



**AUSTRALIAN
PIPELINE VALVE®**
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Joint Venture



API 6D - 1473
API Q1 - 2345
API QR - 2470 (9001)
API 6A - 0842

SLAB & PARALLEL SLIDE GATE VALVE

WWW.FZVGROUP.COM



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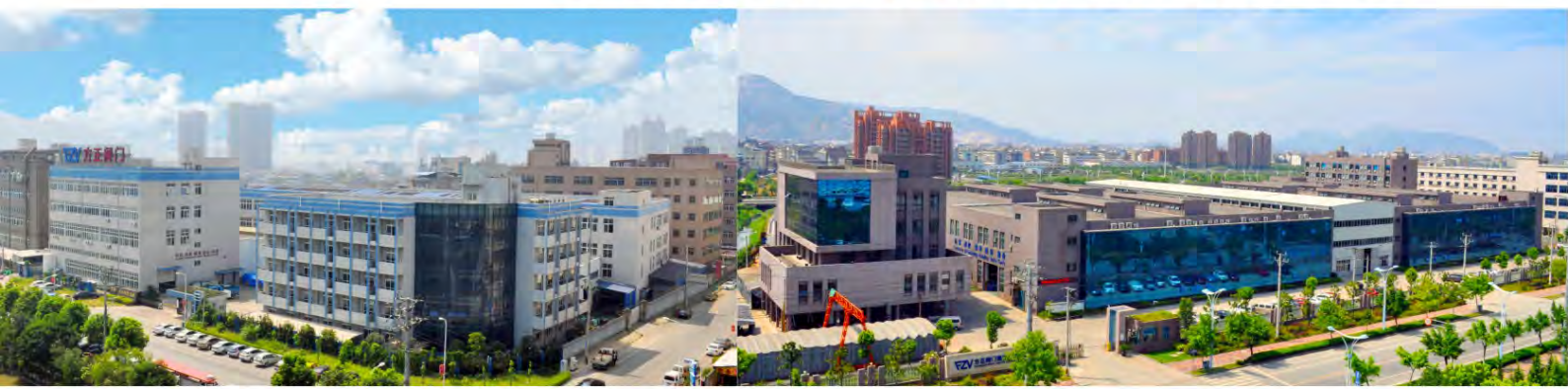
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INDUSTRIAL PIPELINE CONTROL EXPERT

FANGZHENG VALVE GROUP



We (FZV) commit ourselves to manufacturing excellent valves and achieving our customer satisfaction based on the principles of quality assurance and continual improvement.

We specialize in supplying a wide range of API 6D, API 609, API 600, API 594, API 6A, and API 16C products and wellhead equipment.

FZV was formally established in 1992, and so far, FZV has been approved by well-known international and domestic End-users and EPC companies.

FZV has set up three factories based in Shanghai and Wenzhou city with total area 76000 m² and maximum production capacity up to 32000 tons.

To enhance engineering designs and manufacture high-end products, FZV has in-house laboratory equipped with various facilities and test equipment to check and verify the product quality. The following tests are conducted in-house:

- Chemical analysis
- Mechanical test, Hardness, and impact test
- Non-destructive examination
- Salt spray test
- Fugitive emission test(ISO 15848-1 & 2)
- Deign validation testing (DVT) as per SHELL(MESC SPE 77/300)
- High temperature (Up to 550°C) and Cryogenic test (Up to -196°C)

FZV is certified by ISO 9001, ISO 14001, OHSAS 18001, API6D, API600, API609, API594, API607, API6A, API6A-PR2, API Spec.Q1, ABS, CCS, DNV, ATEX, and CE/PED, etc.

FZV Main Products Range:

Product types: Ball Valve, Gate Valve, Globe Valve, Check Valve, Butterfly Valve, Slab Gate Valve, Pipe Fitting, Cryogenic Valve, API6A Valve, Wellhead Equipment, Manifold & Christmas tree, etc.

Implemented Standards: ISO, API, BS, etc.

Casting material: WCB, LCB, WC6, WC9, C5, C12, CF3, CF3M, CF8, CF8M, C95500, 4A, 5A, Monel 400/500, Inconel 825/625, Titanium Alloy, etc.

Forging material: A105, LF2, F11, F12, F304, F321, F347, F316, 304L, 316L, C61900, F51, F53, F55, Inconel, Titanium Alloy, etc.

Nominal diameter: NPS 1/2"-68"(DN 15-DN 1,700)

Nominal pressure: API600 & API6D: CLASS 150~CLASS 2,500 (PN16~PN420) API 6A: 2,000PSI~15,000PSI

Temperature range: -196°C-550°C

Applications: Onshore oil and gas exploitation and transportation, offshore oil and gas platform and FPSO / FLNG / FSRU, natural gas purification and liquefaction unit, LNG receiving station and vaporization unit, refining, chemical industry and chemistry, coal to gas (oil) and coal chemical industry, air separation, power station, aerospace, military industry and new energy (solar power generation, hydrogen energy, etc.) etc.

The Business purpose of FZV: Providing Complete Control Solutions For Industrial Pipelines.

Our Advantages:

1. Strict quality management system to ensure excellent product quality;
2. Excellent production management system to ensure the shortest delivery;
3. Competitive price;
4. Reponsive after-sales service.



CHEVRON
APPROVED



BP APPROVED



SHELL TAT TAMAP
APPROVED



PETRONAS
APPROVED



PDO APPROVED



API 607 5th, 6th & 7th Ed.
ISO 10497 Firesafe Certified



ISO 15848-1 & API 641
Fugitive Emission Certified



API 6D - 1473
API Q1 - 2345
API QR - 2470 (9001)
API 6A - 0842



SIL 3



LLOYDS
FZV - CE/PED
2014/68/EU

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SLAB GATE VALVE

SLAB GATE VALVES



SLAB GATE VALVES

PRODUCT DESIGN FEATURES

- The valve body is fabricated through either casting or forging process.
- Both the gate and the seats are floating parts. The bubble-tight seals is obtained from both upstream and downstream by a series of springs behind the seats pushing against the gate. Sealing is performed by both a primary and a secondary metal-to-metal seal protected O-ring seal. The opening and closing torque of this structure is only ½ of that of the ordinary gate valve, which can easily open and close the valve.
- The valve seat is equipped with PTFE on the sealing surface which provides double sealing feature as PTFE to metal and metal-metal sealing. The PTFE sealing surface has the function of collecting dirt from the gate surface.
- In case of sealing failure, Emergency Sealant Injector System on seat rings is provided to seal (ISO5208 Rate A) temporarily all sealing surface of the seat rings.
- The valve with through conduit gate, whether fully open or fully closed, always coincides with the sealing surface, and the sealing surface is protected from direct scouring by the medium, thus prolonging the service life.
- When the valve is fully open position, they are suitable for piggable operation.
- The stem seal design utilizes the packing structure with self sealing ability, which does not need to be adjusted frequently. The opening and closing are very light, and the sealing performance is reliable. In case of packing failure, Emergency Sealant Injector System on the packing chamber is provided to seal (Zero leakage), while the valve is under pressure to stop the leakage.
- The seat design features an automatic internal body relief for protection against overpressure in the body cavity.
- Fully enclosed structure, good protection performance, can adapt to all weather requirements.
- A visible gate-position indicator rod and a stem protector are provided as a standard feature on handwheel and gearbox-operated valves.
- Top-entry body for inline maintenance has some benefits including lower maintenance cost, reduced downtime.

PRODUCT PERFORMANCE SPECIFICATION															
PRESSURE RATING		CLASS						NOMINAL PRESSURE(MPa)							
		150	300	600	900	1500	2500	1.6	2.5	4.0	6.3	10.0	16.0	26.0	42.0
A216 WCB test pressure at ambient temperature (MPa)	Shell Test	2.94	7.67	15.32	22.98	38.3	63.83	2.4	3.75	6.2	9.8	14.4	24.8	39.5	65.1
	Left seat	2.16	5.63	11.24	16.86	28.1	46.81	1.76	2.75	4.5	7.2	10.6	18.2	28.9	47.8
	Right seat	2.16	5.63	11.24	16.86	28.1	46.81	1.76	2.75	4.5	7.2	10.6	18.2	28.9	47.8
	Low pressure gas seat	0.5-0.7													
Applicable temperature		-29~121 °C or as required by users													
Applicable Medium	Common	Oil, natural gas, water and other non corrosive media													
	Sulfur resistant type	Corrosive media such as oil, natural gas and water containing H ₂ S and CO ₂													

DOUBLE BLOCK AND BLEED (DBB) DESIGN

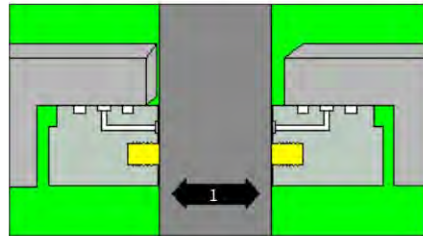


Figure (1)

1. When the internal pressure of the valve is equivalent to the pipeline pressure (1), the gate is in a closed state with a PTFE sealing ring on the seat surface to provide an initial seal. When the valve opens and closes, PTFE on the seat ring cleans both sides of the gate. (As shown in Figure 1)

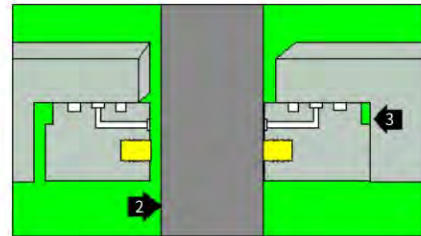


Figure (2)

2. When the valve closes, the pipeline pressure acts on the gate to force the downstream seat. The downstream seat is compressed until the gate stops on metal seat sealing. A double sealing is obtained from PTFE-to-metal sealing on the gate, and metal-to-metal sealing on the gate and the seat ring, and the valve seat is firmly pressed against the groove. At this point (3), the O-ring prevents any rear medium from flowing in. (As shown in Figure 2)

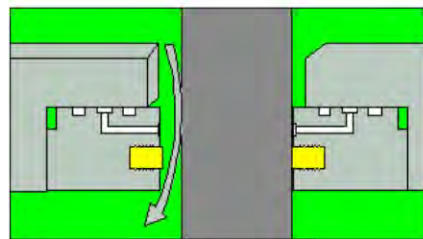


Figure (3)

3. The valve automatically releases excess pressure. When the valve body pressure is greater than the pipeline pressure, due to thermal expansion, the upstream seat is pushed towards the groove, and the excess pressure inside the valve body is released into the pipeline through the gap between the valve seat and the gate plate. (As shown in Figure 3)

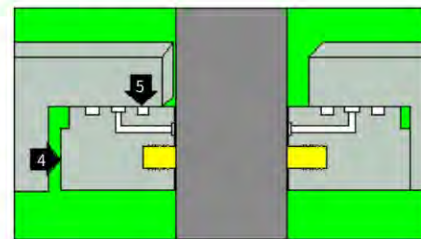


Figure (4)

4. After the valve body pressure is released, the upstream seat is formed, and the pipeline pressure acts on the upstream seat (4), causing it to move towards the gate plate, providing a double seal. At the same time, the O-ring (5) provides a tight seal with the valve seat groove. (As shown in Figure 4)

MAIN PARAMETERS OF THE PRODUCT

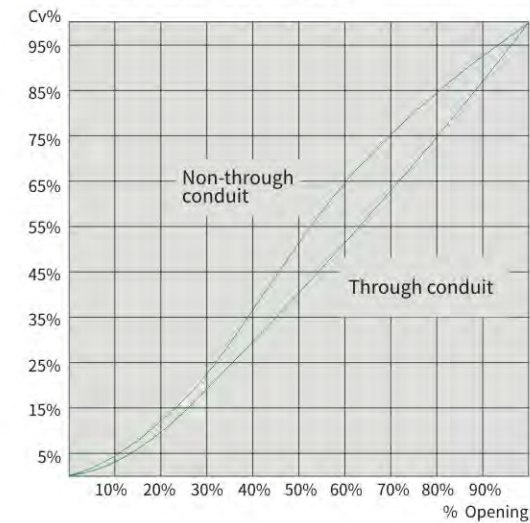
Pressure rate range	Class150~Class2500, PN16~PN420				
Diameter range	2"~60", DN50~DN1500				
Operation method	Handwheel , Gearbox				
Scope of application	Class150~300, Class400 PN1.6~4.0, PN6.4	Class600 PN10.0	Class900 PN6.0	Class1500 PN26.0	Class2500 PN40
	2"~54" DN50~DN1350	2"~48" DN50~DN1200	2"~32" DN50~DN800	2"~24" DN50~DN600	2"~12" DN50~DN300

Note: Alternate designs are available to meet a wide variety of customers requirements.

FLOW RATE CHARACTERISTIC ANALYSIS

- The flow characteristics of a slab gate valve with through conduit are equivalent to those of a pipeline of the same specification, exhibiting equal percentage characteristics; Slab gate valves without through conduit have slightly greater pressure loss than those with through conduit, while their other characteristics are basically similar; The slab gate valve without through conduit adjustment has better flow regulation characteristics than ordinary slab gate valves without through conduit.

VALVE OPENING-FLOW COEFFICIENT(CV) CHARACTERISTIC CURVE



VARIOUS TYPES OF GATE PLATES



Ordinary type gate

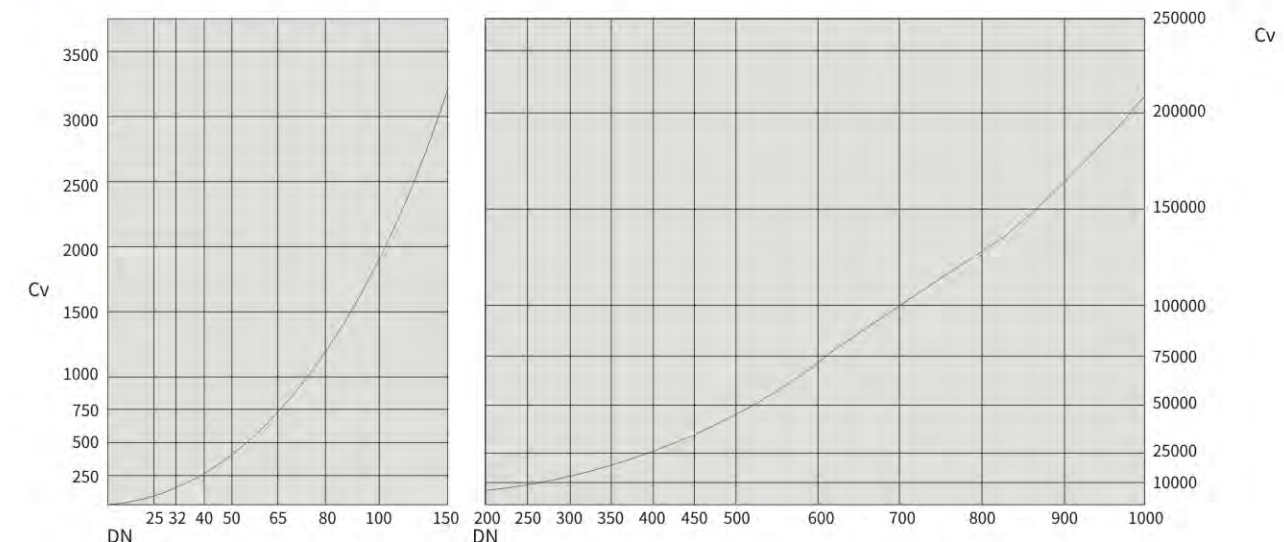


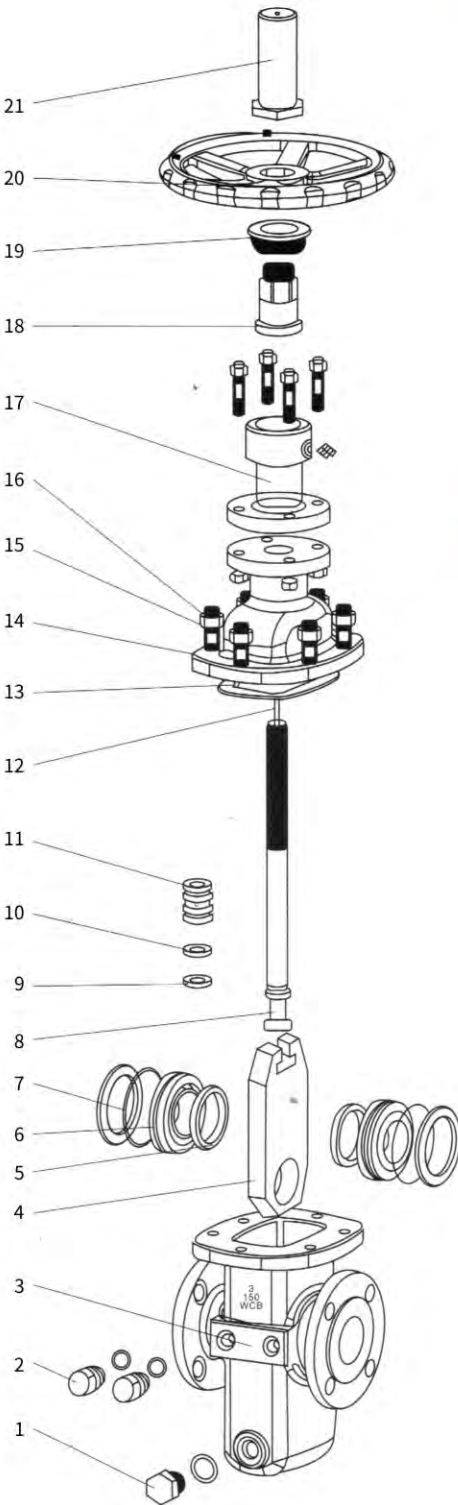
Adjustable gate



Through conduit gate

NOMINAL SIZE (DN)-FLOW COEFFICIENT (CV) CURVE OF THROUGH CONDUIT SLAB GATE VALVE





APPLICABLE STANDARDS

DESIGN BASIS		API	GB
DESIGN STANDARDS		API 6D ASME B16.34	GB/T 19672
FACE TO FACE	FLANGED END	API 6D ASME B16.10	GB/T 12221
	WELDING END		
FLANGE CONNECTION		ASME B16.5 ASME B16.47	GB/T 9113
BUTT WELD		ASME B16.25	GB/T 12224
TEST AND INSPECTION		ISO 5208 API 598	GB/T 13927 GB/T 26480

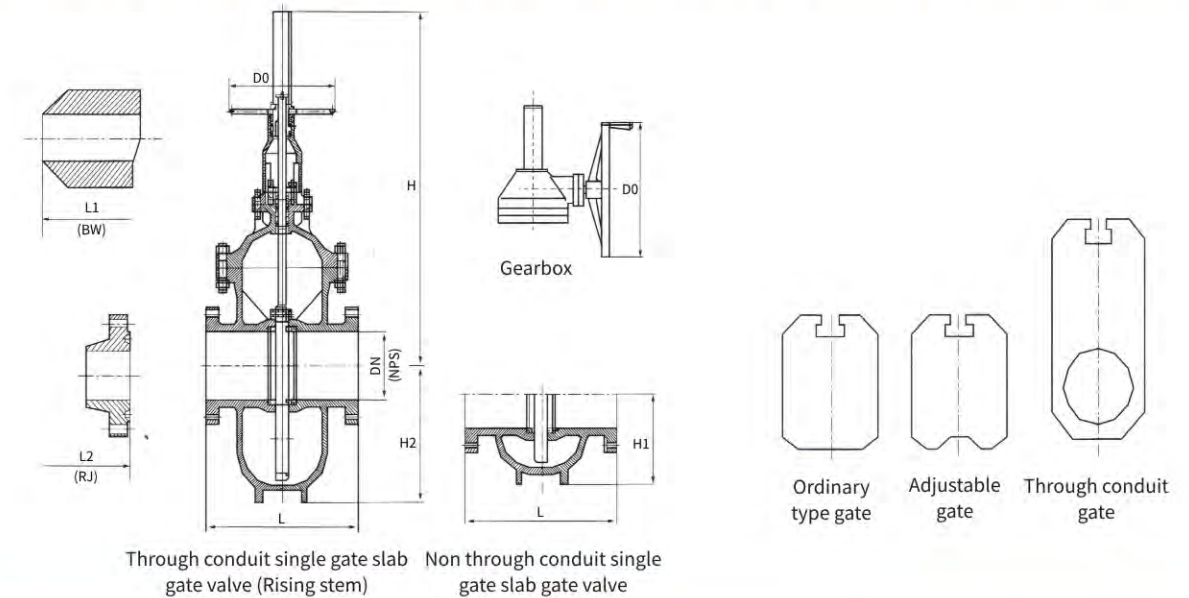
Note: The dimension of end flange can be designed and manufactured according to user requirements.

BASIC MATERIALS OF MAIN COMPONENTS

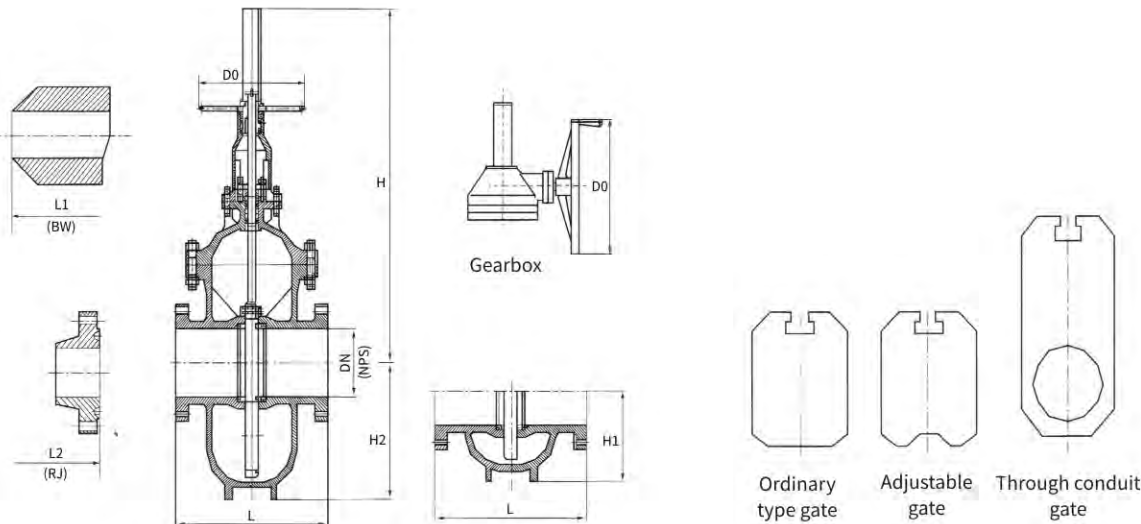
ITEM	PART DESCRIPTION	MATERIAL			
		CARBON STEEL SERIES		STAINLESS STEELSERIES	
		GB	ASTM	GB	ASTM
1	Drain	25+Zn	A105+Zn	1Cr18Ni9	A276-304
2	Injection	25+Zn	A105+Zn	25+Zn	A105+Zn
3	Body	WCB	A216-WCB	WCB	A216-WCB
4	Gate	16Mn+ENP	A105+ENP	1Cr18Ni9+STL	A276-304+RPTL
5	Seat ring	RPTFE	RPTFE	RPTFE	RPTFE
6	Seat	16Mn+PTFE	A105+ENP	1Cr18Ni9+PTFE	A276-304+PTFE
7	O-ring	VITON	VITON	FPM	FPM
8	Stem	1Cr13	A182F6a	Cr17Ni12Mo3Nb	A276-304
9	Packing seat	2Cr13	A276-420	1Cr18Ni9	A276-420
10	Y type ring	NBR	NBR	FPM	FPM
11	Sealing bushing	2Cr13	A276-420	2Cr13	A276-304
12	Indicator	1Cr18Ni9	A276-304	1Cr18Ni9	A276-304
13	Gasket	Flexible graphite+1Cr18Ni9	Flexible graphite+304	Flexible graphite+1Cr18Ni9	Flexible graphite+304
14	Bonnet	WCB	A216-WCB	WCB	A216-WCB
15	Stud	35CrMoA	A193-B7	35CrMoA	A193-B7M
16	Nut	45	A194-2H	45	A194-2HM
17	Yoke	WCB	A216-WCB	WCB	A216-WCB
18	Stem nut	ZQA19-4	C95200	ZQA19-4	C95200
19	Bearing gland	25+ZN	A105+ZN	25+ZN	A105+ZN
20	Handwheel	QT450-18	A536-60-40-18	QT450-18	A536-60-40-18
21	Indicator cover	Q235	A36	Q235	A36

Note: The materials of the main components of the valve can be designed and selected according to actual working conditions or special requirements of the user.

MAIN DIMENSIONS AND WEIGHT OF SLAB GATE VALVE (THROUGH CONDUIT AND NON THROUGH CONDUIT)



CLASS 150													
SIZE		L			HANDWHEEL		GEAR		THROUGH CONDUIT		NON-THROUGH CONDUIT		TRQ
NPS inch	DN mm	RF mm	BW mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	H2 mm	WT(RF) Kg	H3 mm	WT(RF) Kg	N.m
2	50	178	216	191	200	525			130	30	80	27	23
3	80	203	283	216	250	687			200	45	150	40	43
4	100	229	305	241	250	723			235	75	165	70	70
6	150	267	403	279	300	942			317	130	180	122	96
8	200	292	419	305	350	1203	310	1145	415	230	223	220	127
10	250	330	457	343	400	1260	310	1380	492	350	265	330	196
12	300	356	502	368	450	1550	310	1602	555	465	280	415	287
14	350	381	572	394	500	1735	310	1735	675	590	300	540	385
16	400	406	610	419			440	1950	710	740	320	700	432
18	450	432	660	445			440	2145	820	900	430	850	605
20	500	457	711	470			440	2447	872	1130	480	1050	798
24	600	508	813	521			450	2790	1040	2000	535	1920	1232
26	650	559	864				450	2880	1100	2250	585	2150	1604
28	700	610	914				520	3218	1210	2600	600	2485	1892
30	750	660	914				520	3400	1300	2900	610	2750	2454
32	800	711	965				520	3530	1380	3400	620	3200	2653
34	850	762	1016				600	3760	1485	4100	655	3920	2907
36	900	813	1016				600	3990	1585	4950	690	4700	3263
40	1000	813	1016				600	4480	1650	5500	745	5200	4687
42	1050	813					600	4560	1780	6340	800	6000	5374
48	1200	864					800	5576	2035	7100	980	6750	8373
54	1350	991					800	6500	2350	11000	1250	10000	12771



Through conduit single gate slab gate valve (Rising stem) Non through conduit single gate slab gate valve

CLASS 300

SIZE		L		HANDWHEEL		GEAR		THROUGH CONDUIT		NON-THROUGH CONDUIT		TRQ
NPS inch	DN mm	RF(BW) mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	H2 mm	WT(RF) Kg	H3 mm	WT(RF) Kg	N.m
2	50	216	232	200	525			135	43	80	38	28
3	80	283	298	300	696			210	70	155	63	47
4	100	305	321	300	734			245	100	175	90	77
6	150	403	419	400	982			316	220	186	195	172
8	200	419	435	400	1217	310	1150	420	350	230	300	304
10	250	457	473	450	1500	310	1475	550	490	275	410	473
12	300	502	518	560	1700	440	1670	650	750	300	650	736
14	350	762	778	560	1900	440	1850	715	1000	320	900	880
16	400	838	854			440	1960	710	1200	340	1050	1243
18	450	914	930			440	2198	920	2000	450	1850	1683
20	500	991	1010			520	2430	955	2550	500	2380	2036
24	600	1143	1165			600	2940	1152	3000	580	2800	3654
26	650	1245	1270			600	3080	1250	3600	610	3380	4806
28	700	1346	1372			600	3350	1320	4950	640	4730	5851
30	750	1397	1422			600	3636	1400	5900	680	5650	6692
32	800	1524	1553			700	3825	1520	6800	720	6500	8347
34	850	1626	1654			700	3950	1650	7600	750	7300	9457
36	900	1727	1756			800	4250	1710	8800	780	8350	11110
40	1000	1930				800	4692	1820	12500	850	11900	15377
42	1050	2007				800	4800	1880	14500	900	13800	17371
48	1200	2286				800	5100	2050	20000	980	19000	24136

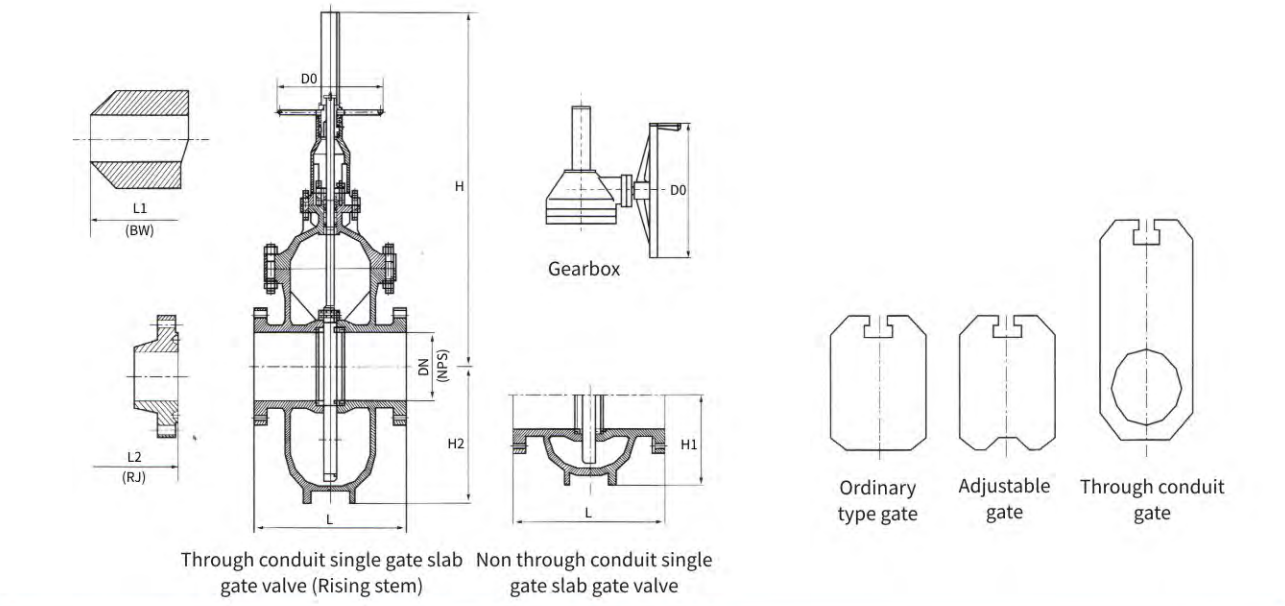
CLASS 600

SIZE		L		HANDWHEEL		GEAR		THROUGH CONDUIT		NON-THROUGH CONDUIT		TRQ
NPS inch	DN mm	RF(BW) mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	H2 mm	WT(RF) Kg	H3 mm	WT(RF) Kg	N.m
2	50	292	295	250	580			155	50	100	43	48
3	80	356	359	300	706			200	140	150	120	116
4	100	432	435	300	772			245	185	175	155	160
6	150	559	562	450	1002			300	350	255	295	378
8	200	660	664	500	1270	440	1315	435	700	285	620	634
10	250	787	791	600	1510	520	1560	520	900	330	860	1082
12	300	838	841	800	1740	520	1735	620	1150	360	1080	1704
14	350	889	892			600	1920	685	1720	400	1635	2103
16	400	991	994			600	2070	740	2350	450	2250	2860
18	450	1092	1095			600	2325	890	2800	480	2600	3772
20	500	1194	1200			600	2582	1030	4200	520	3850	5214
24	600	1397	1407			600	2958	1170	5000	600	4500	7642
26	650	1448	1461			600	3050	1225	6000	630	5400	9744
28	700	1549	1562			700	3225	1300	8100	675	7400	12388
30	750	1651	1664			700	3475	1400	9500	720	8600	15858
32	800	1778	1794			800	3850	1560	11000	750	9900	19181
34	850	1930	1946			800	4175	1650	13000	780	11000	23332
36	900	2083	2099			800	4450	1740	15000	800	12500	28370
40	1000	2388				1000	4200	1650	18500	850	15000	36606
42	1050	2438				1000	4520	1750	20000	900	16000	42299
48	1200	2794				1000	5020	2000	26500	980	22000	60618

CLASS 600

SIZE		L		HANDWHEEL		GEAR		THROUGH CONDUIT		NON-THROUGH CONDUIT		TRQ
NPS inch	DN mm	RF(BW) mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	H2 mm	WT(RF) Kg	H3 mm	WT(RF) Kg	N.m
2	50	368	371	300	605			138	55	100	48	87
3	80	381	384	300	750			220	150	160	135	156
4	100	457	460	400	800			265	250	185	220	263
6	150	610	613	500	1050			350	480	275	440	594
8	200	737	740	560	1270	440	1302	500	950	310	820	1000
10	250	838	841			520	1480	520	1200	350	1050	1654
12	300	965	968			520	1768	612	1950	380	1700	2484
14	350	1029	1038			600	1935	690	2500	425	2250	2965
16	400	1130	1140			600	2117	770	3150	450	2850	4348
18	450	1219	1232			600	2650	920	3850	500	3250	5724
20	500	1321	1334			600	3050	1050	5000	550	4600	7761
24	600	1549	1568			700	3750	1200	8500	650	7850	11768

EXPANDING GATE VALVE



CLASS 1500												
SIZE		L		HANDWHEEL		GEAR		THROUGH CONDUIT		NON-THROUGH CONDUIT		TRQ
NPS inch	DN mm	RF(BW) mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	H2 mm	WT(RF) Kg	H3 mm	WT(RF) Kg	N.m
2	50	368	371	300	660			160	115	160	113	135
3	80	470	473	500	770			220	250	220	240	283
4	100	546	549	560	985	520	970	250	350	210	300	473
6	150	705	711	560	1150	520	1350	340	900	300	850	1007
8	200	832	841			600	1520	485	1500	400	1350	1852
10	250	991	1000			700	1750	600	2200	450	2000	3160
12	300	1130	1146			700	1820	700	3200	550	2950	4287
14	350	1257	1276			800	2100	790	4500	600	4000	6041
16	400	1384	1407			800	2350	880	5900	670	5300	8113
18	450	1537	1559			800	2780	990	7400	750	6700	10504
20	500	1664	1686			800	3350	1100	10000	850	9200	14842
24	600	1943	1972			1000	3950	1250	17000	1000	16100	24776

CLASS 2500												
SIZE		L		HANDWHEEL		GEAR		THROUGH CONDUIT		NON-THROUGH CONDUIT		TRQ
NPS inch	DN mm	RF(BW) mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	H2 mm	WT(RF) Kg	H3 mm	WT(RF) Kg	N.m
2	50	451	454	400	700	440	785	130	175	130	170	204
3	80	578	584	500	800	440	894	205	350	205	320	399
4	100	673	683	560	865	600	1107	250	550	250	510	606
6	150	914	927			600	1340	340	1400	300	1320	1502
8	200	1022	1038			700	1460	450	2300	400	2200	3207
10	250	1270	1292			700	1780	550	4100	430	3950	5184
12	300	1422	1445			800	1950	650	5800	480	5500	8449

EXPANDING GATE VALVE



EXPANDING GATE VALVE

DESIGN FEATURES

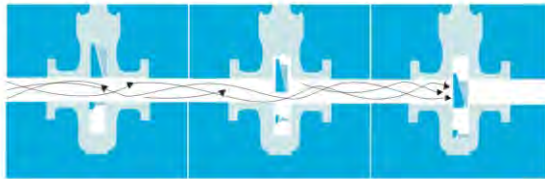
- Expanding gate valve is a full bore through conduit valve with rising stem and parallel expanding gate with low operating torque, increased reliability and ease of maintenance and operation.
- Expanding Gate valve is mainly used in critical applications such as isolation valves in power plants, block valves in process systems, high temperature valves in refineries, and pipeline valves in critical areas. The two members of the parallel Expanding gate including the wedge (closure member) and segment provides a tight mechanical seat seal upstream and downstream and under low and high differential pressure conditions.
- The components of the valve sealing mechanism are separated from each other, ensuring sealing even when deformation occurs due to temperature changes, and preventing high temperature wedging.
- The sealing surface of the valve is made of wear-resistant and corrosion-resistant materials, which extends the service life of the valve.
- The seat design features an automatic internal body relief for protection against overpressure caused by temperature changes in the body cavity.
- Fully enclosed structure, good protective performance, and can be used under full -weather

WORKING PRINCIPLE OF EXPANDING GATE VALVE

When the valve is in the open position, the bottom angles of wedge and segment are in contact.

During opening operation the stem forces the wedge and the segment to come up, during the last stage of the travel, the segment makes contact with the bonnet stop and cannot move up anymore, then the wedge keep rising, and

due the forces related to the angle in between wedge and segment, both components of the closure member expand outward, forcing them (wedge and segment) against the seats.



During opening or closing travel, the wedge and segment are closely compressed themselves in the middle of the seats. In this compressed travelling position, a small gap between the closure member (wedge and segment) and the valve seats helps avoiding friction and ensuring the closure member moves freely.

When the valve is in the closed position, the top angles of the two members are in contact. The stem forces the wedge and segment down; during the last stage of the travel, the segment contact with the body stops and cannot move down anymore, then the wedge keeps going down and due the forces related to the angle in between wedge and segment, both components expand outward, forcing them against the seats.

PRODUCT PERFORMANCE SPECIFICATION

		CLASS						NOMINAL PRESSURE(MPa)							
PRESSURE RATING		150	300	600	900	1500	2500	1.6	2.5	4.0	6.3	10.0	16.0	26.0	42.0
A216 WCB test pressure at ambient temperature (Mpa)	Shell test	2.94	7.67	15.32	22.98	38.3	63.83	2.4	3.75	6.2	9.8	14.4	24.8	39.5	65.1
	Left seat	2.16	5.63	11.24	16.86	28.1	46.81	1.76	2.75	4.5	7.2	10.6	18.2	28.9	47.8
	Right seat	2.16	5.63	11.24	16.86	28.1	46.81	1.76	2.75	4.5	7.2	10.6	18.2	28.9	47.8
	Low pressure gas seat	0.5-0.7													
Applicable temperature		-29~121 °C or according to user requirements													
Applicable Medium	Common	Non corrosive media such as oil, natural gas, water, etc													
	Sulfur resistant type	Corrosive media such as petroleum, natural gas, and water containing H ₂ S and CO ₂													

APPLICABLE STANDARDS

DESIGN BASIS		API	GB
Design standards		API 6D ASME B16.34	GB/T 19672
	Face to face	API 6D ASME B16.10	GB/T 12221
Flange Connection	Flanged End	API 6D ASME B16.10	GB/T 12221
	Welding end	ASME B16.5 ASME B16.47	GB/T 9113
Butt weld		ASME B16.25	GB/T 12224
Test and inspection		ISO 5208 API 598	GB/T 13927 GB/T 26480

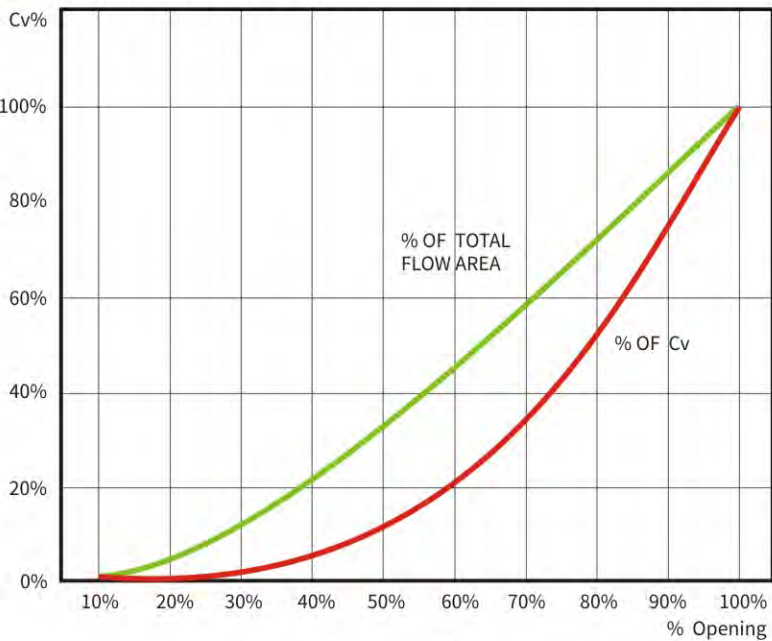
Note: The dimension of end flange can be designed and manufactured according to user requirements.

MAIN PARAMETERS OF THE PRODUCT

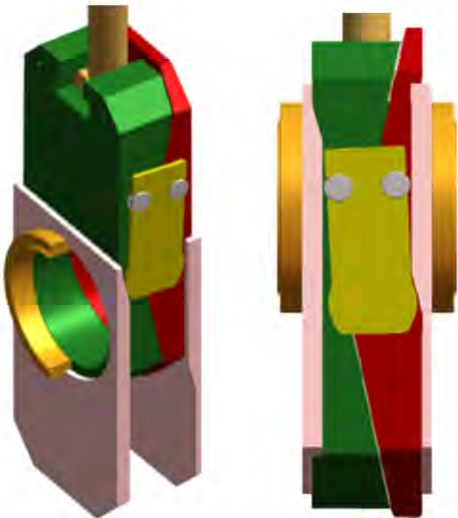
Pressure rate range	Class150~Class2500				
Diameter range	2"~36", DN50-DN900				
Operation method	手轮驱动, 齿轮驱动				
Scope of application	Class150~300	Class600	Class900	Class1500	Class2500
	2"~20" DN50-DN500	2"~20" DN50-DN500	2"~16" DN50-DN400	2"~12" DN50-DN300	2"~8" DN50-DN200

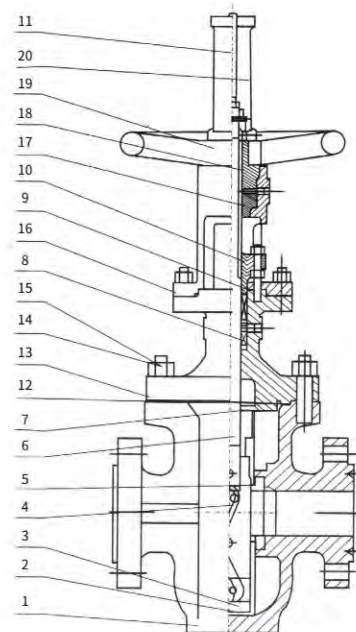
Note: Alternate designs are available to meet a wide variety of customers requirements.

VALVE OPENING-FLOW COEFFICIENT (CV) CHARACTERISTIC CURVE

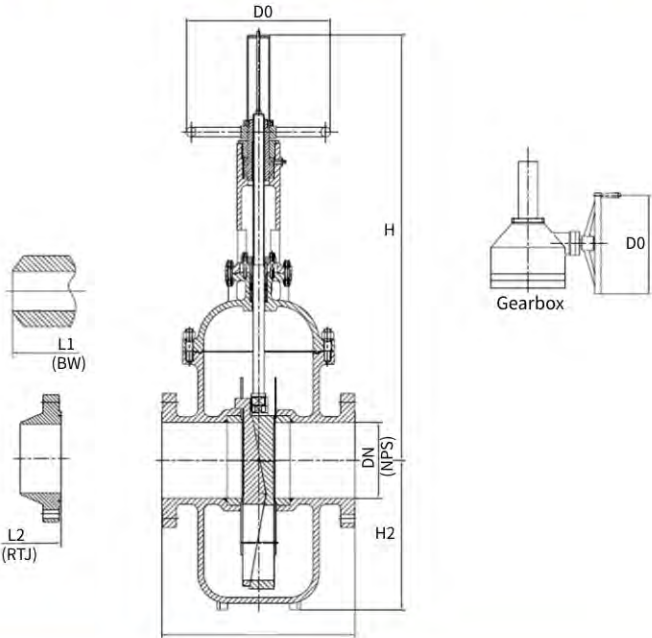


EXPANSION TYPE DOUBLE GATE SHAPE





MAIN DIMENSIONS AND WEIGHT OF EXPANDING GATE VALVE



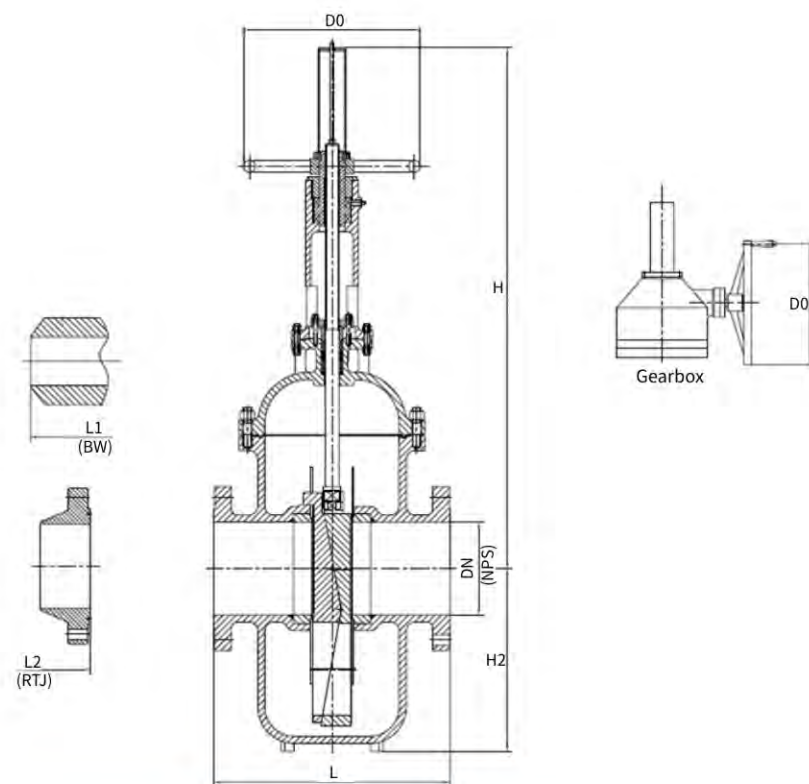
BASIC MATERIALS OF MAIN COMPONENTS

ITEM	PART DESCRIPTION	MATERIAL			
		CARBON STEEL SERIES		STAINLESS STEEL SERIES	
		GB	ASTM	GB	ASTM
1	Body	WCB	A216-WCB	WCB	A216-WCB
2	Gate I	WCB+13Cr	A216-WCB+13Cr	WCB	A216-WCB
3	Gate II	WCB+13Cr	A216-WCB+13Cr	WCB	A216-WCB
4	Spring	1Cr18N9	A276304	1Cr18Ni9+STL	A276-304+STL
5	Seat	25+13Cr	A105+13Cr	1Cr18Ni9+STL	A276-304+STL
6	Stem	2Cr13	A276-410	1Cr18Ni9	A276-304
7	Back seat	1Cr13	A276-410	1Cr18Ni9	A276-304
8	Packing	Flexible graphite	Flexible graphite	Flexible graphite	Flexible graphite
9	Gland ring	2Cr13	A276-420	2Cr13	A276-420
10	Gland flange	WCB	A276-WCB	WCB	A276-WCB
11	Indicator	1Cr13	A276-410	1Cr13	A276-410
12	Gasket	Flexible graphite+1Cr18Ni9	Flexible graphite+304	Flexible graphite+1Cr18Ni9	Flexible graphite+304
13	Bonnet	WCB	A216-WCB	WCB	A216-WCB
14	Stud	35CrMoA	A193-B7	35CrMoA	A193-B7M
15	Nut	35	A194-2H	35	A194-2HM
16	Yoke	WCB	A276-WCB	WCB	A216-WCB
17	Stem nut	ZQA19-4	C95500	ZQA19-4	C95500
18	Gland	25	A105	25	A105
19	Handwheel	QT450-18	A536-60-40-18	QT450-18	A536-60-40-18
20	Indicator cover	25	A105	25	A105

Note: The materials of the main components of the valve can be designed and selected according to actual working conditions or special requirements of the user.

CLASS 150

SIZE			L		HANDWHEEL		GEAR		H2	WT(RF)	TRQ
NPS inch	DN mm	RF mm	BW mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	mm	Kg	N.m
2	50	178	216	191	250	495			118	30	25
3	80	203	283	216	250	587			167	45	47
4	100	229	305	241	300	702			220	75	77
6	150	267	403	279	350	903			310	130	105
8	200	292	419	305	350	1203	310	1210	415	230	139
10	250	330	457	343	400	1260	310	1260	465	350	215
12	300	356	502	368	450	1585	310	1585	555	465	316
14	350	381	572	394	500	1775	310	1775	675	590	424
16	400	406	610	419			440	1950	710	740	476
18	450	432	660	445			440	2145	820	900	666
20	500	457	711	470			440	2447	872	1130	877
24	600	508	813	521			450	2790	1040	2000	1355
26	650	559	864				450	2880	1100	2250	1764
28	700	610	914				520	3218	1210	2600	2081
30	750	660	914				520	3400	1300	2900	2700
32	800	711	965				520	3530	1380	3400	2919
34	850	762	1016				600	3760	1485	4100	3198
36	900	813	1016				600	3990	1585	4950	3589
40	1000	813	1016				600	4480	1650	5500	5156
42	1050	813					600	4560	1780	6340	5911
48	1200	864					800	5576	2035	7100	9211
54	1350	991					800	6500	2350	11000	14048



CLASS 300

SIZE		L		HANDWHEEL		GEAR		H2	WT(RF)	TRQ
NPS inch	DN mm	RF(BW) mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	mm	Kg	N.m
2	50	216	232	250	512			130	43	32
3	80	283	298	300	659	250	705	180	70	62
4	100	305	321	350	759			240	100	102
6	150	403	419	400	953			310	220	155
8	200	419	435	450	1219	310	1220	400	350	277
10	250	457	473	450	1400	310	1400	490	490	450
12	300	502	518	500	1630	440	1630	650	750	718
14	350	762	778			440	1850	715	1000	956
16	400	838	854			440	1960	710	1200	1090
18	450	914	930			440	2198	920	2000	1471
20	500	991	1010			520	2430	955	2550	1826
24	600	1143	1165			650	2700	1130	3000	3219
26	650	1245	1270			650	3080	1250	3600	4278
28	700	1346	1372			700	3350	1320	4950	5065
30	750	1397	1422			700	3450	1425	5900	5811
32	800	1524	1553			700	3650	1520	6800	7267
34	850	1626	1654			700	3900	1650	7600	8316
36	900	1727	1756			800	4150	1710	8800	9612
40	1000	1930				800	4590	1820	12500	13547
42	1050	2007				800	4680	1880	14500	15731
48	1200	2286				1000	5680	2050	20000	24672

CLASS 600

SIZE		L		HANDWHEEL		GEAR		H2	WT(RF)	TRQ
NPS inch	DN mm	RF(BW) mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	mm	Kg	N.m
2	50	292	295	250	550			145	50	53
3	80	356	359	350	695			185	140	127
4	100	432	435	400	814			226	185	175
6	150	559	562	450	1004	310	1029	320	350	416
8	200	660	664	600	1328	440	1335	415	700	697
10	250	787	791	600	1430	600	1426	500	900	1191
12	300	838	841	800	1721	520	1690	580	1150	1874
14	350	889	892			600	1875	665	1720	2314
16	400	991	994			600	2075	740	2350	3146
18	450	1092	1095			600	2325	890	2800	4149
20	500	1194	1200			700	2682	1030	4200	5735
24	600	1397	1407			800	3026	1150	5000	8406
26	650	1448	1461			800	3100	1225	6000	10718
28	700	1549	1562			800	3400	1300	8100	13627
30	750	1651	1664			800	3475	1400	9500	17443
32	800	1778	1794			800	3750	1560	11000	21099
34	850	1930	1946			1000	4175	1650	13000	25665
36	900	2083	2099			1000	4350	1740	15000	31207

CLASS 900

SIZE		L		HANDWHEEL		GEAR		H2	WT(RF)	TRQ
NPS inch	DN mm	RF(BW) mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	mm	Kg	N.m
2	50	368	371	300	640			138	55	96
3	80	381	384	350	770			180	150	172
4	100	457	460	400	900			225	250	289
6	150	610	613	500	1050	310	1029	350	480	653
8	200	737	740	560	1370	440	1291	450	950	1100
10	250	838	841			520	1480	520	1200	1820
12	300	965	968			520	1768	612	1950	2732
14	350	1029	1038			600	1935	690	2500	3261
16	400	1130	1140			600	2117	770	3150	4783
18	450	1219	1232			600	2650	920	3850	6297
20	500	1321	1334			600	3050	1050	5000	8537
24	600	1549	1568			700	3750	1200	8500	12945



The image displays two types of industrial valves against a light blue background. On the left is a large gate valve, characterized by its heavy, cast metal body and a prominent blue handwheel at the top. The valve is closed, and its body features embossed markings including a logo, the number '32', '300', '1/6B', and a serial number '2479246'. On the right is a smaller globe valve, also with a handwheel, shown in a cutaway view to reveal its internal spherical body and the mechanism that allows it to open and close. Both valves are designed for controlling the flow of fluids in industrial systems.

SIZE		L		HANDWHEEL		GEAR		H2	WT(RF)	TRQ
NPS inch	DN mm	RF(BW) mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	mm	Kg	N.m
2	50	368	371	300	640			160	115	149
3	80	470	473	500	770			220	250	311
4	100	546	549	560	985	520	970	250	350	520
6	150	705	711	560	1150	520	1350	340	900	1107
8	200	832	841			600	1520	450	1500	2038
10	250	991	1000			700	1750	600	2200	3476
12	300	1130	1146			700	1820	700	3200	4715
14	350	1257	1276			800	2100	790	4500	6645
16	400	1384	1407			800	2350	880	5900	8924
18	450	1537	1559			800	2780	990	7400	11554
20	500	1664	1686			800	3350	1100	10000	16327
24	600	1943	1972			1000	3950	1250	17000	27254

SIZE		L		HANDWHEEL		GEAR		H2	WT(RF)	TRQ
NPS inch	DN mm	RF(BW) mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	mm	Kg	N.m
2	50	451	454	400	700	440	785	130	175	224
3	80	578	584	500	800	440	894	205	350	439
4	100	673	683	560	1000	600	1107	250	550	1365
6	150	914	927			600	1232	340	1400	2654
8	200	1022	1038			700	1460	450	2300	5330
10	250	1270	1292			800	1805	630	4100	8980
12	300	1422	1445			800	1950	750	5800	14696

SPRING SUPPORTED PARALLEL DOUBLE GATE VALVE

PRODUCT DESIGN FEATURES

- A spring supported parallel gate valve also known as a parallel slide gate valve, is a valve with the characteristics of reduced operating torque, low vibration, long service life, and safe and reliable operation. It is mainly used for tight shut-off or venting gas and liquid transportation pipelines.
- The valve sealing is composed of two parallel gate and springs that controls the flow of liquids or gases.
 - The role of springs is to keep the parallel gates in contact constantly with the upstream and downstream valve seats, which helps the valve seal tightly.
 - The components of the valve sealing mechanism are separated from each other, which ensures wedging action even when deformation occurs due to temperature changes.
 - The valve sealing surface is made of wear-resistant and corrosion-resistant materials, providing a highly robust and leak-proof seal which extends the service life of the valve, particularly suitable for high pressure and high temperature applications.

OPERATION OF SPRING SUPPORTED PARALLEL DOUBLE GATE VALVE

The rotating device drives the valve stem, which in turn drives the gate frame to move up and down. The double gate is driven by the gate frame and moves together with the valve stem to achieve the opening and closing movement of the combined gate. The two gate plates are tightly fitted by the springs at the opening and closing positions, thereby allowing the fluid to flow and sealing off the flow from both upstream and downstream sides.

PRODUCT PERFORMANCE SPECIFICATION														
PRESSURE RATING		CLASS					NOMINAL PRESSURE(MP)							
		150	300	600	900	1500	2500	1.6	2.5	4.0	6.3	10.0	16.0	42.0
A216 WCB test pressure at ambient temperature (MPa)	Shell Test	2.94	7.67	15.32	22.98	38.3	63.83	2.4	3.75	6.2	9.8	14.4	24.8	65.1
	Left seat	2.16	5.63	11.24	16.86	28.1	46.81	1.76	2.75	4.5	7.2	10.6	18.2	47.8
	Right seat	2.16	5.63	11.24	16.86	28.1	46.81	1.76	2.75	4.5	7.2	10.6	18.2	47.8
	Low pressure gas seat	0.5~0.7												
Applicable temperature		-29~121 °C or as required by users												
Applicable Medium	Common	Oil, natural gas, water and other non corrosive media												
	Sulfur resistant type	Corrosive media such as oil, natural gas and water containing H ₂ S and CO ₂												

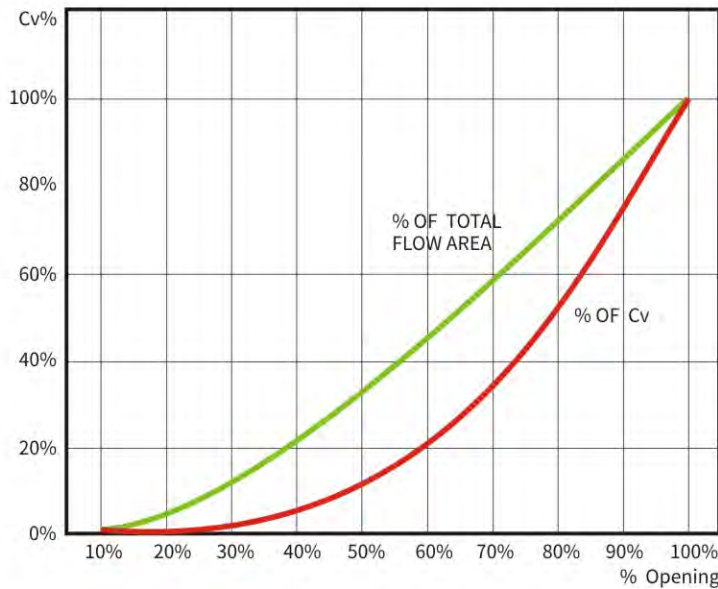
APPLICABLE STANDARDS				
DESIGN BASIS		API	GB	
Face to face	Design standards	API 6D ASME B16.34		GB/T 19672
	Flanged End	API 6D ASME B16.10		GB/T 12221
	Welding end			
	Flange Connection	ASME B16.5 ASME B16.47		GB/T 9113
	Butt weld	ASME B16.25		GB/T 12224
Test and inspection		ISO5208 API 598		GB/T 13927 GB/T 26480

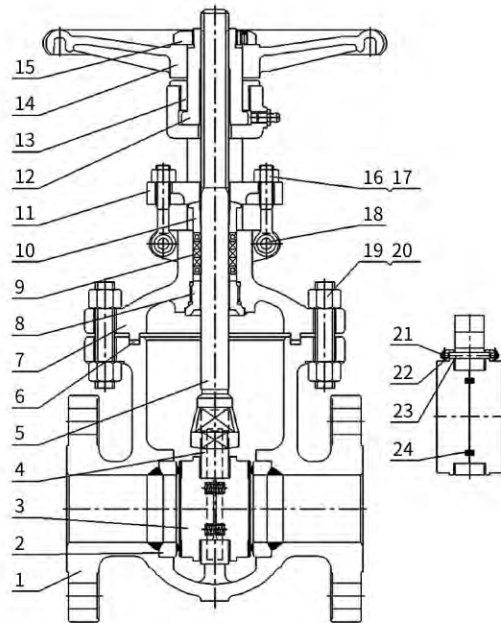
Note: The dimension of end flange can be designed and manufactured according to user requirements.

MAIN PARAMETERS OF THE PRODUCT					
Pressure rate range	Class150~Class2500				
Diameter range	2"~36", DN50~DN900				
Operation method	Handwheel , Gearbox				
Scope of application	Class150~300	Class600	Class900	Class1500	Class2500
	2"~20" DN50~DN500	2"~20" DN50~DN500	2"~16" DN50~DN400	2"~12" DN50~DN300	2"~8" DN50~DN200

Note: Alternate designs are available to meet a wide variety of customers requirements.

VALVE OPENING-FLOW COEFFICIENT (CV) CHARACTERISTIC CURVE

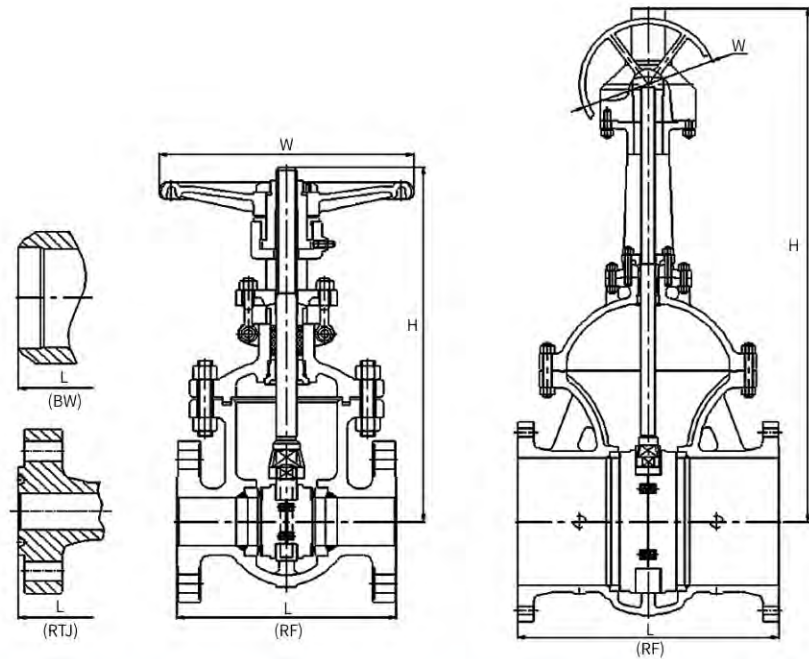




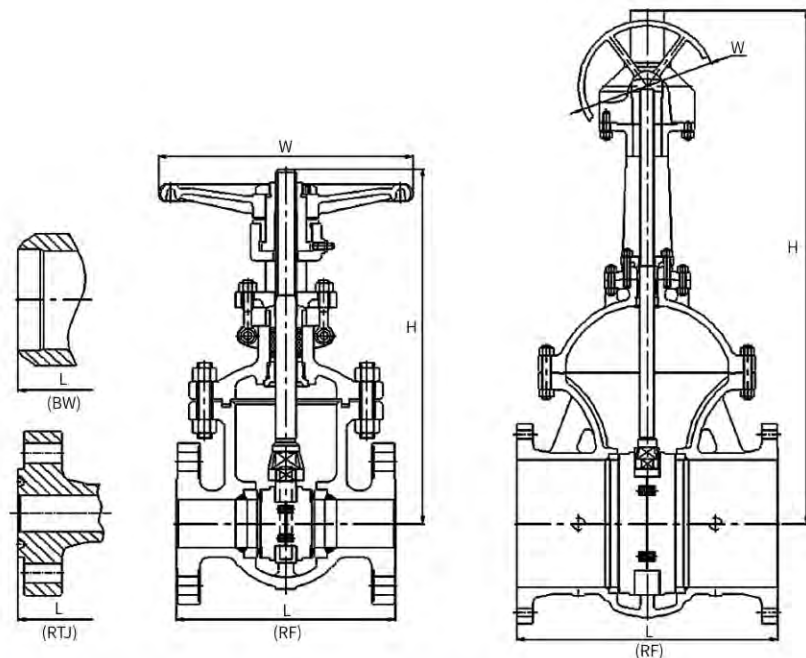
BASIC MATERIALS OF MAIN COMPONENTS

ITEM	PART DESCRIPTION	MATERIAL			
		CARBON STEEL SERIES		STAINLESS STEEL SERIES	
		GB	ASTM	GB	ASTM
1	Body	WCB	ASTM	CF8	A351-CF8
2	Seat	25+13Cr	A216-WCB	0Cr18Ni9+STL	A276 304+STL
3	Gate	25+13Cr	A105+13Cr	0Cr18Ni9+STL	A276 304+STL
4	Gate support	WCB	A105+13Cr	CF8	A351-CF8
5	Stem	2Cr13	A216-WCB	0Cr18Ni9	A182 F304
6	Gasket	Flexible graphite+1Cr18Ni9	A182 F6a	Flexible graphite+1Cr18Ni9	Flexible graphite+A240-304
7	Bonnet	WCB	Flexible graphite+A240-304	CF8	A351-CF8
8	Backseat	1Cr13	A216-WCB	0Cr18Ni9	A182 F304
9	Packing	Flexible graphite	A182 F6a	Flexible graphite	Flexible graphite
10	Gland ring	2Cr13	Flexible graphite A276-410	0Cr18Ni9	A276-304
11	Gland flange	WCB	A216-WCB	CF8	A351-CF8
12	Stem Nut	ZQA19-4	A439 D-2C	ZQA19-4	A439 D-2C
13	Bearing gland	25	AISI 1035	0Cr18Ni9	SS
14	Handwheel	QT450-18	A536-60-40-18	QT450-18	A536-60-40-18
15	Lock nut	35	AISI 1035	35	AISI 1035
16	Nut	35	A194-2H	0Cr18Ni9	A194-8
17	Eyebolt	35CrMoA	A193-B7	0Cr18Ni9	A193-B8
18	Pin	35	AISI 1035	0Cr18Ni9	SS
19	Nut	35	A194-2H	0Cr18Ni9	A194-8
20	Stud	35CrMoA	A193-B7	0Cr18Ni9	A193-B8
21	Spring	1Cr18Ni9	INCONEL X-750	0Cr18Ni9	INCONEL X-750
22	Anti rotation rod	25	A276-410	0Cr18Ni9	A276-304
23	Nut	35	A194-2H	0Cr18Ni9	A194-8
24	Split pin	25	SS	0Cr18Ni9	SS

MAIN DIMENSIONS AND WEIGHT OF SPRING SUPPORTED PARALLEL DOUBLE GATE VALVE



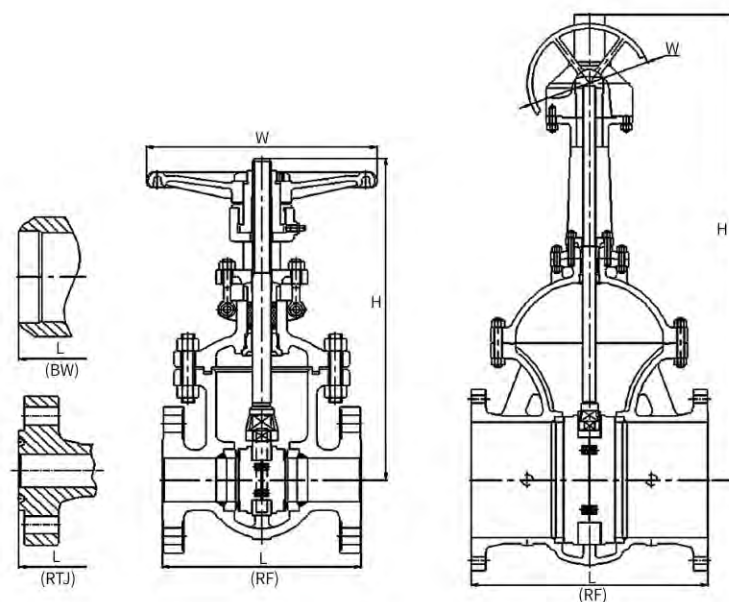
CLASS 150									
SIZE		L		HANDWHEEL		GEAR		WT(RF)	TRQ
NPS inch	DN mm	RF mm	BW mm	W mm	H mm	W1 mm	H1 mm	Kg	N.m
2	50	216	216	250	365	310	830	25	24
2-1/2	65	241	241	250	415	310	1010	38	31
3	80	283	283	280	425	310	1230	45	45
4	100	305	305	300	465	310	1450	55	74
6	150	403	403	350	610	310	1680	85	100
8	200	419	419	400	750	440	1860	135	13
10	250	457	457	400	910	440	2080	225	205
12	300	502	502	500	1065	440	2320	320	300
14	350	572	572	600	1200	520	2695	450	403
16	400	610	610			520	3050	550	452
18	450	660	660			600	3200	685	633
20	500	711	711			600	3400	810	834
24	600	813	813			600	3650	1280	1288
26	650	864	864			600	3865	1610	1677
28	700	914	914			600	4030	1900	1978
30	750	914	914					2620	2566
32	800	965	965					3200	2774
34	850	991	1016					3400	3039
36	900	1016	1016					3650	3411



CLASS 600									
SIZE		L		HANDWHEEL		GEAR		WT(RF)	TRQ
NPS inch	DN mm	RF(BW) mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	Kg	N.m
2	50	292	295	250	365			40	45
2-1/2	65	330	333	250	415			55	66
3	80	356	359	300	445			90	85
4	100	432	435	350	578	310	700	120	141
6	150	559	562	500	730	310	950	300	361
8	200	660	664	600	890	440	1180	430	596
10	250	787	791	600	1000	440	1400	675	1075
12	300	838	841			520	1585	850	1397
14	350	889	892			520	1690	1220	1709
16	400	991	994			600	2010	1820	2358
18	450	1092	1095			600	2150	2200	3136
20	500	1194	1200			600	2370	3175	4361
24	600	1397	1407			700	2780	4580	6425
26	650	1448	1461			700	2980	5080	8480
28	700	1549	1562			800	3100	5230	11047
30	750	1651	1664			800	3400	7380	13720
32	800	1778	1794			800	3580	7820	16644
34	850	1930	1946			800	3870	9800	20140
36	900	2083	2099			800	4100	11650	24532

CLASS 300									
SIZE		L		HANDWHEEL		GEAR		WT(RF)	TRQ
NPS inch	DN mm	RF(BW) mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	Kg	N.m
2	50	216	232	250	365			33	32
2-1/2	65	241	257	250	415			45	41
3	80	283	298	280	425			55	62
4	100	305	321	300	465			95	102
6	150	403	419	400	630	310	840	150	155
8	200	419	435	400	775	310	1050	220	277
10	250	457	473	500	950	310	1270	370	449
12	300	502	518	600	1100	440	1480	490	718
14	350	762	778			440	1660	770	956
16	400	838	854			520	1850	985	1090
18	450	914	930			520	2075	1450	1471
20	500	991	1010			520	2300	1790	1826
24	600	1143	1165			600	2685	2830	3219
26	650	1245	1270			600	3075	3150	4278
28	700	1346	1372			600	3250	3580	5065
30	750	1397	1422			600	3450	3870	5811
32	800	1524	1553			700	3680	5650	7267
34	850	1626	1654			700	3900	5950	8419
36	900	1727	1756			800	4060	6830	9612

CLASS 900									
SIZE		L		HANDWHEEL		GEAR		WT(RF)	TRQ
NPS inch	DN mm	RF(BW) mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	Kg	N.m
2	50	368	371	300	520			80	82
2-1/2	65	419	422	350	565			110	117
3	80	381	384	350	600	310	690	145	144
4	100	457	460	400	685	310	830	210	228
6	150	610	613	600	870	310	1080	390	514
8	200	737	740	600	930	440	1250	660	934
10	250	838	841			520	1450	1000	1556
12	300	965	968			520	1620	1300	2277
14	350	1029	1038			600	1850	1580	2992
16	400	1130	1140			600	2100	2490	4393
18	450	1219	1232			600	2260	3020	5820
20	500	1321	1334			700	2650	3910	8191
24	600	1549	1568			800	2910	6320	12479



CLASS 1500									
SIZE		L		HANDWHEEL		GEAR		WT(RF)	TRQ
NPS inch	DN mm	RF(BW) mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	Kg	N.m
2	50	368	371	300	530	310	620	95	132
2-1/2	65	419	422	350	580	310	635	140	189
3	80	470	473	400	630	310	700	185	267
4	100	546	549	550	800	440	875	325	426
6	150	705	711	600	850	520	1180	670	942
8	200	832	841	680	1000	600	1370	1140	1769
10	250	991	1000			600	1560	1650	3053
12	300	1130	1146			600	1720	2170	4200
14	350	1257	1276			700	1880	2760	5973
16	400	1384	1407			700	2030	3900	7998
18	450	1537	1559			800	2230	4920	10489
20	500	1664	1686			800	2380	6750	15181
24	600	1943	1972			1000	2720	8760	24784

CLASS 2500									
SIZE		L		HANDWHEEL		GEAR		WT(RF)	TRQ
NPS inch	DN mm	RF(BW) mm	RTJ mm	W mm	H mm	W1 mm	H1 mm	Kg	N.m
2	50	451	454	350	580	310	680	145	201
2-1/2	65	508	514	350	650	310	780	230	339
3	80	578	584	400	740	310	860	280	383
4	100	673	683	550	800	440	1000	510	596
6	150	914	927	600	840	520	1200	880	1454
8	200	1022	1038			600	1310	1000	2919
10	250	1270	1292			700	1600	1620	4917
12	300	1422	1445			700	1775	2650	8048



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