	7.77	0.93	1.50	1.45	0.61	1.28	0.44	0.38	2.56	4.04
76-108-24-SP1	2"	1.50	2.73	5.43	3.28	7.77	0.94	1.50	1.45	0.61	1.50	0.44	0.22	3.00	6.05
76-109-24-SP1	2-1/2"	2.50	3.38	6.75	4.05	7.77	1.38	3.38	1.71	0.61	2.00	0.44	0.39	4.06	15.57
76-100-24-SP1	3"	2.50	3.38	6.75	4.05	7.77	1.38	3.38	1.71	0.61	2.00	0.44	0.39	4.58	16.79



1/4" - 1"



1-1/4" - 1-1/2"



2-1/2" - 3"

76F-100 SERIES

THREADED, 2-PIECE, FULL PORT, STAINLESS STEEL BALL VALVE



AAR Approval No. E202151

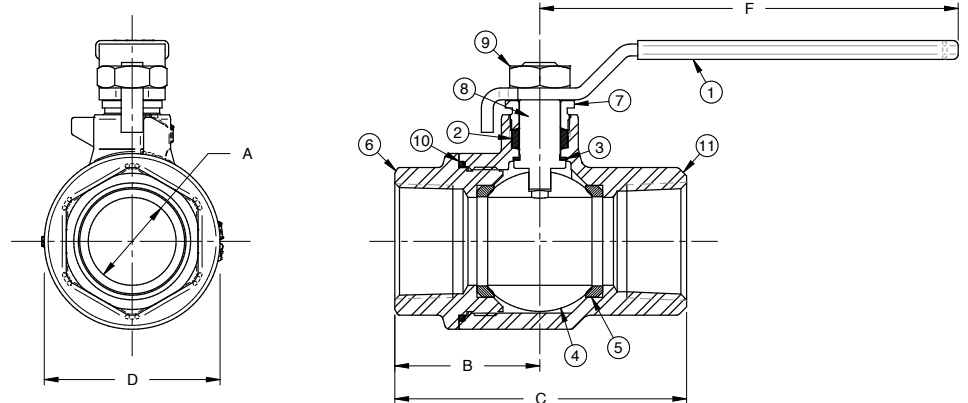
Apollo 76F-100 series are two-piece ball valves with a full port design. This series is an ideal solution for transportation applications. These valves feature an A351 CF8M stainless steel body and investment cast components for high performance and extended service life. Ranging from 1/4" though 3", the pressure rating is 1000 psig. Blowout proof stem design, adjustable graphite packing, stainless steel levers, and tack welds are standard on this series. This series is API 607 Fire Safe.

MATERIALS

PART		MATERIAL
1	Lever and Grip	304 Stainless Steel with Vinyl
2	Stem Packing	Graphite
3	Stem Bearing	RPTFE
4	Ball	316 Stainless Steel
5	Seats	RPTFE/TFM 1700
6	Retainer	A351-CF8M Stainless Steel
7	Gland Nut	316 Stainless Steel
8	Stem	316 Stainless Steel
9	Lever Nut	304 Stainless Steel
10	Body Seal	PTFE
11	Body	A351-CF8M Stainless Steel

DIMENSIONS

PART NO.	SIZE (IN.)	DIMENSIONS (IN.)						WT. (LB.)
		A	B	C	D	E	F	
76F-101-24-SP1	1/4"	0.38	0.95	1.91	1.13	1.60	3.85	0.47
76F-102-24-SP1	3/8"	0.38	0.95	1.91	1.13	1.60	3.85	0.44
76F-103-24-SP1	1/2"	0.50	1.21	2.35	1.27	1.73	3.85	0.57
76F-104-24-SP1	3/4"	0.75	1.38	2.77	1.62	1.96	3.85	0.91
76F-105-24-SP1	1"	1.00	1.67	3.34	2.00	2.27	4.75	1.38
76F-106-24-SP1	1-1/4"	1.25	1.96	3.92	2.73	3.21	7.77	4.17
76F-107-24-SP1	1-1/2"	1.50	2.05	4.10	2.92	3.31	7.77	4.69
76F-108-24-SP1	2"	2.00	2.37	4.74	3.75	3.69	7.77	6.90
76F-100-24-SP1	3"	3.00	3.70	7.40	5.68	5.23	10.00	22.39
TESTED TO ASTM A262 PRACTICE A								
76F-105-24-27-SP3	1"	1.00	1.67	3.34	2.00	2.27	4.75	1.38
76F-108-24-27-SP3	2"	2.00	2.37	4.74	3.75	3.69	7.77	6.90
76F-100-24-27-SP3	3"	3.00	3.70	7.40	5.68	5.23	10.00	22.39



76F380 SERIES

FLANGED X THREADED, 2-PIECE, FULL PORT, STAINLESS STEEL BALL VALVE



AAR Approval No. E202151

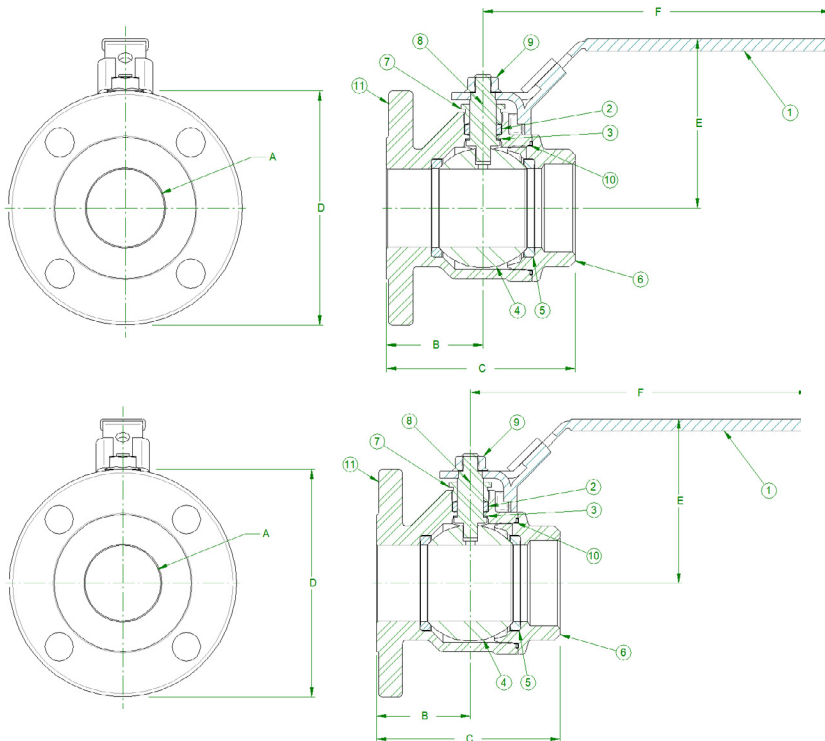
The Apollo 76F-380, Threaded x Flanged series ball valves are two-piece construction with a full port design. This series is an ideal solution for transportation applications. These valves feature an A351 CF8M stainless steel body and investment cast components for high performance and extended service life. Sizes include 2" and 3" NPT with a pressure rating of 275 psig. The threaded NPT body end meets ANSI B1.20.1 and the flanged end meets ANSI B16.5, Class 150 raised face flange requirements. Blowout proof stem design, adjustable graphite stem packing, stainless steel levers, and tack welds are standard on this series. Full perimeter body joint seal welding is available. This series is API 607 fire safe.

MATERIALS

NUMBER		MATERIAL
1	Lever and Grip	304 Stainless Steel and Vinyl
2	Stem Packing	Graphite
3	Stem Bearing	RPTFE
4	Ball	316 Stainless Steel
5	Seats	TFM 1600
6	Retainer	A351-CF8M Stainless Steel
7	Gland Nut	316 Stainless Steel
8	Stem	316 Stainless Steel
9	Lever Nut	304 Stainless Steel
10	Body Seal	PTFE
11	Body	A351-CF8M Stainless Steel

DIMENSIONS

PART NO.	SIZE (IN.)	DIMENSIONS (IN.)						WT. (LB.)
		A	B	C	D	E	F	
76F38827SP1	2"	2.00	2.48	4.85	6.00	4.33	8.93	11.60
76F38027SP1	3"	3.00	3.65	7.35	7.5	5.44	10.06	33.29



89-100 SERIES

THREADED, 2-PIECE, STANDARD PORT, CARBON STEEL BALL VALVE



AAR Approval No. E119022

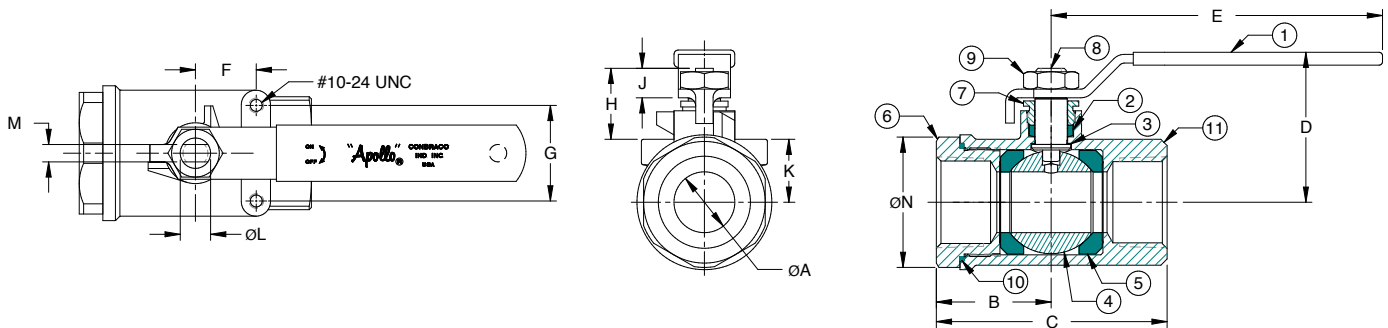
Apollo 89-100 series valves are two-piece ball valves with an investment cast design. Blowout proof stem design and tack welds are standard, as are RPTFE seats and adjustable graphite packing. The 89-100 series ranges in size from 1/4" through 3". For the 1/4"-1" sizes, the pressure rating is 2000 psig. For the 1-1/4"-2" sizes, the pressure rating is 1500 psig. For the 2-1/2" and 3" sizes, the pressure rating is 1000 psig. This series is API 607 Fire Safe.

MATERIALS

PART		MATERIAL
1	Lever and Grip	Zinc Plated Carbon Steel with Vinyl
2	Stem Packing	Graphite
3	Stem Bearing	RPTFE
4	Ball	A108 Carbon Steel or 316 Stainless Steel
5	Seats	RPTFE
6	Retainer	A216-WCB Carbon Steel
7	Gland Nut	A108 Carbon Steel
8	Stem	A108 Carbon Steel or 316 Stainless Steel
9	Lever Nut	Zinc Plated Carbon Steel
10	Body Seal	PTFE
11	Body	A216-WCB Carbon Steel

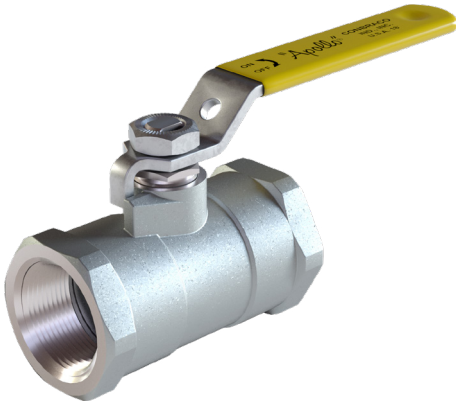
DIMENSIONS

PART NO.	SIZE (IN.)	DIMENSIONS (IN.)														WT. (LB.)
		A	B	C	D	E	F	G	H	J	K	L	M	N		
89-101-24-SPI	1/4"	0.38	1.02	2.05	1.71	3.85	0.50	1.12	0.88	0.35	0.53	0.38	0.23	1.16	0.58	
89-102-24-SPI	3/8"	0.38	1.02	2.05	1.71	3.85	0.50	1.12	0.88	0.35	0.53	0.38	0.23	1.16	0.54	
89-103-24-SPI	1/2"	0.50	1.12	2.23	1.82	3.88	0.50	1.12	0.90	0.35	0.59	0.38	0.23	1.38	0.63	
89-104-24-SPI	3/4"	0.69	1.47	2.96	2.03	4.75	0.87	1.38	1.02	0.42	0.78	0.44	0.25	1.75	1.27	
89-105-24-SPI	1"	0.88	1.65	3.32	2.19	4.78	0.88	1.38	1.02	0.42	0.91	0.44	0.25	1.88	1.63	
89-106-24-SPI	1-1/4"	1.00	2.00	4.00	2.70	5.37	0.93	1.50	1.45	0.61	1.13	0.63	0.37	2.25	3.06	
89-107-24-SPI	1-1/2"	1.25	2.18	4.37	3.05	7.75	0.93	1.50	1.45	0.61	1.28	0.63	0.37	2.56	3.98	
89-108-24-SPI	2"	1.50	2.73	5.43	3.28	7.75	0.94	1.50	1.46	0.61	1.50	0.63	0.37	3.00	5.99	
89-149-24-SPI	2-1/2"	2.50	3.38	6.75	4.05	7.75	1.38	3.38	1.74	0.61	1.99	0.63	0.37	4.06	15.57	
89-140-24-SPI	3"	2.50	3.38	6.75	4.05	7.75	1.38	3.38	1.74	0.61	2.00	0.63	0.37	4.58	16.79	



96-100 SERIES

THREADED, UNIBODY, STANDARD PORT, STAINLESS STEEL BALL VALVE



AAR Approval No. E202150

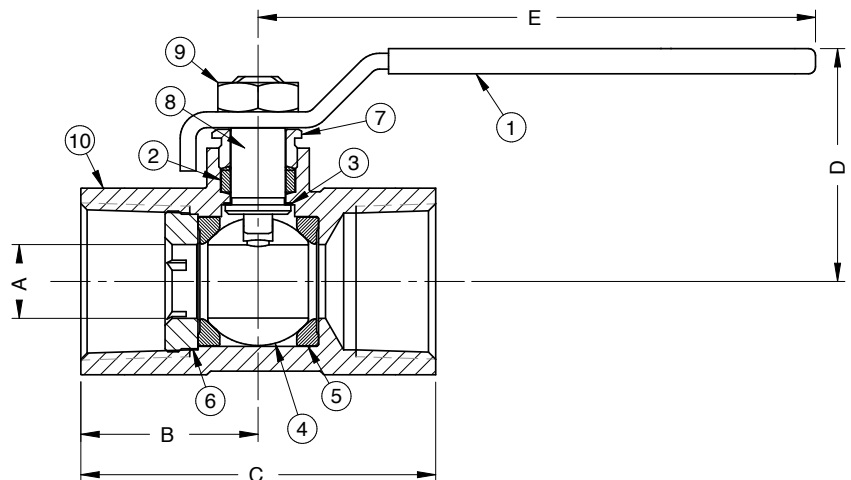
Apollo 96-100 series ball valves are unibody valves with investment cast construction. The unibody design prevents accidental disassembly of the valve during maintenance or piping repair. Blowout proof stem design is standard, along with RPTFE seats and adjustable graphite packing. For the 1/4" - 1" sizes, the pressure rating is 2000 psig. For the 1-1/4" - 2" sizes, the pressure rating is 1500 psig. This series is API 607 Fire Safe.

MATERIALS OF CONSTRUCTION

PART		MATERIAL
1	Lever and Grip	304 Stainless Steel with Vinyl
2	Stem Packing	Graphite
3	Stem Bearing	RPTFE
4	Ball	316 Stainless Steel
5	Seats	RPTFE
6	Retainer	316 Stainless Steel
7	Gland Nut	316 Stainless Steel
8	Stem	316 Stainless Steel
9	Lever Nut	304 Stainless Steel
10	Body	316 Stainless Steel

DIMENSIONS

PART NO.	SIZE (IN.)	DIMENSIONS (IN.)					WT. (LB.)
		A	B	C	D	E	
96-101-24-SP1	1/4"	0.37	1.14	2.21	1.64	3.88	0.49
96-102-24-SP1	3/8"	0.37	1.14	2.21	1.64	3.88	0.49
96-103-24-SP1	1/2"	0.37	1.14	2.21	1.64	3.88	0.50
96-104-24-SP1	3/4"	0.50	1.32	2.70	1.78	3.88	0.76
96-105-24-SP1	1"	0.62	1.51	3.03	2.01	4.78	1.21
96-106-24-SP1	1-1/4"	0.81	1.79	3.62	2.12	4.85	2.09
96-107-24-SP1	1-1/2"	1.00	2.05	4.00	2.90	5.56	3.06
96-108-24-SP1	2"	1.25	2.29	4.73	2.90	5.56	4.76



87A/88A-10X SERIES

STANDARD PORT CLASS 150 FLANGED BALL VALVE | 1-1/2" - 4"



AAR Approval No. E152111

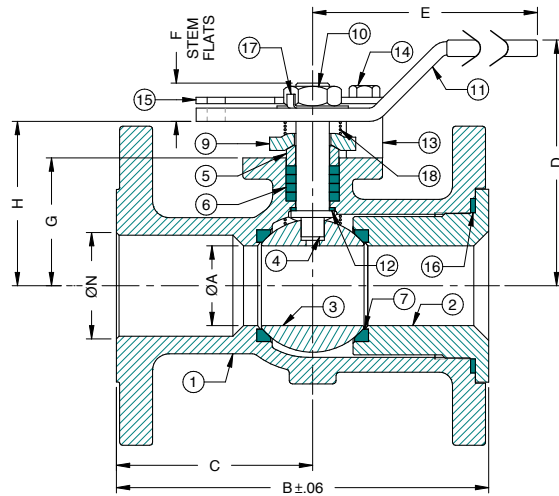
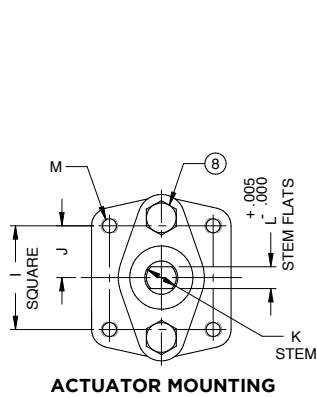
Apollo 87A-100 and 88A-100 series ball valves are quickly becoming the industry's preferred flanged ball valve choice. These standard port ASME Class 150 ball valves feature a blowout proof stem design, an ISO 5211 actuator mounting pad, and a dual position lock plate that meets OSHA lockout/tagging regulations. Standard features include a grounded ball and stem, ball vented in the stem slot, and a heavy duty gland plate. Flexible lip seal seats made of a TFM compound are standard for this series. These seats ensure sealability at both low pressure and high pressure, low temperature and high temperature, and reduce operational torque in all situations. A spiral wound graphite gasket is also standard on this series. Apollo 87A-100 and 88A-100 series valves certified by AAR are available in sizes up to 4". This series is API 607 Fire Safe.

STANDARD MATERIAL LIST

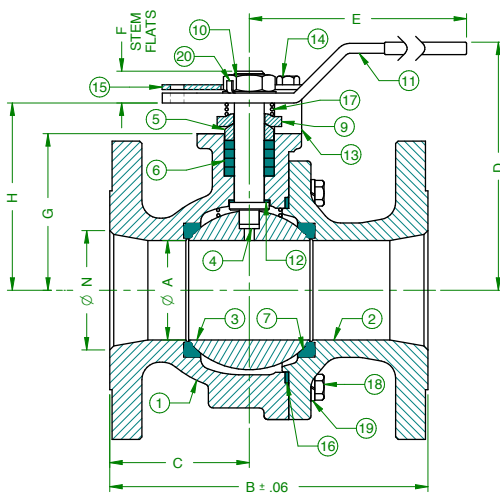
PART		87A-100 SERIES	88A-100 SERIES
1	Body	A351 CF8M Stainless Steel	A216 WCB Carbon Steel
2	Retainer	A351 CF8M Stainless Steel	A216 WCB Carbon Steel
3	Ball	A351 CF8M Stainless Steel	A351 CF8M Stainless Steel
4	Stem	316 Stainless Steel	Carbon Steel
5	Packing Gland	316 Stainless Steel	Carbon Steel
6	Stem Seal	Graphite	Graphite
7	Seats	TFM 1700	TFM 1700
8	Gland Screws	Gr. B8	Zinc Plated Carbon Steel
9	Gland Plate	302 or 304 Stainless Steel	302 or 304 Stainless Steel
10	Stem Nut	316 Stainless Steel	316 Stainless Steel
11	Lever	302 or 304 Stainless Steel	Zinc Plated Carbon Steel
12	Stem Bearing	RPTFE	RPTFE
13	Stop	304 Stainless Steel	Carbon Steel
14	Stop Screw	Stainless Steel	Zinc Plated Carbon Steel
15	Lock Plate	302 or 304 Stainless Steel	Zinc Plated Carbon Steel
16	Body Seal	Spiral Wound Graphite	Spiral Wound Graphite
17	Grounding Spring	Stainless Steel	Stainless Steel
18	Body Joint Bolt	Gr. B8M	Gr. B7
19	Lockwasher	18-8 Stainless Steel	18-8 Stainless Steel

87A/88A-10X SERIES

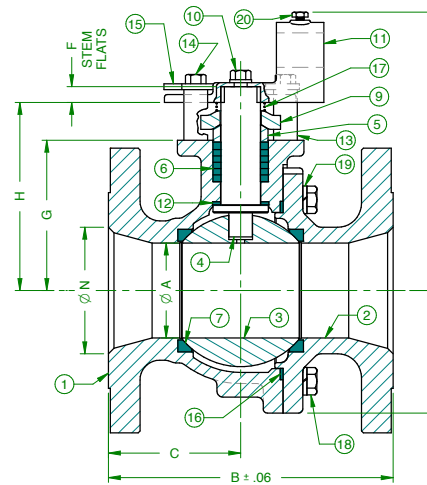
STANDARD PORT CLASS 150 FLANGED BALL VALVE | 1-1/2" - 4"



1-1/2" - 2"



2-1/2" - 3"



4"

DIMENSIONS

PART NO.	SIZE (IN.)	DIMENSIONS (IN.)											WT. (LB.)			
		A	B	C	D	E	F	G	H	I	J	K		L	M	N
87A/88A-107	1-1/2"	1.25	6.50	3.50	4.85	6.53	0.47	1.85	2.38	1.392	0.696	0.50	0.287	1/4"-20	1.50	11.00
87A/88A-108	2"	1.50	7.00	3.69	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16"-18	2.00	18.00
87A/88A-109	2-1/2"	2.00	7.50	3.50	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.75	0.477	5/16"-18	2.50	27.00
87A/88A-100	3"	2.50	8.00	3.51	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.75	0.477	5/16"-18	3.00	34.30
87A/88A-10A	4"	3.00	9.00	4.18	8.80	3.88	0.50	4.75	5.95	2.84	1.42	1.25	0.73	3/8"-16	4.00	73.00

87A/88A-20X SERIES

FULL PORT CLASS 150 FLANGED BALL VALVE | 1" - 6"



AAR Approval No. E152112

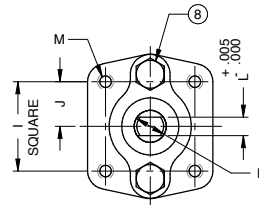
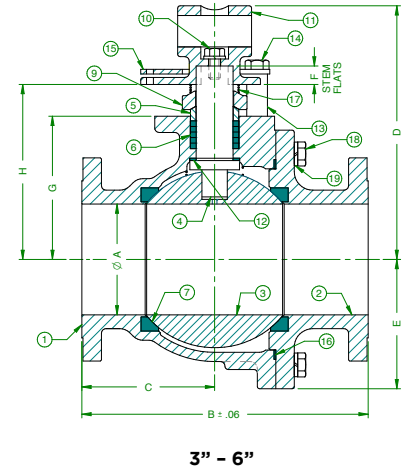
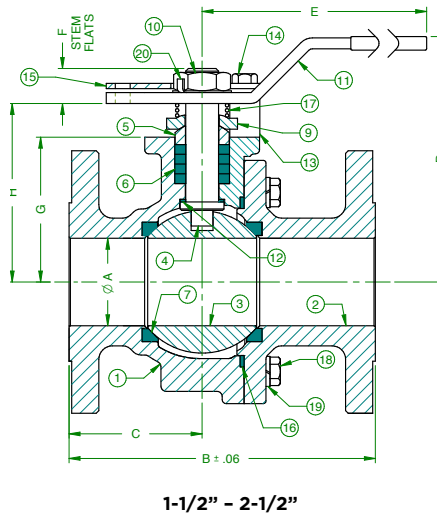
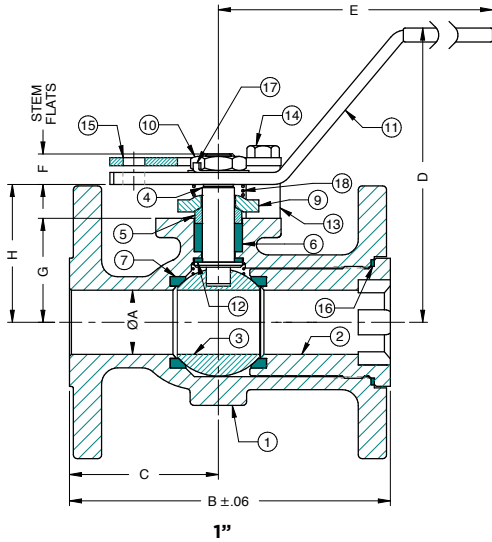
Apollo 87A-200 and 88A-200 series ball valves are quickly becoming the industry's preferred flanged ball valve choice. These full port ASME Class 150 ball valves feature a blowout proof stem design, an ISO 5211 actuator mounting pad, and a dual position lock plate that meets OSHA lockout/tagging regulations. Standard features include a grounded ball and stem, ball vented in the stem slot, and a heavy duty gland plate. Flexible lip seal seats made of a TFM compound are standard for this series. These seats ensure sealability at both low pressure and high pressure, low temperature and high temperature, and reduce operational torque in all situations. A spiral wound graphite body gasket is also standard on this series. Apollo 87A-200 and 88A-200 series valves certified by AAR are available in sizes up to 6". This series is API 607 Fire Safe.

STANDARD MATERIAL LIST

PART		87A-200 SERIES	88A-200 SERIES
1	Body	A351 CF8M Stainless Steel	A216 WCB Carbon Steel
2	Retainer	A351 CF8M Stainless Steel	A216 WCB Carbon Steel
3	Ball	A351 CF8M Stainless Steel	A351 CF8M Stainless Steel
4	Stem	316 Stainless Steel	Carbon Steel
5	Packing Gland	316 Stainless Steel	Carbon Steel
6	Stem Seal	Graphite	Graphite
7	Seats	TFM 1700	TFM 1700
8	Gland Screws	Gr. B8	Zinc Plated Carbon Steel
9	Gland Plate	302 or 304 Stainless Steel	302 or 304 Stainless Steel
10	Stem Nut	316 Stainless Steel	316 Stainless Steel
11	Lever	302 or 304 Stainless Steel	Zinc Plated Carbon Steel
12	Stem Bearing	RPTFE	RPTFE
13	Stop	304 Stainless Steel	Carbon Steel
14	Stop Screw	Stainless Steel	Zinc Plated Carbon Steel
15	Lock Plate	302 or 304 Stainless Steel	Zinc Plated Carbon Steel
16	Body Seal	Spiral Wound Graphite	Spiral Wound Graphite
17	Grounding Spring	Stainless Steel	Stainless Steel
18	Body Joint Bolt	Gr. B8M	Gr. B7
19	Lockwasher	18-8 Stainless Steel	18-8 Stainless Steel

87A/88A-20X SERIES

FULL PORT CLASS 150 FLANGED BALL VALVE | 1/2" - 6"



ACTUATOR MOUNTING

DIMENSIONS

PART NO.		SIZE (IN.)	DIMENSIONS (IN.)													WT. (LB.)
			A	B	C	D	E	F	G	H	I	J	K	L	M	
87A-205-SP1	88A-205-SP1	1"	1.00	5.00	2.32	5.62	6.53	0.47	1.62	2.15	1.392	0.696	0.50	0.287	1/4"-20	7.00
87A-207-SP1	88A-207-SP1	1-1/2"	1.50	6.50	3.00	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.63	0.412	5/16"-18	14.30
87A-208-SP1	88A-208-SP1	2"	2.00	7.00	3.04	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.75	0.477	5/16"-18	25.00
87A-209-SP1	88A-209-SP1	2-1/2"	2.50	7.50	3.34	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.75	0.477	5/16"-18	30.00
87A-200-SP1	88A-200-SP1	3"	3.00	8.00	3.68	8.80	3.88	0.50	4.75	5.95	2.840	1.420	1.25	0.725	3/8"-16	60.00
87A-20A-SP1	88A-20A-SP1	4"	4.00	9.00	3.94	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.25	0.73	3/8"-16	91.00
87A-20C-SP1	88A-20C-SP1	6"	6.00	15.50	7.19	13.73	7.00	1.00	7.75	9.48	4.596	2.298	2.00	1.38	3/4"-10	247.50
TESTED TO ASTM A262 PRACTICE A																
87A-208-24-SP3	-	2"	2.00	7.00	3.04	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.75	0.477	5/16"-18	25.00
87A-200-24-SP3	-	3"	3.00	8.00	3.68	8.80	3.88	0.50	4.75	5.95	2.840	1.420	1.25	0.725	3/8"-16	60.00

87A-37X SERIES

FLANGED X CAM, FULL PORT, STAINLESS STEEL BALL VALVE



87A-378 - 2"
87A-370 - 3"

AAR Approval E152113

Apollo 87A-37x series valves are A351 CF8M stainless steel ball valves with cam end x ANSI 150 flanged connections. Standard features include blowout proof stem design and adjustable graphite packing. These valves also feature standard position locking devices, anti-static grounding devices for the ball and stem, and ISO 5211 actuator mounting pads.

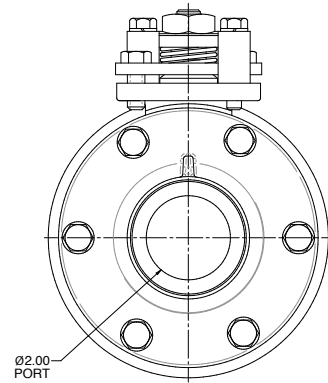
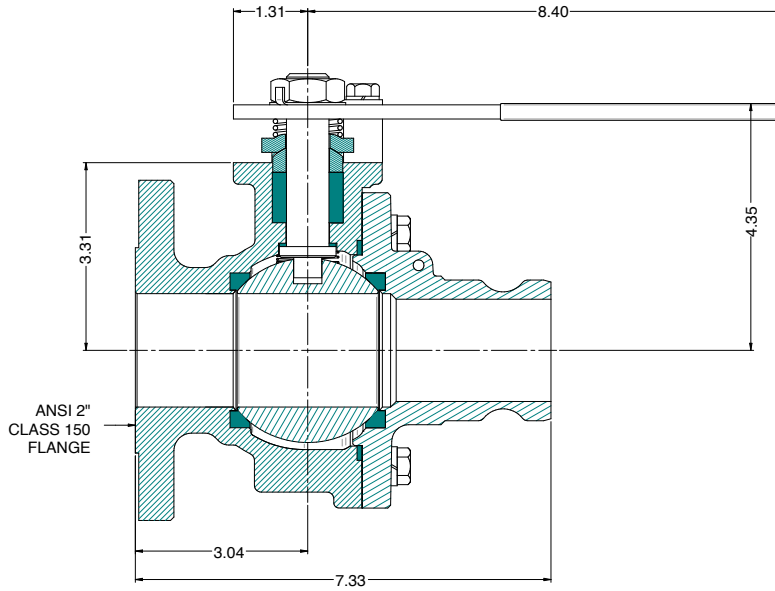
Primary uses for this type of valve include the loading and unloading of tank cars, and these valves have additional features build-in to address this application. The ball is vented at the stem slot to relieve thermal expansion of volatile media in the body cavity; firesafe construction to guard against leakage in the event of an accident; special no-rise handles enable installation in tight places; and full-port design maximizes flow and minimizes load/unload times. The valves are of bolted construction, so they are repairable to ensure leakproof installation/operation and can be disassembled for complete cleaning or replacement of all interior surfaces and parts. The Apollo 87A-37x series is available in 2" and 3" sizes. This series is API 607 Fire Safe.

MATERIALS

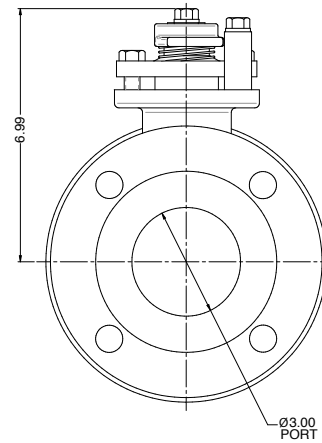
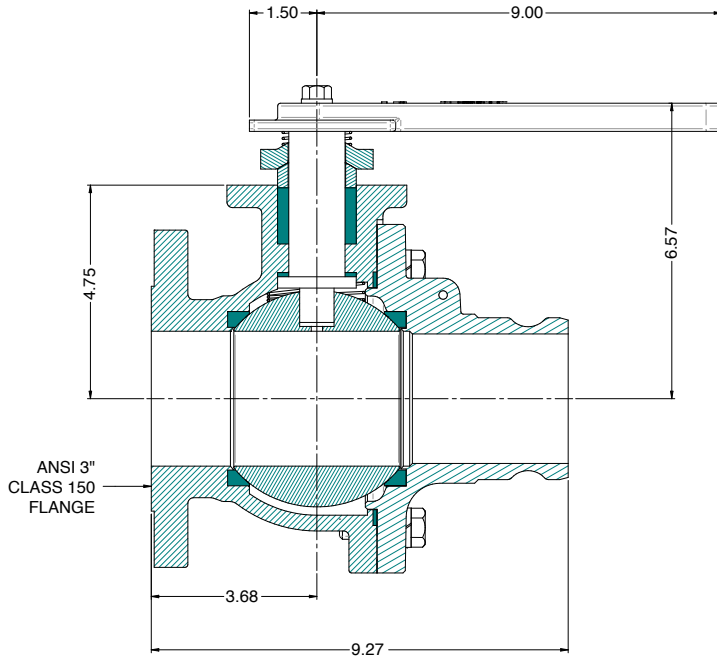
PART	87A-378 SERIES	87A-370 SERIES
Body	A351-CF8M Stainless Steel	A351-CF8M Stainless Steel
Retainer	316 Stainless Steel	316 Stainless Steel
Ball	316 Stainless Steel	316 Stainless Steel
Stem	316 Stainless Steel	316 Stainless Steel
Packing Gland	316 Stainless Steel	316 Stainless Steel
Stem Seal	Graphite	Graphite
Seats	TFM 1700	TFM 1700
Gland Screws	Gr. B8	Gr. B8
Gland Plate	316 Stainless Steel	316 Stainless Steel
Stem Nut	Gr. 8	Stainless Steel
Lever	302 or 304 Stainless Steel with Vinyl	316 Stainless Steel
Stem Bearing	RPTFE	RPTFE
Stop	304 Stainless Steel	304 Stainless Steel
Stop Screw	Stainless Steel	316 Stainless Steel
Body Seal	Spiral Wound Graphite	Spiral Wound Graphite
Grounding Spring	Stainless Steel	Stainless Steel
Body Joint Bolt	Gr. B8M	Gr. B8M
Lockwasher	Stainless Steel	Stainless Steel

87A-37X SERIES
 FLANGED X CAM, FULL PORT, STAINLESS STEEL BALL VALVE

87A-378



87A-370



87A-38X SERIES

FLANGED X THREADED, FULL PORT, STAINLESS STEEL BALL VALVE



87A-385 - 1"
87A-388 - 2"
87A-380 - 3"

AAR Approval No. E152113

Apollo 87A-38x series valves are A351 CF8M stainless steel ball valves with NPT threaded end x ANSI 150 flanged connections. Standard features include blowout proof stem design and adjustable graphite packing. These valves also feature standard position locking device and anti-static grounding device for the ball and stem, and an ISO 5211 actuator mounting pad.

Primary uses for this type of valve include the loading and unloading of tank cars, and these valves have additional features built-in to address this application. The ball is vented at the stem slot to relieve thermal expansion of volatile media in the body cavity; firesafe construction to guard against leakage in case of an accident; a special no-rise handle enables installation in tight spaces; and full-port design maximizes flow and minimizes load/unload times. The valves are of bolted construction, so they are repairable to ensure leakproof installation/operation and can be disassembled for complete cleaning or replacement of all interior surface and parts. The Apollo 87A-38x series is available in the 1", 2", and 3" sizes.

MATERIALS

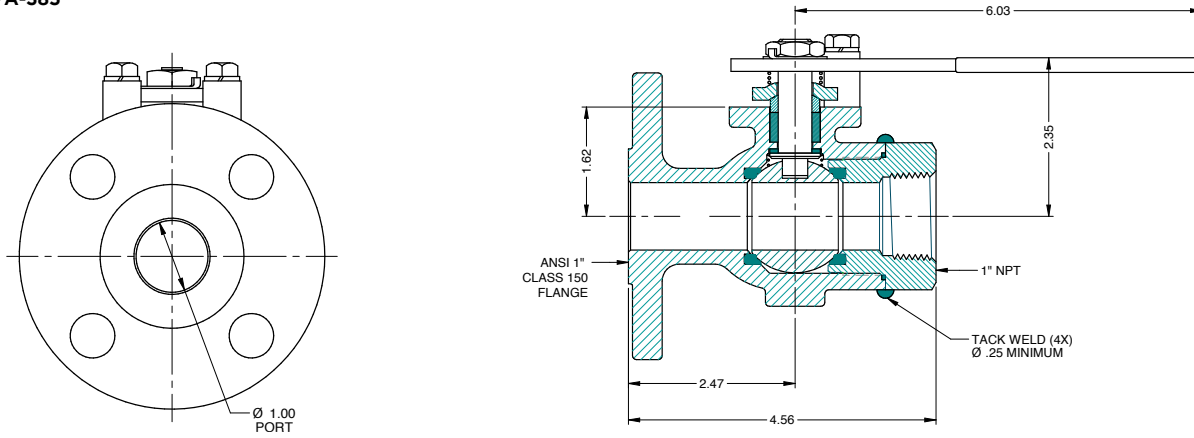
PART	87A-385 SERIES	87A-388 SERIES	87A-380 SERIES
Body	A351-CF8M Stainless Steel	A351-CF8M Stainless Steel	A351-CF8M Stainless Steel
Retainer	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Ball	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Stem	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Packing Gland	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Stem Seal	Graphite	Graphite	Graphite
Seats	TFM 1700	TFM 1700	TFM 1700
Gland Screws	Gr. B8	Gr. B8	Gr. B8
Gland Plate	302 or 304 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Stem Nut	316 Stainless Steel	Gr. 8	304 Stainless Steel
Lever	302 or 304 Stainless Steel with Vinyl	302 or 304 Stainless Steel with Vinyl	A351-CF8M Stainless Steel
Stem Bearing	RPTFE	RPTFE	RPTFE
Stop	316 Stainless Steel	304 Stainless Steel	304 Stainless Steel
Stop Screw	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Body Seal	Spiral Wound Graphite	Spiral Wound Graphite	Spiral Wound Graphite
Grounding Spring	Stainless Steel	Stainless Steel	Stainless Steel
Body Joint Bolt	N/A	Gr. B8M	Gr. B8M
Lockwasher	N/A	Stainless Steel	Stainless Steel

TESTED TO ASTM A262 PRACTICE A

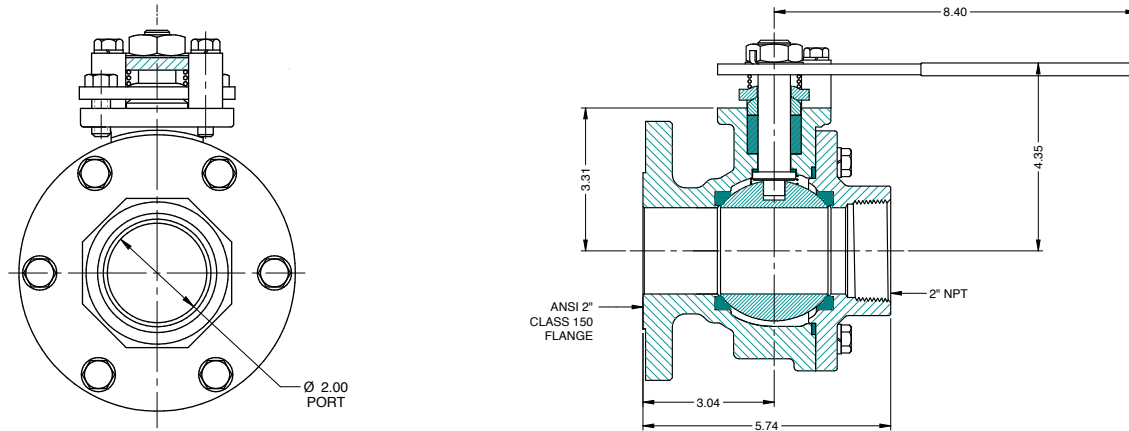
PART NO.
87A-385-24-SP3
87A-388-24-SP3
87A-380-24-SP3

87A-38X SERIES
 FLANGED X THREADED, FULL PORT, STAINLESS STEEL BALL VALVE

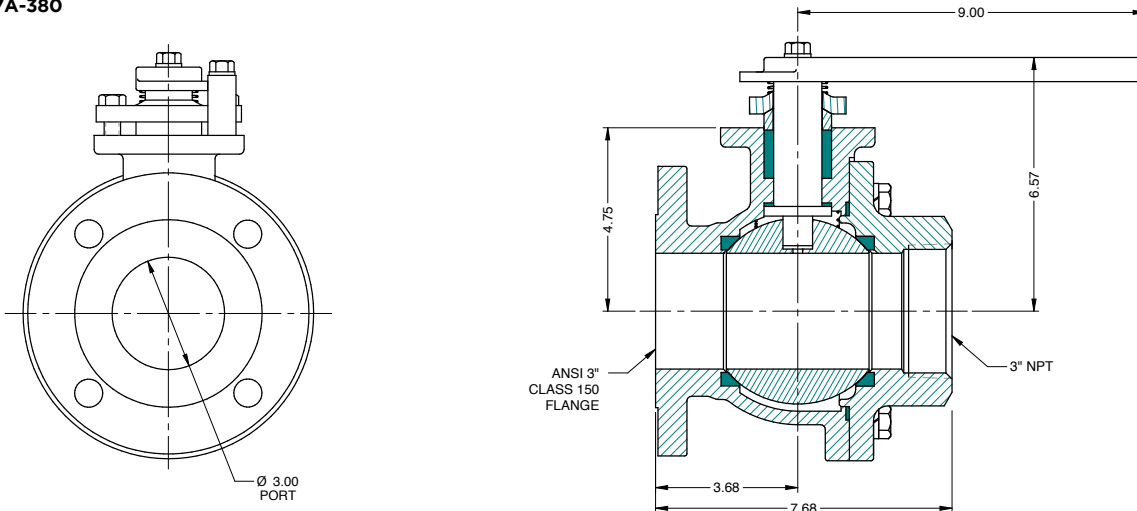
87A-385



87A-388



87A-380



87A-TPA/88A-TPA SERIES
FULL PORT BOTTOM OUTLET VALVE



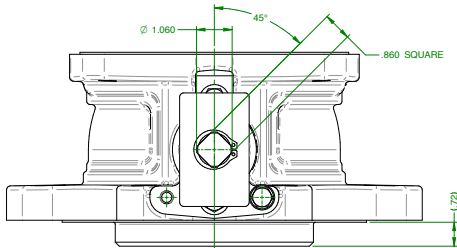
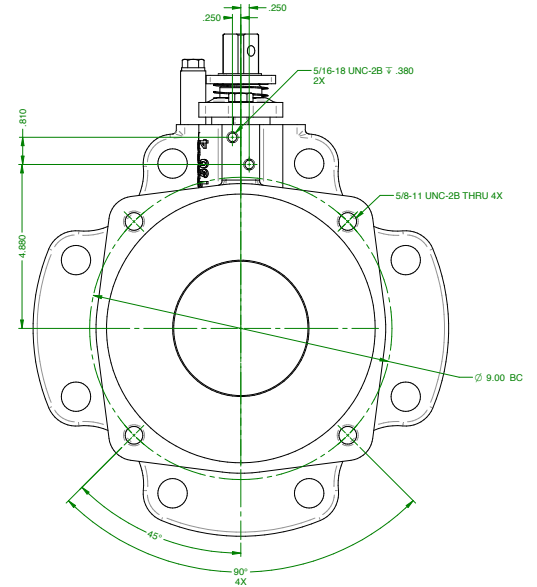
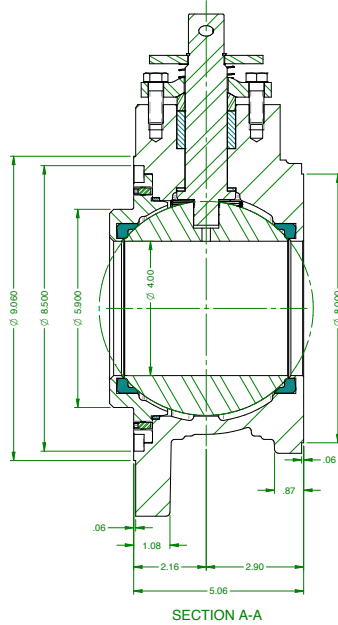
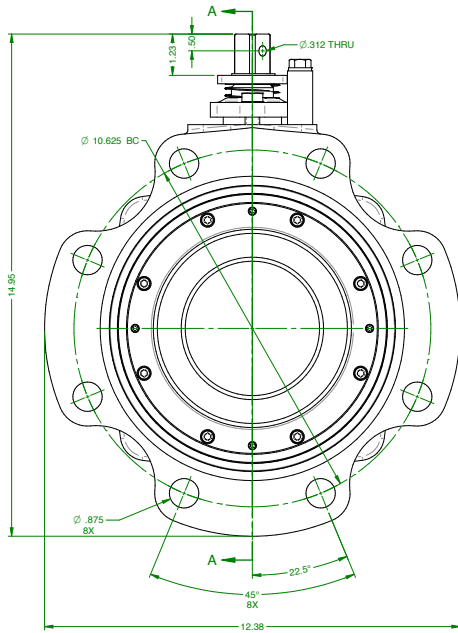
AAR Approval No. 202149

The Apollo 87A-TPA and 88A-TPA valves are full port, 4 inch, bottom outlet valves designed specifically for tank car application. Standard features include a blowout proof stem design and adjustable graphite stem packing. Each valve completes a body shell test, seat test, and cycling test prior to shipment.

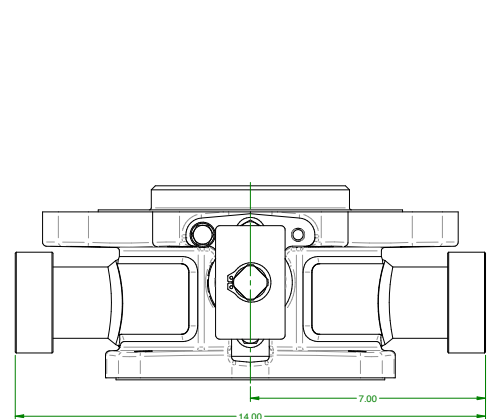
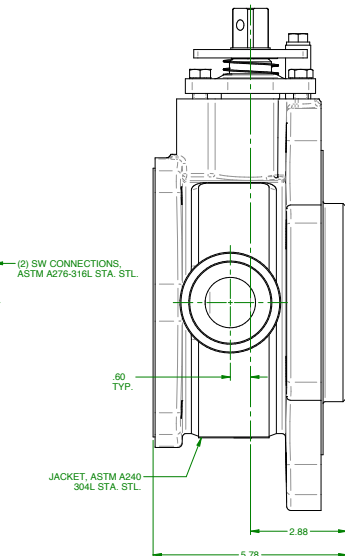
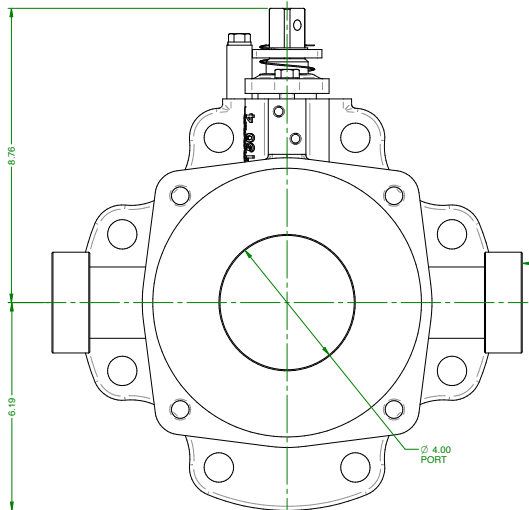
MATERIALS

PART	87A-TPA-24-SP2/SP3	88A-TPA-24-SP2/SP3
Body	A351-CF3M Stainless Steel	A216-WCB Carbon Steel
Retainer	A351-CF8M Stainless Steel	A216-WCB Carbon Steel
Ball	A351-CF8M Stainless Steel	A351-CF8M Stainless Steel
Stem	17-4 Stainless Steel	17-4 Stainless Steel
Packing Gland	316 Stainless Steel	316 Stainless Steel
Stem Seal	Graphite	Graphite
Seats	TFM 1700	TFM 1700
Gland Screws	Gr. B8	Gr. B8
Gland Plate	A351-CF8M Stainless Steel	A351-CF8M Stainless Steel
Stem Bearing	PTFE	PTFE
Stop	304 Stainless Steel	304 Stainless Steel
Stop Retaining Ring	Stainless Steel	Stainless Steel
Stop Lockwasher	18-8 Stainless Steel	18-8 Stainless Steel
Stop Screw	18-8 Stainless Steel	18-8 Stainless Steel
Body Seal	PTFE	PTFE
Grounding Spring	Stainless Steel	Stainless Steel
Retainer Screws	Gr. B8M	Gr. B8M
Retainer Setscrews	18-8 Stainless Steel	18-8 Stainless Steel

87A-TPA-SP2/88A-TPA-SP2
FULL PORT BOTTOM OUTLET VALVE

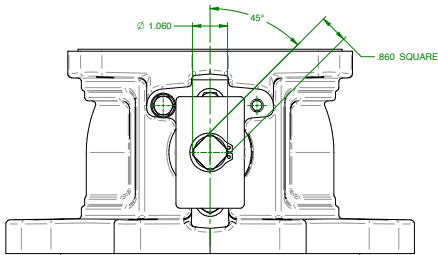
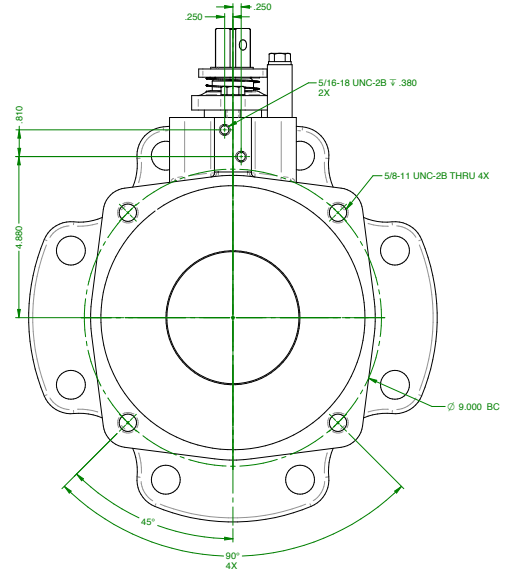
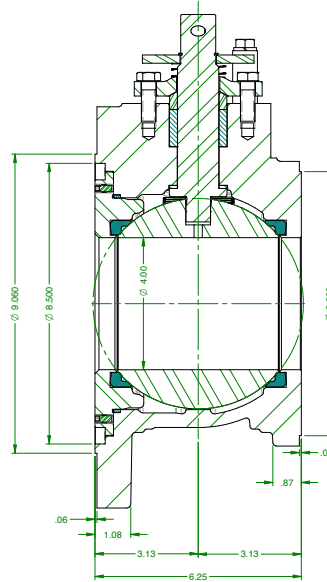
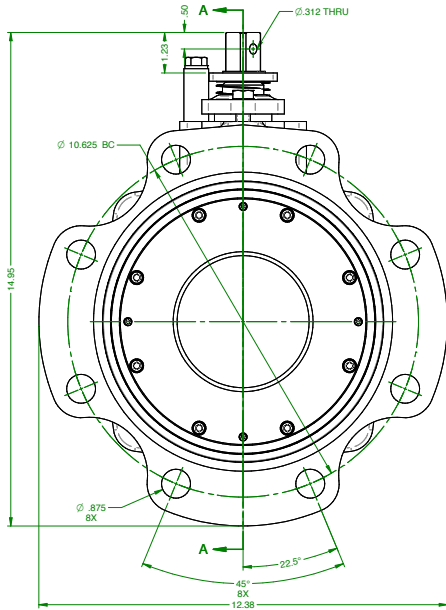


87A/88A-TPA WITH OPTIONAL STEAM JACKET



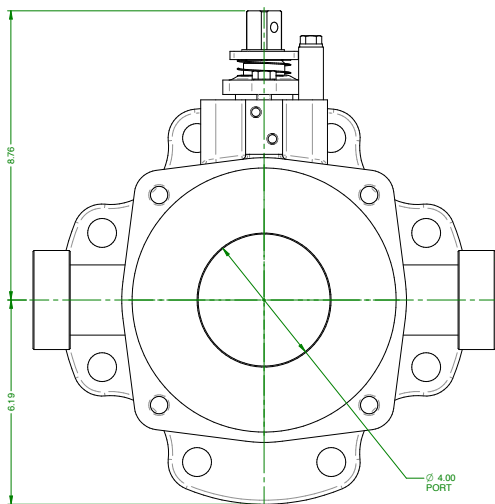
87A-TPA-SP3 / 88A-TPA-SP3 SERIES
FULL PORT BOTTOM OUTLET VALVE

87A/88A-TPA-SP3



SECTION A-A

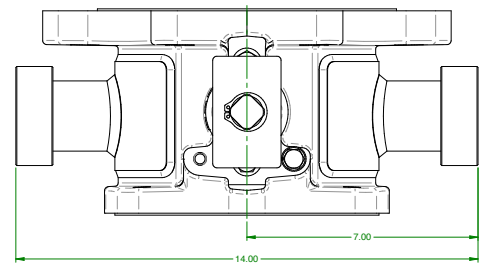
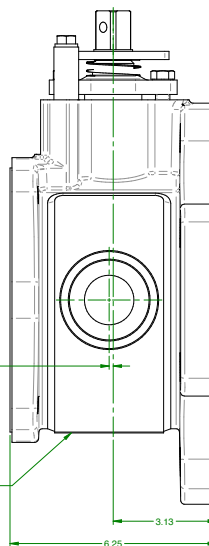
87A/88A-TPA-SP3 WITH OPTIONAL STEAM JACKET



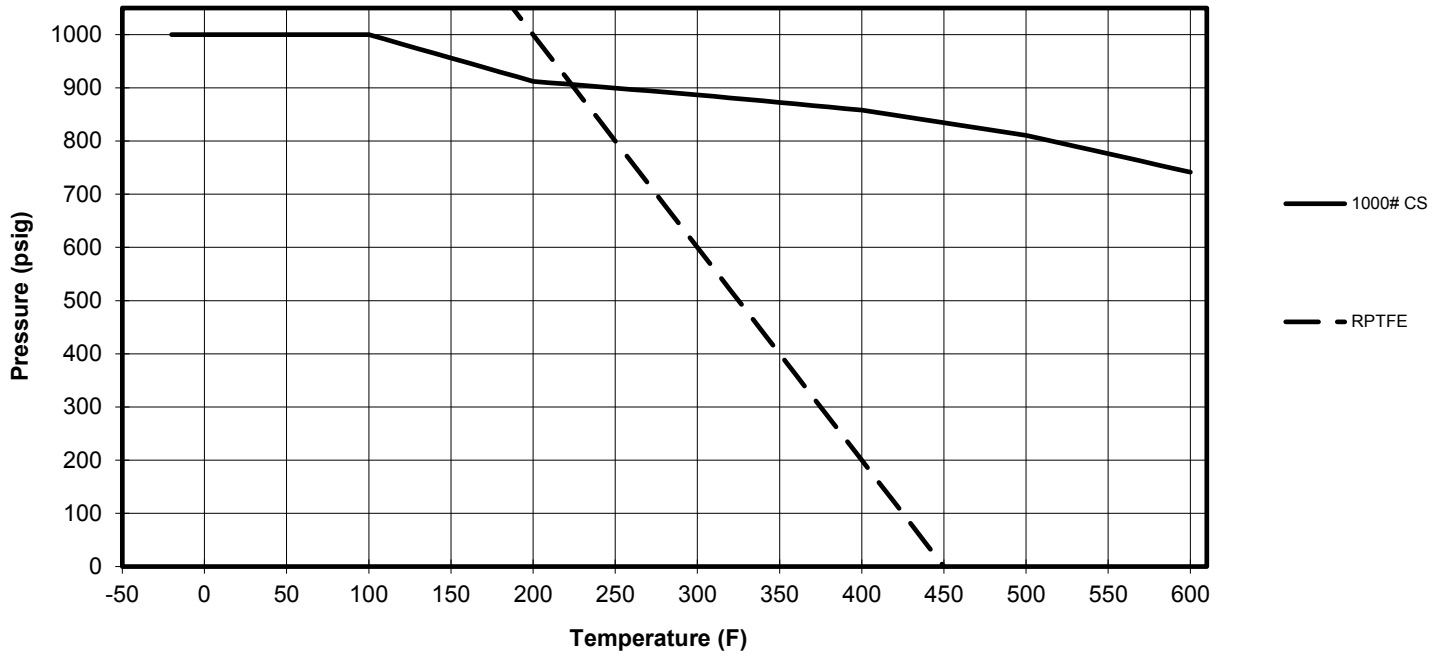
(2) 2" SW CONNECTIONS
ASTM A276-316L STA. STL.

12
TYP.

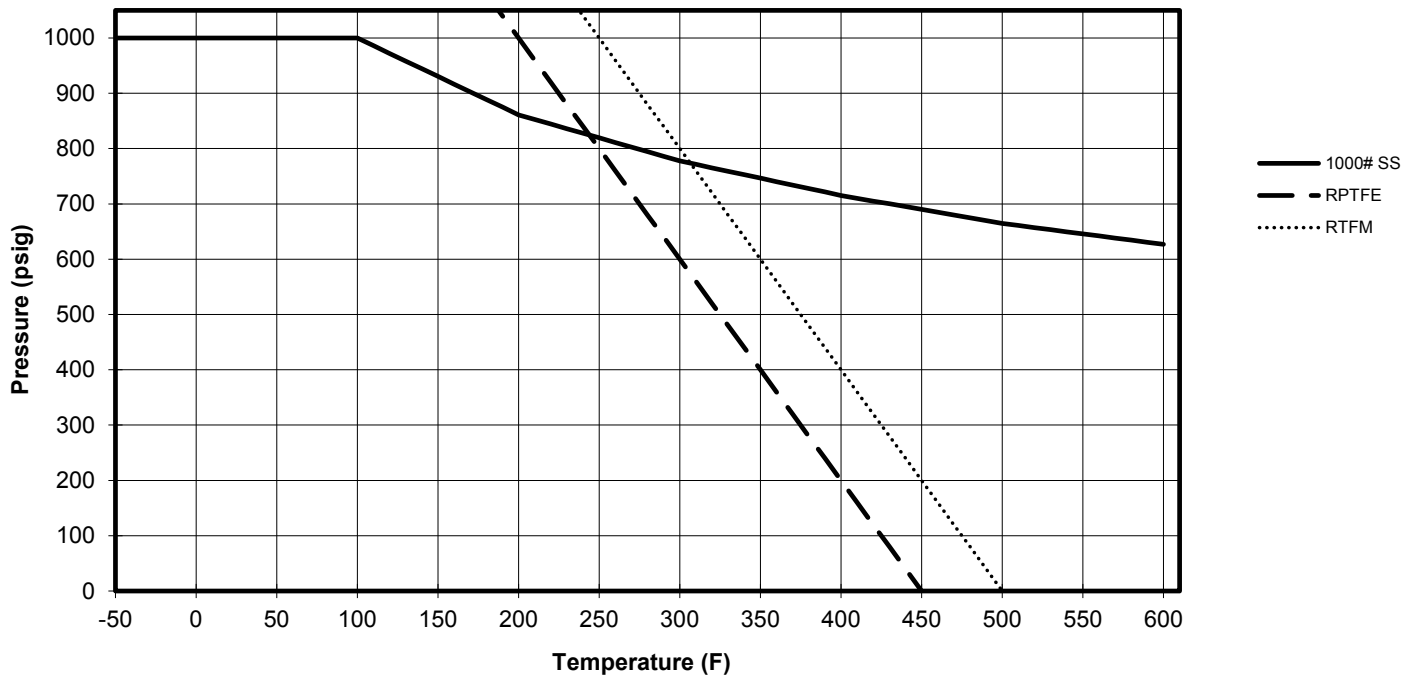
JACKET, ASTM A240
304L STA. STL.



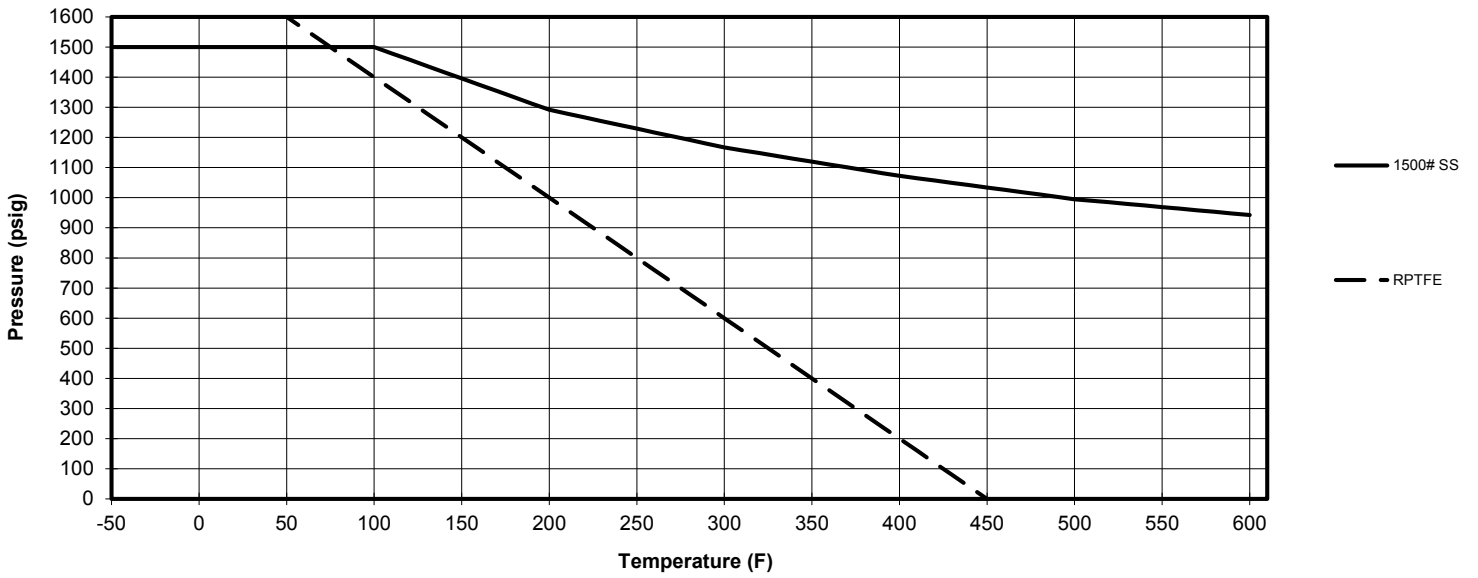
1000# CS **RPTFE**



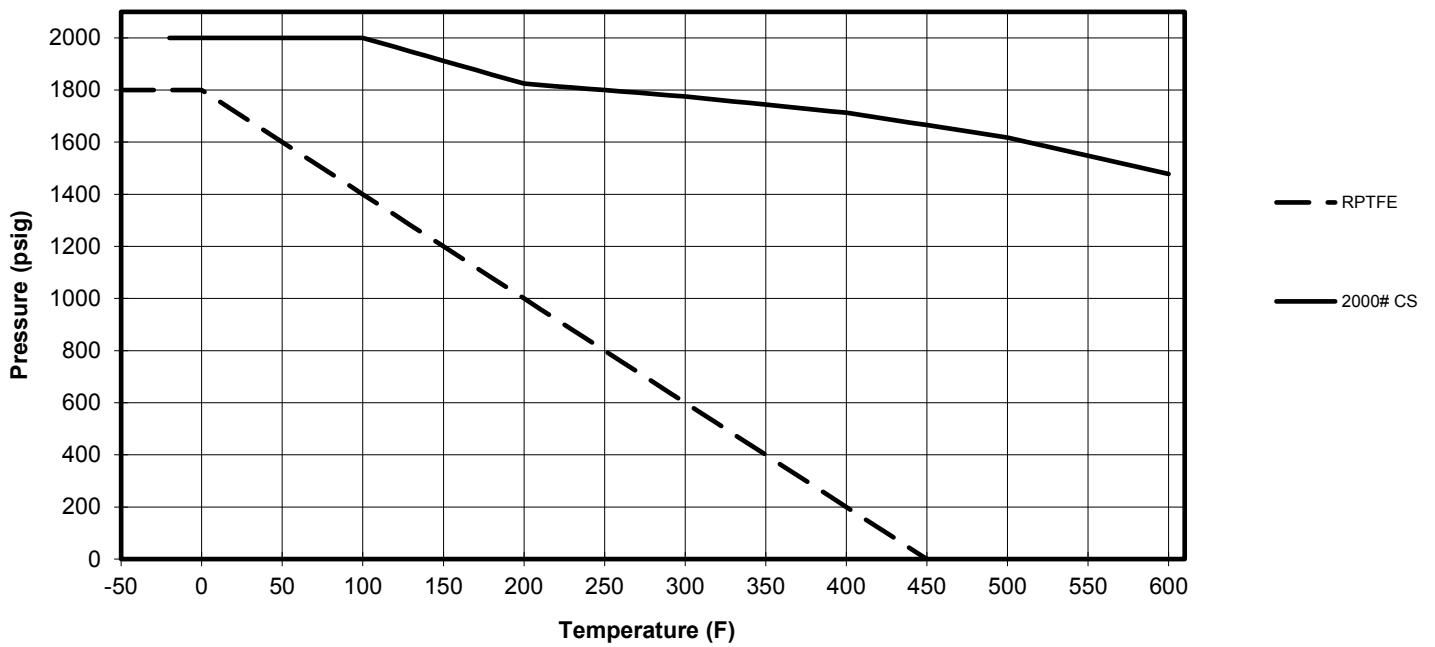
1000# SS **RPTFE & RTFM**



1500# SS **RPTFE**

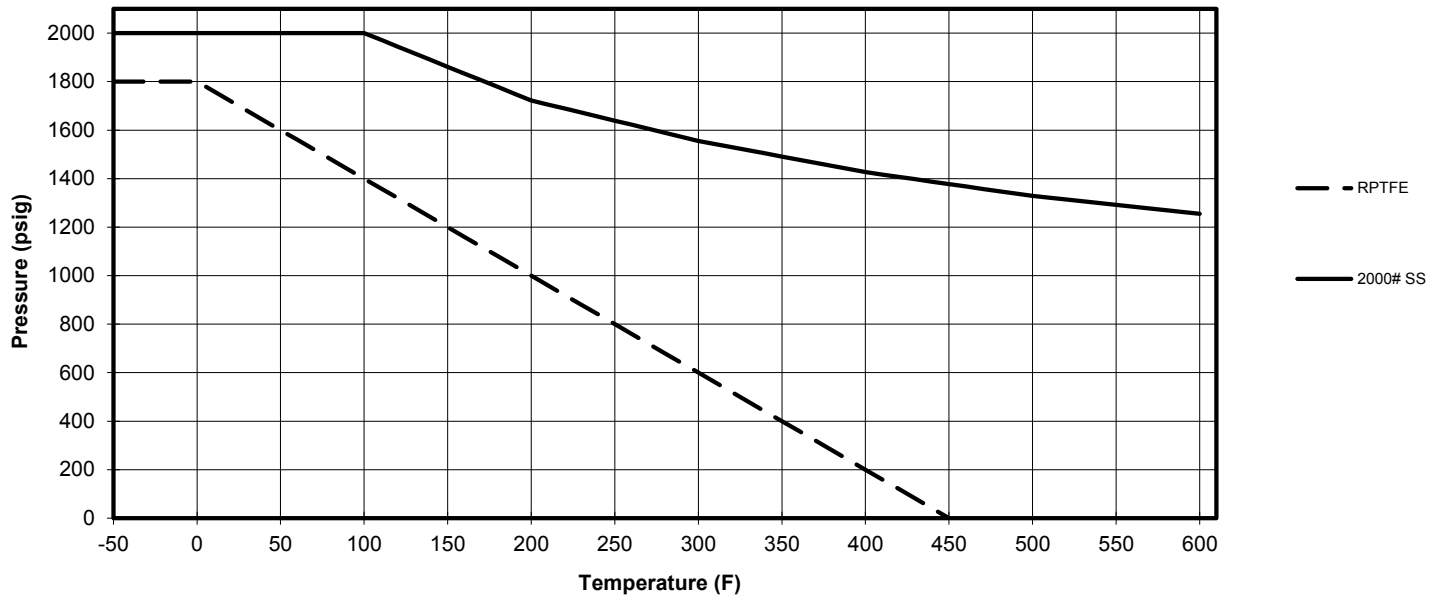


2000# CS **RPTFE**



2000# SS

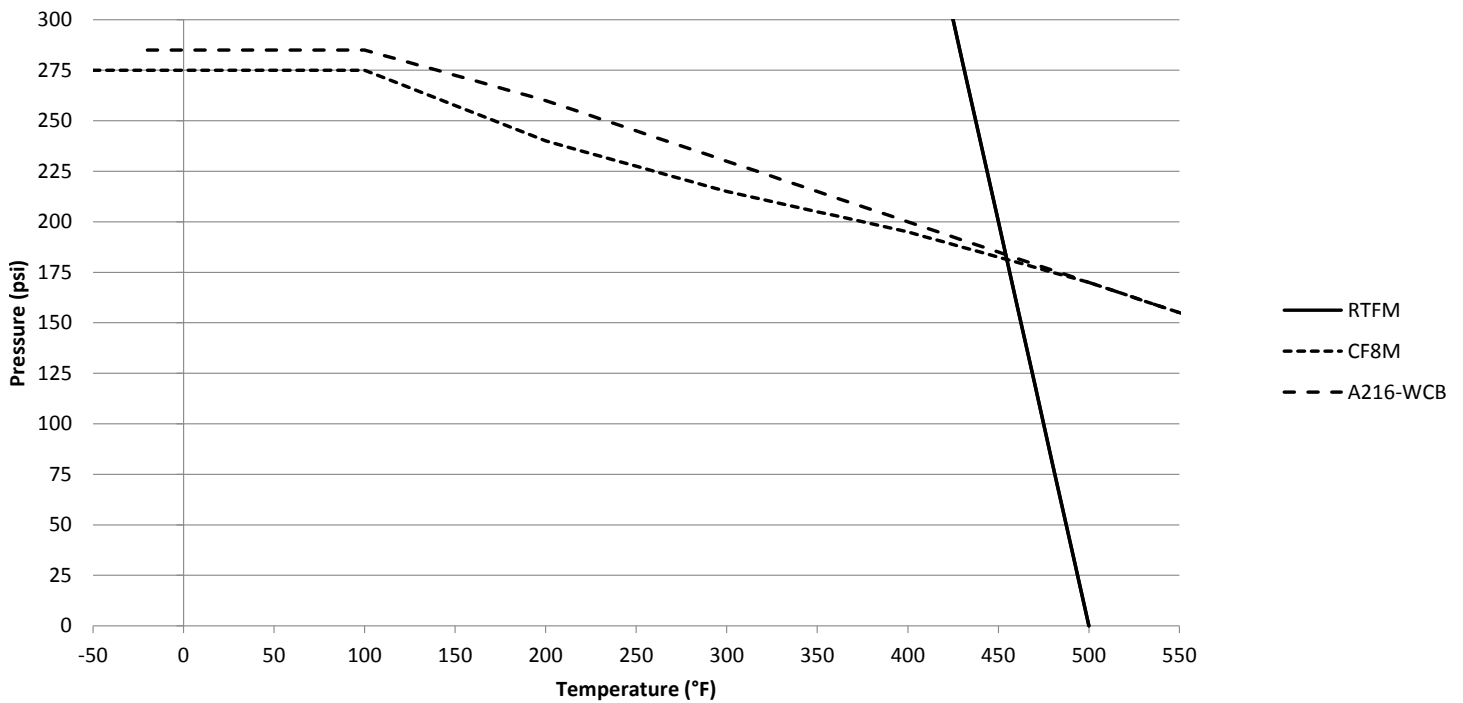
RPTFE



FLANGED 150

A216-WCB & CF8M

RTFM



PLEASE USE ALL DIGITS WHEN ORDERING.

00-000-00

MATERIAL OR STYLE

2-PIECE & UNIBODY VALVES	
70	Bronze
71	Bronze with Pads
72-A	Carbon Steel (Forged Body)
73	Carbon Steel
73A	A105 Carbon Steel
74	Nickel
75	Pad-Locking Bronze
76	CF8M Stainless Steel
76F	CF8M Stainless Steel, Full Port
77	Bronze Full Port
77C	Bronze Full Port Economy
78	Special Valves and Kits
79	Refrigerant Valves
7A	Chlorine Carbon Steel
7K	Bronze Full Port Drain
80	Bronze, UL Listed
81	Bronze, UL Listed Plain Ball
82	Bronze 3-Piece Full Port
89	Cast Carbon Steel w/ Pads
9A	Bronze, Heavy Pattern, Unibody
90	Bronze, Unibody UL Listed
91	Bronze, Unibody
92	Cast Carbon Steel Unibody
93	Carbon Steel Unibody
95	Bronze & Stop Drain
96	CF8M Stainless Steel Unibody
399	Alloy-20 NPT

3-PIECE VALVES	
83A	CS 3-Piece 1500 lb Full Port
83B	CS 3-Piece ASME Class 600 Full Port
86A	SS 3-Piece 1500 lb Full Port
86B	SS 3-Piece ASME Class 600 Full Port
86C	Alloy-20 3-Piece, ASME Class 600 Full Port
83R	CS 3-Piece, Full Port (2" & 3" only)
86R	SS 3-Piece, Full Port (2" & 3" only)

FLANGED VALVES	
87A	CF8M SS Flanged
87A	Alloy 20 Flanged
87B	CF8M SS Flanged Unibody
88A	Carbon Steel Flanged
88B	Carbon Steel Flanged Unibody
88L	Low Temp Carbon Steel Flanged

TYPE

2-PIECE & UNIBODY VALVES	
1	NPT Female or Std Connection
2	Solder/Socket Weld
3	Union End x NPT (70-3) Double UNION END (73-3, 76-3)
4	Union End x Solder Socket Weld Double Union End (76-4)
5	Spring Return Handle
6	3-Way NPT
7	Full Port Refrigeration Valves
8	Male x Female NPT
9	3-Way Solder / O-Ring Boss (70-9) SAE Straight Threads (72, 77)

3-PIECE VALVES	
1	NPT Female
2	Solder (82)/Socket Weld (83/86)
3	Schedule 5 Butt Weld
4	Schedule 10 Butt Weld
5	Schedule 40 Butt Weld
6	Schedule 80 Butt Weld

FLANGED VALVES	
1	Class 150 Standard Port
2	Class 150 Full Port
3	(AAR Valves)
4	Class 150, Standard Port, Alloy 20 (87A)
5	Class 150, Full Port, Alloy 20 (87A)
6	Class 300, Full Port, Alloy 20 (87A)
7	Class 300, Standard Port
8	Class 300, Standard Port, Alloy 20 (87A)
9	Class 300 Full Port
F	Class 600 Full Port

VARIATIONS

0	Standard Configuration
3	Ni-Cu Ball & Stem
4	SS Ball & Stem
8	SS Stem
9*	Pinned Retainer
A	Alloy 20
H	Hastelloy® C Ball & Stem
N	Nickel

**Bronze valves only*

NOTE: NOT ALL OPTIONS AND COMBINATIONS AVAILABLE ON ALL SIZES AND SERIES. REVIEW THE SPECIFIC TECHNICAL SHEET TO DETERMINE AVAILABILITY.

Modifying Suffixes

- The "01" suffix represents the standard configuration detailed in the Technical Literature.
- If an option is desired, replace the "01" suffix with the suffix of the option.
- If multiple options are desired, replace the "01" suffix with the desired suffixes in the order shown below.

Example: 87A-10A-1424MG

SIZE

1	1/4"
2	3/8"
3	1/2"
4	3/4"
5	1"
6	1.25"
7	1.5"
8	2"
9	2.5"
0	3"
A	4"
C	6"
E	8"
G	10"
H	12"

OPTIONS

-01	Standard Configuration
-02	Grounded
-04	2-1/4" Stem Extension
-05	Plain Ball
-07	Tee Handle
-08	90° Reversed Stem
-10	SS Lever and Fastener
-11	Therma-Seal™ Handle
-12	Stamped "157 SWP" & Bagged
-13	Stamped "157 SWP"
-14	Side Vented Ball (Uni-Directional)
-15	Round Handle, Steel
-16	Chain Lever - Valve in Vertical Position
-17	Rough Chrome Plated
-18	Plain Yellow Grip
-19	Pad-Locking
-20	Slot Vented Ball (Bi-Directional)
-21	Uhmwpe Trim (Non PTFE)
-22	Viton Union Seals
-23	Tank Flange (2" 3-Pc. Valves Only)
-24	Graphite Packing (Not Always Firesafe)
-26	For Chlorine Service: Side Vented,Cleaned (CS, HC, Monel Only)
-27	SS Latch Lock Lever & Nut
-29	Graphite Packing & Seals (Firesafe)
-30	Cam-Lock Handle And Grounded
-31	7B Series w/Boss Not Drilled/Tapped
-32	SS Tee Handle & Nut (Hi-Rise Handle)
-33	73-300 Series w/Pad Drilled/Tapped
-34	Nylatron Seats (96 Series)
-35	PTFE (Virgin TFE)
-36	SS Hi-Rise Round Handle, SS Nut
-38	Peek Seats & Bearing, Graphite Packing & Seals
-39	SS Hi-Rise Locking Round Handle, SS Nut
-40	Cyl-Loc & Grounded
-41	Automatic Drain (Uni-Directional)
-42	Non-Vented Ball, No Hole in Slot (CS & SS)
-43	Cyl-Loc, Grounded Ball & Stem, 680 Loctite or 3 Tack Welds
-44	Seal Welded (76-100 & 89-100 Series)
-45	Less Lever & Nut (No Hangtag)
-46	Latch-Lock Lever - Lock in Closed Position Only
-47	SS Oval Latch-Lock Handle
-48	SS Oval Handle (No Latch)
-49	Assembled Dry
-50	2-1/4" Locking Stem Extension
-51	One Tack Weld
-52	Two Tack Welds
-53	Three Tack Welds
-54	Four Tack Welds
-56	Multifill Seats (MPTFE) Not Available When 250#SWP Applies
-57	Cleaned for Oxygen Service (N/A on LF Bronze with Solder Extensions)
-58	Chain Lever - Valve in Horizontal Position
-59	SS External Trim (3-Pc. and Flange Valves)
-60	Grounded Ball & Stem
-62	Body Center Section
-63	NPT x Solder / Socket Weld
-64	250# SWP (MPTFE Seats & Packing)
-65	MPTFE Seats & Graphite Packing (-24 & -56)
-66	FNPT x Butt Weld
-67	Cleaned for Industrial Gas (CS Valves) (I7361 Desiccant)
-69	Purge Ports (Drilled/Tapped at Bottom & Approx. 45°)
-70	4" Extended Bonnet
-72	RTFE Packing

-73	TFE Packing, Spiral Wound Body Seals, TFE Fillers
-75	MPTFE Seats, PTFE Packing, RPTFE Gaskets
-76	Live Loaded - with Lever
-77	Live Loaded - Actuated or Gear Operated
-78	Delrin Seats
-79	Nylon Seats - Graphite Packing (72 Series)
-8R	15% Glass Filled TFM I600 Seats, PEEK Bearing
-80	Dyneon TFE I600 Seats, PEEK Bearing
-81	Graphite Packing with Braided End Rings (Flange Valves)
-82	Flat Face Flanges
-83	SS Tee Handle & Nut (SS Version of -07) (77 Series)
-84	Reverse SS Lever & Nut (77B Series)
-85	Short SS Tee Handle & Nut (Silicone Bronze Retainer) (77B 1/2")
-86	Reverse Locking SS lever (77B Series) (Locking Version of -84)
-87	Safety Latch (Flange Valves)
-88	Panel Mount (60A Series)
-89	PFA Seats
-9P	Double Packed Extended Bonnet with Port
-90	Double Packed Extended Bonnet
-91	Latch-Lock Tee Handle, SS
-92	Balancing Stop
-94	-04 & Balancing Stop
-95	Devlon Seats, Graphite Packing, PEEK Bearing
-96	PCTFE Seats, Graphite Packing
-97	Ground, Round Handle, Pinned or Tack Welded
-99	For 7B Series: -99A Less Lever, Side Tap -99B Less Lever, No Tap
-AR	Actuator Ready (MPTFE Seats, Live Loaded, Less Lever)
-BC	Ball Check
-BK	PCTFE Bearing
-CE	CE Approved (1-1/4" and Above Only)
-DP	Dye Penetrate
-EF	API 641 Compliant Packing (Graphite)
-EP	Garlock EVSP Packing, Graphite Spiral Wound Gasket
-GS	Gas Service; CSA Approved
-HC	3/4" Hose Thread Retainer with Brass Cap & Chain
-KF	Kel-F Bearing
-MG	Gear Operated, Standard Hand Wheel
-MH	Gear Operated, Standard Hand Wheel & Lockout Device
-MJ	Gear Operated, Oversize Hand Wheel
-MK	Gear Operated, Oversize Hand Wheel & Lockout Device
-MP	Material Positive (PMI Testing)
-PH	17-4 PH Stem
-RR	Oiled and Bagged for Rust Prevention on Carbon Steel Valves
-SR	Spring Return Handle (83A/B & 86A/B Series)
-SV	Safety Vent (77-100 / 7K-100 Series) (Auto Drain)
-SW	Limit Switch Mounted
-TC	Tested, Hydrostatic w/Certification
-TD	Tested to API 6D w/Certification
-TH	Tested, Hydrostatic
-TM	MTR
-TR	Tested, Hydrostatic w/Certification and MTR
-TS	Tested, Special, Customer Specified
-TW	Tested, Hydrostatic w/Witness and Certification
-UA	AIS Compliant
-US	Made in USA
-ZG	Cup & Cone Style Packing, Graphite
-ZP	Cup & Cone Style Packing, PTFE
-ZP1	API 641 Compliant Packing (Viton)
-ZP2	API 641 Compliant Packing (Buna-N)
-ZP3	API 641 Compliant Packing (Kalrez)
-SP3	Corrosion Testing to ASTM A262 Practice A (SS Valves Only)

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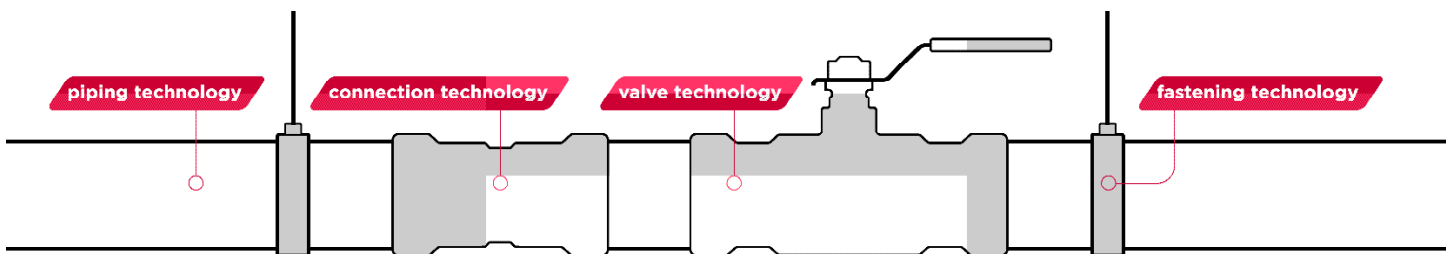
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