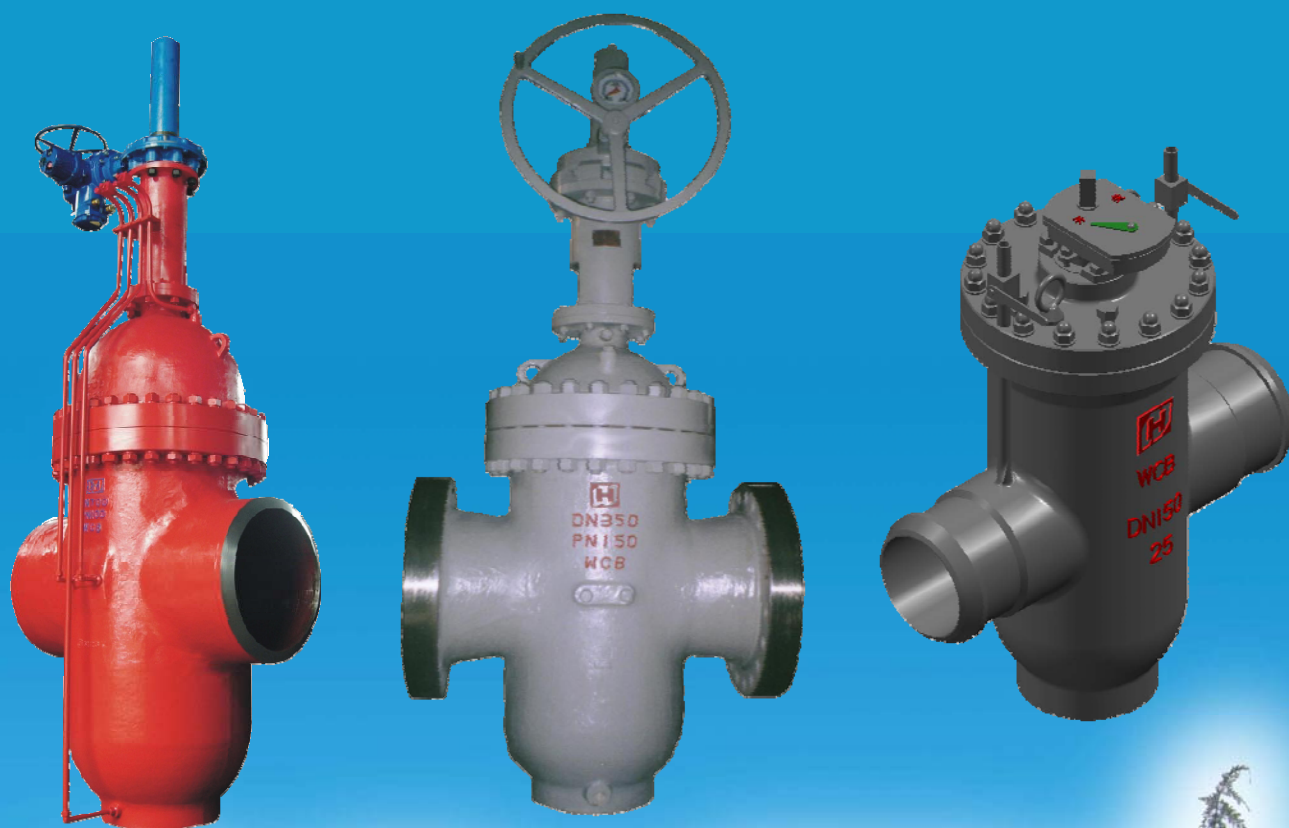




**CHENGDU HOLY VALVE & COMPLETE
EQUIPMENT CO., LTD.**

THROUGH CONDUIT GATE VALVE







★ **ABOUT GROUP COMPANY**



Chengdu Holy Valve & Complete Equipment Co., Ltd. is affiliated to Chengdu Holy Group.

Chengdu Holy Group located in Chengdu city, Sichuan Province, has three industrial parks in Chengdu High-tech Industrial Development Zone, Pengzhou City and Jiujiang town of Shuangliu county. The total area is about 980,000 m² and the total assets is over RMB1.5 billion. The group company is national large-scale enterprise. The business range of the group is diversified, including maintenance of aviation power, manufacturing of steel structure, die type color steel plate, equipments for power transmission & distribution and special valves for oil and natural gas, real estate development, industrial and civil structural design & construction, architectural decoration, etc. The

group company has been awarded 'National Quality & Benefit Type Advanced Enterprise' twice, and has been awarded the many titles of honor, such as 'Top 100 Enterprise of Performance Evaluation in National Mechanism Industries', 'Prominent Contribution Units for National Day Parade', 'Home of National Model Employees', 'National First Class Measuring Units', 'Superexcellent Enterprise of Sichuan Province', and 'National May Day Award', etc.

★ **HISTORY OF DEVELOPMENT**

At the middle of 1980s, the group company cooperated with scientific research institutions, Sichuan Petroleum Survey & Design Institute, to develop and manufacture the products, including through conduit slab gate valves, ball valves, orifice type pressure measuring equipments for nature gas treatment, transportation and distribution. After devoting the marketing, because of the reasonable design, excellent performance, and good quality, the products made by our company has been used to main natural gas collection, transportation pipeline, and treatment station in Sichuan district, the market of our products has been enlarged rapidly and the products has been used to national mayor oil & gas company, and its usage range has been enlarged to petroleum, finished oil, crude oil, waste water, etc. The suitable temperature range of the valves has been enlarged from low temperature to high temperature.

In 1993, the valve manufacturing scale was augmented increasingly, with nice market foreground, valve branch plant became to valve plant to be professionally in charge of design and manufacturer of valve products, special processing treatment and sealing parts for aviation rubber, etc. through group manufacturing lines. In order to meet marketing demand and improve our quality management level, the valve branch plant joined the China Valve Industries Association in 1996, and been awarded the ISO9001 certificate issued by Det Norske Veritas (DNV) and passed the replacement of version of DNV ISO9001:2000 Quality System in 2005. Except for this point, based on the quality intention of our factory –'Zero Defect, Excellent Quality', our factory acquired the 'Manufacturer License of Special Equipment' issued by General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China in January 2003 and acquired 'Certificate of Conformity of Occupational Health and Safety Management System Certification' issued by CNAS in 2007. In 2009, the company had been awarded API 6D certificate (License No.: 6D-0703).

In December 2004, the valve branch plant renamed Chengdu Holy Valve & Complete Equipment Co., Ltd.



★ ABOUT COMPANY

The covering area of the valve company is about 15,000 square meters and there are more than 200 employees in our company, including 10 mechanical engineering technicians with senior title and 26 mechanical engineering technicians with middle and primary title. The company owns over 200 sets kinds of large and common equipments, including processing centers, CNC lathes, large vertical lathe, general lathe, milling machine, boring machine, surface grinder, cylindrical grinder, rubber vulcanization machines, large type nitriding furnace, etc.

★ PRODUCTS RANGE

The company has adopted computer-aided to design products, the key pieces for stress analysis, and fully guarantee its structure and the stress distribution is reasonable and reliable. Good quality tracking system to enhance the technical level and product quality to provide a fundamental guarantee. The valves designed by our company were acquired many national patents. The major products provided by our company are below:

Name of Products	Nominal Diameter (mm/inch)	Nominal Pressure (MPa/Lbs)	Suitable Temperature (°C)	Remark
Slab Gate Valve With or Without Guiding hole	DN25~1500 (1"~60")	PN1.6~42 (class150~2500)	-101~350	HOV,BGO,MOV
Steel Ball Valve	DN50~1200 (1/2"~48")	PN1.6~25 (class150~1500)	-46~250	HOV,AOV,MOV
Advanced Valve Type Orifice Plate Pressure Device	DN50~700 (2"~28")	PN1.6~16 (class150~900)	-46~121	Patent Products
Simple Valve Type Orifice Plate Pressure Device	DN50~700 (2"~28")	PN1.6~16 (class150~900)	-46~121	/
Under Ground Slab Gate Valve	DN50~700 (2"~28")	PN1.6~16 (class150~900)	-29~121	(Patent Products) HOV, BGO
Non-rising Stem Slab Gate Valve With or Without Guiding Hole	DN50~700 (2"~28")	PN1.6~10 (class150~600)	-46~250	HOV,AOV,MOV
Double Acting Throttle & Globe Valve	DN20~250 (3/4"~10")	PN1.6~16 (class150~900)	-29~121	HOV
Valve Case Type Drain Valve	DN20~250 (3/4"~10")	PN1.6~16 (class150~900)	-29~121	HOV
Under Ground PE Ball Valve	DN50~200 (2"~8")	≤0.4	-60~60	(Patent Products) HOV

Note 1: Except underground PE ball valve, all the other valves mentioned above are of non-sulphur resistant type, sulphur resistant type, and high sulphur resistant type.

Note 2: Abbre. Explanation

MOV: Motor Operated Valve

HOV: Handwheel Operated Valve,

BGO: Bevel Gear Operated Valve,

AOV: Actuators Operated Valve (Electric, pneumatic, hydraulic, etc various actuators upon request)



The main products that we supplied to: National Pivot Project – West to East Gas Transportation Pipeline Project, China to Russian Crude Oil Pipeline Project , Lanzhou-Zhengzhou-Changqing Oil Transportation Pipeline Project, Daqing – Tieling Pipeline Capacity Expansion Rebuilding Project and Oil Tank, Shilan-Huiyin Oil Transportation Pipeline Project, Shangxi-Beijing Gas Transportation Pipeline Project, Zhongxian-Wuchang Gas Transportation Pipeline Project, Shebei-Ningxia-Lanzhou Gas Transportation Pipeline Project, Cangzhou-Zibo Gas Transportation Pipeline Project, Shanshan-Urumqi Gas Transportation Pipeline Project, Qinghai Shebi-Geermu Gas Transportation Pipeline Project, and gas transportation & distribution project of the coal gas company in mayor cities in China, such as Beijing, Kunming, Xi'an, Chongqing, Guangzhou, Chengdu, etc. We also supplied valves to **Viramgam Kandla Pipeline Project of Indian Oil Corporation Limited, Kazakhstan Hope Oil Field Oil Transfer Station of Xinjiang Petroleum Engineering Construction Co., Ltd. Niger Agadem Field Crude Oil Pipeline Project and Chad Permit H Crude Oil Transportation Pipeline Project of China Petroleum Pipeline Material And Equipment Corporation.**

★ COMPANY CULTURE

Our Consciousness Idea — Crisis, High-quality Products, and Beyond

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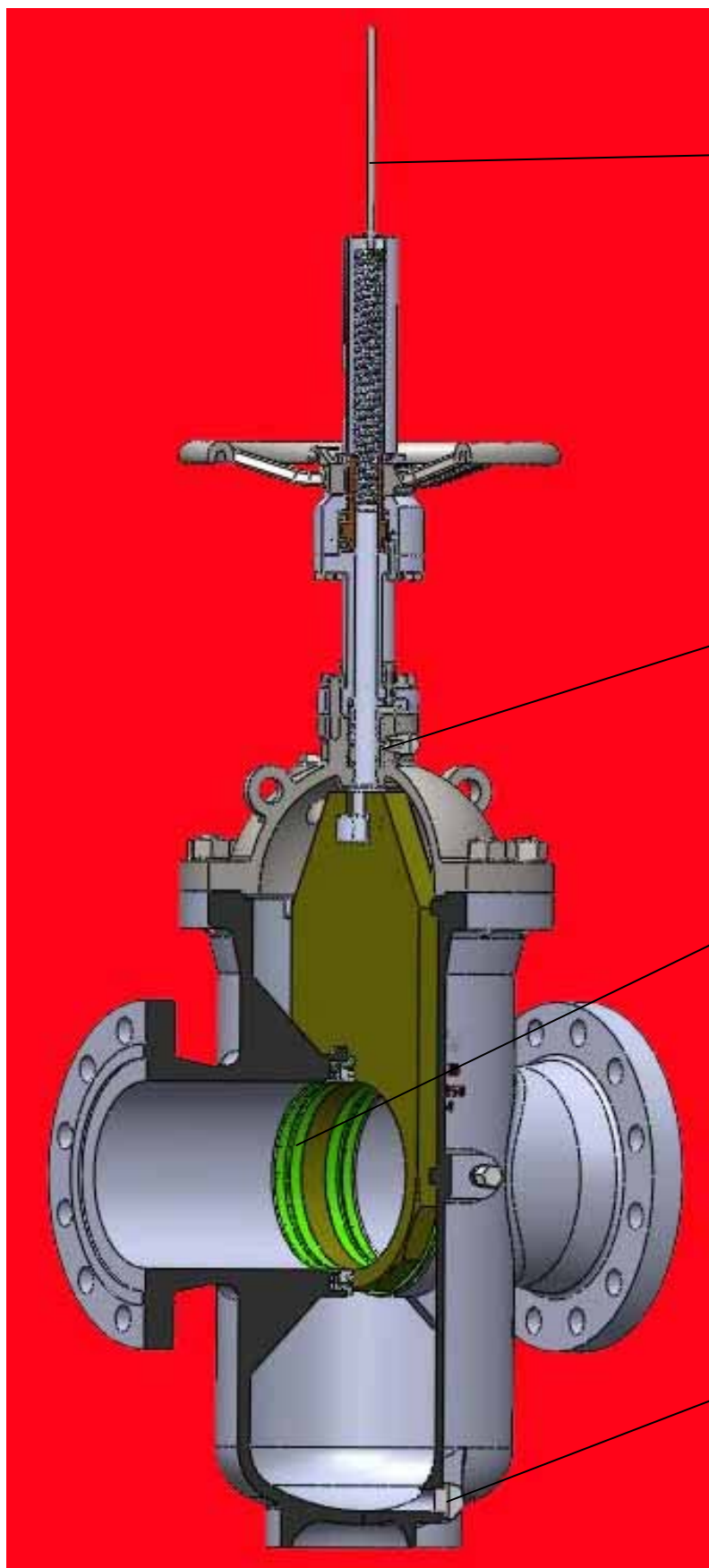
Chengdu Holy Valve is one of the biggest and best professional valve manufacturers and measurement systems in China. We are the leading provider of valves and measurement systems to oil and gas industry and general industrial applications. We commit to supply products with excellent quality and suitable price to our customers to enhance our customers' working site safety, system stability and convenient operation. The valves provided by our company have enough safety design, service life and reliable operation.

Through Conduit Slab Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● TYPICAL CROSS SECTIONAL STRUCTURE DRAWING OF THROUGH CONDUIT SLAB GATE VALVES



Valve position indicator, can indicate the valve operation degree, easy to know the gate position. For BGO, gate position can be observed from opening degree indicating device of gear box.

The stem packing structure is three layer seals of O ring, V-type sealing packing and sealant injection, it can prevent medium from leaking.

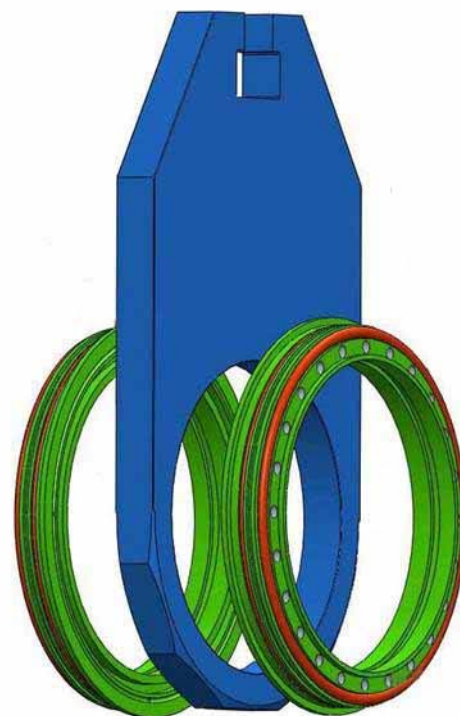
The double replaceable floating seat rings with springs loaded and two O-ring seals always keep in contact with slab gate to ensure the bi-directional sealing and satisfy the automatic pressure relief when pressure overloading in valve case to make the valve in safe.

Valve body drain plug can relief the trapped fluid in the cavity, keep cavity clean and cavity in low pressure.



● STANDARD FEATURES OF THROUGH CONDUIT SLAB GATE VALVES

- ▲ Designed to API 6D specification. Valves are applicable for oil and gas transportation pipeline, oil field, airport, refinery and chemical industry.
- ▲ Full thru-conduit port is suitable for pigging and wiping. Seats and gate surface can be self cleaned.
- ▲ Floating Seat: The seat ring is installed with springs to insure constant contact with the gate insuring a perfect seal.
- ▲ Bi-directional Seal: The valve can provide reliable seal in either direction of downstream and upstream.
- ▲ Double block and bleed (DBB) Valve with two seating surfaces which in the closed position, blocks flow from both valve ends when the cavity between the seating surfaces is vented through a bleed (drain plug) connection provided on the body cavity.
- ▲ Self relieving seat design for protection against over pressure in the body cavity.
- ▲ Body drain relief the trapped fluid in valve cavity.
- ▲ Stem Seals: The stem is sealed with primary and secondary ring energized lip seal made from abrasion resistant material in a non rolling configuration with provisions for emergency grease injection between them. When the valve is in the closed position and the body pressure is vented to atmosphere, the secondary lip seal can be replaced.
- ▲ Special stem packing design protects against dust and easy for tighten packing.
- ▲ Stem back seating design to make stem packing is repairable under full line pressure.
- ▲ Emergency sealant injection for both seats and stem packing.
- ▲ Graphite for fire safe sealing for body, bonnet connection.
- ▲ Equipped bearings when equipped handwheel as operating manner. More convenient and lower thrust for opening and closing.
- ▲ Internal trim parts (gate, seat rings, and stem) are usually Electroless Nickel Plated (ENP). The chemical process provides corrosion resistance and low wear to the parts during operation. Depending on the type of the fluid, a variety of corrosion resistant and hard overlays can be applied in the critical sealing areas.
- ▲ The valves are equipped with handing devices such as lifting lugs and eyebolts to make maintenance, replace, transporting and installation more convenient.
- ▲ A visible gate-position indicator rod and a stem protector are provided as a standard feature on handwheel, gearbox and motor operated valves. It's easy to know the gate position at any time.
- ▲ Stellite alloy can be deposited on sealing surface of seat rings and slab gate to be applicable for special working applications.
- ▲ Perfect internal and external coatings to meet various application requirements. Special design to meet higher or lower temperature service.
- ▲ Actuators shall be equipped upon request.
- ▲ An oriented and balancing stem added for class2500 valves.



● TYPICAL DESIGN FEATURE

In the seat design, there is the function of double block and bleed through the slab gate and replaceable floating seat rings to ensure the bi-directional sealing. When body cavity pressure P_3 is higher than bore pressure, the cavity pressure will be vented to ports. When $P_1 > P_2$, cavity pressure will be vented to P_1 site. When $P_1 = P_2$, case pressure will be vented to the both site ports.

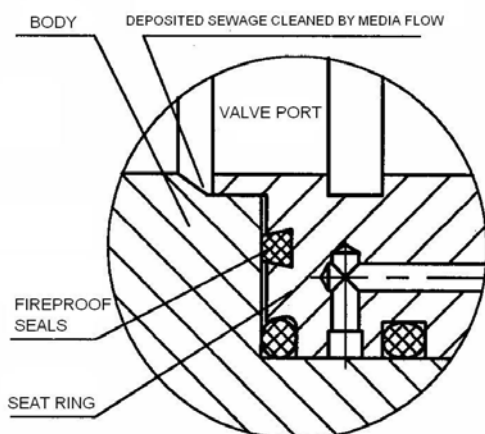


FIG. 2

Fire safe design as per API 6FA. Please see FIG.2 for the fireproof seals on the seat rings. Our products has already passed the fire test as per API 6FA.

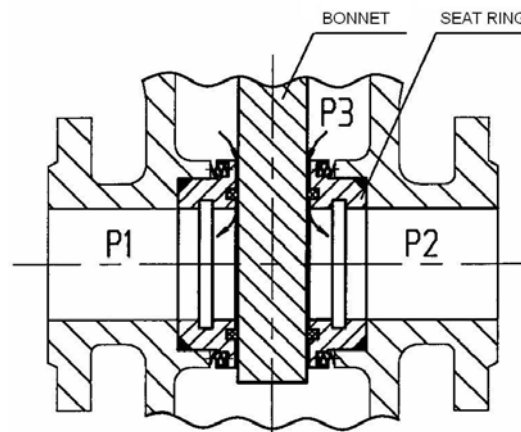
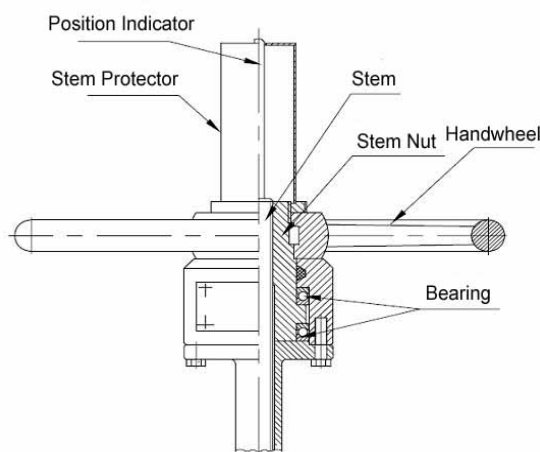


FIG. 1

Special structure for preventing wispy impurity from depositing at the end of seat rings. The structure can make the deposit brought by flow to ensure there is no deposit at the end of seat rings. The torque will not be increased along with the service time. The floating strength of the seat rings will not be weakening due to the deposit at the end of the seat rings. The gate holding to dead by deposit will not happen.

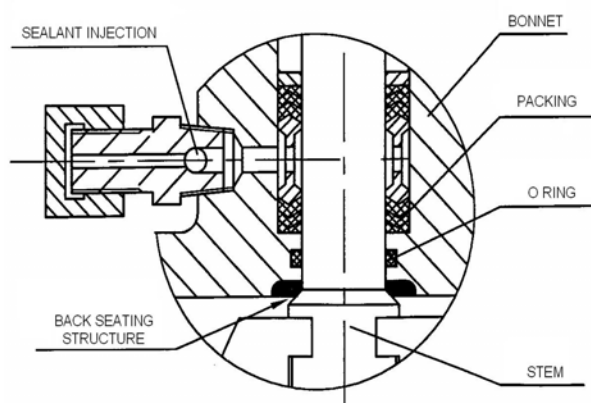


FIG. 3

The stem packing structure is three layer seals of O ring, V-type sealing packing, lantern ring and sealant injection, it can prevent medium from leaking (See FIG.3)

Equipped bearings for handwheel operated valves. It's more convenient and lower thrust for opening and closing.

● OPTIONAL FEATURE UPON REQUEST

- ▲ Reverse acting gate.
- ▲ Metal-to-metal with tungsten carbide coating
- ▲ Transition pieces
- ▲ Seat Skirts for dirty fluid application
- ▲ Top entry construction design.
- ▲ Stem extensions
- ▲ Emergency sealant injection system



● ALLPICABLE STANDARDS AND CODES

Chengdu Holy through conduit gate valves are designed, manufactured and tested in accordance with API, ANSI and ASME requirements. The following list contains the most important applicable standards. Chengdu Holy valves may be produced in accordance with other standards upon customers' request.

ANSI-American National Standard Institute

ASME B 1.20.1	Pipe Threads, General Purpose
ASME B 16.5	Steel Pipe Flanges And Flanged Fittings
ASME B 16.10	Face-To-Face And End-To-End Dimensions Of Ferrous Valves
ASME B 16.25	Butt Welding Ends
ASME B 16.34	Steel Valves-Flanged And Butt Welding Ends
ASME B 16.47	Larger Diameter Steel Flange (26"~60") Technics Pipeline
ASME B31.3	Boiler And Pressure Vessel Code, Section VIII, Division 1, Rules For Construction Of Pressure Vessel
ASME	

API-American Petroleum Institute

API 6D	Specification For Pipeline Valves
API 6A	Specification For Wellhead Valves
API 6FA	Specification For Fire Testing Of Valves
API 607	Fire Test For Soft Seated Quarter-Turn Valves Quality Program
API Q1	EUE External Upset Tubing Threads
API 5B	Valve Inspection And Test
API 598	National Association Of Corrosion Engineers
NACE	Sulfide Stress Cracking Resistant Metallic
MR0175	Materials For Oil Field Equipment (Superceded By ISO15156)

MESC SPE 76/001	Surface Roughness Degree Of Flange Gasket Interface
MESC SPE 77/130	Ball Valve To API SPEC.6D
MESC SPE 77/302	Material Acceptance Requirements For Valves In General Service Electroless Nickel Plating
MESC SPE 77/315	

MSS-Manufacturers Standardization Society

MSS SP-6	Standard Finishes For Contact Faces Of Pipe Flanges And Connecting-End Flanges Of Valves And Fittings
MSS SP-25	Standard Marking System For Valves, Fittings, Flanges And Unions
MSS SP-55	Quality Standard For Steel Castings
MSS SP-45	Bypass, And Drain Connections Standard Cast Steel Quality Standard Of Valve, Flange, Fitting And Pipeline Accessories --- Magnetic Particle Testing
MSS SP-53	Cast Steel Quality Standard Of Valve, Flange, Fitting And Pipeline Accessories—Radiographic Testing
MSS SP-54	Cast Steel And Forged Steel Quality Standard Of Valve, Flange, Fitting, And Pipeline Accessories ---- Liquid Penetrant Testing

ISO9001-International Organization for Standardization

ISO 9001	Quality Systems - Model For Quality Assurance In Design, Development, Production, Installation And Servicing
ISO 15156	Materials For Use In H ₂ S Containing Environment In Oil & Gas Production
ISO 5221-1	Executive Institution Accessories Of Quarter-Turn Valves, Section 1: Flange Dimension
ISO 5221-2	Executive Institution Accessories Of Quarter-Turn Valve, Section2: Capability Character Of Flange And Connector
ISO 5221-3	Executive Institution Accessories Of Quarter-Turn Valves, Section3: The Dimension Of Drive Parts
ISO 10479	Valve Test: Fire-Proof Test Requirement

PREN 12116	Industry Valve, Executive Institution Accessories Of Quarter – Turn Valves
DEP 31.38.01.11-GEN	Standard Of Pipeline
DEP 31.40.70.30-GEN	Quarter-Turn Open / Close Executive Institution
DEP 32.36.01.17-GEN	Control Valve' Choice, Specification And Standard

Through Conduit Slab Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● PERFORMANCE SPECIFICATION

Suitable Medium:	Purified natural gas, natural gas with sulphur ($H_2S+CO_2 \leq 8\%$), coal gas, crude oil, finished oil, refinery oil, clean oil and water, etc.
Suitable Temperature:	-101℃~121℃ (For super low temperature valve) -46℃~121℃ (For low temperature valve) -29℃~121℃ (For normal temperature valve) -29℃~350℃ (For middle temperature valve)
Pressure rating:	PN1.6~42.0MPa (class150 ~ 2500)
Size:	DN25~1500 (NPS1 ~ 60)

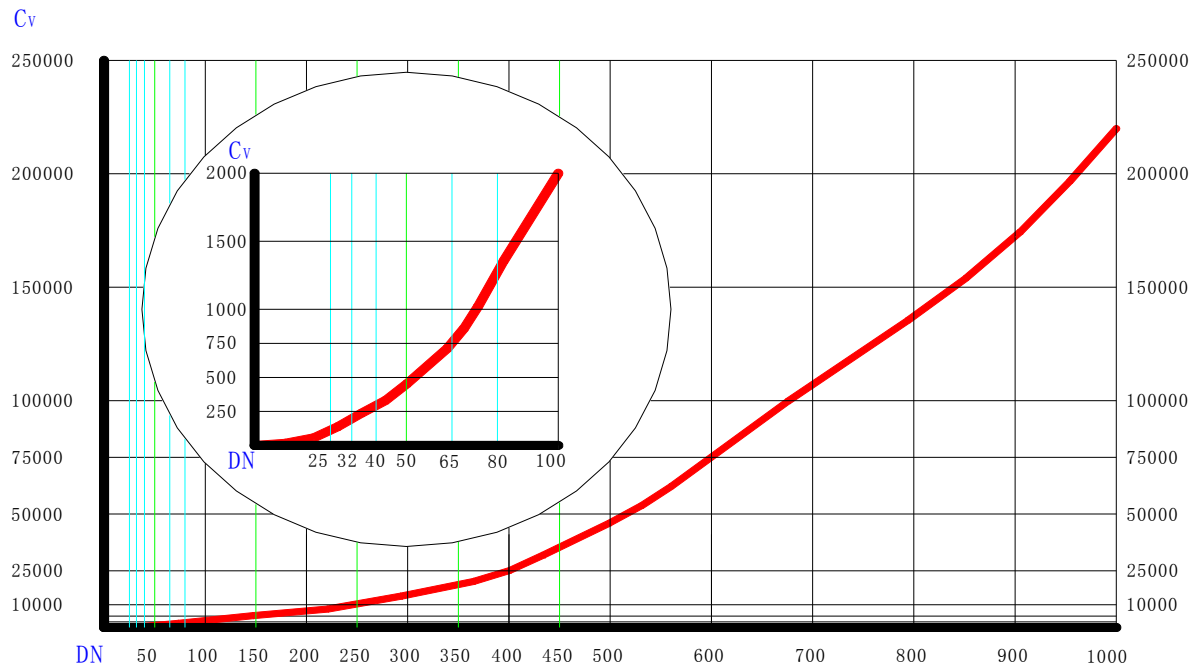
● MATERIALS OF MAIN PARTS

Service	Body & Bonnet	Gate	Seat	Stem Seal	Stem	Bolting	Bolts / Nuts	Fittings
Standard -20°F to 250°F -29℃ to 121℃	WCB Carbon Steel	A516-70 Low Alloy Steel, (ENP/HCR)	A516-70 Nickel Plated PTFE Insert	Viton	Cr13	Alloy Steel	B7 / 2H	Carbon Steel
Corrosive -20°F to 250°F -29℃ to 121℃	WCB Carbon Steel (NACE)	A516-70 Low Alloy Steel, (ENP/HCR)	Carbon Steel Nickel Plated PTFE Insert	PTFE	Low Alloy Steel, (ENP)	Alloy Steel (NACE)	B7M / 2HM	Stainless Steel
High Temperature -20°F to 650°F 29℃ to 343℃	WCC Carbon Steel	CA15 Stainless Steel, HF-6 Hard Faced Tungsten Coated	Carbon Steel Hard Faced Tungsten coated	Flexible Graphite	400Series Stainless Steel	Alloy Steel	B7 / 2H	Stainless Steel
High Temperature -20°F to 1000°F -29℃ to 538℃	WC6 Carbon Steel	CA15 Stainless Steel, HF-6 Hard Faced	A182 F11, HF-6 Hard Faced	Flexible Graphite	400Series Stainless Steel	Alloy Steel	B7 / 2H	Stainless Steel
Low Temperature Non-Sour -50°F to 250°F -46℃ to 121℃	LCC Impact Tested	LCC Carbon Steel Low Alloy Steel (ENP)	Carbon Steel ENP PTFE Insert	PTFE	Low Alloy Steel (ENP)	Alloy Steel	L7 / 2H	Stainless Steel
Low Temperature Sour -50°F to 250°F -46℃ to 121℃	LCC Carbon Steel	LCC Carbon Steel (ENP)	Carbon Steel (ENP) PTFE Insert	PTFE	Low Alloy Steel Impact (ENP)	Alloy Steel NACE	L7 / 2HM	Stainless Steel

Note: The above mentioned valve parts materials are only listed for reference, the actual material should be selected upon the actual working condition.

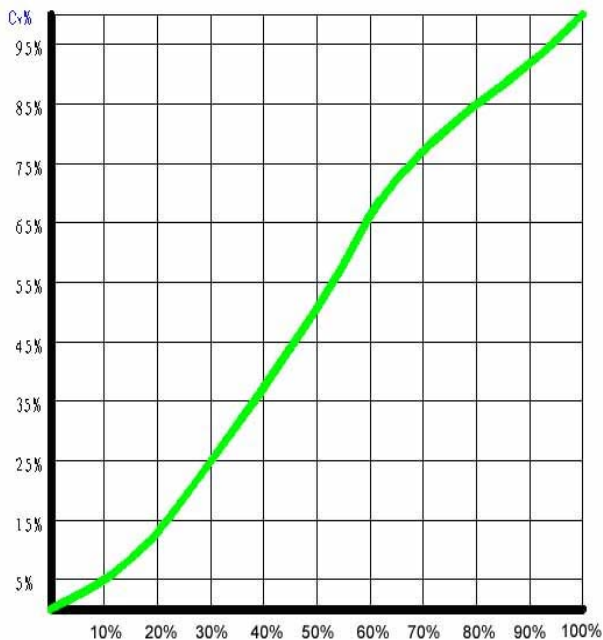
Through Conduit Slab Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



FLOW COEFFICIENT OF API 6D SLAB GATE VALVE

● OPENING AND FLOW COEFFICIENT CHART ● TESTING PRESSURE FOR API 6D GATE VALVE



THE OPENING AND FLOW COEFFICIENT CHART
OF API 6D SLAB GATE VALVE

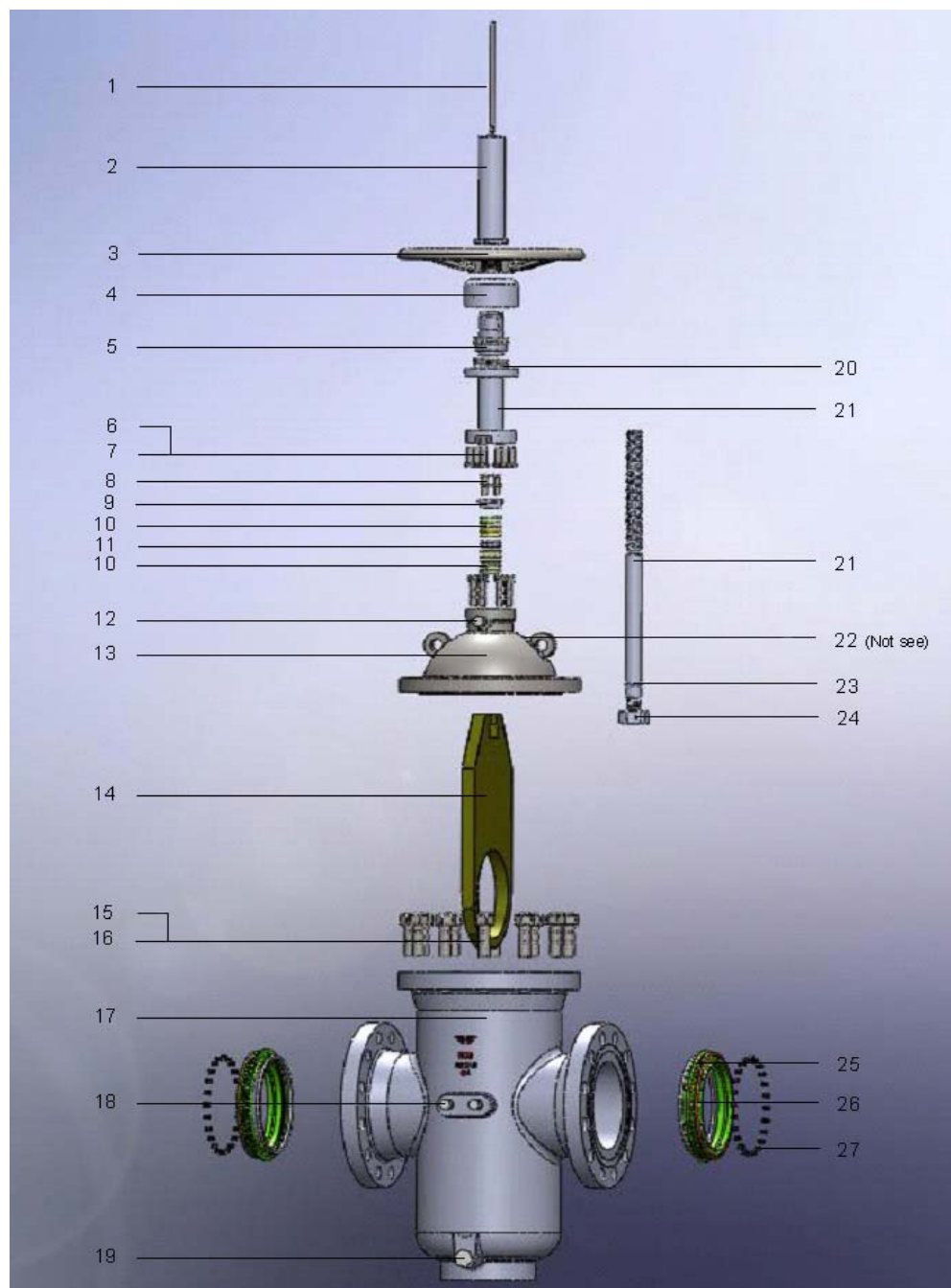
Nominal Pressure Rating		Testing Pressure at Ambient Temperature (MPa)			
		Shell Test	Seat Test	Stem Backseat Test	Low Pressure Air Seat Test
PN	1.6	2.4	1.76	1.76	0.6
	2.5	3.75	2.75	2.75	0.6
	4.0	6.0	4.4	4.4	0.6
	6.4	9.6	7.04	7.04	0.6
	10.0	15.0	11.0	11.0	0.6
	16.0	24.0	17.6	17.6	0.6
	25.0	37.5	27.5	27.5	0.6
	42.0	63.0	46.2	46.2	0.6
CLASS	150	3.0	2.2	2.2	0.6
	300	7.5	5.5	5.5	0.6
	400	9.6	7.04	7.04	0.6
	600	15.0	11.0	11.0	0.6
	900	24.0	17.6	17.6	0.6
	1500	37.5	27.5	27.5	0.6
	2500	63.0	46.2	46.2	0.6

Through Conduit Slab Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● API 6D THROUGH CONDUIT SLAB GATE VALVE ASSEMBLY



SN	Part Name	SN	Part Name	SN	Part Name
1	Position Indicator	10	Stem Packing	19	Body Drain Plug
2	Stem Protector	11	Lantern	20	Bearing
3	Handwheel	12	Stem Grease Injection Fitting	21	Stem
4	Bearing Box	13	Bonnet	22	Bonnet Vent Plug
5	Stem Nut	14	Slab Gate	23	Stem Back Seat
6	Bolt	15	Bolt	24	T-Type Insert
7	Nut	16	Nut	25	Seat Ring
8	Gland Stud	17	Body	26	O-Ring
9	Packing Gland	18	Seat Sealant Injection Fitting	27	Spring

Through Conduit Slab Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● PRODUCT SUPPLY SCOPE

SIZE		ASME CLASS						
In.	mm	15	30	40	60	90	150	250
2	50							
3	80							
4	100							
6	150							
8	200							
10	250							
12	300							
14	350							
16	400							
18	450							
20	500							
22	550							
24	600							
26	650							
28	700							
30	750							
32	800							
34	850							
36	900							
38	950							
40	100							
42	105							
48	120							
54	135							
56	140							
60	150							



Note: Larger size upon request.

● GUARANTEE AND WARRANTEE

Chengdu Holy Valve guarantees that the materials and machining of valves and fittings are adequate and in accordance with the requirements stated in related standards and codes or specified by customers.

If the products suffer the force majeure such as acts of god, war, revolt, fire, flood, sabotage, and other natural disaster during transit which are beyond our ability, and if the products are delayed or destroyed, Chengdu Holy Valve shall be exonerated from these responsibilities, but also has the right to postpone the delivery.

Normally, the warranty period is 12 months from date of shipment. Chengdu Holy Valve assures to replace or repair equipment / material which should result defective due to engineering or to the quality of equipment / materials and manufacturing within the warranty period. All expenses shall be on the account of Chengdu Holy Valve.

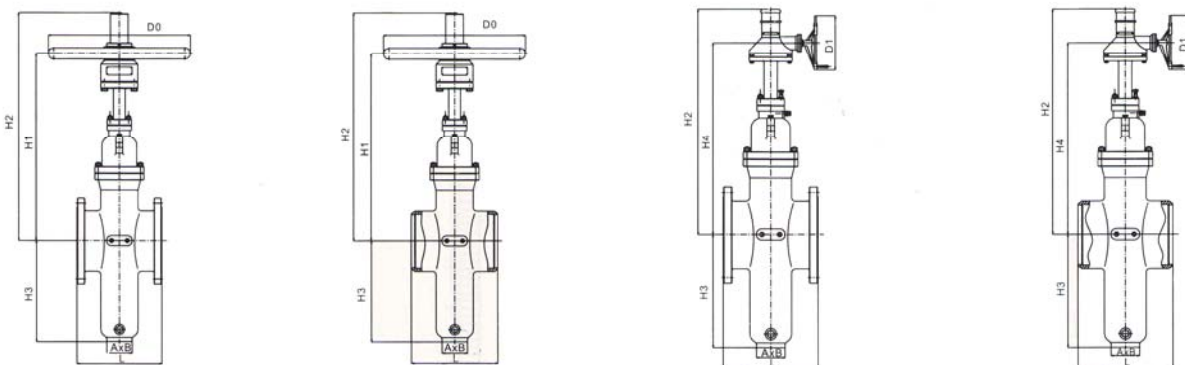
Through Conduit Slab Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● DIMENSION OF THROUGH CONDUIT SLAB GATE VALVE

CLASS150



Size (in.)	Bore	L			H1	H2	H3	H4	AxB	D0	D1	Approx. Weight (kg)		
		RF	RTJ	WE								RF	RTJ	WE
2	49	178	191	216	390	470	138	—	60×100	320	—	50	50	38
2 1/2	62	191	204	241	415	515	160	—	60×120	320	—	63	63	50
3	74	203	216	283	450	587	199	—	80×130	320	—	68	71	65
4	100	229	241	305	529	691	254	495	90×170	320	310	99	105	98
5	125	254	267	381	611	770	278	615	92×190	360	310	128	148	160
6	150	267	279	403	631	852	328	739	100×200	360	310	176	180	160
8	201	292	305	419	772	1047	403	860	100×250	400	458	290	300	268
10	252	330	343	457	900	1230	500	1005	120×340	450	458	330	340	300
12	303	356	368	502	1060	1455	590	1158	120×360	560	458	480	490	30
14	334	381	394	572	—	1644	640	1229	130×400	—	458	730	735	650
16	385	406	419	610	—	1823	707	1367	200×400	—	458	990	998	898
18	436	432	444	660	—	2019	801	1520	220×500	—	458	1270	1200	1180
20	487	457	470	711	—	2207	873	1642	240×500	—	458	1630	1640	1500
22	538	508	●	●	—	2500	960	1872	260×500	—	458	2090	2130	1840
24	589	508	521	813	—	2810	1080	2150	260×500	—	458	2630	2750	2480
26	633	559	●	864	—	2960	1110	2165	280×660	—	500	3060	3090	2760
28	684	610	●	914	—	3110	1230	2415	280×660	—	500	3640	3750	3200
30	735	650	●	914	—	3230	1260	2380	300×720	—	500	4280	4380	3760
32	779	711	●	965	—	3391	1382	2558	320×720	—	500	5160	5260	4540
34	830	762	●	1016	—	4000	1420	2732	360×785	—	860	6150	6280	5410
36	874	711	●	1016	—	4230	1490	2860	400×800	—	860	7060	7180	6210
38	925	864	●	●	—	4460	1570	2994	450×830	—	860	7700	7800	6780
40	976	1575	●	●	—	4700	1650	3158	480×920	—	860	8300	8450	7300
42	1020	1625	●	●	—	4950	1730	3305	480×950	—	860	10190	10230	8970
48	1166	1803	●	●	—	5670	1950	3712	495×1050	—	860	13600	13800	12200
54	1312	1915	●	●	—	6580	2190	4158	500×1052	—	860	16800	17000	14780
56	1360	2032	●	●	—	6830	2290	4318	520×1080	—	860	18200	18200	16020
60	1458	●	●	●	—	7100	2410	4566	600×1320	—	860	21000	21000	18500

1. “●” Upon Request.

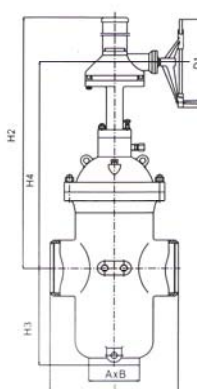
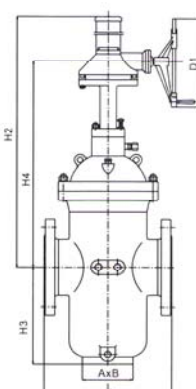
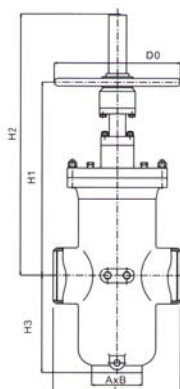
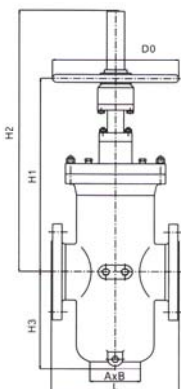
Through Conduit Slab Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● DIMENSION OF THROUGH CONDUIT SLAB GATE VALVE

CLASS300



Size (in.)	Bore	L			H1	H2	H3	H4	AxB	D0	D1	Approx. Weight (kg)		
		RF	RTJ	WE								RF	RTJ	WE
2	49	216	232	216	390	470	138	-	60×100	320	-	55	58	54
2 1/2	62	241	257	241	415	515	160	-	60×120	320	-	60	60	58
3	74	283	298	283	450	587	199	-	80×130	320	-	75	76	70
4	100	305	321	305	529	691	254	495	90×170	320	310	155	165	145
5	125	381	397	381	611	770	278	615	92×190	360	310	160	162	150
6	150	403	419	403	631	852	328	739	100×200	360	310	190	200	170
8	201	419	435	419	772	1047	403	860	100×250	400	310	330	340	290
10	252	457	473	457	900	1230	500	1005	120×340	560	310	490	515	430
12	303	502	518	502	1060	1455	590	1158	150×380	560	450	690	700	625
14	334	762	778	762	-	1644	640	1229	180×400	-	458	1000	1015	890
16	385	838	854	838	-	1823	707	1367	220×300	-	458	1410	1430	1260
18	436	914	930	914	-	2019	801	1520	220×500	-	458	1910	1930	1620
20	487	991	1010	991	-	2207	873	1642	240×400	-	458	2410	2340	2110
22	538	1092	1114	1092	-	2500	960	1872	200×750	-	458	2990	2995	2720
24	589	1143	1165	1143	-	2810	1080	2150	260×500	-	458	3750	3760	3410
26	633	1245	1270	1245	-	2960	1110	2165	310×940	-	500	4390	4395	3970
28	684	1346	1372	1346	-	3110	1230	2415	280×660	-	500	5280	5299	4710
30	735	1397	1422	1397	-	3230	1260	2380	590×1044	-	500	6190	6195	5540
32	779	1524	1553	1524	-	3391	1382	2558	Φ800	-	500	7420	7430	6690
34	830	1626	1654	1626	-	4000	1420	2732	Φ850	-	860	8850	8860	8030
36	874	1727	1756	1727	-	4230	1490	2860	Φ900	-	860	10180	10300	9230
38	925	1829	•	1829	-	4460	1570	2994	Φ1000	-	860	11200	11200	9870
40	976	2083	•	2083	-	4700	1650	3158	Φ1100	-	860	11980	11980	10470
42	1020	2133	•	2133	-	4950	1730	3305	Φ1150	-	860	12550	12550	10930
48	1166	2286	•	2286	-	5670	1950	3712	620×1248	-	860	18800	18800	17600
54	1312	•	•	•	-	6580	2190	4158	680×1354	-	860	•	•	•
56	1360	2489	•	2489	-	6830	2290	4318	760×1502	-	860	22700	22700	21000
60	1458	•	•	•	-	7100	2410	4566	770×1610	-	860	•	•	•

1. "•" Upon Request.

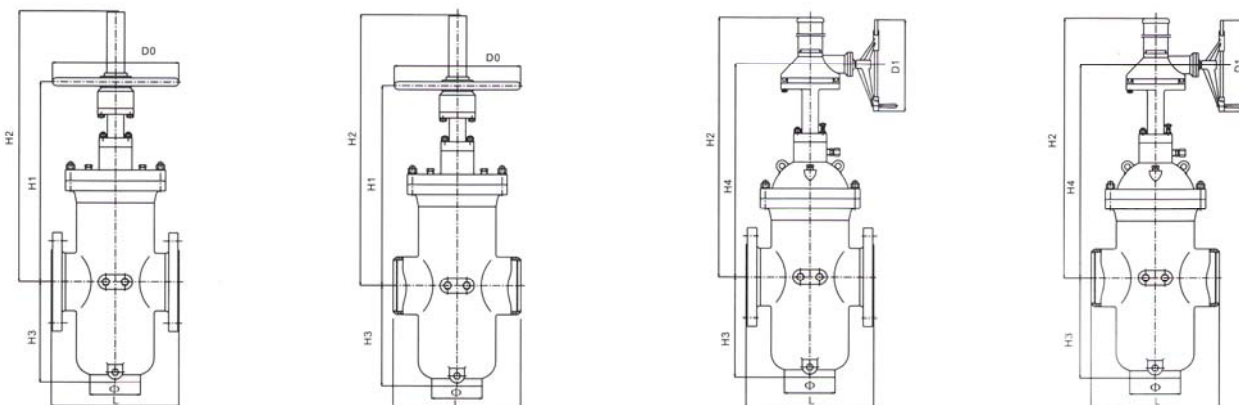
Through Conduit Slab Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● DIMENSION OF THROUGH CONDUIT SLAB GATE VALVE

CLASS400



Size (in.)	Bore	L			H1	H2	H3	H4	Φ	D0	D1	Approx. Weight (kg)		
		RF	RTJ	WE								RF	RTJ	WE
2	49	292	295	292	390	472	140	-	90	320	-	80	80	74
2 1/2	62	330	333	330	420	512	172	-	100	320	-	96	96	90
3	74	356	359	356	450	566	197	-	110	320	-	105	105	95
4	100	406	410	406	550	656	248	677	120	320	310	160	160	120
5	125	400	460	457	611	690	276	695	140	360	310	240	240	150
6	150	495	498	495	631	835	323	700	160	360	310	260	260	200
8	201	597	600	597	772	1029	405	860	200	400	458	470	470	400
10	252	673	676	673	923	1242	499	994	250	560	458	580	582	515
12	303	762	765	762	1083	1451	567	1100	300	640	458	789	792	690
14	334	826	829	826	-	1566	628	1223	260	-	458	1130	1130	1010
16	385	902	905	902	-	1769	717	1354	300	-	458	1580	1580	1430
18	436	978	981	978	-	2035	800	1560	500	-	458	2120	2120	1940
20	487	1054	1060	1054	-	2188	925	1696	400	-	458	2750	2750	2500
22	538	1143	1153	1143	-	2520	1000	1805	450	-	458	3170	3172	2900
24	589	1232	1241	1232	-	2825	1150	2160	480	-	500	4050	4060	3710
26	633	1308	1321	1308	-	3040	1200	2216	500	-	500	4700	4710	4290
28	684	1397	1410	1397	-	3380	1310	2425	560	-	500	5700	5710	5100
30	735	1524	1537	1524	-	3620	1350	2480	660	-	500	6780	6790	6220
32	779	1651	1667	1651	-	3880	1380	2582	700	-	860	7550	7560	6920
34	830	1778	1794	1778	-	4150	1510	2778	710	-	860	9480	9490	8730
36	874	1880	1895	1880	-	4380	1620	3140	710	-	860	9600	9610	8800
38	925	1981	●	1981	-	4600	1680	3205	730	-	860	10200	10210	9000
40	976	2028	●	2028	-	4880	1720	3350	850	-	860	12100	12210	11000
42	1020	2260	●	2260	-	5150	1830	3398	920	-	860	13900	13920	11500
48	1166	2464	●	2464	-	5870	2100	3496	1000	-	860	19500	19520	18700

1. "●" Upon Request.

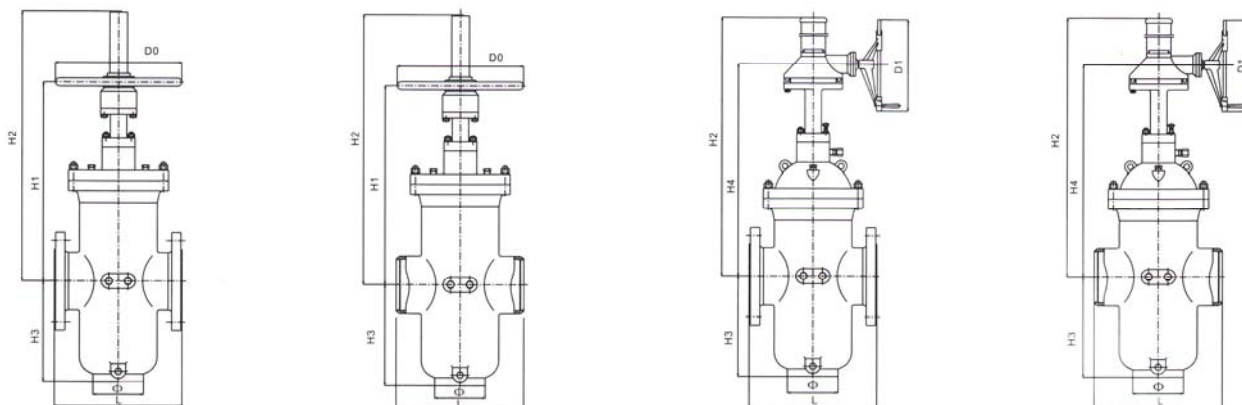
Through Conduit Slab Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● DIMENSION OF THROUGH CONDUIT SLAB GATE VALVE

CLASS600



Size (in.)	Bore	L			H1	H2	H3	H4	Φ	D0	D1	Approx. Weight (kg)		
		RF	RTJ	WE								RF	RTJ	WE
2	49	292	295	292	390	472	140	-	90	320	-	80	80	74
2 1/2	62	330	333	330	420	512	172	-	100	320	-	105	105	100
3	74	356	359	356	450	566	197	-	110	320	-	110	110	105
4	100	432	435	432	550	692	248	695	120	320	310	155	155	125
5	125	508	511	508	611	740	276	700	140	360	310	260	260	190
6	150	559	562	559	665	873	323	898	160	450	310	308	308	260
8	201	660	664	660	815	1080	405	930	200	560	458	484	484	380
10	252	787	791	787	941	1272	499	1041	250	560	458	750	750	580
12	303	838	841	838	1095	1463	567	1250	300	640	458	1350	1750	950
14	334	889	892	889	-	1643	628	1299	260	-	458	1680	1680	1390
16	385	991	994	991	-	1843	717	1448	300	-	458	2015	2015	1650
18	436	1092	1095	1092	-	2035	800	1560	500	-	458	2680	2680	2150
20	487	1194	1120	1194	-	2269	925	1720	400	-	458	2995	2995	2580
22	538	1295	1305	1295	-	2520	1000	1920	450	-	458	3890	3890	3270
24	589	1397	1407	1397	-	2825	1150	2160	480	-	500	4840	4850	3980
26	633	1448	1461	1448	-	3040	1200	2340	500	-	500	5680	5685	4990
28	684	1549	1562	1549	-	3380	1310	2425	560	-	500	6890	6890	6100
30	735	1651	1664	1651	-	3620	1350	2530	660	-	500	7990	7995	7190
32	779	1778	1794	1778	-	3880	1380	2800	700	-	860	9510	9516	8550
34	830	1930	1946	1930	-	4150	1510	2950	785	-	860	11300	11320	10300
36	874	2083	2099	2083	-	4380	1620	3140	805	-	860	12000	12020	10800
38	925	2235	●	2235	-	4600	1680	3280	830	-	860	13200	13220	12500
40	976	2387	●	2387	-	4880	1720	3350	1050	-	860	14800	14820	13700
42	1020	2489	●	2489	-	5150	1830	3460	1120	-	860	16400	16420	14500
48	1166	2692	●	2692	-	5870	2100	3896	1180	-	860	18500	18520	16800

1. "●" Upon Request.

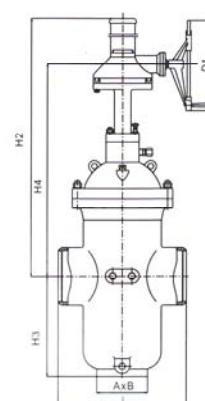
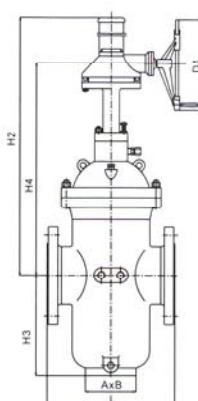
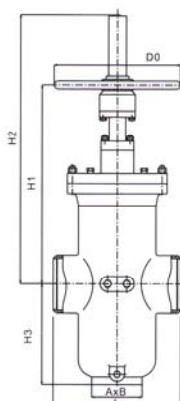
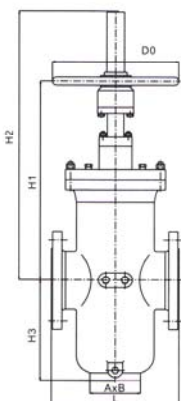
Through Conduit Slab Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● DIMENSION OF THROUGH CONDUIT SLAB GATE VALVE

CLASS900



Size (in.)	Bore	L			H1	H2	H3	H4	Φ	D0	D1	Approx. Weight (kg)		
		RF	RTJ	WE								RF	RTJ	WE
2	49	368	371	368	390	470	140	-	90	320	-	100	100	88
2 1/2	62	419	422	419	420	523	172	-	100	320	-	143	143	130
3	74	381	384	381	496	640	201	-	110	320	-	186	186	170
4	100	457	460	457	550	713	247	570	120	320	305	240	240	218
5	127	559	562	559	605	775	285	600	140	450	305	342	342	330
6	150	610	613	610	665	891	334	860	160	450	305	443	443	421
8	201	737	740	737	837	1124	425	972	200	560	450	707	707	672
10	252	838	841	838	957	1299	518	1120	280	640	450	1034	1034	983
12	303	965	968	965	-	1526	596	1193	300	-	458	1720	1720	1634
14	322	1029	1038	1029	-	1723	647	1299	260	-	458	2476	248	2353
16	373	1130	1140	1130	-	1888	722	1448	300	-	458	2750	276	2613
18	423	1219	1232	1219	-	2100	800	1580	500	-	458	3763	3768	3575
20	471	1321	1334	1321	-	2255	885	1754	500	-	458	4559	4560	4331
22	522	●	●	●	-	●	980	2050	650	-	500	●	●	●
24	570	1549	1568	1549	-	2825	1070	2350	800	-	500	7320	7320	6954
26	617	1651	●	1651	-	3235	1160	2780	900	-	500	8614	8614	8184
28	665	1905	●	1905	-	3380	1250	3196	980	-	500	10358	10358	9840
30	712	2108	●	2108	-	3664	1340	3300	1050	-	500	12412	12412	11792

1. "●" Upon Request.

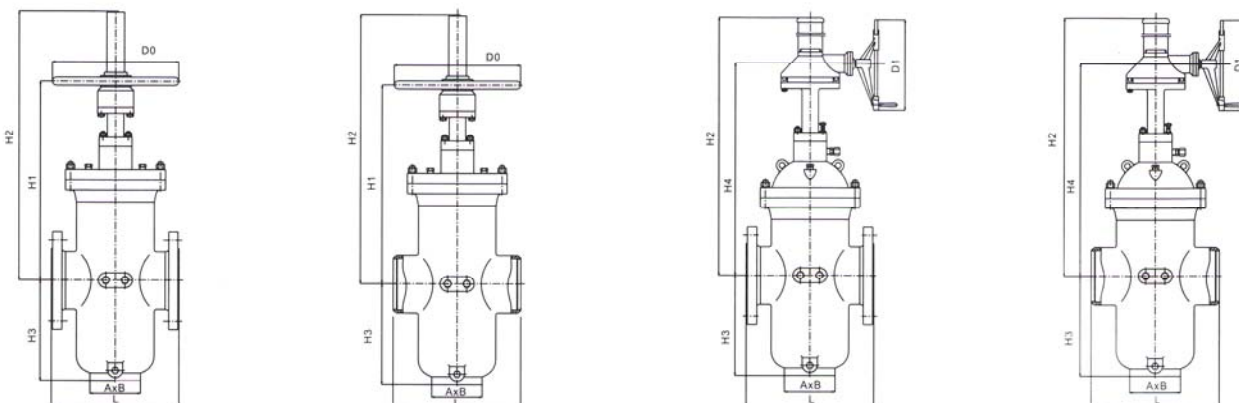
Through Conduit Slab Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● DIMENSION OF THROUGH CONDUIT SLAB GATE VALVE

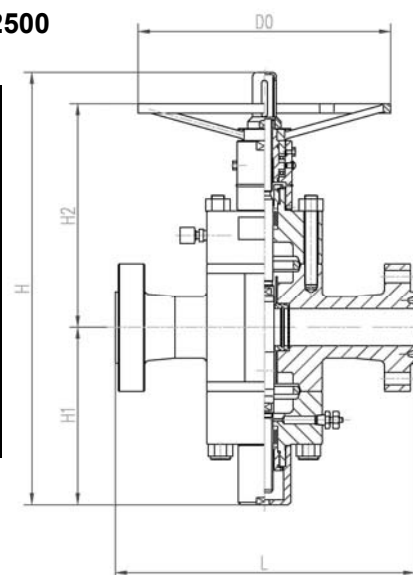
CLASS1500



Size (in.)	Bore	L			H1	H2	H3	H4	Φ	D0	D1	Approx. Weight (kg)		
		RF	RTJ	WE								RF	RTJ	WE
1	25	254	254	254	230	280	90	-	92	250	-	40	40	32
2	49	368	371	368	600	725	185	-	120	450	-	180	180	145
2 1/2	62	419	422	419	615	760	215	-	130	460	-	240	240	210
3	74	470	473	470	630	794	250	750	140	500	360	375	375	340
4	100	546	549	546	707	860	300	790	200	500	360	445	445	403
5	127	673	676	673	785	975	315	820	220	500	360	660	660	620
6	150	705	711	705	-	1090	400	1080	300	-	450	830	830	740
8	201	832	841	832	-	1551	517	1280	420	-	450	1250	1250	1195
10	252	991	1000	991	-	1859	605	1550	520	-	860	2100	2100	1890
12	303	1130	1146	1130	-	2159	649	1780	580	-	860	3260	3260	3090
14	322	1257	1276	1257	-	2442	770	1950	720	-	860	4690	4690	4460
16	373	1384	1407	1384	-	2625	796	2100	780	-	860	5215	5215	4950
18	423	1537	1559	1537	-	3036	990	2350	800	-	860	7130	7130	6780
20	471	1664	1686	1664	-	3344	1090	2560	860	-	860	8640	8640	8210

● DIMENSION OF THROUGH CONDUIT SLAB GATE VALVE CLASS2500

Size (in.)	Bore	L			H	H1	H2	D0	Approx. Weight
		RF	RTJ	WE					RTJ (kg)
1	25	273	275	273	470	90	280	250	52
2	42	451	454	451	800	330	352	500	400
2 1/2	52	508	514	508	890	345	370	400	175
3	62	578	584	578	785	320	340	400	240
4	87	673	683	673	1085	455	470	500	310
6	131	914	927	914	1400	587	610	560	650

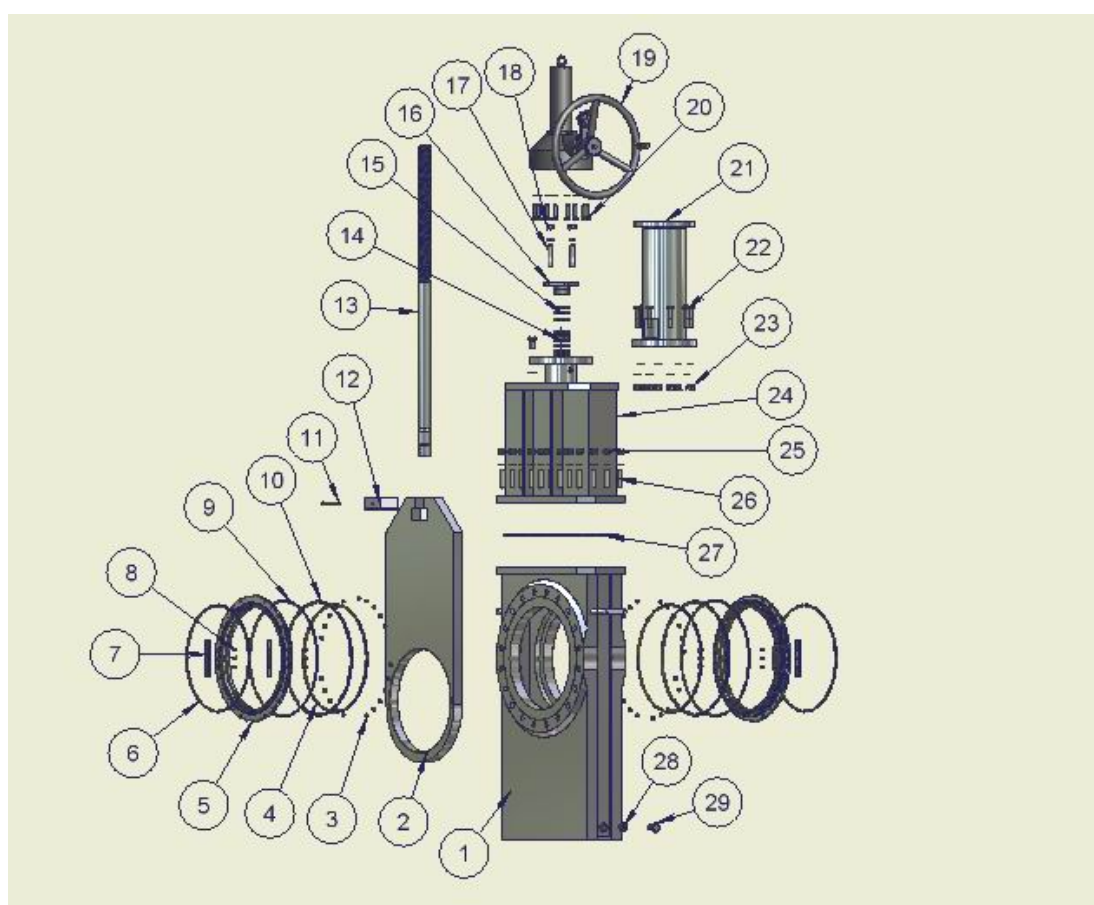


Note: A oriented and balancing stem added for class2500 valves.

● FEATURES OF SHORT PATTERN SLAB GATE VALVE

- ▲ Short pattern through conduit slab gate valves are specially used for installation nearest to the storage tanks or high-altitude installation.
- ▲ Body and bonnet are designed per fully welded idea or light body castings, and passed finite element analysis, to realize the optimization design. The valve weight is about 1/3 of standard through conduit slab gate valve. It can be used to reduce pipeline load, prevent pipeline from sinking, and reduce the adverse impact on pipelines and devices due to fundation changes.
- ▲ Has all the features of standard through conduit slab gate valve.
- ▲ Product range: DN100~1500 (4"~60"), PN16~25bar (class150)

● SHORT PATTERN SLAB GATE VALVE ASSEMBLY



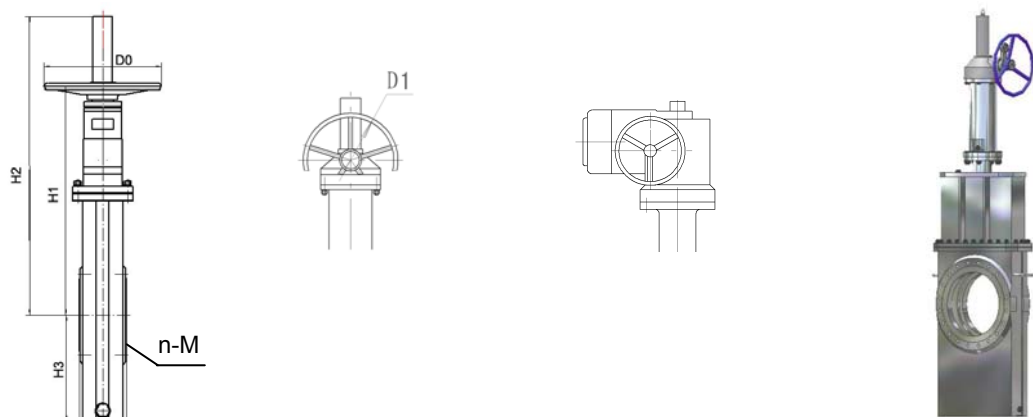
SN	Part Name	SN	Part Name	SN	Part Name	SN	Part Name
1	Body	9	O-Ring	17	Bolt	25	Nut
2	Slab Gate	10	O-Ring	18	Nut	26	Stud
3	Spring	11	Pin	19	Actuator	27	Gasket
4	Sealing Ring	12	T-Type Insert	20	Allen Screw	28	Sealing Ring
5	Seat Ring	13	Stem	21	Yoke	29	Drain Plug
6	O-Ring	14	Middle-packing	22	Bolt		
7	Guide Strip	15	Packing	23	Nut		
8	Pin	16	Stuffing Box Cover	24	Bonnet		

Short Pattern Through Conduit Slab Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● DIMENSION FOR SHORT PATTERN SLAB GATE VALVE



SIZE		L	H1	H2	H3	D0	D1	N-M (GB) 1.6/2.5	N-M (JB) 1.6/2.5	N-M (API)	A×B	Approx. Weight (kg)
API	GB/JB											
4	100	127	547	712	257	250	-	8-M16/M20	8-M16/M20	8-M16	106×204	77
5	125	140	648	820	278	350	-	8-M16/M24	8-M16/M22	8-M20	120×228	110
6	150	140	683	894	339	350	-	8-M20/M24	8-M20/M22	8-M20	120×260	135
8	200	152	793	1074	432	450	310	12-M20/M24	12-M20/M22	8-M20	140×260	230
10	250	165	951	1277	498	450	310	12-M24/M27	12-M22/M27	12-M22	150×260	265
12	300	178	1115	1505	570	550	460	12-M24/ 16-M27	12-M22/ 16-M27	12-M22	160×270	375
14	350	190	1270	1705	640	650	460	16-M24/M30	16-M22/M30	12-M27	172×370	475
16	400	216	1350	1835	710	650	460	16-M27/M33	16-M27/M30	16-M27	180×400	640
18	450	222	1504	2037	800	750	460	20-M27/M33	20-M27/M30	16-M30	190×420	660
20	500	229	1688	2265	877	750	460	20-M30/M33	20-M30/M36	20-M30	193×460	770
22	550	267	1760	2500	960	-	610	●	●	20-M33	230×500	880
24	600	267	2012	2730	1030	-	610	20-M33/M36	20-M36/M36	20-M33	230×540	1078
26	650	292	2040	3040	1110	-	610	●	●	24-M33	254×600	1320
28	700	292	2205	3090	1190	-	610	24-M33/M39	24-M36/M42	28-M33	254×600	1520
30	750	318	2320	3500	1260	-	813	●	●	28-M33	270×700	2465
32	800	318	2480	3680	1340	-	813	24-M36/M45	24-M36/M42	28-M39	270×760	2860
34	850	330	2600	4000	1420	-	813	●	●	32-M39	280×760	3400
36	900	330	2740	4230	1490	-	813	28-M36/M45	28-M36/M48	32-M39	280×800	3850
38	950	410	2870	4460	1570	-	813	●	●	32-M39	360×850	4370
40	1000	410	3020	4700	1650	-	813	28-M39/M52	28-M42/M52	36-M39	360×900	4530
42	1050	410	3160	4950	1730	-	813	●	●	36-M39	360×900	5540
48	1200	470	3580	5670	1950	-	813	32-M45/M52	32-M48/M52	44-M39	420×1000	7020
54	1400	530	4000	6580	2290	-	813	36-M45/M56	36-M48/M56	44-M45	480×1200	7920
60	1500	600	4400	7100	2410	-	813	●	●	52-M45	540×1300	10780

1. "●" Upon Request.
2. "GB/JB" means Chinese national standards.

Through Conduit Expanding Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● GENERAL

Through conduit expanding gate valve made by Chengdu Holy Valve is a kind of bilateral forced sealing valve with the capability of protecting the sealing faces. It is developed by domestic experts with outstanding ideas for design. The valve is a kind of advanced API 6D design gate valve, can provide tight mechanically activated seal. It has double sealing, bi-directional sealing and enforced mechanical sealing function, and is supplied in full bore fully piggable options. This kind of valves can be installed widely on pipelines and storage devices for thermal steam, natural gas and oil, and also can be used as bilateral truncation devices on pipelines for oil products, finished oil, coal gas, and corrosive mediums, such as acid, alkali.

● PERFORMANCE SPECIFICATION

Suitable Medium:	Thermal steam, purified natural gas, natural gas with sulphur ($H_2S+CO_2 \leq 8\%$), coal gas, crude oil, finished oil, refinery oil, clean oil and acid, alkali, etc.
Suitable Temperature:	$\leq 550^\circ C$ (Body Material: Carbon Steel, Suitable Medium: Water, Steam & Oil) $\leq 425^\circ C$ (Body Material: Cr-Ni Stainless Steel, Suitable Medium: Nitric Acid) $\leq 455^\circ C$ (Body Material: Ni-Cr-Mo Stainless Steel, Suitable Medium: Acetic Acid) $\leq 550^\circ C$ (Body Material: Cr-Mo Steel, Suitable Medium: Water, Steam & Oil)
Pressure rating:	PN5.0~16.0MPa (class300 ~ 900)
Size:	DN50~600 (NPS2 ~ 24)

● MATERIALS OF MAIN PARTS

Service	Body & Bonnet	Gate	Seat	Stem Seal	Stem	Bolting	Bolts / Nuts
Water, Steam & Oil, etc. $\leq 550^\circ C$	WCB/WCC WC6/WC9 Cr-Mo Steel	WCB/WCC WC6/WC9 Cr-Mo Steel HF-6 Hard Faced Tungsten Coated	A105 / Stainless Steel HF-6 Hard Faced Tungsten Coated	Flexible Graphite (+ Inconel)	Cr13 / 400 Series Stainless Steel	Alloy Steel	B7 / 2H
Corrosive Water, Steam & Oil, etc. $\leq 550^\circ C$	WCB/WCC WC6/WC9 Cr-Mo Steel (NACE)	WCB/WCC WC6/WC9 Cr-Mo Steel HF-6 Hard Faced Tungsten Coated	A105 / Stainless Steel HF-6 Hard Faced Tungsten Coated	Flexible Graphite (+ Inconel)	Low Alloy Steel, (ENP)	Alloy Steel (NACE)	B7M / 2HM
Nitric Acid $\leq 425^\circ C$	Cr-Ni Stainless Steel	Cr-Ni Stainless Steel HF-6 Hard Faced Tungsten Coated	Cr-Ni Stainless Steel HF-6 Hard Faced Tungsten Coated	Flexible Graphite (+ Inconel)	400 Series Stainless Steel	Alloy Steel (NACE)	B7M / 2HM
Acetic Acid $\leq 455^\circ C$	Ni-Cr-Mo Stainless Steel	Ni-Cr-Mo Stainless Steel HF-6 Hard Faced Tungsten Coated	Ni-Cr-Mo Stainless Steel HF-6 Hard Faced Tungsten Coated	Flexible Graphite (+ Inconel)	400 Series Stainless Steel	Alloy Steel (NACE)	B7M / 2HM

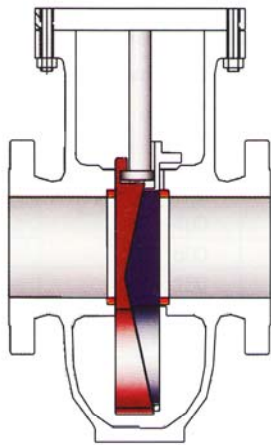
Note: The above mentioned valve parts materials are only listed for reference, the actual material should be selected upon the actual working condition.

Through Conduit Expanding Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.

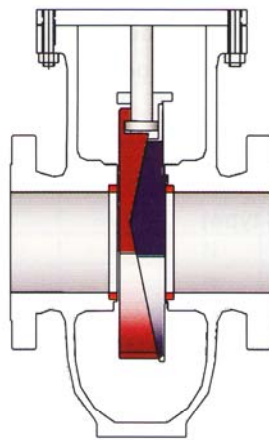


● WORKING PRINCIPLE



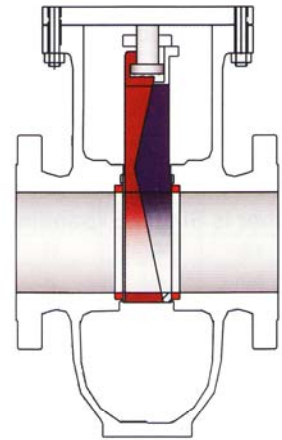
SEALED CLOSED

In the fully closed position the segment has engaged with an end-stop and the gate is wedged downward, expanding the segment and gate so that they form a tight mechanical closure against the upstream and downstream seats. Valve is in sealed position.



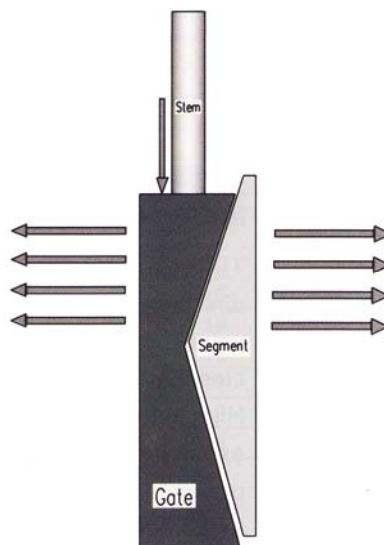
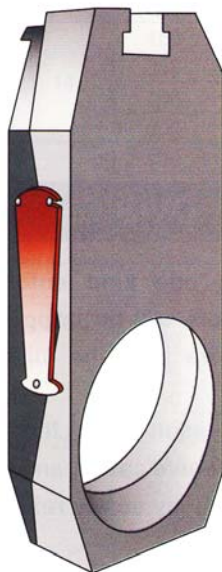
MID-TRAVEL

During travel towards open or close, the gate slides across the wedge angle of the segment, collapsing the assembly so that it travels freely between the seal faces. The lever lock gate centralizer holds the mechanism in the neutral position until closed and fully open position expansion is required.



FULLY OPEN

When the bore in the segment is aligned with the conduit bore, an end-stop prevents further travel and the gate slides across the wedge angle, expanding the gate and the segment, isolating the flow from the body.



The lever arm is held parallel to the gate faces by the skirt plate, while the assembly is moving through its stroke. Near end-of-travel, the skirt allows the lever to tilt. The gate and segment slide against their angled faces, creating the expanding seal action. In their final position, the gate and segment are mechanically secured in place. The skirt plates are guide rails, align the gate and segments with the seat.

- Note: 1. For size from 2" to 6", the gate and segment are connected with a spring.
2. For size above 8", the gate and segment are connected with lever mechanism.



● FEATURE OF THROUGH CONDUIT EXPANDING GATE VALVE

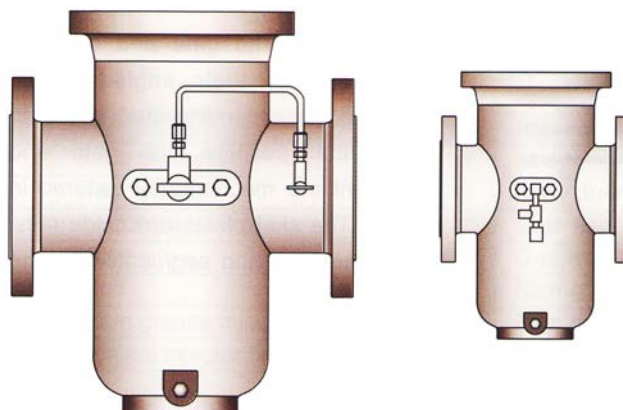
- ▲ Full bore design makes the valve suitable to be placed on pipelines to be cleaned by tube cleaner, causing no blocking or damage to the valve and other fittings. No flow resistance in the valve port.
- ▲ When valve is under fully opening or fully closing, the valve cavity is isolated from medium completely. Thereby, under accidental condition, open the bleed valve and waste valve to relieve the pressure first, and then carry out trouble removal, drainage and packing replacement.
- ▲ Fire safe design to API 6FA / API 607.
- ▲ With special top entry design, professionals or trained maintainers can replace the trims of valves online.
- ▲ Due to the absolutely bi-directional sealing, when the pressure in the body chamber is increased abnormally due to temperature rising or metallographic variation, the over pressure can not be relieved through the sealing face to pipelines, but relieve it through safety valve installed at the valve body, so as to keep safe for the pipelines and devices.
- ▲ Automatically pressure relief system will release the over pressure in the cavity for over pressure, protect the valve.
- ▲ The position of installment is flexible. The valve can be installed vertically, horizontally, reversely, obliquely and so on.
- ▲ Stem back seating design to make stem packing is repairable under full line pressure.
- ▲ Emergency sealant injection for both seats and stem packing.
- ▲ Seats may be lubricated to promote long life, minimize operating torques, or affect a seal in an emergency.
- ▲ When accidental leakage happens to sealing, relieve the pressure through grease injection, and then inject sealant into it, so as to carry out the next step (This method only can be used as an emergency management before taking measures).
- ▲ Multi-operation types, hand wheel, gear box, pneumatic, electric, etc.



Gate and Segment Assembly

★ PRESSURE RELIEF PROVISIONS

- ▲ The expanding gate valve is a kind of enforced bi-directional sealing valve, pressure will be trapped in the valve body cavity when the valve is in the full open or closed position.
- ▲ High internal pressures can result from the thermal expansion of the fluid trapped in valve cavity, and the over pressure will be released by the body safety relief system.
- ▲ Conforms to API 6D Para 6.8 / Annex A3.

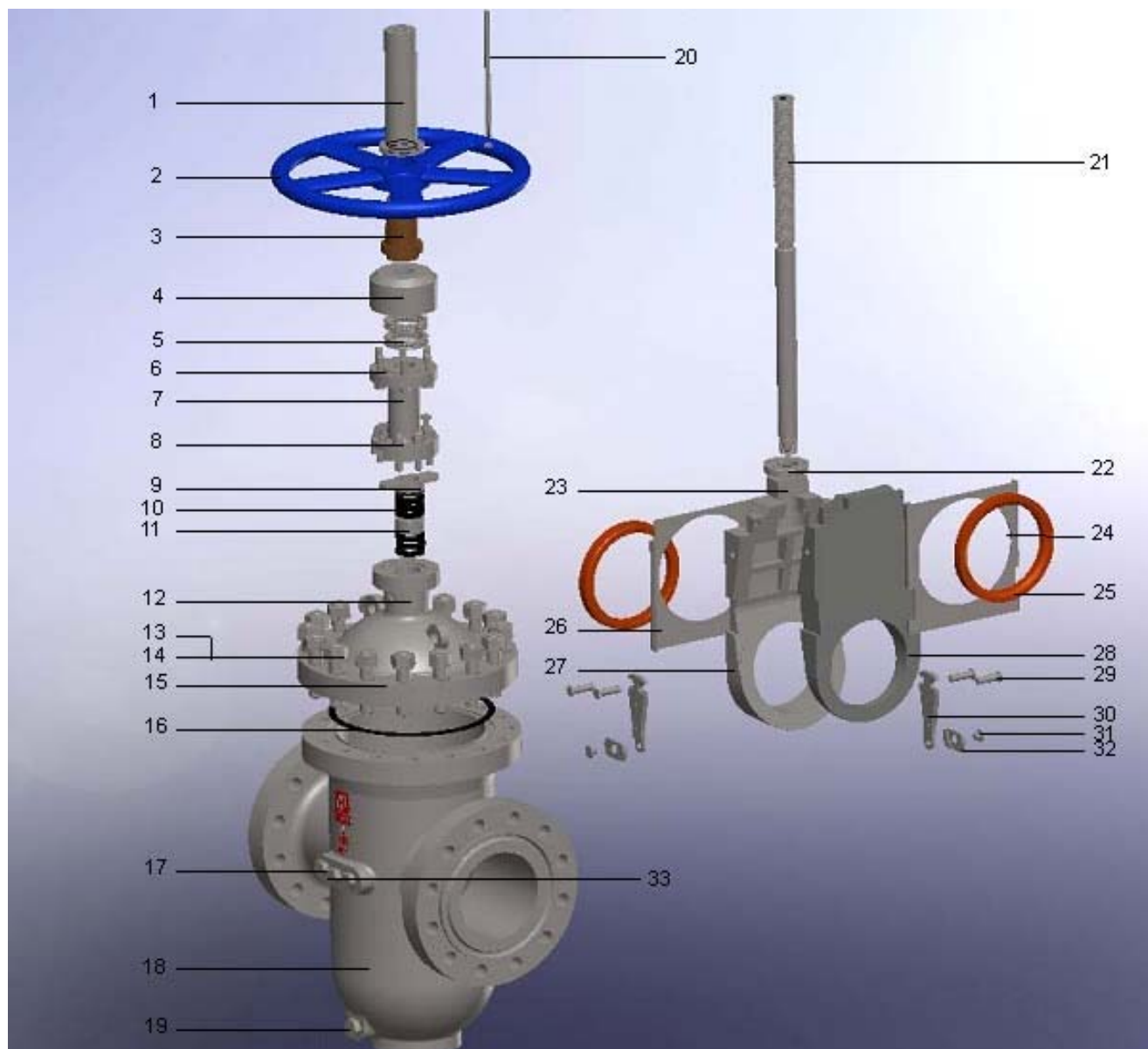


Through Conduit Expanding Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● THROUGH CONDUIT EXPANDING GATE VALVE ASSEMBLY



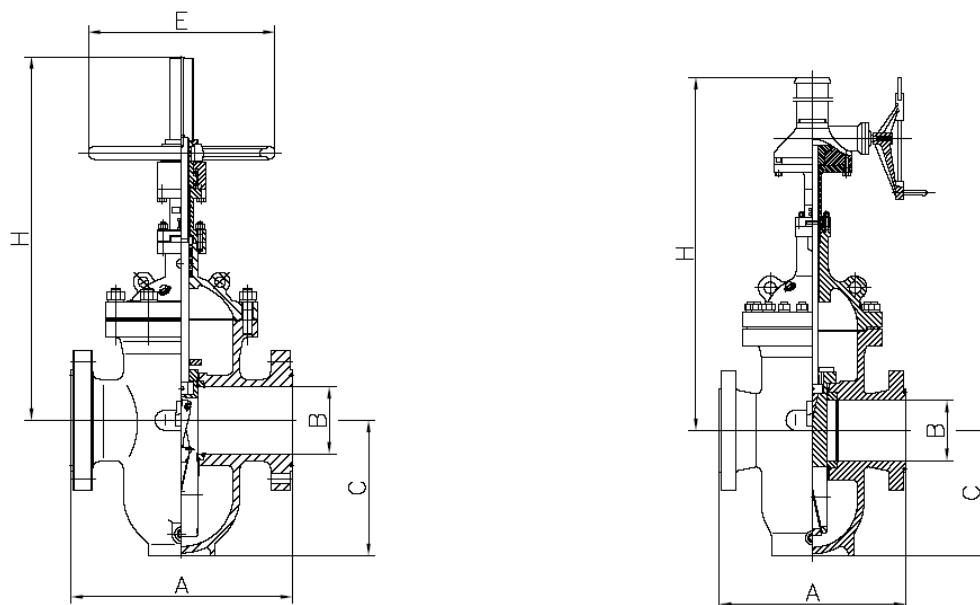
SN	Part Name	SN	Part Name	SN	Part Name	SN	Part Name
1	Stem Protector	9	Packing Gland	17	Sealant Injection Fitting	25	Seat Ring
2	Handwheel	10	Stem Packing	18	Body	26	Gate Seat Skirt
3	Stem Nut	11	Lantern	19	Drain Plug	27	Gate
4	Stuffing Box Cover	12	Vent Plug (Out of Sight)	20	Position Indicator Rod	28	Segment
5	Bearing	13	Bolt	21	Stem	29	Lever Lock Arm Pin
6	Stud	14	Nut	22	Adjusting Gasket	30	Lever Lock Arm
7	Yoke	15	Bonnet	23	T-Type Insert Nut	31	Shoe Pin
8	Stud	16	Body-Bonnet Gasket	24	Segment Seat Skirt	32	Lever Lock Shoe
						33	Safety Valve

Through Conduit Expanding Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● DIMENSION FOR THROUGH CONDUIT EXPANDING GATE VALVE CLASS300/600



Class	Size		Dimensions (mm)						Approx. Weight (kg)
	NPS	DN	A		B	C	H	E	
			(RF)	(RTJ)					
Class 300	6	150	403	419	150	324	964	500	214
	8	200	419	435	201	425	1157	560	387
	10	250	457	473	252	530	1594	--	567
	12	300	502	518	303	600	1820	--	862
	14	350	762	778	334	641	1673	--	1012
	16	400	838	854	385	714	2122	--	1587
	18	450	914	930	436	787	2205	--	1932
	20	500	991	1010	487	895	2699	--	2834
	24	600	1143	1165	586	1067	2940	--	4843
Class 600	2	50	292	295	49	122	451	300	112
	3	80	356	359	74	176	606	300	154
	4	100	432	435	100	238	721	400	217
	6	150	403	419	150	324	964	500	431
	8	200	419	435	201	430	1157	560	678
	10	250	457	473	252	530	1594	--	1050
	12	300	502	518	303	600	1820	--	1890
	14	350	762	778	334	641	1972	--	2352
	16	400	838	854	385	714	2061	--	2821
	18	450	914	930	436	787	2197	--	3752
	20	500	991	1010	487	895	2492	--	4193
	24	600	1143	1165	586	1067	2883	--	5446

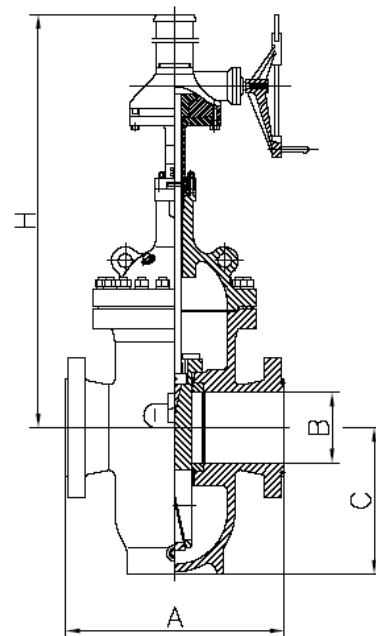
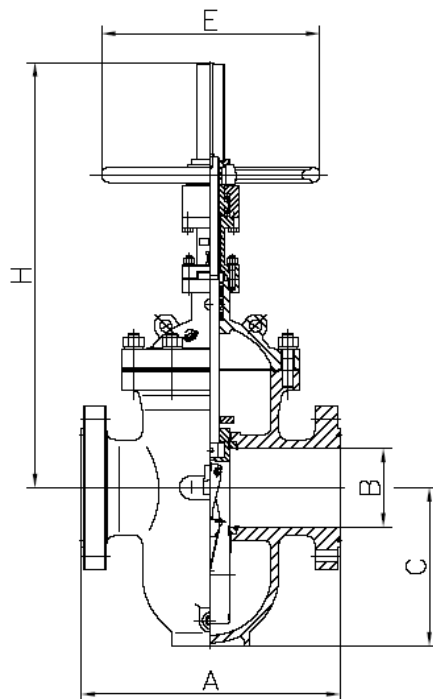
Through Conduit Expanding Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● DIMENSION FOR THROUGH CONDUIT EXPANDING GATE VALVE

CLASS900



Class	Size		Dimensions (mm)						Approx. Weight (kg)
	NPS	DN	A		B	C	H	E	
			(RF)	(RTJ)					
Class 900	2	50	368	371	49	129	451	300	146
	3	80	381	384	74	186	606	300	200
	4	100	457	460	100	230	724	450	282
	6	150	610	613	150	327	1175	--	560
	8	200	737	740	201	400	1429	--	881
	10	250	838	841	252	511	1680	--	1365
	12	300	965	968	303	597	1873	--	2457
	14	350	1029	1038	322	664	1972	--	3058
	16	400	1130	1140	373	768	2061	--	3667
	18	450	1219	1232	423	838	2337	--	4878
	20	500	1321	1334	471	914	2616	--	5451
	24	600	1549	1568	522	1130	2883	--	7080



● GENERAL

Underground slab gate valve is used to cut off medium in buried pipelines transportation, it can be buried in underground directly only required to build a small valve room on the valve cover (see drawing 5), in order to operate and maintain conveniently in all directions above ground.

● FEATURES OF UNDERGROUND SLAB GATE VALVE

- ▲ Reliable sealing, lower flow resistance coefficient, good anti-rust performance.
- ▲ It can be installed with professional parts and special design construction in order to install or unload the parts on line and convenient to keep the maintenance.
- ▲ Separation between inner cavity of body and medium bore, keeps clean without deposits.
- ▲ With indicating position device.
- ▲ Optional the relief device.
- ▲ Optional actuators: Handwheel, gear box, electrical actuator.

It's widely used to connect the buried pipelines in city coal gas, natural gas and liquefied petroleum gas (LPG), above ground station and long-distance transportation of pipelines after installed connection flange and handwheel.

● PERFORMANCE

Suitable Medium:	Coal gas, natural gas, liquefied petroleum gas and so on.
Suitable Temperature:	-29℃~100℃
Pressure rating:	PN1.6~16.0MPa (class150 ~ 900)
Size:	DN50~700 (NPS2 ~ 28)

● STANDARDS (EXCEPT FOR RELATED INTERNATIONAL STANDARDS)

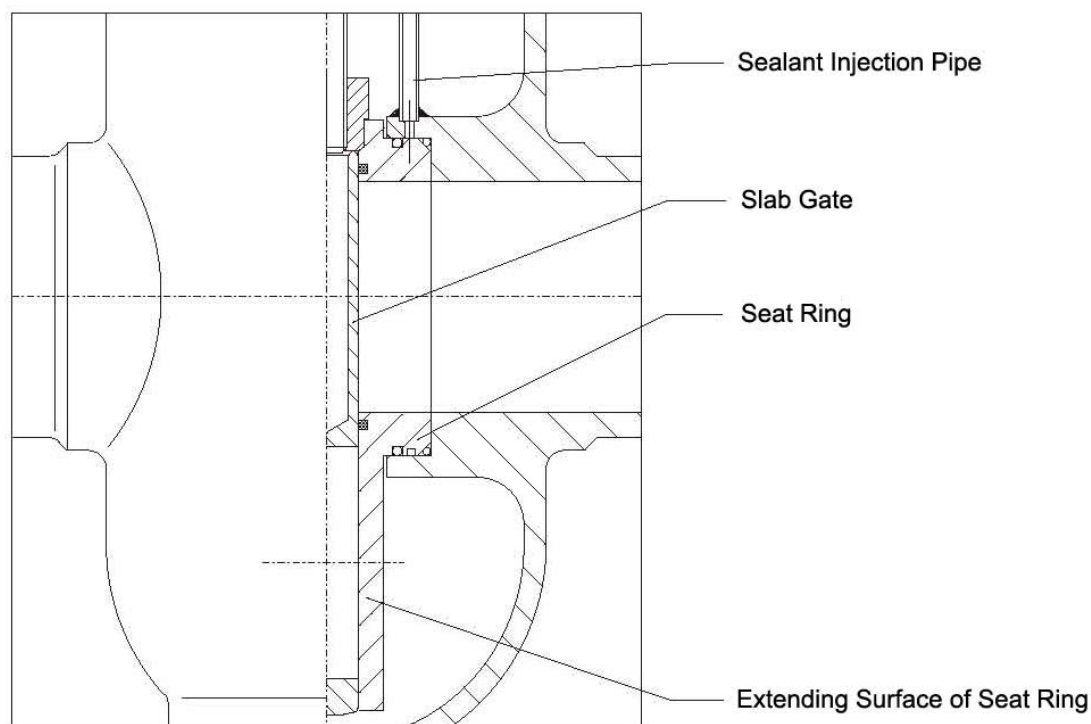
JB/T5298	Steel slab gate valve in pipeline
Q/35X21	Non-rising slab gate valve in buried pipeline
GB/T12234	Bolted cover steel gate valve in Oil & Gas
GB/T12221	Metal valve/face to face length
GB/T12229	General valve/casting steel technical condition
GB/T13927	General valve/pressure test
GB/T12224	General steel gate valve
JB/T79.1~94	Casting steel pipe flange

● MATERIALS OF MAIN COMPONENTS

Name of Parts	Material
Body& Cover	ASTM A216 WCB
Slab Gate & Seat Ring	16Mn / ASTM A105, Alloy Steel+ENP, Stellite Deposited + ENP
Stem	2Cr13/ASTM A276 420
Sealing	PTFE, Viton, 5080



● VALVE SEALINGS



**Drawing 1: Model MZ Buried Valve
(Half-Opening Position)**

1. Non-rising stem gate valve with single slab and guiding hole is double floating seats construction, and the sealings are soft sealing, metal sealing and sealing injection sealant.
2. Extending seat keeps the separation between the bore and cavity during opening or closing status, the deposits of the bore will not enter into the cavity, the slab can move in the cavity freely even using for long time.

● ANTI-CORROSION IN OUTER AND INNER SURFACE

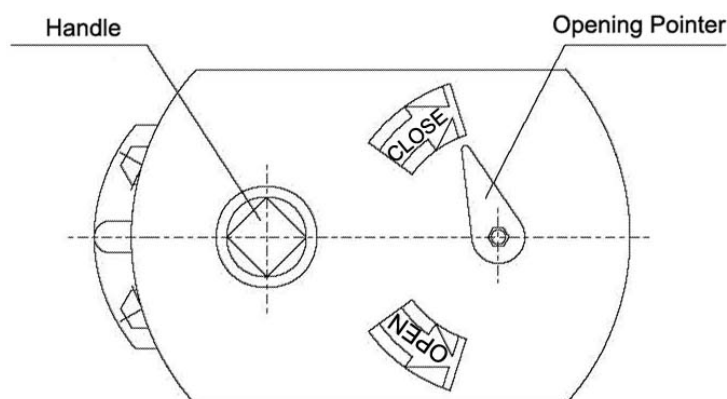
Non-machining sections are under shot blast, inner surface is painted with varnish like epoxy resin in 2~3 layers of coatings. Except the welding ends, outer surface is painted with epoxy anti-rust red primer and then with insulated heavy corrosion coating. At Present, XHDAC series heavy corrosion coating was used in our factory, and also we use Chlorosulfonated Polyethylene Rubber (CPR) which is recognized by anti-corrosion field to change the performance of the epoxy resin, CPR owns much advantage, such as firm adhesion, good flexibility, impact resistance and well insulation, and waterproof, oilproof, anti-acid, alkali and salt, as well with good stability of freezing and thawing, and wide temperature from -60°C to 120°C.

Note: Underground slab gate valves made by our company are Chinese patent products.

Patent No.: 95242080.5.



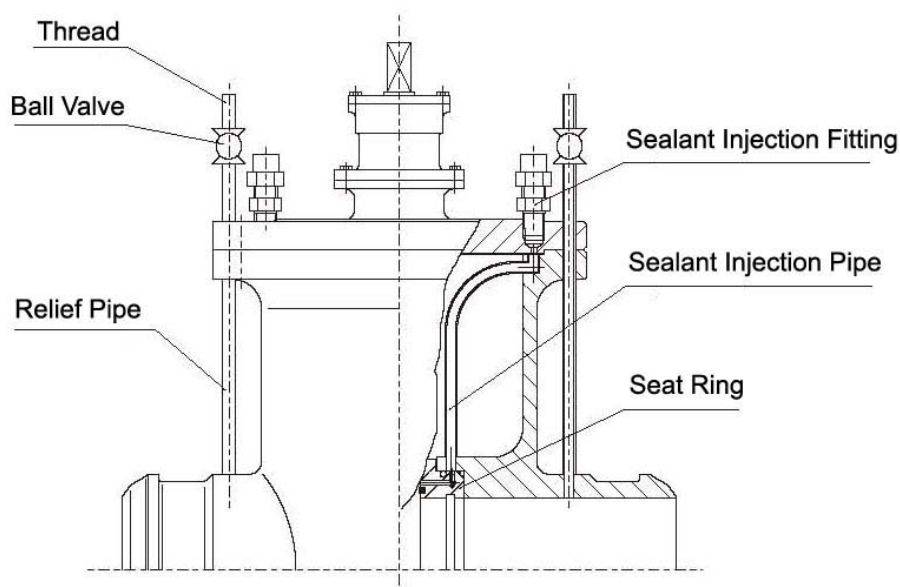
● POSITION INDICATING DEVICE



In order to observe the opening or closing status of the valve, the position indicating device is designed on the top of the valve with stainless steel parts.

Drawing 2: Position Indicating Device

● SEALANT INJECTION



Drawing 3: Devices for Sealant Injection and Relief

Sealant is injected from outside of body to seat ring to strengthen the auxiliary sealing of the valve, it can be sure the zero leakage even if the valve is used for long time.

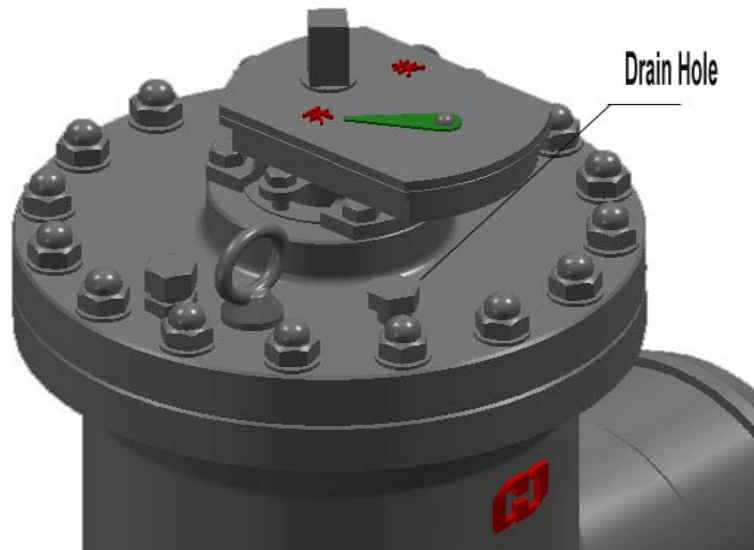
● RELIEF DEVICE

In order to test the pressure of the medium and obviate the excess pressure in the pipe, the relief device (See drawing 3) can be installed; there is a small ball valve in the top of the relief pipe.

Exception for the special requirement from customers, the size of the relief pipe is 1/2" when valve size is $DN < 200$, and the screw thread size of the pipe is Rc1/2; The size of the relief pipe is 3/4" when the valve size is $DN \geq 200$, and the screw thread size of the pipe is Rc1/2.



● DRAIN HOLE



Drawing 4: Drain hole

From the design of Holy valve, there is a good device to prevent the stagnant water, namely there are two balanced drainage holes (hole screw thread in Rc1/2) in the cover. When working, you need to unscrew the two drain plugs, put a pipeline in the hole and draw out the stagnant water with a pump. Meanwhile you may put a pipeline at the bottom of the water in one hole, and in another hole with gas pressure to draw out the water.

● ON-LINE MAINTENANCE

Using the special professional tools, customers can dis-assemble, assemble, and change the defective inner parts on line conveniently, keep the maintenance for the valves.

● MODEL INSTRUCTION

For instance: MZ467F-16CP

Instruction:

M: Underground valve

Z: Gate valve

4: Driving Model: 4-Gear box, 9-Electric, 9B-Electric c/w explosion-proof, no number for manual operators.

6: End connection type: 6-Welded ends, 4-Flanged ends.

7: Non-rising stem, single slab (MFC. Standard).

F: Material of seat insert: F-Fluorous rubber, Y-Hard alloy, H-Nitride alloyed steel.

16: Nominal Pressure: Mark as 10 times in metric pressure MPa.

C: Body material: C-Carbon steel (may be omitted when $PN > 1.6$ MPa), P-Stainless steel, I-Alloyed steel.

P: Special device: P-With relief device (Optional).

● WELDING ENDS UNDERGROUND SLAB GATE VALVE



MZ67F-□ Series

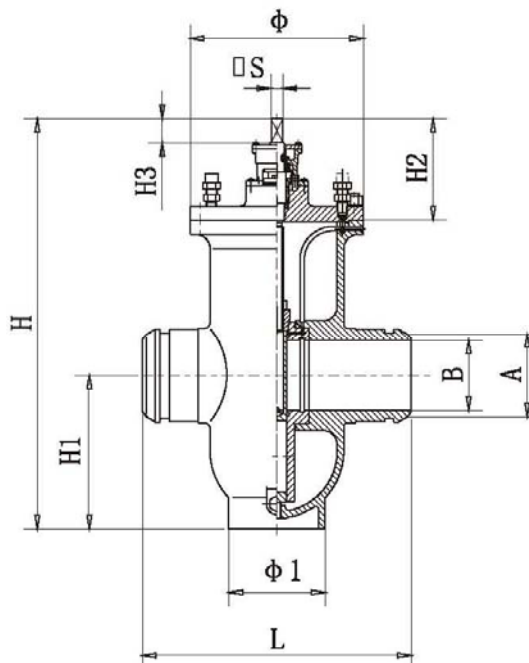
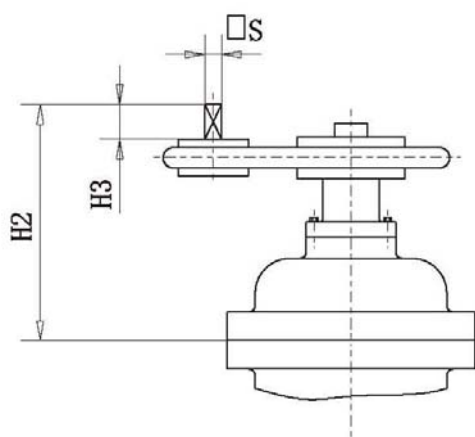


MZ67F-□ -P Series

Model Instruction: MZ467-25-P DN350

Means nominal pressure is 2.5MPa, nominal size is 350mm, with gear box, welded ends, and with relief device.

● DIMENSION FOR WELDING ENDS UNDERGROUND SLAB GATE VALVE



Underground Slab Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



PN (MPa)	DN (mm)	Valve Construction										Welding End		Weight (Kg)
		L	H		H1	H2		H3	□S	¢	¢ 1	¢ A	¢ B	
			Manual	G.O.		Manual	G.O.							
1.6	50	292	552		165	210		50	24	254	110	62	50	58
	65	330	550		184	210		50	24	254	110	75	64	73
	80	356	652		213	210		50	24	276	110	91	68	98
	100	432	708		240	210		50	24	296	120	117	96	122
	125	508	782		286	210		50	24	330	172	146	121	187
	150	559	871		323	221		50	24	360	205	172	146	230
	200	660	1081		404	261		50	24	440	200	223	200	395
	250	787	1223	1386	477	282	405	50	27/24	480	220	278	246	570
	300	838	1330	1495	538	365	530	50	27/24	530	280	329	300	680
	350	889	1481	1510	620	379	545	50	27/24	600	280	360	330	870
	400	991	1695	1860	720	450	615	50	27/24	682	280	413	382	1280
	500	1194	2000	2087	830	550	637	50	27/24	782	300	508	460	2050
2.5 (class 150)	50	292	552		165	210		50	24	254	110	62	50	58
	65	330	550		184	210		50	24	254	110	75	64	73
	80	356	652		213	210		50	24	276	110	91	68	98
	100	432	708		240	210		50	24	296	120	117	96	122
	125	508	782		286	210		50	24	330	172	146	121	187
	150	559	871		323	221		50	24	360	200	172	146	230
	200	660	1081		404	261		50	24	440	200	223	200	395
	250	787	1223	1386	477	282	405	50	27/24	480	220	278	246	570
	300	838	1330	1495	538	365	530	50	27/24	530	280	329	300	680
	350	889	1481	1510	620	379	545	50	27/24	600	280	360	350	870
	400	991	1695	1860	720	450	615	50	27/24	682	280	413	400	1280
	500	1194	2000	2087	830	550	637	50	27/24	782	300	508	500	2050
4.0	50	292	544		165	210		50	24	254	110	62	50	61
	65	330	550		184	210		50	24	254	110	75	64	77
	80	356	652		213	210		50	24	276	110	91	68	103
	100	432	708		240	210		50	24	296	120	117	96	129
	125	508	782		286	210		50	24	330	172	146	121	198
	150	559	871		323	221		50	24	360	205	172	146	243
	200	660	1081		404	261		50	24	440	200	223	200	408
	250	787	1223	1386	477	282	405	50	27/24	480	220	278	246	604
	300	838	1330	1495	538	365	530	50	27/24	530	280	329	300	720
	350	889	1481	1510	620	379	545	50	27/24	600	280	360	330	922
	400	991	1695	1860	720	450	615	50	27/24	682	280	413	382	1356
	500	1194	2000	2087	830	550	637	50	27/24	782	300	508	460	2173
6.4 (class 300)	50	292	529		170	191		50	24	254	110	62	49	63
	65	330	572		189	191		50	24	254	110	75	60	80
	80	356	620		218	196		50	24	276	110	91	75	107
	100	432	688		245	200		50	24	296	120	117	96	134
	125	508	786		291	210		50	24	330	172	146	121	205
	150	559	875		328	216		50	24	360	205	172	146	253
	200	660	1110		409	258		50	24	440	200	223	190	423
	250	787	1262	1386	779	260	405	50	27/24	480	220	278	246	627
10.0 (class 600)	50	292	533		171	193		50	24	254	110	62	49	66
	65	330	576		190	193		50	24	254	110	75	60	83
	80	356	624		219	198		50	24	276	110	91	75	112
	100	432	757		246	257		50	24	296	120	117	96	140
	125	508	800		292	210		50	24	330	172	146	121	215
	150	559	880		329	210		50	24	360	200	172	146	264
	200	660	1132		410	264		50	27/24	446	200	223	190	442

Notes: □S—Denominator indicates the dimension when with spur gear.

Underground Slab Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



● FLANGED ENDS UNDERGROUND SLAB GATE VALVE



MZ47F-□-P Series

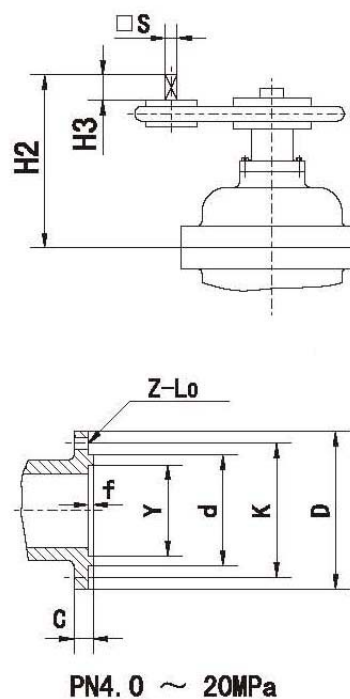
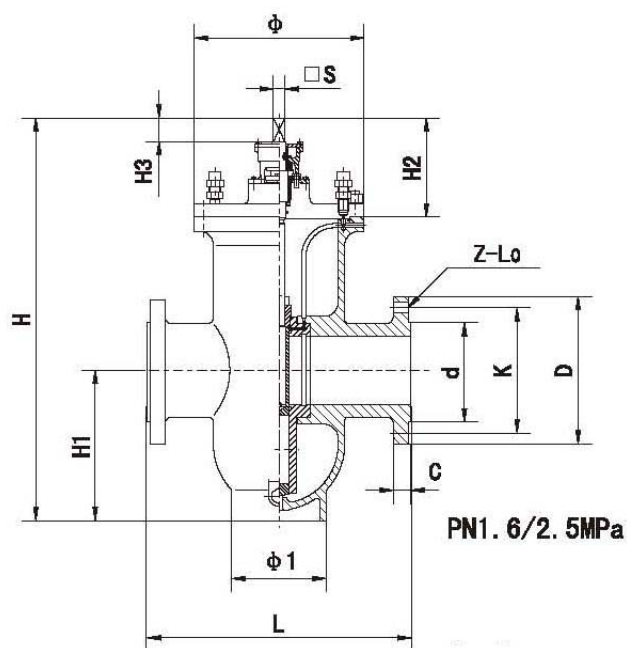


MZ47F-□ Series

Model Instruction: MZ47-25-P DN150

Means nominal pressure is 2.5MPa, nominal size is 150mm, flanged ends

● DIMENSION FOR FLANGED ENDS UNDERGROUND SLAB GATE VALVE



Underground Slab Gate Valve

Chengdu Holy Valve & Complete Equipment Co., Ltd.



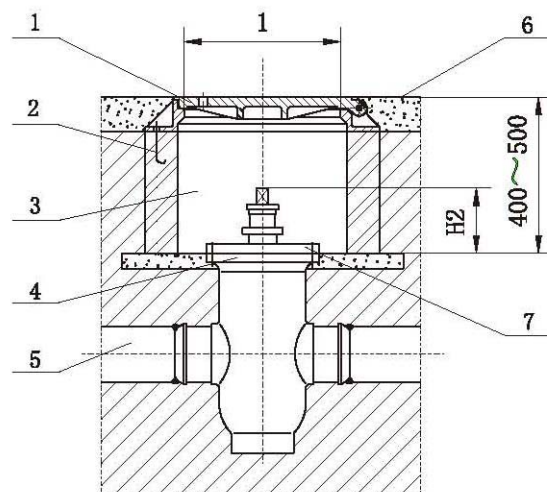
PN (MPa)	DN (mm)	Valve Construction										Flange End & Sealing Dimension								Weight (kg)
		L	H		H1	H2		H3	□S	¢	¢ 1	D	K	C	d	Y	f	Z-Lo		
			Manual	G.O.		Manual	G.O.													
1.6	50	292	552		165	210		50	24	254	110	160	125	16	100	--	--	4- ¢ 18	60	
	65	330	550		184	210		50	24	254	110	180	145	18	120	--	--	4- ¢ 18	76	
	80	356	652		213	210		50	24	276	110	195	160	20	135	--	--	8- ¢ 18	101	
	100	432	708		240	210		50	24	296	120	215	180	20	155	--	--	8- ¢ 18	126	
	125	508	782		286	210		50	24	330	172	245	210	22	185	--	--	8- ¢ 18	193	
	150	559	871		323	221		50	24	360	205	280	240	24	210	--	--	8- ¢ 23	237	
	200	660	1081		404	261		50	24	440	200	335	295	26	265	--	--	12- ¢ 23	395	
	250	787	1223	1386	477	282	405	50	27/24	480	220	405	355	30	320	--	--	12- ¢ 25	585	
	300	838	1330	1495	538	365	530	50	27/24	530	280	460	410	30	375	--	--	12- ¢ 25	698	
	350	889	1481	1510	620	379	545	50	27/24	600	280	520	470	34	435	--	--	16- ¢ 25	893	
	400	991	1695	1860	720	450	615	50	27/24	682	280	580	525	36	485	--	--	16- ¢ 30	1310	
	500	1194	2000	2087	830	550	637	50	27/24	782	300	705	650	44	608	--	--	20- ¢ 34	2105	
2.5 (class 150)	50	292	552		165	210		50	24	254	110	160	125	20	100	--	--	4- ¢ 18	60	
	65	330	550		184	210		50	24	254	110	180	145	22	120	--	--	8- ¢ 18	76	
	80	356	652		213	210		50	24	276	110	195	160	22	135	--	--	8- ¢ 18	102	
	100	432	708		240	210		50	24	296	120	230	190	24	160	--	--	8- ¢ 23	128	
	125	508	782		286	210		50	24	330	172	270	220	28	188	--	--	8- ¢ 25	195	
	150	559	871		323	221		50	24	360	205	300	250	30	218	--	--	8- ¢ 25	240	
	200	660	1081		404	261		50	24	440	200	360	310	34	278	--	--	12- ¢ 25	399	
	250	787	1223	1386	477	282	405	50	27/24	480	220	425	370	36	332	--	--	12- ¢ 30	588	
	300	838	1330	1495	538	365	530	50	27/24	530	280	485	430	40	390	--	--	16- ¢ 30	706	
	350	889	1481	1510	620	379	545	50	27/24	600	280	550	490	44	448	--	--	16- ¢ 34	904	
	400	991	1695	1860	720	450	615	50	27/24	682	280	610	550	48	505	--	--	16- ¢ 34	1324	
	500	1194	2000	2087	830	550	637	50	27/24	782	300	730	660	52	610	--	--	20- ¢ 41	2117	
4.0	50	292	544		165	210		50	24	254	110	160	125	20	100	88	4	4- ¢ 18	63	
	65	330	550		184	210		50	24	254	110	180	145	22	120	110	4	8- ¢ 18	80	
	80	356	652		213	210		50	24	276	110	195	160	22	135	121	4	8- ¢ 18	107	
	100	432	708		240	210		50	24	296	120	230	190	24	160	150	4.5	8- ¢ 23	135	
	125	508	782		286	210		50	24	330	172	270	220	28	188	176	4.5	8- ¢ 25	206	
	150	559	871		323	221		50	24	360	205	300	250	30	218	204	4.5	8- ¢ 25	253	
	200	660	1081		404	261		50	24	440	200	375	320	38	282	260	4.5	12- ¢ 30	422	
	250	787	1223	1386	477	282	405	50	27/24	480	220	445	385	42	345	313	4.5	12- ¢ 34	622	
	300	838	1330	1495	538	365	530	50	27/24	530	280	510	450	46	408	364	4.5	16- ¢ 34	746	
	350	889	1481	1510	620	379	545	50	27/24	600	280	570	510	52	465	422	5	16- ¢ 34	956	
	400	991	1695	1860	720	450	615	50	27/24	682	280	655	585	58	535	474	5	16- ¢ 41	1400	
	500	1194	2000	2087	830	550	637	50	27/24	782	300	755	670	62	612	576	5	20- ¢ 48	2240	
6.4 (class 300)	50	292	529		170	191		50	24	254	110	175	135	26	105	88	4	4- ¢ 23	66	
	65	330	572		189	191		50	24	254	110	200	160	28	130	110	4	8- ¢ 23	84	
	80	356	620		218	196		50	24	276	110	210	170	30	140	121	4	8- ¢ 23	111	
	100	432	688		245	200		50	24	296	120	250	200	32	165	150	4.5	8- ¢ 30	142	
	125	508	786		291	210		50	24	330	172	295	240	36	202	176	4.5	8- ¢ 30	217	
	150	559	875		328	216		50	24	360	205	340	280	38	240	204	4.5	8- ¢ 34	271	
	200	660	1110		409	258		50	24	440	200	405	345	44	300	260	4.5	12- ¢ 34	451	
	250	787	1262	1386	779	260	405	50	27/24	480	220	470	400	48	352	313	4.5	12- ¢ 41	666	
10.0 (class 600)	50	292	533		171	193		50	24	254	110	195	145	28	112	88	4	4- ¢ 25	70	
	65	330	576		190	193		50	24	254	110	220	170	32	138	110	4	8- ¢ 25	89	
	80	356	624		219	198		50	24	276	110	230	180	34	148	121	4	8- ¢ 25	119	
	100	432	757		246	257		50	24	296	120	265	210	38	172	150	4.5	8- ¢ 30	151	
	125	508	800		292	210		50	24	330	172	310	250	42	210	176	4.5	8- ¢ 34	232	
	150	559	880		329	210		50	24	360	200	350	290	46	250	204	4.5	12- ¢ 34	287	
	200	660	1132		410	264		50	27/24	446	200	430	360	54	312	260	4.5	12- ¢ 41	480	

Notes: □S—Denominator indicates the dimension when with spur gear.

● INSTALLATION FOR UNDERGROUND VALVE

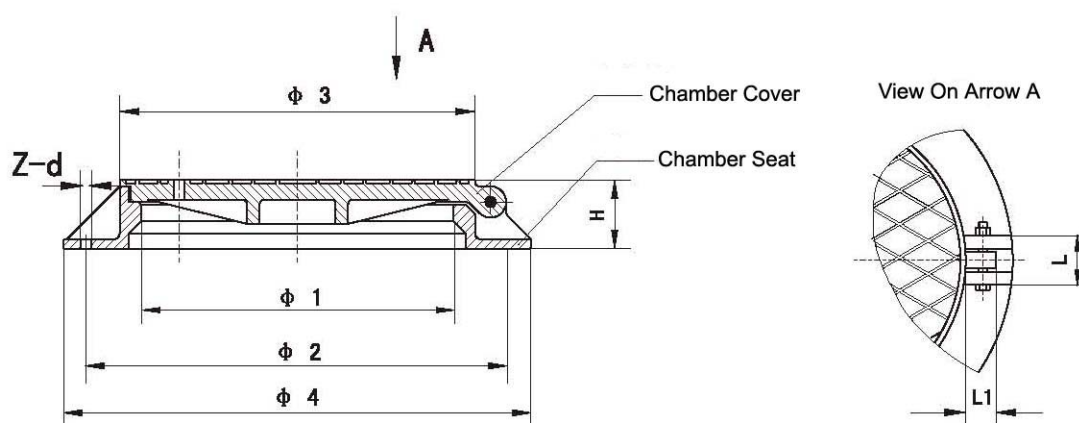
Valve chamber is the mating equipment for the non-rising stem underground slab gate valve in buried pipelines. The material is ductile casting iron; the design is theft-deterrent hinge connection, and convenient opening. It's widely used in city residential sub-districts, courtyard, pavements and other environments, it allows the loading weight in Cars-Class 8.

If required please note in inquiry, we'll offer you accordingly.



Drawing 5: Sketch for construction of buried valve

1. Chamber cover 2. Buried bolt 3. Chamber room 4. Top flange 5. Pipe 6. Ground 7. Bonnet



Drawing 6: Sketch for valve chamber

Model	Valve Size		φ 1	φ 2	φ 3	φ 4	H	L	L1	Z-d	Weight (kg)
	DN (mm)										
	From	To									
MZS-500	50	500	500	660	570	750	110	140	50	3-16	120
MZS-820	250	700	820	970	890	1070	110	140	80	4-22	240
MZS-940	400	700	940	1130	1060	1200	125	140	105	4-22	380

CHENGDU HOLY VALVE & COMPLETE EQUIPMENT CO., LTD.

MAIN MANUFACTURING FACILITIES

SN	Name	Model and Specification	Qty
1	Single Arm Vertical Type Lathe	C5116A Ø1600	1
2	Single Arm Vertical Type Lathe	C5112A Ø1250	1
3	Vertical Type Lathe (4m)	CQX5240	1
4	Numerical Display Double Arm Vertical Type Lathe	CX5225/1 Ø2500	1
5	Large Type General Lathe	CW611001	1
6	Horizontal Type Processing Center	FBM-11025	1
7	Numerical Control Lathe	CAK63135D	2
8	Numerical Control Lathe	CAK4085DJ	1
9	Ball Surface Lathe	C6595/1500	1
10	Ball Surface Lathe	CR6532 Ø50~320	1
11	Numerical Display Lathe	CX616A-1 320×750	1
12	Numerical Display Lathe	CA6140 800×5000	2
13	General Lathe	C6140 400×1000	5
14	General Lathe	CW6180A 800×5000	1
15	Saddle Bed Lathe	CW6263B 630×750	1
16	Horizontal Type Boring Machine	TX68 Ø85	3
17	Floor Type Boring & Milling Machine	TX6213	1
18	Plano Milling Machine	X2012C 1250×4000	1
19	Vertical Type Knee Type Milling Machine	X53K 400×1600	2
20	Vertical Type Knee Type Milling Machine	X52K 320×1250	2
21	Vertical Type Knee Type Milling Machine	X5032 320×1320	2
22	Universal Knee Type Milling Machine	B1-400W 400×1600	3
23	Numerical Display Horizontal Type Knee Type Milling Machine	FX6045/1	1
24	Numerical Display Universal Knee Type Milling Machine	X6132/1	1
25	Slotting Machine	B5032	1
26	Numeral Control Lathe	180-CNC	5
27	Turning & Milling Processing Center	INTE200SY	1
28	Numeral Control Line Cutter	DK720	2
29	Numeral Control Water Knife Cutting Machine	CX5225	1
30	Universal Cylindrical Grinding Machine	M1432A Ø320×1500	1
31	Universal Cylindrical Grinding Machine	M1432B Ø320×1000	1
32	Universal Tool Grinding Machine	M6025C Ø250	1
33	Universal Tool Grinding Machine	M612K Ø200	1
34	Surface Grinding Machine With Horizontal Spindle And Rectangular Table	M7132H	1
35	Surface Grinding Machine With Horizontal Spindle And Rectangular Table	M7150A 500×2000	1
36	Plano Surface Grinding Machine	CC1-033	1
37	Cylinder Column Vertical Type Drilling Machine	Z525B Ø25	2
38	Radial Drilling Machine	Z3063 Ø63×2000	5

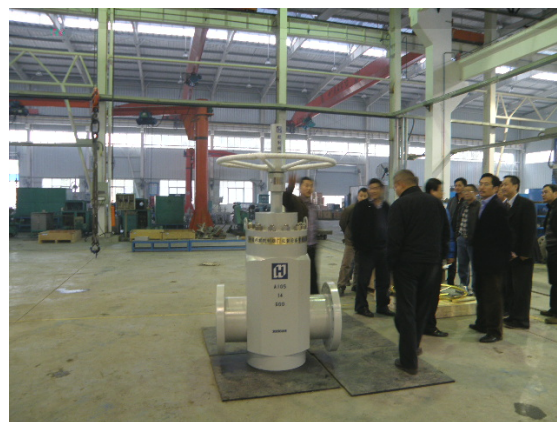


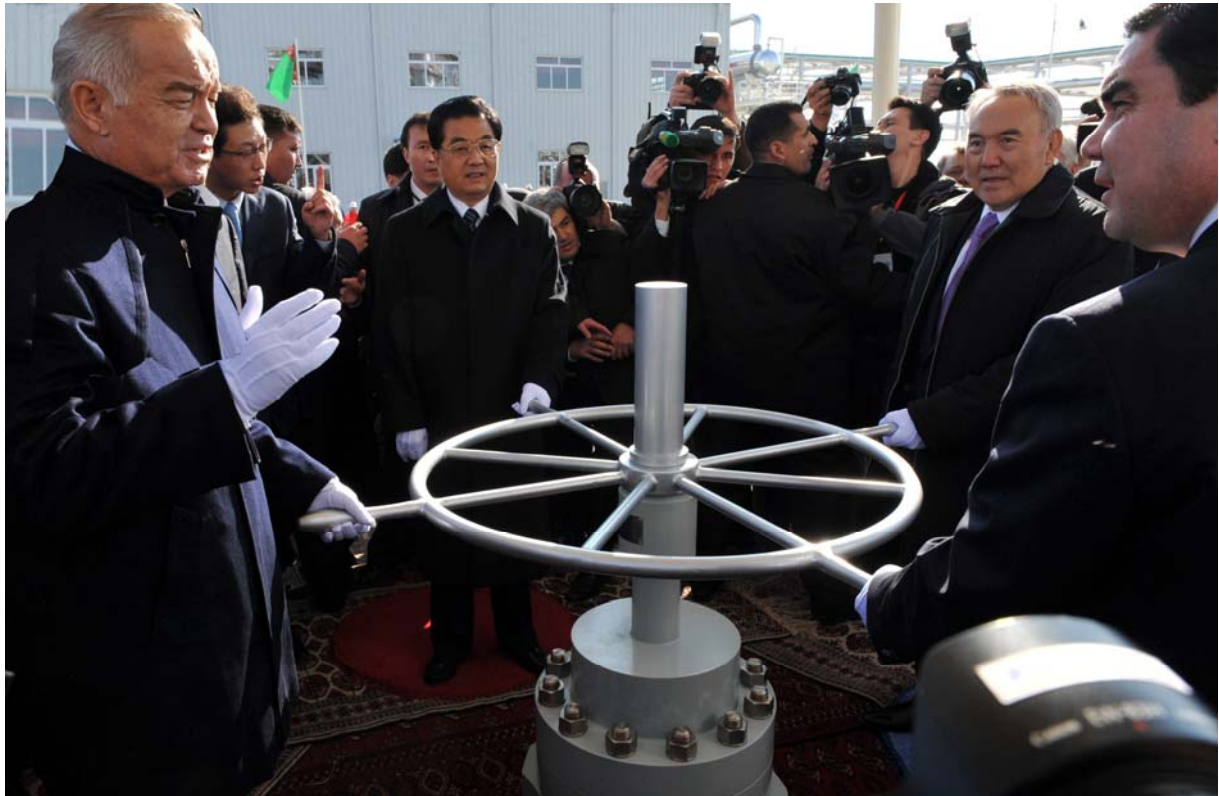
MAIN REFERENCE

- ★ **Indian Oil Corporation Limited**
Viramgam Kandla Pipeline Project
- ★ **Goodwell Engineering Ltd Part.**
Oil Pipeline of Thai Petroleum Pipeline Co., Ltd.
- ★ **China Petroleum Pipeline Material And Equipment Corporation:**
Chas Permit H Crude Oil Transportation Pipeline Project
Niger Agadem Field Crude Oil Pipeline Project
- ★ **Xinjiang Petroleum Engineering Construction Co., Ltd.**
Kazakhstan Hope Oil Field Oil Transfer Station
- ★ **China Petroleum Engineering Construction (Group) Company**
China to Kazakstan Oil Transportation Pipeline Project
- ★ **Zigong Rocky Union Valve Co., Ltd.**
Export to American, Mexico, etc.
- ★ **PetroChina Pipeline Co., Ltd.**
Shilan-Huiyin Oil Transportation Pipeline Project
Lanzhou-Zhengzhou-Changqing Oil Transportation Pipeline Project
China to Russian Crude Oil Pipeline Project
Qinhuangdao-Beijing Oil Transportation Pipeline Project
Renqiu--Beijing Oil Transportation Pipeline Project
Northeast China Pipeline Net
Daqing – Tieling Pipeline Capacity Expansion Rebuilding Project and Oil Tank
Dagang-Zaozhuang Oil Transportation Pipeline Project
Changling - Songlan Nature Gas Transportation Pipeline Project
Dalian- Xiaosonglan Oil Transportation Pipeline Project
- ★ **PetroChina Talimu Oil Field Co., Ltd.**
West To East Gas Transportation Pipeline Project
- ★ **PetroChina Talimu Oil Field Co., Ltd.**
Yingmaili Gas Field Project
- ★ **Xinjiang Oil Managing Bureau Material Provide Head Company**
West China Crude Oil and Finished Oil Pipeline Project
- ★ **Xuzhou Chengda Petroleum & Chemical Equipment Installation Co., Ltd.**
China Petroleum Ningbo Daxie Fuel Oil House Project
- ★ **China Petroleum Pipeline Materials & Equipment Corporation Pipeline Bureau**
West China Crude Oil and Finished Oil Pipeline Project
Lanzhou Commercial Oil Tank Project



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