



CHENGFENG
FLOW-TECH GROUP



PRESSURE BALANCED PLUG VALVE



CHENGDU CHENGGAO VALVE CO., LTD.

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

PROFILE

CHENGFENG FLOW-TECH GROUP

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"Class600, 48"Class600 and 48"Class900, 56"Class900 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 Class900 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 Class900 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 CHENGFENG 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 ChengfengFlow-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 25000 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 API6D, API6A, TS, ISO9001, ISO14001, OHSAS 18001, CE, CU-TR, API6FA, API607 fire safety certification and other certificates.

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PRODUCT SPECIFICATIONS AND DESIGN STANDARDS

Product range

Structure type		Short pattern		Regular pattern							Venturi type					
Size	Class	Class 150	Class 300	Class 150	Class 300	Class 400	Class 600	Class 900	Class 1500	Class 2500	Class 150	Class 300	Class 400	Class 600	Class 900	Class 1500
		(PN16,20)	(PN25,50)	(PN16,20)	(PN25,50)	(PN63)	(PN100)	(PN150)	(PN260)	(PN420)	(PN16,20)	(PN25,50)	(PN63)	(PN100)	(PN150)	(PN260)
DN50	2"	●	●			●	●	●	●	●						
DN65	2 ½"	●	●			●	●	●	●	●						
DN80	3"	●	●			●	●	●	●	●						
DN100	4"	●	●			●	●	●	●	●						
DN150	6"	●	●	●	●	●	●	●	●	●		●	●	●	●	●
DN200	8"	●	●	●	●	●	●	●	●	●		●	●	●	●	●
DN250	10"	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DN300	12"	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DN350	14"				●	●	●				●	●	●	●	●	●
DN400	16"				●	●	●				●	●	●	●	●	●
DN450	18"				●	●	●				●	●	●	●	●	●
DN500	20"				●	●	●				●	●	●	●	●	●
DN550	22"				●	●	●					●	●	●		
DN600	24"				●	●	●				●	●	●	●	●	●
DN650	26"				●						●	●	●	●		
DN700	28"				●							●	●	●		
DN750	30"				●						●	●	●	●		
DN800	32"				●							●	●	●		
DN850	34"				●							●	●	●		
DN900	36"				●						●	●	●	●		

Note: 1. When ordering, please follow the product range table, where green represents the priority series and orange represents the second series; if it exceeds above table, please consult the factory directly!

Standard & Specification

Design standard	API 6D、ASME B16.34、API 599、GB/T 19672、GB/T 12224、GB/T 22130
Test standard	ISO5208、API 598、GB/T 19672、GB/T 13927
End connection	ASME B16.5、ASME B16.25、ASME B16.47、GB/T9113、HG20592 etc.
Face to face	ASME B16.10、API 6D、GB/T 19672、GB/T 12221
Fire test	API 6FA、API 607
Anti-corrosion, acid-resisting*	NACE MR0103、NACE MR0175、ISO 15156

*Optional, available upon request.

DESIGN FEATURES

Slip ring connection design

The stem and the plug are connected by a slip ring, which can reduce the concentricity error between the center of the stem and the taper surface of the plug, and improve the stress conditions and operating performance of the stem.

Multiple packing seal design

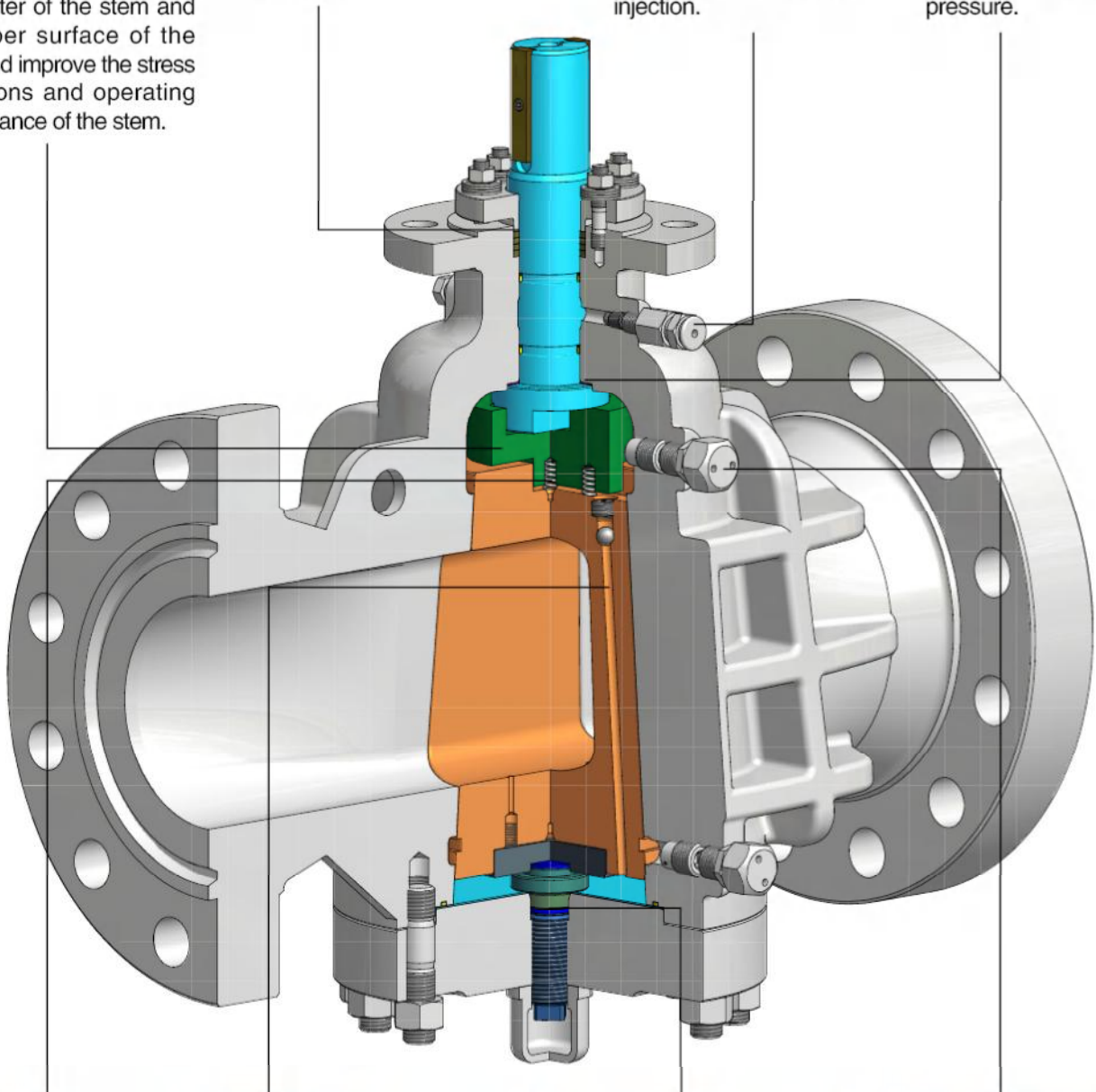
The stem adopts O-ring + graphite packing multiple seals, which can play a fire safe role.

Stem grease design

When the stem seal fails, emergency sealing can be performed through online grease injection.

Blow-out proofstem design

The stem adopts blow-out proof design, and the stem packing can be replaced under pressure.



Anti-static design

In order to prevent static electricity from causing fire, a coil spring is used to connect the plug and the body to form a closed circuit. At the same time, it can also play a pre-tightening role on the plug to prevent the valve from getting stuck.

Side pressure balance hole design

The balancing hole is hidden inside the plug and is not in direct contact with the medium. It is mainly used to balance the pressure in the upper and lower chambers of the body and effectively prevent the plug from getting stuck in the body.

Adjustment and operation of plug

An adjustment plate is embedded in the bonnet. The adjustment plate and the plug are completely isolated by a metal diaphragm. The plug can be adjusted to the best position by adjusting the screw under the plate.

Valve seal grease injection design

The sealing grease is injected into the upper cavity of the body through the grease injection valve. Under the action of pressure, the sealing grease adheres to the sealing surface by filling the space. Normally, in order to ensure sufficient adhesion of sealing grease, $\geq$ NPS6 is equipped with a grease injection valve at the annular groove.

FEATURE DESCRIPTION

Plug balanced

CHV's pressure-balanced plug valve can prevent the plug from getting stuck. Plug sticking is a common phenomenon in ordinary plug valves, mainly caused by the excessive pressure difference between the large and small ends of the plug. As shown in Figure 1, the resultant force shown by the arrow will cause an interference fit between the plug and the valve cavity, causing the plug to get stuck. Even when the pipeline pressure is reduced, the plug still cannot move.

To prevent the plug from getting stuck, a regular plug valve applies a force to the upper end of the plug by injecting sealing grease into the upper chamber of the body, thereby balancing the upward force generated from the larger end of the plug. However, this requires frequent injection of sealing grease to balance the pressure difference between the upper and lower chambers of the valve.

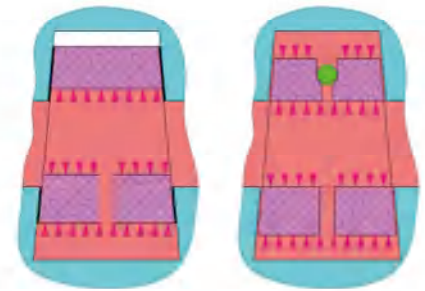


Figure1

Figure2

Pressure balance

Usually, a one-way valve is installed at the upper end of the plug, as shown in Figure 2. When the pressure in the lower chamber of the body is greater than the pressure in the upper chamber, the one-way valve allows pipeline pressure to enter the upper chamber of the body, producing a downward force on the upper end of the plug, achieving a balanced effect, preventing the plug from getting stuck, and no longer requiring frequent injection of sealing grease to maintain smooth operation of the valve.

Lateral pressure balance

In order to improve the reliability of pipelines with particulate impurities, CHV has carried out corresponding structural optimization and developed a protected side pressure balance structure (as shown in Figure 3). This design prevents the balance hole from directly contacting the pipeline medium, preventing pipeline impurities from entering the valve chamber, thereby improving the service life of the valve.



Figure3

Figure4

Coil spring preload

This design (as shown in Figure 4) can apply preload to the plug to prevent the plug from getting stuck in the event of pressure or temperature transients. This ensures flexibility in piping configuration regardless of the valve installation orientation.

Injection instructions

CHV does not require spare parts in design, and the simplest maintenance method is to quickly inject sealing grease into the pipeline under pressure (as shown in Figure 5). At the same time, compared with other plug valves, our pressure balanced plug valve can ensure zero leakage and smooth operation at the lowest grease injection frequency. CHV's pressure balanced plug valve uses high viscosity fluid sealing grease, which is usually selected according to the medium and temperature. In general, it is not recommended to use commercial sealing grease or lubricants without our authorization, as it may damage the function of the valve and even cause valve jamming.

Our company's pressure balanced plug valve can ensure the sealing and low torque characteristics of the valve after injecting sealing grease. Due to its excellent lubrication performance and oil film strength, sealing grease can enhance the sealing function of valves and reduce friction between the body and the plug surface, providing a very effective seal, even at higher pipeline pressures.

In addition, the selection of sealing grease should be based on the working medium and working temperature. The correct selection of sealing grease can reduce the frequency of grease injection and extend the service life of valves. If there are any doubts about the selection of sealing grease, our company can provide more detailed services.

Stem grease injection

Cavity grease injection

Oil tank grease injection

Sealing grease distributed on the taper surface of the plug

Ring groove grease injection

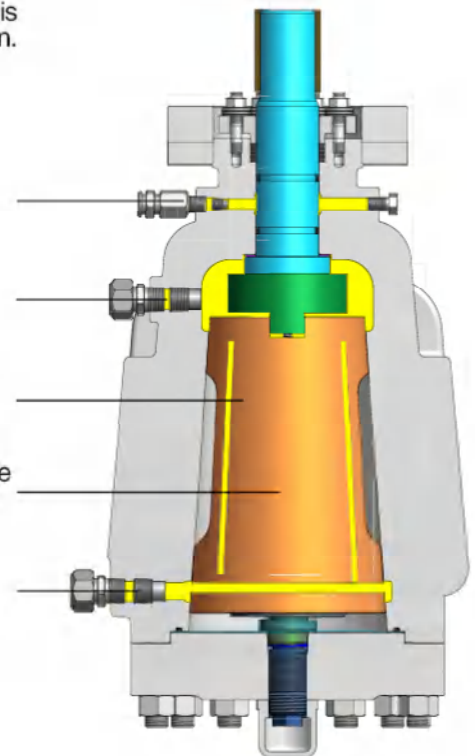


Figure5

OPTIONAL FEATURES

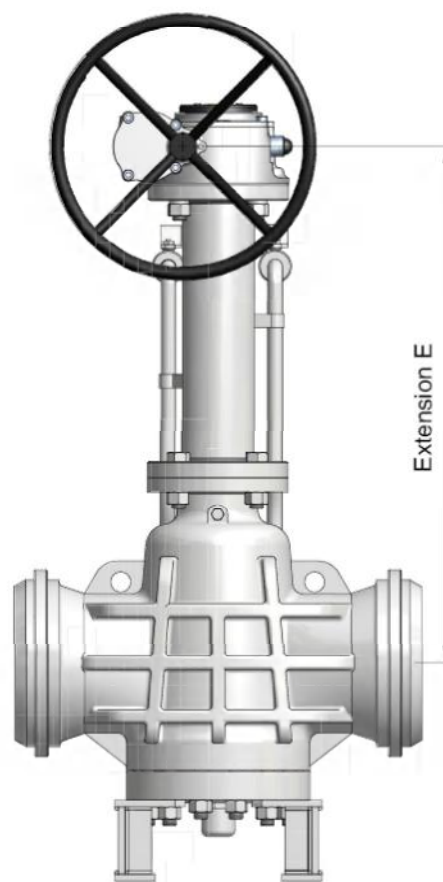
Union

In order to ensure the weldability of the valve and the pipeline, CHV can weld the union to the body of the pressure balanced plug valve during the manufacturing process. The customer only needs to provide the material, specifications and model of the pipeline.

Actuator

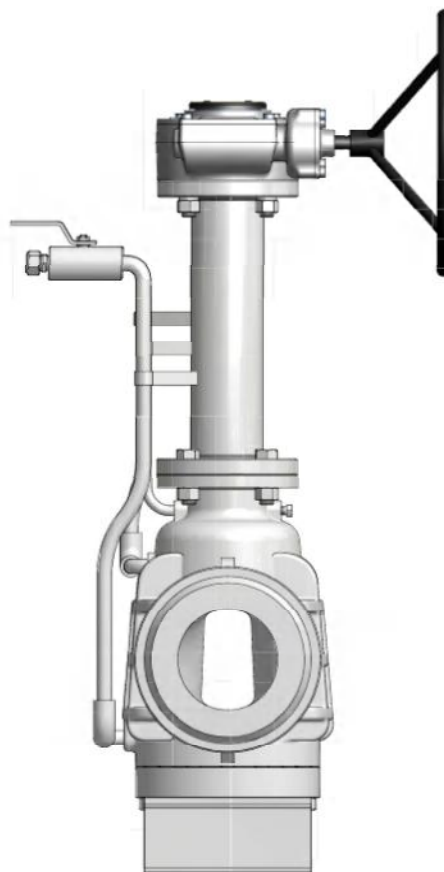
Our company's pressure-balanced plug valves all adopt ISO5211 standard connection plate design to facilitate the installation of electric, hydraulic or pneumatic actuators.

The assembly of the actuator and valve can be carried out in the factory. The assembly and debugging of the valve can be completed under the supervision and guidance of factory technical personnel.



Optional extended height

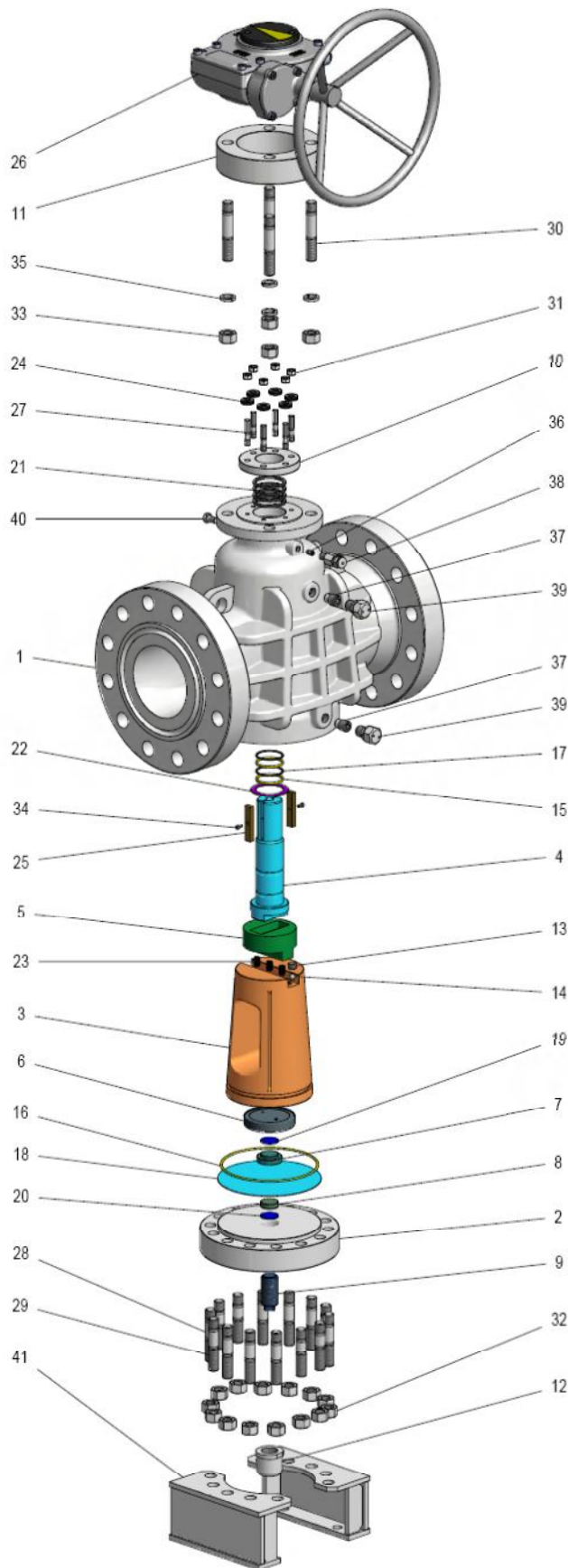
Our company's pressure-balanced plug valves can be designed with an extended stem so that the valve can be buried underground and operated above ground by extending the stem. At the same time, sealing grease can be injected into the valve cavity and the stem with the help of a grease injection pipe. When ordering a valve, the user must specify the distance from the center of the valve to the center of the handwheel.



Special application

For pressure-balanced plug valves used in special working conditions, you can contact us directly. We can provide solutions that meet the working conditions according to customer requirements.

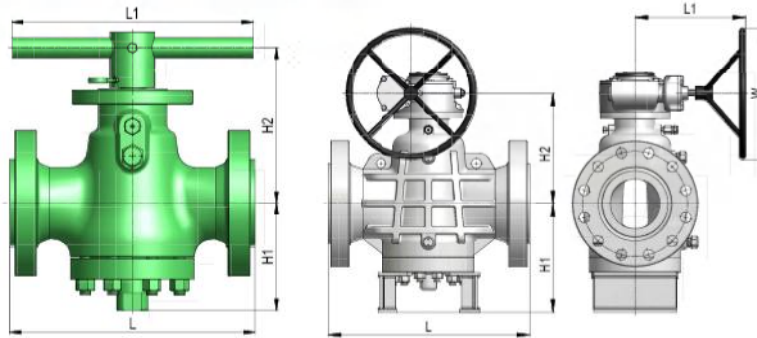
X10 SERIES PARTS LIST



Pressure Balanced Plug Valve Parts List

1	Body
2	Bonnet
3	Plug
4	Stem
5	Connector
6	Spacer
7	Support block
8	Adjustment plate
9	Adjustment screw
10	Packing gland
11	Adapter plate
12	End cap
13	Balance cap
14	Steel ball
15	O-ring
16	O-ring
17	Lock Ring
18	Diaphragm
19	Thrust bearing
20	Thrust bearing
21	Rectangular packing
22	Thrust bearing
23	Coil spring
24	Belleville spring
25	Key
26	Gear
27	Double-end stud
28	Double-end stud
29	Double-end stud
30	Double-end stud
31	Hex nut
32	Hex nut
33	Hex nut
34	Hex-Socket bolt
35	Spring washer
36	Check valve
37	Check valve
38	Sealant Injector
39	Sealant Injector
40	Plug
41	Leg

DIMENSION AND WEIGHT



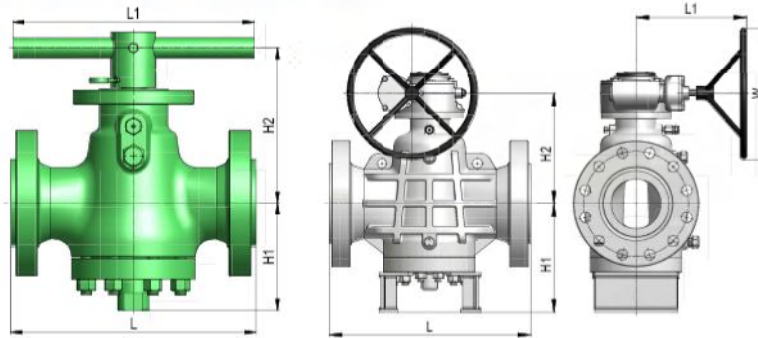
ASME CLASS 150

Full port NPS DN	Short pattern								Regular pattern								Venturi pattern							
	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight* Lb/kg	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight* Lb/kg	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight* Lb/kg
2	7.00	10.50	7.50	4.92	6.50	-	11.02	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50	178	267	191	125	165	-	280	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 1/2	7.50	12.00	8.00	5.71	7.48	-	11.02	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65	191	305	203	145	190	-	280	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	8.00	13.00	8.50	6.69	7.87	-	15.75	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80	203	330	216	170	200	-	400	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9.00	14.00	9.50	7.28	8.35	-	25.59	121	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	229	356	241	185	212	-	650	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	10.50	8.00	11.00	10.04	11.81	15.75	15.35	183	15.50	-	16.00	10.24	11.81	15.75	15.35	265	-	-	-	-	-	-	-	-
150	267	457	279	255	300	400	390	83	394	①	406	260	300	400	390	120	-	-	-	-	-	-	-	-
8	11.50	20.50	12.00	11.02	12.80	23.62	15.35	364	18.00	①	18.50	13.78	11.81	23.62	15.35	507	-	-	-	-	-	-	-	-
200	292	521	305	280	325	600	390	165	457	①	470	350	300	600	390	230	-	-	-	-	-	-	-	-
10	13.00	22.00	13.50	12.00	14.37	27.56	18.31	551	21.00	①	21.50	13.78	16.54	27.56	18.31	639	21.00	22.00	21.50	13.07	15.47	27.56	16.81	661
250	330	559	343	305	365	700	465	250	533	①	546	335	420	700	465	290	533	559	546	332	393	700	427	300
12	14.00	25.00	14.50	13.07	14.37	23.62	15.35	794	24.00	①	24.50	17.91	18.70	27.56	18.31	926	24.00	25.00	24.50	17.91	19.37	27.56	16.81	939
300	356	635	368	332	365	600	390	360	610	①	622	455	475	700	465	420	610	635	622	455	492	700	427	426
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27.00	27.00	27.50	18.11	17.91	27.56	21.65	1235
350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	686	686	699	460	455	700	550	560
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00	30.00	30.50	18.50	16.93	19.69	19.88	1411
400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	762	762	775	470	430	500	505	640
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34.00	34.00	34.50	19.09	17.24	31.50	22.20	2028
450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	864	864	876	485	438	800	564	920
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36.00	36.00	36.50	20.06	21.65	27.56	22.20	2622
500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	914	914	927	510	555	700	564	1280
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42.00	42.00	42.50	20.26	21.77	25.59	22.20	3638
600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1067	1067	1080	515	553	650	564	1650
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
650	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①

ASME CLASS 300

Full port	Short pattern								Regular pattern								Venturi pattern							
NPS DN	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight* Lb/kg	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight* Lb/kg	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight* Lb/kg
2	8.50	10.50	9.13	5.12	6.89	-	11.02	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50	216	267	232	130	175	-	280	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2½	9.50	12.00	10.13	5.71	7.68	-	11.02	95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65	241	305	257	145	195	-	280	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	11.13	13.00	11.75	6.30	8.27	-	15.75	115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80	283	330	298	160	210	-	400	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	12.00	14.00	12.63	7.28	8.35	-	25.59	165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	305	356	321	185	212	-	650	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	15.88	18.00	16.50	10.04	11.81	15.75	15.35	232	15.88	①	16.50	12.60	11.22	23.62	15.35	331	15.88	18.00	16.50	11.02	9.84	23.62	15.35	291
150	403	457	419	255	300	400	390	105	403	①	419	320	285	600	390	150	403	457	419	280	250	600	390	132
8	16.50	20.50	17.13	11.02	12.80	23.62	15.35	441	19.75	①	20.38	13.98	13.39	23.62	16.73	613	16.50	20.50	17.13	12.60	10.63	23.62	15.35	507
200	419	521	435	280	325	600	390	200	502	①	518	355	340	600	425	278	419	521	435	320	270	600	390	230
10	18.00	22.00	18.63	12.00	14.37	27.56	18.31	672	22.38	①	23.00	16.54	16.54	27.56	18.31	875	18.00	22.00	18.63	16.14	14.96	23.62	16.81	805
250	457	559	473	305	365	700	465	305	568	①	584	420	420	700	465	397	457	559	473	410	380	600	427	365
12	19.75	25.00	20.38	13.07	14.37	23.62	15.35	985	①	①	①	①	①	①	①	①	19.75	25.00	20.38	17.72	16.54	27.56	18.31	1345
300	502	635	518	332	365	600	390	447	①	①	①	①	①	①	①	①	502	635	518	450	420	700	465	610
14	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①	30.00	30.00	30.63	19.49	17.13	31.50	27.17	1819
350	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①	762	762	778	495	435	800	690	825
16	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①	33.00	33.00	33.63	20.47	17.32	31.50	21.34	2187
400	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①	838	838	854	520	440	800	542	992
18	-	-	-	-	-	-	-	-	36.00	①	36.63	21.65	20.47	31.50	22.20	2932	36.00	36.00	36.63	21.14	20.20	31.50	22.20	2663
450	-	-	-	-	-	-	-	-	914	①	930	550	520	800	564	1330	914	914	930	537	513	800	564	1208
20	-	-	-	-	-	-	-	-	39.00	①	39.75	24.61	21.65	27.56	22.20	4070	39.00	39.00	39.75	24.01	21.46	27.56	22.20	3670
500	-	-	-	-	-	-	-	-	991	①	1010	625	550	700	564	1846	991	991	1010	610	545	700	564	1678
22	-	-	-	-	-	-	-	-	43.00	①	43.88	25.08	22.17	27.56	22.87	4883	43.00	43.00	43.88	24.61	21.85	27.56	22.87	4438
550	-	-	-	-	-	-	-	-	1092	①	1114	637	563	700	581	2215	1092	1092	1114	625	555	700	581	2013
24	-	-	-	-	-	-	-	-	45.00	①	45.88	26.18	22.52	27.56	22.87	5494	45.00	45.00	45.88	25.59	22.24	27.56	22.87	4993
600	-	-	-	-	-	-	-	-	1143	①	1165	665	572	700	581	2492	1143	1143	1165	650	565	700	581	2265
26	-	-	-	-	-	-	-	-	49.00	①	50.00	27.28	25.00	27.56	22.87	7430	49.00	49.00	50.00	26.65	24.41	27.56	22.87	6746
650	-	-	-	-	-	-	-	-	1245	①	1270	693	635	700	581	3370	1245	1245	1270	677	620	700	581	3060
28	-	-	-	-	-	-	-	-	53.00	①	54.00	28.66	25.67	27.56	24.41	11133	53.00	53.00	54.00	28.15	25.08	27.56	24.41	10119
700	-	-	-	-	-	-	-	-	1346	①	1372	728	652	700	620	5050	1346	1346	1372	715	637	700	620	4590
30	-	-	-	-	-	-	-	-	55.00	①	56.00	30.12	26.42	27.56	24.41	17741	55.00	55.00	56.00	29.45	25.67	27.56	24.41	16127
750	-	-	-	-	-	-	-	-	1397	①	1422	765	671	700	620	8047	1397	1397	1422	748	652	700	620	7315
32	-	-	-	-	-	-	-	-	60.00	①	61.13	30.79	27.44	27.56	24.41	18966	60.00	60.00	61.13	30.12	26.50	27.56	24.41	18062
800	-	-	-	-	-	-	-	-	1524	①	1553	782	697	700	620	8603	1524	1524	1553	765	673	700	620	8193
34	-	-	-	-	-	-	-	-	64.00	①	65.13	32.87	28.15	31.50	25.67	20106	64.00	64.00	65.13	32.01	27.40	31.50	25.67	19147
850	-	-	-	-	-	-	-	-	1626	①	1654	835	715	800	652	9120	1626	1626	1654	813	696	800	652	8685
36	-	-	-	-	-	-	-	-	68.00	①	69.13	34.37	29.53	31.50	25.67	21854	68.00	68.00	69.13	33.46	28.54	31.50	25.67	20238
900	-	-	-	-	-	-	-	-	1727	①	1756	873	750	800	652	9913	1727	1727	1756	850	725	800	652	9180

DIMENSION AND WEIGHT



ASME CLASS 400

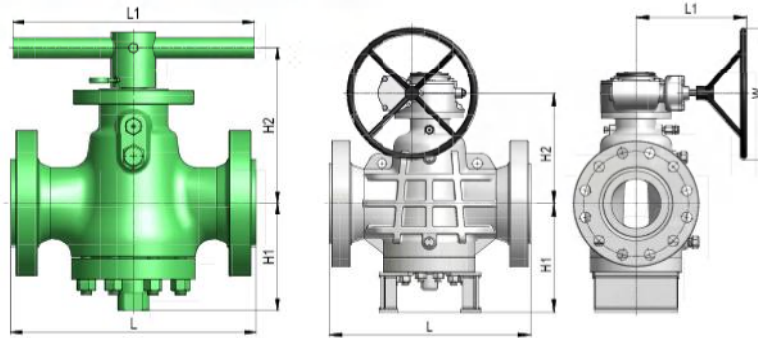
Full port	Regular pattern								Venturi pattern							
NPS	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight*	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight*
DN								lb/Kg								Lb/kg
2	11.50	11.50	11.63	5.00	7.09	—	23.62	55	—	—	—	—	—	—	—	—
50	292	292	295	127	180	—	600	25	—	—	—	—	—	—	—	—
2½	13.00	13.00	13.13	5.91	9.13	—	29.53	106	—	—	—	—	—	—	—	—
65	330	330	333	150	232	—	750	48	—	—	—	—	—	—	—	—
3	14.00	14.00	14.13	5.91	9.13	—	29.53	137	—	—	—	—	—	—	—	—
80	356	356	359	150	232	—	750	62	—	—	—	—	—	—	—	—
4	16.00	16.00	16.14	7.09	9.45	12.60	9.10	196	—	—	—	—	—	—	—	—
100	406	406	410	187	240	320	230	89	—	—	—	—	—	—	—	—
6	19.50	19.50	19.63	11.81	13.84	15.75	11.14	430	19.50	19.50	19.63	11.34	9.69	23.62	13.78	326
150	495	495	498	300	351.5	400	283	195	495	495	498	288	246	600	350	148
8	23.50	23.50	23.63	14.92	14.45	15.75	13.54	945	23.50	23.50	23.63	12.32	15.16	23.62	15.04	530
200	597	597	600	379	367	400	344	428	597	597	600	313	385	600	382	240
10	26.50	26.50	26.63	17.76	17.83	15.75	12.91	1272	26.50	26.50	26.63	14.61	15.75	23.62	15.04	926
250	673	673	676	451	453	400	328	577	673	673	676	371	400	600	382	420
12	30.00	30.00	30.13	18.90	17.40	15.75	13.54	1698	30.00	30.00	30.13	17.72	18.39	25.59	22.95	1334
300	762	762	765	480	442	400	344	770	762	762	765	450	467	650	583	605
14	32.50	32.50	32.63	19.69	20.67	23.62	15.04	2205	32.50	32.50	32.63	19.21	19.37	25.59	22.95	1875
350	826	826	829	500	525	600	382	1000	826	826	829	488	492	650	583	850
16	35.50	35.50	35.63	20.75	20.67	27.56	20.16	2712	35.50	35.50	35.63	20.75	20.67	27.56	20.16	2590
400	902	902	905	527	525	700	512	1230	902	902	905	527	525	700	512	1175
18	①	①	①	①	①	①	①	①	38.50	38.50	38.63	20.09	22.24	27.56	24.80	3395
450	—	—	—	—	—	—	—	—	978	978	981	561	565	700	630	1540
20	41.50	41.50	41.75	24.02	25.59	31.50	24.02	5159	41.50	41.50	41.75	23.03	26.61	31.50	24.02	4740
500	1054	1054	1060	610	650	800	610	2340	1054	1054	1060	585	676	800	610	2150
22	①	①	①	①	①	①	①	①	45.00	45.00	45.63	23.50	27.36	31.50	24.02	5811
550	—	—	—	—	—	—	—	—	1143	1143	1159	597	695	800	610	2636
24	48.50	48.50	48.88	24.41	28.82	31.50	24.02	8360	48.50	48.50	48.88	23.90	28.15	31.50	24.02	6371
600	1232	1232	1241	620	732	800	610	3792	1232	1232	1241	607	715	800	610	2890
26	—	—	—	—	—	—	—	—	51.50	51.50	52.00	31.30	35.59	31.50	24.02	9943
650	—	—	—	—	—	—	—	—	1308	1308	1321	795	904	800	610	4510
28	—	—	—	—	—	—	—	—	55.00	55.00	55.50	31.30	35.59	31.50	24.02	10785
700	—	—	—	—	—	—	—	—	1397	1397	1410	795	904	800	610	4892
30	—	—	—	—	—	—	—	—	60.00	60.00	60.50	31.30	35.59	31.50	24.02	13029
750	—	—	—	—	—	—	—	—	1524	1524	1537	795	904	800	610	5910
32	—	—	—	—	—	—	—	—	65.00	65.00	65.63	34.65	38.00	31.50	24.02	15476
800	—	—	—	—	—	—	—	—	1651	1651	1667	880	965	800	610	7020
34	—	—	—	—	—	—	—	—	70.00	70.00	70.63	37.20	39.76	25.40	32.28	18107
850	—	—	—	—	—	—	—	—	1778	1778	1794	945	1010	1000	820	8213
36	—	—	—	—	—	—	—	—	74.00	74.00	74.63	38.11	42.68	25.40	32.28	19456
900	—	—	—	—	—	—	—	—	1880	1880	1895	968	1084	1000	820	8825

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

Note: For dimensions and 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.

DIMENSION AND WEIGHT



ASME CLASS 600

Full port	Regular pattern								Venturi pattern							
NPS DN	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight* lb/Kg	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight* Lb/kg
2	11.50	11.50	11.63	5.00	7.09	-	23.62	55	-	-	-	-	-	-	-	-
50	292	292	295	127	180	-	600	25	-	-	-	-	-	-	-	-
2 1/2	13.00	13.00	13.13	5.91	9.13	-	29.53	106	-	-	-	-	-	-	-	-
65	330	330	333	150	232	-	750	48	-	-	-	-	-	-	-	-
3	14.00	14.00	14.13	5.91	9.13	-	29.53	137	-	-	-	-	-	-	-	-
80	356	356	359	150	232	-	750	62	-	-	-	-	-	-	-	-
4	17.00	17.00	17.13	7.09	9.45	12.60	9.10	209	-	-	-	-	-	-	-	-
100	432	432	435	187	240	320	230	95	-	-	-	-	-	-	-	-
6	22.00	22.00	22.13	11.81	13.84	15.75	11.14	485	22.00	22.00	22.13	11.34	9.69	23.62	13.78	368
150	559	559	562	300	351.5	400	283	220	559	559	562	288	246	600	350	167
8	26.00	26.00	26.13	14.92	14.45	15.75	13.54	1043	26.00	26.00	26.13	12.32	15.16	23.62	15.04	582
200	660	660	664	379	367	400	344	473	660	660	664	313	385	600	382	264
10	31.00	31.00	31.13	17.76	17.83	15.75	12.91	1488	31.00	31.00	31.13	14.61	15.75	23.62	15.04	1076
250	787	787	791	451	453	400	328	675	787	787	791	371	400	600	382	488
12	33.00	33.00	33.13	18.90	17.40	15.75	13.54	1865	33.00	33.00	33.13	17.72	18.39	25.59	22.95	1462
300	838	838	841	480	442	400	344	846	838	838	841	450	467	650	583	663
14	35.00	35.00	35.12	19.69	20.67	23.62	15.04	2381	35.00	35.00	35.13	19.21	19.37	25.59	22.95	2006
350	889	889	892	500	525	600	382	1080	889	889	892	488	492	650	583	910
16	39.02	39.02	39.13	20.75	20.67	27.56	20.16	2976	39.00	39.00	39.13	20.75	20.67	27.56	20.16	2844
400	991	991	994	527	525	700	512	1350	991	991	994	527	525	700	512	1290
18	43.00	43.00	43.13	20.09	22.24	27.56	24.80	3777	43.00	43.00	43.13	20.09	22.24	27.56	24.80	3777
450	1092	1092	1095	561	565	700	630	1713	1092	1092	1095	561	565	700	630	1713
20	47.01	47.01	47.24	24.02	25.59	31.50	24.02	5842	47.00	47.00	47.25	23.03	26.61	31.50	24.02	5335
500	1194	1194	1200	610	650	800	610	2650	1194	1194	1200	585	676	800	610	2420
22	51.00	51.00	51.38	23.50	27.36	31.50	24.02	6296	51.00	51.00	51.38	23.50	27.36	31.50	24.02	6296
550	1295	1295	1305	597	695	800	610	2856	1295	1295	1305	597	695	800	610	2856
24	55.00	55.00	55.39	24.41	28.82	31.50	24.02	9480	55.00	55.00	55.38	23.90	28.15	31.50	24.02	7022
600	1397	1397	1407	620	732	800	610	4300	1397	1397	1407	607	715	800	610	3185
26	57.00	57.00	57.50	31.30	35.59	31.50	24.02	10913	57.00	57.00	57.50	31.30	35.59	31.50	24.02	10913
650	1448	1448	1461	795	904	800	610	4950	1448	1448	1461	795	904	800	610	4950
30	65.00	65.00	65.50	31.30	35.59	31.50	24.02	14116	65.00	65.00	65.50	31.30	35.59	31.50	24.02	14116
750	1651	1651	1664	795	904	800	610	6403	1651	1651	1664	795	904	800	610	6403
32	70.00	70.00	70.63	34.65	38.00	31.50	24.02	16658	70.00	70.00	70.63	34.65	38.00	31.50	24.02	16658
800	1778	1778	1794	880	965	800	610	7556	1778	1778	1794	880	965	800	610	7556
34	76.00	76.00	76.63	37.20	39.76	25.40	32.28	19654	76.00	76.00	76.63	37.20	39.76	25.40	32.28	19654
850	1930	1930	1946	945	1010	1000	820	8915	1930	1930	1946	945	1010	1000	820	8915
36	82.00	82.00	82.63	38.11	42.68	25.40	32.28	21552	82.00	82.00	82.63	38.11	42.68	25.40	32.28	21552
900	2083	2083	2099	968	1084	1000	820	9776	2083	2083	2099	968	1084	1000	820	9776

ASME CLASS 900

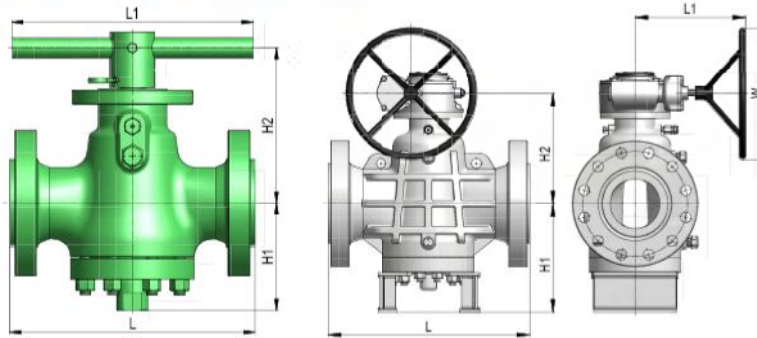
Full port	Regular pattern								Venturi pattern							
NPS DN	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight* lb/Kg	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight* Lb/kg
2	14.50	①	14.63	5.94	7.87	-	15.75	99	-	-	-	-	-	-	-	-
50	368	①	371	151	200	-	400	45	-	-	-	-	-	-	-	-
2 1/2	16.50	①	16.63	6.22	8.90	-	25.59	139	-	-	-	-	-	-	-	-
65	419	①	422	158	226	-	650	63	-	-	-	-	-	-	-	-
3	15.00	15.00	15.13	6.42	9.84	-	25.59	172	-	-	-	-	-	-	-	-
80	381	381	384	163	250	-	650	78	-	-	-	-	-	-	-	-
4	18.00	18.00	18.13	7.28	9.84	-	9.10	276	-	-	-	-	-	-	-	-
100	457	457	460	185	250	-	230	125	-	-	-	-	-	-	-	-
6	24.00	24.00	24.13	11.89	15.98	27.56	16.61	723	24.00	24.00	24.13	11.69	15.67	27.56	16.61	650
150	610	610	613	302	406	700	422	328	610	610	613	297	398	700	422	295
8	29.00	29.00	29.13	14.37	16.73	27.56	16.61	1243	29.00	29.00	29.13	14.17	16.54	27.56	16.61	1120
200	737	737	740	365	425	700	422	564	737	737	740	360	420	700	422	508
10	33.00	33.00	33.13	14.57	16.38	27.56	17.20	2275	33.00	33.00	33.13	14.57	16.38	27.56	17.20	2275
250	838	838	841	370	416	700	437	1032	838	838	841	370	416	700	437	1032
12	38.00	38.00	38.13	17.32	16.38	27.56	21.93	2844	38.00	38.00	38.13	17.32	16.38	27.56	21.93	2844
300	965	965	968	440	416	700	557	1290	965	965	968	440	416	700	557	1290
14	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
350	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
16	-	-	-	-	-	-	-	-	44.50	44.50	44.88	23.27	27.05	27.56	24.80	5423
400	-	-	-	-	-	-	-	-	1130	1130	1140	591	687	700	630	2460
18	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
450	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
20	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
500	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
24	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
600	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①

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

Note: For dimensions and 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.

DIMENSION AND WEIGHT



ASME CLASS 1500

Full port NPS DN	Regular pattern								Venturi pattern							
	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight* lb/Kg	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight* Lb/kg
2	14.50	①	14.63	6.10	8.97	23.62	13.39	198	-	-	-	-	-	-	-	-
50	368	①	371	155	228	600	340	90	-	-	-	-	-	-	-	-
2½	16.50	①	16.63	6.77	9.45	23.62	13.39	265	-	-	-	-	-	-	-	-
65	419	①	422	172	240	600	340	120	-	-	-	-	-	-	-	-
3	18.50	18.50	18.63	7.78	10.00	23.62	13.39	331	-	-	-	-	-	-	-	-
80	470	470	473	190	254	600	340	150	-	-	-	-	-	-	-	-
4	21.50	21.50	21.63	9.06	11.34	23.62	16.61	430	-	-	-	-	-	-	-	-
100	546	546	549	230	288	600	422	195	-	-	-	-	-	-	-	-
6	27.75	27.75	28.00	13.78	12.87	23.62	22.35	882	27.75	27.75	28.00	13.00	15.61	27.56	16.57	827
150	705	705	711	350	327	600	593	400	705	705	711	330	396.5	700	421	375
8	32.75	32.75	33.13	16.54	19.88	27.56	21.10	2154	32.75	32.75	33.13	16.42	19.53	27.56	21.10	2055
200	832	832	841	420	505	700	536	977	832	832	841	417	496	700	536	932
10	39.00	39.00	39.38	19.09	20.35	27.56	24.37	3880	39.00	39.00	39.38	18.62	20.08	27.56	24.37	3695
250	991	991	1000	485	517	700	619	1760	991	991	1000	473	510	700	619	1676
12	44.50	44.50	45.13	19.69	21.06	27.56	24.37	5053	44.50	44.50	45.13	18.70	20.75	27.56	24.37	4813
300	1130	1130	1146	500	535	700	619	2292	1130	1130	1146	475	527	700	619	2183
14	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
350	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
16	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
400	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
18	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
450	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
20	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
500	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
24	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①
600	-	-	-	-	-	-	-	-	①	①	①	①	①	①	①	①

ASME CLASS 2500

Full port NPS DN	Regular pattern								Venturi pattern							
	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight* lb/Kg	L-RF	L-BW	L-BJ	H1	H2	W	L1	Weight* Lb/kg
2	17.75	①	17.88	7.68	9.25	23.62	13.78	331	-	-	-	-	-	-	-	-
50	451	①	454	195	235	600	350	150	-	-	-	-	-	-	-	-
2½	20.00	①	20.25	8.86	10.16	23.62	13.78	485	-	-	-	-	-	-	-	-
65	508	①	514	225	258	600	350	220	-	-	-	-	-	-	-	-
3	22.75	①	23.00	10.04	11.06	23.62	13.86	635	-	-	-	-	-	-	-	-
80	578	①	584	255	281	600	352	288	-	-	-	-	-	-	-	-
4	26.50	①	26.88	9.65	13.19	23.62	13.86	1764	-	-	-	-	-	-	-	-
100	673	①	683	245	335	600	352	800	-	-	-	-	-	-	-	-
6	36.00	①	36.50	16.14	12.01	31.50	20.87	1958	-	-	-	-	-	-	-	-
150	914	①	927	410	305	800	530	888	-	-	-	-	-	-	-	-
8	40.25	①	40.88	19.49	21.65	27.56	25.20	3042	-	-	-	-	-	-	-	-
200	1022	①	1038	495	550	700	640	1380	-	-	-	-	-	-	-	-
10	50.00	①	50.88	20.00	21.65	27.56	25.20	4762	-	-	-	-	-	-	-	-
250	1270	①	1292	508	550	700	640	2160	-	-	-	-	-	-	-	-
12	56.00	①	56.88	25.59	22.52	27.56	25.87	7452	-	-	-	-	-	-	-	-
300	1422	①	1445	650	572	700	657	3380	-	-	-	-	-	-	-	-

*Weight figures are relevant to flanged end valves. ① Please consult the factory.
 Note: For dimensions and 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.

QUALIFICATION TEST



Fire safety testing

The valve design complies with API6FA fire protection design requirements and has passed the fire protection test, and the certificate covers all pressure balanced plug valve products.



Pneumatic high-pressure test

Our company's pressure-balanced plug valves undergo strict strength tests and sealing tests before leaving the factory, and the test results comply with the corresponding design standards and test requirements. In addition to the conventional water pressure test specified in API6D, if the customer requires more detailed testing, our company can conduct additional pneumatic high-pressure sealing tests according to customer requirements.



Coating inspection

The surface of the plug is precision machined, surface hardened using a special process, and finally sprayed with PTFE, which not only improves the hardness of the sealing surface and makes it wear-resistant. At the same time, under grease lubrication conditions, the friction coefficient can be reduced and the valve opening torque can be reduced.

Unique grinding technology

The unique grinding technology ensures that the matching accuracy of the body and the plug reaches Ra0.4. Once the sealing grease completely fails in the event of a fire, the body and the plug can still form a metal-to-metal seal, which serves as a fire safe function and effectively prevents medium leakage.



GREASE INJECTION EQUIPMENT

In order to ensure quick injection of sealing grease and simple and easy operation, CHV is equipped with a grease injection valve on the body of the pressure-balanced plug valve. By connecting the grease injection equipment to the grease valve bayonet of the valve, grease injection can be completed safely within a few minutes. Grease injection equipment is special high-pressure equipment. Generally, other grease injection tools are not allowed to be used without clear regulations.

GZ0-400 grease gun

Manual grease gun, equipped with a pressure gauge. It is suitable for a small number of valves in remote locations, and can be used for effective grease injection with pressures up to 10,000 PSI. It is suitable for the lubrication and sealing grease filling of various high-pressure valves (equipment) on long-distance pipelines, oil field sites, drilling platforms, and maintenance bases.



Grease injection pump

The foot-operated large-capacity grease injection pump is usually used for rapid grease injection of valves with large diameters, high pressures, and large valve cavity volumes. Grease injection can be completed quickly by performing mechanical work on the grease injection pump.



SEALANT

Sealant	Color	Temperature range	Scope of application	Not applicable
CHV—R	Cream color	-20℃~250℃	Most hydrocarbons, butane, propane, gasoline, kerosene, oil, fuel oil, most hydrocarbon solvents. Sulfur-free gas, acid gas and product gas produced by organic condensation of water	Strongly alkaline, highly aromatic and chlorinated solvents
CHV—L	Black	-46℃~325℃	Advanced multi-purpose sealant suitable for use with a variety of fluids including hydrocarbons, water, amines and methanol. Suitable for high/low temperature environments	Petroleum products, strong mineral acids, chlorinated and aromatic acids
CHV—W	Cream color	-15℃~230℃	Chemical plant, compressed air, water, water treatment, dilute acid, alkali, asphalt treatment	Strong acid solutions, hydrocarbons, chlorinated and aromatic solvents

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, API 599 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	Class	Connection	Actuation	Body Material	Trim Material	Coating	Bolts & nuts	Special Requirements
X10	6	900	RJ	G	C1	008	1	B2	

Example: X10-6-900RJ-G-C10081B2

X 10 series pressure balanced plug valve, 6" full port, ASME CLASS 900, Flange RJ, Gear, A216 WCB body, AISI 4140 plug/stem, surface of the plug is sprayed with PTFE, stem plus nickel-plated, B7/2H bolts & nuts.

A	Model
Code	Type
X10	Pressure balanced plug valve

B	Size						
Code	NPS(DN)	Code	NPS(DN)	Code	NPS(DN)	Code	NPS(DN)
2	2(50)	8	8(200)	18	18(450)	28	28(700)
2 1/2	2 1/2(65)	10	10(150)	20	20(500)	30	30(750)
3	3(80)	12	12(300)	22	22(550)	32	32(800)
4	4(100)	14	14(350)	24	24(600)	34	34(850)
6	6(150)	16	16(400)	26	26(650)	36	36(900)

C	Class	D	Connection
Code	Type	Code	Type
150	ASME CLASS 150	1.6P	PN16
300	ASME CLASS 300	3.2P	PN32
400	ASME CLASS 400	6.4P	PN64
600	ASME CLASS 600	8.0P	PN80
900	ASME CLASS 900	10P	PN100
1500	ASME CLASS 1500	16P	PN160
2500	ASME CLASS 2500	25P	PN250
		32P	PN320
Code	Type	Code	Type
RF	Flange RF-B16.5(NPS1/2~NPS 24)	RG	Flange RF-GB/T 9112~9124
	Flange RF-MSS SP 44 (NPS 22)	RH	Flange RF-HG/T 20592~20635
	Flange RF-B16.47(NPS 26~NPS 60)A Series	JG	Flange RJ-GB/T 9112~9124
RJ	Flange RJ-B16.5(NPS1/2~NPS 24)	JH	Flange RJ-HG/T20592~20635
	Flange RJ-MSS SP 44 (NPS 22)	ET	External thread-ASME B1.20.1
	Flange RJ-B16.47(NPS26~NPS60)A Series	BW	Butt weld-ASME B31.8*
SW	Socket weld-ASME B16.11	XX	Other

*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. (Such as: voltage, frequency, single or three-phase, explosion-proof certificate, etc.)
B	Bare stem	S	Pneumatic–Single acting	
W	Wrench	D	Pneumatic–Double acting	
G	Gear	M	Gas over oil	
E	Electric	N	Electro–Hydraulic	
H	Hydraulic	X	Others	

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. (Such as: voltage, frequency, single or three-phase, explosion-proof certificate, etc.)

F Body material					
Code	Body	Bonnet	Code	Body	Bonnet
C1	A216 WCB	A216 WCB	S8	A182 F316L	A182 F316L
C2	A216 WCC	A216 WCC	D0	A995 4A(UNS J92205)	A995 4A(UNS J92205)
C5	A105N	A105N	D1	A995 5A(UNS J93404)	A995 5A(UNS J93404)
L1	A352 LCB	A352 LCB	D5	A182 F51(UNS S31803)	A182 F51(UNS S31803)
L2	A352 LCC	A352 LCC	D6	A182 F53(UNS S32750)	A182 F53(UNS S32750)
L5	A350 LF2	A350 LF2	D7	A182 F55(UNS S32760)	A182 F55(UNS S32760)
S0	A351 CF8	A351 CF8	D8	A182 F60(UNS S32205)	A182 F60(UNS S32205)
S1	A351 CF3	A351 CF3	I5	INCONEL 600(UNS N06600)	INCONEL 600(UNS N06600)
S2	A351 CF8M	A351 CF8M	I6	INCONEL 625(UNS N06625)	INCONEL 625(UNS N06625)
S3	A351 CF3M	A351 CF3M	I7	CW6MC(UNSN26625)	CW6MC(UNSN26625)
S5	A182 F304	A182 F304	I8	INCOLOY 825(UNS N08825)	INCOLOY 825(UNS N08825)
S6	A182 F316	A182 F316	M6	MONEL K500(UNS N05500)	MONEL K500(UNS N05500)
S7	A182 F304L	A182 F304L	H5	HASTELLOY C-276 (UNS N10276)	HASTELLOY C-276 (UNS N10276)

G Trim material					
Code	Plug	Stem	Code	Plug	Stem
002	A105N	AISI 4140	603	A182 F316L	A182 F51(UNS S31803)
008	AISI 4140	AISI 4140	650	A182 FXM-19(UNS S20910)	A182 FXM-19(UNS S20910)
020	A105N	A182 F6a	680	A564 GR.630(UNS S17400)	A564 GR.630(UNS S17400)
081	A694 F60	A694 F60	701	A182 F51(UNS S31803)	A182 F51(UNS S31803)
101	A350 LF2	A350 LF2	702	A182 F51(UNS S31803)	INCONEL 718(UNS N07718)
102	A350 LF2	AISI 4140	751	A182 F53(UNS S32750)	A182 F53(UNS S32750)
109	A350 LF2	A564 GR.630(UNS S17400)	752	A182 F53(UNS S32750)	INCONEL 718(UNS N07718)
119	A350 LF2	A182 F6a	761	A182 F55(UNS S32760)	A182 F55(UNS S32760)
278	A182 F6a	A182 F6a	801	INCONEL 600(UNS N06600)	INCONEL 600(UNS N06600)
279	A182 F6a	A564 GR.630(UNS S17400)	802	INCONEL 600(UNS N06600)	INCONEL 718(UNS N07718)
301	A182 F304	A182 F304	805	INCONEL 625(UNS N06625)	INCONEL 625(UNS N06625)
303	A182 F304	A564 GR.630(UNS S17400)	809	INCONEL 718(UNS N07718)	INCONEL 718(UNS N07718)
311	A182 F304	A182 F51(UNS S31803)	821	INCOLOY 825(UNS N08825)	INCOLOY 825(UNS N08825)
401	A182 F316	A182 F316	826	INCOLOY 925(UNS N09925)	INCOLOY 925(UNS N09925)
403	A182 F316	A564 GR.630(UNS S17400)	831	HASTELLOY C-276(UNS N10276)	HASTELLOY C-276(UNS N10276)
405	A182 F316	A182 F51(UNS S31803)	841	MONEL K500(UNS N05500)	MONEL K500(UNS N05500)
411	A182 F316	A182 FXM-19(UNS S20910)	XXX	Other	Other
502	A182 F304L	A182 F51(UNS S31803)			

H Coating		
Code	Plug	Stem
0	N/A	N/A
1	PTFE	ENP
B	Tungsten chromium cobalt alloy, hard alloy	ENP
L	Chromium carbide*	ENP
M	Tungsten carbide, hard alloy*	ENP
P	NiCrMoCu*	ENP
X	Other	Other

I Bolts & nuts					
Code	Bolts	Nuts	Code	Bolts	Nuts
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	Other	Other
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			

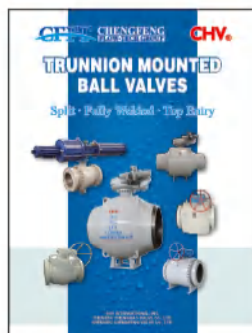
J Special requirements, Misc (Multiple choice)	
Code	Special notes
E-	Specify distance from valve centerline to top of power operator mounting flange for direct-buried ball valve. Example, E2500 means the specify distance is 2500 mm.
K	Anti-corrosion, acid-resisting are in compliance with NACE MR0103, NACE MR0175, ISO 15156. Please provide detailed medium composition.
B-	Bolts & nuts coating, BE: ENP, BZ: Zinc plate, BT: PTFE, BC: Cadmium +PTFE
X	Other special requirements.

Note: 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.

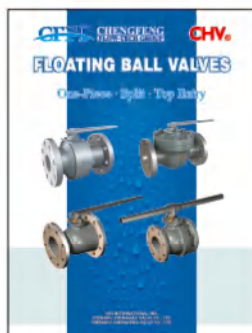
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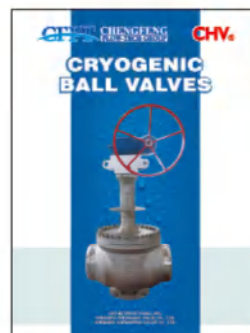
CHV-TB



CHV-FB



CHV-MS



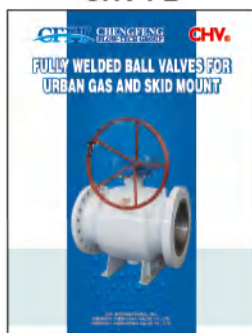
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CHV-DBB



CHV-HO



CHV-PW



CCFV-SG



CCFV-EG



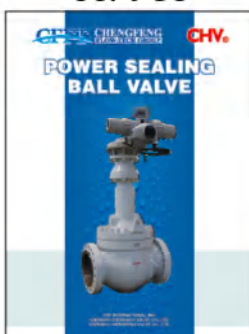
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CCFV-GV



CCFV-PL



CHV-PSB



CHV-EB



CCFV-TOB



CHV-JV



CHV-HS



CHV-WB



CHV-PV



CHV-CV

CHENGFENG FLOW-TECH GROUP

www.china-cfft.com

China Headquarters
No. 6, Guanghua Road Jinyuan Town, Dayi County,
Chengdu City, Sichuan Province, China
Tel: +86(28)87465186
Fax: +86(28)84847510
E-mail: sales@china-cfft.com

USA Office
10700 Richmond Ave Ste 230
Houston, TX 77042
Tel: +1(832)831-2473
Fax: +1(832)831-2617
E-mail: international@china-cfft.com

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