



DC5811 双偏心高性能蝶阀

DC5811 Double eccentric high performance butterfly valve

专业提供过程控制阀门解决方案
Professionally provide process control valve solutions

Rev.2021



浙江东辰阀门科技有限公司

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◆主要特点 Main features

DC5811系列高性能蝶阀采用偏置式阀杆、偏心式蝶板、阀座采用唇缘式密封补偿了使用时温变化和压力变化，有软密封和硬密封两种密封形式，具有优良的双向密封性能。

它具有结构简单、重量轻、流通能力高、密封可靠持久、可调范围大、调节精度高、可以任意方向安装的优点。适用于各种工业生产过程的自动调节或切断功能。

DC5811 series high performance butterfly valve with offset stem, eccentric disc, valve seat with lip seal to compensate for temperature change and pressure change, soft seal and hard seal two forms, with excellent two-way sealing performance.

It has the advantages of simple structure, light weight, high circulation capacity, reliable and durable sealing, large adjustable range, high adjustment accuracy, and can be installed in any direction. It is suitable for automatic adjustment or cutting function in various industrial production processes.

◆标准规格 Standard specification

本体部 Body

型 号 Series	DC5811
公 称 通 径 Body size	3" 24" 80A 600A 即DN80 DN600
阀 板 形 状 Disc form	偏心型部分球面阀板 Eccentric type segmental ball disc
阀内件材质 Trim materials 阀内件处理 Trim treatment	标准材质组合及使用温度 压力范围请参见表1 See Table1 for hardening treatment and operating pressure-temperature.
公 称 压 力 Body ratings	ANSI Class 150、300; PN1.6、4.0
连 接 方 式 Body connections	对夹Wafer(RF、MFM)、法兰Flange(RF、MFM)
尺 寸 Dimension	请参见第 09页See pages 09.
阀 体 及 上 阀 盖 材 质 Body & Bonnet Material	WCB, CF8, CF8M , and other alloy steels. 各种材质的使用温度压力范围请参见表1 和表2 As to the operating pressure-temperature limitation for each material, see Tables 1 and 2.
上 阀 盖 形 式 Bonnet type	标准型 Standard type : 3" 6"(80A 150A) -45~+500℃ 8" 24"(200A 600A) -45~+450℃ 加长型 Long-Extension type : 3" 24"(80A 600A) -45℃ and under 但必须注意各材质的使用温度压力范围 Please notice the operating pressure-temperature limitation for each material
填 料 Packing	请参见图 3 See Fig. 3 for selection.
垫 圈 Gasket	请参见图 4 See Fig. 4 for selection.
表面涂层色 Painting color	银灰色 环氧树脂但是阀体材质为不锈钢时本体部不加涂层 Munsell N-6 Epoxy resin group is standard. In the case of stainless steel body, no painting is standard.

企业简介

Company profile

浙江东辰阀门科技有限公司（原杭州东辰热力辅机有限公司）成立于2006年，专业设计、制造特种阀门，各种高中压调节阀、减温减压器、汽机旁路阀、锅炉给水调节阀、最小流量阀、闸阀、球阀、蝶阀、截止阀、止回阀、排污阀等阀门及相关汽轮机辅机、锅炉辅机。产品广泛应用于各种参数的燃煤发电机组，燃机热电联产项目以及炼油、化工、冶金、集中供热等领域。

公司拥有一批专业从事阀门设计和开发的技术人员，掌握着国内外领先的阀门专业技术，有着丰富的设计、制造和现场调试经验。产品最高压力等级为PN76MPa，最高温度620℃，应用于最大单机容量为1030MW超超临界机组。

公司目前有40多项发明专利和实用新型专利，经过多年发展建立了一套完整的符合《特种设备生产和充装单位许可规则》的压力管道元件制造管理体系，并取得国家市场监管总局颁发的TS特种设备制造许可A1级证书，许可项目为电动调节阀、气动调节阀、闸阀、截止阀、止回阀、球阀、蝶阀、减温减压装置。取得中国质量认证中心CQC颁发的ISO9001质量管理体系认证，ISO14001&45001环境与职业健康安全体系认证。

公司被评为国家高新技术企业，浙江省科技型企业，浙江省守合同重信用AAA单位，浙江省阀门研发中心，浙江省信用管理示范单位，安全生产标准化单位，同时也是中国阀门协会会员单位，中国石油化工热工协会理事单位；现已成为中石油、中石化、中海油、中国神华、中核集团、华能、华电、国电、大唐、中电投、浙能集团等合格供应商。

结合市场特点，公司在技术创新、产品选型、投标、合同签订、产品设计、工艺制造、检验试验，供货安装、运行调试、售后服务、以及用户回访等各个环节，都严格遵循质量管理体系程序。

Zhejiang Dongchen Valve Technology Co., Ltd. (formerly Hangzhou Dongchen Heating Auxiliary Machinery Co., Ltd.) was established in 2006. It specializes in designing and manufacturing special valves, various high and medium pressure regulating valves, temperature reducing and reducing devices, steam turbine bypass valves, and boiler feed water. Regulating valve, minimum flow valve, gate valve, ball valve, butterfly valve, globe valve, check valve, blowdown valve and other valves and related steam turbine auxiliary equipment, boiler auxiliary equipment. The products are widely used in various parameters of coal-fired thermal power units, gas-fired combined heat and power projects, as well as in the fields of oil refining, chemical industry, metallurgy, and central heating.

The company has a group of technical personnel who are specialized in valve design and development, mastering the leading valve technology at home and abroad, and has rich experience in design, manufacturing and field commissioning. The highest pressure level of the product is PN76MPa, the highest temperature is 620 ° C, and it is used in ultra-supercritical units with a maximum single-unit capacity of 1030MW.

The company currently has more than 40 invention patents and utility model patents. After many years of development, it has established a complete set of pressure pipeline component manufacturing management system that complies with the "Special Equipment Production and Filling Unit Licensing Rules" and has been issued by the State Administration of Market Supervision. TS special equipment manufacturing license A1 certificate, the approved items are electric regulating valve, pneumatic regulating valve, gate valve, globe valve, check valve, ball valve, butterfly valve, temperature reducing and reducing device. Obtained ISO9001 quality management system certification, ISO14001 & 45001 environmental and occupational health and safety system certification issued by China Quality Certification Center CQC.

The company has been rated as a national high-tech enterprise, a science and technology enterprise in Zhejiang Province, an AAA unit in Zhejiang Province that abides by its contract, and is a AAA unit in Zhejiang Province. Member of China Petrochemical Thermal Engineering Association; has now become a qualified supplier of PetroChina, Sinopec, CNOOC, China Shenhua, China Nuclear Group, Huaneng, Huadian, Guodian, Datang, China Power Investment Corporation, Zhejiang Energy Group.

Combining market characteristics, the company strictly follows the quality management system in all aspects of technological innovation, product selection, bidding, contract signing, product design, process manufacturing, inspection and testing, supply and installation, commissioning, after-sales service, and customer return visits. program.

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执行机构 Actuator

规格 Specification	形式 Type	气缸式Pneumatic cylinder type	
		单动作型 Spring return type	双动作型 Double acting type
用途 Purpose	调节、开-关Modulation、On-off		
供气压力 Air supply	0.4~0.7MPa		
回转角度 Angle rotation	60 or 90 deg		随输入定位器信号增加阀开或阀闭 Valve open or shut by air or electric signal.
正作用 Direct action	气压增加阀闭 Air to valve shut		
反作用 Reverse action	气压增加阀开 Air to valve open		
滞后 Hysteresis	≤ 1.5% FS 带定位器 1.5% of full stroke with positioner		
直线性 Linearity	≤ ± 2% FS 带定位器 2% of full stroke with positioner		
允许环境温度 Ambient Temp	-20~+60℃		
表面涂层色 Painting	银色环氧树脂		
选购设备 Option	E/P P/P 定位器过滤减压阀电磁阀限位开关调速器锁止阀限位件手动操作机构 E/P, P/P-Positioner, Air-set, Solenoid valve, Limit switch, Position transmitter, Lock valve, Speed controller, Rotation stopper, Manual handle, etc.		

性能Performance

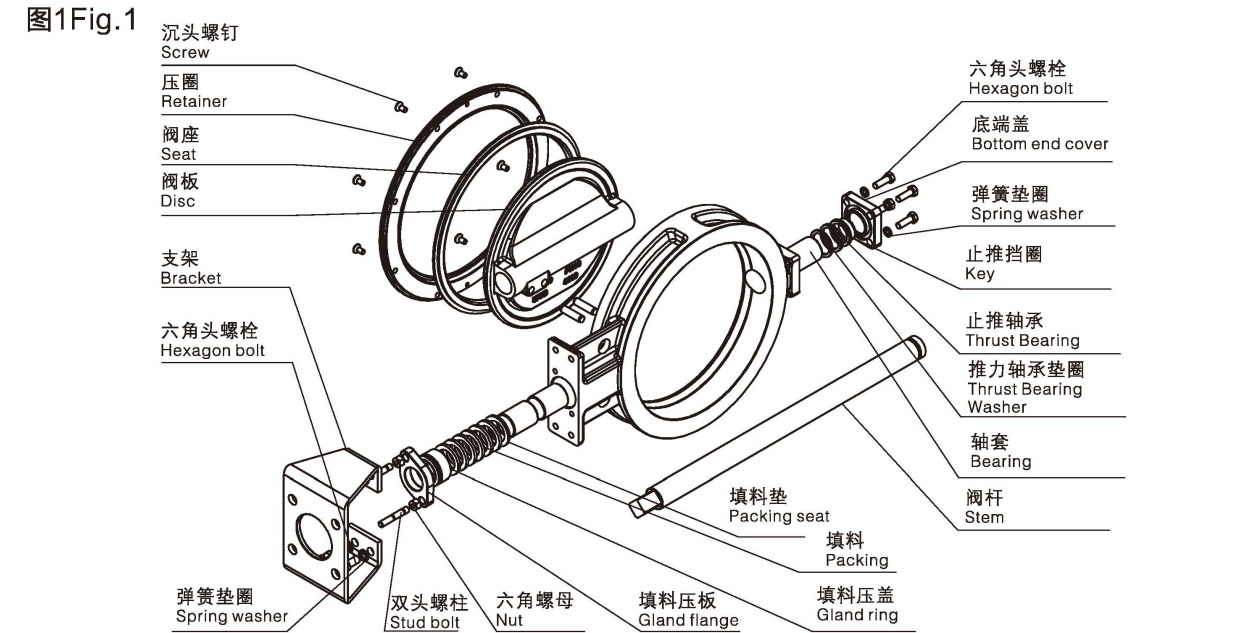
C v 值 Cv value	请参见表3 See Table 3.
流量特性 Flow characteristics	近似等百分比 Approximate EQ%
可调比 R Rangeability	60° Opening/50:1； 90° Opening/100:1
阀座泄漏量 Seat Leakage	请参见图2 See Fig. 2.
阀门扭矩 Valve torque	请参见表 5 See Table 5.

特殊规格（有偿）Optional special specifications (Additional cost is required)

本体部特殊检查 Special testing for body	材料检查 (液体渗透探伤检查PT 放射线检查RT) 流量特性检查低温试验 蒸汽试验 Material certificate, Liquid penetrant testing, Radiographic testing, Flow characteristic testing, Low temperature testing, Steam testing.
本体部特殊清洗 Special cleaning for body	完全禁油除水处理 Oxygen clean, Oil–free, Water–free
本体部及执行机构特殊规格 Special specification for body and actuator	防砂防尘型防盐腐蚀型寒冷地区用热带地区用无铜处理特殊空气配管及特殊气接头真空工作条件用接触大气部分的螺栓螺母采用不锈钢指定涂层色 Sand and Dust proof, Salty environment proof, Cold area proof, Tropical area proof Copper–free alloy, Special piping and fitting, Vacuum service proof, SUS bolt and nut for exposed parts, Non–standard painting.

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◆本体结构 Body section view



◆表1 阀体阀内件标准材质组合及使用温度范围
Table 1 Body/trim standard material combination, operating temperature

阀体材质 Body material		A216 WCB/ZG230–450	A351 CF8/CF8M/ZG0Cr18Ni9
阀板 Disc	材质 Material	A216 WCB/A351 CF8	A351 CF8M
	处理 Treatment	HCR+BUF	
阀杆 Stem	材质 Material	A564 630(17–4PH)	A479 XM–19
	处理 Treatment	PH	MR
压圈 Retainer	材质 Material	A182 F304	A182 F316
轴承 Bearing	材质 Material	A276 316	
	处理 Treatment	HCR+BUF	
阀座 Seal ring	材质 Material	RTFE	
垫环 Back ring	材质 Material	NBR O ring	VITON O ring
使用温度 Operating Temp.℃		-20~+60	-20~+200

表1–2 金属密封 Metal seat

阀体材质 Body material		A216 WCB/ZG230–450	A351 CF8/CF8M/ZG0Cr18Ni9
阀板 Disc	材质 Material	A216 WCB/A351 CF8	A351 CF8M
	处理 Treatment	HCR+BUF	
阀杆 Stem	材质 Material	A564 630(17–4PH)	XM–19
	处理 Treatment	PH	MR
压圈 Retainer	材质 Material	A182 F304	A182 F316
轴承 Bearing	材质 Material	A276 316	Nitronic 60
	处理 Treatment	HCR+BUF	—
阀座 Seal ring	材质 Material	A240 316	
	处理 Treatment	HCR	
使用温度 Operating Temp.℃		-20~+200	+200~+425

备注：RTFE: 增强聚四氟乙烯 Reinforced Teflon Hcr : 镀硬铬 Hard chrome plated
PH : 析出硬化热处理 Precipitation hardening BUF:抛光 Buffing
MR: 镜面辊压 Mirror roller

密封环的材质 处理以及使用温度压力范围请参见图2
Seal ring material/treatment vs operating temperature–pressure limitation : See Fig. 2.

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表 2 阀体材质的使用温度 压力范围
 Table 2 Body material/operating pressure–temperature rating

表2-1 ANSI Table 2-1 ANSI Unit : MPa

温度 Temp.℃	Class 150			Class 300		
	WCB	CF8	CF8M	WCB	CF8	CF8M
-196~38	–	1.90	1.90	–	4.95	4.95
-5~38	1.96	1.90	1.90	5.10	4.95	4.95
50	1.92	1.84	1.84	5.00	4.77	4.80
100	1.76	1.56	1.61	4.63	4.08	4.21
150	1.57	1.39	1.47	4.51	3.62	3.85
200	1.4	1.25	1.37	4.38	3.27	3.56
250	1.2	1.16	1.20	4.16	3.04	3.34
300	1.01	1.01	1.01	3.87	2.91	3.15
350	0.84	0.84	0.84	3.69	2.81	3.03
375	0.73	0.73	0.73	3.64	2.77	2.96
400	0.64	0.64	0.64	3.44	2.74	2.91
425	–	0.55	0.55	–	2.71	2.87
450	–	0.47	0.47	–	2.68	2.81
475	–	0.37	0.37	–	2.65	2.73
500	–	0.28	0.28	–	2.60	2.67

表2-2JB/T79-2015 or HG20596-2009

Unit : MPa

温度 Temp.℃	PN16	PN40	温度 Temp.℃	PN16	PN40
	ZG230-450			ZG0Cr18Ni9	
-5~200	1.60	4.00	-45~200	1.60	4.00
~250	1.40	3.50	~300	1.40	3.50
~300	1.20	3.00	~400	1.20	3.00
~350	1.10	2.60	-	-	-
~400	0.90	2.30	-	-	-

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图 2 阀座的使用温度 压力范围及阀座允许泄漏量
 Fig. 2 Seal ring operating pressure–temperature ratings and allowable seat leakage

图2-1 软密封 Soft seat (rptfe)

阀座泄漏量 Seat leakage : ANSI Class VI
 (可提供防火安全型)
 (Firesafe type is optional)

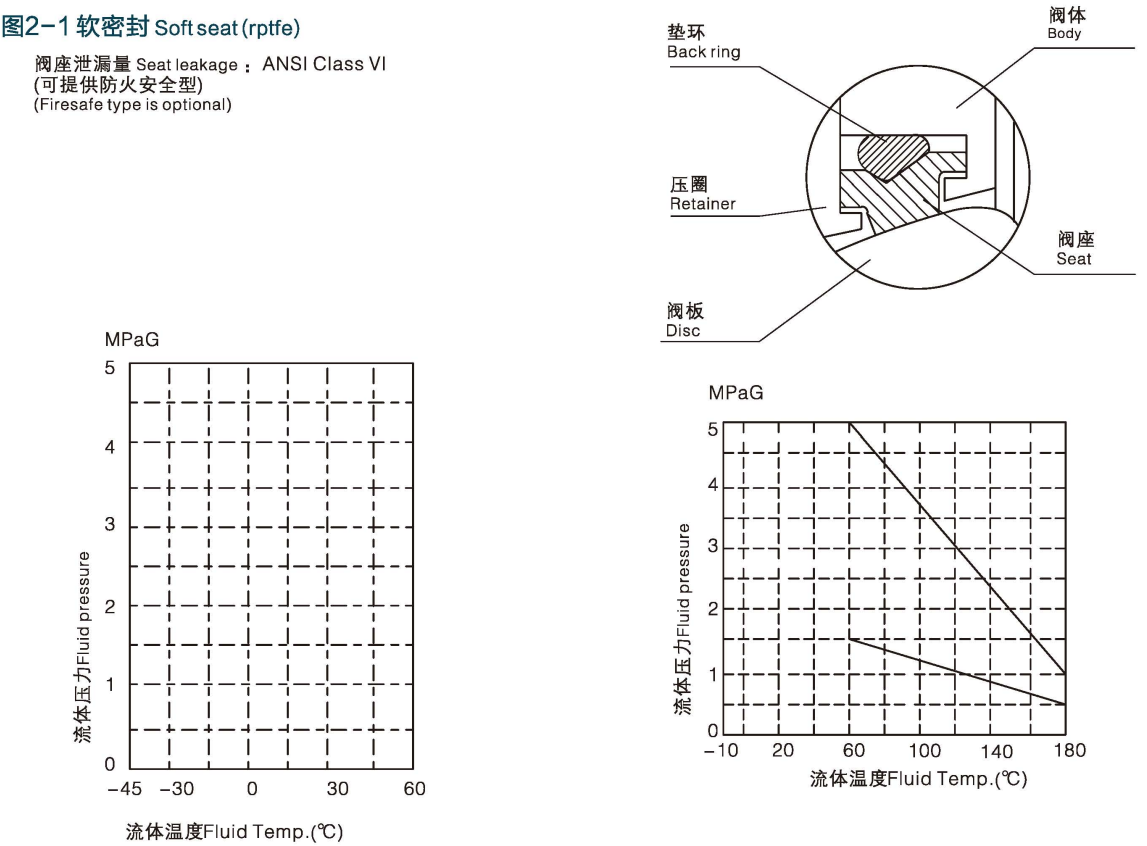
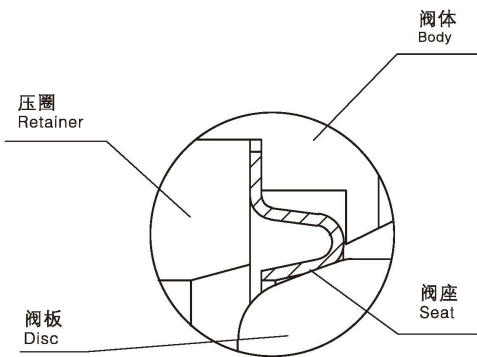
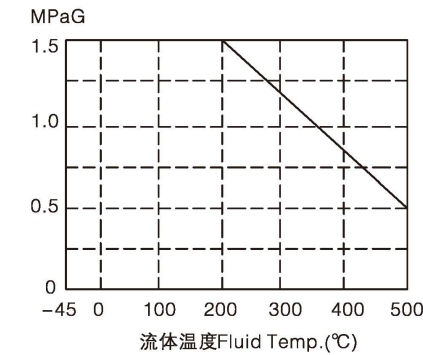


图2-2 金属密封 Metal seat

金属密封阀座泄漏量：相对90° 开度的Cv值得百分比
 Seat leakage Cv% against rated Cv value for 90 disc opening.

Valve size (inch)	Seat leakage
3~6	≤0.01%
8~18	≤0.001%
20~24	≤0.0005%



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◆ 图3填料的使用温度 压力范围
 Fig. 3 Gland packing operating pressure–temperature ratings

图 3–1 低摩擦型聚四氟乙烯碳纤维
 Fig. 3–1 Low torque type : TFE carbon/tfe asbestos

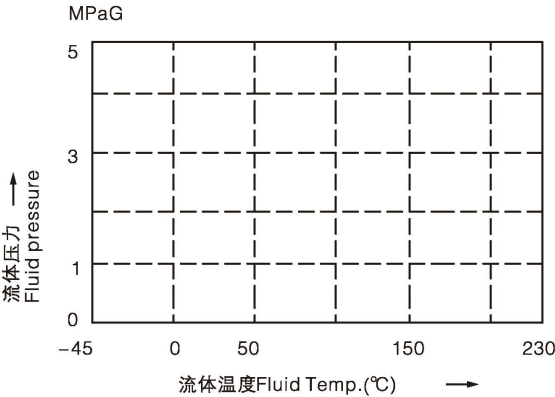
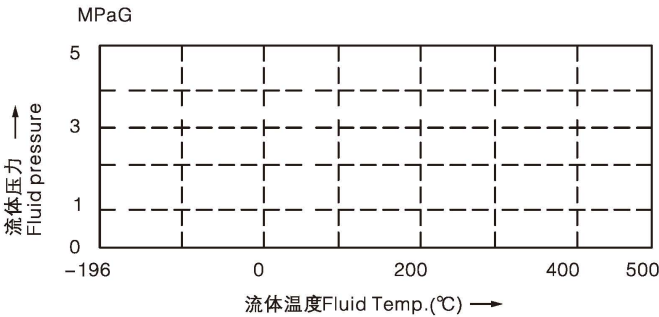


图3–2 柔性石墨
 Fig. 3–2 Grafoil



◆ 图4垫圈的使用温度 压力范围
 Fig. 4 Gasket pressure–temperature ratings

图4–1 聚四氟乙烯/316
 Fig. 4–1 Teflon/316

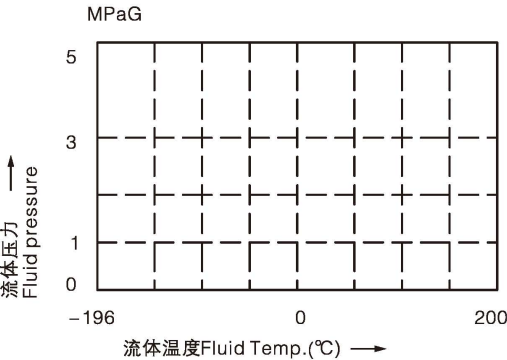
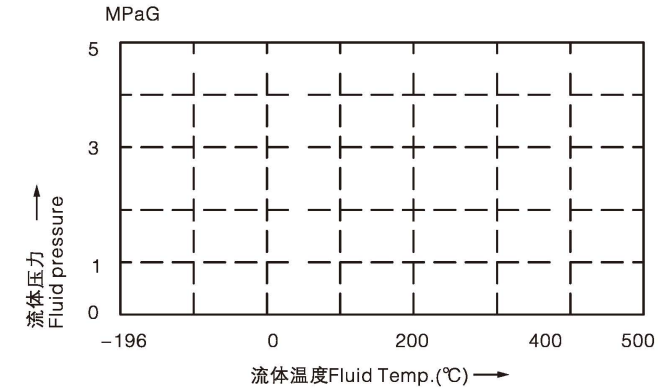


图4–2 柔性石墨/316
 Fig. 4–2 Grafoil/316



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◆ 表3 Cv值 Cv value

表3–1 PN16/Class 150

Unit:mm

公称通径 Size		阀门开度Valve opening (°)								
inch	mm	10	20	30	40	50	60	70	80	90
3	80	5	14	32	56	87	123	155	178	185
4	100	10	31	63	115	175	250	315	365	375
5	125	19	51	102	154	247	351	507	671	816
6	150	35	81	140	218	330	510	750	1070	1350
8	200	65	165	280	456	685	1060	1590	2230	2800
10	250	100	250	450	700	1050	1630	2430	3450	4300
12	300	155	390	700	1080	1630	2530	3750	5330	6650
14	350	175	450	810	1250	1890	2900	4300	6100	7650
16	400	230	580	1020	1530	2420	3700	5510	7860	9800
18	450	170	500	1180	2220	3520	5100	6960	9100	10500
20	500	200	640	1530	2820	4500	6500	8800	11700	13500
24	600	240	920	2200	3880	6640	9570	12800	17100	21600

表3–2 PN40/Class300

Unit:mm

公称通径 Size		阀门开度Valve opening (°)								
inch	mm	10	20	30	40	50	60	70	80	90
3	80	5	14	32	56	87	123	155	178	185
4	100	10	31	63	115	175	250	315	365	375
6	150	26	79	138	240	370	530	710	875	1000
8	200	47	121	240	405	630	950	1360	1720	2000
10	250	61	150	295	510	780	1200	1740	2250	2650
12	300	92	220	430	710	1100	1690	2500	3400	4000
14	350	100	240	490	830	1200	1770	2600	3500	4100
16	400	180	420	730	1160	1840	2970	4550	6540	7800
18	450	94	440	1080	1970	3110	4530	6170	8000	9500
20	500	110	530	1250	2330	3720	5400	7300	9570	11000
24	600	180	830	2000	3700	5920	8570	11400	15100	18000

◆表4 压力恢复系数Pressure recovery factor (F_L)

FLOW Direction \ STROKE		15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
阀座上游 SEAT UP	F _L	0.93	0.92	0.91	0.9	0.87	0.86	0.85	0.81	0.78	0.75	0.74	0.69	0.65	0.6	0.55	0.5
阀座下游 SEAT DOWN	F _L	0.92	0.9	0.91	0.91	0.88	0.83	0.83	0.79	0.73	0.68	0.67	0.65	0.6	0.55	0.52	0.5

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◆ 表5 启闭扭矩 Table 5 open–close torque

Table 5–1 PN16/Class 150
 Unit:mm

Size		RTFE SEAT			Fire/metal SEAT		
		ΔP(bar)					
inch	mm	6.9	13.8	19.7	6.9	13.8	19.7
3	80	34	37	39	72	77	81
4	100	47	53	58	91	100	108
6	150	97	113	126	178	206	230
8	200	164	193	217	196	347	391
10	250	222	274	318	452	550	635
12	300	290	390	475	689	862	1010
14	350	491	684	749	819	1028	1205
16	400	628	876	1087	963	1247	1489
18	450	816	1144	1423	1315	1857	2318
20	500	1098	1546	1926	1885	2685	3364
24	600	1673	2384	2983	2779	3661	4410

Table 5–2 PN40/Class 300
 Unit:mm

Size		RTFE SEAT						Fire/metal SEAT					
		ΔP(bar)											
inch	mm	20.7	27.6	34.5	41.4	48.3	51	20.7	27.6	34.5	41.4	48.3	51
3	80	42	46	51	55	60	62	77	79	81	83	85	86
4	100	70	79	88	97	106	110	117	127	138	149	160	164
6	150	161	188	214	241	267	278	256	287	319	350	381	394
8	200	313	368	422	477	532	554	424	480	536	591	647	669
10	250	480	572	664	756	848	885	629	708	786	865	944	975
12	300	667	790	913	1035	1158	1207	1119	1302	1485	1668	1851	1924
14	350	1117	1372	1627	1882	2137	2239	1250	1459	1668	1877	2085	2169
16	400	1340	1643	1946	2248	2550	2671	1586	1885	2183	2481	2779	2899
18	450	1734	2118	2520	2885	3269	3422	2685	3308	3932	4556	5179	5429
20	500	2314	2842	3369	3897	4424	4635	3796	4691	5586	6481	7376	7734
24	600	3131	3840	4549	5258	5967	6251	5966	7321	8677	10033	11389	11931

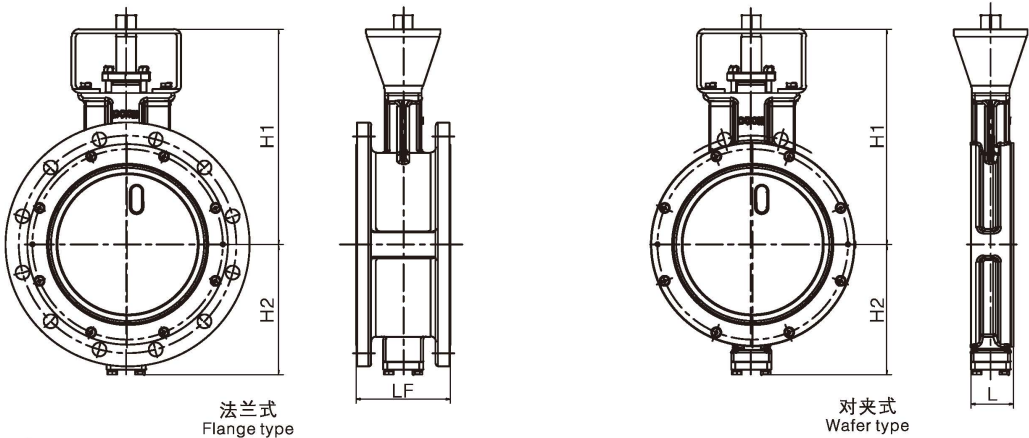
◆ 表6 扭矩计算 Table 6 torque calculation

Size		PN16/Class 150					PN40/Class 300				
		SOFT SEAT			FIRE/METAL SEAT		SOFT SEA			FIRE/METAL SEAT	
		K		T	K	T	K		T	K	T
		up	down				up	down			
3	80	0.02	0.021	23	0.033	50	0.034	0.033	21	0.015	52
4	100	0.05	0.046	30	0.07	60	0.068	0.066	32	0.08	62
6	150	0.16	0.116	60	0.21	110	0.203	0.196	60	0.23	120
8	200	0.3	0.211	100	0.38	180	0.423	0.403	110	0.41	190
10	250	0.58	0.384	125	0.73	260	0.689	0.679	150	0.58	290
12	300	0.85	0.737	140	1.28	380	1.106	0.906	220	1.35	420
14	350	2.03	1.424	220	1.54	450	2.28	1.88	260	1.54	460
16	400	2.88	1.83	280	2.1	500	3.21	2.23	320	2.2	510
18	450	3.65	2.42	360	4.0	570	3.94	2.83	430	4.6	600
20	500	4.72	3.30	480	5.9	800	5.01	3.89	540	6.6	820
24	600	7.34	5.24	710	6.5	1400	6.88	5.23	740	10	1400

*注：使用公式计算阀门启闭扭矩：所需扭矩 (lb–ft) =(K× ΔP)+T
 例如：ΔP=230psi(15.9bar),轴安装在下游的6 “ (DN150) 阀门扭矩= (0.116× 230) +60=87英寸·磅
 英尺·磅换算成Nm,乘以1.356
 Calculate valve opening and closing torque by formula: Required torque (LB–ft) =(K× ΔP)+T
 Example: ΔP=230psi(15.9bar), shaft mounted downstream 6 “(DN150) valve torque = (0.116× 230) +60=87 in· lb
 Feet per pound equals Nm, times 1.356

DC5811 双偏心高性能蝶阀
 DC5811 Double eccentric high performance butterfly valve

◆外形尺寸Boundary dimension



Dimensions
 Unit:mm

SIZE		PN1.6/2.5/Class 150				weight(Kg)	
Inch	mm	H1	H2	L	LF	WAFER	FLANGE
3	80	215	116	48	114	6	22
4	100	252	148	54	127	8	25
6	150	270	160	57	140	13	40
8	200	345	223	64	152	20	60
10	250	375	222	71	165	35	85
12	300	430	300	81	178	51	120
14	350	435	301	92	190	82	150
16	400	545	408	102	216	115	220
18	450	635	380	114	222	156	250
20	500	670	350	127	229	199	320
24	600	735	528	154	267	333	490

Dimensions
 Unit:mm

SIZE		PN4.0/Class 300				weight(Kg)	
in	mm	H1	H2	L	LF	WAFER	FLANGE
3	80	215	185	48	114	6	28
4	100	252	178	54	127	8	34
6	150	270	298	59	140	15	60
8	200	395	250	73	152	27	90
10	250	420	357	83	165	48	135
12	300	474	306	92	178	66	200
14	350	495	515	117	190	167	250
16	400	592	473	133	216	195	330
18	450	685	385	149	222	324	420
20	500	720	593	159	229	406	570
24	600	790	685	181	267	631	760