

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



CHENGFENG FLOW-TECH GROUP

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CHV-MS-1601

CHV CHENGFENG
FLOW-TECH GROUP

CHV®

METAL-SEATED BALL VALVES



CHV INTERNATIONAL, INC.
CHENGDU CHENGGAO VALVE CO., LTD.
CHENGDU CHENGFENG 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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PRODUCT RANGE

RANGE

SERIES	TEMPERATURE	SIZE (NPS/DN) - PRESSURE RANGE				
		ASME CLASS 150-300	ASME CLASS 600	ASME CLASS 900	ASME CLASS 1500	ASME CLASS 2500
Cast Steel Split-Body Metal-Seated Floating Ball Valve						
HY13 Series	-20°F to 302°F (-29°C to 150°C)	1/2-12 15-300	1/2-8 15-200	N/A	N/A	N/A
HY43 Series	-20°F to 1000°F (-29°C to 538°C)					
Forged Steel Split-Body Metal-Seated Floating Ball Valve						
HY12 Series	-20°F to 302°F (-29°C to 150°C)	1/2-12 15-300	1/2-8 15-200	N/A	N/A	N/A
HY42 Series	-20°F to 1000°F (-29°C to 538°C)					
Cast Steel Top Entry Metal-Seated Floating Ball Valve						
HY14 Series	-20°F to 302°F (-29°C to 150°C)	1/2-12 15-300	1/2-8 15-200	N/A	N/A	N/A
HY44 Series	-20°F to 1000°F (-29°C to 538°C)					
Cast Steel Split-Body Metal-Seated Trunnion Ball Valve						
HY11 Series	-20°F to 302°F (-29°C to 150°C)	1-40 25-1000	1-40 25-1000	1-24 25-600	1-24 25-600	N/A
HY21 Series	-20°F to 446°F (-29°C to 230°C)					
HY31 Series	-20°F to 608°F (-29°C to 320°C)					
Forged Steel Split-Body Metal-Seated Trunnion Ball Valve						
HY10 Series	-20°F to 302°F (-29°C to 150°C)	1-40 25-1000	1-40 25-1000	1-36 25-900	1-28 25-700	1-12 25-300
HY20 Series	-20°F to 446°F (-29°C to 230°C)					
HY30 Series	-20°F to 608°F (-29°C to 320°C)					
HY40 Series	-20°F to 1000°F (-29°C to 538°C)					
Cast Steel Top Entry Metal-Seated Trunnion Ball Valve						
HY15 Series	-20°F to 302°F (-29°C to 150°C)	2-40 50-1000	2-40 50-1000	2-36 50-900	2-28 50-700	N/A
HY45 Series	-20°F to 1000°F (-29°C to 538°C)					
Forged Steel Top Entry Metal-Seated Trunnion Ball Valve						
HY16 Series	-20°F to 302°F (-29°C to 150°C)	2-40 50-1000	2-40 50-1000	2-36 50-900	2-28 50-700	N/A
HY46 Series	-20°F to 1000°F (-29°C to 538°C)					

STANDARD & SPECIFICATIONS

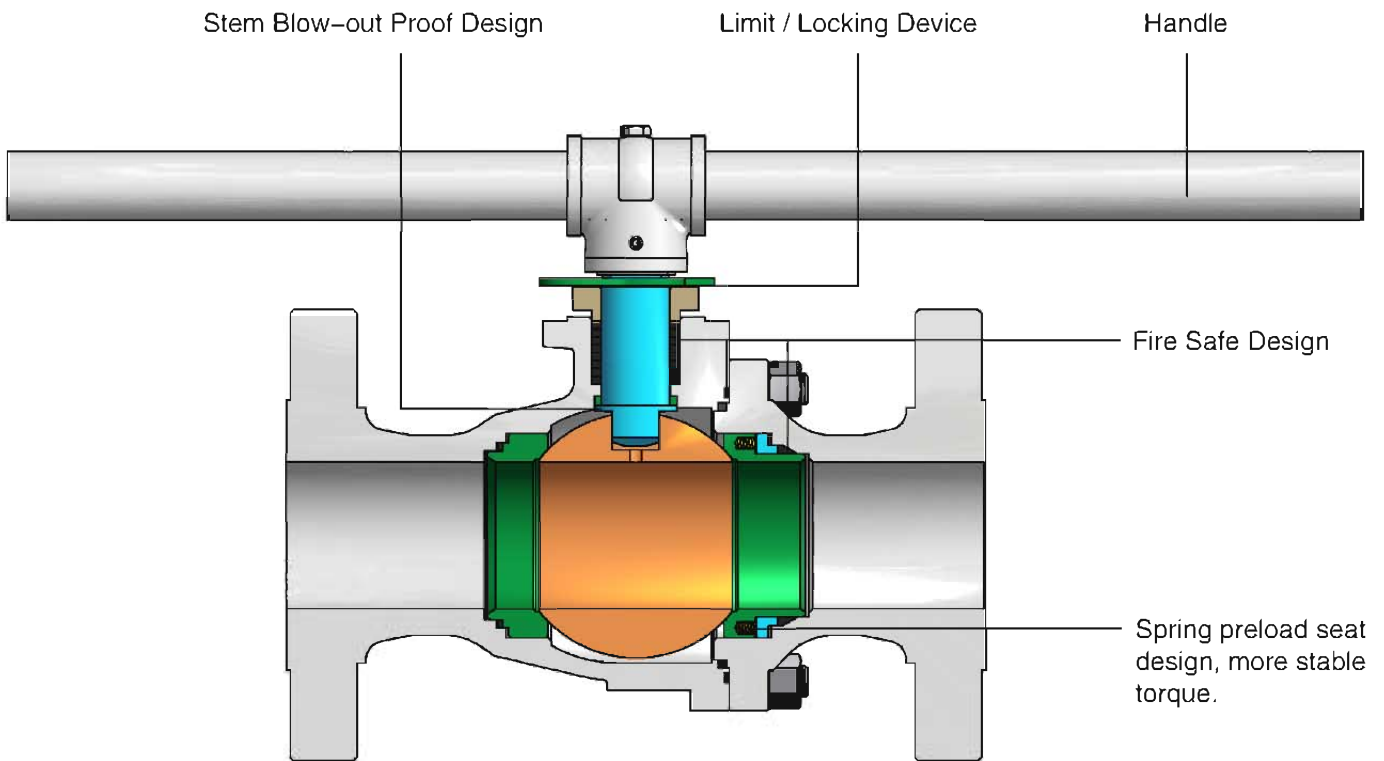
Design Standard	API 6D, ISO 17292, API 608, ASME B16.34
Test Standard	API 6D, ISO 17292, API 598, ISO 15848-2*
End Connection	ASME B16.5, ASME B16.47, ASME B31.8, etc.
Face-to-Face	API 6D, ASME B16.10
Fire Test	API 6FA, API 607
Anti-Corrosion, Acid-Resisting*	NACE MR0103, NACE MR0175, ISO 15156

*Optional, available upon request.

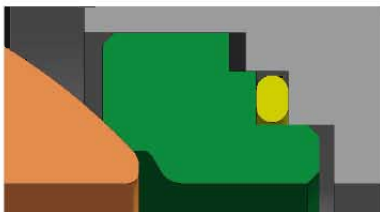
DESIGN FEATURES

SERIES:HY13/HY43/HY12/HY42

- Split body structure, easy to replace and maintain.
- Full bore design, to ensure the valve has a maximum flow capacity, but also to avoid the accumulation of media in the valve flow path.
- Various types of operational mode. Can be achieved manually operated valves (including handle and worm gear) and automatic control (pneumatic, electric, hydraulic, etc.)
- Hard treatment to ball and seat surface, and through rubbing technique to achieve high accuracy between ball and seat, reducing valve operating torque.
- Leakage level can reach ASME/FCI 70-2 Class V.

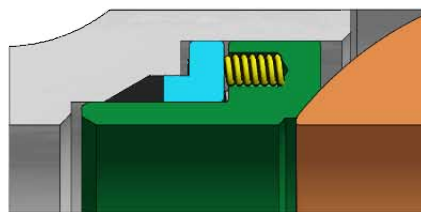


TYPE "H1" SEAT



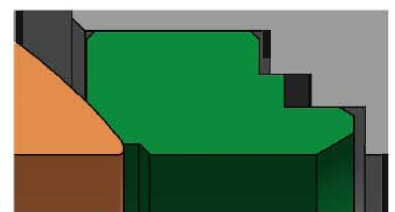
Temperature:
-29°C ~ 150°C (O-Ring)

TYPE "G1" SEAT



Temperature: -29°C ~ 230°C (PTFE)
-29°C ~ 538°C (Graphite)

TYPE "G2" SEAT

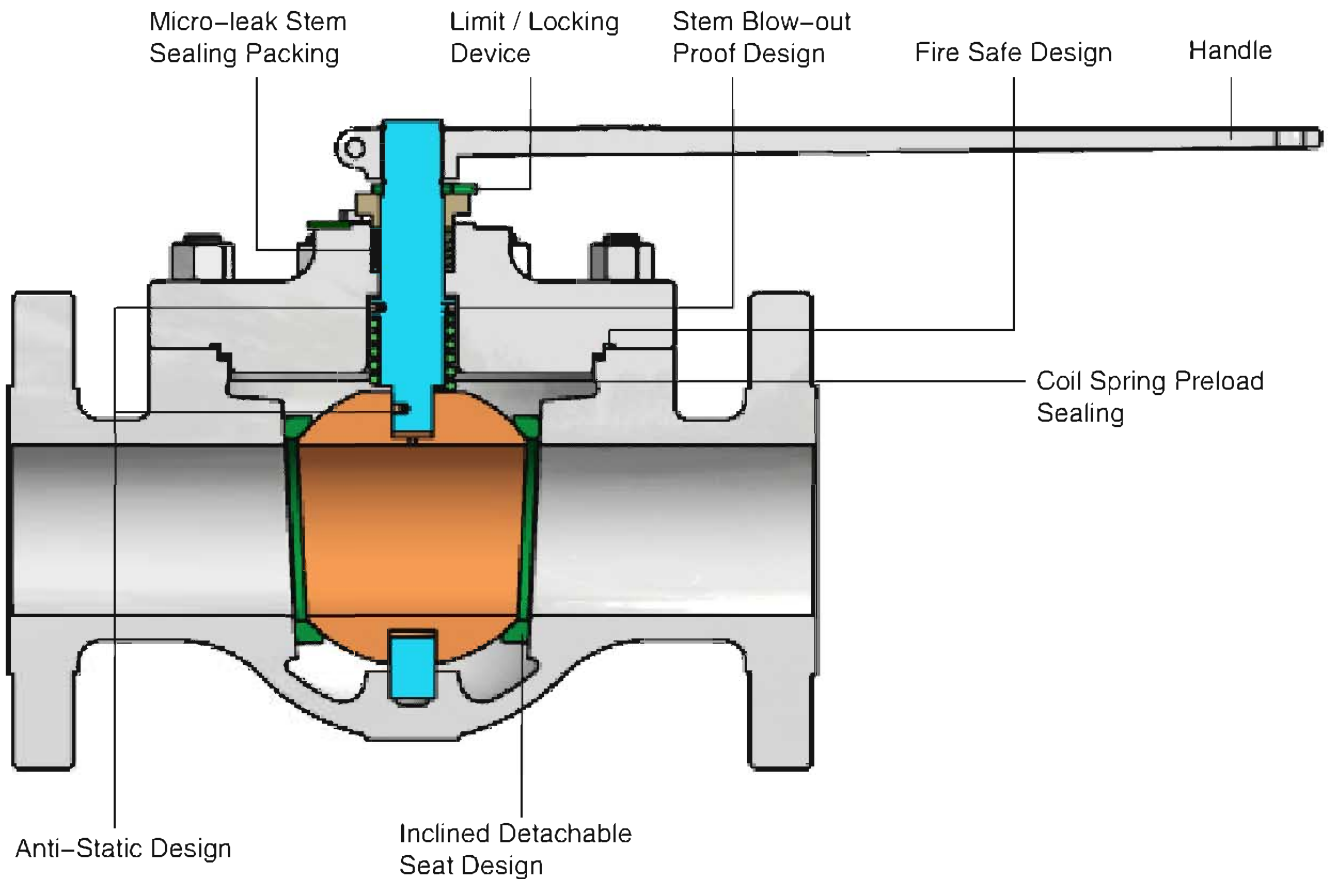


Note: All the types above are with general seat structure. Metal-seated ball valve's seat structure based on working conditions (temperature, pressure, medium hardness, etc.), requires customer to provide specific working condition when ordering valves.

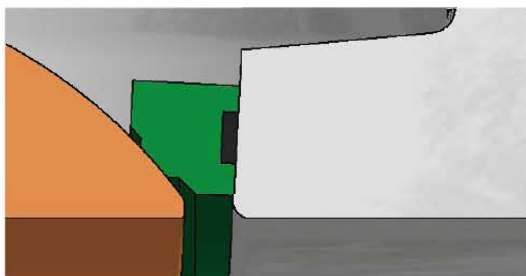
DESIGN FEATURES

SERIES: HY14/HY44

- On-line maintain.
- Flange connections stress-free from pipe.
- Split body structure, easy to replace and maintain.
- Full bore design, to ensure the valve has a maximum flow capacity, but also to avoid the accumulation of media in the valve flow path.
- Various types of operational mode. Can be achieved manually operated valves (including handle and worm gear) and automatic control (pneumatic, electric, hydraulic, etc.)
- Hard treatment to ball and seat surface, and through rubbing technique to achieve high accuracy between ball and seat, reducing valve operating torque.
- Leakage level can reach ASME/FCI 70-2 Class V.

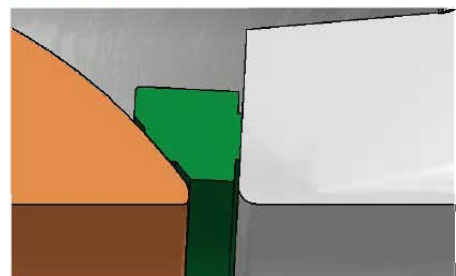


TYPE "Y" SEAT



Temperature: $-29^{\circ}\text{C} \sim 150^{\circ}\text{C}$ (RPTFE)

TYPE "Z" SEAT



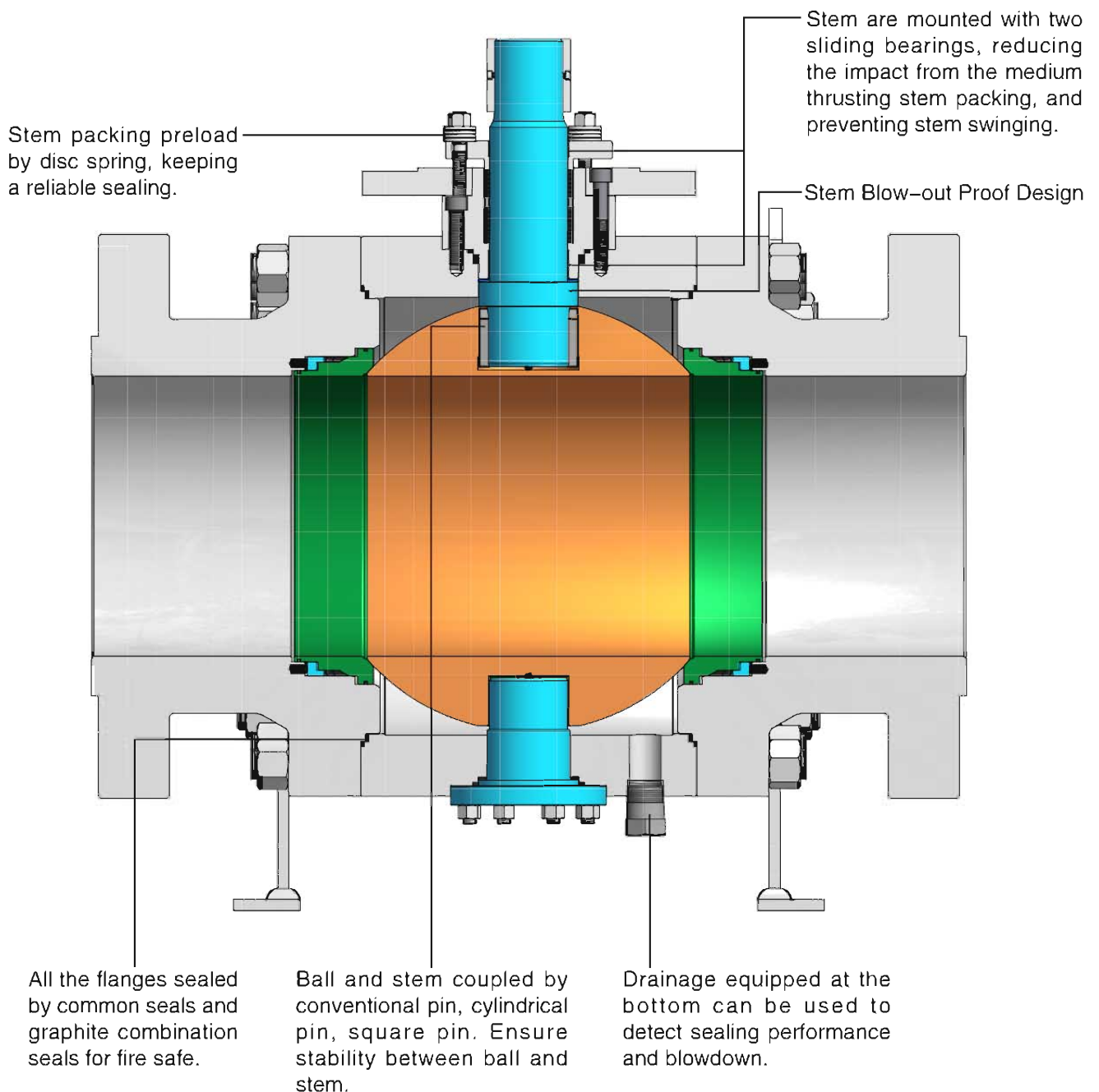
Temperature: $-29^{\circ}\text{C} \sim 538^{\circ}\text{C}$ (Metal-Metal)

Note: All the types above are with general seat structure. Metal-seated ball valve's seat structure based on working conditions (temperature, pressure, medium hardness, etc.), requires customer to provide specific working condition when ordering valves.

DESIGN FEATURES

SERIES: HY11/HY21/HY31/HY10/HY20/HY30/HY40

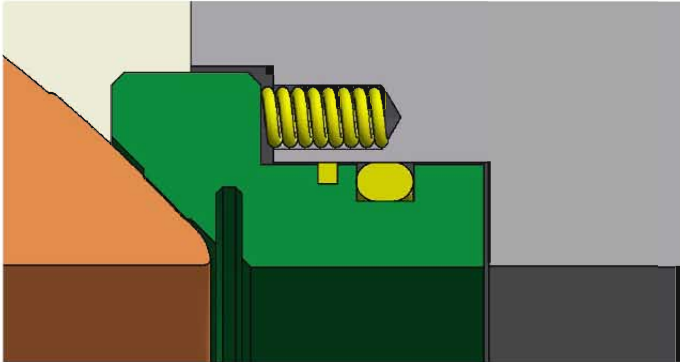
- Split body structure, easy to replace and maintain.
- Full bore design, to ensure the valve has a maximum flow capacity, but also to avoid the accumulation of media in the valve flow path.
- Various types of operational mode. Can be achieved manually operated valves (including handle and worm gear) and automatic control (pneumatic, electric, hydraulic, etc.).
- Hard treatment to ball and seat surface, and through rubbing technique to achieve high accuracy between ball and seat, reducing valve operating torque.
- Leakage level can reach ASME/FCI 70-2 Class V.



DESIGN FEATURES

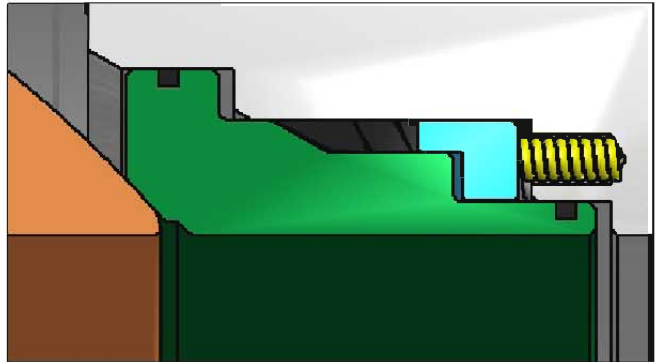
SERIES: HY11/HY21/HY31/HY10/HY20/HY30/HY40

TYPE "H2" SEAT



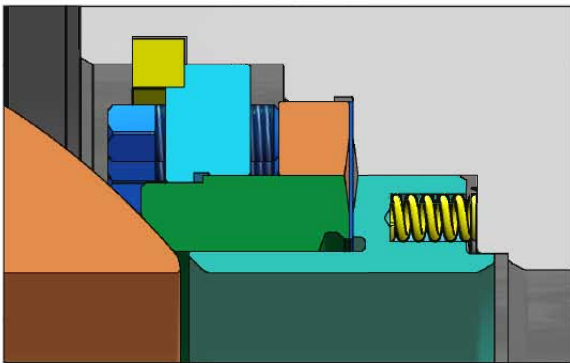
Auxiliary sealing by O-ring
Temperature: $-29^{\circ}\text{C} \sim 150^{\circ}\text{C}$ (O-ring)

TYPE "J" SEAT



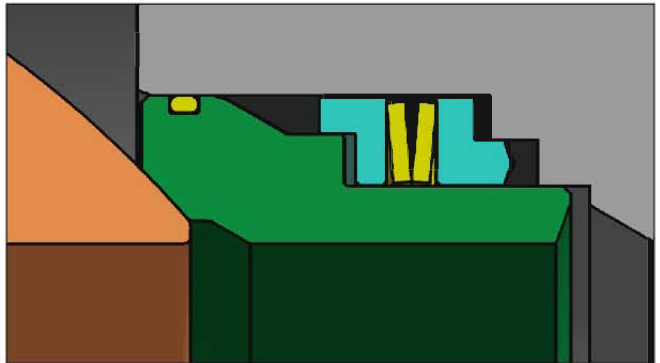
Auxiliary sealing by combined packing
Temperature: $-29^{\circ}\text{C} \sim 250^{\circ}\text{C}$ (RPTFE or PPL)
 $-29^{\circ}\text{C} \sim 538^{\circ}\text{C}$ (Graphite)

TYPE "W" SEAT



Auxiliary sealing by metal thin sheet
Temperature: $-29^{\circ}\text{C} \sim 538^{\circ}\text{C}$

TYPE "K" SEAT



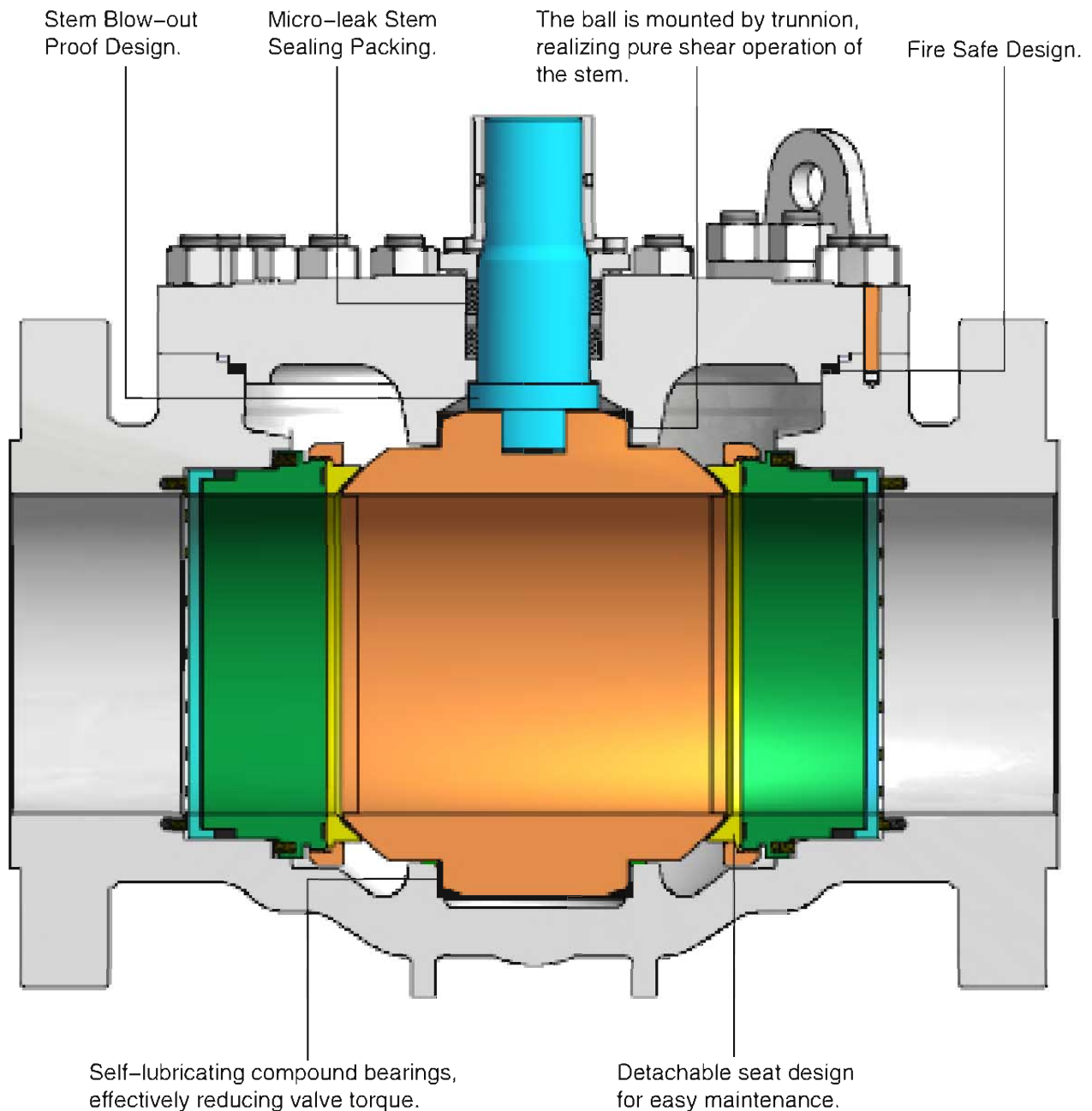
Dustproof design: dust ring installed in, spring chamber installed to prevent impurity particles entering spring chamber which can cause jamming Mainly used in wear-resistant conditions.
Temperature: $-29^{\circ}\text{C} \sim 250^{\circ}\text{C}$

Note: All the types above are with general seat structure. Metal-seated ball valve's seat structure based on working conditions (temperature, pressure, medium hardness, etc.) requires customer to provide specific working condition when ordering valves.

DESIGN FEATURES

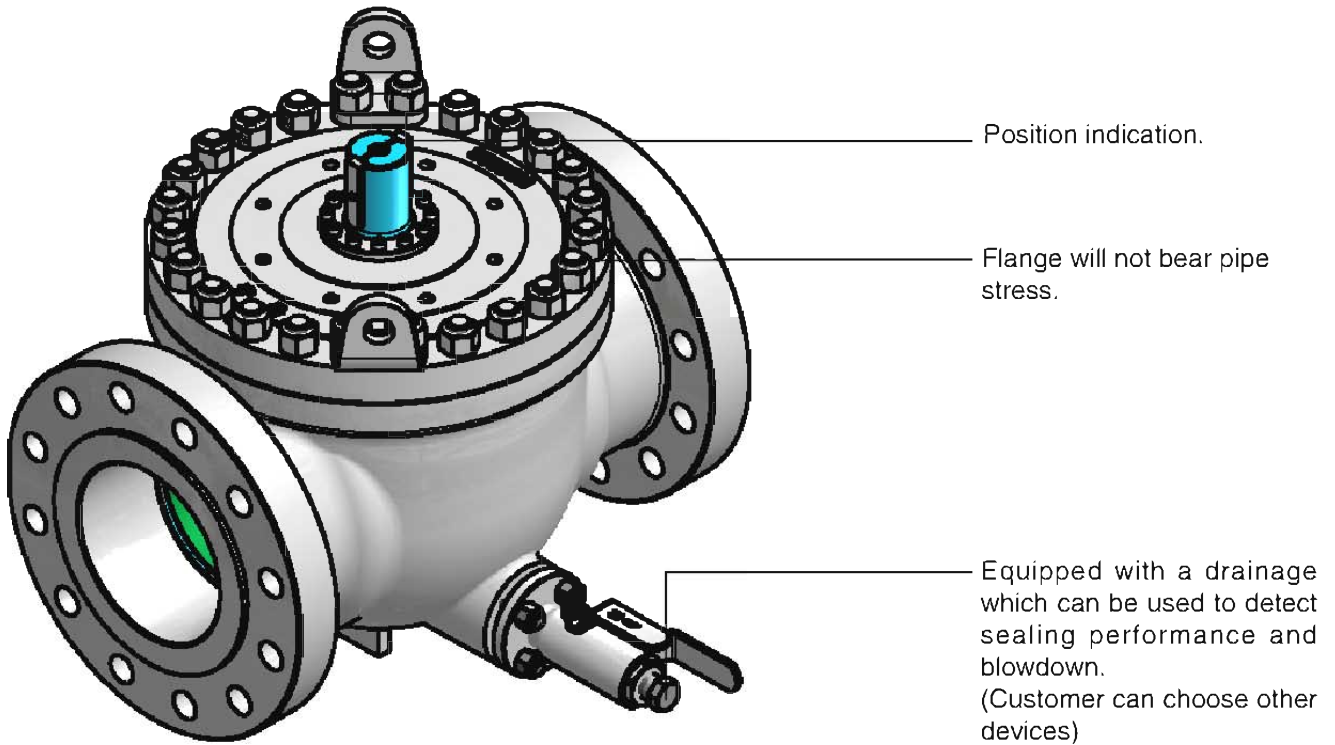
SERIES: HY15/ HY45/HY16/ HY46

- Top-entry structure, To avoid the stress effect to flange sealing.
- Easy to replace and maintain on-line.
- Full bore design, to ensure the valve has a maximum flow capacity, but also to avoid the accumulation of media in the valve flow path.
- Various types of operational mode. Can be achieved manually operated valves (including handle and worm gear) and automatic control (pneumatic, electric, hydraulic, etc.)
- Hard treatment to ball and seat surface, and through rubbing technique to achieve high accuracy between ball and seat, reducing valve operating torque.
- Leakage level can reach ASME/FCI 70-2 Class V.

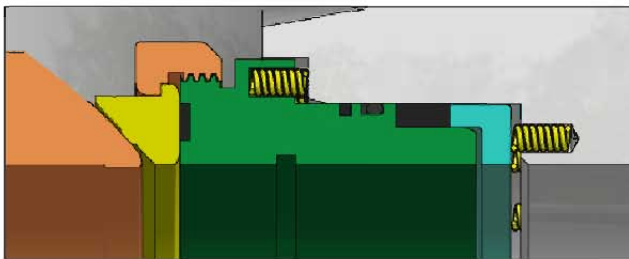


DESIGN FEATURES

SERIES: HY15/ HY45/HY16/ HY46

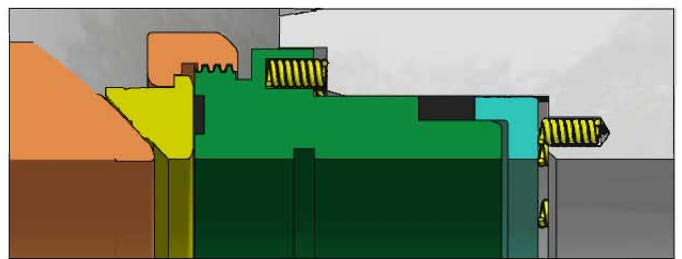


TYPE "H3" SEAT



Auxiliary sealing by O-ring
Temperature: $-29^{\circ}\text{C} \sim 250^{\circ}\text{C}$

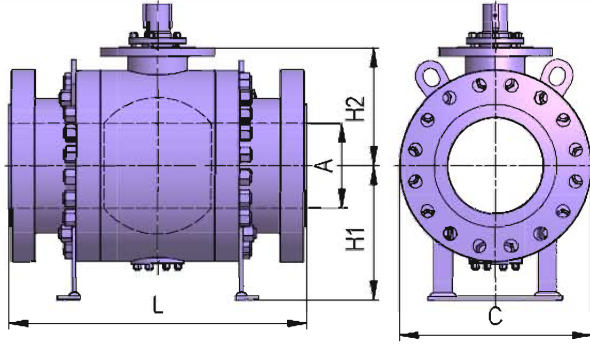
TYPE "G3" SEAT



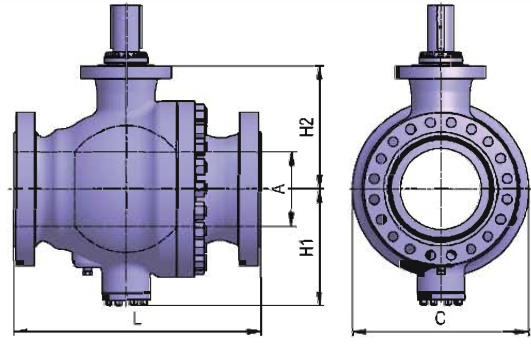
Auxiliary sealing by combined packing and graphite
Temperature: $-29^{\circ}\text{C} \sim 538^{\circ}\text{C}$

Note: All the types above are general seat structure, Metal-seated ball valve's seat structure based on working conditions (temperature, pressure, medium hardness, etc.) requires customer to provide specific working condition when ordering valves.

DIMENSIONS & WEIGHTS



HY10/HY20/HY30/HY40 Series



HY11/HY21/HY31 Series

ASME CLASS 150

ALL TYPES			HY10/HY20/ HY30/ HY40 Series					HY11/HY21/ HY31 Series			
Size	A	L-RF	H1	H2	C	Weight*	H1	H2	C	Weight*	
NPS/DN						lb/kg				lb/kg	
1-1/2	1.5	6.5	3.39	2.99	5.63	20	2.89	2.99	5.28	20	
40	38	165	86	76	143	9	73.5	76	134	9	
2	1.94	7	3.82	3.31	6.22	26	3.92	3.31	6.30	26	
50	49	178	97	84	158	12	99.5	84	160	12	
3	2.94	8	4.09	4.41	7.83	65	4.09	4.86	7.72	55	
80	74	203	104	112	199	30	104	123.5	196	25	
4	3.94	9	5.12	5.43	9.37	76	5.22	5.94	8.86	71	
100	100	229	130	138	238	34	132.5	151	225	32	
6	5.94	15.5	10.16	7.95	12.01	315	8.50	8.46	13.46	115	
150	150	394	258	202	305	143	216	215	342	52	
8	7.94	18	12.07	9.82	16.30	579	10.79	10.81	16.30	227	
200	201	457	306.5	249.5	414	263	274	274.5	414	103	
10	9.94	21	13.76	11.36	18.78	888	13.09	14.31	20	601	
250	252	533	349.5	288.5	477	403	332.5	363.5	508	273	
12	11.94	24	15.33	13.41	21.85	1305	14.67	15.89	23.23	897	
300	303	610	389.5	340.5	555	592	372.5	403.5	590	407	
14	13.19	27	16.06	14.23	23.50	2253	15.87	17.19	25	1129	
350	334	686	408	361.5	597	1022	403	436.5	635	512	
16	15.19	30	18.03	16.00	27.09	3406	17.60	18.54	28.94	1664	
400	385	762	458	406.5	688	1545	447	471	735	755	
18	17.19	34	20.00	17.54	30.04	4090	20.35	21.10	32.40	2127	
450	436	864	508	445.5	763	1855	517	536	823	965	
20	19.19	36	21.18	18.92	32.91	4635	21.97	23.58	35.63	2607	
500	487	914	538	480.5	836	2103	558	599	905	1182	
22	21.19	40	23.03	20.71	36.14	5144	25.00	25.67	39.06	3554	
550	538	1016	585	526	918	2334	635	652	992	1612	
24	23.19	42	24.78	22.72	39.33	7051	25.43	27.24	40.75	4524	
600	589	1067	629.5	577	999	3199	646	692	1035	2052	
28	26.94	49	28.54	25.93	45.35	10877	29.65	31.20	45.47	6247	
700	684	1245	725	658.5	1152	4934	753	792.5	1155	2834	
30	28.94	51	29.57	27.48	48.62	12302	30.16	31.61	48.62	8611	
750	735	1295	751	698	1235	5580	766	803	1235	3906	
32	30.69	54	30.748	29.193	52.008	16041	33.70	34.69	52.56	11228	
800	779	1372	781	741.5	1321	7276	856	881	1335	5093	
36	34.44	60	33.858	31.575	57.48	20759	34.53	36.30	58.07	14531	
900	874	1524	860	802	1460	9416	877	922	1475	6591	
40	38.44	①	①	①	①	①	①	①	①	①	
1000	976	①	①	①	①	①	①	①	①	①	

ASME CLASS 300

ALL TYPES			HY10/HY20/ HY30/ HY40 Series					HY11/HY21/ HY31 Series			
Size	A	L-RF	H1	H2	C	Weight*	H1	H2	C	Weight*	
NPS/DN						lb/kg				lb/kg	
1-1/2	1.5	7.48	3.39	2.99	5.63	25	2.89	2.99	5.28	24	
40	38	190	86	76	143	12	73.5	76	134	11	
2	1.94	8.5	3.82	3.31	6.22	27	3.92	3.31	6.30	24	
50	49	216	97	84	158	12	99.5	84	160	11	
3	2.94	11.13	4.09	4.41	7.83	65	4.39	4.07	7.72	55	
80	74	283	104	112	199	30	111.5	103.5	196	25	
4	3.94	12	5.12	5.43	9.37	144	5.22	5.94	8.86	115	
100	100	305	130	138	238	65	132.5	151	225	52	
6	5.94	15.88	10.16	7.95	12.01	309	8.50	8.46	13.46	209	
150	150	403	258	202	305	140	216	215	342	95	
8	7.94	19.75	11.89	9.82	16.30	822	10.79	10.81	16.54	337	
200	201	502	302	249.5	414	373	274	274.5	420	153	
10	9.94	22.38	13.76	11.36	18.98	954	13.09	14.31	20.00	745	
250	252	568	349.5	288.5	482	433	332.5	363.5	508	338	
12	11.94	25.5	15.33	13.41	21.85	1459	14.67	15.89	23.23	1096	
300	303	648	389.5	340.5	555	662	372.5	403.5	590	497	
14	13.19	30	16.06	14.23	23.50	2474	15.87	17.19	25.00	1548	
350	334	762	408	361.5	597	1122	403	436.5	635	702	
16	15.19	33	18.03	16.00	27.09	3406	17.60	18.54	28.94	2149	
400	385	838	458	406.5	688	1545	447	471	735	975	
18	17.19	36	20.00	17.54	30.04	5213	20.35	21.10	32.40	2700	
450	436	914	508	445.5	763	2365	517	536	823	1225	
20	19.19	39	21.18	18.92	33.35	5539	21.97	23.58	35.63	3180	
500	487	991	538	480.5	847	2512	558	599	905	1442	
22	21.19	43	23.03	20.71	36.14	5729	25.00	31.50	39.06	4193	
550	538	1092	585	526	918	2599	635	800	992	1902	
24	23.19	45	24.78	22.72	39.33	10752	25.43	27.24	40.75	5406	
600	589	1143	629.5	577	999	4877	646	692	1035	2452	
28	26.94	53	28.54	25.93	45.83	10810	29.65	31.20	45.47	8010	
700	684	1346	725	658.5	1164	4904	753	792.5	1155	3634	
30	28.94	55	29.57	27.48	48.62	15399	30.16	31.61	48.62	10781	
750	735	1397	751	698	1235	6985	766	803	1235	4890	
32	30.69	60	32.68	29.19	52.01	18711	33.70	34.69	52.56	13098	
800	779	1524	830	741.5	1321	8487	856	881	1335	5941	
36	34.44	68	33.86	31.57	57.48	23810	34.53	36.30	58.07	16667	
900	874	1727	860	802	1460	10800	877	922	1475	7560	
40	38.44	①	37.80	35.89	64.37	32494	①	①	①	①	
1000	976	①	960	911.5	1635	14739	①	①	①	①	

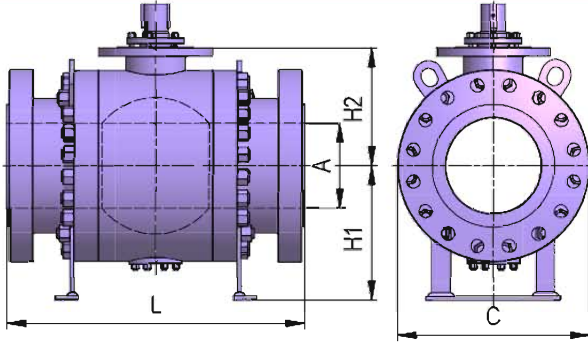
* Weight figures are relevant to flanged end valves. ① Please consult the factory.

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

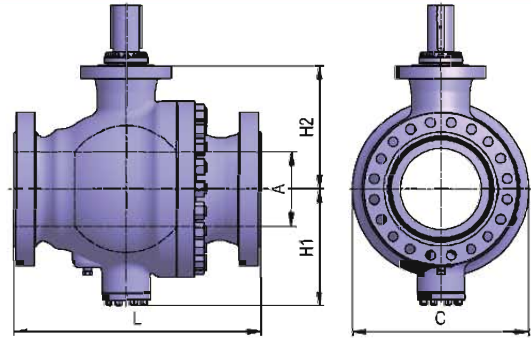
Dimensions and weights are subject to change without notice.

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

DIMENSIONS & WEIGHTS



HY10/HY20/HY30/HY40 Series



HY11/HY21/HY31 Series

ASME CLASS 600

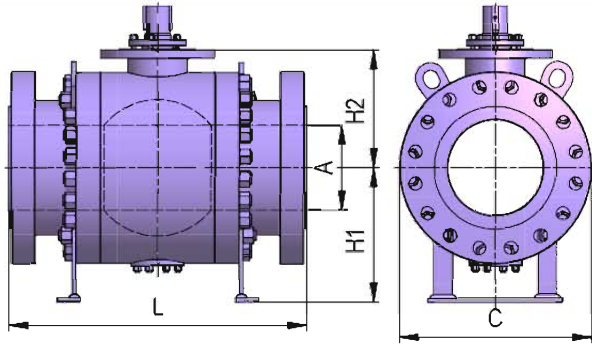
ALL TYPES				HY10/HY20/ HY30/ HY40 Series				HY11/HY21/ HY31 Series			
Size NPS/DN	A	L-RF	L-RJ	H1	H2	C	Weight*	H1	H2	C	Weight*
							lb/kg				lb/kg
1-1/2	1.5	9.49	9.49	3.41	3.98	6.14	40	3.41	3.98	5.31	29
40	38	241	241	86.5	101	156	18	86.5	101	135	13
2	1.94	11.5	11.63	3.78	3.72	6.30	69	4.15	4.72	5.98	43
50	49	292	295	96	94.5	160	32	105.5	120	152	20
3	2.94	14	14.13	4.88	4.82	7.87	85	5.59	6.46	8.86	95
80	74	356	359	124	122.5	200	39	142	164	225	43
4	3.94	17	17.13	7.28	6.87	9.76	298	7.09	7.42	10.63	143
100	100	432	435	185	174.5	248	135	180	188.5	270	65
6	5.94	22	22.13	10.43	8.35	12.95	558	9.80	10.35	14.65	425
150	150	559	562	265	212	329	253	249	263	372	193
8	7.94	26	26.13	12.40	10.39	16.06	1337	12.46	12.76	18.50	688
200	201	660	664	315	264	408	607	316.5	324	470	312
10	9.94	31	31.13	13.98	12.01	19.37	1425	14.65	14.74	20.67	1239
250	252	787	791	355	305	492	647	372	374.5	525	562
12	11.94	33	33.13	15.75	13.70	22.68	2083	15.49	16.67	24.02	1686
300	303	838	841	400	348	576	945	393.5	423.5	610	765
14	13.19	35	35.13	16.54	14.63	24.92	3185	17.52	18.07	25.67	2370
350	334	889	892	420	371.5	633	1445	445	459	652	1075
16	15.19	39	39.13	19.09	16.38	28.27	4194	19.33	20.39	29.33	3202
400	385	991	994	485	416	718	1903	491	518	745	1452
18	17.19	43	43.13	20.87	18.74	32.09	6214	22.62	23.88	33.82	4406
450	436	1092	1095	530	476	815	2819	574.5	606.5	859	1999
20	19.19	47	47.25	22.64	20.43	35.28	6508	23.92	25.22	36.22	8220
500	487	1194	1200	575	519	896	2952	607.5	640.5	920	3729
22	21.19	50.98	51.38	24.11	21.95	38.66	8338	24.84	26.77	39.06	5836
550	538	1295	1305	612.5	557.5	982	3782	631	680	992	2647
24	23.19	55	55.38	25.89	23.96	42.17	9333	28.80	30.49	42.52	4483
600	589	1397	1407	657.5	608.5	1071	4234	731.5	774.5	1080	2034
28	26.94	61	61.5	28.86	26.99	48.43	17667	33.86	35.43	53.15	11758
700	684	1549	1562	733	685.5	1230	8014	860	900	1350	5334
30	28.94	65	65.5	30.91	28.74	51.18	19760	36.14	36.77	55.79	13832
750	735	1651	1664	785	730	1300	8963	918	934	1417	6274
32	30.69	70	70.63	37.01	31.00	56.10	23614	39.43	40.57	59.69	18499
800	779	1778	1794	940	787.5	1425	10711	1001.5	1030.5	1516	8391
36	34.44	82	82.63	39.37	35.20	61.97	31367	40.55	42.24	66.30	21958
900	874	2083	2099	1000	894	1574	14228	1030	1073	1684	9960
40	38.44	82.68	①	41.73	38.27	68.19	44463	①	①	①	①
1000	976	2100	①	1060	972	1732	20168	①	①	①	①

ASME CLASS 900

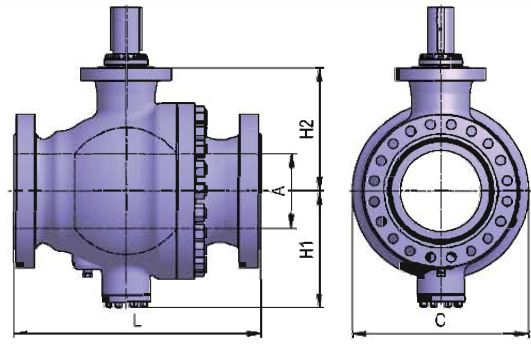
ALL TYPES				HY10/HY20/ HY30/ HY40 Series				HY11/HY21/ HY31 Series			
Size NPS/DN	A	L-RF	L-RJ	H1	H2	C	Weight*	H1	H2	C	Weight*
							lb/kg				lb/kg
1-1/2	1.5	12	12	4.17	3.90	5.91	79	5.47	8.27	5.20	57
40	38	305	305	106	99	150	36	139	210	132	26
2	1.94	14.5	14.63	5.08	5.22	8.31	112	4.29	5.47	6.50	79
50	49	368	371	129	132.5	211	51	109	139	165	36
3	2.94	15	15.13	4.92	5.96	8.46	146	6.34	6.91	10.04	104
80	74	381	384	125	151.5	215	66	161	175.5	255	47
4	3.94	18	18.13	7.87	7.38	10.83	381	7.28	8.82	11.22	267
100	100	457	460	200	187.5	275	173	185	224	285	121
6	5.94	24	24.13	11.02	8.82	13.58	597	10.10	10.91	14.29	419
150	150	610	613	280	224	345	271	256.5	277	363	190
8	7.94	29	29.13	13.98	11.30	17.32	1239	12.68	13.19	19.29	866
200	201	737	740	355	287	440	562	322	335	490	393
10	9.94	33	33.13	15.55	12.93	20.55	2083	15.47	16.34	21.26	1459
250	252	838	841	395	328.5	522	945	393	415	540	662
12	11.94	38	38.13	17.72	15.04	24.49	3092	13.07	15.22	24.61	2165
300	303	965	968	450	382	622	1403	332	386.5	625	982
14	12.69	40.5	40.88	18.90	16.14	26.85	3862	18.03	19.47	26.38	2703
350	322	1029	1038	480	410	682	1752	458	494.5	670	1226
16	14.69	44.5	44.88	20.47	17.91	30.12	5071	21.16	22.60	30.51	3549
400	373	1130	1140	520	455	765	2300	537.5	574	775	1610
18	16.69	48	48.5	22.05	19.88	33.86	4634	23.09	24.43	34.06	3243
450	423	1219	1232	560	505	860	2102	586.5	620.5	865	1471
20	18.56	52	52.5	24.41	22.11	37.99	9113	25.20	27.17	38.39	5924
500	471	1321	1334	620	561.5	965	4134	640	690	975	2687
24	22.44	61	61.75	28.35	26.26	46.06	9328	29.21	31.50	46.54	6530
600	570	1549	1568	720	667	1170	4231	742	800	1182	2962
28	26.19	①	①	①	①	①	①	①	①	①	①
700	665	①	①	①	①	①	①	①	①	①	①
30	28.06	74	74.88	33.62	31.89	55.51	28195	34.86	35.37	56.30	19736
750	712	1880	1902	854	810	1410	12789	885.5	898.5	1430	8952
32	29.94	①	①	①	①	①	①	①	①	①	①
800	760	①	①	①	①	①	①	①	①	①	①
36	33.69	90	91.13	38.86	36.69	66.34	44584	①	①	①	①
900	855	2286	2315	987	932	1685	20223	①	①	①	①

* 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.

DIMENSIONS & WEIGHTS



HY10/HY20/HY30/HY40 Series



HY11/HY21/HY31 Series

ASME CLASS 1500

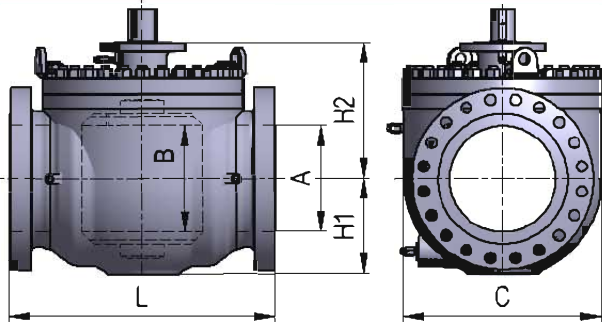
ALL TYPES				HY10/HY20/ HY30/ HY40 Series				HY11/HY21/ HY31 Series			
Size	A	L-RF	L-RJ	H1	H2	C	Weight*	H1	H2	C	Weight*
NPS/DN							lb/kg				lb/kg
1-1/2	1.5	①	①	4.17	3.90	5.91	①	5.18	5.41	7.87	79
40	38			106	99	150		131.5	137.5	200	36
2	1.94	14.5	14.63	5.08	5.22	8.31	117	4.33	5.47	6.50	88
50	49	368	371	129	132.5	211	53	110	139	165	40
3	2.94	18.5	18.63	5.63	6.42	9.13	229	7.26	8.88	10.83	161
80	74	470	473	143	163	232	104	184.5	225.5	275	73
4	3.94	21.5	21.63	8.66	8.03	11.61	467	8.50	9.80	12.99	326
100	100	546	549	220	204	295	212	216	249	330	148
6	5.69	27.75	28	10.24	10.51	15.75	1133	11.22	11.46	15.75	794
150	144	705	711	260	267	400	514	285	291	400	360
8	7.56	32.75	33.13	11.42	12.09	18.50	1845	13.58	13.33	19.29	1292
200	192	832	841	290	307	470	837	345	338.5	490	586
10	9.44	39	39.38	15.91	15.43	23.74	3538	17.01	17.83	24.80	2478
250	239	991	1000	404	392	603	1605	432	453	630	1124
12	11.31	44.5	45.13	19.76	17.36	28.15	5357	45.13	45.13	45.13	3750
300	287	1130	1146	502	441	715	2430	432.5	453	630	1701
14	12.44	49.5	50.25	20.08	18.39	31.02	6724	45.13	45.13	45.13	4707
350	315	1257	1276	510	467	788	3050	493	529	741	2135
16	14.19	54.5	55.38	22.32	20.08	34.06	9601	45.13	45.13	45.13	6722
400	360	1384	1407	567	510	865	4355	592	622	856	3049
18	16	60.5	61.38	25.63	23.70	37.40	14614	45.13	45.13	45.13	10229
450	406	1537	1559	651	602	950	6629	704	734	1000	4640
20	17.88	65.5	66.38	29.21	26.69	40.75	21407	45.13	45.13	45.13	14985
500	454	1664	1686	742	678	1035	9710	757	827	1056	6797
24	21.5	①	77.63	32.48	29.13	49.21	33684	45.13	45.13	45.13	23578
600	546		1972	825	740	1250	15279	842	903	1263	10695

ASME CLASS 2500

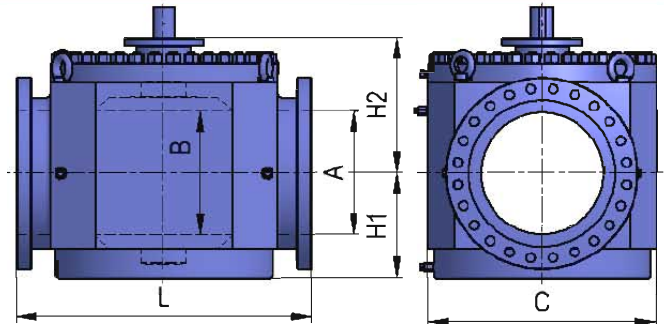
ALL TYPES				HY10/HY20/ HY30/ HY40 Series			
Size	A	L-RF	L-RJ	H1	H2	C	Weight*
NPS/DN							lb/kg
2	1.69	17.75	17.88	5.24	6.48	8.74	181
50	42	451	454	133	164.5	222	82
3	2.44	22.75	23	7.13	7.70	11.61	384
80	62	578	584	181	195.5	295	174
4	3.44	26.5	26.88	8.86	9.15	13.98	809
100	87	673	683	225	232.5	355	367
6	5.19	36.00	36.50	11.28	11.02	16.46	1647
150	131	914	927	286.5	280	418	747
8	7.06	40.25	40.88	13.78	12.99	20.47	2782
200	179	1022	1038	350	330	520	1262
10	8.81	50.00	50.88	15.55	15.43	25.00	4491
250	223	1270	1292	395	392	635	2037
12	10.44	56.00	56.88	18.35	18.03	29.92	6865
300	265	1422	1445	466	458	760	3114

* 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.

DIMENSIONS & WEIGHTS



HY15/ HY45 Series



HY16 /HY46 Series

ASME CLASS 150

ALL TYPES			HY15/HY25/ HY35/ HY45 Series					HY16/HY26/ HY36/ HY46 Series				
Size NPS/DN	A	L-RF	H1	H2	C	Weight* lb/kg	H1	H2	C	Weight* lb/kg		
2	1.94	11.5	4.37	4.74	5	71	4.37	4.74	6	90		
50	49	292	111	120.5	119	32	111	120.5	150	41		
3	2.94	14	5.18	5.71	6	132	5.18	5.71	8	171		
80	74	356	131.5	145	159	60	131.5	145	195	77		
4	3.94	17	6.08	6.57	8	234	6.08	6.57	9	299		
100	100	432	154.5	167	199	106	154.5	167	235	136		
6	5.94	22	7.85	8.54	11	503	7.85	8.54	12	653		
150	150	559	199.5	217	280	228	199.5	217	312	296		
8	7.94	26	10.06	10.98	14	950	10.06	10.98	16	1216		
200	201	660	255.5	279	361	431	255.5	279	410	552		
10	9.94	31	12.50	13.31	17	1310	12.50	13.31	19	1689		
250	252	787	317.5	338	440	594	317.5	338	485	766		
12	11.94	33	10.61	14.69	20	1660	10.61	14.69	22	2158		
300	303	838	269.5	373	508	753	269.5	373	558	979		
14	13.19	35	13.07	16.67	24	1777	13.07	16.67	25	2292		
350	334	889	332	423.5	617	806	332	423.5	635	1040		
16	15.19	39	14	19.02	27	2571	14	19.02	28	3342		
400	385	991	343	483	698	1166	343	483	712	1516		
18	17.19	43	16.87	23.07	30	3534	16.87	23.07	31	4630		
450	436	1092	428.5	586	773	1603	428.5	586	790	2100		
20	19.19	47	17.17	22.01	35	4511	17.17	22.01	36	5864		
500	487	1194	436	559	884	2046	436	559	904	2660		
22	21.19	50.98	18.11	22.52	37	6426	18.11	22.52	38	8354		
550	538	1295	460	572	937	2915	460	572	955	3790		
24	23.19	55	23	26	39	7478	23	26	41	9759		
600	589	1397	582	660	990	3392	582	660	1050	4427		
28	26.94	61	22.80	27.36	45	10750	22.80	27.36	47	14028		
700	684	1549	579	695	1135	4876	579	695	1185	6363		
30	30.69	70	29	30	49	13157	29	30	51	17170		
750	735	1651	725	771	1234	5968	725	771	1298	7788		
32	30.69	70	30	32	51	16557	30	32	52	21607		
800	779	1778	757	825	1287	7510	757	825	1310	9801		
36	34.44	82	33	35	56	21266	33	35	56	27752		
900	874	2083	849	881	1410	9646	849	881	1433	12588		
40	38.44	82.68	①	①	①	①	①	①	①	①		
1000	976	2100	①	①	①	①	①	①	①	①		

ASME CLASS 300

ALL TYPES			HY15/HY25/ HY35/ HY45 Series					HY16/HY26/ HY36/ HY46 Series				
Size NPS/DN	A	L-RF	H1	H2	C	Weight* lb/kg	H1	H2	C	Weight* lb/kg		
2	1.94	11.5	4.37	4.74	5	84	4.37	4.74	6	107		
50	49	292	111	120.5	119	38	111	120.5	150	49		
3	2.94	14	5.18	5.71	6	148	5.18	5.71	8	191		
80	74	356	131.5	145	159	67	131.5	145	195	86		
4	3.94	17	6.08	6.57	8	247	6.08	6.57	9	316		
100	100	432	154.5	167	199	112	154.5	167	235	143		
6	5.94	22	7.85	8.54	11	516	7.85	8.54	12	671		
150	150	559	199.5	217	280	234	199.5	217	312	304		
8	7.94	26	10.06	10.98	14	963	10.06	10.98	16	1233		
200	201	660	255.5	279	361	437	255.5	279	410	559		
10	9.94	31	12.50	13.31	17	1323	12.50	13.31	19	1706		
250	252	787	317.5	338	440	600	317.5	338	485	774		
12	11.94	33	10.61	14.69	20	1671	10.61	14.69	22	2172		
300	303	838	269.5	373	508	758	269.5	373	558	985		
14	13.19	35	13.07	16.67	24	1790	13.07	16.67	25	2309		
350	334	889	332	423.5	617	812	332	423.5	635	1047		
16	15.19	39	14	19.02	27	2584	14	19.02	28	3359		
400	385	991	343	483	698	1172	343	483	712	1524		
18	17.19	43	16.87	23.07	30	3549	16.87	23.07	31	4650		
450	436	1092	428.5	586	773	1610	428.5	586	790	2109		
20	19.19	47	17.17	22.01	35	4524	17.17	22.01	36	5881		
500	487	1194	436	559	884	2052	436	559	904	2668		
22	21.19	50.98	18.11	22.52	37	6440	18.11	22.52	38	8372		
550	538	1295	460	572	937	2921	460	572	955	3797		
24	23.19	55	23	26	39	7496	23	26	41	9782		
600	589	1397	582	660	990	3400	582	660	1050	4437		
28	26.94	61	22.80	27.36	45	10765	22.80	27.36	47	14049		
700	684	1549	579	695	1135	4883	579	695	1185	6372		
30	30.69	70	29	30	49	13175	29	30	51	17193		
750	735	1651	725	771	1234	5976	725	771	1298	7799		
32	30.69	70	30	32	51	16572	30	32	52	21627		
800	779	1778	757	825	1287	7517	757	825	1310	9810		
36	34.44	82	33	35	56	21294	33	35	56	27789		
900	874	2083	849	881	1410	9659	849	881	1433	12605		
40	38.44	82.68	①	①	①	①	①	①	①	①		
1000	976	2100	①	①	①	①	①	①	①	①		

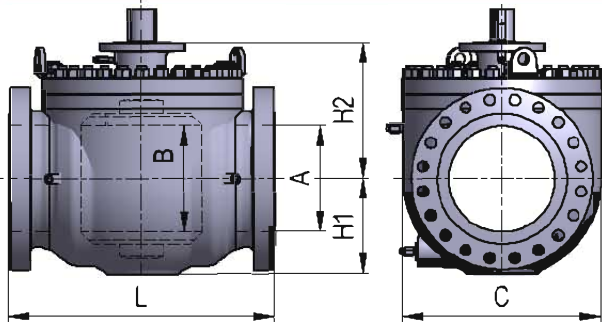
* Weight figures are relevant to flanged end valves. ① Please consult the factory.

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

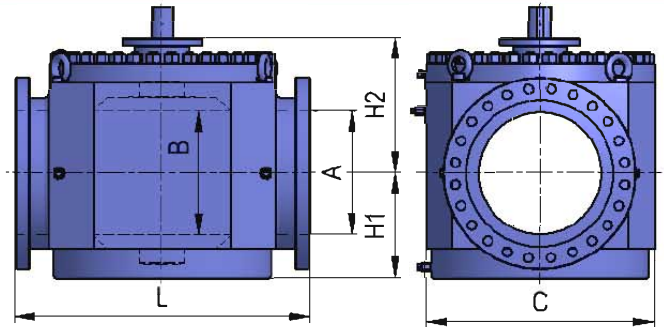
Dimensions and weights are subject to change without notice.

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

DIMENSIONS & WEIGHTS



HY15/ HY45 Series



HY16 /HY46 Series

ASME CLASS 600

ALL TYPES				HY15/HY25/ HY35/ HY45 Series				HY16/HY26/ HY36/ HY46 Series			
Size NPS/DN	A	L-RF	L-RJ	H1	H2	C	Weight* lb/kg	H1	H2	C	Weight* lb/kg
2	1.94	11.5	11.63	4.84	4.96	5	95	4.84	4.96	7	121
50	49	292	295	123	128	130	43	123	128	168	55
3	2.94	14	14.13	5.81	6.14	7	157	5.81	6.14	8	202
80	74	356	359	147.5	156	173	71	147.5	156	210	92
4	3.94	17	17.13	6.99	7.56	8	258	6.99	7.56	10	330
100	100	432	435	177.5	192	210	117	177.5	192	255	150
6	5.94	22	22.13	9.53	10.67	11	529	9.53	10.67	14	688
150	150	559	562	242	271	292	240	242	271	350	312
8	7.94	26	26.13	12.20	12.76	15	974	12.20	12.76	17	1247
200	201	660	664	310	324	378	442	310	324	435	566
10	9.94	31	31.13	14.29	15.12	18	1332	14.29	15.12	21	1718
250	252	787	791	363	384	462	604	363	384	522	779
12	11.94	33	33.13	12.09	16.73	23	1682	12.09	16.73	24	2187
300	303	838	841	307	425	594	763	307	425	605	992
14	13.19	35	35.13	13.07	16.67	24	1799	13.07	16.67	26	2321
350	334	889	892	332	423.5	617	816	332	423.5	655	1053
16	15.19	39	39.13	14.31	19.02	27	2599	14	18	29	3379
400	385	991	994	363.5	483	698	1179	353	447	737	1533
18	17.19	43	43.13	15.30	21.89	32	3558	15.30	21.89	32	4661
450	436	1092	1095	388.5	556	811	1614	388.5	556	820	2114
20	19.19	47	47.25	17.17	22.01	35	4533	17.17	22.01	36	5893
500	487	1194	1200	436	559	884	2056	436	559	904	2673
22	21.19	50.98	51.38	18.11	23.23	40	6449	18	23	39	8383
550	538	1295	1305	460	590	1021	2925	460	590	996	3803
24	23.19	55	55.38	21	27	42	7509	21	27	43	9799
600	589	1397	1407	539	685	1068	3406	539	685	1100	4445
28	26.94	61	61.5	24	32	47	10778	24	32	48	14066
700	684	1549	1562	609	804	1206	4889	609	804	1216	6380
30	30.69	70	65.5	25.39	35.18	50	13179	25.39	35.18	53	17199
750	735	1651	1664	645	893.5	1276	5978	645	893.5	1340	7801
36	34.44	82	82.63	32	42	60	21308	32	42	62	27807
900	874	2083	2099	803	1060	1526	9665	803	1060	1566	12613

ASME CLASS 900

ALL TYPES				HY15/HY25/ HY35/ HY45 Series				HY16/HY26/ HY36/ HY46 Series			
Size NPS/DN	A	L-RF	L-RJ	H1	H2	C	Weight* lb/kg	H1	H2	C	Weight* lb/kg
2	1.94	14.5	14.63	6.42	6.71	6	121	6.42	6.71	7.68	155
50	49	368	371	163	170.5	152	55	163	170.5	195	70
3	2.94	15	15.13	7	8	7	250	7	8	8.82	333
80	74	381	384	184	209	188	117	184	209	224	151
4	3.94	18	18.13	7.91	8.94	9	467	7.91	8.94	10.43	598
100	100	457	460	201	227	228	212	201	227	265	271
6	5.94	24	24.13	11.81	11.77	12	1005	11.81	11.77	13.70	1307
150	150	610	613	300	299	304	456	300	299	348	593
8	7.94	29	29.13	12.20	13.07	16	1870	12.20	13.07	17.72	2393
200	201	737	740	310	332	400	846	310	332	450	1085
10	9.94	33	33.13	12	16	19	2337	12	16	20.75	3015
250	252	838	841	312	406	487	1060	312	406	527	1367
12	11.94	38	38.13	13	18	21	3038	13	18	23.74	3949
300	303	965	968	322	446	535	1378	322	446	603	1791
14	12.69	40.5	40.88	12.91	17.72	24	3962	12.91	17.72	27.48	5111
350	322	1029	1038	328	450	606	1797	328	450	698	2318
16	14.69	44.5	44.88	14.27	19.69	27	5983	14.27	19.69	30.12	7778
400	373	1130	1140	362.5	500	696	2714	362.5	500	765	3528
18	16.69	48	48.5	15.81	21.10	31	7945	15.81	21.10	33.07	10409
450	423	1219	1232	41.5	536	778	3604	401.5	536	840	4721
20	18.56	52	52.5	18	24	34	10282	16.91	20.77	35.43	13367
500	471	1321	1334	450	622	872	4664	429.5	527.5	900	6063
22	22.44	61	①	21.06	26.69	41	13058	21.06	26.69	42.36	16975
550	522	1549	①	535	678	1035	5923	535	678	1076	7700
24	22.44	61	61.75	22	28	43	16826	22	28	44.21	21958
600	570	1549	1568	562	718	1091	7632	562	718	1123	9960
28	26.19	①	①	①	①	①	①	①	①	①	①
700	665	①	①	①	①	①	①	①	①	①	①
30	29.94	①	①	①	①	①	①	①	①	①	①
800	760	①	①	①	①	①	①	①	①	①	①
36	33.69	90	91.13	①	①	①	①	①	①	①	①
900	855	2286	2315	①	①	①	①	①	①	①	①

ASME CLASS 1500

ALL TYPES				HY15/ HY45 Series				HY16/ HY46 Series			
Size NPS/DN	A	L-RF	L-RJ	H1	H2	C	Weight* lb/kg	H1	H2	C	Weight* lb/kg
2	1.94	14.5	14.63	6.42	6.71	6	132	6.42	6.71	7.68	171
50	49	368	371	163	170.5	152	60	163	170.5	195	78
3	2.94	18.5	18.63	7.87	9.04	8	362	5	6	11	468
80	74	470	473	200	229.5	202	184	120	156	286	212
4	3.94	21.5	21.63	9.67	10.35	10	655	9.67	10.35	12	848
100	100	546	549	245.5	263	248	297	245.5	263	296	385
6	5.69	27.75	28	12.95	12.95	13	1415	12.95	12.95	15	1833
150	144	705	711	329	329	338	642	329	329	385	831
8	7.56	32.75	33.13	14	15	17	2595	14	15	17	3360
200	192	832	841	350	382	420	1177	350	382	431	1524
10	9.44	39	39.38	15	17	20	3393	15	17	21	4428
250	239	991	1000	392	424	509	1539	392	424	540	2008
12	11.31	44.5	45.13	16	18	24	4758	16	18	25.28	6209
300	287	1130	1146	404	466	606	2158	404	466	642	2816
14	12.44	49.5	50.25	15	20	26	6162	15	20	28.54	8041
350	315	1257	1276	385	503	654	2795	385	503	725	3647
16	14.19	54.5	55.38	16	22	29	9178	16	22	31.18	11977
400	360	1384	1407	403	558	725	4163	403	558	792	5433
18	16	60.5	61.38	17	24	33	12031	17	24	34.69	15700
450	406	1537	1559	441	616	838	5457	441	616	881	7121
20	17.88	65.5	66.38	19	26	35	15752	19	26	36.42	20635
500	454	1664	1686	475	659	883	7145	475	659	925	9360
24	21.5	①	77.63	23	32	45	27600	23	32	46.69	36018
600	546	①	1972	595	801	1154	12519	595	801	1186	16337

* 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.

SURFACE HARDENING TREATMENT



CHV metal-seated ball valve surface hardening treatments include supersonic flame spray, flame spray welding, remelting, hard alloy welded, making hardening layer with high bonding strength, to be used at a wide range, and to meet high temperature, high pressure, wear resistance, erosion resistance and other working requirements.

Supersonic Flame Spray Hard Alloy

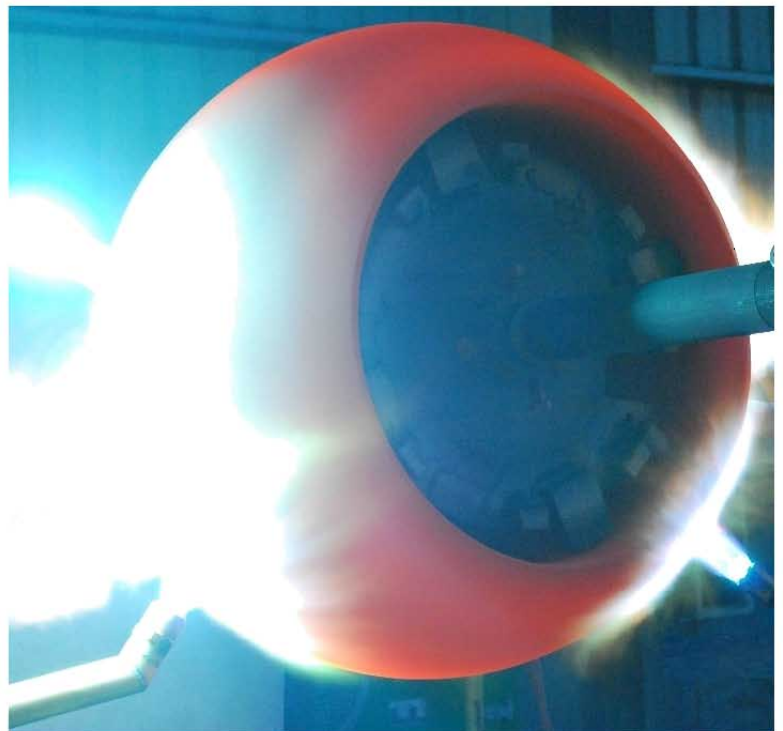
Supersonic Flame Spray (HVOF and HVAF) is the most popular and the most mature technology for ball surface hardening treatment. The treatment can get the ball tungsten carbide or chromium carbide coating. Tungsten carbide coating can achieve hardness HV1100–1300, thickness 0.3–0.4mm. The bonding strength between the coating and the workpiece can achieve 68–77MPa.

Flame Spray Welding + Remelting

The technology uses oxygen acetylene flame spray welding to spray self-melting alloy powder, then heat coating over 1000°C for remelting. After repeating remelting twice, coating and substrate is metallurgical bonded. High bonding strength, thickness can achieve 0.5–1.0mm, hardness 50–60HRC. This technique is applicable to self-fluxing Ni-based alloy powder coating (e.g. Ni55 and Ni60). In coal chemical industry system, this technique is widely adopted.

Hard Facing

This technique is commonly used in welding stellite alloy. The hardness is HRC40 ~ 45, the thickness is 3mm and above.



SURFACE HARDENING TREATMENT

No.	Parts	Surface Treatment	Material	Temp. (°C)	Hardness	Application	
1	Ball	SF	Nickel	≤ 500	HRC60	General conditions (no special requirement for temperature or corrosion)	
	Seat	SF	Nickel		HRC55		
2	Ball	HVOF	Tungsten Carbide/Co	≤ 450	HV ≥ 1100		
	Seat	SF	Nickel		HRC60		
3	Ball	HVOF	Tungsten Carbide/Co/Cr	≤ 450	≥ HV1100		
	Seat	SF	Nickel		HRC60		
4	Ball	HVOF	Tungsten Carbide/Co	≤ 450	HV ≥ 1100		
	Seat	HVOF	Tungsten Carbide/Co/Cr		HV ≥ 1100		
5	Ball	HVOF	Stellite	≤ 650	HRC60–65		High temperature condition
	Seat	SF	Stellite		HRC50–55		
6	Ball	HVOF	Stellite	≤ 650	HRC60–65		
	Seat	SW	Stellite		≥ HRC45		
7	Ball	HVOF	Chrome Carbide	≤ 800	≥ HV900		
	Seat	SF	Stellite		HRC58–63		
8	Ball	SF	Tungsten Carbide/Ni	≤ 500	≥ HRC62	Coal chemical industry and corrosive wear resistance condition	
	Seat	SF	Nickel		HRC58–62		
9	Ball	HVOF	Tungsten Carbide/Co	≤ 450	≥ HV1100	Anti-sulfur corrosion-resistant condition	
	Seat	SF	Nickel/Chrome		HRC55–60		
A	Ball	SW	Stellite	≤ 550	≥ HRC45	High temperature Hydrogenation Hydroisomerization system	
	Seat	SW	Stellite		≥ HRC40		

Note: SF–Oxyacetylene Spray Welding + Remelting.
HVOF–high velocity oxy fuel spraying.
SW–hardfacing(plasma spray welding, Argon Arc Surfacing or Oxy–acetylene Bead Welding).

HOW TO ORDER

PLEASE PROVIDE FOLLOWING INFORMATION :

1. Max./Min. Operating Pressure, Max. /Min. Service Temp, Special Flow/Service Environment Requirements.
2. Design Standard (API 6D, ISO 17292, ASME B16.34, 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 Inspection or other).

A	B	C	D	E	F	G	H	I	J
MODEL	SIZE	PRESSURE RATING	CONNECTION	ACTUATION	BODY MATERIAL	TRIM MATERIAL	COATINGS	BOLTS&NUTS	SPECIAL REQUIREMENTS
HY10	4	600	RF	G	S5	301	1	B2	BE

EXAMPLE: HY10-4-600 RF-G-S53011B2-BE

Forged steel split-body metal-seated trunnion ball valve, -20°F to 302°F (-29°C to 150°C), 4" full port, ASME 600, Flanged RF, Worm Gear, A182 F304 body, A182 F304 trim, SF: nickel ball coating & SF: nickel seat coating, B7/2H bolts & nuts, Bolts & nuts ENP coating.

A	TEMPERATURE RANGE	
CODE	TYPE	TemperatureRange
HY13	Cast Steel Split-Body Metal-Seated Floating Ball Valve	-20°F~302°F(-29°C~150°C)
HY43	Cast Steel Split-Body Metal-Seated Floating Ball Valve	-20°F~1000°F(-29°C~538°C)
HY12	Forged Steel Split-Body Metal-Seated Floating Ball Valve	-20°F~302°F(-29°C~150°C)
HY42	Forged Steel Split-Body Metal-Seated Floating Ball Valve	-20°F~1000°F(-29°C~538°C)
HY14	Cast Steel Top Entry Metal-Seated Floating Ball Valve	-20°F~302°F(-29°C~150°C)
HY44	Cast Steel Top Entry Metal-Seated Floating Ball Valve	-20°F~1000°F(-29°C~538°C)
HY11	Cast Steel Split-Body Metal-Seated Trunnion Ball Valve	-20°F~302°F(-29°C~150°C)
HY21	Cast Steel Split-Body Metal-Seated Trunnion Ball Valve	-20°F~446°F(-29°C~230°C)
HY31	Cast Steel Split-Body Metal-Seated Trunnion Ball Valve	-20°F~608°F(-29°C~320°C)
HY10	Forged Steel Split-Body Metal-Seated Trunnion Ball Valve	-20°F~302°F(-29°C~150°C)
HY20	Forged Steel Split-Body Metal-Seated Trunnion Ball Valve	-20°F~446°F(-29°C~230°C)
HY30	Forged Steel Split-Body Metal-Seated Trunnion Ball Valve	-20°F~608°F(-29°C~320°C)
HY40	Forged Steel Split-Body Metal-Seated Trunnion Ball Valve	-20°F~1000°F(-29°C~538°C)
HY15	Cast Steel Top Entry Metal-Seated Trunnion Ball Valve	-20°F~302°F(-29°C~150°C)
HY45	Cast Steel Top Entry Metal-Seated Trunnion Ball Valve	-20°F~1000°F(-29°C~538°C)
HY16	Forged Steel Top Entry Metal-Seated Trunnion Ball Valve	-20°F~302°F(-29°C~150°C)
HY46	Forged Steel Top Entry Metal-Seated Trunnion Ball Valve	-20°F~1000°F(-29°C~538°C)

B	SIZE		
CODE	NPS(DN)	CODE	NPS(DN)
1/2	1/2(15)	28	28(700)
3/4	3/4(20)	30	30(750)
1	1(25)	32	32(800)
1-1/2	1-1/2(40)	36	36(900)
2	2(50)	40	40(1000)
3	3(80)	48	48(1200)
4	4(100)	56	56(1400)
6	6(150)	60	60(1500)
8	8(200)		
10	10(150)		
12	12(300)		
14	14(350)		
16	16(400)		
18	18(450)		
20	20(500)		
22	22(550)		
24	24(600)		

C	PRESSURE RATING		
CODE	TYPE	CODE	TYPE
150	ASME 150	1.6P	PN 16
300	ASME 300	3.2P	PN 32
400	ASME 400	6.4P	PN 64
600	ASME 600	8P	PN 80
900	ASME 900	10P	PN 100
1500	ASME 1500	16P	PN 160
2500	ASME 2500	25P	PN 250
		32P	PN 320

D	CONNECTION		
CODE	TYPE	CODE	TYPE
RF	Flanged RF-B16.5(NPS 1/2-NPS 24)	RFB	Flanged RF-B16.47(NPS 26-NPS 60) Series B
	Flanged RF-MSS SP 44(NPS 22)	RJB	Flanged RJ-B16.47(NPS 26-NPS 60) Series B
	Flanged RF-B16.47(NPS 26-NPS 60) Series A	SW	Socket Weld-ASME B16.11
RJ	Flanged RJ-B16.5(NPS 1/2-NPS 24)	ET	External Thread-ASME B1.20.1
	Flanged RJ-MSS SP 44(NPS 22)	BW	Butt Weld-ASME B31.8*
	Flanged RJ-B16.47(NPS 26-NPS 60) Series A	XX	Others

*For weld end valves, specify ID or OD, wall thickness and grade of pipe.

E	ACTUATION			
CODE	TYPE	CODE	TYPE	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.)
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	END CONNECTION	CODE	BODY	END CONNECTION	CODE	BODY	END CONNECTION
C1	A216 WCB	A216 WCB	S3	A351 CF3M	A351 CF3M	D7	A182 F55(UNS S32760)	A182 F55(UNS S32760)
C2	A216 WCC	A216 WCC	S5	A182 F304	A182 F304	D8	A182 F60(UNS S32205)	A182 F60(UNS S32205)
C5	A105N	A105N	S6	A182 F316	A182 F316	I5	INCONEL 600(UNS N06600)	INCONEL 600(UNS N06600)
L1	A352 LCB	A352 LCB	S7	A182 F304L	A182 F304L	I6	INCONEL 625(UNS N06625)	INCONEL 625(UNS N06625)
L2	A352 LCC	A352 LCC	S8	A182 F316L	A182 F316L	I7	CW6MC(UNSN26625)	CW6MC(UNSN26625)
L5	A350 LF2	A350 LF2	SE	A564 GR.630(UNS S17400)	A564 GR.630(UNS S17400)	I8	INCOLOY 825(UNS N08825)	INCOLOY 825(UNS N08825)
LA	A694 F52 Mod.	A694 F52 Mod.	SF	A182 FXM-19(UNS S20910)	A182 FXM-19(UNS S20910)	I9	INCOLOY 925(UNS N09925)	INCOLOY 925(UNS N09925)
LB	A694 F60 Mod.	A694 F60 Mod.	D0	A995 4A(UNS J92205)	A995 4A(UNS J92205)	M6	MONEL K500(UNS N05500)	MONEL K500(UNS N05500)
S0	A351 CF8	A351 CF8	D1	A995 5A(UNS J93404)	A995 5A(UNS J93404)	H5	HASTELLOY C-276(UNS N10276)	HASTELLOY C-276(UNS N10276)
S1	A351 CF3	A351 CF3	D5	A182 F51(UNS S31803)	A182 F51(UNS S31803)	AC	A105N	A216 WCB
S2	A351 CF8M	A351 CF8M	D6	A182 F53(UNS S32750)	A182 F53(UNS S32750)	XX	Others	Others

G 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)
009	A105N	A182 F316	A564 GR.630(UNS S17400)	603	A182 F316L	A182 F316L	A182 F51(UNS S31803)
012	A105N	A182 F6A	AISI 4140	650	A182 FXM-19(UNS S20910)	A182 FXM-19(UNS S20910)	A182 FXM-19(UNS S20910)
020	A105N	A105N	A182 F6A	680	A564 GR.630(UNS S17400)	A564 GR.630(UNS S17400)	A564 GR.630(UNS S17400)
081	A694 F60	A105N	A694 F60	701	A182 F51(UNS S31803)	A182 F51(UNS S31803)	A182 F51(UNS S31803)
101	A350 LF2	A350 LF2	A350 LF2	702	A182 F51(UNS S31803)	A182 F51(UNS S31803)	INCONEL 718(UNS N07718)
102	A350 LF2	A350 LF2	AISI 4140	703	A182 F51(UNS S31803)	A182 F51(UNS S31803)	A564 GR.630(UNS S17400)
104	A350 LF2	A182 F304	AISI 4140	751	A182 F53(UNS S32750)	A182 F53(UNS S32750)	A182 F53(UNS S32750)
108	A350 LF2 Mod.	A182 F316	A182 F51(UNS S31803)	752	A182 F53(UNS S32750)	A182 F53(UNS S32750)	INCONEL 718(UNS N07718)
109	A350 LF2	A350 LF2	A564 GR.630(UNS S17400)	761	A182 F55(UNS S32760)	A182 F55(UNS S32760)	A182 F55(UNS S32760)
122	A350 LF2	A350 LF2	A182 F6A	771	A182 F60(UNS S32205)	A182 F60(UNS S32205)	A182 F60(UNS S32205)
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)	810	INCONEL 718(UNS N07718)	INCONEL 625(UNS N06625)	INCONEL 718(UNS N07718)
306	A182 F304	A182 F316	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

H TRIM COATING		
CODE	BALL	SEAT
1	SF: Nickel	SF:Nickel
2	HVOF: Tungsten Carbide/Co	SF: Nickel
3	HVOF: Tungsten Carbide/Co/Cr	SF: Nickel
4	HVOF: Tungsten Carbide/Co	HVOF: Tungsten Carbide/Co/Cr
5	HVOF:Stellite	SF:Stellite
6	HVOF:Stellite	SW:Stellite
7	HVOF: Chrome Carbide	SF:Stellite
8	SF: Tungsten Carbide/Ni	SF: Nickel
9	HVOF: Tungsten Carbide/Co	SF:Nickel/Chrome
A	SW:Stellite	SW:Stellite
X	Others	Others

I BOLTS & NUTS		
CODE	BOLT	NUT
B1	A193 B7M	A194 2HM
B2	A193 B7	A194 2H
B3	A320 L7M	A194 7M
B4	A320 L7	A194 7
B5	A193 B8M	A194 8M
B6	A193 B8	A194 8
B7	A193 B16	A194 7
B8	A320 L7	A194 4
N5	A320 B8M CL2	A194 8M-S1
N6	A320 B8M CL1	A194 8MA
XX	Others	Others

J SPECIAL REQUIREMENTS, MISC (MULTIPLE CHOICE)	
CODE	SPECIAL NOTES
K	Anti-corrosion, acid-resisting regs are in compliance with NACE MR0103, NACE MR0175, ISO 15156. Please provide detailed medium composition.
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.