



ARANS
ARVIN ANDOOZAN SAVEH

Ball Valve

Manufacturer and Supplier
of all kinds of Valves for
Gas, Oil and Petrochemical Industries

GENERAL CATALOGUE



ARVIN ANDOOZAN SAVEH

Index

Introduction	2
Manufacturing Program	3
Certificates	4
Technical Specification	5
Fire safe Design Features	6
Safety Features Available	6
Standard Design Features	7
Seating Design Features	7
Double Block and Bleed	7
Pressures Testing	8
Floating Ball Valve	10
Trunnion Ball Valve	11
Typical Construction	12
Typical Parts and Materials	12
ANSI Class 150 Pressure Temp. Rating	13
ANSI Class 300 Pressure Temp. Rating	14
ANSI Class 600 Pressure Temp. Rating	15
Material Specifications	16
ANSI/ASME B16.5 Flange Dimensions Class 150	17
ANSI/ASME B16.5 Flange Dimensions Class 300	17
ANSI/ASME B16.5 Flange Dimensions Class 600	18
Flow Data	19



Company Introduction

We are pleased to present you our company which, since its foundation more than 3 years ago, is dedicated to the production of high-quality valves. Up to 2005 we have been manufacturing all kind of valves mainly for oil, petrochemical, energy and gas services and we are proud to manufacture our valves under our brand ARANSA.

We are equipped with the most modern installations and a highly qualified human team, enabling us to offer the widest possible range of valves combining high standards in technology, quality and productivity, as well as tradition, experience and dependability, with an unrivalled reputation for quality and service.

All of **ARANSA'S** quality guarantee system as well as all its processes and procedures, both technical ones regarding products and the organization of the company, are certified according to the ONE-EN **ISO 9001-2003, TS 29000** standards approved by **Moody International Company**. Though this certification is extremely important for our company, it must be said that the best certification we can offer is that which our customers afford us day after day with their trust when they buy **ARANSA'S** products which are to our complete satisfaction.

The company is structured into two different divisions, petrochemical & energy division gas and oil division, we are proud to present them as follows in this brochure.

FLEXIBILITY-SERVICE-EXPERIENCE-KNOWLEDGE & QUALITY MANUFACTURING PROGRAM

ARANSA valves philosophy is the customer requirement satisfaction fulfilling the most strict requirements of the gas, petrochemical and oil industry. As the market is demanding shortest delivery, technical assistance and higher quality requirements ARANSA is reaching the state of art in giving the best service. ARANSA is a company on the 21 st century involved in improving the environmental issues manufacturing according the latest technology clean and safe.

ARANSA is one of the leader companies in IRAN special valves manufacturing and other products designed for fluids handling applied to petrochemical, gas, oil plants, and general industry. Our principal objective is to be our client's favorite supplier, manufacturing valves that offer the highest value and service levels that exceed our clients' expectative.

Client's service

The ARANSA philosophy is the satisfaction of the client's requirements. Our market position is build over the fundamentals of the product availability from our distributors net and to provide technical support to the valves users. A correct product selection and the advice for the service can be one by simple phone call. We are specialized in tailor made valves according with the customer's specifications. Our sales engineers are qualified for treat with the valves application necessities, receiving clients' requirements and quoting an optimal offer of valves, which satisfies all international standards.

Quality assurance

A complete implemented quality system and strictness quality control and inspection in all the production steps assure that the ARANSA'S products are totally adequate for their proper application and they will give a satisfactory service. All the valves are tested individually according to the international standards Special **API6D**. Our product will be delivered with 24 mounts guarantee and also with after sales service for 10 years.





ARANS registered as manufacture in many company same as NIGC, NIOC, NIOPDC, NIPC and also approved under many standards such as **ISO 9001, 2000, TS 29000 standards**

Additionally, it has been approved by some users organizations, like main IRNIAN contractor's and customer private organizations in Iran and middle east biggest petrochemical and gas companies for the following range of products, plug and ball valves in a wide variety of pressure and materials such as carbon steel, low alloys, stainless steel and special alloys (monel, duplex, alloy 20, inconel, etc.) our product have been meet many standard such as API6D / API6FA / DIN 3230 / ASME B16.34 also IGS(Iranian gas standard) TPS(Iranian petroleum standard.)

TECHNICAL SPECIFICATION

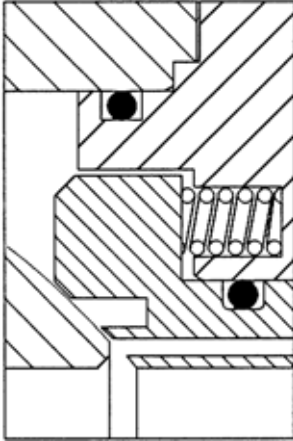
CONSTRUCTION	API 6D	
FIRESAFE DESIGN	API 6FA and BS 6755 Part 2	
STYLE	2-Piece Bolted Body, End Entry, Trunnion Mounted, Floating Available in Full Bore Patterns	
FACE-TO-FACE DIMENSIONS	API 6D and ANSI B16.10	
END-TO-END DIMENSIONS	API 6D and ANSI B16.10	
FLANGE END DIMENSIONS	Up to Size 24" Sizes 26" and Larger	ANSI B16.5 ASME B16.47 Series A or B or API 605 or MSS SP-44
BUTT-WELD END DIMENSIONS	ANSI B16.25	
TESTING	API 6D	
BODY MATERIALS	ASTM A105 A216 WCB Carbon Steel ASTM A350 Impact Tested Carbon / Low-Alloy Steel ASTM A182 Alloy / Corrosion-Resistant Steel or per Order Specifications	
TRIM MATERIALS	E.N.P. (Electroless Nickel Plating) Alloy / Corrosion-Resistant Steel or per Order Specifications	
SEAT MATERIALS	PTFE Nylon	
SEAL MATERIALS	Buna-N FKM Fluoroelastomer / Viton® Flexible Graphite	
OPERATION	Manual Lever Gearbox Actuation via ISO 5211 Mounting Pad	



FIRESAFE DESIGN FEATURES

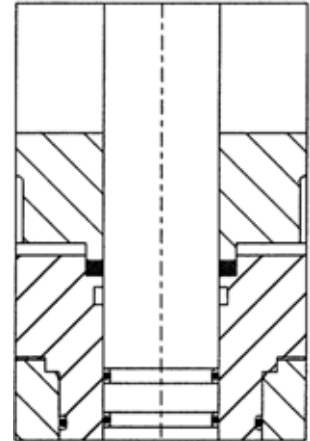
SECONDARY FIRESAFE METAL-TO-METAL SEATING

In event the soft seat insert is burned away, the spring-loaded metal seat rings will effect a secondary metal-to-metal seal.



TRIPLE STEM SEAL SYSTEM

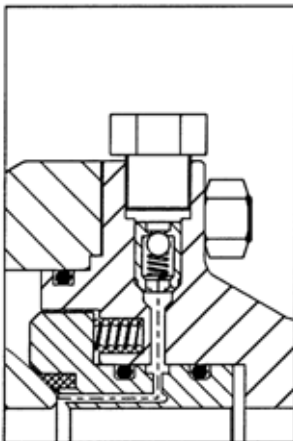
Two o-rings are employed below the sealant injection to provide static sealing while re-placeable packing is added above the sealant injection for triple protection and firesafe integrity.



SAFETY FEATURES AVAILABLE

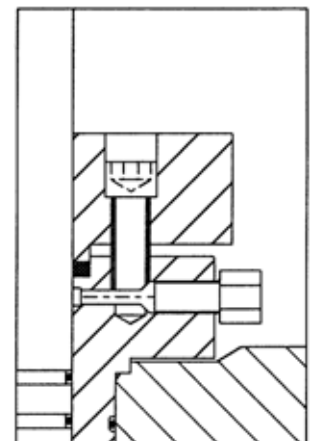
SEAT SEALANT INJECTION FITTING

A seat sealant injection fitting is provided to allow a fast, simple way to restore tight shut-off in the event the soft seat inserts are damaged.



STEM SEALANT INJECTION FITTING

A stem sealant injection fitting is provided to allow a fast, simple way to restore stem integrity in the event the stem seals are damaged



- ◆ Locking Device - Prevents Tampering
- ◆ Transition Pups - For Welding
- ◆ Stem Extension - For Buried Service

- ◆ Extended Bonnet - For Insulated Service
- ◆ Fugitive Emissions Bonnet
- ◆ Actuation - Electric, Hydraulic and Pneumatic (Double Acting / Spring Return)

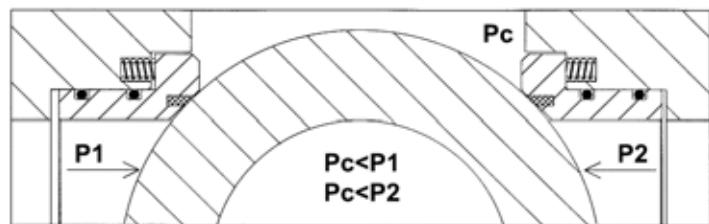
STANDARD DESIGN FEATURES

- ◆ Bi-Directional Flow
- ◆ 2-Piece Bolted Body - Field Serviceable
- ◆ Full Bore Through Conduit - Suitable for Pigging Operations
- ◆ Anti-Blowout Stem
- ◆ Unique Valve Serialization- Full Traceability
- ◆ Anti-Static Devices - Provide electrical continuity between all valve components

SEATING DESIGN FEATURES

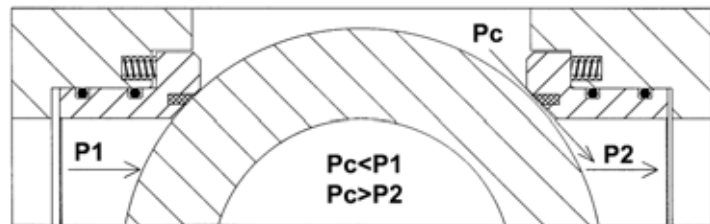
AUTOMATIC SEALING SEAT DESIGN

Seating design incorporates spring-loaded metal seat holders with soft seat inserts to maintain constant seat-to-ball contact effecting tight shut-off even at low pressure.



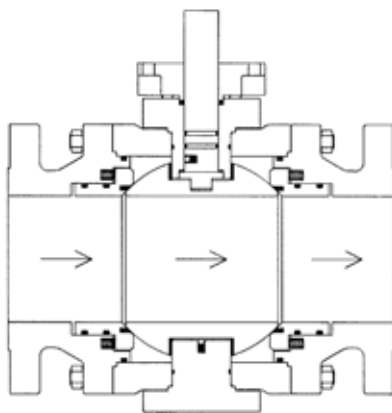
AUTOMATIC PRESSURE RELIEF SYSTEM

The spring-loaded seating design will automatically relieve excess cavity pressure into the line when the cavity pressure exceeds line pressure.

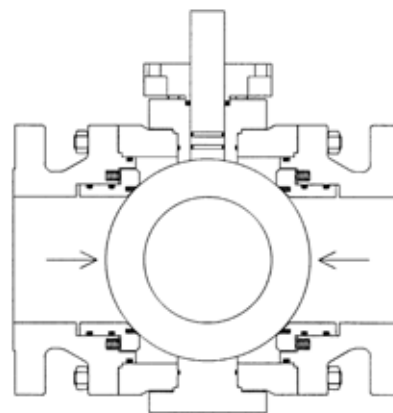


DOUBLE BLOCK AND BLEED

- ◆ Independent spring-loaded seat rings effect *DOUBLE* (upstream and downstream) seals (*BLOCK*) while a combination of vent and drain connections allow for *BLEED* operations
- ◆ The drain valve can also be used to test for seat/seal integrity



Valve in Open Position



Valve in Closed Position



Pressures Testing

Test Pressures

VALVE RATING	Maximum C.W.P.	BODY TEST(minimum)	SEAT TEST(minimum)
	bar	bar	bar
CLASS 150 PN 20	19.5	29.5	21.5
CLASS 300 PN 50	51	76.5	56
CLASS 600 PN 100	102	153.2	112
CLASS 800	138	207	152
CLASS 900 PN 150	153	230	168
CLASS 1500 PN 250	256	383	281
CLASS 2500 PN 420	425	638	468
API 2000	138	276	138
API 3000	207	414	207

API pressures are taken from API 6A, all other pressures are taken from ANSI B16.34. The test pressures from ANSI B16.34 are those relevant to Carbon Steel ASTM A216 Gr. WCB. There may not be exact equivalence between pressure in bar and in PSIG due to rounding (1 bar=105 Pa) Each relevant standard defines the minimum length of time for which each test pressure is to be maintained and also the testing operations sequence.

NPS IN	DN mm	Duration of hydrostatic tests in minutes (minimum) ¹								
		Shell Test			Backseat Test			High Closure Test		
		API ⁴	API	ISO ²	API ⁴	API	ISO ^{2 3}	API ⁴	API	ISO ²
≤2	≤50	1	-	0.5	0.5	2	0.5	1	-	0.5
1/2~4	15~100	-	2	-	-	2	-	-	2	-
2 1/2~6	65~150	1	-	-	1	-	0.5	1	-	-
2 1/2~8	65~200	-	-	1	-	-	-	-	-	0.5
6~10	150~250	-	5	-	-	5	0.5	-	5	-
≥10	≥250	2	-	3	-	5	0.5	-	5	-
8~12	200~300	-	-	-	2	-	-	2	-	-
10~18	250~450	-	-	-	-	-	-	-	-	1
12~18	300~450	-	15	-	-	-	-	-	-	-
≥14	≥350	5	-	-	2	-	-	2	-	-
≥20	≥500	-	30	-	-	-	-	-	-	2

Remark:

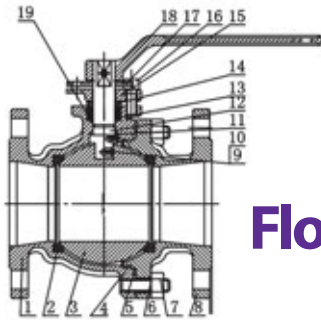
1. The test duration is calculated after the testing pressure in the valve has been increased to the value stipulated on the standard. These durations will be adhered to unless a different specification is required against a particular order. Hydrostatic tests of long duration require that the valve be given special attention to facilitate pipeline testing. The same duration for BS6755, GB/T13927 & ISO5208.

2. ISO5208 has no this requirement which is cited from BS6755.

3. API 6D also requires a 5.5 bar(80 PSIG)air test on the seat for the same duration.

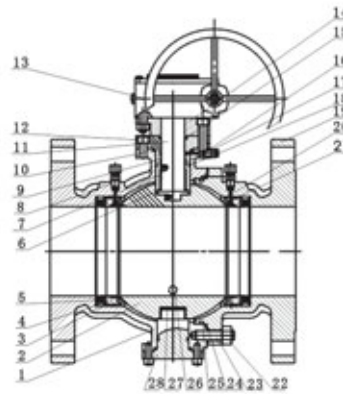
ARANSÁ Ball Valves





Floating Ball Valves SIZE MAIN DIMENSIONS

DN		150Lb(PR)							
mm	in	L	D	D1	D2	b	n-Ø d	H	D0
15	1/2	108	89	60.5	35	10	4-Ø 16	59	130
20	3/4	117	98	69.9	43	10.5	4-Ø 16	63	130
25	1	127	108	79.2	51	11.5	4-Ø 16	75	160
32	1 1/4	140	117	89.0	63	13	4-Ø 16	95	160
40	1 1/2	165	127	98.6	73	14.5	4-Ø 16	107	160
50	2	178	152	120.7	92	16	4-Ø 19	155	200
65	2 1/2	190	178	139.7	105	18	4-Ø 19	164	200
80	3	203	190	152.4	127	19.5	4-Ø 19	182	200
100	4	229	229	190.5	157	24.0	8-Ø 19	226	300
125	5	356	254	216.0	186	24.0	8-Ø 22.5	230	300
150	6	394	279	241.3	216	25.4	8-Ø 22.5	250	500
200	8	457	343	298.5	270	28.4	8-Ø 22.5	280	500
250	10	533	406	362.0	324	30.2	12-Ø 25.5	320	600
DN		300Lb(PR)							
15	1/2	140	95	66.5	35	14.2	4-Ø 16	59	130
20	3/4	152	117	82.5	43	16.0	4-Ø 19	63	130
25	1	165	123	89.0	51	17.5	4-Ø 19	75	160
32	1 1/4	178	133	98.5	63	19.0	4-Ø 19	95	160
40	1 1/2	190	155	114.3	73	20.6	4-Ø 22.5	107	160
50	2	216	165	127.0	92	22.4	8-Ø 19	155	200
65	2 1/2	241	190	149.4	105	25.4	8-Ø 22.5	164	200
80	3	283	210	168.1	127	28.4	8-Ø 22.5	182	200
100	4	305	254	200.2	157	31.8	8-Ø 22.5	226	300
125	5	381	279	235.0	186	35.0	8-Ø 22.5	230	300
150	6	403	318	269.7	216	36.6	12-Ø 22.5	250	500
200	8	502	381	330.2	270	41.2	12-Ø 25.5	280	500
250	10	568	444	387.4	324	47.8	16-Ø 28.5	320	600
DN		600Lb(PR)							
15	1/2	165	95	66.5	35	21	4-Ø 16	59	130
20	3/4	190	117	82.5	43	22.5	4-Ø 19	63	130
25	1	216	124	89.0	51	24	4-Ø 19	75	160
32	1 1/4	229	133	98.5	63	27.5	4-Ø 19	95	160
40	1 1/2	241	156	114.3	73	29	4-Ø 22.5	107	200
50	2	292	165	127.0	92	33	8-Ø 19	162	200
65	2 1/2	330	190	149.4	105	36	8-Ø 22.5	205	300
80	3	356	210	168.1	127	39	8-Ø 22.5	226	300
100	4	432	273	216.0	157	45	8-Ø 22.5	240	500
125	5	508	330	266.0	186	52	8-Ø 28.5	305	500
150	6	559	356	292.1	216	55	12-Ø 28.5	353	600



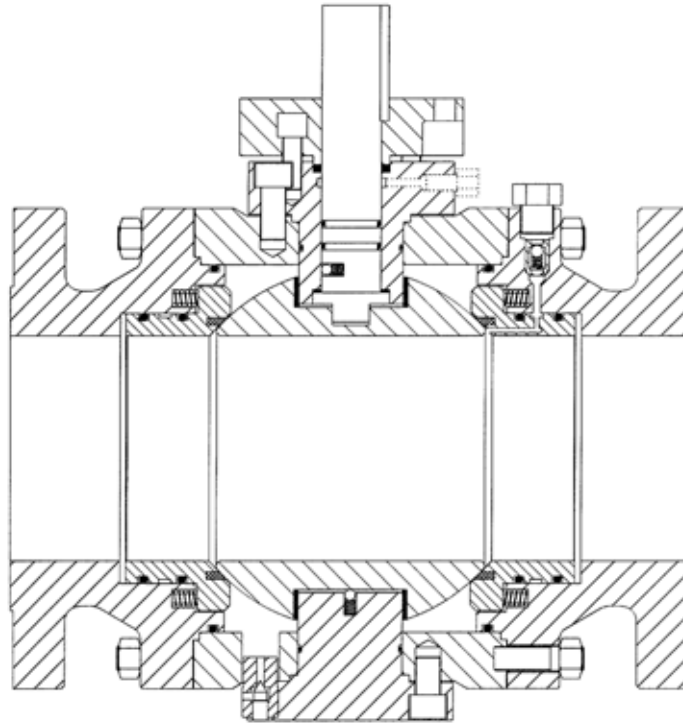
Trunnion Ball Valves

SIZE MAIN DIMENSIONS

DN		150Lb(CPR)							
mm	in	L	D	D1	D2	b	n-Ø d	H1	H2
150	6	394	279	241.3	216	25.4	8-Ø 22.5	219	330
200	8	457	343	298.5	270	28.4	8-Ø 22.5	273	398
250	10	533	406	362.0	324	30.2	12-Ø 25.4	360	495
300	12	610	483	431.8	381	32.0	12-Ø 25.4	395	580
350	14	686	533	476.3	413	35.0	12-Ø 29	430	625
400	16	762	597	539.8	470	36.6	16-Ø 29	470	670
450	18	864	635	577.9	533	39.6	16-Ø 32	550	698
500	20	914	698	635.0	584	43.0	20-Ø 32	580	840
600	24	1067	813	749.3	692	48.8	20-Ø 35	700	1050
DN		300Lb(CPR)							
150	6	403	318	269.7	216	36.6	12-Ø 22.5	219	330
200	8	502	381	330.2	270	41.2	12-Ø 25.4	273	398
250	10	568	444	387.4	324	47.8	16-Ø 28.5	360	495
300	12	648	521	450.8	381	50.8	16-Ø 32	395	580
350	14	762	584	514.4	413	54.0	20-Ø 32	430	625
400	16	838	648	571.5	470	57.2	20-Ø 35	470	670
450	18	914	711	628.7	533	60.5	24-Ø 35	550	698
500	20	991	775	685.8	584	63.65	24-Ø 35	580	840
600	24	1143	914	812.8	692	70.0	24-Ø 41	700	1050
DN		600Lb(CPR)							
150	6	559	356	292.1	216	55	12-Ø 28.5	250	300
200	8	660	419	394.2	270	63	12-Ø 32	294	374
250	10	787	508	431.8	324	71	16-Ø 35	370	445
300	12	838	559	489.0	381	74	20-Ø 35	420	515
350	14	889	603	527.0	413	77	20-Ø 38	460	550
400	16	991	686	603.2	470	84	20-Ø 41	505	615
450	18	1092	743	654.0	533	90	20-Ø 44.5	560	720
500	20	1194	813	723.9	584	96	24-Ø 44.5	630	810
600	24	1397	940	838.2	692	109	24-Ø 51	825	1010



TYPICAL CONSTRUCTION



TYPICAL PARTS AND MATERIALS

Service	Standard	Corrosive	Low Temp.
Part Name	-20 to 200 °F -29 to 93 °C	-20 to 400 °F -29 to 200 °C	-50 to 300 °F -46 to 149 °C
Body	A216 WCB Normalized		A350 Gr. LF2
Bonnet	A216 WCB Normalized		A350 Gr. LF2
End Piece	A216 WCB Normalized		A350 Gr. LF2
Ball	A105 + ENP	A182 Gr. F316	LF2 + ENP
Seat Holder	A105 + ENP	A182 Gr. F316	LF2 + ENP
Stem	AISI 1045 + ENP	A182 Gr. F316	LF2 + ENP
Trunnion	A105 + ENP	A182 Gr. F316	LF2 + ENP
Seat Insert	Nylon		PTFE
Seat Spring	UNS N07750 / Inconel® X-750		
O-Ring Seal	FKM Fluoroelastomer / Viton®		EPDM
Gasket	Flexible Graphite		
Stud Bolt	A193 Gr. B7 / B7M		A320 Gr. L7 / L7M
Hex Nut	A194 Gr. 2H / 2HM		A194 Gr. 7 / 7M

Note: Other materials available upon request.

ANSI CLASS 150 PRESSURE-TEMP. RATINGS

Temperature °F	Pressure (psig)							Temperature °C
	ANSI B16.34 Material Group							
	1.1	2.1	2.2	2.3	2.8			
	1.2 A216 WCB	A350 LF2 ¹	A182					
		F304 ³	F316 ³	F304L	F316L	F44		
-20 to 100	285	285	275	275	230	230	290	-29 to 38
200	260	260	230	230	195	195	260	93
300	230	230	205	215	175	175	230	149
350	215	215	198	205	168	168	215	177
400	200	200	190	195	160	160	200	204
450	185	185	180	183	153	153	185	232
500	170	170	170	170	145	145	170	260
550	155	155	155	155	143	143	155	288
600	140	140	140	140	140	140	140	316
650	125	125	125	125	125	125	125	343
700	110	110	110	110	110	110	110	371
750	95	95	95	95	95	95	95	399
800	80	80	80	80	80	80		427
850	65	65	65	65		320		454
900	50	50	50	50				482
950	35	35	35	35				510
1,000	20	20	20	20				538
1,050			20 ^a	20 ^a				566
1,100			20 ^a	20 ^a				593
1,150			20 ^a	20 ^a				621
1,200			20 ^a	20 ^a				649
1,250			20 ^a	20 ^a				677
1,300			20 ^a	20 ^a				704
1,350			20 ^a	20 ^a				732
1,400			20 ^a	20 ^a				760
1,450			15 ^a	15 ^a				788
1,500			10 ^a	10 ^a				816

¹ Upon prolonged exposure to temperatures above 800 °F (427 °C), the carbide phase of steel may be converted to graphite. Permissible, but not recommended for prolonged use above 800 °F (427 °C).

² Only killed steel shall be used over 850 °F (454 °C).

³ At temperatures over 1,000 °F (538 °C), use only when the carbon content is 0.04% or higher.

^a For welding end valves only. Flanged end ratings terminate at 1,000 °F (538 °C).

Shaded Area Consult factory when working temperature is in this range.



ANSI CLASS 300 PRESSURE-TEMP. RATINGS

Temperature °F	Pressure (psig)							Temperature °C
	ANSI B16.34 Material Group							
	1.1		2.1	2.2	2.3		2.8	
	^{1,2} A216 WCB	A350 LF2 ¹	F304 ³	F316 ³	F304L	F316L	F44	
-20 to 100	740	740	720	720	600	600	750	-29 to 38
200	675	675	600	620	505	505	720	93
300	655	655	540	560	455	455	665	149
350	645	645	518	538	435	435	640	177
400	635	635	495	515	415	415	615	204
450	618	618	480	498	398	398	595	232
500	600	600	465	480	380	380	575	260
550	575	575	450	465	370	370	565	288
600	550	550	435	450	360	360	555	316
650	535	535	430	445	350	350	550	343
700	535	535	425	430	345	345	540	371
750	505	505	415	425	335	335	530	399
800	410	410	405	420	330	330		427
850	270	270	395	420		320		454
900	170	170	390	415				482
950	105	105	380	385				510
1,000	50	50	320	350				538
1,050			310	345				566
1,100			255	305				593
1,150			200	235				621
1,200			155	185				649
1,250			115	145				677
1,300			85	115				704
1,350			60	95				732
1,400			50	75				760
1,450			35	60				788
1,500			25	40				816

¹ Upon prolonged exposure to temperatures above 800 °F (427 °C), the carbide phase of steel may be converted to graphite. Permissible, but not recommended for prolonged use above 800 °F (427 °C).

² Only killed steel shall be used over 850 °F (454 °C).

³ At temperatures over 1,000 °F (538 °C), use only when the carbon content is 0.04% or higher.

^a For welding end valves only. Flanged end ratings terminate at 1,000 °F (538 °C).

Shaded Area Consult factory when working temperature is in this range.

ANSI CLASS 600 PRESSURE-TEMP. RATINGS

Temperature °F	Pressure (psig)							Temperature °C
	ANSI B16.34 Material Group							
	1.1	2.1	2.2	2.3		2.8		
	A216 WCB ^{1,2}	A350 LF2 ¹	F304 ³	F316 ³	F304L	F316L	F44	
-20 to 100	1,480	1,480	1,440	1,440	1,200	1,200	1,500	-29 to 38
200	1,350	1,350	1,200	1,240	1,015	1,015	1,440	93
300	1,315	1,315	1,080	1,120	910	910	1,330	149
350	1,293	1,293	1,038	1,073	868	868	1,280	177
400	1,270	1,270	995	1,025	825	825	1,230	204
450	1,235	1,235	963	990	795	795	1,190	232
500	1,200	1,200	930	955	765	765	1,150	260
550	1,148	1,148	903	928	743	743	1,133	288
600	1,095	1,095	875	900	720	720	1,115	316
650	1,075	1,075	860	890	700	700	1,100	343
700	1,065	1,065	850	870	685	685	1,085	371
750	1,010	1,010	830	855	670	670	1,065	399
800	825	825	805	845	660	660		427
850	535	535	790	835		645		454
900	345	345	780	830				482
950	205	205	765	775				510
1,000	105	105	640	700				538
1,050			615	685				566
1,100			515	610				593
1,150			400	475				621
1,200			310	370				649
1,250			225	295				677
1,300			170	235				704
1,350			125	190				732
1,400			95	150				760
1,450			70	115				788
1,500			55	85				816

¹ Upon prolonged exposure to temperatures above 800 °F (427 °C), the carbide phase of steel may be converted to graphite. Permissible, but not recommended for prolonged use above 800 °F (427 °C).

² Only killed steel shall be used over 850 °F (454 °C).

³ At temperatures over 1,000 °F (538 °C), use only when the carbon content is 0.04% or higher.

^a For welding end valves only. Flanged end ratings terminate at 1,000 °F (538 °C).

Shaded Area Consult factory when working temperature is in this range.



MATERIAL SPECIFICATIONS

		Chemical Composition				
		Carbon Steels		Alloy and Corrosion-Resistant Steels		
		A216 WCB	A350 Gr. LF2	A182 Gr. F304	A182 Gr. F316	A182 Gr. F44
C ¹	%	0.350 ²	0.300	0.080	0.080	0.020
Mn	%	0.06-1.05 ²	0.06-1.35	2.000	2.000	1.000
P ¹	%	0.040	0.035	0.040	0.040	0.030
S ¹	%	0.050	0.040	0.030	0.030	0.010
Si ¹	%	0.350	0.15-0.30	1.000	1.000	0.800
Cu ¹	%	0.400 ³	0.400 ³	-	-	0.50-1.00
Ni ¹	%	0.400 ³	0.400 ³	8.00-11.00	10.00-14.00	17.50-18.50
Cr ¹	%	0.300 ^{3,4}	0.300 ^{3,4}	18.00-20.00	16.00-18.00	19.50-20.50
Mo ¹	%	0.120 ^{3,4}	0.120 ^{3,4}	-	2.00-3.00	6.00-6.50
V ¹	%	0.030 ⁵	0.030 ⁵	-	-	-
Nb ¹	%	0.020 ⁵	0.020 ⁵	-	-	-
N ¹	%	-	-	0.100	0.100	0.18-0.22

¹ Values listed are permitted maximums, unless otherwise stated.

² For each reduction of 0.01 % below the specified carbon maximum (0.35 %), an increase of 0.06 % manganese above the specified maximum (1.05 %) will be permitted up to a maximum of 1.35 %.

³ The sum of copper, nickel, chromium and molybdenum shall not exceed 1.00 %.

⁴ The sum of chromium and molybdenum shall not exceed 0.32 %.

⁵ By agreement between the manufacturer and the purchaser, the limits for vanadium and columbium, or both, may be increased to 0.10 % and 0.05 % respectively.

		Mechanical Properties				
		Carbon Steels		Alloy and Corrosion-Resistant Steels		
		A105	A350 Gr. LF2	A182 Gr. F304	A182 Gr. F316	A182 Gr. F44
T.S. ¹	MPa	485	485-685	515 ⁴	515 ⁴	650
Y.S. ^{1,2}	MPa	250	250	205	205	300
E.L. ¹	%	22.0	22.0	30.0	30.0	35.0
R.A. ¹	%	30.0	30.0	50.0	50.0	50.0
Hard. ³	HB	187	-	-	-	-

¹ Values listed are required minimums, unless otherwise stated.

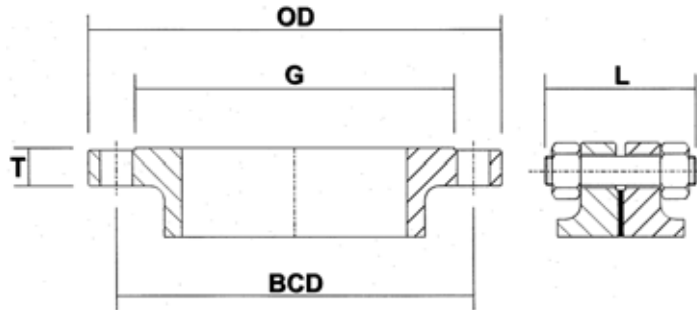
² Determined by either the 0.2 % offset method or the 0.5 % extension-under-load method.

³ Values listed are permitted maximums, unless otherwise stated.

⁴ For sections over 5" (130 mm) in thickness, the minimum tensile strength shall be 485 MPa.

Impact Test Requirements for Carbon Steel to ASTM A350 Gr. LF2		
Test Temperature	Minimum Energy Impact Permitted for	
	Single Specimen	Average of Three Specimens
-50.0 °F		
-45.6 °C	16 J (12 ft-lbf)	20 J (15 ft-lbf)

ANSI / ASME B16.5 FLANGE DIMENSIONS (in.)



ANSI / ASME Class 150 R.F. (1/16" Raised Face)

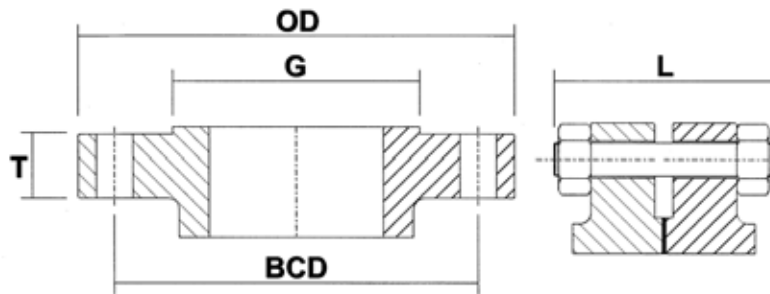
Size	OD	T		G R.F. Ø	Bolt Circle Ø	Bolt Hole Ø	No. of Bolt Holes	Stud Bolt Ø	L	
		Companion Flange	Valve Flange						Stud Bolt	Size
2	6	3/4	5/8	3 5/8	4 3/4	3/4	4	5/8	3 1/4	2
2½	7	7/8	11/16	4 1/8	5 1/2	3/4	4	5/8	3 1/2	2½
3	7 1/2	15/16	3/4	5	6	3/4	4	5/8	3 1/2	3
4	9	15/16	15/16	6 3/16	7 1/2	3/4	8	5/8	3 1/2	4
6	11	1	1	8 1/2	9 1/2	7/8	8	3/4	4	6
8	13 1/2	1 1/8	1 1/8	10 5/8	11.75	7/8	8	3/4	4 1/4	8
10	16	1 3/16	1 3/16	12 3/4	14 1/4	1	12	7/8	4 1/2	10
12	19	1 1/4	1 1/4	15	17	1	12	7/8	4 3/4	12
14	21	1 3/8	1 3/8	16 1/4	18 3/4	1 1/8	12	1	5 1/4	14
16	23 1/2	1 7/16	1 7/16	18 1/2	21 1/4	1 1/8	16	1	5 1/4	16
18	25	1 9/16	1 9/16	21	22 3/4	1 1/4	16	1 1/8	5 3/4	18
20	27 1/2	1 11/16	1 11/16	23	25	1 1/4	20	1 1/8	6 1/4	20
24	32	1 7/8	1 7/8	27 1/4	29 1/2	1 3/8	20	1 1/4	6 3/4	24

ANSI / ASME Class 300 R.F. (1/16" Raised Face)

2	6 1/2	7/8	7/8	3 5/8	5	3/4	8	5/8	3 1/2	2
2½	7 1/2	1	1	4 1/8	5 7/8	7/8	8	3/4	4	2½
3	8 1/4	1 1/8	1 1/8	5	6 5/8	7/8	8	3/4	4 1/4	3
4	10	1 1/4	1 1/4	6 3/16	7 7/8	7/8	8	3/4	4 1/2	4
6	12 1/2	1 7/16	1 7/16	8 1/2	10 5/8	7/8	12	3/4	4 3/4	6
8	15	1 5/8	1 5/8	10 5/8	13	1	12	7/8	5 1/2	8
10	17 1/2	1 7/8	1 7/8	12 3/4	15 1/4	1 1/8	16	1	6 1/4	10
12	20 1/2	2	2	15	17 3/4	1 1/4	16	1 1/8	6 3/4	12
14	23	2 1/8	2 1/8	16 1/4	20 1/4	1 1/4	20	1 1/8	7	14
16	25 1/2	2 1/4	2 1/4	18 1/2	22 1/2	1 3/8	20	1 1/4	7 1/2	16
18	28	2 3/8	2 3/8	21	24 3/4	1 3/8	24	1 1/4	7 3/4	18
20	30 1/2	2 1/2	2 1/2	23	27	1 3/8	24	1 1/4	8	20
24	36	2 3/4	2 3/4	27 1/4	32	1 5/8	24	1.5	9	24



ANSI / ASME B16.5 FLANGE DIMENSIONS (in.)



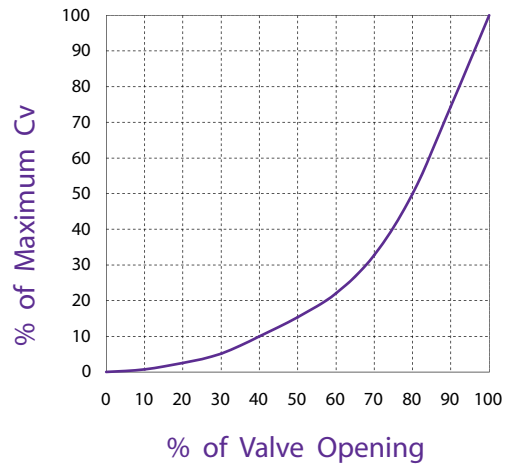
ANSI / ASME Class 600 R.F. (1/4" Raised Face)

Size	OD	T	G R.F. Ø	Bolt Circle Ø	Bolt Hole Ø	No. of Bolt Holes	Stud Bolt Ø	L Stud Bolt	Size
2	6 1/2	1	3 5/8	5	3/4	8	5/8	4 1/4	2
2½	7 1/2	1 1/8	4 1/8	5 7/8	7/8	8	3/4	4 3/4	2½
3	8 1/4	1 1/4	5	6 5/8	7/8	8	3/4	5	3
4	10 3/4	1 1/2	6 3/16	8 1/2	1	8	7/8	5 3/4	4
6	14	1 7/8	8 1/2	11 1/2	1 1/8	12	1	6 3/4	6
8	16 1/2	2 3/16	10 5/8	13 3/4	1 1/4	12	1 1/8	7 1/2	8
10	20	2 1/2	12 3/4	17	1 3/8	16	1 1/4	8 1/2	10
12	22	2 5/8	15	19 1/4	1 3/8	20	1 1/4	8 3/4	12
14	23 3/4	2 3/4	16 1/4	20 3/4	1 1/2	20	1 3/8	9 1/4	14
16	27	3	18 1/2	23 3/4	1 5/8	20	1 1/2	10	16
18	29 1/4	3 1/4	21	25 3/4	1 3/4	20	1 5/8	10 3/4	18
20	32	3 1/2	23	28 1/2	1 3/4	24	1 5/8	11 1/4	20
24	37	4	27 1/4	33	2	24	1 7/8	13	24

FLOW DATA

FLOW CHARACTERISTIC

ARANSA's trunnion mounted ball valves have an equal percentage flow characteristic by design. This means that a given percentage change in the valve opening will produce the same percentage change in the flow rate.



FLOW RATE

The calculated flow rate data represented in the tables below express the maximum flow of clean water @ 60 °F in gallons per minute through a ARANSA's trunnion mounted ball valve while producing a 1 psi pressure drop across the valve.

Nom. Size	Full Bore ANSI Class						Reduced Bore ANSI Class					
	150	300	600	900	1500	2500	150	300	600	900	1500	2500
2	500	460	400	330	330	300	140	140	135	125	125	100
2½	1010	860	780	700	620	550	160	170	160	160	160	130
3	1350	1150	1050	935	830	740	180	195	180	180	180	150
4	2500	2200	1850	1760	1660	1460	545	535	480	480	480	410
6	5300	5290	4460	4405	4100	2600	790	765	745	740	740	590
8	10500	9600	8730	8475	8010	5370	1945	1945	1945	1945	1600	1400
10	17500	16750	14250	14205	13310	8630	4050	4040	4040	4040	3860	3050
12	26300	25500	22550	21430	17070	12500	6900	6900	6900	6900	6670	5350
14	31850	30050	28400	26800	24275	-	13100	13100	13100	13100	12630	-
16	43300	41700	38150	36700	33215	-	14600	14580	14300	14200	13490	-
18	57300	55370	50950	48700	43400	-	19750	19750	19750	19750	18760	-
20	74500	72300	65600	62500	55930	-	27750	27750	27750	27300	20470	-
24	112300	109150	98150	94050	84025	-	29000	28850	27250	26900	25500	-



We can supply you all kinds of Plug, Ball, Butterfly, Gate, Globe and Check valves from anywhere in the world

Valve	Size	Class	Connection
Plug	1/2" - 24"	150 - 300 - 600	Butt Weld - Flanged
Gate	1/2" - 24"	150 - 300 - 600	Butt Weld - Flanged
Globe	1/2" - 16"	150 - 300 - 600	Butt Weld - Flanged
Check	1" - 24"	150 - 300 - 600	Butt Weld - Flanged
Butterfly	1" - 24"	150 - 300 - 600	Butt Weld - Flanged
Ball	1/2" - 24"	150 - 300 - 600	Butt Weld - Flanged




ARNSA
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