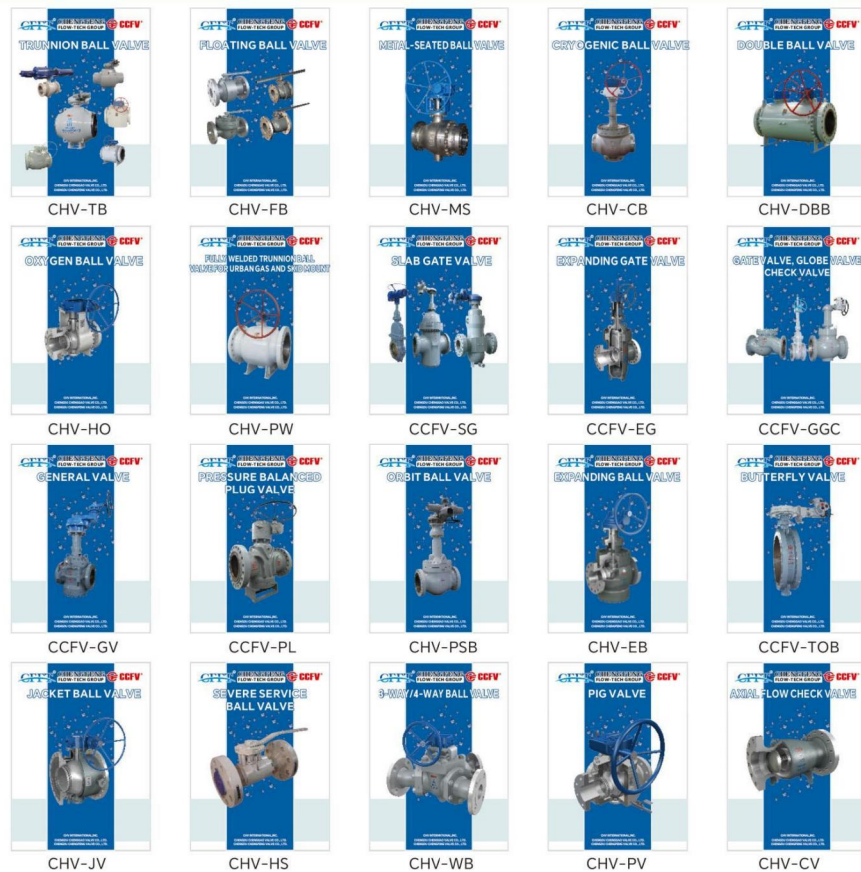


THE MOST COMPREHENSIVE INDUSTRIAL SOLUTION FOR FORGED AND CAST STEEL BALL VALVES, GATE VALVES, GLOBE VALVES, CHECK VALVES, PLUG VALVES, BUTTERFLY VALVES, AND PIG VALVES

COMPREHENSIVE SOLUTION, TRUSTWORTHY



CCFV-PSB-2401



FORCED SEAL BALL VALVE



CHENGDU CHENGGAO VALVE CO., LTD.

WWW.CHINA-CFFT.COM
sales@china-cfft.com

PROFILE

CHENG FENG FLOW-TECH GROUP CFFTG

Chengdu Chengfeng Flow-Tech Group is a professional and high-tech industrial group engaged in the research and manufacturing of various valves, as well as the research and development, production, and sales of various fluid control machinery. It is the vice president unit of the China General Machinery Industry Association, the vice chairman unit of the Valve Branch of the China General Machinery Industry Association, and the chairman unit of the Sichuan Valve Industry Association. The group controls Chengdu Chenggao Valve Co., Ltd. ("CHV") and Chengdu Chengfeng Valve Co., Ltd. ("CCFV"). The group has long focused on market research and technological development of petrochemical, aerospace, and power plant valves both domestically and internationally. It enjoys a group of well-known domestic valve experts, possesses multiple national patents and high-tech achievements, and its technological development and production capabilities are at the leading level in the domestic industry. Its products are widely used in petrochemical, natural gas, refining, aerospace, metallurgy, power plants, and urban gas transmission and distribution, and are exported to more than 20 countries and regions.

The group adheres to the concept of "following the path of technological innovation, building the dream of brand rise" and the corporate purpose of "pursuing 100% customer satisfaction". Over the years, it has devoted itself to operation and construction, gathering high-end professional talents from all aspects, maintaining sustained and stable economic and social growth, and precipitating a deep and unique corporate culture.

CHENGDU CHENGGAO VALVE CO., LTD CHV

Chengdu Chenggao Valve Co., Ltd. is currently a well-known large-scale enterprise specializing in R&D and production of ball valves in China. It has been recognized by the Ministry of Industry and Information Technology as the single champion enterprise of China's pipeline ball valves.

CHV is located in the Industrial Concentrated Development Zone of Dayi County, Chengdu City, Sichuan Province. The company was founded in 1993 (formerly known as Chengdu High Pressure Valve Factory) with a registered capital of 110 million yuan, covering an area of about 135 acres, a construction area of 77,661 square meters, and more than 330 employees. CHV has more than 230 sets of advanced and excellent modern processing and testing equipment and various special equipment, with an annual production capacity of 1 billion yuan. The company has independent design and development capabilities and strong technical research and development capabilities. It has long been committed to the R&D and manufacturing of high and medium pressure ball valves, especially in oil and gas pipeline transportation and petrochemical applications, and has accumulated rich experience. In the national project of "Localization of High-Pressure Large-diameter Fully Welded Main Line Ball Valve", the 40" Class 600, 48" Class 900, 56" Class 900 high-pressure large-diameter fully welded ball valves developed by CHV completed expert appraisal and acceptance, filling the domestic gap in this technology. Among them, the 40"-48-inch Class 900 high-pressure large-diameter fully welded ball valve won the first prize of China Machinery Industry Science and Technology Award in 2016, and the 56-inch Class 900 high-pressure large-diameter fully welded ball valve won the title of China's top ten energy equipment products with outstanding performance in 2017. The company has successively won the titles of High-tech Enterprise, Sichuan Province Famous Brand Product, Sichuan Province Famous Trademark, and China Pipeline Ball Valve Champion Enterprise.

CHENGDU CHENG FENG VALVE CO., LTD CCFV

Chengdu Chengfeng Valve Co., Ltd. was established in 1966. In 1999, it was restructured from a state-owned enterprise (Chengdu Valve Factory) into a limited liability company, which is a professional research and development and manufacturing company for oil and gas pipelines and storage and transportation valves under Chengdu Chengfeng Flow-Tech Group Co., Ltd. The company is located in Dayi Economic and Technological Development Zone, Chengdu (No. 6 Guanghua Road, Jinyuan Town), covering an area of 172 acres with a construction area of over 250,000 square meters and a registered capital of 105 million yuan.

Chengdu Chengfeng Valve Co., Ltd. is one of the pioneers in China's slab gate valves, metal-seated butterfly valves, and vent and drain valves. The company's annual production capacity exceeds 1 billion yuan. We have provided over 1000 varieties and specifications of slab gate valves, ball valves, butterfly valves, vent and drain valves, as well as various non-standard and special valves (nominal diameter DN100-4000mm, nominal pressure 0.05-100MPa) for China's aerospace systems, nuclear power systems, oil and natural gas collection, ground gathering and transportation, long-distance pipeline stations, storage, ports, petrochemicals, airports and urban water supply and drainage, gas, metallurgy, non-ferrous metals, chemical transportation pipelines, and fluid control engineering. The company always adheres to the business policy of "quality first, customer first", with the goal of "pursuing 100% customer satisfaction", and provides customers with high-quality products and services.

CERTIFICATION

The product quality of CHV and CCFV strictly follows the industry's strictest standards. The company has API 6D, API 6A, TS, ISO 9001, ISO 14001, OHSAS 18001, CE, CU-TR, API 6FA, API 607 fire safety certification and other certificates.



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PRODUCT SCOPE AND MANUFACTURING STANDARDS

PRODUCT SCOPE

Dimension		Pressure Class						
NPS	DN	ASME CLASS 150 (PN 16,20)	ASME CLASS 300 (PN 25,50)	ASME CLASS 400 (PN 63)	ASME CLASS 600 (PN 100)	ASME CLASS 900 (PN 150)	ASME CLASS 1500 (PN 260)	ASME CLASS 2500 (PN 420)
2	50	●	●	●	●	●	●	●
3 × 2 × 3	80 × 50 × 80	●	●	●	●	●	●	●
3	80	●	●	●	●	●	●	●
4 × 3 × 4	100 × 80 × 100	●	●	●	●	●	●	●
4	100	●	●	●	●	●	●	●
6 × 4 × 6	150 × 100 × 150	●	●	●	●	●	●	●
6	150	●	●	●	●	●	●	●
8 × 6 × 8	200 × 150 × 200	●	●	●	●	●	●	●
8	200	●	●	●	●	●	●	●
10 × 8 × 10	250 × 200 × 250	●	●	●	●	●	●	●
10	250	●	●	●	●	●	●	●
12 × 10 × 12	300 × 250 × 300	●	●	●	●	●	●	●
12	300	●	●	●	●	●	●	●
14 × 12 × 14	350 × 300 × 350	●	●	●	●	●	●	●
14	350	●	●	●	●	●	●	●
16 × 12 × 16	400 × 300 × 400	●	●	●	●	●	●	●
16	400	●	●	●	●	●	●	●
18	450	●	●	●	●	●	●	●
20 × 16 × 20	500 × 400 × 500	●	●	●	●	●	●	●
20	500	●	●	●	●	●	●	●
24 × 20 × 24	600 × 500 × 600	●	●	●	●	●	●	●
24	600	●	●	●	●	●	●	●

*When ordering, please follow the above table; if it exceeds the range, please consult the factory directly!

DESIGN AND MANUFACTURING STANDARDS

Design Standard	API 6D, ASME B16.34, GB/T 19672, GB/T 12224, GB/T 12237
Test Standard	API 6D, API 598, GB/T 19672, ISO 5208, GB/T 13927
End Connection	ASME B16.5, ASME B16.25, ASME B31.8, GB/T 9113, HG/T 20592 etc.
Face to Face	API 6D, ASME B16.10, GB/T 19672, GB/T 12221, CHV Standard
Fire Safe	API 6FA
Anti-Corrosion, Acid-Resisting	NACE MR0103, NACE MR0175, ISO 15156

Note: *Optional to meet actual working conditions.

TECHNICAL CONDITIONS

Medium temperature	-46℃~425℃
Applicable Medium	Natural gas, coal gas, crude oil, refined oil, alkanes, hydrocarbons, light oil, sewage, etc.

DESIGN FEATURES

THE SWITCH IS FRICTIONLESS.

The ball deviates from the seat and then rotates to achieve the opening and closing of the sealing surface without friction so that the service life of the valve can be extended.

SPECIAL ORBIT DESIGN.

The stem can be lifted and rotated through the guide groove and guide pin of the stem to effectively ensure the separation and fitting of the sealing surface during the switching process.

STEM GREASING DESIGN.

In case of sealing failure of the stem, emergency sealing can be carried out through online greasing.

MULTIPLE SEALS OF THE STEM.

It is sealed with multiple packing materials and with a fire protection function.

SPECIAL SEAT DESIGN.

In case of online leakage detection and sealing failure, emergency sealing can be carried out through online greasing.

SELF-CLEANING FUNCTION.

When the ball deviates from the valve seat, the fluid shall flush the sealing surface 360 degrees to keep the sealing surface clean and prevent scaling.

OPTIMUM FLOW PERFORMANCE.

It has a high Cv value, which improves the system efficiency and reduces the medium scouring effect.

HARD SEALING SURFACE OF WEAR-RESISTANT BALL.

A layer of hard alloy is welded on the surface of the sphere, which can meet the sealing requirements under severe working conditions without damaging the integrity of the seal.

SINGLE SEAT FORCED SEAL.

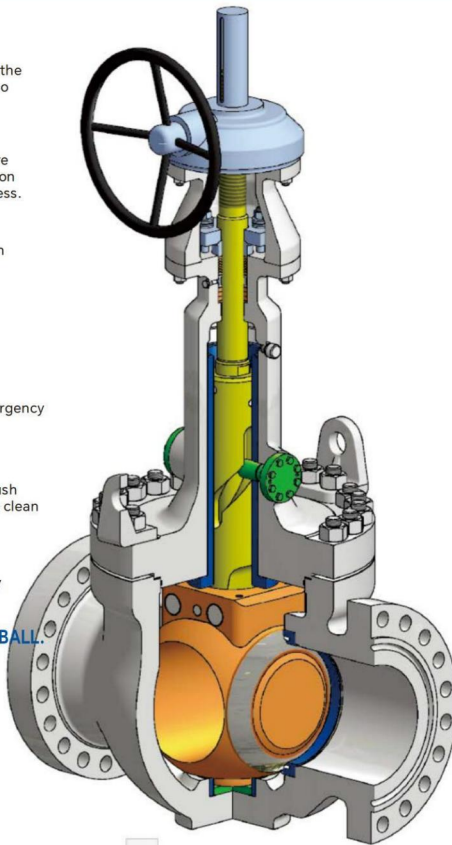
The solid single seat setting of the valve can ensure bidirectional zero leakage, avoid the problem of pressure rise inside the double seat valve, and eliminate the need for a discharge valve.

LOW TORQUE IN OPERATION.

The operating torque is small and economical driving devices can be used.

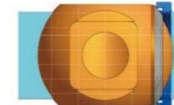
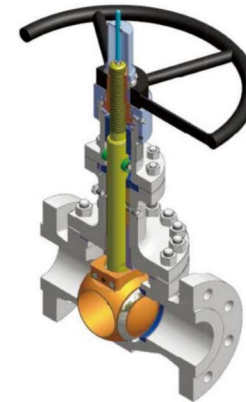
TOP ENTRY DESIGN.

After the system is depressurized, online inspection and maintenance can be carried out to simplify the maintenance.

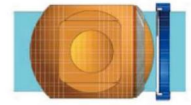
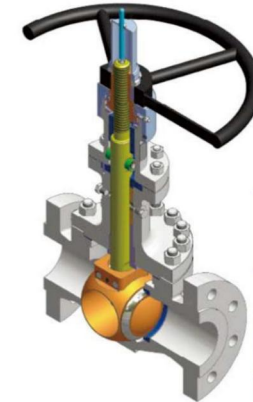


Seat online leak detection and grease injection structure description

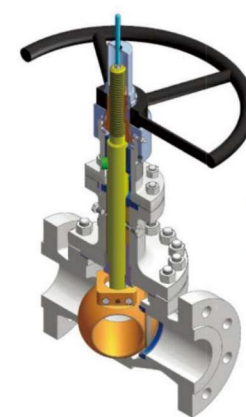
OPENING PRINCIPLE



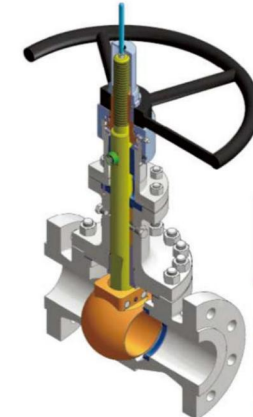
1. In the closed position, the ball is pressed against the seat by the mechanical pressure of the stem.



2. When the handwheel is turned counterclockwise, the stem moves upward, and its bottom wedge plane causes the ball to deviate from the seat.

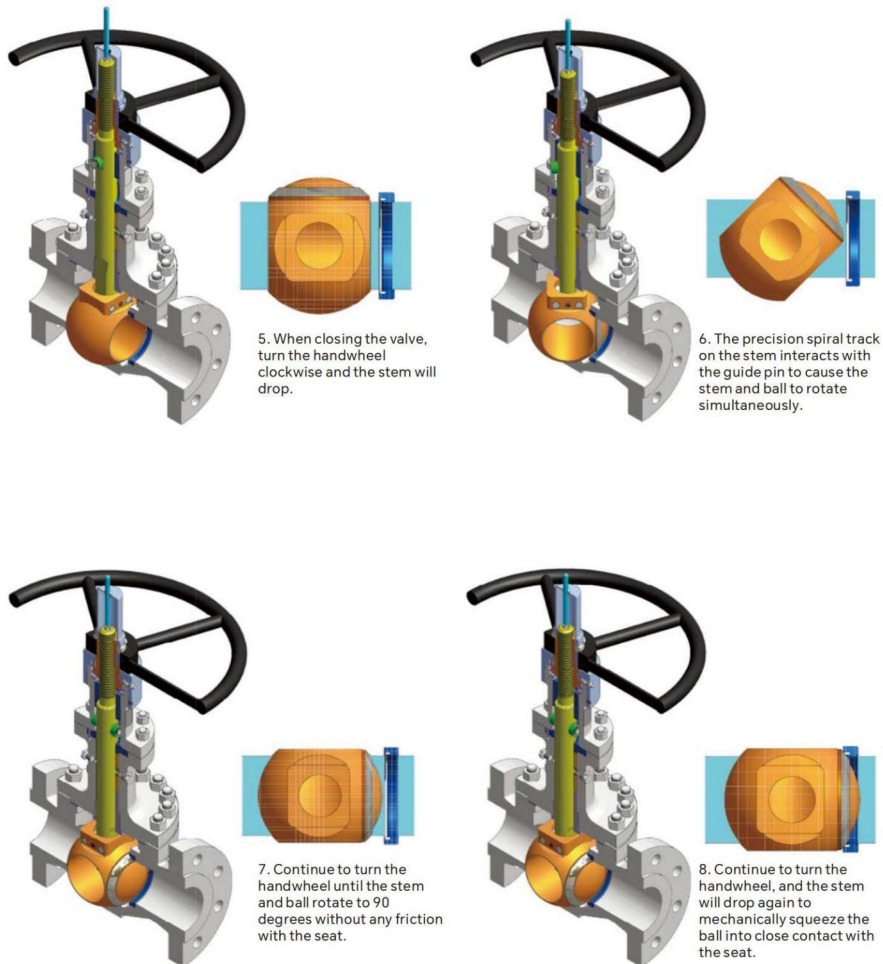


3. The stem continues to lift and interacts with the guide pin in the spiral groove of the stem, causing the ball to begin to rotate without friction.



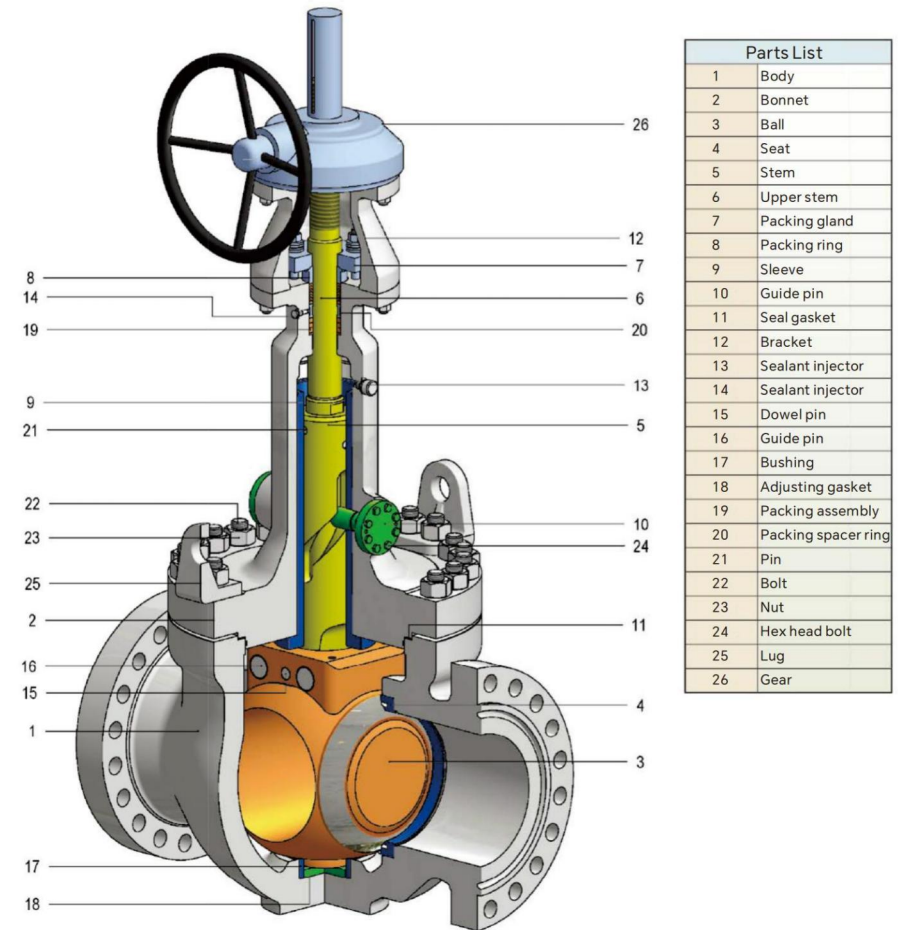
4. To the fully open position, the stem rises to the extreme position and the ball moves to the fully open position.

CLOSING PRINCIPLE

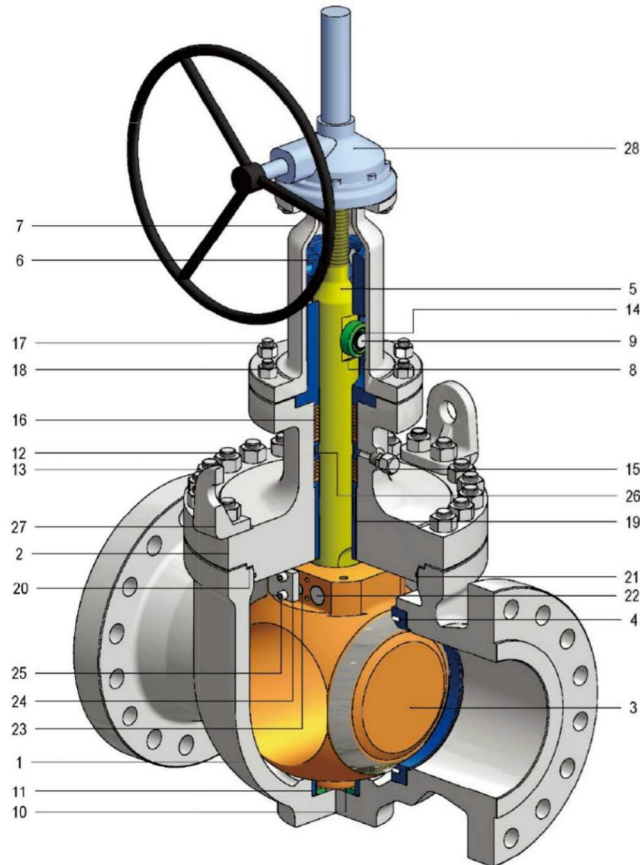


Q10 SERIES MAIN PARTS LIST

Q10 SERIES: STEM GUIDE GROOVE TYPE

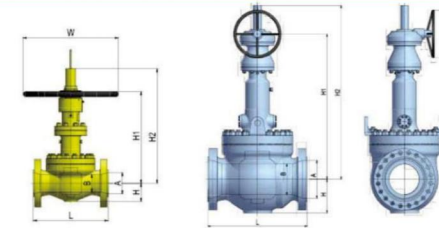


Q11 SERIES MAIN PARTS LIST



Parts List	
1	Body
2	Bonnet
3	Ball
4	Seat
5	Stem
6	Guide sleeve
7	Bracket
8	Roller
9	Hinge pin
10	Adjusting gasket
11	Bushing
12	Bolt
13	Nut
14	External retaining ring
15	Sealant injector
16	Packing assembly
17	Bolt
18	Nut
19	Sleeve
20	Seal gasket
21	O-ring
22	Guide pin
23	Pin
24	Guard
25	Internal hexagonal cylindrical screw
26	Packing spacer ring
27	Lug
28	Gear

DIMENSION AND WEIGHT

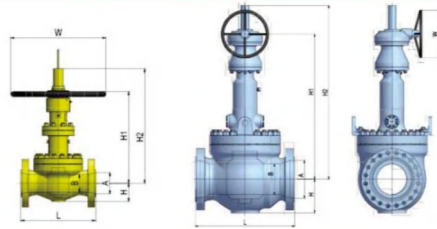


Size	ASME CLASS 150 PN 16.20 Full port									ASME CLASS 300 PN 25.50 Full port								
NPS DN	A	B	L-RF	L-BW	H	H1	H2	W	Weight* Lb/kg	A	B	L-RF	L-BW	H	H1	H2	W	Weight* Lb/kg
2	1.94	1.94	8.5	8.5	3.15	14.96	18.11	9.84	90	1.94	1.94	8.5	8.5	3.15	14.96	18.11	9.84	108
50	49	49	216	216	80	380	460	250	41	49	49	216	216	80	380	460	250	49
3	2.94	2.94	11.13	11.13	3.94	15.75	20.08	9.84	170	2.94	2.94	11.13	11.13	3.94	15.75	20.08	9.84	190
80	74	74	283	283	100	400	510	250	77	74	74	283	283	100	400	510	250	86
4	3.94	3.94	16	16	4.72	17.72	22.83	13.78	300	3.94	3.94	16	16	4.72	17.72	22.83	13.78	315
100	100	100	406	406	120	450	580	350	136	100	100	406	406	120	450	580	350	143
6	5.94	5.94	19.5	19.5	5.91	22.44	31.5	13.78	752	5.94	5.94	19.5	19.5	5.91	22.44	31.5	13.78	769
150	150	150	495	495	150	570	800	350	341	150	150	495	495	150	570	800	350	349
8	7.94	7.94	23.5	23.5	7.48	25.98	35.04	21.65	1393	7.94	7.94	23.5	23.5	7.48	25.98	35.04	21.65	1409
200	201	201	597	597	190	660	890	550	632	201	201	597	597	190	660	890	550	639
10	9.94	9.94	26.5	26.5	9.06	32	42	25.59	1817	9.94	9.94	26.5	26.5	9.06	32	25.59	1865	
250	252	252	673	673	230	820	1070	650	824	252	252	673	673	230	820	1070	650	846
12	11.94	11.94	30	30	9.84	36	48	29.53	2335	11.94	11.94	30	30	9.84	36	29.53	2348	
300	303	303	762	762	250	920	1220	750	1059	303	303	762	762	250	920	750	1065	
14	13.19	13.19	32.5	32.5	10.83	40.16	53.94	19.69	2513	13.19	13.19	32.5	32.5	10.83	40.16	19.69	2533	
350	334	334	826	826	275	1020	1370	500	1140	334	334	826	826	275	1020	500	1149	
16	15.19	15.19	35.5	35.5	12.20	44.09	59.84	19.69	3563	15.19	15.19	35.5	35.5	12.20	44.09	19.69	3580	
400	385	385	902	902	310	1120	1520	500	1616	385	385	902	902	310	1120	500	1624	
18	17.19	17.19	43	43	12.80	47.24	62.99	23.62	4850	17.19	17.19	43	43	12.80	47.24	23.62	4870	
450	436	436	1092	1092	325	1200	1600	600	2200	436	436	1092	1092	325	1200	600	2209	
20	19.19	19.19	47	47	14.17	51.18	70.87	23.62	6085	19.19	19.19	47	47	14.17	51.18	23.62	6102	
500	487	487	1194	1194	360	1300	1800	600	2760	487	487	1194	1194	360	1300	600	2768	
24	23.19	23.19	55	55	16.34	57	81	27.56	10642	23.19	23.19	55	55	16.34	57	27.56	10664	
600	589	589	1397	1397	415	1450	2050	700	4827	589	589	1397	1397	415	1450	700	4837	

Size		ASME CLASS 150 PN 16.20 Reduced port									ASME CLASS 300 PN 25.50 Reduced port								
NPS DN	A	B	L-RF	L-BW	H	H1	H2	W	Weight* Lb/kg	A	B	L-RF	L-BW	H	H1	H2	W	Weight* Lb/kg	
3x2x3	2.94	1.94	11.13	11.13	3.15	14.96	18.11	9.84	101	2.94	1.94	11.13	11.13	3.15	14.96	18.11	9.84	128	
80x50x80	74	49	283	283	80	380	460	250	46	74	49	283	283	80	380	460	250	58	
4x3x4	3.94	2.94	12	12	3.94	15.75	20.08	9.84	209	3.94	2.94	12	12	3.94	15.75	20.08	9.84	247	
100x80x100	100	74	305	305	100	400	510	250	95	100	74	305	305	100	400	510	250	112	
6x4x6	5.94	3.94	15.88	15.88	4.72	17.72	22.83	13.78	390	5.94	3.94	15.88	15.88	4.72	17.72	22.83	13.78	463	
150x100x150	150	100	403	403	120	450	580	350	177	150	100	403	403	120	450	580	350	210	
8x6x8	7.94	5.94	19.75	19.75	5.91	22.44	31.5	13.78	860	7.94	5.94	19.75	19.75	5.91	22.44	31.5	13.78	966	
200x150x200	201	150	502	502	150	570	800	350	390	201	150	502	502	150	570	800	350	438	
10x8x10	9.94	7.94	26.5	26.5	7.48	25.98	35.04	21.65	1459	9.94	7.94	26.5	26.5	7.48	25.98	35.04	21.65	1702	
250x200x250	252	201	673	673	190	660	890	550	662	252	201	673	673	190	660	890	550	772	
12x10x12	11.94	9.94	30	30	9.06	32	42	25.59	1806	11.94	9.94	30	30	9.06	32	42	25.59	1887	
300x250x300	303	252	762	762	230	820	1070	650	819	303	252	762	762	230	820	1070	650	856	
14x12x14	13.19	11.94	32.5	32.5	9.84	36	48	29.53	2205	13.19	11.94	32.5	32.5	9.84	36	48	29.53	2939	
350x300x350	334	303	826	826	250	920	1220	750	1000	334	303	826	826	250	920	1220	750	1333	
16x12x16	15.19	11.94	35.5	35.5	9.84	36	48	29.53	2734	15.19	11.94	35.5	35.5	9.84	36	48	29.53	3276	
400x300x400	385	303	902	902	250	920	1220	750	1240	385	303	902	902	250	920	1220	750	1486	
20x16x20	19.19	15.19	47	47	12.20	44.09	59.84	19.69	4870	19.19	15.19	47	47	12.20	44.09	59.84	19.69	5633	
500x400x500	487	385	1194	1194	310	1120	1520	500	2209	487	385	1194	1194	310	1120	1520	500	2555	
24x20x24	23.19	19.19	55	55	14.17	51.18	70.87	23.62	7390	23.19	19.19	55	55	14.17	51.18	70.87	23.62	8527	
600x500x600	589	487	1397	1397	360	1300	1800	600	3352	589	487	1397	1397	360	1300	1800	600	3868	

*Weight figures are relevant to flanged end valve. ① Please contact manufacture for more details.
Note: For dimensions and weights in large 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.

DIMENSION AND WEIGHT

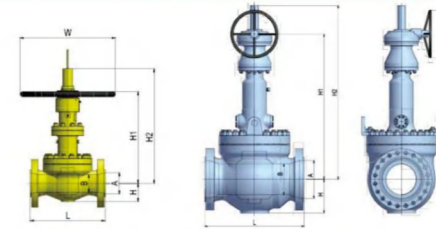


Size NPS DN	ASME CLASS 400 PN 63 Full port										ASME CLASS 600 PN100 Full port									
	A	B	L-RF	L-BW	L-RJ	H	H1	H2	W	Weight* Lb/kg	A	B	L-RF	L-BW	L-RJ	H	H1	H2	W	Weight* Lb/kg
2	1.94	1.94	11.5	11.5	11.63	3.54	16.54	19.69	9.84	121	1.94	1.94	11.5	11.5	11.63	3.54	16.54	19.69	9.84	121
50	49	49	292	292	295	90	420	500	250	55	49	49	292	292	295	90	420	500	250	55
3	2.94	2.94	14	14	14.13	4.53	18.11	22.44	13.78	203	2.94	2.94	14	14	14.13	4.53	18.11	22.44	13.78	203
80	74	74	356	356	359	115	460	570	350	92	74	74	356	356	359	115	460	570	350	92
4	3.94	3.94	17	17	17.13	5.71	18.9	24.02	17.72	430	3.94	3.94	17	17	17.13	5.71	18.9	24.02	17.72	430
100	100	100	432	432	435	145	480	610	450	195	100	100	432	432	435	145	480	610	450	195
6	5.94	5.94	22	22	22.13	7.28	25.59	32.68	21.65	864	5.94	5.94	22	22	22.13	7.28	25.59	32.68	21.65	864
150	150	150	559	559	562	185	650	830	550	392	150	150	559	559	562	185	650	830	550	392
8	7.94	7.94	26	26	26.13	8.66	29.53	38.58	25.59	1468	7.94	7.94	26	26	26.13	8.66	29.53	38.58	25.59	1468
200	201	201	660	660	664	220	750	980	650	666	201	201	660	660	664	220	750	980	650	666
10	9.94	9.94	31	31	31.13	10.43	35.43	45.28	29.53	1938	9.94	9.94	31	31	31.13	10.43	35.43	45.28	29.53	1938
250	252	252	787	787	791	265	900	1150	750	879	252	252	787	787	791	265	900	1150	750	879
12	11.94	11.94	33	33	33.13	11.42	38.98	50.79	19.69	2407	11.94	11.94	33	33	33.13	11.42	38.98	50.79	19.69	2407
300	303	303	838	838	841	290	990	1290	500	1092	303	303	838	838	841	290	990	1290	500	1092
14	13.19	13.19	35	35	35.13	13.78	42.52	56.3	19.69	2542	13.19	13.19	35	35	35.13	13.78	42.52	56.3	19.69	2542
350	334	334	889	889	892	315	1080	1430	500	1153	334	334	889	889	892	315	1080	1430	500	1153
16	15.19	15.19	39	39	39.13	13.78	47.24	62.99	23.62	3821	15.19	15.19	39	39	39.13	13.78	47.24	62.99	23.62	3821
400	385	385	991	991	994	350	1200	1600	600	1733	385	385	991	991	994	350	1200	1600	600	1733
18	17.19	17.19	43	43	43.13	14.96	53.15	70.87	23.62	5101	17.19	17.19	43	43	43.13	14.96	53.15	70.87	23.62	5101
450	436	436	1092	1092	1095	380	1350	1800	600	2314	436	436	1092	1092	1095	380	1350	1800	600	2314
20	19.19	19.19	47	47	47.25	16.34	57.09	76.77	27.56	6334	19.19	19.19	47	47	47.25	16.34	57.09	76.77	27.56	6334
500	487	487	1194	1194	1200	415	1450	1950	700	2873	487	487	1194	1194	1200	415	1450	1950	700	2873
24	23.19	23.19	55	55	55.38	18.9	69	93	31.5	10681	23.19	23.19	55	55	55.38	18.9	69	93	31.5	10681
600	589	589	1397	1397	1407	480	1750	2350	800	4845	589	589	1397	1397	1407	480	1750	2350	800	4845

Size NPS DN	ASME CLASS 400 PN 63 Reduced port										ASME CLASS 600 PN 100 Reduced port									
	A	B	L-RF	L-BW	L-RJ	H	H1	H2	W	Weight* Lb/kg	A	B	L-RF	L-BW	L-RJ	H	H1	H2	W	Weight* Lb/kg
3x2x3	2.94	1.94	14	14	14.13	3.54	16.54	19.69	9.84	132	2.94	1.94	14	14	14.13	3.54	16.54	19.69	9.84	139
80x50x80	74	49	356	356	359	90	420	500	250	60	74	49	356	356	359	90	420	500	250	63
4x3x4	3.94	2.94	17	17	17.13	4.53	18.11	22.44	13.78	270	3.94	2.94	17	17	17.13	4.53	18.11	22.44	13.78	284
100x80x100	100	74	432	432	435	115	460	570	350	129	100	74	432	432	435	115	460	570	350	129
6x4x6	5.94	3.94	22	22	22.13	5.71	18.9	24.02	17.72	582	5.94	3.94	22	22	22.13	5.71	18.9	24.02	17.72	582
150x100x150	150	100	559	559	562	145	480	610	450	264	150	100	559	559	562	145	480	610	450	264
8x6x8	7.94	5.94	26	26	26.13	7.28	25.59	32.68	21.65	1142	7.94	5.94	26	26	26.13	7.28	25.59	32.68	21.65	1142
200x150x200	201	150	660	660	664	185	650	830	550	518	201	150	660	660	664	185	650	830	550	518
10x8x10	9.94	7.94	31	31	31.13	8.66	29.53	38.58	25.59	2015	9.94	7.94	31	31	31.13	8.66	29.53	38.58	25.59	2015
250x200x250	252	201	787	787	791	220	750	980	650	914	252	201	787	787	791	220	750	980	650	914
12x10x12	11.94	9.94	33	33	33.13	10.43	35.43	45.28	29.53	2136	11.94	9.94	33	33	33.13	10.43	35.43	45.28	29.53	2136
300x250x300	303	252	838	838	841	265	900	1150	750	969	303	252	838	838	841	265	900	1150	750	969
14x12x14	13.19	11.94	35	35	35.13	11.42	38.98	50.79	19.69	3292	13.19	11.94	35	35	35.13	11.42	38.98	50.79	19.69	3292
350x300x350	334	303	889	889	892	290	990	1290	500	1493	334	303	889	889	892	290	990	1290	500	1493
16x12x16	15.19	11.94	39	39	39.13	11.42	42.52	56.3	19.69	3697	15.19	11.94	39	39	39.13	11.42	42.52	56.3	19.69	3697
400x300x400	385	303	991	991	994	290	1080	1430	500	1677	385	303	991	991	994	290	1080	1430	500	1677
20x16x20	19.19	15.19	47	47	47.25	13.78	47.24	62.99	23.62	6266	19.19	15.19	47	47	47.25	13.78	47.24	62.99	23.62	6266
500x400x500	487	385	1194	1194	1200	350	1200	1600	600	2992	487	385	1194	1194	1200	350	1200	1600	600	2992
24x20x24	23.19	19.19	55	55	55.38	16.34	53.15	70.87	27.56	10174	23.19	19.19	55	55	55.38	16.34	53.15	70.87	27.56	10174
600x500x600	589	487	1397	1397	1407	415	1350	1800	700	4615	589	487	1397	1397	1407	415	1350	1800	700	4615

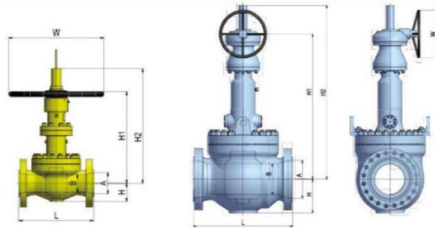
*Weight figures are relevant to flanged end valve. Ⓢ Please contact manufacture for more details.
Note: For dimensions and weights in large sizes consult the factory.
Dimensions and weights are subject to change without notice.
Face to face dimensions not listed in industry standards are subject to change without notice.

DIMENSION AND WEIGHT



Size NPS DN	ASME CLASS 900 PN 150 Full port										ASME CLASS 1500 PN 260 Full port									
	A	B	L-RF	L-BW	L-RJ	H	H1	H2	W	Weight* Lb/kg	A	B	L-RF	L-BW	L-RJ	H	H1	H2	W	Weight* Lb/kg
2	1.94	1.94	14.5	14.5	14.63	4.53	18.11	21.26	9.84	154	1.94	1.94	14.5	14.5	14.63	4.53	18.9	22.05	9.84	172
50	49	49	368	368	371	115	460	540	250	70	49	49	368	368	371	115	480	500	250	78
3	2.94	2.94	15	15	15.13	5.12	20	24.8	13.78	432	2.94	2.94	18.5	18.5	18.63	5.51	21	25.98	13.78	567
80	74	74	381	381	384	130	500	630	350	196	74	74	470	470	473	140	530	660	350	257
4	3.94	3.94	18	18	18.13	6.1	21.65	26.77	17.72	774	3.94	3.94	21.5	21.5	21.63	6.5	22.83	27.95	17.72	1025
100	100	100	457	457	460	155	550	680	450	351	100	100	546	546	549	165	580	710	450	465
6	5.94	5.94	24	24	24.13	7.87	28.74	35.83	21.65	1484	5.69	5.69	27.75	27.75	28	8.07	29.53	36.61	21.65	2008
150	150	150	610	610	613	200	730	910	550	673	144	144	705	705	711	205	750	930	550	911
8	7.94	7.94	29	29	29.13	9.65	33.86	42.91	25.59	2612	7.56	7.56	32.75	32.75	33.13	9.84	40.16	49.21	25.59	3580
200	201	201	737	737	740	245	860	1090	650	1185	192	192	832	832	841	250	1020	1250	650	1624
10	9.94	9.94	33	33	33.13	11.02	38	48	29.53	3234	9.44	9.44	39	39	39.38	11.81	48	58	29.53	4647
250	252	252	838	838	841	280	970	1220	750	1467	239	239	991	991	1000	300	1220	1470	750	2108
12	11.94	11.94	38	38	38.13	12.4	42	54	19.69	2419	11.31	11.31	44.5	44.5	45.13	13.58	51	65	19.69	6429
300	303	303	965	965	968	315	1070	1370	500	1891	287	287	1130	1130	1146	345	1300	1650	500	2916
14	12.69	12.69	40.5	40.5	40.88	12.99	45.28	59.06	19.69	5331	12.44	12.44	49.5	49.5	50.25	15.16	61	74	19.69	8481
350	322	322	1029	1029	1038	330	1150	1500	500	2418	315	315	1257	1257	1276	385	1540	1890	500	3847
16	14.69	14.69	44.5	44.5	44.88	14.17	49.21	64.96	23.62	8219	①	①	①	①	①	①	①	①	①	①
400	373	373	1130	1130	1139	360	1250	1650	600	3728										
18	16.69	16.69	48	48	48.5	15.75	55.12	72.83	23.62	10649	①	①	①	①	①	①	①	①	①	①
450	423	423	1219	1219	1232	400	1400	1850	600	4921	①	①	①	①	①	①	①	①	①	①
20	18.56	18.56	52	52	52.5	17.13	61	81	27.56	14248										
500	471	471	1321	1321	1334	435	1550	2050	700	6463	①	①	①	①	①	①	①	①	①	①
24	22.44	22.44	61	61	61.75						①	①	①	①	①	①	①	①	①	①
600	570	570	1549	1549	1568	①	①	①	①	①	①	①	①	①	①	①	①	①	①	①

DIMENSION AND WEIGHT



Size	ASME CLASS 2500 PN 420 Full port										ASME CLASS 2500 PN 420 Full port										
NPS DN	A	B	L-RF	L-BW	L-RJ	H	H1	H2	W	Weight Lb/kg	NPS DN	A	B	L-RF	L-BW	L-RJ	H	H1	H2	W	Weight Lb/kg
2	1.94	1.94	17.75	17.75	17.88	4.92	19.69	22.83	9.84	236	3x2x3	2.44	1.94	22.75	22.75	23	4.92	19.69	22.83	9.84	375
50	42	42	451	451	454	125	500	580	250	107	80x50x80	62	42	578	578	584	125	500	580	250	170
3	2.44	2.44	22.75	22.75	23	6	22	26.38	13.78	701	4x3x4	3.44	2.44	26.5	26.5	26.88	6	22	26.38	13.78	929
80	62	62	578	578	584	150	560	670	350	318	100x80x100	87	62	673	673	683	150	560	670	350	422
4	3.44	3.44	26.5	26.5	26.88	6.89	25.98	31.10	17.72	1272	6x4x6	5.19	3.44	36	36	36.5	6.89	25.98	31.10	17.72	1723
100	87	87	673	673	683	175	660	790	450	577	150x100x150	131	87	914	914	927	175	660	790	450	782
6	5.19	5.19	36	36	36.5	8.46	31.5	38.98	21.65	2748	8x6x8	7.06	5.19	40.25	40.25	40.88	8.46	31.5	38.98	21.65	3221
150	131	131	914	914	927	215	780	990	550	1247	200x150x200	179	131	1022	1022	1038	215	780	990	550	1461
8	7.06	7.06	40.25	40.25	40.88	10.24	46.06	55.12	25.59	5040	10x8x10	8.81	7.06	50	50	50.88	10.24	46.06	55.12	25.59	5857
200	179	179	1022	1022	1038	215	1170	1400	650	2286	250x200x250	223	179	1270	1270	1292	215	1170	1400	650	2657
10	8.81	8.81	50	50	50.88	12	50	60	29.53	6640	12x10x12	10.44	8.81	56	56	56.88	12	50	60	29.53	7060
250	223	223	1270	1270	1292	310	1280	1530	750	3012	300x250x300	265	223	1422	1422	1445	310	1280	1530	750	3203
12	10.44	10.44	56	56	56.88	①	①	①	①	①	14x12x14	11.5	10.44	①	①	①	①	①	①	①	①
300	265	265	1422	1422	1445	①	①	①	①	①	350x300x350	292	265	①	①	①	①	①	①	①	①

*Weight figures are relevant to flanged end valve. ① Please contact manufacture for more details.
Note: For dimensions and weights in large 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.

DISPLAY OF ACHIEVEMENTS AND CERTIFICATES



ENGINEERING DATA

BODY AND TRIM MATERIAL

Carbon steel	Austenitic stainless steel	Nickel alloys
A105N, A216 WCB, A216 WCC	A182 F304, A182 F316	Incoloy 825 (UNS N08825)
Low temperature steel	A182 F304L, A182 F316L	Incoloy 925 (UNS N09925)
A350 LF2, A352 LCB, A352 LCC	A182 F347, A182 FXM-19 (Nitronic 50)	Inconel 625 (UNS N06625)
Low alloy steel	A351 CF8M, A351 CF3 A351 CF3M	Inconel 718 (UNS N07718)
AISI 4140, A694 F65, A694 F52	Precipitation hardening stainless steel	Inconel 750 (UNS N07750)
A694 F60, A350 LF3	A564 Gr 630 H1150M (UNS S17400)	Monel 400
Martensitic stainless steel	Duplex stainless steel	Monel K500
A182 F6A, A182 F6NM	A182 F51 (UNS S31803) , A182 F53 (UNS S31750)	
A217 CA15, A487 CA6NM	A182 F55 (UNS S31760) , A995 4A (UNS J92205)	
	A995 5A (UNS J93404)	

VALVE TESTING

All valves manufactured by CHV are tested in compliance with API 6D requirements, prior to shipping.

LEAKAGE RATE

Standard	Soft seated	Metal-seated	Cryogenic
API 6D	ISO 5208 rate A	ISO 5208 rate D	(1)

(1) Please consult the factory.

STANDARD PERFORMANCE TEST

Visual and dimensional check.
High pressure hydrostatic shell test
High pressure hydrostatic seats test
Low pressure air seats test

RATING AND TEST PRESSURE AT AMBIENT TEMPERATURE (ASME B16.34 GROUP 1.1 MATERIALS)

ASME CLASS	Rating (1)			Body test			H.P. seat test			Air seat test		
	psi	bar	kg/cm ²	psi	bar	kg/cm ²	psi	bar	kg/cm ²	psi	bar	kg/cm ²
150	285	19.6	20	428	29.4	30	314	21.6	22	100	6.9	7
300	740	51.1	52	1110	76.7	78	814	56.2	57	100	6.9	7
600	1480	102.1	104	2220	153.2	156	1628	112.3	115	100	6.9	7
900	2220	153.2	156	3330	229.8	234	2442	168.5	172	100	6.9	7
1500	3705	255.3	261	5558	383.0	391	4076	280.8	287	100	6.9	7
2500	6170	425.5	434	9255	638.3	651	6787	468.1	477	100	6.9	7

(1) Rating pressure may change for different materials.
Conversion Factors: 1 bar = 14.50 psi & 1 bar = 1.02 kg/cm² & 1 bar = 100 kpa 1 kg/cm² = 14.22 psi
1°F = (1.8 × °C) + 32 & 1°C = (°F - 32) / 1.8

SEAT, O-RING TEMPERATURE-PRESSURE RATING

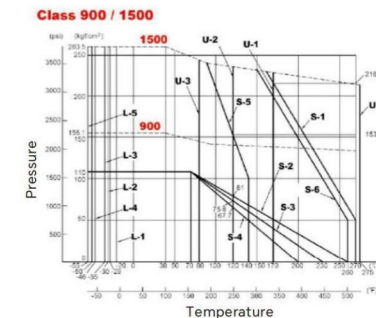
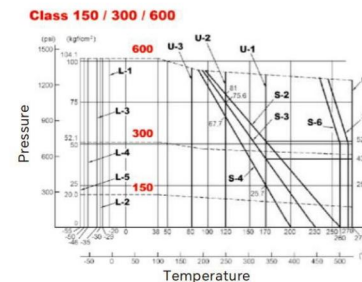
Type of seat

- S-1: PEEK
- S-2: Carbon fiber+PTFE
- S-3: (1) Glass fiber+PTFE
(2) Glass fiber+PTFE+MoS2
- S-4: Virgin PTFE
- S-5: Nylon + MoS2

Type of seat

- U-1: (1) FPM (for stainless steel valves)
(2) Low temperature FPM
- U-2: (1) EPDM (2) ECO
- U-3: (1) NBR (2) Low temperature NBR
- U-4: Kalrez (6375)

- L-1: FPM (for stainless steel valves)
- L-2: (1) EPDM (2) NBR
- L-3: Low temperature FPM
- L-4: ECO
- L-5: Low temperature NBR



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, ASME B16.34 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	K
Model	Size	Pressure rating	Connection	Actuation	Body material	Seals	Trim material	Trim coating	Bolts and nuts	Special requirements
Q10	10	300	RF	G	C1	NV	067	A3	B2	BZ

EXAMPLE

Q10 orbit ball valve, 10" full port, ASME CLASS 150, Flange RF, Gear operation, A216 WCB body, NYLON/VITON-B seals, A216 WCB ball, A182 F304 stem, 17-4PH seat retainer, ball overlay STL/ stem nitriding/support ring not treated trim coating, B7/2H galvanized bolts&nuts.

A	Model	
Code	Type	Code
Q10	Q10 series orbit ball valve	Q11

B	Size	
Code	IN(DN)	Code
2	2(50)	3
12	12(300)	14

C	Pressure rating	
Code	Type	Code
150	ASME CLASS 150	1.6P
300	ASME CLASS 300	3.2P
400	ASME CLASS 400	6.4P
600	ASEM CLASS 600	8P
900	ASEM CLASS 900	10P
1500	ASEM CLASS 1500	16P
2500	ASME CLASS 2500	25P
		32P

E	Actuation	
Code	Type	Code
B	Bare stem	S
W	Wrench	D
G	Gear	M
E	Electric	N
H	Hydraulic	X

F	Body material	
Code	Body	Bonnet
C1	A216 WCB	A216 WCB
C2	A216 WCC	A216 WCC
L1	A352 LCB	A352 LCB
L2	A352 LCC	A352 LCC
S0	A351 CF8	A351 CF8

G	Seals	
Code	Seat	O-ring
VV	VITON-B(2)	VITON-B
VH	VITON-B(2)	HNBR
GG	VITON-GF(2)	VITON-GF
VT	VITON-B(2)	VITON-GLT
TT	VITON-GLT(2)	VITON-GLT
HH	HNBR(2)	HNBR
FV	RPTFE	VITON-B
FH	RPTFE	HNBR
FG	RPTFE	VITON-GF
FT	RPTFE	VITON-GLT
FQ	RPTFE	PTFE-ElgiloySpring
DV	DEVLON	VITON-B

H	Trim material	
Code	Ball	Seat retainer
066	A216 WCB	A105
940	A216 WCC	A105
067	A216 WCB	A182 F304
941	A216 WCC	A182 F304
945	A352 LCB	A350 Lf2
950	A352 LCC	A182 F316

I	Trim coating	
Code	Ball	Seat retainer
0	N/A	N/A
A3	Stelife*	N/A
C3	Stelife*	ENP
C4	Nickel*	ENP
X	X	Others

J	Bolts & Nuts	
Code	Bolts	Nuts
B1	A193 B7M	A194 2HM
B2	A193 B7	A194 2H
B3	A320 L7M	A194 7M
B4	A320 L7	A194 Gr.7
B5	A193 B16	A194 Gr.7
B6	A320 L7	A194 Gr.4
N5	A320 B8M CL.2	A194 Gr.8M-S1
N6	A320 B8M CL.1	A194 Gr.8MA
XX	Others	Others

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.