

UV664(Q) Trunnion Ball Valve

The UV664(Q) ball valve from UNIVALS incorporates with an advanced innovation concept, featuring an unique design and high-quality manufacturing processes. Engineered for durability and superior sealing performance, it meets stringent safety, emission and performance standards in the Oil, Gas, Petrochemical and Chemical industries. Its versatility makes it ideal for diverse applications, including emergency shutdown valves (ESDV), high temperature, cryogenic service.



Features

Proven for exceptional reliability, the UV664(Q) delivers a long service life with outstanding low-leakage performance and smooth, low operating torques - even in the most demanding applications.

- Integrated Heavy Duty Design
- Double Bearing Positioning Structure
- Anti-Rotation Yoke Design
- Double Retainer Ring Structure
- Fugitive Emission Valves

Technical Summary

- Size: 2~24 inch
- Rating: Class 150LB ~ Class 2500LB
- Body: Carbon Steel, Alloy Steel, Stainless Steel
- Trim: Carbon Steel, Alloy Steel, Stainless Steel
- Seat: RPTFE, PEEK, Hard Faced

Additional configurations material are available, contact UNIVALS engineering for specialized requirement.

Advantages

- Bubbled-tight shut-off
- Extended service life
- Fail-Safe Reliability

Design Standards

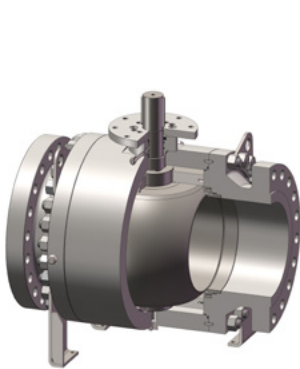
- Design
API 6D, ISO 14313
- Pressure / Temperature Rating
ASME B16.34 or DIN EN 12516
- Face-to-face Dimensions
API 6D, ISO 14313
- Flange End Dimensions
ASME B16.5 or DIN EN 1092-1
- NACE
MR 0103 or MR 0175
- Fugitive Emission
ISO15848, TA-LUFT
- Fire-safe Type Test
API607, API 6FA, ISO10497

Available Configurations

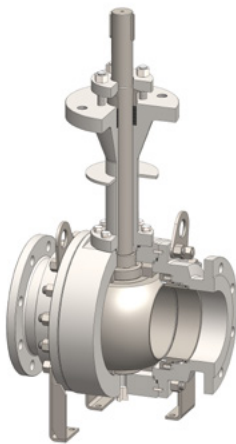
The UV664(Q) ball valves is engineered for seamless integration into both standard and severe service environments. Its highly configurable design supports a wide range of specialized requirements, including:

- Cryogenic Service
- High temperature Resistance
- Extended Stem Options
- Multiple End Connections
- Customized Solutions

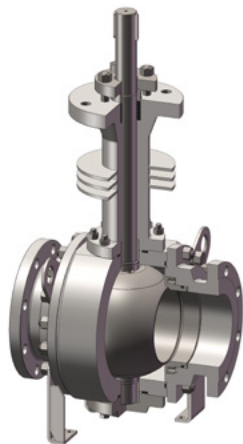
Configuration



STANDARD



CRYOGENIC



HIGH TEMPERATURE

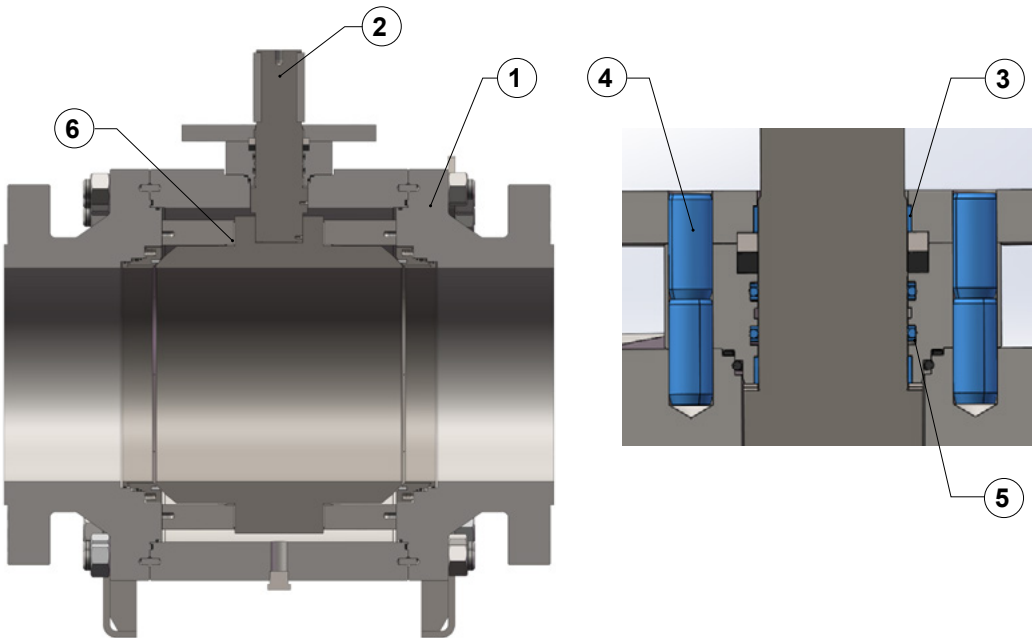
Size and Pressure Range

Product Supply Scope for ASME B16.5 Flange														
ASME	NPS													
Class	2	2-1/2	3	4	5	6	8	10	12	14	16	18	20	24
CL150	×	×	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CL300	×	×	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CL600	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CL900	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CL1500	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	*	*	*
CL2500	✓	✓	✓	✓	✓	✓	✓	✓	✓	*	*	*	*	*

Note, “✓” Standard products, “×” Not Available, “*” Please contact sales for relevant data

Product Supply Scope for DIN-EN-1092 Flange														
DIN	DN													
PN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
PN10	×	×	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PN16	×	×	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PN25	×	×	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PN40	×	×	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PN63	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	*	*	*
PN100	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	*	*	*

Note, “✓” Standard products, “×” Not Available, “*” Please contact sales for relevant data



1. Heavy Duty Flange

The heavy-duty flange design ensures superior connection strength, with body flange bolts that offer higher load-bearing capacity than standard end connections.

2. Heavy Duty Stem

The heavy-duty stem features a highstrength design that prevents deformation or fracture during operation, ensuring reliable performance even under extreme conditions.

3. Double Bearing Positioning Structure

The Double Bearing Positioning Structure enhances valve performance by providing exceptional operational stability and smooth rotation, even under high-load conditions.

4. Anti-Rotation Yoke Design

The reinforced valve transmission system features an exceptionally strong chain with high loadbearing capacity, effectively preventing operational lag and protecting the valve stem from vibration-induced damage.

5. Double Retainer Ring Structure

The upper/lower retainer ring system safeguards the O-Ring seal from stem abrasion, effectively preventing potential leakage paths and extending service life.

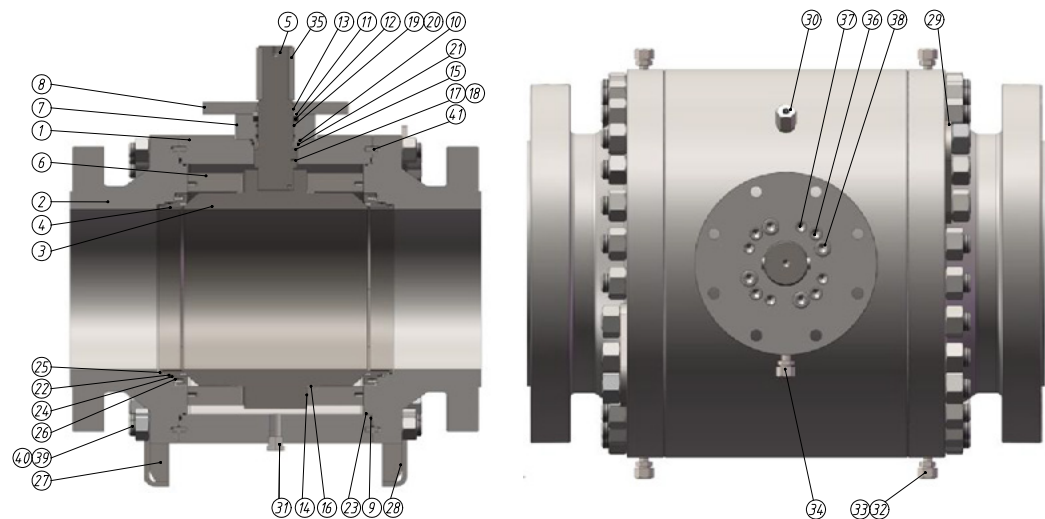
6. Heavy Duty Bearing

The High-capacity bearings with superior wear resistance ensure reliable performance in, quick-shutoff applications, even under frequent cycling and high-stress conditions.

7. Fugitive Emission Valves

Optimized for high-frequency automatic valve operation, ensuring reliable performance in rapid-cycling applications with minimal wear degradation.

Section Drawing



No.	Description	No.	Description
1	Body	22	O-Ring
2	End Connector	23	O-Ring
3	Ball	24	Consumable packing
4	Seat	25	Consumable packing
5	Stem	26	Spring
6	Bearing Retainer	27	Left Feet
7	Stem Cover	28	Right Feet
8	Adapter	29	Lifting Lug
9	Gasket	30	Vent
10	Gasket	31	Drain
11	Spacer	32	Injection Fitting
12	Packing	33	Check Fitting
13	Bearing	34	Injection Fitting
14	Bearing	35	Key
15	Bearing	36	Pin
16	Bearing	37	Valve-Screw
17	Steel Ball	38	Valve-Screw
18	Spring	39	Valve-Stud
19	O-Ring	40	Valve-Nut
20	O-Ring Retainer	41	Pin
21	O-Ring		

Materials of Construction - UV664

Max. Temperature	200° C	200° C	200° C
Min. Temperature	-25° C	-45° C	-45° C
Body	A105N	A182 F316	A182 F316L
Ball	F316 F51	F316 F51	F316L F51
Seat Insert	RPTFE/PEEK	RPTFE/PEEK	RPTFE/PEEK
Seat Ring	F316 F51	F316 F51	F316 F51
Stem	F51 17-4PH	F51 17-4PH	F51 Inconel 718
Bearing Retainer	Carbon Steel	Stainless Steel	Stainless Steel
Stem Cover	A105N	A182 F316	A182 F316L
Adapter	Carbon Steel	Stainless Steel	Stainless Steel
Gasket	316L+Graphite	316L+Graphite	316L+Graphite
Spacer	A276 316L	A276 316L	A276 316L
Packing	Graphite	Graphite	Graphite
Bearing	316L+PTFE	316L+PTFE	316L+PTFE
O-Ring	FKM	FKM-LT	FKM-LT
Spring	INCONEL X750	INCONEL X750	INCONEL X750
Feet	Carbon Steel	Carbon Steel	Carbon Steel
Lifting Lug	Carbon Steel	Carbon Steel	Carbon Steel
Vent	A182 F316L	A182 F316L	A182 F316L
Drain	A182 F316L	A182 F316L	A182 F316L
Injection Fitting	A182 F316L	A182 F316L	A182 F316L
Check Fitting	A182 F316L	A182 F316L	A182 F316L
Key	AISI 1045	AISI 1045	AISI 1045
Pin	Stainless Steel	Stainless Steel	Stainless Steel
Valve Screw	A193 B7M	A193 B8M	A193 B8M
Valve Stud	A193 B7M	A193 B8M	A193 B8M
Valve Nut	A194 2HM	A194 8M	A194 8M

Materials of Construction - UV664Q

Max. Temperature	200° C	200° C	200° C
Min. Temperature	-25° C	-45° C	-45° C
Body	A105N	A182 F316	A182 F316L
Ball	F316/Ni60 F51/Ni60	F316/Ni60 F51/Ni60	F316L/Ni60 F51/Ni60
Seat	F316/Ni55 F51/Ni55	F316/Ni55 F51/Ni55	F316L/Ni55 F51/Ni55
Stem	F51 17-4PH	F51 17-4PH	F51 Inconel 718
Bearing Retainer	Carbon Steel	Stainless Steel	Stainless Steel
Stem Cover	A105N	A182 F316	A182 F316L
Adapter	Carbon Steel	Stainless Steel	Stainless Steel
Gasket	316L+Graphite	316L+Graphite	316L+Graphite
Spacer	A276 316L	A276 316L	A276 316L
Packing	Graphite	Graphite	Graphite
Bearing	316L+PTFE	316L+PTFE	316L+PTFE
O-Ring	FKM	FKM-LT	FKM-LT
Spring	INCONEL X750	INCONEL X750	INCONEL X750
Feet	Carbon Steel	Carbon Steel	Carbon Steel
Lifting Lug	Carbon Steel	Carbon Steel	Carbon Steel
Vent	A182 F316L	A182 F316L	A182 F316L
Drain	A182 F316L	A182 F316L	A182 F316L
Injection Fitting	A182 F316L	A182 F316L	A182 F316L
Check Fitting	A182 F316L	A182 F316L	A182 F316L
Key	AISI 1045	AISI 1045	AISI 1045
Pin	Stainless Steel	Stainless Steel	Stainless Steel
Valve Screw	A193 B7M	A193 B8M	A193 B8M
Valve Stud	A193 B7M	A193 B8M	A193 B8M
Valve Nut	A194 2HM	A194 8M	A194 8M

Torques (Nm) - UV664

Class 150, PN10, PN16

Size		Differential Pressure (bar)							
NPS	DN	10				20			
		BTO	RTO,RTC	ETO,BTC	ETC	BTO	RTO,RTC	ETO,BTC	ETC
3	80	100	60	75	90	122	73	92	110
4	100	150	85	121	135	172	95	140	155
6	150	470	265	380	423	556	310	450	500
8	200	845	507	634	761	1139	683	854	1025
10	250	1136	682	852	1022	1690	1014	1268	1521
12	300	1843	1106	1382	1659	2168	1301	1626	1951
14	350	2732	1639	2049	2459	3138	1883	2353	2824
16	400	3270	1962	2452	2943	3858	2315	2893	3472
18	450	4458	2675	3344	4012	5620	3372	4215	5058
20	500	4980	2988	3735	4482	6458	3875	4843	5812
24	600	8594	5157	6446	7735	10649	6389	7986	9584

Class 300, PN25, PN40

Size		Differential Pressure (bar)															
NPS	DN	10				20				30				50			
		BTO	RTO,RTC	ETO,BTC	ETC	BTO	RTO,RTC	ETO,BTC	ETC	BTO	RTO,RTC	ETO,BTC	ETC	BTO	RTO,RTC	ETO,BTC	ETC
3	80	100	60	75	90	122	73	92	110	144	79	108	130	188	103	141	169
4	100	150	85	121	135	172	95	140	155	195	108	160	176	240	208	284	216
6	150	470	265	380	423	556	310	450	500	645	355	520	581	810	450	650	729
8	200	845	507	634	761	1139	683	854	1025	1296	713	972	1166	1794	987	1346	1615
10	250	1136	682	852	1022	1690	1014	1268	1521	1727	950	1295	1554	2488	1368	1866	2239
12	300	1843	1106	1382	1659	2168	1301	1626	1951	2492	1371	1869	2243	3141	1728	2356	2827
14	350	2732	1639	2049	2459	3138	1883	2353	2824	3543	1949	2657	3189	4356	2396	3267	3920
16	400	3270	1962	2452	2943	3858	2315	2893	3472	4443	2444	3332	3999	5613	3087	4210	5052
18	450	4458	2675	3344	4012	5620	3372	4215	5058	6282	3455	4712	5654	7605	4183	5704	6845
20	500	4980	2988	3735	4482	6458	3875	4843	5812	7390	4064	5542	6651	9983	5491	7488	8985
24	600	8594	5157	6446	7735	10649	6389	7986	9584	11699	6434	8774	10529	15138	8326	11353	13624

Class 600, PN63, PN100

Size		Differential Pressure (bar)															
NPS	DN	20				50				70				100			
		BTO	RTO,RTC	ETO,BTC	ETC	BTO	RTO,RTC	ETO,BTC	ETC	BTO	RTO,RTC	ETO,BTC	ETC	BTO	RTO,RTC	ETO,BTC	ETC
3	80	128	77	96	115	232	128	174	209	293	147	220	264	374	187	281	337
4	100	172	95	140	155	240	208	284	216	315	175	254	284	400	222	325	360
6	150	556	310	450	500	810	450	650	729	955	525	770	860	1205	670	980	1085
8	200	1184	710	888	1066	1794	987	1346	1615	2119	1060	1589	1907	2773	1387	2080	2496
10	250	1825	1095	1369	1643	2451	1348	1838	2206	2966	1483	2225	2669	3936	1968	2952	3542
12	300	2717	1630	2038	2445	3164	1740	2373	2848	3841	1921	2881	3457	4985	2493	3739	4487
14	350	3139	1883	2354	2825	4492	2470	3369	4043	5409	2704	4056	4868	6762	3381	5071	6086
16	400	4108	2465	3081	3697	5921	3256	4441	5329	7128	3564	5346	6415	8939	4470	6705	8045
18	450	6111	3667	4584	5500	8532	4693	6399	7679	10786	5393	8090	9707	13808	6904	10356	12427
20	500	7289	4373	5466	6560	10702	5886	8026	9632	12998	6499	9748	11698	16791	8396	12593	15112
24	600	11702	7021	8777	10532	16026	8814	12019	14423	19069	9535	14302	17162	24061	12031	18046	21655

Assumptions:

- Seat sealing: PEEK, Class 150~ Class 300≤NPS6 is RPTFE.
- Operating temperature: -29 to 38° C
- Medium characteristic: Lubricating
- Stem sealing: ISO 15848

Torques (Nm) - UV664Q

Class 150, PN10, PN16

Size		Differential Pressure (bar)							
NPS	DN	10				20			
		BTO	RTO,RTC	ETO,BTC	ETC	BTO	RTO,RTC	ETO,BTC	ETC
3	80	188	104	151	169	215	120	175	194
4	100	207	114	166	186	237	132	193	213
6	150	600	330	480	540	695	385	560	626
8	200	1056	580	850	950	1425	785	1140	1283
10	250	1684	1010	1263	1516	2450	1470	1838	2205
12	300	2672	1603	2004	2405	3143	1886	2357	2829
14	350	3962	2377	2971	3566	4550	2730	3412	4095
16	400	4741	2845	3556	4267	5594	3356	4195	5035
18	450	6464	3879	4848	5818	8149	4890	6112	7334
20	500	7220	4332	5415	6498	9364	5618	7023	8428
24	600	12462	7477	9346	11216	15440	9264	11580	13896

Class 300, PN25, PN40

Size		Differential Pressure (bar)															
NPS	DN	10				20				30				50			
		BTO	RTO,RTC	ETO,BTC	ETC	BTO	RTO,RTC	ETO,BTC	ETC	BTO	RTO,RTC	ETO,BTC	ETC	BTO	RTO,RTC	ETO,BTC	ETC
3	80	188	104	151	169	215	120	175	194	245	135	195	221	298	165	240	268
4	100	207	114	166	186	237	132	193	213	270	149	215	243	328	182	264	295
6	150	600	330	480	540	695	385	560	626	803	445	645	723	1013	560	815	912
8	200	1056	580	850	950	1425	785	1140	1283	1620	900	1300	1458	2245	1240	1800	2021
10	250	1684	1010	1263	1516	2450	1470	1838	2205	2716	1494	2037	2444	3607	1984	2705	3246
12	300	2672	1603	2004	2405	3143	1886	2357	2829	3614	1988	2711	3253	4554	2505	3416	4099
14	350	3962	2377	2971	3566	4550	2730	3412	4095	5138	2826	3853	4624	6316	3474	4737	5684
16	400	4741	2845	3556	4267	5594	3356	4195	5035	6443	3544	4832	5799	8139	4476	6104	7325
18	450	6464	3879	4848	5818	8149	4890	6112	7334	9109	5010	6832	8198	11027	6065	8270	9924
20	500	7220	4332	5415	6498	9364	5618	7023	8428	10715	5893	8036	9644	14476	7962	10857	13028
24	600	12462	7477	9346	11216	15440	9264	11580	13896	16964	9330	12723	15268	21949	12072	16462	19754

Class 600, PN63, PN100

Size		Differential Pressure (bar)															
NPS	DN	20				50				70				100			
		BTO	RTO,RTC	ETO,BTC	ETC	BTO	RTO,RTC	ETO,BTC	ETC	BTO	RTO,RTC	ETO,BTC	ETC	BTO	RTO,RTC	ETO,BTC	ETC
3	80	215	120	175	194	298	165	240	268	395	220	320	356	500	275	400	450
4	100	237	132	193	213	328	182	264	295	435	242	352	392	550	303	440	495
6	150	695	385	560	626	1013	560	815	912	1195	660	960	1076	1505	840	1210	1355
8	200	1425	785	1140	1283	2245	1240	1800	2021	2649	1460	2120	2384	3466	1910	2773	3119
10	250	2646	1588	1985	2381	3553	1954	2665	3198	4301	2151	3226	3871	5707	2854	4280	5136
12	300	3940	2364	2955	3546	4588	2523	3441	4129	5569	2785	4177	5012	7228	3614	5421	6505
14	350	4551	2731	3414	4096	6513	3582	4885	5862	7842	3921	5882	7058	9805	4902	7354	8825
16	400	5957	3574	4468	5361	8585	4722	6439	7727	10336	5168	7752	9302	12962	6481	9722	11666
18	450	8862	5317	6646	7976	12371	6804	9278	11134	15640	7820	11730	14076	20021	10010	15016	18019
20	500	10568	6341	7926	9511	15517	8535	11638	13965	18847	9423	14135	16962	24347	12174	18261	21912
24	600	16969	10181	12726	15272	23238	12781	17428	20914	27650	13825	20738	24885	34889	17445	26167	31400

Assumptions:

- Seat sealing: F316 +Ni
- Operating temperature: -29 to 38° C
- Medium characteristic: Lubricating
- Stem sealing: ISO 15848

Flow Rates (Cv and Kv) - Full Bore

NPS	DN	Class 150		Class 300		Class 600	
		Cv	Kv	Cv	Kv	Cv	Kv
2	50	447	387	447	387	359	311
3	80	1191	1030	1191	1030	924	799
4	100	2377	2056	2377	2056	1773	1534
6	150	5074	4389	5074	4389	4577	3959
8	200	10103	8740	10103	8740	8950	7742
10	250	17037	14738	17037	14738	14324	12391
12	300	26163	22632	26163	22632	22729	19662
14	350	30597	26468	30597	26468	28277	24461
16	400	41459	35864	41459	35864	38076	32938
18	450	56221	48634	56221	48634	51368	44436
20	500	71060	61471	71060	61471	64559	55847
24	600	106055	91743	106055	91743	95605	82703

Data for Calculation of Flow:

The coefficient of flow Cv expresses the rate of flow in gallons per minute at 60° F water with a pressure drop 1 psig across the valve.The Cv coefficients for the various types and sizes. Shown in the tables, have beendetermined from actual flow tests.

NOTE: The relationship between Cv and Kv can be express as: Cv=1.156Kv

Torques - MAST (Ambient temperature) (Nm)

NPS	Material	MAST(Nm)			Material	MAST(Nm)		
		Class150	Class300	Class600		Class150	Class300	Class600
3	F51	1909	1909	1909	17-4PH	3075	3075	3075
4	F51	1909	1909	2778	17-4PH	3075	3075	4476
6	F51	5620	5620	7817	17-4PH	9054	9054	12595
8	F51	9939	9939	13091	17-4PH	16013	16013	21090
10	F51	13091	13091	16846	17-4PH	21090	21090	27141
12	F51	16846	16846	21260	17-4PH	27141	27141	34252
14	F51	21260	21260	32270	17-4PH	34252	34252	51991
16	F51	26838	26838	38974	17-4PH	42507	42507	62791
18	F51	38974	38974	62538	17-4PH	62791	62791	100756
20	F51	62538	62538	84188	17-4PH	100756	100756	135636
24	F51	84188	84188	107504	17-4PH	135636	135636	173201

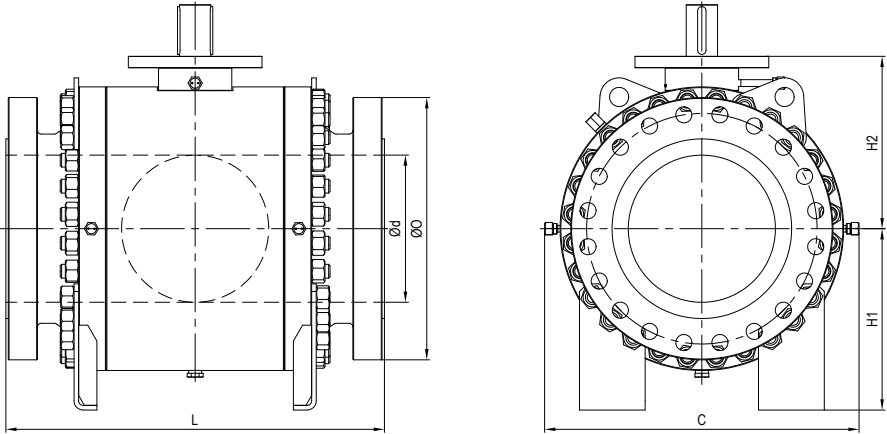
Leakage Allowable

Size			ISO 5208				API 598						API 6D					
NPS	DN	Testing Time (s)	UV664		UV664Q		Testing Time (s)	UV664		UV664Q		Testing Time (s)	UV664		UV664Q			
			Rate A Water (ml/min)	Rate A Gas (ml/min)	Rate A Water (ml/min)	Rate A Gas (ml/min)		Rate A Water (ml/min)	Rate A Gas (ml/min)	Rate A Water (ml/min)	Rate A Gas (ml/min)		Rate A Water (ml/min)	Rate A Gas (ml/min)				
2	50	15	0	0	0.3	90	15	0	0	0	0	120	0	0	0.09	9		
3	80	60	0	0	0.48	144	60	0	0	0.375	0.12	120	0	0	0.144	14.4		
4	100	60	0	0	0.6	180	60	0	0	0.5	0.16	120	0	0	0.18	18		
6	150	60	0	0	0.9	270	60	0	0	0.75	0.24	300	0	0	0.27	27		
8	200	120	0	0	1.2	360	120	0	0	1	0.32	300	0	0	0.36	36		
10	250	120	0	0	1.5	450	120	0	0	1.25	0.4	300	0	0	0.45	45		
12	300	120	0	0	1.8	540	120	0	0	1.5	0.48	300	0	0	0.54	54		
14	350	120	0	0	2.1	630	120	0	0	1.75	0.56	300	0	0	0.63	63		
16	400	120	0	0	2.4	720	120	0	0	2	0.64	300	0	0	0.72	72		
18	450	120	0	0	2.7	810	120	0	0	2.25	0.72	300	0	0	0.81	81		
20	500	120	0	0	3	900	120	0	0	2.5	0.8	600	0	0	0.9	90		
24	600	120	0	0	3.6	1080	120	0	0	3	0.96	600	0	0	1.08	108		

Test Procedures

ISO 5208	Rate A water	Water	1.1 PN	Pathway	(DBB Caverne)
ISO 5208	Rate A gas	Air-N2	1.1 PN or 6 bar	Pathway	(DBB Caverne)
API 598	Test water	Water	1.1 PN	Pathway	(DBB Caverne)
API 598	Test gas	Air-N2	1.1 PN or 6 bar	Pathway	(DBB Caverne)
API 6D	Test water	Water	1.1 PN	Pathway	(DBB Caverne)
API 6D	Test gas	Air-N2	1.1 PN or 6 bar	Pathway	(DBB Caverne)

Ball Valve Dimensions



ASME Class Series

Size	ASME CLASS 150 Approximate Dimensions in mm								
NPS	L		Ø d	Ø O	C	H1	H2	Weight (Kg)	
	RF	RTJ						RF	RTJ
3	203	216	74	190	200	120	150	48	50
4	229	241	100	229	242	143	173	55	57
5	356	369	125	254	272	159	187	101	105
6	394	406	150	279	378	231	225	152	156
8	457	470	201	343	458	287	275	274	280
10	533	546	252	406	536	341	315	435	441
12	610	622	303	483	618	390	357	680	688
14	686	699	334	533	712	412	378	817	825
16	762	775	385	597	802	457	431	1232	1242
18	864	876	436	635	880	499	470	1658	1668
20	914	927	487	698	966	549	523	2173	2185
24	1067	1080	589	813	1136	633	602	3425	3437

Size	ASME CLASS 300 Approximate Dimensions in mm								
NPS	L		Ø d	Ø O	C	H1	H2	Weight (Kg)	
	RF	RTJ						RF	RTJ
3	283	298	74	210	210	120	150	58	60
4	305	321	100	254	254	143	173	90	92
5	381	397	125	279	279	159	187	121	125
6	403	419	150	318	378	231	225	192	196
8	502	518	201	381	458	287	275	315	321
10	568	584	252	444	536	341	315	505	511
12	648	664	303	521	618	390	357	719	727
14	762	778	334	584	732	412	388	977	985
16	838	854	385	648	802	457	431	1397	1407
18	914	930	436	711	900	509	470	1862	1872
20	991	1010	487	775	966	554	523	2473	2485
24	1143	1165	589	914	1136	633	602	3824	3836

Size	ASME CLASS 600 Approximate Dimensions in mm								
NPS	L		Ø d	Ø O	C	H1	H2	Weight (Kg)	
	RF	RTJ						RF	RTJ
2	292	295	49	165	178	110	135	38	39
3	356	359	74	210	210	120	150	63	64
4	432	435	100	273	273	153	183	131	132
5	508	511	125	330	330	169	197	176	178
6	559	562	150	356	406	253	239	269	271
8	660	664	201	419	480	300	285	471	474
10	787	791	252	508	570	365	333	812	815
12	838	841	303	559	658	410	377	1030	1034
14	889	892	334	603	772	430	408	1360	1364
16	991	994	385	686	842	474	451	1912	1917
18	1092	1095	436	743	932	520	505	2608	2613
20	1194	1200	487	813	1020	574	549	3494	3502
24	1397	1407	589	940	1196	685	660	5149	5157

DIN-EN Series

Size	DIN-EN PN10 Approximate Dimensions in mm						
DN	L	Ø d	Ø O	C	H1	H2	Weight (Kg)
	RF						RF
80	203	74	200	200	120	150	50
100	229	100	220	242	143	173	53
125	356	125	250	272	159	187	99
150	394	150	285	378	231	225	150
200	457	201	340	458	287	275	272
250	533	252	395	536	341	315	431
300	610	303	445	618	390	357	668
350	686	334	505	712	412	378	805
400	762	385	565	802	457	431	1216
450	864	436	615	880	499	470	1646
500	914	487	670	966	549	523	2153
600	1067	589	780	1136	633	602	3395

Size	DIN-EN PN16 Approximate Dimensions in mm						
DN	L	Ø d	Ø O	C	H1	H2	Weight (Kg)
	RF						RF
80	203	74	200	200	120	150	50
100	229	100	220	242	143	173	53
125	356	125	250	272	159	187	99
150	394	150	285	378	231	225	150
200	457	201	340	458	287	275	272
250	533	252	405	536	341	315	433
300	610	303	460	618	390	357	672
350	686	334	520	712	412	378	809
400	762	385	580	802	457	431	1220
450	864	436	640	880	499	470	1660
500	914	487	715	966	549	523	2185
600	1067	589	840	1136	633	602	3451

Size	DIN-EN PN25 Approximate Dimensions in mm						
DN	L	Ø d	Ø O	C	H1	H2	Weight (Kg)
	RF						RF
80	203	74	200	210	120	150	56
100	229	100	235	254	143	173	87
125	356	125	270	279	159	187	119
150	394	150	300	378	231	225	188
200	457	201	360	458	287	275	307
250	533	252	425	536	341	315	495
300	610	303	485	618	390	357	697
350	686	334	555	732	412	388	955
400	762	385	620	802	457	431	1373
450	864	436	670	900	509	470	1822
500	914	487	730	966	554	523	2423
600	1067	589	845	1136	633	602	3724

Size	DIN-EN PN40 Approximate Dimensions in mm						
DN	L	Ø d	Ø O	C	H1	H2	Weight (Kg)
	RF						RF
80	283	74	200	210	120	150	56
100	305	100	235	254	143	173	87
125	381	125	270	279	159	187	119
150	403	150	300	378	231	225	188
200	502	201	375	458	287	275	311
250	568	252	450	536	341	315	507
300	648	303	515	618	390	357	715
350	762	334	580	732	412	388	973
400	838	385	660	802	457	431	1407
450	914	436	685	900	509	470	1836
500	991	487	755	966	554	523	2449
600	1143	589	890	1136	633	602	3788

Size	DIN-EN PN63 Approximate Dimensions in mm						
DN	L	Ø d	Ø O	C	H1	H2	Weight (Kg)
	RF						RF
50	292	49	180	180	110	135	40
80	356	74	215	215	120	150	65
100	432	100	250	273	153	183	125
125	508	125	295	295	169	197	164
150	559	150	345	406	253	239	265
200	660	201	415	480	300	285	469
250	787	252	470	570	365	333	784
300	838	303	530	658	410	377	1004
350	889	334	600	772	430	408	1356
400	991	385	670	842	474	451	1892

Size	DIN-EN PN100 Approximate Dimensions in mm						
DN	L	Ø d	Ø O	C	H1	H2	Weight (Kg)
	RF						RF
50	292	49	195	195	110	135	42
80	356	74	230	230	120	150	67
100	432	100	265	273	153	183	129
125	508	125	315	315	169	197	170
150	559	150	355	406	253	239	267
200	660	201	430	480	300	285	477
250	787	252	505	570	365	333	810
300	838	303	585	658	410	377	1054
350	889	334	655	772	430	408	1416
400	991	385	715	842	474	451	1950

Bolting Torque

Body Stud Torque (Nm)															
MATERIAL ASTM	Stud Size														
	M8	M10	M12	M14	M16	M20	M24	M27	M30	M33	M36×3	M39×3	M42×3	M45×3	M48×3
A193 B7M	15	29	49	79	120	234	403	586	803	1080	1446	1856	2338	2896	3537
A193 B8M	9	18	30	48	73	141	243	354	484	653	878	1129	1423	1765	2157

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