CE-PED OHSAS 18001:2007 ISO 9001:2008

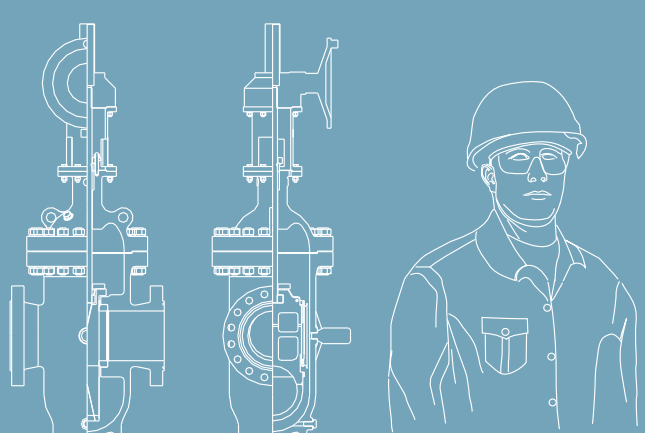
RUV

API6D THROUGH CONDUIT GATE VALVE

RDP/RDD SERIES



RDP Slab Gate Valve RDD Expanding Gate Valve CAG-17-01



ROCKY UNION

ROCKY UNION

Through Conduit Gate Valve

Rocky Union is committed to enhancing our customers' working site safety, system stability, and convenient operations through our valve product offerings. Our diverse and innovative valves will have more safety design, longer working life and more reliable operation.

Located in the city with a more than forty years' history to make industrial valve, RUV has carried on the mature valve manufacturing tradition of Zigong city. By our advanced seat design and special workmanship, we are making high quality ball valve and through conduit gate valve, range from complete size and pressure for petroleum, chemical, and energy industrial use. To be a professional API6D valve company, we are making for reliability.

Rocky Union 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. Rocky Union valves may be produced in accordance with other standards on 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 B16.10 Face-to -face and end- to- end dimensions of ferrous valves.
ASME B 16.25 Butt welding ends
ASME B16.34 Steel valves-flanged and butt welding ends
ASME B16.47 Larger diameter steel flange(26" ~ 60"）
ASME B31.3 Technics pipeline
ASME Boiler and Pressure Vessel Code, SectionVIII, Division 1, rules for construction of pressure vessel
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
MESC SPE 77/315 Electroless Nickel Plating

ISO9001-International Organization for Standardization

ISO9001 Quality systems-model for quality assurance in design, development, production, Installation and servicing.
ISO15156 Materials for use in H2S containing environment in oil & gas production.
ISO 5221-1 Executive institution accessories of quarter-turn valves,section1:flange dimension
ISO 5221-2 Executive institution accessories of quarter-turn valves, 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

API-American Petroleum Institute

API 6A Specification for wellhead valves
API 6D Specification for pipeline valves
API 6FA Specification for fire testing of valves
API 607 Fire test for soft seated quarter-turn valves
API Q1 Quality program
API 5B EUE External upset tubing threads

NACE-National Association of Corrosion Engineers
MR0175 Sulfide stress cracking resistant metallic materials for oil field equipment(Superceded by ISO15156)

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
MSS SP-53 Cast steel quality standard of valve, flange, fitting and pipeline accessories --Magnetic-particle testing
MSSSP-54 Cast steel quality standard of valve, flange, fitting and pipeline accessories--Radiographic testing
MSS SP-93 Cast steel and forged steel quality standard of valve, flange, fitting, and pipeline accessories ---Liquid penetrant testing
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 valves' choice, Specification and standard

Through Conduit Gate Valve

Valve position indicator, can indicate the valve operation degree, easy to know the gate position.

Valve packing protection plate, prevent the dust going into the valve stem and packing.

V type and latern ring packing design make sure no stem leakage will happen, also stem with a primary O-ring design.

Steel wounded gasket and the O-ring design on the body and bonnet connection, make sure no leakage.

Seat ring with springs loaded and double O-ring seal design make sure the valve has DBB and pressure relief function.

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

"RDP" Type Slab Gate

- **Floating Seat**
  The seat ring is installed with springs, this insures constant contact with the gate insuring a perfect seal.
- **Bi-directional**
  The valve will seal in either direction of down-stream and up-stream.
- **Stem Seals**
  Self energizing non rolling lip seals, no side load or friction drag on the stem low operating thrust.
- **Stem protector and position indicator**
- **API 6 FA Fire safe design**
  Metal to metal primary seal, secondary to be soft seal.
- **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.
- **Graphite for fire safe sealing for body, bonnet connection**
- **Self relieving seat design for protection against over pressure in the body cavity**
- **Body drain relief the trapped fluid in valve cavity**
- **Emergency sealant injection for both seats and stem packing**
- **Top entry bonnet design for easy inline valve maintenance and replacement of stem packing.**
- **Special stem packing design protects against dust and easy for tighten packing.**

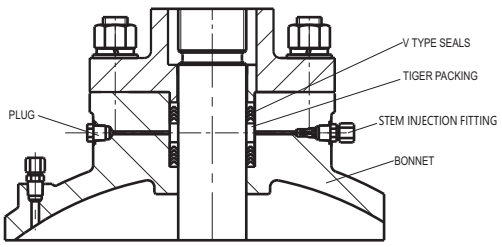
SIZE		ASME CLASS						
in.	(mm)	150	300	400	600	900	1500	2500
2	(50)	■	■	■	■	■	■	■
3	(80)	■	■	■	■	■	■	■
4	(100)	■	■	■	■	■	■	■
6	(150)	■	■	■	■	■	■	■
8	(200)	■	■	■	■	■	■	■
10	(250)	■	■	■	■	■	■	■
12	(300)	■	■	■	■	■	■	■
14	(350)	■	■	■	■	■	■	■
16	(400)	■	■	■	■	■	■	■
18	(450)	■	■	■	■	■	■	
20	(500)	■	■	■	■	■	■	
22	(550)	■	■	■	■	■		
24	(600)	■	■	■	■	■		
26	(650)	■	■	■	■	■		
28	(700)	■	■	■	■	■		
30	(750)	■	■	■	■	■		
32	(800)	■	■	■	■	■		
34	(850)	■	■	■	■	■		
36	(900)	■	■	■	■	■		
38	(950)	■	■	■	■			
40	(1000)	■	■	■	■			
42	(1050)	■	■		■			
48	(1200)	■	■		■			
54	(1350)	■						
56	(1400)	■						
60	(1500)	■						

Remarks: ■ Means Slab Gate Valve
■ Means Expanding Gate Valve

B.B Double Block & Bleed	Cleaning Pipe	Extended Stem	Diversity of Seat Materials
Safe Release	Emergency Seal	Various Operations	C.S Various Control Systems
Reliable Seal	Special Seat	Various End Connections	Reliable Operation
Fire Safe	Draining	Diversity of Body Materials	Bearing Pipe Stress Safety

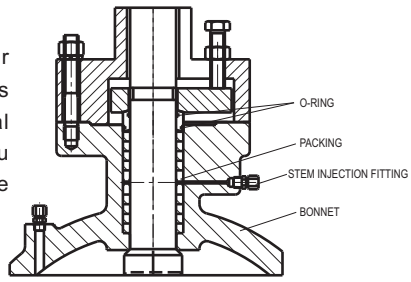
DESIGN FEATURES

Inside Stem Packing Design



Inside Packing Gland (new)

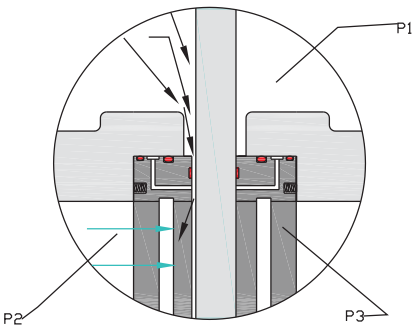
The new packing design we suggested is Blue Tiger packing, which has better sealing function and less friction than graphite packing. When the stem seal leakage, maintenance will be more convenient, you don't need to move packing gland, just filling the Blue Tiger packing with packing injection.



Outside Packing Gland(old)

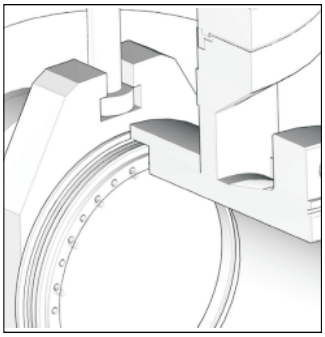
Packing Injection Show

Pressure Automatic Relief

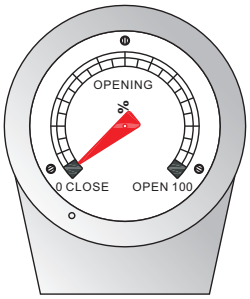


Our RDP type slab gate valve is a self-relieving seat design. The initial seal, at extremely low pressure differentials, is obtained by the floating seats being forced against the gate by the spring. When the gate is closed, the upstream pressure pushes the gate tightly against the down stream seat. This results in upstream and downstream bubble-tight seals which works independently under most pressure conditions.

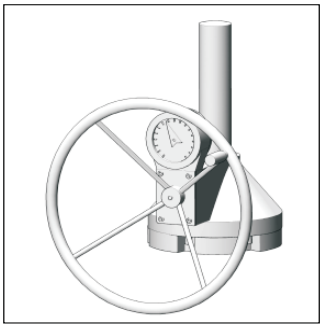
In case of over pressure in cavity, the upstream seat will move back to pocket due to a piston effect, and the cavity trapped flow will move to valve bore, until the cavity pressure equivalent to port pressure



Valve Position Indicator



All the valves which have the gear box, there is a position indicator on the gear box. This will indicate the valve opening and closing degree, easy for working site operation, make sure no mistake on the valve operation.



Rocky Union through conduit gate valve working temperature range is

- -29℃ to 140℃----Normal working condition
- -46℃ to 120℃----Low temperature working condition
- -29℃ to 538℃----High temperature working condition

Rocky union through conduit gate valve medium available to crude oil,refinery oild and gasline,air port gasline, natural coal gas, chlorine oil, slurry, etc.

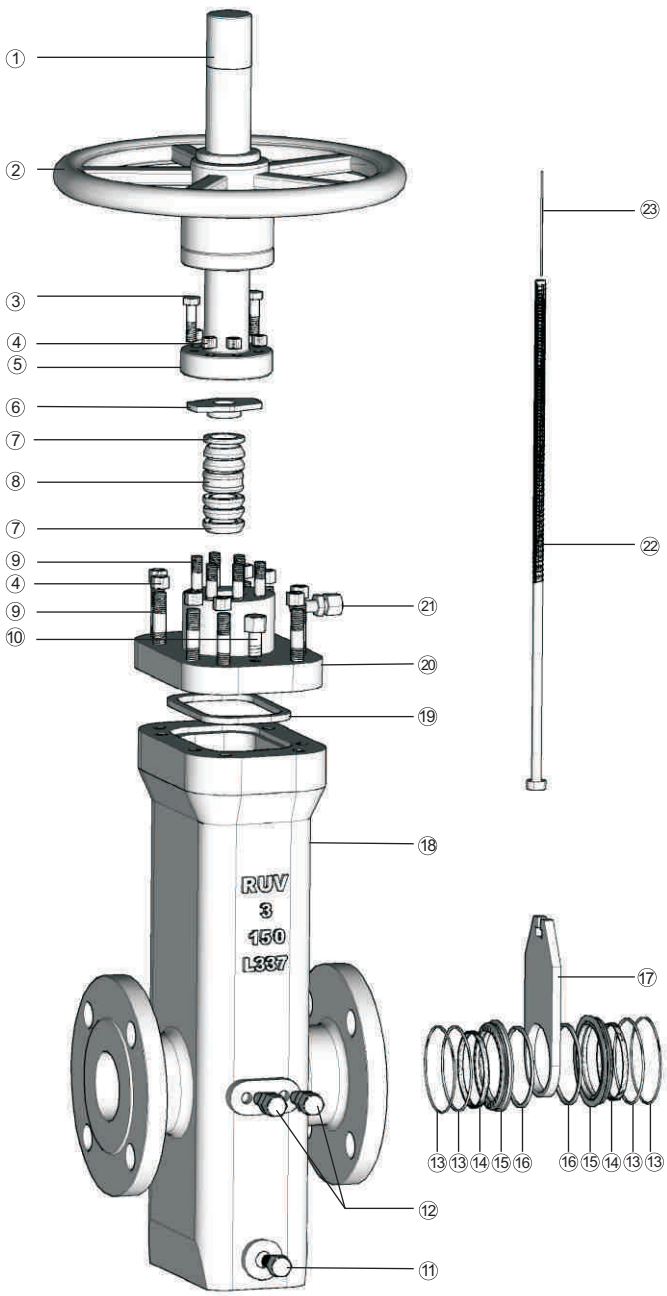
Depend on the working temperature, we can provide soft seated design and metal to metal seated design. (the stellite coated and tungsten coated on the gate and seat ring).

Valve Material Specification

Service	Trim No	Body& Bonnet	Gate	Seat	Stem Seal	Stem	Bolting	Fittings
Standard -20°F to 250°F -29℃ to 121℃	NW1	WCB Carbon Steel	A 515-70 Low Alloy Steel, ENP/ HCR	A 515-70 Nickel Plated PTFE Insert	Viton	Cr13	Alloy Steel	Carbon Steel
Corrosive -20°F to 250°F -29℃ to 121℃	NC1	Cf8 Carbon Steel CF8M	A 515-70 Low Alloy Steel, ENP/ HCR	F304 Carbon Steel Nickel Plated PTFE Insert F316	PTFE	Low Alloy Steel, ENP	Alloy Steel NACE	Stainless Steel
High Temperature -20°F to 650°F 29℃ to 343℃	GH1	WCB Carbon Steel	CA15 Stainless Steel, HF-6 Hard Faced Tungsten coated	Carbon Steel Hard Faced Tungsten coated	Flexible Graphite	400Series Stainless Steel	Alloy Steel	Stainless Steel
High Temperature -20°F to 1000°F -29℃ to 538℃	GH2	Wc6 Carbon Steel WC9	CA15 Stainless Steel HF-6 Hard Faced	A182F11, HF-6Hard Faced	Flexible Graphite	400Series Stainless Steel	Alloy Steel	Stainless Steel
Low Temperature Non-Sour -50°F to 250°F -46℃ to 121℃	DW1	LCB LCC Impact Tested	ENP/LF2 LCC Carbon Steel Low Alloy Steel	LF2 Carbon Steel ENP PTFE Insert	PTFE	Low Alloy Steel ENP	Alloy Steel	Stainless Steel
Low Temperature Sour -50°F to 250°F -46℃ to 121℃	DW2	LCB LCC Carbon Steel	LF2 ENP LCC Carbon Steel	LF2 Carbon Steel ENP PTFE Insert	PTFE	Low Alloy Steel Impact ENP	Alloy Steel NACE	Stainless Steel

Above valve components materials are for reference, the actual material should be selected upon the working condition.

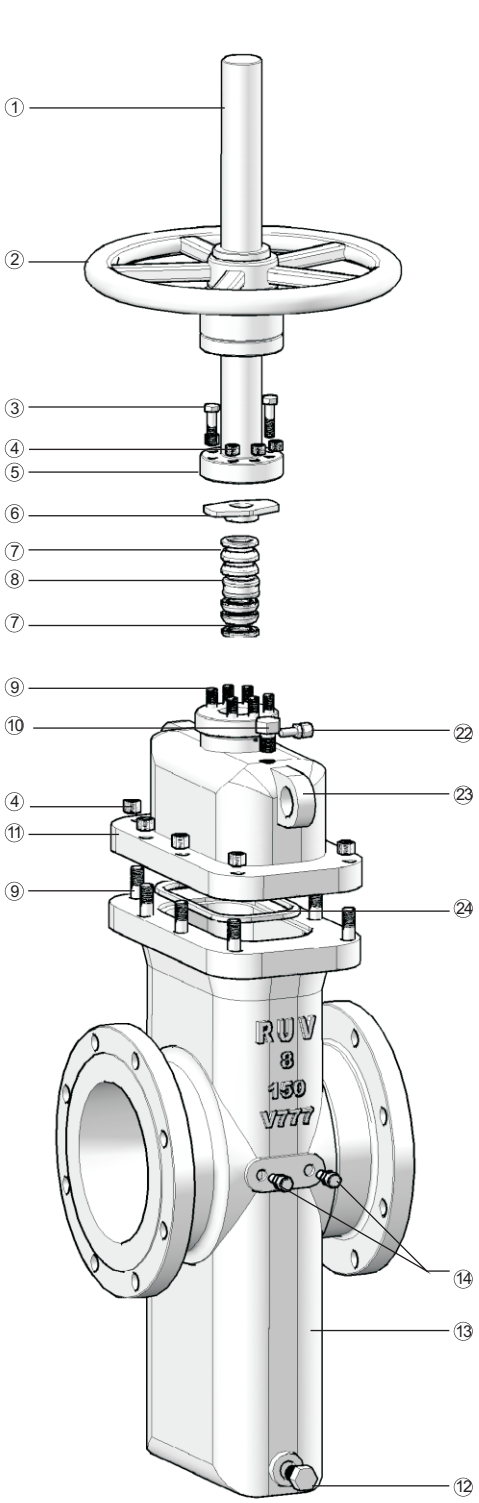
THROUGH CONDUIT SLAB GATE VALVE
PRESSURE CLASS150#
SIZE 2 " 3 " 4 "

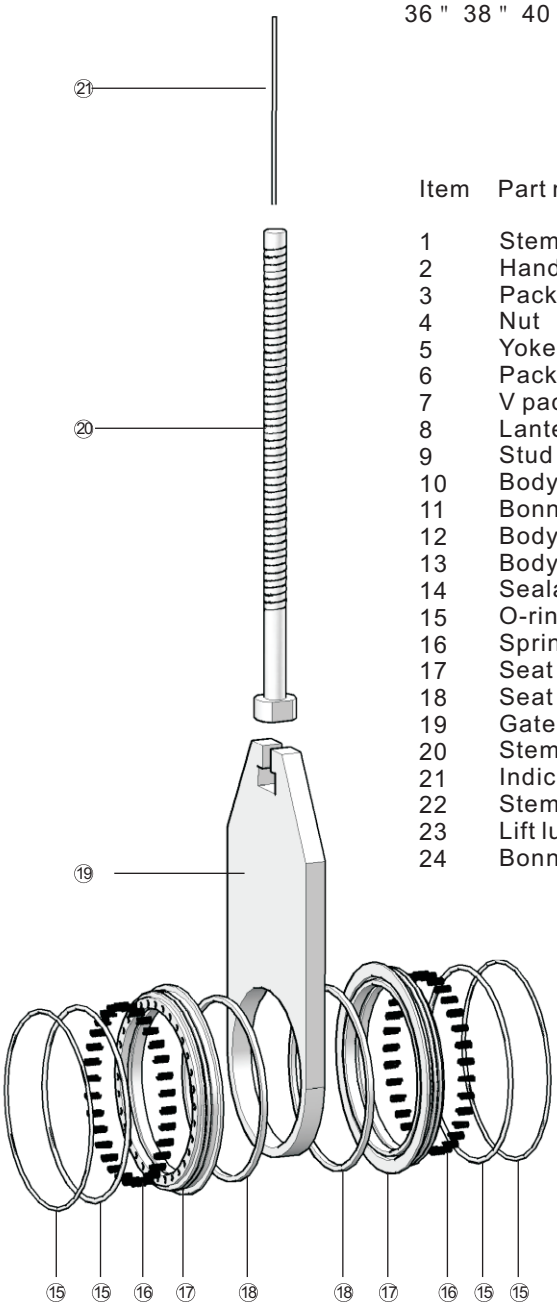


- Double Block & Bleed
- Safe Release
- Reliable Seal
- Fire Safe
- Cleaning Pipe
- Emergency Seal
- Special Seat
- Draining
- Extended Stem
- Various Operations
- Various End Connections
- Diversity of Body Materials
- Diversity of Seat Materials
- Various Control Systems
- Reliable Operation
- Bearing Pipe Stress Safety

Item	Part name	Item	Part name	Item	Part name	Item	Part name
1	Stem protector	7	V packing ring	13	O-ring	19	Bonnet gasket
2	Handwheel	8	Lantern ring	14	Bevel spring	20	Bonnet
3	Packing adjust bolt	9	Stud	15	Seat ring	21	Stem grease injection fitting
4	Nut	10	Body vent plug	16	Seat insert	22	Stem
5	Yoke	11	Body drain plug	17	Gate	23	Indicator rod
6	Packing gland	12	Sealant injector fitting	18	Body		

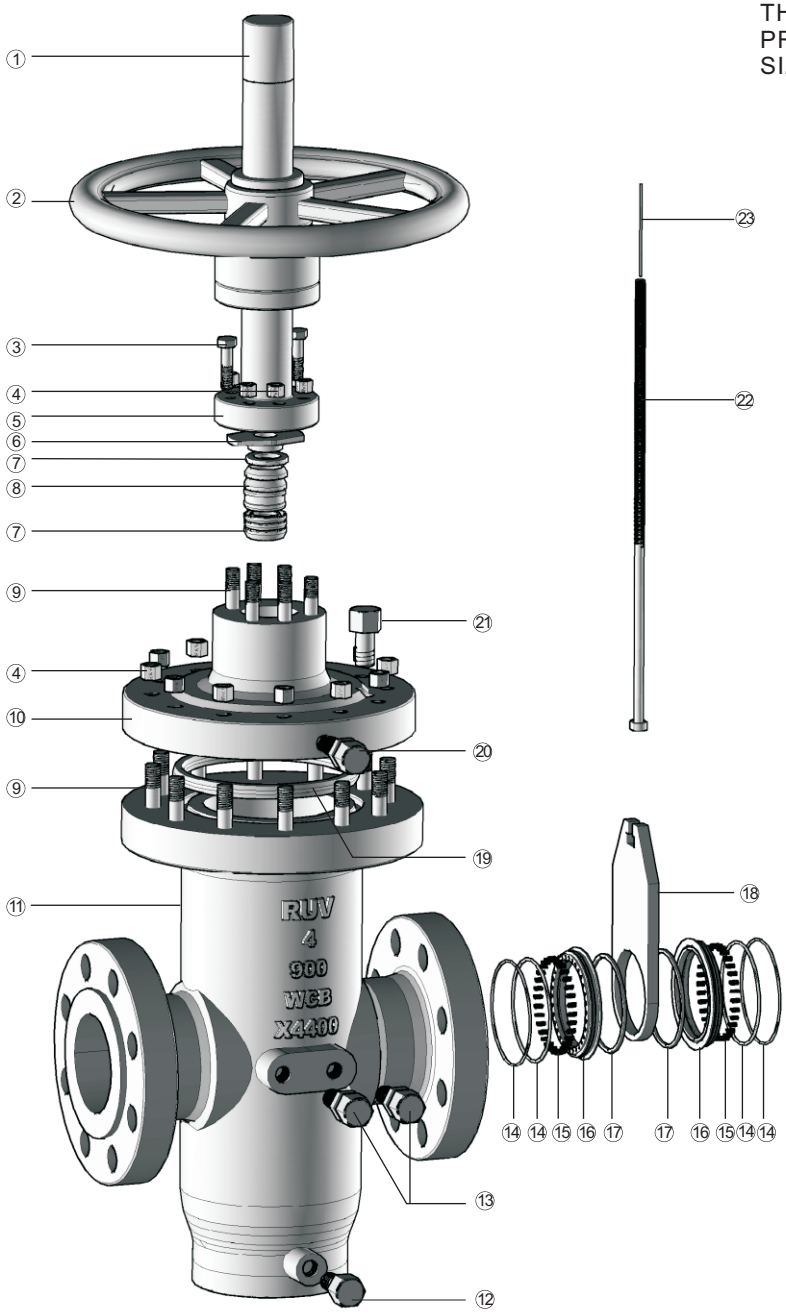
THROUGH CONDUIT SLAB GATE VALVE
PRESSURE CLASS150#
SIZE 6" 8" 10" 12" 14" 16" 18"
20" 24" 26" 28" 30" 32" 34"
36" 38" 40" 42" 48" 54" 56" 60"





Item	Part name
1	Stem protector
2	Handwheel
3	Packing adjust bolt
4	Nut
5	Yoke
6	Packing gland
7	V packing ring
8	Lantern ring
9	Stud
10	Body vent plug
11	Bonnet
12	Body drain plug
13	Body
14	Sealant injector fitting
15	O-ring
16	Spring
17	Seat ring
18	Seat insert
19	Gate
20	Stem
21	Indicator rod
22	Stem grease injection fitting
23	Lift lug
24	Bonnet gasket

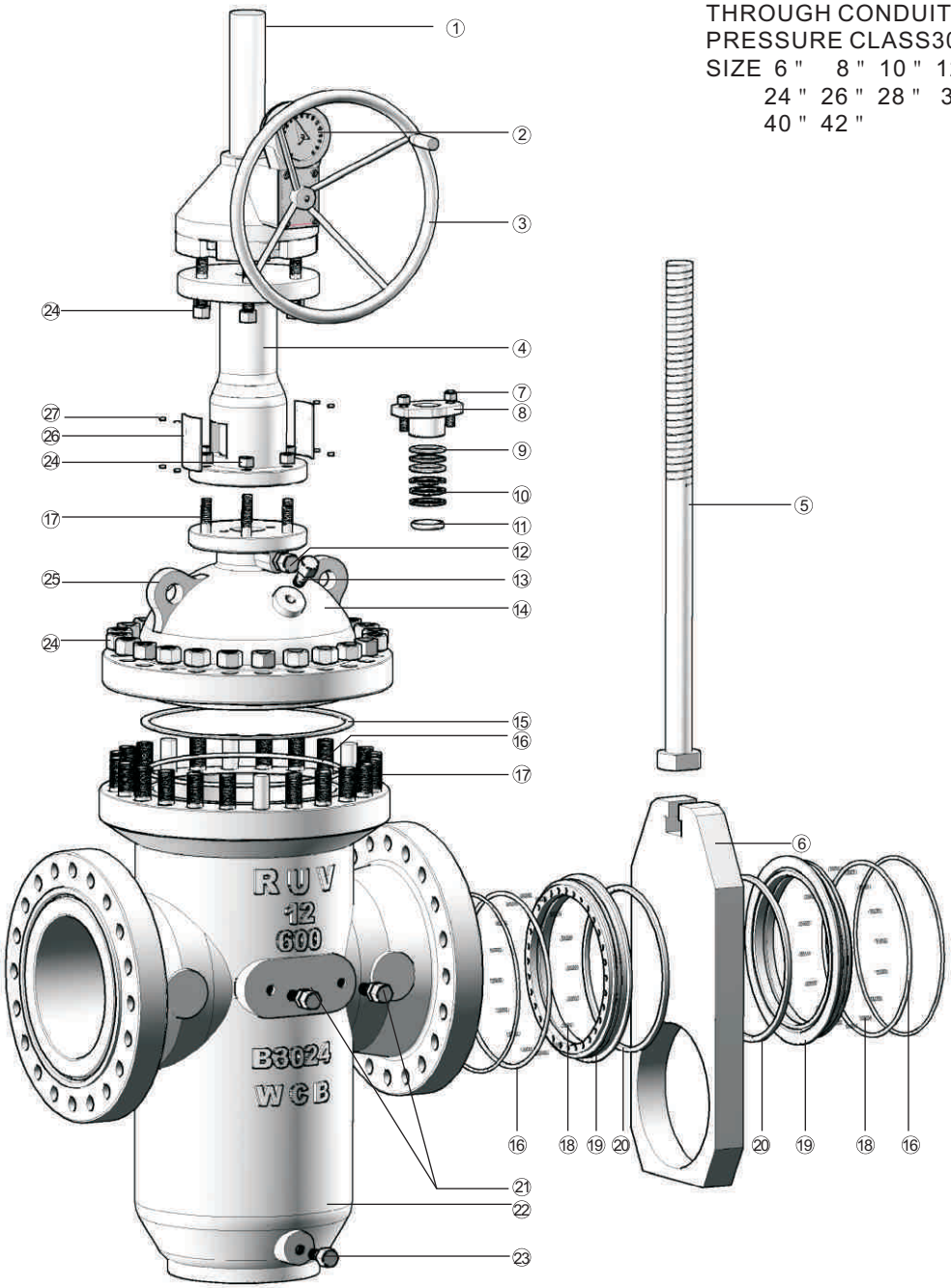
THROUGH CONDUIT SLAB GATE VALVE
PRESSURE CLASS300#,600#,900#
SIZE 2 " 3 " 4 "



- Double Block & Bleed
- Safe Release
- Reliable Seal
- Fire Safe
- Cleaning Pipe
- Emergency Seal
- Special Seat
- Draining
- Extended Stem
- Various Operations
- Various End Connections
- Diversity of Body Materials
- Diversity of Seat Materials
- Various Control Systems
- Reliable Operation
- Bearing Pipe Stress Safety

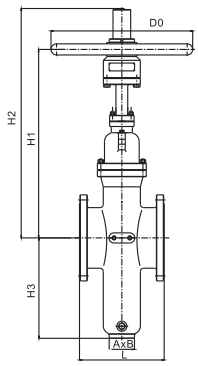
Item	Part name	Item	Part name	Item	Part name	Item	Part name
1	Stem protector	7	V packing ring	13	Sealant injector fitting	19	Bonnet gasket
2	Handwheel	8	Lantern ring	14	O-ring	20	Stem grease injection fitting
3	Packing adjust bolt	9	Stud	15	Spring	21	Body vent plug
4	Nut	10	Bonnet	16	Seat ring	22	Stem
5	Yoke	11	Body	17	Seat insert	23	Indicator rod
6	Packing gland	12	Body drain plug	18	Gate		

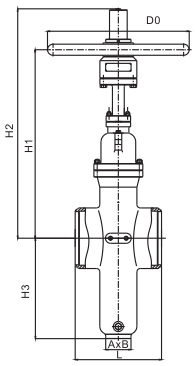
THROUGH CONDUIT SLAB GATE VALVE
PRESSURE CLASS300#,600#,900#
SIZE 6" 8" 10" 12" 14" 16" 18" 20"
24" 26" 28" 30" 32" 34" 36" 38"
40" 42"

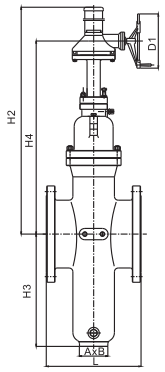


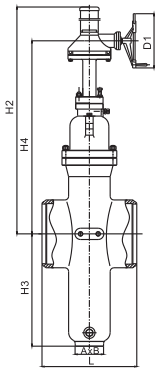
Item	Part name	Item	Part name	Item	Part name	Item	Part name
1	Stem protector	8	Packing gland	15	Bonnet gasket	22	Body
2	Indicator	9	Graphite gland	16	O-ring	23	Body drain plug
3	Handwheel	10	Lantern ring	17	Stud	24	Nut
4	Yoke	11	Bearing	18	Spring	25	Lift lug
5	Stem	12	Stem grease injection fitting	19	Seat ring	26	Protection plate
6	Gate	13	Body vent plug	20	Seat insert	27	Screw
7	Gland adjust bolt	14	Bonnet	21	Sealant injector fitting		

DIMENSION FOR SLAB THROUGH CONDUIT GATE VALVE CLASS150#







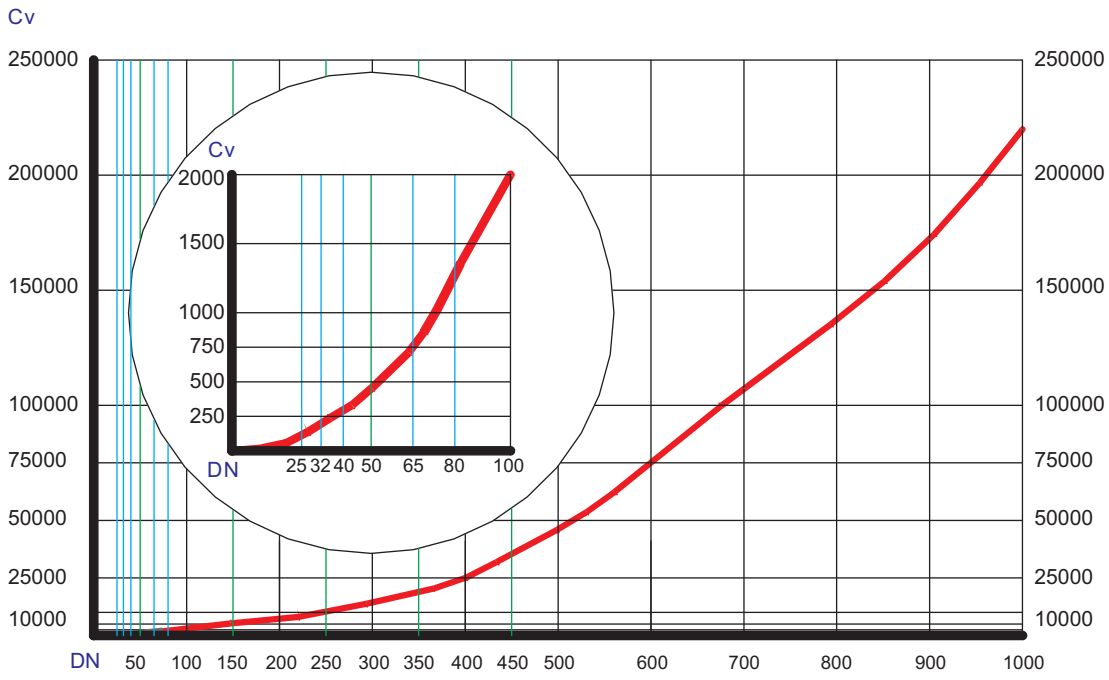


150#

SIZE INCHES	BORE	L			H1	H2	H3	H4	AxB	Do	D1	APPROX. Weight(kg)		
		R F	RTJ	WE								R F	RTJ	WE
2	49	178	191	216	312	472	138	-	60x100	320	-	50	50	38
2 1/2	62	191	203	241	338	511	160	-	60x120	320	-	68	71	65
3	74	203	216	283	378	566	199	-	80x130	320	-	68	71	65
4	100	229	241	305	443	656	254	495	90x170	320	310	80	80	75
5	125	254	267	381	560	800	278	615	92x190	360	310	138	148	130
6	150	267	279	403	560	835	328	739	100x200	360	310	176	180	160
8	201	292	305	419	691	1029	403	860	100x250	400	458	250	250	220
10	252	330	343	457	816	1217	500	1005	120x340	450	458	330	340	300
12	303	356	368	502	958	1431	590	1158	120x360	560	458	420	425	360
14	334	381	394	572	1134	1578	640	1229	130x400	560	458	550	540	500
16	385	406	419	610	1264	1752	707	1367	200x400	560	458	850	840	780
18	436	432	445	660	1404	1955	801	1520	220x500	650	458	1270	1270	1180
20	487	457	470	711	1546	2143	873	1642	130x400	650	458	1630	1640	1500
22	538	508	●	●	1760	2700	960	1872	260x500	650	458	2090	2100	1840
24	589	508	521	8 13	2010	2780	1080	2150	260x500	650	458	2630	2650	2480
26	633	559	●	864	2040	2960	1110	2165	280x660	650	500	3060	3060	2760
28	684	610	●	914	2275	3005	1230	2415	280x660	650	500	3640	3650	3200
30	735	610@	●	914	2320	3330	1260	2380	320x720	650	500	4280	4280	3760

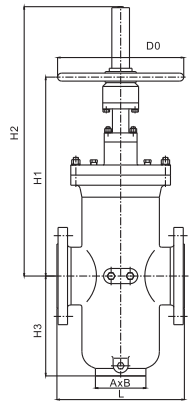
SIZE INCHES	BORE	L			H1	H2	H3	H4	AxB	Do	D1	APPROX. Weight(kg)		
		R F	RTJ	WE								R F	RTJ	WE
32	779	771	●	965	2425	3376	1260	2558	300x720	650	500	4400	4400	3800
34	830	762	●	1016	2600	4000	1420	2732	360x785	750	860	4800	4750	4100
36	874	711	●	1016	2740	4230	1490	2860	400x800	750	860	5500	5500	4900
38	925	864	●	●	-	4460	1570	2994	450x830	-	860	6500	6500	5800
40	976	1575	●	●	-	4700	1650	3158	480x920	-	860	7000	7000	6200
42	1020	1625	●	●	-	4950	1730	3305	480x950	-	860	8500	8500	7800
48	1166	1803	●	●	-	5760	1950	3712	495x1050	-	860	12600	12800	11200
54	1312	1915	●	●	-	6580	2190	4158	500x1052	-	860	14800	14000	13780
56	1360	2032	●	●	-	6830-	2290	4318	520x1080	-	860	16200	16280	15200
60	1458	●	●	●	-	7100	2410	4566	600x1320	-	860	●	●	●

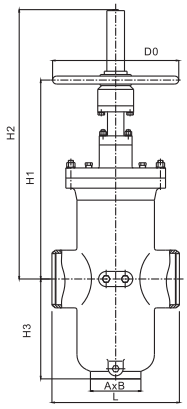
FLOW CHART

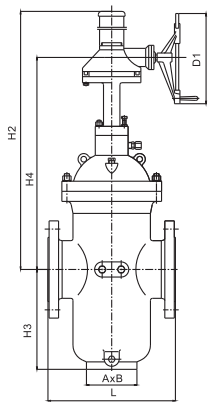


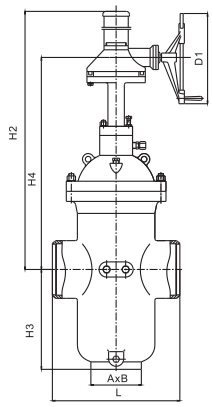
FLOW COEFFICIENT OF API 6D SLAB GATE VALVES

DIMENSION OF API 6D SLAB THROUGH CONDUIT GATE VALVE CLASS300#







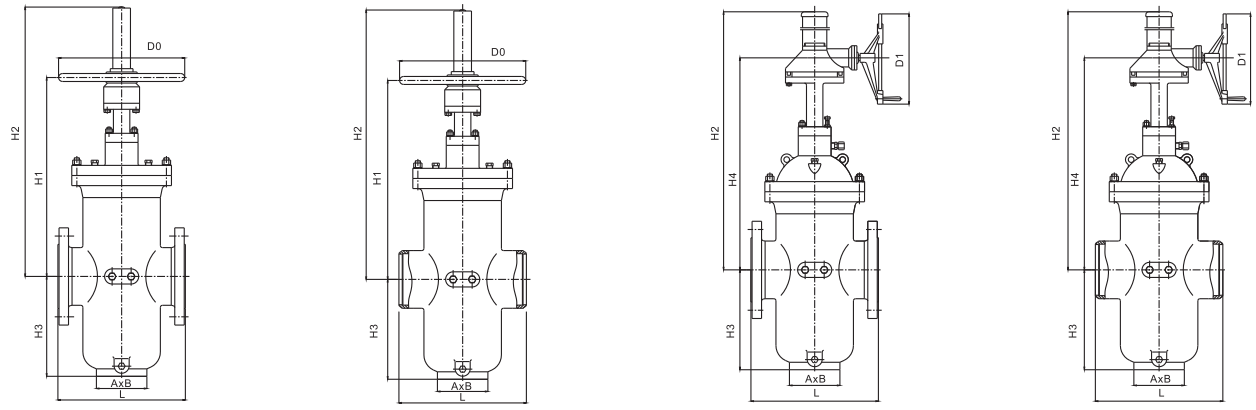


300#

SIZE INCHES	BORE	L			H1	H2	H3	H4	AxB	Do	D1	APPROX. Weight(kg)		
		R F	RTJ	WE								R F	RTJ	WE
2	49	216	232	216	312	472	138	-	60x100	320	-	55	58	54
2 1/2	62	241	257	241	338	511	160	-	60x120	320	-	60	60	58
3	74	283	298	283	378	566	197	-	80x130	320	-	75	76	70
4	100	305	321	305	443	656	254	565	80x170	320	305	155	165	145
5	125	381	397	381	560	800	278	695	92x190	360	305	160	162	150
6	150	403	419	403	560	835	328	739	100x200	360	310	190	200	170
8	201	419	435	419	691	1029	403	860	100x250	400	310	330	340	290
10	252	457	473	457	816	1217	513	1056	120x340	560	310	450	450	380
12	303	502	518	502	958	1431	595	1228	150x380	560	450	690	700	625
14	334	762	778	762	1134	1578	640	1229	180x460	850	458	1000	1015	890
16	385	838	854	838	1264	1752	707	1367	220x300	850	458	1410	1430	1260
18	436	914	930	914	1404	1955	801	1520	220x500	850	458	1910	1930	1620
20	487	991	1010	991	1546	2143	873	1642	240x400	850	458	2410	2340	2110
22	538	1092	1114	1092	1760	2520	960	1945	200x750	850	458	2990	2995	2720
24	589	1143	1165	1143	2010	2780	1080	2150	260x500	850	458	3750	3760	3410
26	633	1245	1270	1245	2040	2960	1170	2202	310x940	850	500	4390	4395	3970
28	684	1346	1372	1346	2275	2960	1230	2415	280x660	850	500	5280	5299	4710
30	735	1397	1422	1397	2320	3005	1320	2498	590x1044	850	500	6190	6195	5540
32	779	1524	1553	1524	2455	3376	1410	2558	Φ800	850	500	7420	7430	6690
34	830	1626	1654	1626	-	4000	1480	2835	Φ850	850	860	8850	8860	8030
36	874	1727	1756	1727	-	4230	1550	2935	Φ900	-	860	9000	10300	8200
38	925	1829	●	1829	-	-	1650	3100	Φ1000	-	860	11200	11200	9870
40	976	2083	●	2083	-	-	1690	3230	Φ1100	-	860	11980	11980	10470
42	1020	2133	●	2133	-	-	1790	3356	Φ1150	-	860	12550	12550	10930
48	1166	2286	●	2286	-	-	2040	3805	620x1248	-	860	18800	18800	17600
54	1312	●	●	●	-	-	2270	4247	680x1354	-	860	●	●	●
56	1360	2489	●	2489	-	-	2350	4305	760x1502	-	860	22700	22700	21000
60	1458	●	●	●	-	-	2499	4450	770x1610		860	●	●	●

1. “●” Upon request

DIMENSION OF API 6D SLAB THROUGH CONDUIT GATE VALVE CLASS 600#



600#

SIZE INCHES	BORE	L			H1	H2	H3	H4	Φ	Do	D1	APPROX. Weight(kg)		
		R F	RTJ	WE								R F	RTJ	WE
2	49	292	295	292	309	472	140	-	90	320	-	80	80	65
2 1/2	62	330	333	330	335	512	172	-	100	320	-	105	105	100
3	74	356	359	356	380	566	197	680	110	320	305	110	110	95
4	100	432	435	432	474	692	242	695	120	320	305	155	155	125
5	125	508	511	508	576	835	325	700	160	450	305	260	260	190
6	150	559	562	559	576	873	325	898	160	450	305	308	308	260
8	201	660	664	660	711	1080	415	930	200	560	450	484	484	380
10	252	787	791	787	856	1272	496	1041	250	560	450	750	750	580
12	303	838	841	838	986	1463	576	1250	300	640	458	1200	1200	950
14	334	889	892	889	1158	1643	632	1229	260	850	458	1680	1680	1390
16	385	991	994	991	1307	1843	707	1448	260	-	458	2015	2015	1650
18	436	1092	1095	1092	1441	2150	800	1560	500	-	458	2680	2680	2150
20	487	1194	1120	1194	1630	2269	896	1720	400	-	458	2995	2995	2580
22	538	1295	1305	1295	1980	2520	1040	1920	480	-	500	3890	3895	3270
24	589	1397	1407	1397	1980	2825	1150	2160	480	-	500	5700	5600	5620
26	633	1448	1461	1448	2305	3040	1230	2340	560	-	500	6000	6000	5200
28	684	1549	1562	1549	2305	3155	1350	2425	560	-	500	6890	6890	6100
30	735	1651	1664	1651	2460	3620	1385	2530	700	-	500	7990	7995	7190
32	779	1778	1794	1778	2460	3880	1385	2725	700	-	500	9510	9516	8550
34	830	1930	1946	1930	-	4150	1580	2875	785	-	860	11300	11320	10300
36	874	2083	2099	2083	-	4380	1663	3140	805	-	860	15000	15000	14200
38	925	2235	●	2235	-	4600	1750	3280	830	-	860	17500	17500	16600
40	976	2387	●	2387	-	4880	1830	3350	1050	-	860	19000	19000	18100
42	1020	2489	●	2489	-	5150	1920	3460	1120	-	860	22000	22000	21000
48	1166	2692	●	2692	-	5870	2170	3896	1180	-	860	30500	30500	29100

1. “●” Upon request

VALVE DATA FOR CHOOSING ACTUATOR-SLAB GATE VALVE

Data of the Rocky Union API 6D Slab Gate Valve

No .	Size	ANSI Class	Diff./ Press (bar)	Stem Dia(mm)	Pitch (mm)	Lead (mm)	Turns for Double Thread	Turns for Single Thread	Thrust (N)	Torque(N.m) for Double Thread	Torque(N.m) for Single Thread	Journey of Stem(mm)
1	2	150	20	20	4	4	N	17.3	2500	N	6	69
2		300	50	20	4	4	N	17.3	5700	N	14	69
3		400	64	20	4	4	N	17.3	7200	N	18	69
4		600	100	20	4	4	N	17.3	11000	N	27	69
5	2.5	150	20	20	4	4	N	21.0	3000	N	7	84
6		300	50	20	4	4	N	21.0	6500	N	16	84
7		400	64	20	4	4	N	21.0	8300	N	21	84
8		600	100	20	4	4	N	21.0	13000	N	32	84
9	3	150	20	20	4	4	N	23.5	4300	N	10	94
10		300	50	20	4	4	N	23.5	8000	N	19	94
11		400	64	20	4	4	N	23.5	10000	N	24	94
12		600	100	20	4	4	N	23.5	15000	N	37	94
13	4	150	20	20	4	4	N	30.5	4800	N	14	122
14		300	50	24	5	5	N	24.4	9400	N	26	122
15		400	64	24	5	5	N	24.4	12000	N	32	122
16		600	100	24	5	5	N	24.4	24000	N	64	122
17	6	150	20	24	5	5	N	34.8	7680	N	20	174
18		300	50	24	5	5	N	34.8	15000	N	37	174
19		400	64	28	5	5	N	34.8	22000	N	67	174
20		600	100	32	6	6	N	29.0	40800	N	125	174
21	8	150	20	32	6	6	N	37.8	13200	N	40	227
22		300	50	32	6	6	N	37.8	25000	N	79	227
23		400	64	32	6	6	N	37.8	32000	N	99	227
24		600	100	32	6	6	N	37.8	68000	N	210	227
25	10	150	20	32	6	6	N	47.0	18000	N	55	282
26		300	50	32	6	6	N	47.0	37000	N	124	282
27		400	64	36	6	6	N	47.0	47000	N	157	282
28		600	100	36	6	6	N	47.0	101000	N	280	282
29	12	150	20	36	6	6	N	55.7	25200	N	90	334
30		300	50	36	6	6	N	55.7	49000	N	191	334
31		400	64	40	7	7	N	47.7	63000	N	249	334
32		600	100	40	7	7	N	47.7	138000	N	460	334
33	14	150	20	36	6	6	N	60.7	31200	N	130	364
34		300	50	40	7	7	N	52.0	61000	N	258	364
35		400	64	50	8	8	N	45.5	81000	N	399	364
36		600	100	50	8	8	N	45.5	175000	N	859	364
37	16	150	20	44	7	7	N	59.3	32000	N	135	415
38		300	50	44	7	7	N	59.3	76000	N	323	415
39		400	64	50	8	8	N	51.9	103000	N	495	415
40		600	100	50	8	8	N	51.9	225000	N	890	415
41	18	150	20	50	8	16	29.4	58.8	40000	193	154	470
42		300	50	50	8	16	29.4	58.8	137000	660	528	470
43		400	64	60	9	18	26.1	52.2	129000	730	584	470
44		600	100	60	9	18	26.1	52.2	282000	1600	1280	470
45	20	150	20	50	8	16	32.5	65.0	49000	235	188	520
46		300	50	50	8	16	32.5	65.0	117000	725	578	520
47		400	64	60	9	18	28.9	57.8	122000	878	702	520
48		600	100	70	10	20	26.0	52.0	358000	3138	2510	520
49	24	150	20	60	9	18	35.2	70.4	69000	366	293	634
50		300	50	60	9	18	35.2	70.4	169000	1220	975	634
51		400	64	70	10	20	31.7	63.4	224000	1840	1472	634
52		600	100	80	10	20	31.7	63.4	509000	4656	3725	634

Note: Recommended safety factor for choosing actuator is 1.3 times.

RUV Expanding Gate Valve

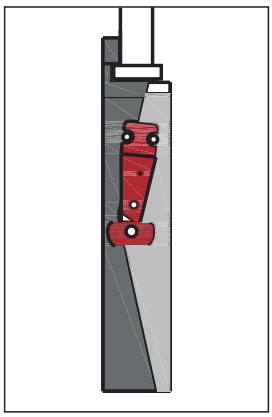
Rocky Union expanding gate valve is one kind advanced API6D design gate valve, provides tight mechanically activated seal. It has double sealing, bi-directional sealing and enforced mechanical sealing function, and is supplied in full bore fully piggable options. It can be widely used for hot steam, natural gas, oil well drilling system, oil pipeline, and oil tank storage, also can be used for block and shut valve for pipes of chemical flow with acid, alkali corrosive

Rocky Union has two kinds expanding gate valve designs, one is most popular Double Expanding Gate(RDD type), another is Single Expanding Gate valve (RDS type)

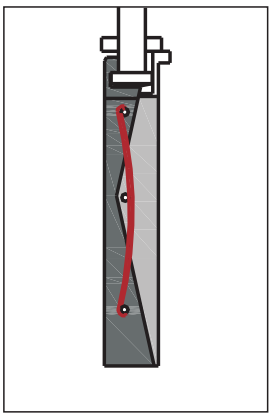
DESIGN FEATURES RDD

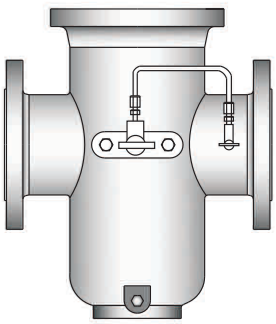
- Full bore design, easy for run scraper, hot tap cutter and pigs. No flow resistance in the valve port.
- Fire safe design to API6FA/API607.
- Special top entry design, can be maintained for online condition.
- Valve cavity is isolated from the flow both in fully open and fully closed position. Stem packing can be replaced online in fully open and fully closed position after cavity flow released from body vent and drain plug.
- Automatically pressure relief system will release the over pressure in the cavity for over pressure, protect the valve.
- Can be installed with pipe at any angle, vertical, horizontal, reverse position
- Multi operation types, hand wheel, gear box, pneumatic, electric, etc.
- Dust proof plate on yoke.
- Valve has back seat and stem blow proof design.
- Seats may be lubricated to promote long life, minimize operating torques, or effect a seal in an emergency.

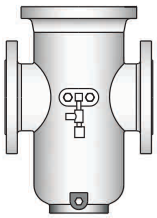
For size above 8",the gate and segment are connected with lever mechanism.



For size from 2"to 6",the gate and segment are connected with a spring.







PRESSURE RELIEF PROVISIONS

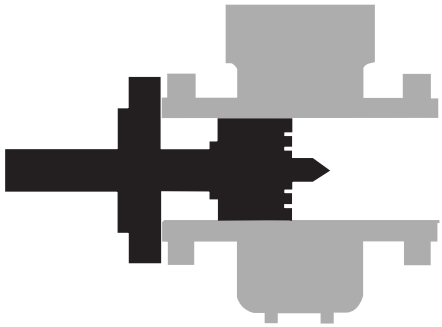
The expanding gate valve is one kind enforced bi-directional sealing valve, pressure will be trapped in the valve body cavity when the valve is in the full open or closed position

High internal pressures can result from the thermal expansion of the fluid trapped in valve cavity, and this over pressure will be released by the body safety relief system to outside valve or to connection pipe.

Conforms to API6D Para 6.8/Annex A3.

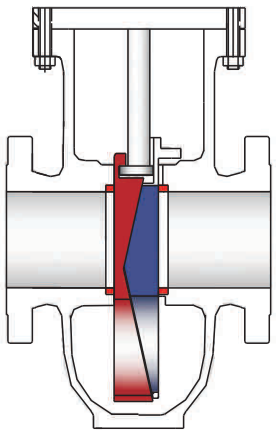
PIGGABLE BORE

Full bore and through conduit design, ensure the pressure across the valve does not change, and pigging ball (pig) can smoothly through the valve without damage the valve seat.



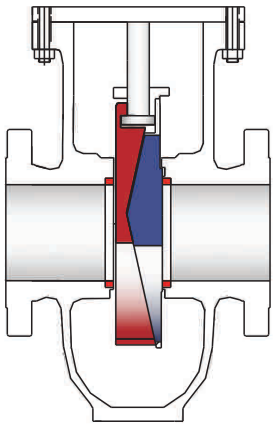
Working Principle of the Double Expanding Gate Valve

RDD type



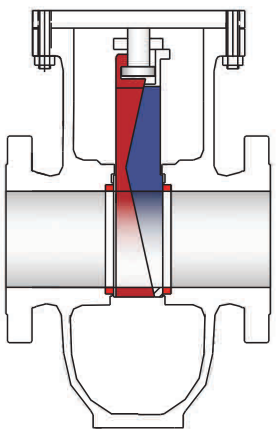
SEALED CLOSED

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.



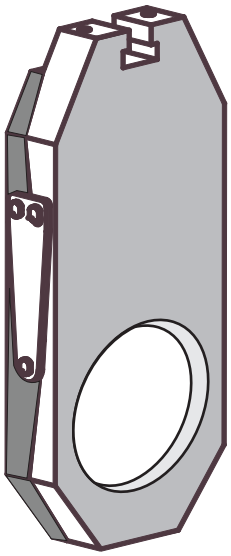
MID-TRAVEL

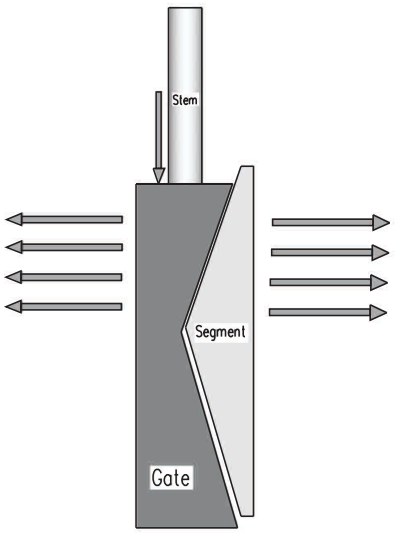
During travel towards open or close, the gate slides across the wedge angle of the segment, collapsing the assembly so that it travels freely between the seal faces. The lever lock gate centralizer holds the mechanism in the neutral position until closed and fully open position expansion is required.



FULLY OPEN

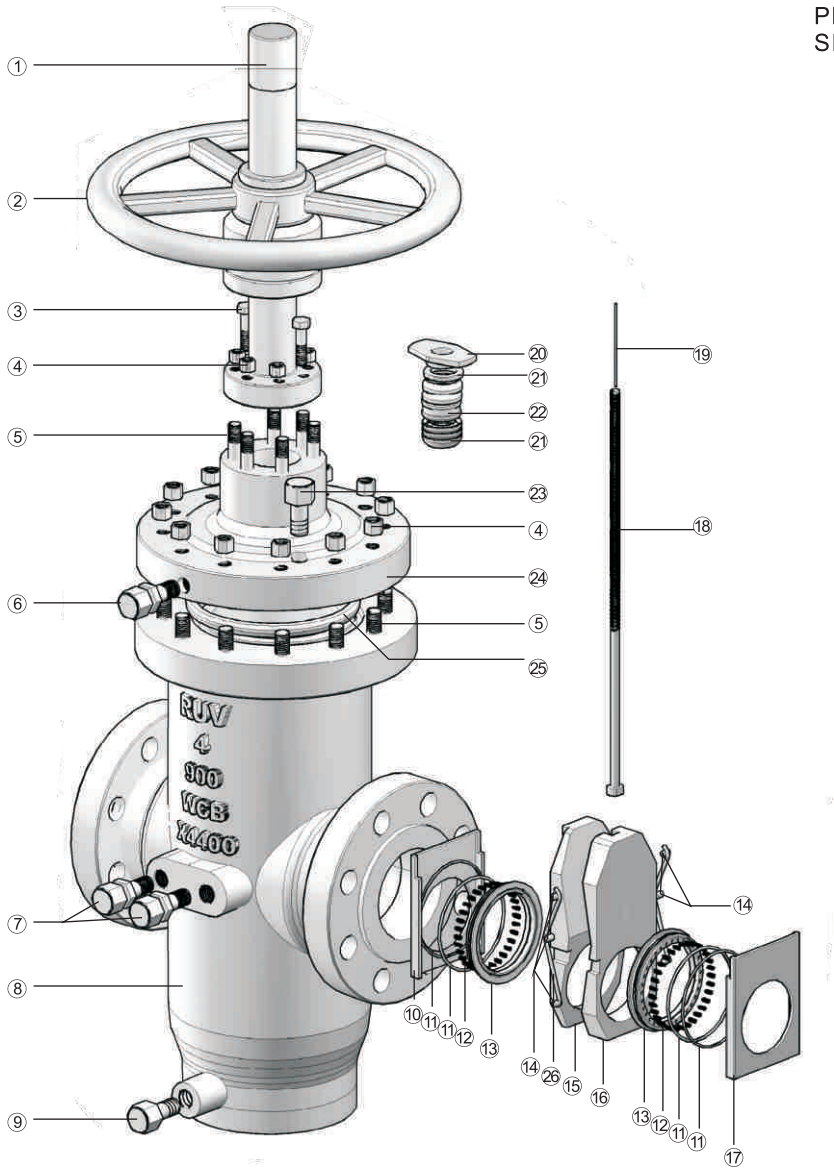
When the bore in the segment is aligned with the conduit bore, an end-stop prevents further travel and the gate slides across the wedge angle, expanding the gate and the segment, isolating the flow from the body.





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.

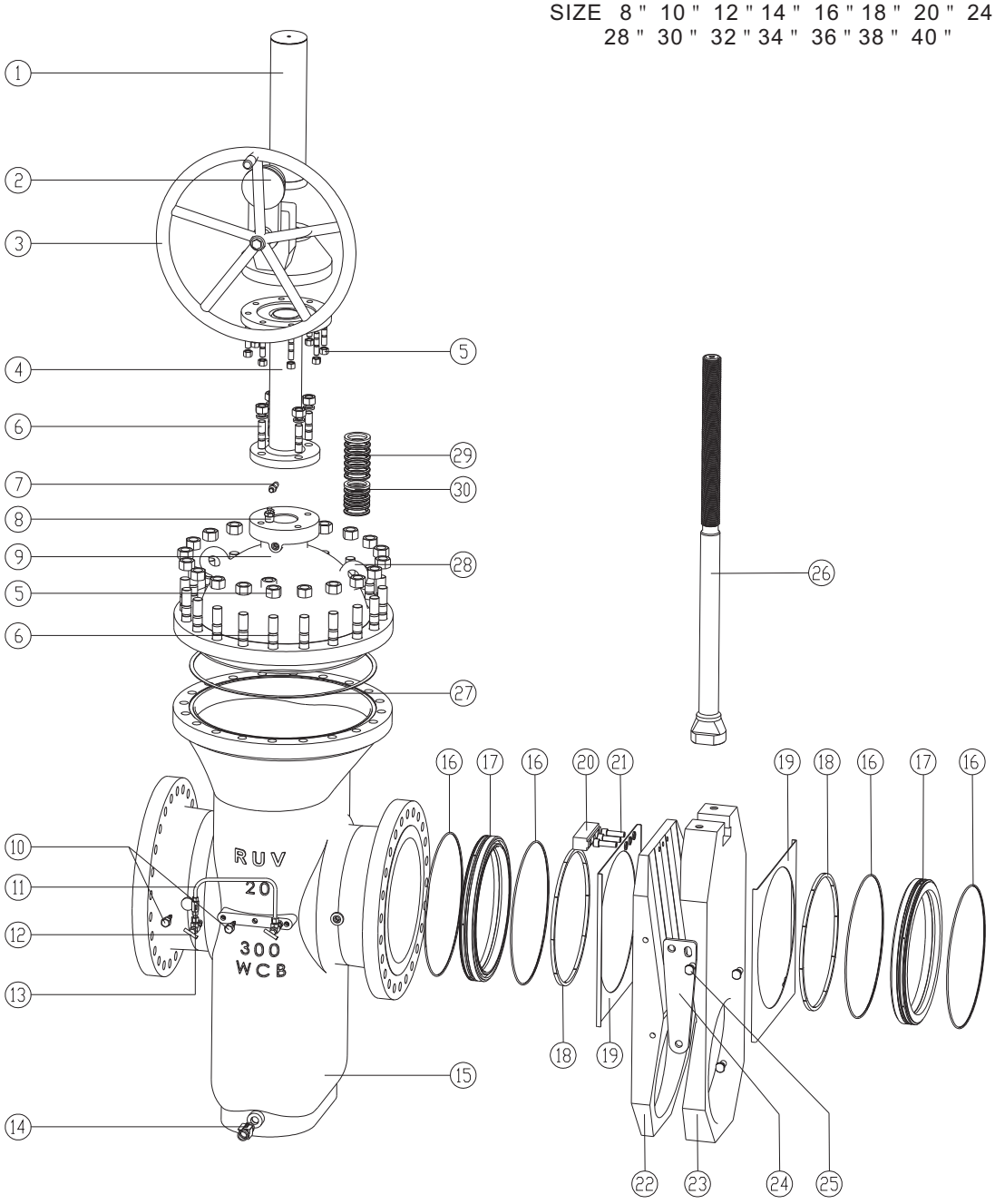
THROUGH CONDUIT DOUBLE
EXPANDING GATE VALVE
PRESSURE CLASS300#,600#,900#
SIZE 2 " 3 " 4 "



- Double Block & Bleed
- Safe Release
- Reliable Seal
- Fire Safe
- Cleaning Pipe
- Emergency Seal
- Special Seat
- Draining
- Extended Stem
- Various Operations
- Various End Connections
- Diversity of Body Materials
- Diversity of Seat Materials
- Various Control Systems
- Reliable Operation
- Bearing Pipe Stress Safety

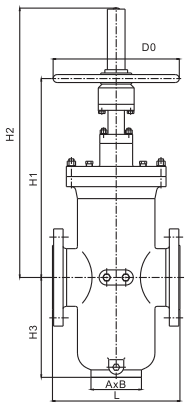
Item	Part name	Item	Part name	Item	Part name	Item	Part name
1	Stem protector	8	Body	15	Gate	22	Lantern ring
2	Handwheel	9	Body drain plug	16	Segment	23	Body vent plug
3	Packing adjust bolt	10	Gate seat skirt	17	Segment seat skirt	24	Bonnet
4	Nut	11	O-ring	18	Stem	25	Bonnet gasket
5	Stud	12	Spring	19	Indicator rod	26	Connection spring
6	Stem grease injection fitting	13	Seat ring	20	Packing gland		
7	Sealant injector fitting	14	Spring pin	21	V packing ring		

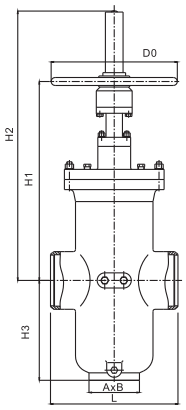
THROUGH CONDUIT DOUBLE EXPANDING
GATE VALVE PRESSURE CLASS300#,600#,900#
SIZE 8 " 10 " 12 " 14 " 16 " 18 " 20 " 24 " 26 "
28 " 30 " 32 " 34 " 36 " 38 " 40 "

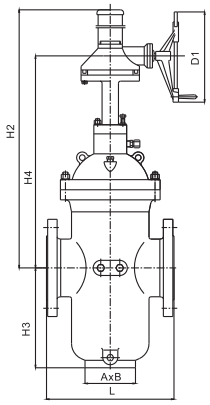


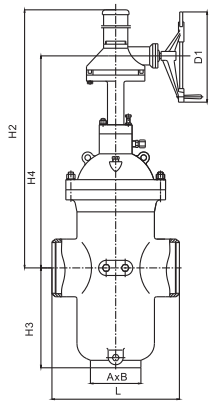
Item	Part name	Item	Part name	Item	Part name	Item	Part name
1	Stem Enclosure	10	Seat Grease Injection	19	Segment Guide	28	Lug
2	Stem Indicator	11	Tubing	20	Limit Block	29	Graphite packing
3	Handwheel	12	Needle Valve	21	Pin	30	Lantern Ring
4	Yoke	13	Check Valve	22	Segment		
5	Yoke Nut	14	Drain Plug	23	Gate		
6	Yoke Stud	15	Body	24	Lever Lock Arm		
7	Packing Valve	16	O-ring	25	Lever Lock Arm Pin		
8	Relief Valve	17	Seat Ring	26	Stem		
9	Bonnet	18	Seat	27	Gasket		

DIMENSION FOR DOUBLE EXPANDING GATE VALVE CLASS300#







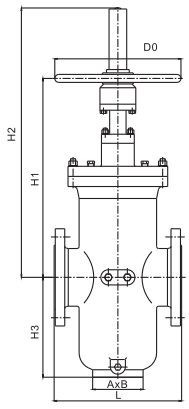


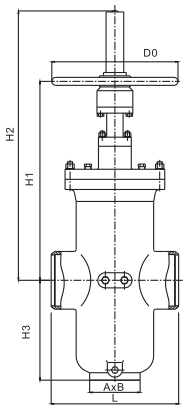
300#

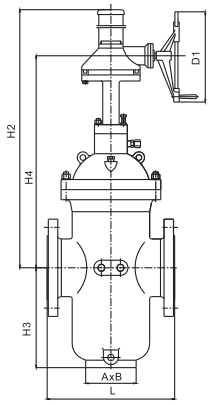
SIZE INCHES	BORE	L			H1	H2	H3	H4	AxB	Do	D1	APPROX. Weight(kg)		
		R F	RTJ	WE								R F	RTJ	WE
2	49	216	232	216	312	472	138	-	60x100	320	-	77	81	76
2 1/2	62	241	257	241	338	511	160	-	60x120	320	-	84	84	81
3	74	283	298	283	378	566	197	-	80x130	320	-	105	106	98
4	100	305	321	305	443	656	254	565	80x170	320	305	160	231	203
5	125	381	397	381	560	800	278	695	92x190	360	305	224	227	210
6	150	403	419	403	560	835	328	739	100x200	360	310	240	280	238
8	201	419	435	419	691	1029	403	860	100x250	400	310	400	476	406
10	252	457	473	457	816	1217	513	1056	120x340	560	310	686	721	602
12	303	502	518	502	958	1431	595	1228	150x380	560	450	860	980	875
14	334	762	778	762	1134	1578	640	1229	180x460	850	458	1400	1421	1246
16	385	838	854	838	1264	1752	707	1367	220x300	850	458	1974	2002	1764
18	436	914	930	914	1404	1955	801	1520	220x500	850	458	2674	2702	2268
20	487	991	1010	991	1546	2143	873	1642	240x400	850	458	3374	3276	2954
22	538	1092	1114	1092	1760	2520	960	1945	200x750	850	500	4186	4193	3808
24	589	1143	1165	1143	2010	2780	1080	2150	260x500	850	500	5250	5264	4774
26	633	1245	1270	1245	2040	2960	1170	2202	310x940	850	500	6146	6153	5558
28	684	1346	1372	1346	2275	2960	1230	2415	280x660	850	500	7392	7419	6594
30	735	1397	1422	1397	2320	3005	1320	2498	590x1044	850	860	8666	8673	7756
32	779	1524	1553	1524	2455	3376	1410	2558	Φ800	850	860	10388	10402	9366
34	830	1626	1654	1626	-	4000	1480	2835	Φ850	850	860	12390	12404	11242
36	874	1727	1756	1727	-	4230	1550	2935	Φ900	-	860	14252	14420	12922
38	925	1829	●	1829	-	-	1650	3100	Φ1000	-	860	15680	15680	13818
40	976	2083	●	2083	-	-	1690	3230	Φ1100	-	860	16772	16772	14658
42	1020	2133	●	2133	-	-	1790	3356	Φ1150	-	860	17570	17570	15302
48	1166	2286	●	2286	-	-	2040	3805	620x1248	-	860	26320	26320	24640
54	1312	●	●	●	-	-	2270	4247	680x1354	-	860	●	●	●
56	1360	2489	●	2489	-	-	2350	4305	760x1502	-	860	31780	31780	29400
60	1458	●	●	●	-	-	2499	4450	770x1610		860	●	●	●

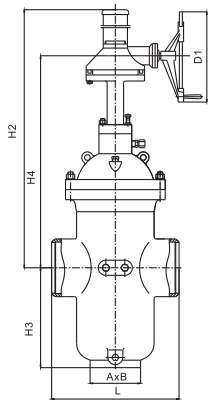
1. “●” Upon request

DIMENSION OF EXPANDING GATE VALVE CLASS 600#









600#

SIZE INCHES	BORE	L			H1	H2	H3	H4	Φ	Do	D1	APPROX. Weight(kg)		
		R F	RTJ	WE								R F	RTJ	WE
2	49	292	295	292	309	472	140	-	90	320	-	112	112	91
2 1/2	62	330	333	330	335	512	172	-	100	320	-	147	147	140
3	74	356	359	356	380	566	197	680	110	320	305	154	154	133
4	100	432	435	432	474	692	242	695	120	320	305	217	217	175
5	125	508	511	508	576	835	325	700	160	450	305	364	364	266
6	150	559	562	559	576	873	325	898	160	450	305	431	431	364
8	201	660	664	660	711	1080	415	930	200	560	450	600	678	532
10	252	787	791	787	856	1272	496	1041	250	560	450	1050	1050	812
12	303	838	841	838	986	1463	576	1250	300	640	458	1890	2450	1330
14	334	889	892	889	1158	1643	632	1229	260	850	458	2352	2352	1946
16	385	991	994	991	1307	1843	707	1448	260	-	458	2500	2821	2310
18	436	1092	1095	1092	1441	2150	800	1560	500	-	458	3500	3752	3010
20	487	1194	1120	1194	1630	2269	896	1720	400	-	458	4193	4193	3612
22	538	1295	1305	1295	1980	2520	1040	1920	480	-	500	5446	5453	4578
24	589	1397	1407	1397	1980	2825	1150	2160	480	-	500	6776	6790	5572
26	633	1448	1461	1448	2305	3040	1230	2340	560	-	500	7952	7959	6986
28	684	1549	1562	1549	2305	3155	1350	2425	560	-	500	9646	9646	8540
30	735	1651	1664	1651	2460	3620	1385	2530	700	-	500	11186	11193	10066
32	779	1778	1794	1778	2460	3880	1385	2725	700	-	500	13314	13322	11970
34	830	1930	1946	1930	-	4150	1580	2875	785	-	860	15820	15848	14420
36	874	2083	2099	2083	-	4380	1663	3140	805	-	860	16800	16828	15120
38	925	2235	●	2235	-	4600	1750	3280	830	-	860	18480	18508	17500
40	976	2387	●	2387	-	4880	1830	3350	1050	-	860	20720	20748	19180
42	1020	2489	●	2489	-	5150	1920	3460	1120	-	860	25000	22988	20300
48	1166	2692	●	2692	-	5870	2170	3896	1180	-	860	34000	25928	23520

1. “●” Upon request

VALVE DATA FOR CHOOSING ACTUATOR-DOUBLE EXPANDING GATE VALVE

SIZE	CLASS	ANSI WORKING PRESSURE		STEM THREAD			RECOMMENDED OPERATE THRUST		RECOMMENDED OPERATE TORQUE		MAXIMUM ALLOWABLE THRUST		MAXIMUM ALLOWABLE TORQUE		TOTAL STEM TRAVEL		TURNS TO OPEN
				SIZE	PITCH	LEAD											
in		Psi	Kg/cm²	in	in	in	Lb	Kgs	Ft-Lb	N-M	Lb	Kgs	Ft-Lb	N-M	in	mm	
3	600	1,500	106	1.000	0.200	0.200	4,064	1,843	31	42	19,944	9,045	153	207	4.03	102.3	20
	900	2,250	158				6,097	2,765	47	83							
4	600	1,500	106	1.250	0.250	0.250	6,612	2,999	63	86	31,868	14,453	305	413	4.88	124	19.5
	900	2,250	158				9,918	4,498	95	129							
6	300	750	53	1.500	0.286	0.286	6,400	2,902	73	99	48,000	21,769	546	740	7.06	179.3	25
	600	1,500	106				12,800	5,805	146	197							
	900	2,250	158				19,199	8,707	218	296							
8	300	750	53	2.000	0.333	0.333	10,994	4,986	161	219	94,177	42,711	1,380	1,872	9.25	235	28
	600	1,500	106				21,987	9,972	322	437							
	900	2,250	158				32,981	14,957	483	858							
10	300	750	53	2.250	0.333	0.333	16,126	7,313	259	351	127,226	57,699	2,041	2,767	11.38	269	34
	600	1,500	106				32,251	14,626	517	702							
	900	2,250	158				48,377	21,940	776	1,052							
12	300	750	53	2.250	0.333	0.333	21,574	9,784	346	469	127,226	57,699	2,041	2,767	13.31	338	40
	600	1,500	106				48,152	19,570	692	939							
	900	2,250	158				64,723	29,353	1,038	1,408							
16	300	750	53	2.500	0.333	0.333	32,444	14,714	566	767	168,876	76,588	2,944	3,992	16.63	422.4	50
	600	1,500	106				64,887	29,427	1,131	1,534							
	900	2,250	158				97,331	44,141	1,697	2,301							
20	300	750	53	2.875	0.400	0.400	60,698	22,992	1,027	1,392	220,220	99,873	4,460	6,047	22.00	569	55
	600	1,500	106				101,396	46,984	2,063	2,784							
	900	2,250	158				152,094	68,977	3,080	4,177							
24	300	750	53	2.63	0.333	0.666	30,389	18,775	690	935	175,865	79,771	3,994	5,415	28.13	715	42
	600	1,500	106				151,845	68,876	3,449	4,676							
30	300	750	53	3.13	0.400	0.800	112,888	51,205	3,063	4,153	250,000	113,400	6,800	9,220	32.88	835	41
	600	1,500	106				225,776	102,410	6,126	8,306							

- 50% safety factor should be considered

WARRANTY

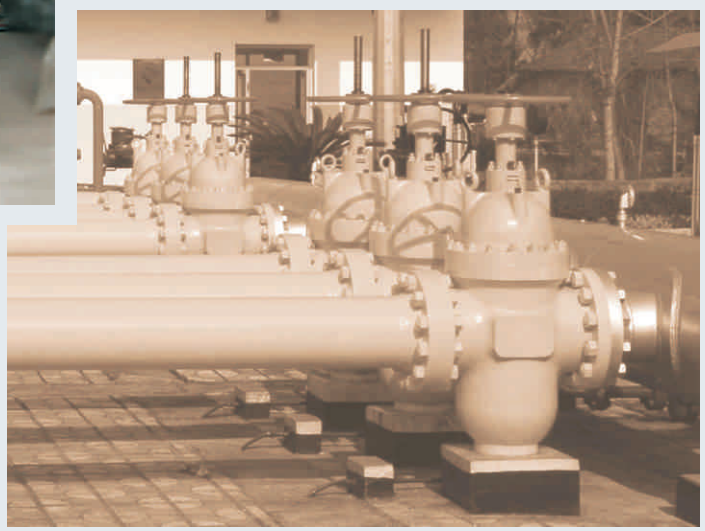
ROCKY UNION VALVE CO.,LTD

The warranty described below only applies to new or unused products, or products reconditioned by the seller, and made only to the buyer, do not extend to any other third party. The seller fulfills the obligation to deliver when the products are made available at the seller's premises. The seller agrees (on the seller's premises) to load the items on the buyers stipulated mode of transportation. The equipment quoted shall be packed in accordance with seller's standard packing process. Any additional packaging requesting by the buyer is the responsibility of the buyer, unless agreed to in writing by the seller.

If the products suffer the force majeure such as God, war, riot, and other natural disaster during transit which are beyond the seller's ability to control and which affect the seller's obligation to complete the delivery, the products are hindered, delayed or other, the seller shall be exonerated from these responsibilities but also remain the right to postpone the delivery.

Seller's all products should be guaranteed against the defects in workmanship and materials. For a period of twelve (12) months after date of shipment of any of the products described herein, seller warrants such products shall remain free from failure due to defects in workmanship and materials incorporated therein by or for seller provided such failure shall not have been caused or contributed to, by improper usage, service or application, improper installation or maintenance, repairs, alterations, or modifications effected by or for the user, misuse, negligence or accident.

The guarantee is only limited to the replacement of any parts founded to have defects either in the material or workmanship. No warranty shall apply to any products changed in design or function. The products described herein are not sold or distributed by seller for personal, family or household purposes, nor are they normally suited for use as such.



WE MAKE FOR RELIABILITY

ROCKY UNION VALVE CO.,LTD

Address: Chuannan SME Incubator, Bancang Industrial Park Hi-Tech Development Area Zigong City, Sichuan People's Republic of China
Tel:+86-813-5536058 Fax:+86-813-5519412
E-mail: sales@rockyunion.com
rockyvalve@163.com
Website: www.rockyunion.com

Special Statement

ROCKY UNION is always committed to provide high quality products and efficient service to our customers, At the same time, we have always strictly abided by the provisions of the state; abided by the relevant international rules. And we also abide by the business and professional ethics, making effort to providing employees safety, healthy, environmental work environment.