

奔日阀门® 擅长化工行业

— 出口欧美16年 —

法兰闸阀系列

FLANGE GATE VALVE SERIES

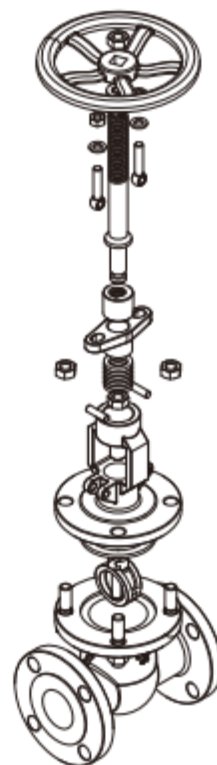


闸阀作为双向密封的高效开关阀,被广泛应用于各个行业。通过闸板在通道上滑动以控制介质流动(就像一个闸门一样,闸阀因此得名)。闸阀一个显著特点是直通性,当其处在“开”位时闸板上升至通道上方,此时通道全开。因此,闸阀操作时拥有最小的湍流和压降。

当现场要求阀门有上述两种性能时,闸阀是不错的选择。但是闸阀不能作为调节阀使用,只能用作开关阀。

Gate valve is widely used in various industries as an efficient on-off valve with two-way sealing. Slide the gate on the channel to control the medium flow (like a gate, so the gate valve is named). A prominent feature of the gate valve is straight-through. When it is in the "open" position, the gate rises above the channel, and the channel is fully open. Therefore, the gate valve operates with minimum turbulence and pressure drop.

When the valve is required to have the above two performances on site, the gate valve is a good choice. However, the gate valve cannot be used as a regulating valve, but as an on-off valve.



标准清单

产品规范 Product Specification	设计规范 Design spec.	结构长度 Face to Face	连接法兰 Connection flange	试验与检验 Test & Check	压力-温度 Pressure-temperature	产品标识 Marking	供货规范 Supply
	GB/T12234	GB/T12221	JB/T 79	JB/T 9092	GB/T 9124	GB/T 12220	JB/T 7926
	API 600	ASME B16.10	ASME B16.5	API598	ASME B16.34		

材质清单

部件 part Name	国标/GB			美标/ASME		
阀体/阀盖 Body/Bonnet	WCB	ZGCr5Mo	304	A216 WCB	A217 WC6	A351 CF8
闸板 Wedge	WCB	ZGCr5Mo	304	A216 WCB	A217 WC6	A351 CF8
阀杆 Stem	13Cr	25Cr2MoV	304	A182F6a	A217 WC6	A351 CF8
填料 Packing	聚四氟乙烯/PTFE 柔性石墨/Flexible Graphite					
垫片 Gasket	304+柔性石墨/Flexible Graphite					
螺栓 Bolt	35/35CrMo	25Cr2MoV	304	A193 B7	A193 B7	A193 B8
适用温度 Suitable temperature	-29~425°C	-29~550°C	-40~200°C	-29~425°C	-29~540°C	-46~425°C
适用介质 Applicable medium	水、油品、蒸汽 Water, Oil, Steam	水、油品、蒸汽 Water, Oil, Steam	硝酸类 Nitric Acid	水、油品、蒸汽 Water, Oil, Steam	水、油品、蒸汽 Water, Oil, Steam	硝酸类 Nitric Acid

HIGH/MED PRESS FLANGED GATE VALVE (CHEMICAL)

结构优势与特点

Structural advantages and characteristics

- 1、符合国内外先进标准的要求，密封可靠，性能优良，造型美观。
 - 2、闸板、阀座密封面用铁基合金堆焊或司太立(stellite)钴基硬质合金堆焊而成，耐磨、耐高温、耐腐蚀、抗擦伤性能好、使用寿命长。
 - 3、采用楔式弹性闸板结构，中大口径设置滚动轴承，开关灵活，启闭轻松。
 - 4、阀杆经调质及表面氮化处理，有良好的抗腐蚀性，抗擦伤性和耐磨性。
 - 5、可采用各种配管法兰标准及法兰密封面形式，满足各种工程需要及用户要求。
 - 6、阀体材料品种齐全，填料、垫片可根据实际工况或用户要求合理选配，能适用于各种压力、温度及介质工况。
- 1、Meets the domestic and foreign advanced standard requirement the seal is reliable, the performance is fine, handsome appearance.
 - 2、The damper plate, the valve seat packing surface is too vertical (tellite) with the iron-base alloy built-up welding or the department the cobalt base hard alloy built-up welding to become, wear-resisting, thermostable, anti-corrosive, the anti-abrasion performance is good, the service life is long.
 - 3、Using wedge-type flexible gate structure, medium and large caliber set bearings, switches flexible, open and dose easily.
 - 4、Stem quenched and the nitrogen treatment, with good corrosion resistance, scratch resistance and wear resistance .
 - 5、Can be used with a variety of standard pipe flanges and flange sealing surface types to meet various project needs and user requirements.
 - 6、Complete variety of valve body materials, packing, gasket can be based on actual working conditions or the user requests a reasonable option, can be applied to all kinds of pressure, temperature and medium conditions.

标准与规范Standards and norms

设计与制造 Design and Manufacture	结构长度 Structure Length	压力-温度等级 Pressure-Temperature rating	连接法兰 Connection flange	试验与检验 Test and Inspection
GB12234	GB12221	GB/T12224	JB/T79.1-2-94 GB9113-2009 HG 20592 ~ 20635	JB/T9092-1999 GB 13927-2005

标准与规范Standards and norms

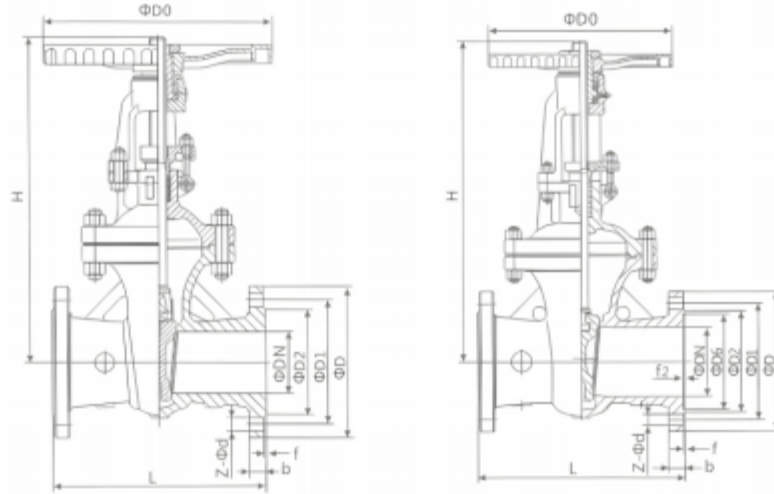
序号 No	项目名称 Item name	项目名称 Entry name					
		PN16	PN25	PN40	PN64	PN100	PN160
1	公称压力 Normal Pressure PN(MPa)	1.6	2.5	4.0	6.4	10	16
2	壳体强度试验压力 Shell strength test pressure(MPa)	常温下公称压力的1.5倍 1.5 times the nominal pressure at normal temperature					
3	高压密封试验压力 High-pressure sealing Test pressure(MPa)	常温下公称压力的1.1倍 1.1 times the nominal pressure at normal temperature					
4	常温下工作压力 Working pressure at normal temperature(MPa)	按GB/T12224压力温度额定值 Pressure and temperature rating according to GB/T12224					

主要零件材料Main components material

名称 Name	材料 Material								
阀体/阀盖 Body/Bonnet	CF8	CF3	CF8M	CF3M	WCB	LCB	WC6	WC9	C5
闸板 Wedge	CF8	CF3	CF8M	CF3M	WCB	LCB	WC6	WC9	C5
阀杆 Stem	F304	F304L	F316	F316L	2CR13	F304	F304	F304	F304
阀杆螺母 Stem Nut	铝青铜 Aluminium Bronze								
填料 Packing	PTFE/柔性石墨				石墨 Graphite				
垫片 Gasket	PTFE/金属缠绕垫				石墨 Graphite				
压盖 Gland	CF8	CF3	CF8M	CF3M	WCB	LCB	WC6	WC9	C5
螺栓 Bolt	不锈钢 Stainless Steel				35CrMoA				
螺母 Nut	不锈钢 Stainless Steel				45、35CrMoA				
手轮 Handwheel	铸钢 Cast Steel								

MED PRESS MANUAL FLANGED GATE VALVE (CHEMICAL)

Z41
← 1/2" →
C. I. P. R



主要外形尺寸及连接尺寸 Main external and connection dimension

JB/T82.1-1994
JB/T79.1-1994

公称压力 PN(MPa)	公称通径 DN(mm)	尺寸 Size(mm)								重量(kg)
		L	D	D1	D2	b-f	Z-φd	H	D0	
1.0	15	130	95	65	45	12-1	4-φ14	160	100	5
	20	150	105	75	55	14-2	4-φ14	165	100	8
	25	160	115	85	65	14-2	4-φ14	200	125	11
	32	180	135	100	78	16-2	4-φ18	240	125	13
	40	165	145	110	85	16-3	4-φ18	245	135	9.5
	50	180	160	125	100	16-3	4-φ18	286	180	24
	65	195	180	145	120	18-3	4-φ18	320	180	31
	80	210	195	160	135	18-3	4-φ18	373	200	40
	100	230	215	180	155	20-3	8-φ18	428	200	55
	125	255	245	210	185	22-3	8-φ18	513	240	63
	150	280	280	240	210	22-3	8-φ23	582	240	90
	200	330	335	295	265	22-3	8-φ23	730	320	145
	250	380	390	350	320	24-3	12-φ23	897	320	230
	300	420	440	400	368	26-4	12-φ23	1032	400	330
	350	450	500	460	428	26-4	16-φ23	1170	400	460
	400	480	565	515	482	26-4	16-φ25	1330	500	500
	450	510	615	565	532	26-4	20-φ25	1460	500	680
	500	540	670	620	585	28-4	20-φ25	1650	500	960
600	600	780	725	685	28-5	20-φ30	1830	600	1200	
700	660	895	840	800	30-5	24-φ30	2120	700	1620	
800	730	1010	950	905	32-5	24-φ34	2420	800	2090	
900	800	1110	1050	1005	34-5	28-φ34	2750	850	3100	
1000	850	1220	1160	1115	34-5	28-φ34	3130	900	4050	
1.6	15	130	95	65	45	14-2	4-φ14	170	120	5
	20	150	105	75	55	14-2	4-φ14	190	140	6.5
	25	160	115	85	65	14-2	4-φ14	205	160	9
	32	180	135	100	78	16-2	4-φ18	270	180	12
	40	200	145	110	85	16-3	4-φ18	290	200	26.5
	50	250	160	125	100	16-3	4-φ18	310	240	29
	65	265	180	145	120	18-3	4-φ18	373	240	33
	80	280	195	160	135	20-3	8-φ18	435	280	45
	100	300	215	180	155	20-3	8-φ18	445	300	63
	125	325	245	210	185	22-3	8-φ18	570	320	108
	150	350	280	240	210	24-3	8-φ23	630	360	134
	200	400	335	295	265	26-3	12-φ23	735	400	192
	250	450	405	355	320	30-3	12-φ25	969	450	273
	300	500	460	410	375	30-4	12-φ25	976	580	379
	350	550	520	470	435	34-4	16-φ25	1120	640	500
	400	600	580	525	485	36-4	16-φ30	1452	640	540
	450	650	640	585	545	40-4	20-φ30	1541	720	870
	500	700	705	650	608	44-4	20-φ34	1880	720	1100
600	800	840	770	718	48-5	20-φ36	1874	800	1570	
700	900	910	840	788	50-5	24-φ41	2083	800	1870	
800	1000	1020	950	898	52-5	24-φ41	2400	850	2500	
900	1100	1120	1050	998	54-5	28-φ41	2950	1000	3620	
1000	1200	1255	1170	1110	56-5	28-φ48	3245	1000	4550	

MED PRESS MANUAL FLANGED GATE VALVE (CHEMICAL)

主要外形尺寸及连接尺寸Main external and connection dimension

JB/T79.1-1994

公称压力 PN(MPa)	公称通径 DN(mm)	尺寸Size(mm)								重量(kg)
		L	D	D1	D2	b-f	Z-φd	H	D0	
2.5	15	130	95	65	45	16-2	4-φ14	170	120	5.5
	20	150	105	75	55	16-2	4-φ14	190	140	7
	25	160	115	85	65	16-2	4-φ14	205	160	11
	32	180	135	100	78	18-2	4-φ18	270	180	14
	40	200	145	110	85	18-3	4-φ18	310	200	20
	50	250	160	125	100	20-3	4-φ18	358	240	34
	65	265	180	145	120	22-3	8-φ18	373	240	36
	80	280	195	160	135	22-3	8-φ18	435	280	50
	100	300	230	190	160	24-3	8-φ23	500	300	69
	125	325	270	220	188	28-3	8-φ25	614	320	116
	150	350	300	250	218	30-3	8-φ25	674	360	141
	200	400	360	310	278	34-3	12-φ25	811	400	192
	250	450	425	370	332	36-3	12-φ30	969	450	207
	300	500	485	430	390	40-4	16-φ30	1145	580	350
	350	550	550	490	448	44-4	16-φ34	1280	640	560
	400	600	610	550	505	48-4	16-φ34	1452	640	650
	450	650	660	600	555	50-4	20-φ34	1541	720	910
	500	700	730	660	610	52-4	20-φ41	1676	720	1166
	600	800	840	770	718	56-5	20-φ41	1874	800	1650
	700	900	955	875	815	60-5	24-φ48	2083	800	1980
800	1000	1070	990	930	64-5	24-φ48	2400	950	2740	
900	1100	1180	1090	1025	66-5	28-φ54	2950	1000	3900	
1000	1200	1305	1210	1140	68-5	28-φ58	3245	1000	4850	

主要外形尺寸及连接尺寸Main external and connection dimension

JB/T79.2-1994

公称压力 PN(MPa)	公称通径 DN(mm)	尺寸Size(mm)										重量(kg)
		L	D	D1	D2	D6	b-f	f1	Z-φd	H	D0	
4.0	15	130	95	65	45	40	16-2	4	4-14	135	120	6
	20	150	105	75	55	51	16-2	4	4-14	190	140	8
	25	160	115	85	65	58	16-2	4	4-14	205	160	12
	32	180	135	100	78	66	18-2	4	4-18	270	180	15
	40	200	145	110	85	76	18-3	4	4-18	310	200	31
	50	250	160	125	100	88	20-3	4	4-18	377	280	34
	65	280	180	145	120	110	22-3	4	8-18	391	280	39
	80	310	195	160	135	121	22-3	4	8-18	455	320	52
	100	350	230	190	160	150	24-3	4.5	8-23	557	360	80
	125	400	270	220	188	176	28-3	4.5	8-25	628	400	127
	150	450	300	250	218	204	30-3	4.5	8-25	708	400	154
	200	550	375	320	282	260	38-3	4.5	12-30	885	450	263
	250	650	445	385	345	313	42.3	4.5	12.34	906	560	368
	300	750	570	450	408	364	46-4	4.5	16-34	1203	640	547
	350	850	570	510	465	422	52-4	5	16-34	1341	640	679
	400	950	655	585	535	474	58-4	5	16-41	1492	720	953
	500	1150	755	670	612	576	62-4	5	20-48	1627	/	1073
	600	1350	890	795	730	678	62-5	6	20-54	1925	/	1490
	700	1450	995	900	835	768	68-5	6	24-54	2310	/	2640
	800	1650	1135	1030	960	876	76-5	6	24-58	2600	/	3239
6.3	15	170	105	75	55	40	18-2	4	4-14	140	100	/
	20	190	125	90	68	51	20-2	4	4-18	140	100	9
	25	210	135	100	78	58	22-2	4	4-18	215	180	12
	32	230	150	110	82	66	24-2	4	4-23	270	180	16
	40	240	165	125	95	76	24-3	4	4-23	345	200	32
	50	250	175	135	105	88	26-3	4	4-23	470	200	39
	65	280	200	160	130	110	28-3	4	8-23	520	250	43
	80	310	210	170	140	121	30-3	4.5	8-23	570	300	60
	100	350	250	200	168	150	32-3	4.5	8-25	700	300	89
	125	400	295	240	202	176	36-3	4.5	8-30	780	350	140
	150	450	340	280	240	204	38-3	4.5	8-34	850	350	207
	200	550	405	345	300	260	44-3	4.5	12-34	1035	400	325
	250	650	470	400	352	313	48-3	4.5	12-41	1050	560	467
	300	750	530	460	412	364	54-4	4.5	16-41	1470	640	590
	350	850	595	525	475	422	60-4	5	16-41	1718	700	773
	400	950	670	585	525	474	66-4	5	16-48	1885	750	1050
500	1150	800	705	640	576	70-4	5	20-54	2410	850	1775	
600	1350	930	820	750	678	76-5	6	20-58	2895	1000	2960	

API GATE VALVE (PETROCHEMICAL)

Z41^W_V-150LB

一、产品概述

Product overview

法兰连接钢制闸阀适用于ANSI Class 150 ~ 900, PN2.0 ~ 16.0MPa, JIS10 ~ 20K, 工作温度-29 ~ 425℃ (碳钢)及-40 ~ 500℃ (不锈钢)的各种管路上,用于截断或接通管路中的介质,通过选用不同的材质可适用于水、蒸汽、油品、硝酸、醋酸、强氧化性介质及尿素等多种介质,有手动、伞齿轮传动及电动等。

Flange-connected steel gate valve is applicable to ANSI Class 150 ~ 900, PN2.0 ~ 16.0MPa, JIS10 ~ 20K, and the operating temperature is -29 ~ 425 °C (carbon steel) and -40 ~ 500 °C (stainless steel) for cutting off or connecting the medium in the pipeline. By selecting different materials, it can be applied to water, steam, oil, nitric acid, acetic acid, strong oxidizing media, urea and other media. There are manual, bevel gear transmission and electric transmission.

结构优势与特点 Structural advantages and characteristics

- 1、符合国内外先进标准的要求,密封可靠,性能优良,造型美观。
- 2、闸板、闸座密封面用铁基合金堆焊或司太立(stellite)钴基硬质合金堆焊而成,耐磨、耐高温、耐腐蚀、抗擦伤性能好、使用寿命长。
- 3、采用楔式弹性闸板结构,中大口径设置滚动轴承,开关灵活,启闭轻松。
- 4、闸杆经调质及表面氮化处理,有良好的抗腐蚀性、抗擦伤性和耐磨性。
- 5、可采用各种配管法兰标准及法兰密封面形式,满足各种工程需要及用户要求。
- 6、阀体材料品种齐全,填料、垫片可根据实际工况或用户要求合理选配,能适用于各种压力、温度及介质工况。

1. Meets the domestic and foreign advanced standard requirement the seal is reliable, the performance is fine, handsome appearance.
2. The damper plate, the valve seat packing surface is too vertical (stellite) with the iron-base alloy built-up welding or the department the cobalt base hard alloy built-up welding to become, wear-resisting, thermostable, anti-corrosive, the anti-abrasion performance is good, the service life is long.
3. Using wedge-type flexible gate structure, medium and large caliber set bearings, switches flexible, open and close easily.
4. Stem quenched and the nitrogen treatment, with good corrosion resistance, scratch resistance and wear resistance.
5. Can be used with a variety of standard pipe flanges and flange sealing surface types to meet various project needs and user requirements.
6. Complete variety of valve body materials, packing, gasket can be based on actual working conditions or the user requests a reasonable option, can be applied to all kinds of pressure, temperature and medium conditions.

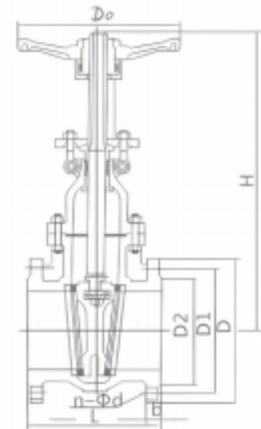
三、主要零件材料 Main components material

名称 Name	材料 Material								
阀体/阀盖 Body/Bonnet	CF8	CF3	CF8M	CF3M	WCB	LCB	WC6	WC9	C5
闸板 Wedge	CF8	CF3	CF8M	CF3M	WCB	LCB	WC6	WC9	C5
闸杆 Stem	F304	F304L	F316	F316L	2CR13	F304	F304	F304	F304
闸杆螺母 Stem Nut	铝青铜 Aluminium Bronze								
填料 Packing	PTFE/柔性石墨						石墨 Graphite		
垫片 Gasket	PTFE/金属缠绕垫						石墨 Graphite		
压盖 Gland	CF8	CF3	CF8M	CF3M	WCB	LCB	WC6	WC9	C5
螺栓 Bolt	不锈钢 Stainless Steel						35CrMoA		
螺母 Nut	不锈钢 Stainless Steel						45, 35CrMoA		
手轮 Handwheel	铸钢 Cast Steel								

四、主要外形尺寸及连接尺寸 Main external and connection dimension

Class (150Lb)

规格 inch	尺寸 (mm)									
	DN	L	D	D1	D2	b	Z-φd	H	D0	
1/2"	15	108	89	60.5	35	12	4-φ15	155	120	
3/4"	20	117	98	70	43	12	4-φ15	160	120	
1"	25	127	108	79.5	51	12	4-φ15	200	140	
1 1/4"	32	140	117	89	64	13	4-φ15	245	160	
1 1/2"	40	165	127	98.5	73	15	4-φ15	285	180	
2"	50	178	152	120.5	92	16	4-φ19	315	200	
2 1/2"	65	190	178	139.5	105	18	4-φ19	375	220	
3"	80	203	190	152.5	127	19	4-φ19	400	240	
4"	100	229	229	190.5	157	24	8-φ19	460	280	
5"	125	254	254	216	186	24	8-φ22	540	300	
6"	150	267	279	241.5	216	26	8-φ22	620	320	
8"	200	292	343	298.5	270	29	8-φ22	800	400	
10"	250	330	406	362	324	31	12-φ25	850	450	
12"	300	356	483	432	381	32	12-φ25	1000	500	
14"	350	381	533	476	413	35	12-φ29	1300	600	
16"	400	406	597	540	470	37	16-φ29	1400	600	
18"	450	432	635	578	533	40	16-φ32	1600	650	
20"	500	457	398	635	584	43	20-φ32	1850	650	
24"	600	508	813	749.5	692	48	20-φ35	2200	700	



API GATE VALVE (PETROCHEMICAL)

Class (300Lb)

规格 inch	尺寸(mm)								
	DN	L	D	D1	D2	b	Z-φd	H	D0
1/2"	15	140	95	66.5	35	15	4-φ15	155	120
3/4"	20	152	117	82.5	43	16	4-φ19	160	120
1"	25	165	124	89	51	18	4-φ19	200	140
1 1/4"	32	178	133	98.5	64	19	4-φ19	250	160
1 1/2"	40	190	156	114.5	73	21	4-φ22	290	180
2"	50	216	165	127	92	22	8-φ19	330	200
2 1/2"	65	241	190	149	105	25	8-φ22	385	220
3"	80	283	210	168.5	127	29	8-φ22	410	240
4"	100	305	254	200	157	32	8-φ22	480	280
5"	125	381	279	235	186	35	8-φ22	630	300
6"	150	403	318	270	216	37	12-φ22	690	320
8"	200	419	381	330	270	41	12-φ25	830	400
10"	250	457	445	387.5	324	48	16-φ29	1003	450
12"	300	502	521	451	381	51	16-φ32	1137	500
14"	350	762	584	514.5	413	54	20-φ32	1489	600
16"	400	838	648	571.5	470	57	20-φ35	1581	600
18"	450	914	711	628.5	533	60	24-φ35	2017	650
20"	500	991	775	686	584	64	24-φ35	2228	650
24"	600	1143	914	813	692	70	24-φ41	2650	700

Class (600Lb)

规格 inch	尺寸(mm)								
	DN	L	D	D1	D2	b	Z-φd	H	D0
1/2"	15	165	95	66.5	35	15	4-φ15	155	155
3/4"	20	190	118	82.5	43	16	4-φ19	160	160
1"	25	216	124	89	51	18	4-φ19	200	200
1 1/4"	32	229	133	98.5	64	21	4-φ19	250	250
1 1/2"	40	241	156	114.5	73	23	4-φ22	290	290
2"	50	292	165	127	92	26	8-φ10	350	350
2 1/2"	65	330	190	149	105	29	8-φ22	430	430
3"	80	356	210	168	127	32	8-φ22	470	470
4"	100	432	273	216	157	38	8-φ25	570	570
5"	125	508	330	266.5	186	45	8-φ29	700	700
6"	150	559	356	292	216	48	12-φ29	750	750
8"	200	660	419	349	270	56	12-φ32	830	830
10"	250	787	508	432	324	64	16-φ35	1210	1210
12"	300	838	559	489	381	67	20-φ35	1350	1350
14"	350	889	603	527	413	70	20-φ38	1600	1600
16"	400	991	686	603	470	77	20-φ41	1800	1800
18"	450	1092	743	654	533	83	20-φ44	2110	2110
20"	500	1194	813	724	584	89	24-φ22	2350	2350
24"	600	1397	940	838	692	102	24-φ52	2900	2900

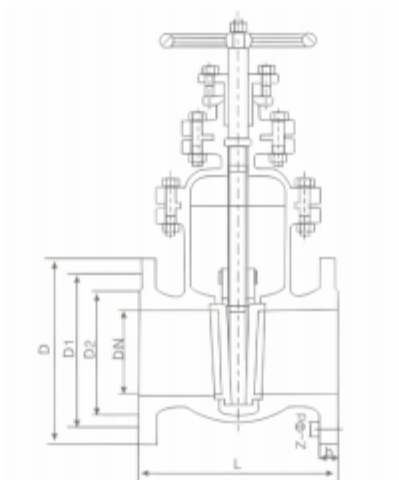
Z45H/W 化工专用暗杆闸阀

奔日阀门 擅长化工行业

— 出口欧美16年 —

Z45H/W NON-RISING STEM GATE VALVE (CHEMICAL)

Z45H^W-16C、P、R



技术参数 Technical parameters

压力等级 Pressure rating	阀体耐压 Body voltage	密封试验 Seal test	工作温度 Working temperature	适用介质 Suitable medium
1.0MPa、1.6MPa	1.5MPa、2.4MPa	1.1MPa、1.76MPa	0~80℃	水、气等 water, gas, etc

主要零件材料 Main components material

名称 Name	材料 Material								
阀体/阀盖 Body/Bonnet	CF8	CF3	CF8M	CF3M	WCB	LCB	WC6	WC9	C5
闸板 Wedge	CF8	CF3	CF8M	CF3M	WCB	LCB	WC6	WC9	C5
阀杆 Stem	F304	F304L	F316	F316L	2CR13	F304	F304	F304	F304
阀杆螺母 Stem Nut	铝青铜 Aluminium Bronze								
填料 Packing	PTFE/柔性石墨				石墨 Graphite				
垫片 Gasket	PTFE/金属缠绕垫				石墨 Graphite				
压盖 Gland	CF8	CF3	CF8M	CF3M	WCB	LCB	WC6	WC9	C5
螺栓 Bolt	不锈钢 Stainless Steel				35CrMoA				
螺母 Nut	不锈钢 Stainless Steel				45、35CrMoA				
手轮 Handwheel	铸钢 Cast Steel								

主要尺寸 Main dimensions

公称直径 DN(mm)	尺寸 Dimensions(mm)					
	L	D	D1	D2	b	Z- d
50	250	160	125	100	16	4-18
65	265	180	145	120	18	4-18
80	280	195	160	135	20	8-18
100	300	215	180	155	20	8-18
125	325	245	210	185	22	8-18
150	350	280	240	210	24	8-23
200	400	335	295	265	26	12-23
250	450	405	355	320	30	12-25
300	500	460	410	375	30	12-25
350	550	520	470	435	34	16-25
400	600	580	525	485	36	16-30