

THE MOST COMPREHENSIVE INDUSTRIAL SOLUTION FOR FORGED STEEL AND CAST STEEL
BALL, GATE, GLOBE, CHECK, PLUG, BUTTERFLY AND PIG VALVES

COMPLETE SOLUTIONS

YOU CAN TRUST



CFVT CHENG FENG
FLOW-TECH GROUP

CHV®

DOUBLE BLOCK AND BLEED BALL VALVES



CHENG FENG FLOW-TECH GROUP

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CHV-DBB-1601

CHV INTERNATIONAL, INC.
CHENGDU CHENGGAO VALVE CO., LTD.
CHENGDU CHENG FENG VALVE CO., LTD.

PROFILE

CHENGFENG FLOW-TECH GROUP

Chengfeng Flow-Tech Group, headquartered in Chengdu, China, is the leading flow technology company in China. Being a high-tech group specialized in R&D, manufacturing of industrial valves, and being one of the core suppliers to Petro-China, SINOPEC and CNOOC for decades, it has transformed into a multi-dimensional group that is committed to providing the most complete solutions to the oil&gas markets. With industry-leading facilities, innovative technical teams and highly professional engineers, its top-notch services cover various realms in the energy sector – valve manufacturing and maintenance, fluids equipment solutions, flow control solutions and industrial data analytics, etc.

Chengfeng's products have been widely used in the oil&gas pipelines, petrochemical industries, aerospace industry and power stations, etc. Chengfeng's top two brands, CHV and CCFV, have established the nationwide reputation for their quality and service. Now, Chengfeng Flow-Tech Group has begun its new adventure – serving the world market.

CHENGDU CHENGGAO VALVE CO., LTD. (CHV)

CHV was founded in 1993, and has been specialized in the R&D and manufacturing of mid&high end ball valves ever since. CHV offers complete ball valve product lines. Among all the product lines, the High Pressure Large Diameter Fully Welded Ball Valves have captured more than half the domestic fully welded ball valve market. High Temperature Metal-Seated Oxygen Ball Valve and NACE Ball Valve are also leading the domestic market.

CHENGDU CHENGFENG VALVE CO., LTD. (CCFV)

CCFV was founded in 1966. Its main product lines include slab gate valves, expanding gate valves, tri-eccentric butterfly valves, check valves, globe valves and plug valves, etc. CCFV is leading the domestic slab gate valve market, taking up 70% of the oil transportation and storage sector.

CHV INTERNATIONAL, INC.

CHV International, Inc. is the newest branch of Chengfeng Flow-Tech Group. Based in Houston, Texas, U.S.A, its mission is to shorten the distance between the Group and the international market by providing faster response and better service to our customers around the globe.

CERTIFICATION

Chengfeng Flow-Tech Group's quality program is fully compliant with the industry's most stringent standards. The group holds all major certifications, including but not limited to API 6D, ISO 9001, ISO 14001, OHS 18001, CE, API 6FA, API 607 fire safety inspection certificate.

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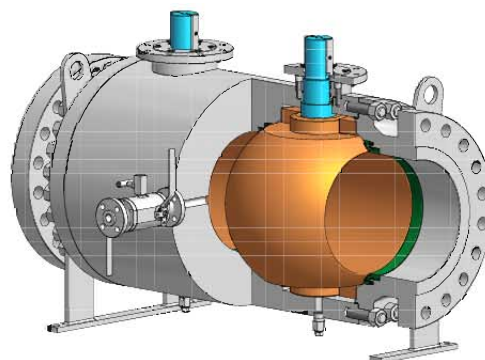


T90 PRODUCT RANGE & DESIGN FEATURES

DOUBLE BLOCK AND BLEED TRUNNION MOUNTED BALL VALVE (T90 SERIES)

CHV DBB trunnion mounted ball valves are mainly used in petrochemical, natural gas, gas oil, and pharmaceutical pipeline systems to replace the complex design in traditional pipeline systems that requires the combination of multiple valves. The benefits of this innovative design include saving installation space and simplifying the process of medium sampling. T90 Series can be used in gas, liquid and mixed medium working conditions.

DBB trunnion mounted ball valves have the following advanced features: compact structure, reliable sealing, low torque, no routine maintenance requirement, fire proof, anti-static, stem blow-out proof, emergency greasing injection and easy repairing.



PRODUCT RANGE

Pressure Class	ASME CLASS 150-600	ASME CLASS 900	ASME CLASS 1500	ASME CLASS 2500
Nominal Dimension	NPS 2-48 DN 50-1200	NPS 2-36 DN 50-900	NPS 2-24 DN 50-600	NPS 2-12 DN 50-300
Note: In both full bore and reduced bore.				

TEMPERATURE RANGE

Temperature Range	-46°C ~ 121°C (-50°F ~ 250°F)
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STANDARD & SPECIFICATIONS

Design Standard	API 6D & CHV-STD
Inspection Standard	API 6D, API 598
End Connection	ASME B16.5, ASME B16.47, MSS SP-44, ASME B31.8, ASME B 16.25, etc.
Face-to-Face	CHV-STD
Fire Test	API 6FA, API 607
Anti-Corrosion, Acid-Resisting*	NACE MR0103, NACE MR0175, ISO 15156

*Optional, available upon request.

DESIGN FEATURES

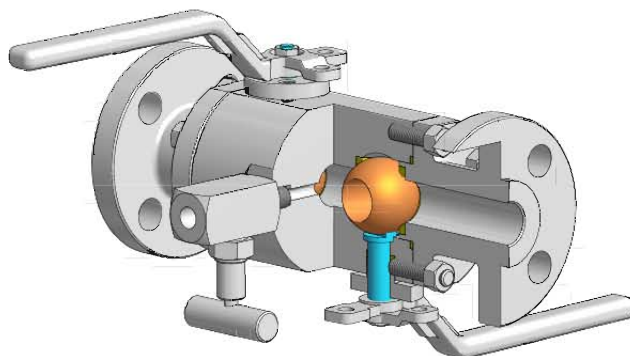
Main Feature	<ul style="list-style-type: none"> -Excellent sealing performance, long service life. -Low friction torque, easy operations. -Multiple operating modes (manual, electric, pneumatic, hydraulic, and pneumatic-hydraulic, etc.). -Customizable materials according to working conditions or customer requirements. -Multiple seat options (soft plastic seal, soft rubber seal, metal seal, etc.).
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T91 PRODUCT RANGE & DESIGN FEATURES

DOUBLE BLOCK AND BLEED FLOATING BALL VALVE (T91 SERIES)

CHV DBB floating ball Valves used in petrochemical, natural gas, gas oil, and pharmaceutical pipeline systems to replace the complex design in traditional pipeline systems that requires the combination of multiple valves. The benefits of this innovative design include saving installation space and simplifying the process of medium sampling. T91 Series can be used in gas, liquid and mixed medium working conditions.

DBB floating ball valves are have the following advanced features: compact structure, reliable sealing, low torque, no routine maintenance requirement, fire proof, anti-static, stem blow-out proof, emergency greasing injection and easy repairing.



PRODUCT RANGE

Pressure Class	ASME CLASS 150-300	ASME CLASS 600	ASME CLASS 900
Nominal Dimension	NPS 1/2-12 DN 15-300	NPS 1/2-4 DN 15-100	NPS 1/2-2 DN 15-50
Note: Inboth full bore and reduced bore.			

TEMPERATURE RANGE

Temperature Range	-46°C ~121°C (-50°F ~250°F)
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STANDARD & SPECIFICATIONS

Design Standard	ISO 17292 & CHV-STD
Inspection Standard	ISO 17292, API 598
End Connection	ASME B16.5, ASME B31.8
Face-to-Face	CHV-STD
Fire Test	API 6FA, API 607
Anti-Corrosion, Acid-Resisting*	NACE MR0103, NACE MR0175, ISO 15156

*Optional, available upon request.

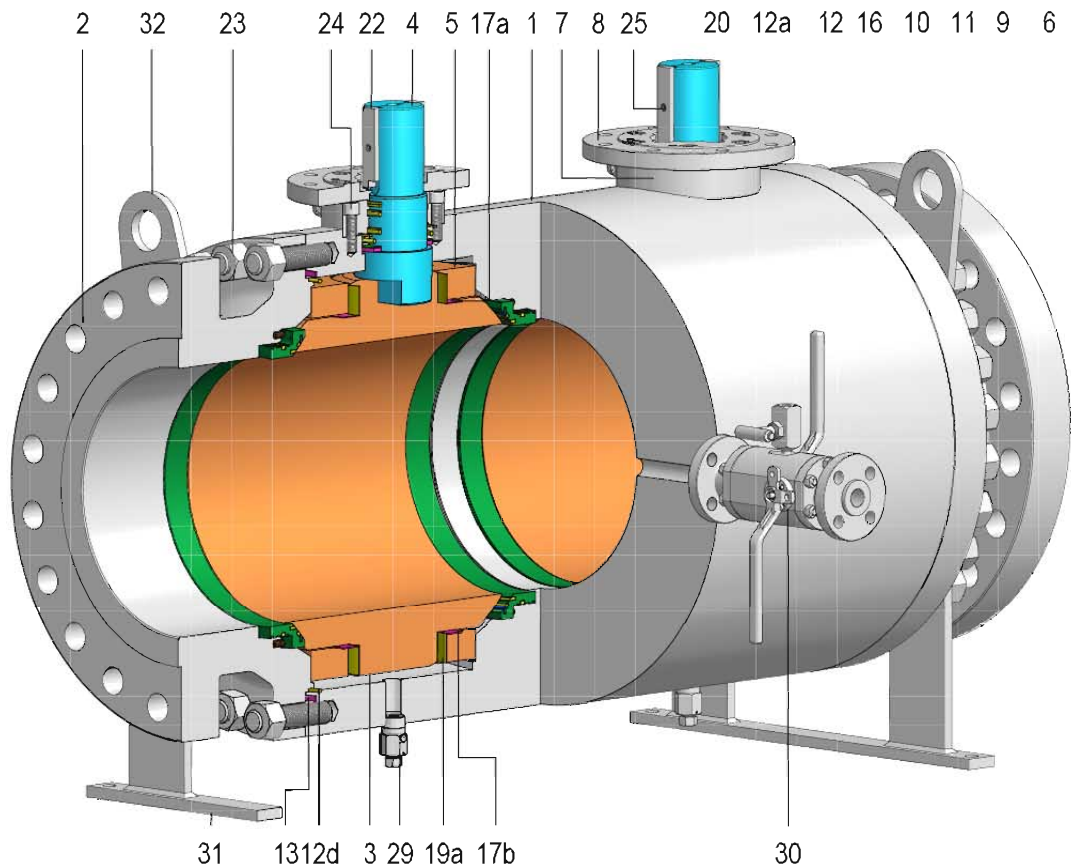
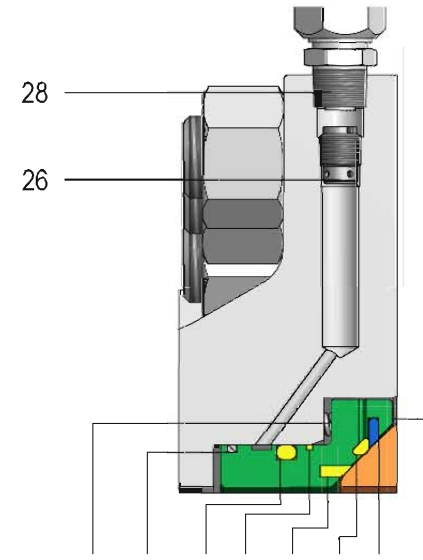
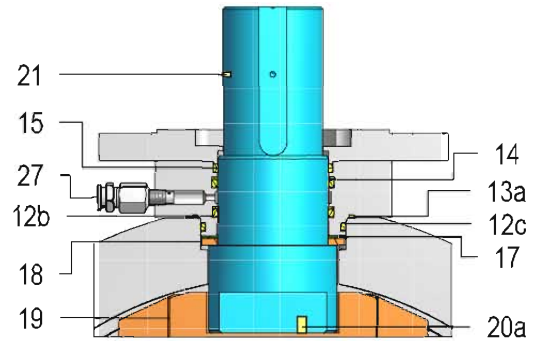
DESIGN FEATURES

Main Features	<ul style="list-style-type: none"> -Excellent sealing performance, long service life. -Low friction torque, easy operations. -Multiple operating modes (manual, electric, pneumatic, hydraulic, and pneumatic-hydraulic, etc.). -Customizable materials according to working conditions or customer requirements. -Multiple seat options (soft plastic seal, soft rubber seal, metal seal, etc.).
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T90 SERIES PARTS LIST

FORGED TRUNNION TYPE PARTS LIST (6" AND ABOVE)			
1	Body	17	Trust Bearing
2	End Cap	17a	Trust Bearing
3	Ball	17b	Trust Bearing
4	Stem	18	Thrust Washer
5	Trunnion Plate	19	Sliding Bearing
6	Seat	19a	Sliding Bearing
7	Gland	20	Coil Spring
8	Adapter Plate	20a	Coil Spring
9	Seat Lock Ring	21	Anti-static Device
10	Scraper	22	Key
11	Seat Insert	23	Stud / Hexagon Nut
12*	O-ring	24	Head Bolt
12a*	O-ring	25	Head Bolt
12b*	O-ring	26	Check Valve
12c*	O-ring	27	Grease Injection Valve
12d*	O-ring	28	Grease Injection Valve
13*	Gasket	29	Drain Valve
13a*	Gasket	30	Vent Valve
14*	Back Ring	31	Support Leg
15*	Rectangular Packing	32	Lift Eye
16	Graphite Rope		

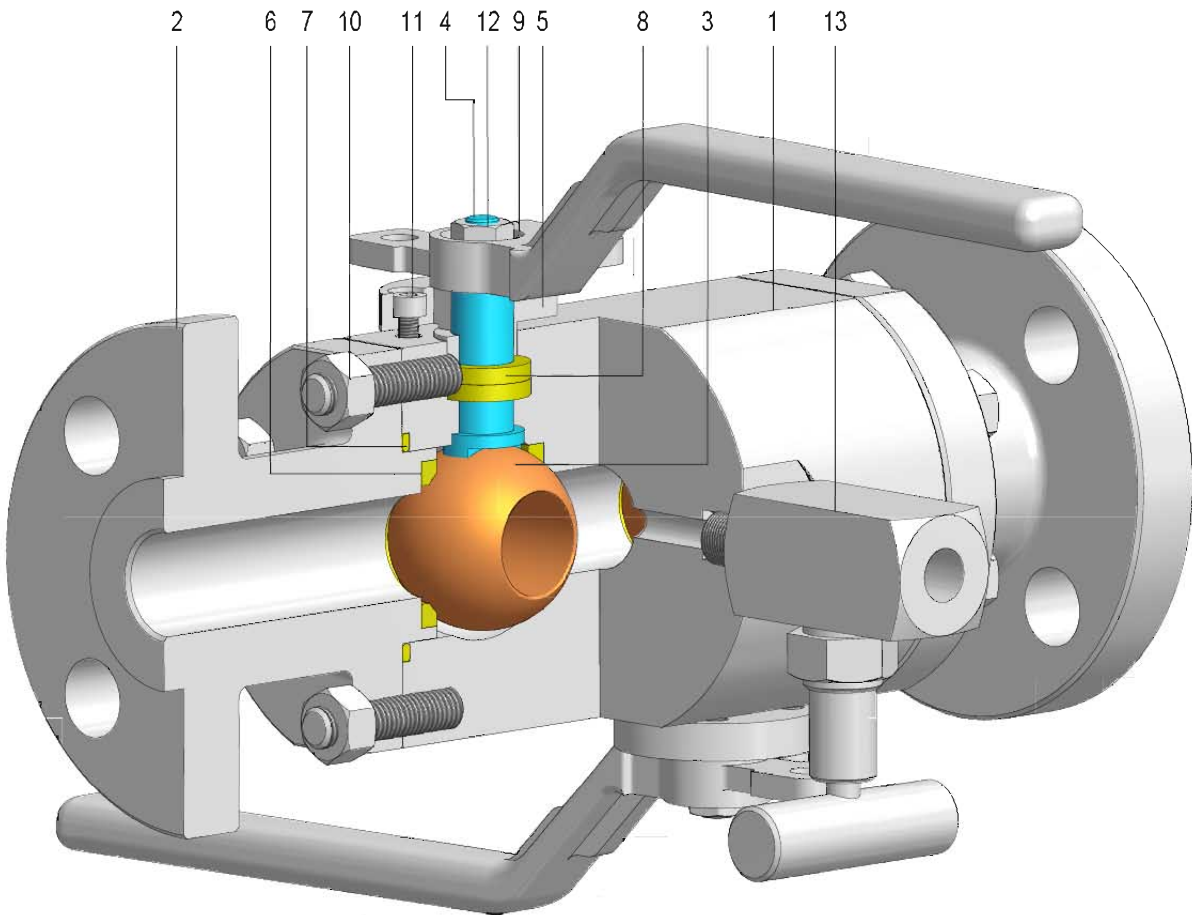
* Recommended spare parts.



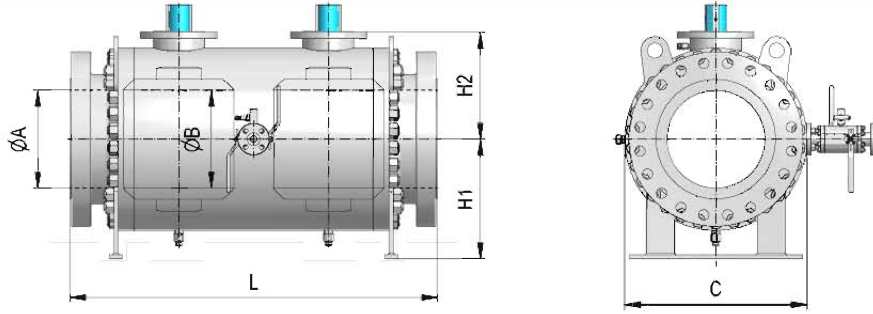
T91 SERIES PARTS LIST

FORGED FLOATING TYPE PARTS LIST (UP TO 4")			
1	Body	8*	Rectangular Packing
2	End Cap	9	Lever
3	Ball	10	Stud/Hexagon Nut
4	Stem	11	Head Bolt
5	Gland Flange	12	Stud
6	Seat	13	Drain Valve
7*	O-ring		

* Recommended spare parts.



T90 DIMENSIONS & WEIGHTS



ASME CLASS 150

ASME CLASS 150 FULL BORE								ASME CLASS 150 REDUCED BORE							
Size NPS/DN	A	B	L	H1	H2	C	Weight* lb/kg	Size NPS/DN	A	B	L	H1	H2	C	Weight* lb/kg
50	49	49	312	97	84	158	21	80 × 50	74	49	355	97	84	158	46
3	2.94	2.94	14.0	4.09	4.41	7.83	114	4 × 3	3.94	2.94	15.8	4.09	4.41	7.83	183
80	74	74	355	104	112	199	52	100 × 80	100	74	401	104	112	199	83
4	3.94	3.94	15.78	5.12	5.43	9.37	132	6 × 4	5.94	3.94	27.1	5.12	5.43	9.37	341
100	100	100	401	130	138	238	60	150 × 100	150	100	690	130	138	238	155
6	5.94	5.94	27.1	10.16	7.95	12.01	552	8 × 6	7.94	5.94	31.5	10.16	7.95	12.01	945
150	150	150	690	258	202	305	250	200 × 150	201	150	800	258	202	305	429
8	7.94	7.94	31.5	12.07	9.82	16.30	1014	10 × 8	9.94	7.94	36.7	12.07	9.82	16.30	1342
200	201	201	800	306.5	249.5	414	460	250 × 200	252	201	933	306.5	249.5	414	609
10	9.94	9.94	36.7	13.76	11.36	18.78	1554	12 × 10	11.94	9.94	42.0	13.76	11.36	18.78	2499
250	252	252	933	349.5	288.5	477	705	300 × 250	303	252	1068	349.5	288.5	477	1134
12	11.94	11.94	42.0	15.33	13.41	21.85	2284	14 × 12	13.19	11.94	47.3	15.33	13.41	21.85	3287
300	303	303	1068	389.5	340.5	555	1036	350 × 300	334	303	1201	389.5	340.5	555	1491
14	13.19	13.19	47.3	16.06	14.23	23.50	3943	16 × 14	15.19	13.19	52.5	16.06	14.23	23.50	4483
350	334	334	1201	408	361.5	597	1789	400 × 350	385	334	1334	408	361.5	597	2034
16	15.19	15.19	52.5	18.03	16.00	27.09	5961	20 × 16	19.19	15.19	63.0	18.03	16.00	27.09	6770
400	385	385	1334	458	406.5	688	2704	500 × 400	487	385	1600	458	406.5	688	3071
18	17.19	17.19	59.5	20.00	17.54	30.04	7157	20 × 18	19.19	17.19	63.0	20.00	17.54	30.04	8005
450	436	436	1512	508	445.5	763	3246	500 × 450	487	436	1600	508	445.5	763	3631
20	19.19	19.19	63.0	21.18	18.92	32.91	8112	24 × 20	23.19	19.19	73.5	21.18	18.92	32.91	9076
500	487	487	1600	538	480.5	836	3679	600 × 500	589	487	1867	538	480.5	836	4117
22	21.19	21.19	70.0	23.03	20.71	36.14	9003	28 × 24	26.94	23.19	85.8	24.78	22.72	39.33	13536
550	538	538	1778	585	526	918	4084	700 × 600	684	589	2179	629.5	577	999	6140
24	23.19	23.19	73.5	24.78	22.72	39.33	12340	32 × 28	30.69	26.94	94.5	28.54	25.93	45.35	21605
600	589	589	1867	629.5	577	999	5597	800 × 700	779	684	2401	725	658.5	1152	9800
28	26.94	26.94	85.8	28.54	25.93	45.35	19034	36 × 30	34.44	28.94	105.0	29.57	27.48	48.62	26061
700	684	684	2179	725	658.5	1152	8634	900 × 750	874	735	2667	751	698	1235	11821
30	28.94	28.94	89.2	29.57	27.48	48.62	21528	36 × 32	34.44	30.69	105.0	30.75	29.19	52.01	33685
750	735	735	2266	751	698	1235	9765	900 × 800	874	779	2667	781	741.5	1321	15279
32	30.69	30.69	94.5	30.75	29.19	52.01	28071	40 × 36	38.44	34.44	①	①	①	①	①
800	779	779	2401	781	741.5	1321	12733	1000 × 900	976	874					
36	34.44	34.44	105.0	33.86	31.57	57.48	36328								
900	874	874	2667	860	802	1460	16478								
40	38.44	38.44	①	①	①	①	①								
1000	976	976													
48	45.94	45.94	①	①	①	①	①								
1200	1166	1166													

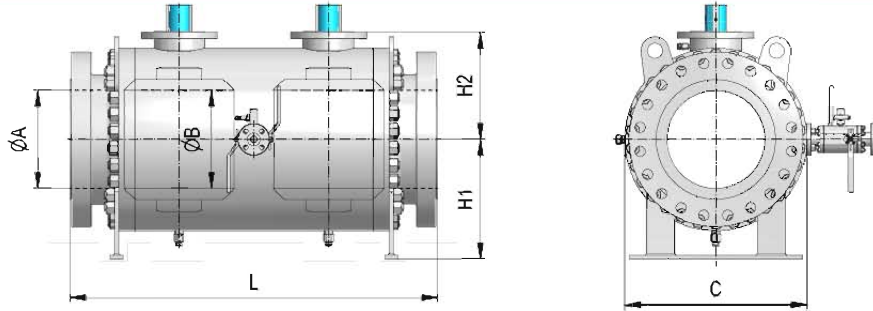
* Weight figures are relevant to flanged end valves. ①Please consult the factory.

Note: For dimensions & weights in larger sizes consult the factory.

Dimensions and weights are subject to change without notice.

Face to face dimensions not listed in industry standards are subject to change without notice.

T90 DIMENSIONS & WEIGHTS



ASME CLASS 300

ASME CLASS 300 FULL BORE								ASME CLASS 300 REDUCED BORE							
Size	A	B	L	H1	H2	C	Weight*	Size	A	B	L	H1	H2	C	Weight*
NPS/DN							lb/kg	NPS/DN							lb/kg
2	1.94	1.94	14.9	3.82	3.31	6.22	47	3 × 2	2.94	1.94	19.5	3.82	3.31	6.22	117
50	49	49	378	97	84	158	22	80 × 50	74	49	495	97	84	158	53
3	2.94	2.94	19.5	4.09	4.41	7.83	114	4 × 3	3.94	2.94	21.0	4.09	4.41	7.83	183
80	74	74	495	104	112	199	52	100 × 80	100	74	534	104	112	199	83
4	3.94	3.94	21.0	5.12	5.43	9.37	252	6 × 4	5.94	3.94	27.8	5.12	5.43	9.37	383
100	100	100	534	130	138	238	114	150 × 100	150	100	705	130	138	238	174
6	5.94	5.94	27.8	10.16	7.95	12.01	540	8 × 6	7.94	5.94	34.6	10.16	7.95	12.01	1042
150	150	150	705	258	202	305	245	200 × 150	201	150	879	258	202	305	473
8	7.94	7.94	34.6	11.89	9.82	16.30	1438	10 × 8	9.94	7.94	39.1	11.89	9.82	16.30	1400
200	201	201	879	302	249.5	414	652	250 × 200	252	201	994	302	249.5	414	635
10	9.94	9.94	39.1	13.76	11.36	18.98	1670	12 × 10	11.94	9.94	44.6	13.76	11.36	18.98	2673
250	252	252	994	349.5	288.5	482	757	300 × 250	303	252	1134	349.5	288.5	482	1212
12	11.94	11.94	44.6	15.33	13.41	21.85	2554	14 × 12	13.19	11.94	52.5	15.33	13.41	21.85	3345
300	303	303	1134	389.5	340.5	555	1159	350 × 300	334	303	1334	389.5	340.5	555	1517
14	13.19	13.19	52.5	16.06	14.23	23.50	4329	16 × 14	15.19	13.19	57.7	16.06	14.23	23.50	5062
350	334	334	1334	408	361.5	597	1964	400 × 350	385	334	1467	408	361.5	597	2296
16	15.19	15.19	57.7	18.03	16.00	27.09	5960	20 × 16	19.19	15.19	63.0	18.03	16.00	27.09	7542
400	385	385	1467	458	406.5	688	2703	500 × 400	487	385	1600	458	406.5	688	3421
18	17.19	17.19	63.0	20.00	17.54	30.04	9124	20 × 18	19.19	17.19	68.3	20.00	17.54	30.04	9644
450	436	436	1600	508	445.5	763	4138	500 × 450	487	436	1734	508	445.5	763	4375
20	19.19	19.19	68.3	21.18	18.92	33.35	9693	24 × 20	23.19	19.19	78.8	21.18	18.92	33.35	11005
500	487	487	1734	538	480.5	847	4397	600 × 500	589	487	2000	538	480.5	847	4992
22	21.19	21.19	75.2	23.03	20.71	36.14	10025	28 × 24	26.94	23.19	92.7	24.78	22.72	39.33	16057
550	538	538	1911	585	526	918	4547	700 × 600	684	589	2356	629.5	577	999	7284
24	23.19	23.19	78.8	24.78	22.72	39.33	18816	32 × 28	30.69	26.94	105.0	28.54	25.93	45.83	21983
600	589	589	2000	629.5	577	999	8535	800 × 700	779	684	2667	725	658.5	1164	9972
28	26.94	26.94	92.7	28.54	25.93	45.83	18918	36 × 30	34.44	28.94	119.0	29.57	27.48	48.62	28588
700	684	684	2356	725	658.5	1164	8581	900 × 750	874	735	3022	751	698	1235	12968
30	28.94	28.94	96.3	29.57	27.48	48.62	26949	36 × 32	34.44	30.69	119.0	32.68	29.19	52.01	31663
750	735	735	2445	751	698	1235	12224	900 × 800	874	779	3022	830	741.5	1321	14362
32	30.69	30.69	105.0	32.68	29.19	52.01	32744	40 × 36	38.44	34.44	①	①	①	①	①
800	779	779	2667	830	741.5	1321	14852	1000 × 900	976	874					
36	34.44	34.44	119.0	33.86	31.57	57.48	41667								
900	874	874	3022	860	802	1460	18900								
40	38.44	38.44	①	①	①	①	①								
1000	976	976													
48	45.94	45.94	①	①	①	①	①								
1200	1166	1166													

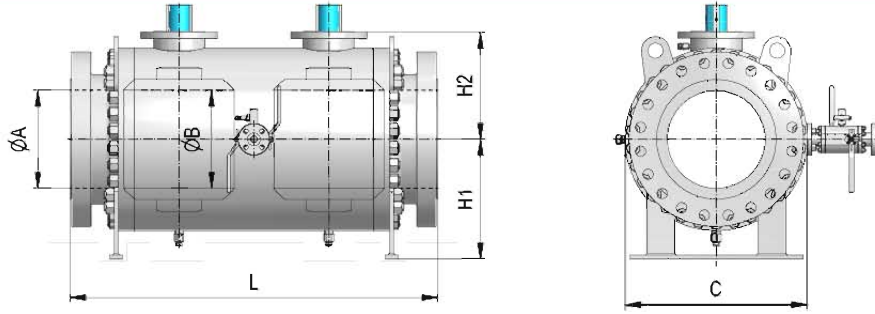
* Weight figures are relevant to flanged end valves. ① Please consult the factory.

Note: For dimensions & weights in larger sizes consult the factory.

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T90 DIMENSIONS & WEIGHTS



ASME CLASS 600

ASME CLASS 600 FULL BORE								ASME CLASS 600 REDUCED BORE							
Size	A	B	L	H1	H2	C	Weight*	Size	A	B	L	H1	H2	C	Weight*
NPS/DN							lb/kg	NPS/DN							lb/kg
2	1.94	1.94	20.1	3.78	3.72	6.30	122	3 × 2	2.94	1.94	24.5	3.78	3.72	6.30	156
50	49	49	511	96	94.5	160	55	80 × 50	74	49	623	96	94.5	160	71
3	2.94	2.94	24.5	4.88	4.82	7.87	149	4 × 3	3.94	2.94	29.8	4.88	4.82	7.87	441
80	74	74	623	124	122.5	200	67	100 × 80	100	74	756	124	122.5	200	200
4	3.94	3.94	29.8	7.28	6.87	9.76	521	6 × 4	5.94	3.94	38.5	7.28	6.87	9.76	868
100	100	100	756	185	174.5	248	236	150 × 100	150	100	978.25	185	174.5	248	394
6	5.94	5.94	38.5	10.43	8.35	12.95	976	8 × 6	7.94	5.94	45.5	10.43	8.35	12.95	1631
150	150	150	978.25	265	212	329	443	200 × 150	201	150	1155	265	212	329	740
8	7.94	7.94	45.5	12.40	10.39	16.06	2340	10 × 8	9.94	7.94	54.2	12.40	10.39	16.06	2863
200	201	201	1155	315	264	408	1061	250 × 200	252	201	1377.3	315	264	408	1299
10	9.94	9.94	54.2	13.98	12.01	19.37	2494	12 × 10	11.94	9.94	57.7	13.98	12.01	19.37	4097
250	252	252	1377.3	355	305	492	1131	300 × 250	303	252	1466.5	355	305	492	1859
12	11.94	11.94	57.7	15.75	13.70	22.68	3646	14 × 12	13.19	11.94	61.3	15.75	13.70	22.68	6924
300	303	303	1466.5	400	348	576	1654	350 × 300	334	303	1555.8	400	348	576	3141
14	13.19	13.19	61.3	16.54	14.63	24.92	5573	16 × 14	15.19	13.19	68.3	16.54	14.63	24.92	8275
350	334	334	1555.8	420	371.5	633	2528	400 × 350	385	334	1734.3	420	371.5	633	3753
16	15.19	15.19	68.3	19.09	16.38	28.27	7340	20 × 16	19.19	15.19	75.2	19.09	16.38	28.27	10619
400	385	385	1734.3	485	416	718	3329	500 × 400	487	385	1911	485	416	718	4817
18	17.19	17.19	75.2	20.87	18.74	32.09	10874	20 × 18	19.19	17.19	82.3	20.87	18.74	32.09	11646
450	436	436	1911	530	476	815	4932	500 × 450	487	436	2089.5	530	476	815	5282
20	19.19	19.19	82.3	22.64	20.43	35.28	11389	24 × 20	23.19	19.19	96.3	22.64	20.43	35.28	13806
500	487	487	2089.5	575	519	896	5166	600 × 500	589	487	2444.8	575	519	896	6262
22	21.19	21.19	89.2	24.11	21.95	38.66	14591	28 × 24	26.94	23.19	106.7	25.89	23.96	42.17	27059
550	538	538	2266.3	612.5	557.5	982	6619	700 × 600	684	589	2710.8	657.5	608.5	1071	12274
24	23.19	23.19	96.3	25.89	23.96	42.17	16333	32 × 28	30.69	26.94	122.5	28.86	26.99	48.43	30101
600	589	589	2444.8	657.5	608.5	1071	7409	800 × 700	779	684	3111.5	733	685.5	1230	13654
28	26.94	26.94	106.7	28.86	26.99	48.43	30917	36 × 30	34.44	28.94	143.5	30.91	28.74	51.18	37281
700	684	684	2710.8	733	685.5	1230	14024	900 × 750	874	735	3645.3	785	730	1300	16910
30	28.94	28.94	113.8	30.91	28.74	51.18	34580	36 × 32	34.44	30.69	143.5	37.01	31.00	56.10	40089
750	735	735	2889.3	785	730	1300	15685	900 × 800	874	779	3645.3	940	787.5	1425	18184
32	30.69	30.69	122.5	37.01	31.00	56.10	41324	40 × 36	38.44	34.44	144.7	39.37	35.20	61.97	55294
800	779	779	3111.5	940	787.5	1425	18744	1000 × 900	976	874	3675	1000	894	1574	25081
36	34.44	34.44	143.5	39.37	35.20	61.97	54893								
900	874	874	3645.3	1000	894	1574	24899								
40	38.44	38.44	144.7	41.73	38.27	68.19	77810								
1000	976	976	3675	1060	972	1732	35294								
48	45.94	45.94	①	①	①	①	①								
1200	1166	1166	①	①	①	①	①								

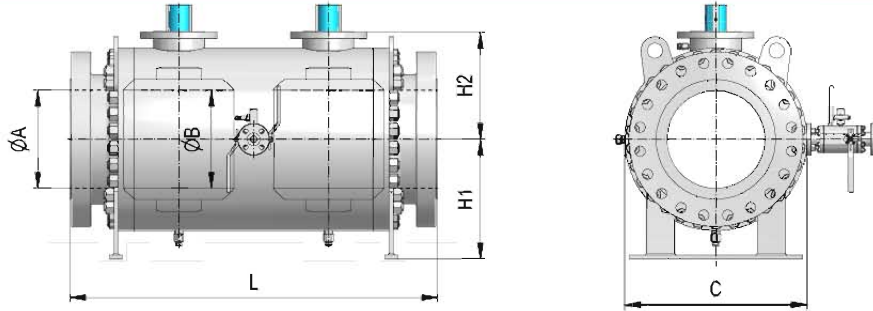
* Weight figures are relevant to flanged end valves. ①Please consult the factory.

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T90 DIMENSIONS & WEIGHTS



ASME CLASS 900

ASME CLASS 900 FULL BORE								ASME CLASS 900 REDUCED BORE							
Size NPS/DN	A	B	L	H1	H2	C	Weight* lb/kg	Size NPS/DN	A	B	L	H1	H2	C	Weight* lb/kg
2 50	1.94 49	1.94 49	25.4 644	5.08 129	5.22 132.5	8.31 211	197 89	3 × 2 80 × 50	2.94 74	1.94 49	26.3 667	5.08 129	5.22 132.5	8.31 211	216 98
3 80	2.94 74	2.94 74	26.3 667	4.92 125	5.96 151.5	8.46 215	255 116	4 × 3 100 × 80	3.94 100	2.94 74	31.5 800	4.92 125	5.96 151.5	8.46 215	390 177
4 100	3.94 100	3.94 100	31.5 800	7.87 200	7.38 187.5	10.83 275	667 303	6 × 4 150 × 100	5.94 150	3.94 100	42.0 1068	7.87 200	7.38 187.5	10.83 275	845 383
6 150	5.94 150	5.94 150	42.0 1068	11.02 280	8.82 224	13.58 345	1046 474	8 × 6 200 × 150	7.94 201	5.94 150	50.8 1290	11.02 280	8.82 224	13.58 345	1813 823
8 200	7.94 201	7.94 201	50.8 1290	13.98 355	11.30 287	17.32 440	2168 984	10 × 8 250 × 200	9.94 252	7.94 201	57.7 1467	13.98 355	11.30 287	17.32 440	2847 1292
10 250	9.94 252	9.94 252	57.7 1467	15.55 395	12.93 328.5	20.55 522	3646 1654	12 × 10 300 × 250	11.94 303	9.94 252	66.5 1689	15.55 395	12.93 328.5	20.55 522	4769 2163
12 300	11.94 303	11.94 303	66.5 1689	17.72 450	15.04 382	24.49 622	5411 2454	14 × 12 350 × 300	12.69 322	11.94 303	70.9 1801	17.72 450	15.04 382	24.49 622	6624 3005
14 350	12.69 322	12.69 322	70.9 1801	18.90 480	16.14 410	26.85 682	6759 3066	16 × 14 400 × 350	14.69 373	12.69 322	77.9 1978	18.90 480	16.14 410	26.85 682	7018 3183
16 400	14.69 373	14.69 373	77.9 1978	20.47 520	17.91 455	30.12 765	8874 4025	20 × 16 500 × 400	16.69 423	14.69 373	84.0 2133	20.47 520	17.91 455	30.12 765	11867 5383
18 450	16.69 423	16.69 423	84.0 2133	22.05 560	19.88 505	33.86 860	8110 3679	20 × 18 500 × 450	18.56 471	16.69 423	91.0 2312	22.05 560	19.88 505	33.86 860	13418 6087
20 500	18.56 471	18.56 471	91.0 2312	24.41 620	22.11 561.5	37.99 965	15947 7234	24 × 20 600 × 500	22.44 570	18.56 471	106.7 2711	24.41 620	22.11 561.5	37.99 965	16054 7282
24 600	22.44 570	22.44 570	106.7 2711	28.35 720	26.26 667	46.06 1170	16324 7404	28 × 24 700 × 600	26.19 665	22.44 570	120.8 3068	28.35 720	26.26 667	46.06 1170	28041 12719
28 700	26.19 665	26.19 665	①	①	①	①	①	32 × 28 800 × 700	29.94 760	①	①	①	①	①	①
30 750	28.06 712	28.06 712	129.5 3290	33.62 854	31.89 810	55.51 1410	49341 22381	36 × 30 900 × 750	33.69 855	28.06 712	157.5 4001	33.62 854	31.89 810	55.51 1410	63369 28744
32 800	29.94 760	29.94 760	①	①	①	①	①	36 × 32 900 × 800	33.69 855	29.94 760	①	①	①	①	①
36 900	33.69 855	33.69 855	157.5 4001	38.86 987	36.69 932	66.34 1685	78022 35390	40 × 36 1000 × 900	37.63 956	33.69 855	①	①	①	①	①
40 1000	37.63 956	37.63 956	①	①	①	①	①								
48 1200	45.25 1149	45.25 1149	①	①	①	①	①								

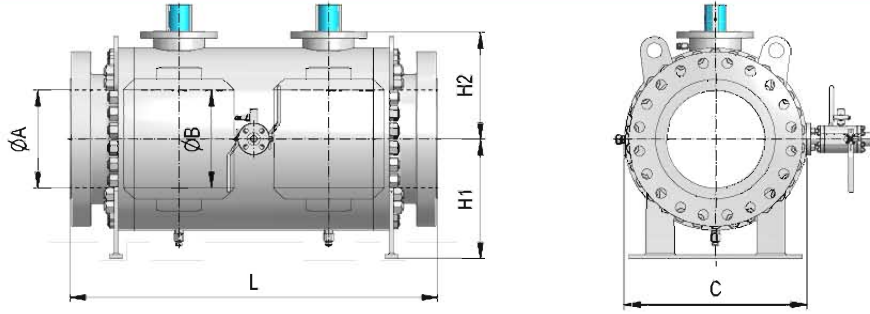
* Weight figures are relevant to flanged end valves. ①Please consult the factory.

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T90 DIMENSIONS & WEIGHTS



ASME CLASS 1500

ASME CLASS 1500 FULL BORE								ASME CLASS 1500 REDUCED BORE							
Size NPS/DN	A	B	L	H1	H2	C	Weight* lb/kg	Size NPS/DN	A	B	L	H1	H2	C	Weight* lb/kg
2	1.94	1.94	25.4	5.08	5.22	8.31	204	3 × 2	2.94	1.94	32.4	5.08	5.22	8.31	282
50	49	49	644	129	132.5	211	93	80 × 50	74	49	823	129	132.5	211	128
3	2.94	2.94	32.4	5.63	6.42	9.13	401	4 × 3	3.94	2.94	37.6	5.63	6.42	9.13	505
80	74	74	822.5	143	163	232	182	100 × 80	100	74	956	143	163	232	229
4	3.94	3.94	37.6	8.66	8.03	11.61	818	6 × 4	5.69	3.94	48.6	8.66	8.03	11.61	1177
100	100	100	955.5	220	204	295	371	150 × 100	144	100	1234	220	204	295	534
6	5.69	5.69	48.6	10.24	10.51	15.75	1983	8 × 6	7.56	5.69	57.3	10.24	10.51	15.75	2338
150	144	144	1233.8	260	267	400	900	200 × 150	192	144	1456	260	267	400	1061
8	7.56	7.56	57.3	11.42	12.09	18.50	3229	10 × 8	9.44	7.56	68.3	11.42	12.09	18.50	4221
200	192	192	1456	290	307	470	1465	250 × 200	239	192	1734	290	307	470	1915
10	9.44	9.44	68.3	15.91	15.43	23.74	6192	12 × 10	11.31	9.44	77.9	15.91	15.43	23.74	7265
250	239	239	1734.3	404	392	603	2809	300 × 250	287	239	1978	404	392	603	3295
12	11.31	11.31	77.9	19.76	17.36	28.15	9375	14 × 12	12.44	11.31	86.6	19.76	17.36	28.15	10320
300	287	287	1977.5	502	441	715	4253	350 × 300	315	287	2200	502	441	715	4681
14	12.44	12.44	86.6	20.08	18.39	31.02	11767	16 × 14	14.19	12.44	95.4	20.08	18.39	31.02	13395
350	315	315	2199.8	510	467	788	5338	400 × 350	360	315	2422	510	467	788	6076
16	14.19	14.19	95.4	22.32	20.08	34.06	16802	20 × 16	17.88	14.19	114.6	22.32	20.08	34.06	21196
400	360	360	2422	567	510	865	7621	500 × 400	454	360	2912	567	510	865	9615
18	16	16	105.9	25.63	23.70	37.40	25575	20 × 18	17.88	16	114.6	25.63	23.70	37.40	30961
450	406	406	2689.8	651	602	950	11601	500 × 450	454	406	2912	651	602	950	14044
20	17.88	17.88	114.6	29.21	26.69	40.75	37462	24 × 20	21.5	17.88	①	①	①	①	①
500	454	454	2912	742	678	1035	16993	600 × 500	546	454	①	①	①	①	①
24	21.5	21.5	①	①	①	①	①								
600	546	546	①	①	①	①	①								

ASME CLASS 2500

ASME CLASS 2500 FULL BORE								ASME CLASS 2500 REDUCED BORE							
Size NPS/DN	A	B	L	H1	H2	C	Weight* lb/kg	Size NPS/DN	A	B	L	H1	H2	C	Weight* lb/kg
2	1.69	1.69	31.1	5.24	6.48	8.74	316	2 × 1-1/2	1.69	1.5	31.1	5.04	5.00	7.99	243
50	42	42	789	133	164.5	222	144	50 × 40	42	38	789	128	127	203	110
3	2.44	2.44	39.8	7.13	7.70	11.61	671	3 × 2	2.44	1.69	39.8	5.24	6.48	8.74	579
80	62	62	1012	181	195.5	295	305	80 × 50	62	42	1012	133	164.5	222	263
4	3.44	3.44	46.4	8.86	9.15	13.98	1416	4 × 3	3.44	2.44	46.4	7.13	7.70	11.61	988
100	87	87	1178	225	232.5	355	642	100 × 80	87	62	1178	181	195.5	295	448
6	5.19	5.19	63.0	11.28	11.02	16.46	2882	6 × 4	5.19	3.44	63.0	8.86	9.15	13.98	1910
150	131	131	1600	286.5	280	418	1307	150 × 100	131	87	1600	225	232.5	355	866
8	7.06	7.06	70.4	13.78	12.99	20.47	4869	8 × 6	7.06	5.19	70.4	11.28	11.02	16.46	4082
200	179	179	1789	350	330	520	2209	200 × 150	179	131	1789	286.5	280	418	1852
10	8.81	8.81	87.5	15.55	15.43	25.00	7859	10 × 8	8.81	7.06	87.5	13.78	12.99	20.47	6223
250	223	223	2223	395	392	635	3565	250 × 200	223	179	2223	350	330	520	2823
12	10.44	10.44	98.0	18.35	18.03	29.92	12014	12 × 10	10.44	8.81	98.0	15.55	15.43	25.00	9560
300	265	265	2489	466	458	760	5450	300 × 250	265	223	2489	395	392	635	4337

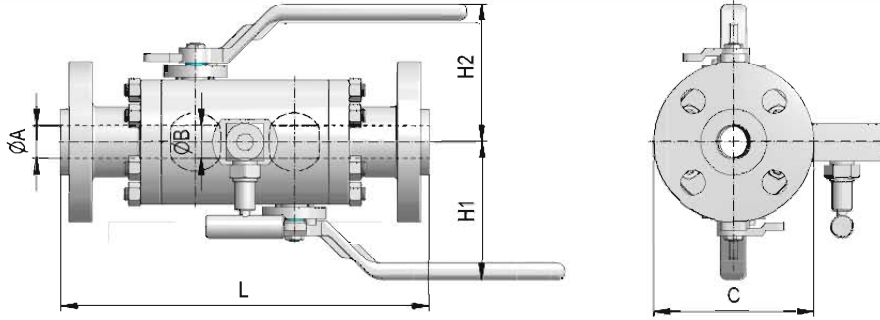
* Weight figures are relevant to flanged end valves. ① Please consult the factory.

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T91 DIMENSIONS & WEIGHTS



ASME CLASS 150

ASME CLASS 150 FULL BORE								ASME CLASS 150 REDUCED BORE							
Size NPS/DN	A	B	L	H1	H2	C	Weight* lb/kg	Size NPS/DN	A	B	L	H1	H2	C	Weight* lb/kg
1/2	0.50	0.50	7.1	3.27	3.27	2.36	9	1 x 3/4	1.00	0.75	8.7	3.39	3.39	3.74	11
15	13	13	180	83	83	60	4	25 x 20	25	19	220	86	86	95	5
3/4	0.75	0.75	7.9	3.39	3.39	3.74	8	1-1/2 x 1	1.50	1.00	11.4	3.94	3.94	4.92	13
20	19	19	200	86	86	95	4	40 x 25	38	25	290	100	100	125	6
1	1.00	1.00	8.7	3.94	3.94	4.92	11	2 x 1-1/2	1.94	1.50	12.2	5.31	5.31	5.31	25
25	25	25	220	100	100	125	5	50 x 40	49	38	310	135	135	135	12
1-1/4	1.25	1.25	10.2	4.13	4.13	5.12	17	3 x 2	2.94	1.94	14.0	5.31	5.31	5.31	25
32	32	32	260	105	105	130	8	80 x 50	74	49	355	135	135	135	12
1-1/2	1.50	1.50	11.4	4.72	5.31	5.31	22	4 x 3	3.94	2.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
40	38	38	290	120	135	135	10	100 x 80	100	74	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
2	1.94	1.94	12.2	5.12	5.71	5.71	35	6 x 4	5.94	3.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
50	49	49	310	130	145	145	16	150 x 100	150	100	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
3	2.94	2.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	8 x 6	7.94	5.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
80	74	74	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	200 x 150	201	150	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
4	3.94	3.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	10 x 8	9.94	7.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
100	100	100	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	250 x 200	252	201	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
6	5.94	5.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	12 x 10	11.94	9.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
150	150	150	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	300 x 250	303	252	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
8	7.94	7.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	14 x 12	13.19	11.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
200	201	201	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	350 x 300	334	303	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
10	9.94	9.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ								
250	252	252	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ								
12	11.94	11.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ								
300	303	303	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ								

ASME CLASS 300

ASME CLASS 300 FULL BORE								ASME CLASS 300 REDUCED BORE							
Size NPS/DN	A	B	L	H1	H2	C	Weight* lb/kg	Size NPS/DN	A	B	L	H1	H2	C	Weight* lb/kg
1/2	0.50	0.50	9.9	3.23	3.23	2.36	8	1 x 3/4	1.00	0.75	11.4	3.35	3.35	3.74	11
15	13	13	252	82	82	60	4	25 x 20	25	19	290	85	85	95	5
3/4	0.75	0.75	10.6	3.35	3.35	3.74	10	1-1/2 x 1	1.50	1.00	13.4	3.94	3.94	4.92	14
20	19	19	270	85	85	95	5	40 x 25	38	25	340	100	100	125	7
1	1.00	1.00	11.4	3.94	3.94	4.92	18	2 x 1-1/2	1.94	1.50	15.4	4.72	4.72	5.31	27
25	25	25	290	100	100	125	8	50 x 40	49	38	390	120	120	135	12
1-1/4	1.25	1.25	12.6	4.06	4.06	5.12	26	3 x 2	2.94	1.94	19.5	5.31	5.31	5.31	25
32	32	32	320	103	103	130	12	80 x 50	74	49	495	135	135	135	12
1-1/2	1.50	1.50	13.4	4.72	4.72	5.31	35	4 x 3	3.94	2.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
40	38	38	340	120	120	135	16	100 x 80	100	74	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
2	1.94	1.94	15.4	5.12	5.12	5.71	44	6 x 4	5.94	3.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
50	49	49	390	130	130	145	20	150 x 100	150	100	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
3	2.94	2.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	8 x 6	7.94	5.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
80	74	74	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	200 x 150	201	150	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
4	3.94	3.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	10 x 8	9.94	7.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
100	100	100	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	250 x 200	252	201	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
6	5.94	5.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	12 x 10	11.94	9.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
150	150	150	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	300 x 250	303	252	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
8	7.94	7.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	14 x 12	13.19	11.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
200	201	201	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	350 x 300	334	303	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
10	9.94	9.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ								
250	252	252	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ								
12	11.94	11.94	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ								
300	303	303	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ								

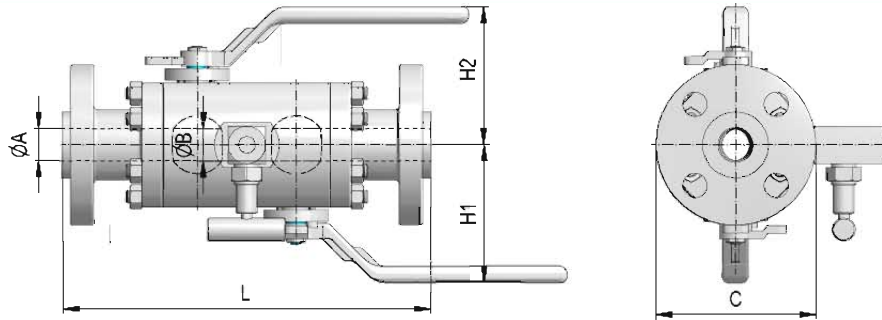
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T91 DIMENSIONS & WEIGHTS



ASME CLASS 600

ASME CLASS 600 FULL BORE								ASME CLASS 600 REDUCED BORE							
Size	A	B	L	H1	H2	C	Weight*	Size	A	B	L	H1	H2	C	Weight*
NPS/DN							lb/kg	NPS/DN							lb/kg
1/2	0.50	0.50	11.4	3.84	3.84	2.36	11	1 × 3/4	1.00	0.75	15.4	3.98	3.98	3.74	19
15	13	13	290	98	98	60	5	25 × 20	25	19	390	101	101	95	9
3/4	0.75	0.75	13.4	3.98	3.98	3.74	15	1-1/2 × 1	1.50	1.00	16.9	4.72	4.72	4.92	29
20	19	19	340	101	101	95	7	40 × 25	38	25	430	120	120	125	13
1	1.00	1.00	15.4	4.72	4.72	4.92	25	2 × 1-1/2	1.94	1.50	20.7	5.31	5.31	5.31	47
25	25	25	390	120	120	125	12	50 × 40	49	38	525	135	135	135	21
1-1/4	1.25	1.25	16.1	4.88	4.88	5.12	35	3 × 2	2.94	1.94	19.5	4.72	4.72	①	①
32	32	32	410	124	124	130	16	80 × 50	74	49	495	120	120	①	①
1-1/2	1.50	1.50	16.9	5.31	5.31	5.31	42	4 × 3	3.94	2.94	①	①	①	①	①
40	38	38	430	135	135	135	19	100 × 80	100	74	①	①	①	①	①
2	1.94	1.94	20.7	4.72	4.72	5.71	55	6 × 4	5.94	3.94	①	①	①	①	①
50	49	49	525	120	120	145	25	150 × 100	150	100	①	①	①	①	①
3	2.94	2.94	①	①	①	①	①								
80	74	74	①	①	①	①	①								
4	3.94	3.94	①	①	①	①	①								
100	100	100	①	①	①	①	①								

ASME CLASS 900

ASME CLASS 900 FULL BORE								ASME CLASS 900 REDUCED BORE							
Size	A	B	L	H1	H2	C	Weight*	Size	A	B	L	H1	H2	C	Weight*
NPS/DN							lb/kg	NPS/DN							lb/kg
1/2	0.50	0.50	12.0	4.02	4.02	2.36	14	1 × 3/4	1.00	0.75	15.9	4.33	4.33	3.74	22
15	13	13	305	102	102	60	6	25 × 20	25	19	405	110	110	95	10
3/4	0.75	0.75	14.0	4.33	4.33	3.74	19	1-1/2 × 1	1.50	1.00	17.5	4.92	4.92	4.92	33
20	19	19	355	110	110	95	9	40 × 25	38	25	445	125	125	125	15
1	1.00	1.00	15.9	4.92	4.92	4.92	29	2 × 1-1/2	1.94	1.50	21.3	5.51	5.51	5.31	55
25	25	25	405	125	125	125	13	50 × 40	49	38	540	140	140	135	25
1-1/4	1.25	1.25	16.7	5.16	5.16	5.12	37								
32	32	32	425	131	131	130	17								
1-1/2	1.50	1.50	17.5	5.51	5.51	5.31	46								
40	38	38	445	140	140	135	21								
2	1.94	1.94	21.3	4.92	4.92	5.71	64								
50	49	49	540	125	125	145	29								

* Weight figures are relevant to flanged end valves. ① Please consult the factory.

Note: For dimensions & weights in larger sizes consult the factory.

Dimensions and weights are subject to change without notice.

Face to face dimensions not listed in industry standards are subject to change without notice.

HOW TO ORDER

PLEASE PROVIDE FOLLOWING INFORMATION :

1. Max./Min. Operating Pressure, Max./Min. Service Temp, Special Flow/Service Environment Requirements.
2. Design Standard (API6D, ISO 17292, API 608 or Other).
3. Test Requirements (Standard Package, UT, PT, MT, RT, High Pressure (N2/Air), Low Emission, Low Temp. or other).
4. Other Requirements (Mating Flange, PUP, Third-party Inspector or other).

A	B	C	D	E	F	G	H	I	J	K
MODEL	SIZE	PRESSURE RATING	CONNECTION	ACTUATION	BODY MATERIAL	SEALS	TRIM MATERIAL	TRIM COATING	BOLTS&NUTS	SPECIAL REQUIREMENTS
T90	16	600	RF	G	C5	VV	002	1	B2	D

EXAMPLE:T90-16-600RF-G-C5VV0021B2-D

DBB trunnion ball valve, 16" reduced port, ASME 600, Flanged RF, Gear actuator, A105N body, VITON/VITON seals, A105N trim, ENP trim coating, B7/2H bolts & nuts, Double piston effect of seat.

A		MODEL	
CODE	TYPE	CODE	TYPE
T90	DBB Trunnion Ball Valve	T91	DBB Floating Ball Valve

B		SIZE							
FULL BORE				REDUCED BORE					
CODE	NPS(DN)	CODE	NPS(DN)	CODE	NPS(DN)	CODE	NPS(DN)	CODE	NPS(DN)
1-1/2	11/2(40)	22	22(550)	2 × 11/2	2 × 11/2(50 × 40)	18 × 16	18 × 16(450 × 400)	36 × 30	36 × 30(900 × 750)
2	2(50)	24	24(600)	3 × 2	3 × 2(80 × 50)	20 × 16	20 × 16(500 × 400)	36 × 32	36 × 32(900 × 800)
3	3(80)	28	28(700)	4 × 3	4 × 3(100 × 80)	20 × 18	20 × 18(500 × 450)	40 × 36	40 × 36(1000 × 900)
4	4(100)	30	30(750)	6 × 4	6 × 4(150 × 100)	22 × 18	22 × 18(550 × 450)	42 × 36	42 × 36(1050 × 900)
6	6(150)	32	32(800)	8 × 6	8 × 6(200 × 150)	22 × 20	22 × 20(550 × 500)	42 × 40	42 × 40(1050 × 1000)
8	8(200)	36	36(900)	10 × 8	10 × 8(250 × 200)	24 × 20	24 × 20(600 × 500)	48 × 40	48 × 40(1200 × 1000)
10	10(150)	40	40(1000)	12 × 10	12 × 10(300 × 250)	24 × 22	24 × 22(600 × 550)	56 × 48	56 × 48(1400 × 1200)
12	12(300)	48	48(1200)	14 × 10	14 × 10(350 × 250)	28 × 24	28 × 24(700 × 600)		
14	14(350)			14 × 12	14 × 12(350 × 300)	30 × 24	30 × 24(750 × 600)		
16	16(400)			16 × 12	16 × 12(400 × 300)	30 × 28	30 × 28(750 × 700)		
18	18(450)			16 × 14	16 × 14(400 × 350)	32 × 28	32 × 28(800 × 700)		

C		PRESSURE RATING		D		CONNECTION	
CODE	TYPE	CODE	TYPE	CODE	TYPE	CODE	TYPE
150	ASME 150	1.6P	PN 16	RF	Flanged RF-B16.5(NPS 1/2-NPS 24)	RFB	Flanged RF-B16.47(NPS 26-NPS 60) Series B
300	ASME 300	3.2P	PN 32		Flanged RF-MSS SP 44(NPS 22)	RJB	Flanged RJ-B16.47(NPS 26-NPS 60) Series B
400	ASME 400	6.4P	PN 64		Flanged RF-B16.47(NPS 26-NPS 60) Series A	SW	Socket Weld-ASME B16.11
600	ASME 600	8P	PN 80	RJ	Flanged RJ-B16.5(NPS 1/2-NPS 24)	ET	External Thread-ASME B1.20.1
900	ASME 900	10P	PN 100		Flanged RJ-MSS SP 44(NPS 22)	BW	Butt Weld-ASME B31.8*
1500	ASME 1500	16P	PN 160		Flanged RJ-B16.47(NPS 26-NPS 60) Series A	XX	Others
2500	ASME 2500	25P	PN 250	*For weld end valves, specify ID or OD, wall thickness and grade of pipe.			

E		ACTUATION		Type operator desired (electric, hydraulic, pneumatic), provide following information: 1. Speed of opening and closing, probable frequency of operation. 2. Accessories and controls (limit switches, valving, instrumentation, tanks, pumps, etc). 3. Information on operating medium. (If electric: voltage, frequency, single- or three-phase, open- or explosion-proof motor, If hydraulic or pneumatic: operating medium and pressure. etc.)
CODE	TYPE	CODE	CODE	
B	Bare Stem	S	Pneumatic-Spring Return	
W	Wrench	D	Pneumatic-Double Acting	
G	Worm Gear	M	Gas-Hydraulic	
E	Electric	N	Electro-Hydraulic	
H	Hydraulic	X	Others	

F BODY MATERIAL								
CODE	BODY	CLOSURES(SPLIT-BODY) END CONNECTION(FOR BW)	CODE	BODY	CLOSURES(SPLIT-BODY) END CONNECTION(FOR BW)	CODE	BODY	CLOSURES(SPLIT-BODY) END CONNECTION(FOR BW)
C5	A105N	A105N	D5	A182 F51(UNS S31803)	A182 F51(UNS S31803)	M6	MONEL K500(UNS N05500)	MONEL K500(UNS N05500)
S5	A182 F304	A182 F304	D6	A182 F53(UNS S32750)	A182 F53(UNS S32750)	H5	HASTELLOY C-276 (UNS N10276)	HASTELLOY C-276 (UNS N10276)
S6	A182 F316	A182 F316	D7	A182 F55(UNS S32760)	A182 F55(UNS S32760)	AA	A350 LF2	A350 LF6 CL1
S7	A182 F304L	A182 F304L	D8	A182 F60(UNS S32205)	A182 F60(UNS S32205)	AB	A350 LF2	A350 LF6 CL2
S8	A182 F316L	A182 F316L	I5	INCONEL 600(UNS N06600)	INCONEL 600(UNS N06600)	AD	A105N	A350 LF2
L5	A350 LF2	A350 LF2	I6	INCONEL 625(UNS N06625)	INCONEL 625(UNS N06625)	AH	A105N	A350 LF6 CL2
D0	A995 4A(UNS J92205)	A995 4A(UNS J92205)	I7	CW6MC(UNSN26625)	CW6MC(UNSN26625)	AL	A105N	A350 LF6 CL1
D1	A995 5A(UNS J93404)	A995 5A(UNS J93404)	I8	INCOLOY 825(UNS N08825)	INCOLOY 825(UNS N08825)	XX	Others	Others

G SEALS(1)								
CODE	SEAT INSERT	O-Ring	CODE	SEAT INSERT	O-Ring	CODE	SEAT INSERT	O-Ring
VV	VITON-B(2)	VITON-B	DH	DEVLON	HNBR	KT	PEEK	VITON-GLT
VH	VITON-B(2)	HNBR	DG	DEVLON	VITON-GF	KQ	PEEK	PTFE-Elgiloy Spring
VT	VITON-B(2)	VITON-GLT	DT	DEVLON	VITON-GLT	YV	N/A(3)	VITON-B
GG	VITON-GF(2)	VITON-GF	DQ	DEVLON	PTFE-Elgiloy Spring	YH	N/A(3)	HNBR
TT	VITON-GLT(2)	VITON-GLT	NV	NYLON	VITON-B	YG	N/A(3)	VITON-GF
HH	HNBR(2)	HNBR	NH	NYLON	HNBR	YT	N/A(3)	VITON-GLT
FV	RPTFE	VITON-B	NG	NYLON	VITON-GF	YQ	N/A(3)	PTFE-Elgiloy Spring
FH	RPTFE	HNBR	NT	NYLON	VITON-GLT	PQ	PTFE	PTFE-Elgiloy Spring
FG	RPTFE	VITON-GF	NQ	NYLON	PTFE-Elgiloy Spring	XX	Others	Others
FT	RPTFE	VITON-GLT	KV	PEEK	VITON-B	(1) All seals on gaskets are Graphite. (2) Delta Ring. (3) Metal-to-Metal.		
FQ	RPTFE	PTFE-Elgiloy Spring	KH	PEEK	HNBR			
DV	DEVLON	VITON-B	KG	PEEK	VITON-GF			

H TRIM MATERIAL							
CODE	BALL	SEAT RINGS	STEM	CODE	BALL	SEAT RINGS	STEM
002	A105N	A105N	AISI 4140	411	A182 F316	A182 F316	A182 FXM-19(UNSS20910)
004	A105N	A182 F304	AISI 4140	502	A182 F304L	A182 F304L	A182 F51(UNS S31803)
012	A105N	A182 F6A	AISI 4140	603	A182 F316L	A182 F316L	A182 F51(UNS S31803)
020	A105N	A105N	A182 F6A	650	A182 FXM-19(UNS S20910)	A182 FXM-19(UNS S20910)	A182 FXM-19(UNS S20910)
081	A694 F60	A105N	A694 F60	680	A564 GR.630(UNS S17400)	A564 GR.630(UNS S17400)	A564 GR.630(UNS S17400)
101	A350 LF2	A350 LF2	A350 LF2	701	A182 F51(UNS S31803)	A182 F51(UNS S31803)	A182 F51(UNS S31803)
102	A350 LF2	A350 LF2	AISI 4140	702	A182 F51(UNS S31803)	A182 F51(UNS S31803)	INCONEL 718(UNS N07718)
104	A350 LF2	A182 F304	AISI 4140	751	A182 F53(UNS S32750)	A182 F53(UNS S32750)	A182 F53(UNS S32750)
109	A350 LF2	A350 LF2	A564 GR.630(UNS S17400)	752	A182 F53(UNS S32750)	A182 F53(UNS S32750)	INCONEL 718(UNS N07718)
122	A350 LF2	A350 LF2	A182 F6A	761	A182 F55(UNS S32760)	A182 F55(UNS S32760)	A182 F55(UNS S32760)
278	A182 F6A	A182 F6A	A182 F6A	801	INCONEL 600(UNS N06600)	INCONEL 600(UNS N06600)	INCONEL 600(UNS N06600)
279	A182 F6A	A182 F304	A564 GR.630(UNS S17400)	802	INCONEL 600(UNS N06600)	INCONEL 600(UNS N06600)	INCONEL 718(UNS N07718)
280	A182 F6A	A182 F304	A182 F6A	805	INCONEL 625(UNS N06625)	INCONEL 625(UNS N06625)	INCONEL 625(UNS N06625)
301	A182 F304	A182 F304	A182 F304	809	INCONEL 718(UNS N07718)	INCONEL 718(UNS N07718)	INCONEL 718(UNS N07718)
303	A182 F304	A182 F304	A564 GR.630(UNS S17400)	821	INCOLOY 825(UNS N08825)	INCOLOY 825(UNS N08825)	INCOLOY 825(UNS N08825)
311	A182 F304	A182 F304	A182 F51(UNS S31803)	826	INCOLOY 925(UNS N09925)	INCOLOY 925(UNS N09925)	INCOLOY 925(UNS N09925)
401	A182 F316	A182 F316	A182 F316	831	HASTELLOY C-276 (UNS N10276)	HASTELLOY C-276 (UNS N10276)	HASTELLOY C-276 (UNS N10276)
403	A182 F316	A182 F316	A564 GR.630(UNS S17400)	841	MONEL K500(UNS N05500)	MONEL K500(UNS N05500)	MONEL K500(UNS N05500)
405	A182 F316	A182 F316	A182 F51(UNS S31803)	XXX	Others	Others	Others

I TRIM COATING			
CODE	BALL	SEAT RINGS	STEM/TRUNNION
O	N/A	N/A	N/A
1	ENP	ENP	ENP
B	Stellite*	Stellite*	ENP
L	Chrome Carbide*	Chrome Carbide*	ENP
M	Tungsten Carbide*	Tungsten Carbide*	ENP
P	NiCrMoCu*	NiCrMoCu*	ENP
X	Others	Others	Others

J BOLTS & NUTS					
CODE	BOLT	NUT	CODE	BOLT	NUT
B1	A193 B7M	A194 2HM	N5	A320 B8M CL.2	A194 Gr.8M-S1
B2	A193 B7	A194 2H	N6	A320 B8M CL.1	A194 Gr.8MA
B3	A320 L7M	A194 7M	XX	Others	Others
B4	A320 L7	A194 Gr.7			
B5	A193 B8M	A194 Gr.8M			
B6	A193 B8	A194 Gr.8			
B7	A193 B16	A194 Gr.7			
B8	A320 L7	A194 Gr.4			

K SPECIAL REQUIREMENTS, MISC (MULTIPLE CHOICE)	
CODE	SPECIAL NOTES
E-	Specify distance from valve centerline to top of power operator mounting flange for direct-buried ball valve. Example, E2500 means the specify distance is 2500mm.
K	Anti-corrosion, acid-resisting regs are in compliance with NACE MR0103, NACE MR0175, ISO 15156. Please provide detailed medium composition.
D	Double piston effect (Single piston effect (self-release) seats are supplied as a standard feature).
SD	Single piston for upstream and double piston for downstream (self-release).
B-	Bolts & nuts coating, BE: ENP, BZ: Zinc Plating, BT: PTFE, BC: Cadmium+PTFE.
X	Others special requirements.

Notes: If you are uncertain about some categories, we will make suggestions based on your working conditions or your special requirement. The item marked with default will be used if no item is selected in that category unless it doesn't meet the working requirements.