

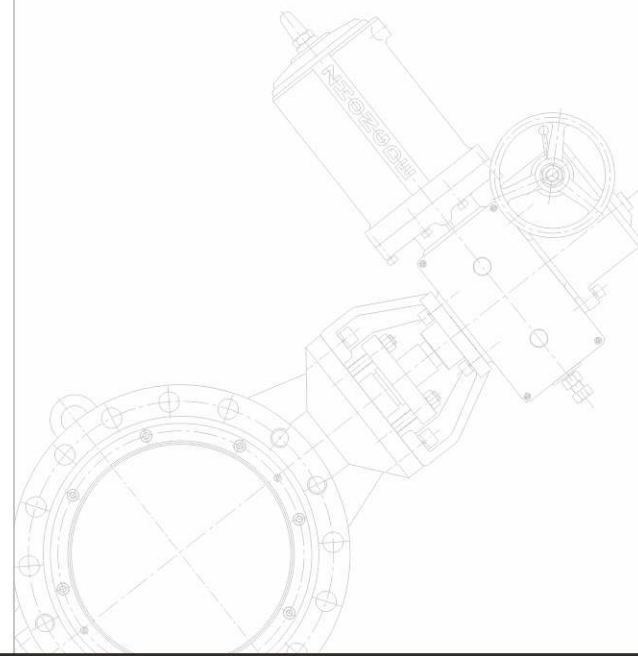
浙江中德自控科技股份有限公司

Zhejiang Zhongde Automatic Control Science And Technology Joint Stock Co., Ltd.

双偏心弹性密封蝶阀

Double-eccentric Resilient Seal Butterfly Valve

通过了ISO9001质量体系认证
 通过API6D/609产品认证
 通过API6FA/607防火认证
 通过国家特种设备制造许可“压力管道元件”TS认证
 通过CE安全认证
 通过HSE认证
 通过SIL 产品功能安全认证
 通过ISO 15848逸散性认证
 中国著名品牌



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企业概述

浙江中德自控科技股份有限公司(原中德机械集团有限公司)是集研发、生产、销售、服务于一体的专业控制阀制造商。自1992年创立以来,中德致力于发展切断阀专业领域技术,使我们始终处于国内切断阀领域的技术领先地位。在我们二十多年的发展历程中,中德人专业、聚焦、坚持不懈来打造切断阀品牌,其中气\电\液电动高性能蝶阀、高性能球阀、高温耐磨球阀、高温蝶阀、快速切断闸阀等产品广泛应用于石油、化工、天然气、煤化工等高端领域,并获得了众多用户朋友的高度信任。

中德集团现已拥有专业阀门研究中心和一流的生产平台,并通过了ISO9001:质量体系认证,美国石油学会API6D/609产品认证、API6FA/607防火认证,特种设备压力管道制造许可“TS认证”。是中国石化、中石油、中海油、中化、神华、煤化工等领域的一级供应商。先后被评为“中国著名品牌”,“省级星火示范企业”,“国家高新技术企业”,“省明星企业”,连续五年被工行评为“AAA信用企业”。

“客户的满意我们视之为生命”为此中德在国内建立了十二个直销和服务网络,在服务市场的广度和深度上都具有独创性。我们能满足您的需求,我们给您提供“安全、可靠、省心”产品的同时,我们的产品价值永远大于产品价格。无论您在那里,我们具有丰富经验和专业知识的团队,都能给您提供“认真、负责、快速”的优质服务。我们坚守“一个电话,一天内到达,一次性成功”的服务承诺。

“以人为本,以德兴业”是中德企业文化的核心,是中德人做人做事的标准,中德人将以“以诚会友,以德待友”来衬托我们过硬的产品质量和一流的服务。中德人厚积薄发,再立潮头,全力打造国家高端切断阀先进制造企业,致力于加快我国切断阀的国产化应用进程,以更好地实现顾客满意度的最大化,中德愿与您精诚合作,共创美好的明天!



BRIEF INTRODUCTION

Zhejiang Zhongde Automatic Control Technology Co., Ltd. (formerly known as Zhongde Machinery Group Co., Ltd.) is a professional control valve manufacturer integrating research, development, production, sale and service. Since its establishment in 1992, Zhongde has been devoted to developing specialized technologies of shut-off valves, keeping us always at the leading position in Chinese shut-off valve industry. During more than twenty years of development, Zhongde personnel are building the brand of shut-off valves with specialization, concentration and perseverance. The products such as high performance butterfly valves, high performance ball valves, high temperature anti-wear ball valves, high temperature butterfly valves and quick shut-off gate valves with pneumatic, electric and electro-hydraulic driving are widely applied in petroleum, chemical industry, natural gas, coal chemical industry and other high-end fields, receiving deep trust from users.

Now Zhongde Group has set up the professional valve research and development center and first-class production platforms. It has successively obtained the ISO9001: quality system certification, API6D/609 product certification, API6FA/607 fire safety certification and special equipment (pressure pipes) manufacturing license TS certification. It is a first-tier supplier of SINOPEC, CNPC, CNOOC, CHEMCHINA, Shenhua Group, coal chemical industry and other fields. It has been successively awarded such honors as “China Famous Brand”, “Spark Model Enterprise in Zhejiang Province”, “National High-tech Enterprise”, “Star Enterprise in Zhejiang Province”, and has been approved as a “Class AAA Creditable Enterprise” by the Industrial and Commercial Bank of China for five years in succession.

“Customer satisfaction is regarded as our life”. For this, Zhongde has established 12 sales and service networks, which are creative both in breadth and depth of serving the markets. We can meet your demands. We will provide you with safe, reliable and trustworthy products and the value of our products is much higher than their price. Wherever you are, our team will offer serious, responsible, fast and high quality services to you with their rich experience and professional knowledge. We always keep our service promise of “one telephone, arrival within one day and success in one step”.

“Human oriented, booming business by morals” is the core idea of Zhongde Enterprise, and the standard followed by Zhongde personnel in conducting themselves and handling affairs. Zhongde personnel will offer high product quality and top-ranking services with the attitude of “meeting friends with sincerity, treating friends with morals”. Accumulating profoundly and working ceaselessly and unremittingly, Zhongde personnel are making all efforts to create an advanced manufacturing enterprise of high-end shut-off valves in China, accelerate the process of localization of shut-off valves and realize maximized customer satisfaction. Zhongde hopes to cooperate with you faithfully and create a brilliant future together!

概要

WR系列双偏心弹性密封蝶阀是我公司在引进国外先进技术的基础上进行特殊设计、精心制造的。本系列蝶阀分为调节型、二位切断型、快速切断调节型三种。双偏心密封型蝶阀阀板采用双偏心部分球面结构，采用球锁方法使阀门实现良好密封。密封组件采用弹性软阀座结构，具有自补偿功能。广泛应用于石油、化工、轻工、电力等工业部门，特别适用于油灌区、油管输出及水处理系统大口径管道。在生产过程中进行就地控制和远距离自动控制。

本产品具有密封性能优良，使用寿命长、重量轻、流通能力大，结构简单合理，易于维修、保养等特点。

执行机构是与立推式气动执行机构的组合为标准产品（见图1），也可与电动式或液动式执行机构组合。

特点

- 阀座采用PTFE/RTFE/PPL弹性材质，设计为特殊的U型密封环，具有自动补偿功能，使用寿命长。
- 阀板采用双偏心结构，密封面为部分球面型，与阀座形成球面线性密封，密封性好，启闭力矩小。
- 阀门流量特性为近似等百分比曲线，可作为调节与切断。满API607防火要求。

Summary

The WR series double-eccentric resilient seal butterfly valve is a specially designed and carefully manufactured product on the basis of introducing foreign advanced technology. The series butterfly valves include three types such as control type, two-position shut-off type and fast shut-off control type. The disc of the double-eccentric sealing butterfly valve adopts double-eccentric partial ball face structure. The ball lock method is adopted to realize good sealing of the valve. The sealing assembly adopts resilient soft seat structure, which has the self-compensation function. It is widely used in petroleum, chemical industry, light industry, electric power and other industries, and is especially suitable for large size pipes in oil depots, oil pipe output and water treatment systems, for local control and remote automatic control during production.

The product has such features as good sealing performance, long service life, light weight, high flow capacity, simple and reasonable structure, easy maintenance and servicing, etc.

The product combined with the vertical push type pneumatic actuator is the standard product (see figure 1). The product can also be combined with electric or hydraulic actuator.

Features

- The seat is made of PTFE/RTFE/PPL resilient material, designed with special U type seal ring, having automatic compensation function and long service life.
- The disc adopts double-eccentric structure and the sealing face is partial ball face. It forms spherical linear sealing with the seat, with good sealing performance and low opening and closing torque.
- The valve flow characteristic is approximate equal percentage curve. It can be used for control and shut-off. It meets API607 fireproof requirements.

主要技术参数

阀体

型式：扁平偏置铸造体

阀门口径：2"~40"

公称压力：ANSI 150LB~300LB

连接：法兰型或对夹型

材质：A216 WCB、A351 CF8、A351 CF8M、A351 CF3、A351 CF3M(或按客户要求)

结构长度：见表5-1~7 (P13~16)

阀盖：标准型-29~+230℃，加长型：+230~300℃，-46~-30℃ 但需注意各材料的使用温度、压力范围。见表1 (P5)

填料：PTFE，柔性石墨，钢丝增强柔性石墨（见图2）

本体涂层：银白色（环氧树脂）

当本体为不锈钢时，不加涂层

阀内组件

阀板型式：双偏心旋转式

阀座型式：PTFE/RTFE/PPL弹性软阀座

流量特性：近似等百分比

材质处理：本体、阀板、座环、阀杆等材质组合、处理请参见表2 (P6)

额定Cv值：请参见表3 (P7)

额定行程：0~70° 或0~90°

阀座泄露率：零泄露

最大阀闭压力：请参见表4-1~4-4 (P11~12)

外型尺寸：请参见表5-1~7 (P13~16)

产品重量：请参见表5-1~7 (P13~16)

Main technical parameters

Body

Type: Flat offset casting

Valve size: 2"~40"

Nominal pressure: ANSI 150LB~300LB

Connection: Flanged type or wafer type

Material: A216 WCB, A351 CF8, A351 CF8M, A351 CF3, A351 CF3M (according to customer requirements)

Face-to-face dimension: See tables 5-1~7 (P10~13)

Bonnet: Standard type -29~+230℃, extended type +230~300℃, -46~-30℃.

Notice the range of working temperature and pressure for different materials. See table 1 (P4).

Packing: PTFE, flexible graphite, steel wire reinforced flexible graphite (see figure 2)

Body coating: Silver grey (epoxy resin). No coating shall be added if the body material is stainless steel.

Trim

Disc type: Double-eccentric rotary type

Seat type: PTFE/RTFE/PPL resilient soft seat

Flow characteristic: Approximate equal percentage

Material treatment: Please refer to table 2 (P5) for the material combination and treatment for body, disc, seat ring and stem.

Rated Cv value: Please refer to table 3 (P5).

Rated travel: 0~70° or 0~90°

Seat leakage: Zero leakage

Maximum valve closing pressure: Please refer to tables 4-1~4-4 (P8~9).

Outline dimensions: Please refer to tables 5-1~7 (P10~153).

Product weight: Please refer to tables 5-1~7 (P10~153).



图1 双偏心弹性密封蝶阀
Figure1 Double-eccentric Resilient Sea Butterfly Valve

执行机构 Actuator

规格 Specification	型号 Model	气缸式 Cylinder type		电动式 Electric type	电液联动式 Electro-hydraulic type
		ZSS/ZSH	ZST	ZDJ	ZYJ
		双作用 Double acting	单作用 Single acting		
用途 Purpose		通断、调节 On-off, control		通断、调节 On-off, control	
操作源 Operating source		气压 Air pressure 0.35 ~ 0.7Mpa(G)		电源 Power supply 220VAC 50Hz, 380VAC 50Hz	
输入范围 Input range		通断 On-off: 24VDC, 48VDC, 220VAC 带定位器 With positioner: 4 ~ 20mA, 4 ~ 20mA+HART; 0.02 ~ 0.1MPa		4 ~ 20mA, 1 ~ 5VDC, 0 ~ 10VDC	
动作 Action		通断: 电磁阀通电阀开或阀闭 调节: 随定位器输入信号增加阀开或阀闭 On-off: The valve is opened or closed when the solenoid valve is powered on Control: The valve is opened or closed with the increase of positioner input signal		通断: 通电阀开或阀闭 调节: 随输入信号增加阀开或阀闭 On-off: The valve is opened or closed when powered on Control: The valve is opened or closed with the increase of input signal	
允许环境温度 Allowable ambient temperature		-40°C ~ +80°C		-40°C ~ +80°C	
执行器涂层色 Actuator coating color		橘红色 (环氧树脂) 或银灰色 Orange (epoxy resin) or silver grey		随外购执行器 Actuator	
选购设备 Optional equipment		手动操作机构、限位开关、E/F、P/P定位器空气过滤减压阀、电磁阀、速度调整器、锁止阀及其他 Manual operating mechanism, limit switch, E/F, P/P positioner, Airtset, solenoid valve, speed adjuster, locking valve, etc.		手动操作机构、限位开关、输入/输出模拟信号浪涌保护器、阀位变送器、扭矩开关及其他 Manual operating mechanism, limit switch, input/output analogue signal, surge protector, valve position transducer, torque switch and others	

表1 本体材料的使用温度、压力范围

Table 1 Range of working temperature and pressure for body materials

表1 Table1 单位 Unit: bar(G)

温度°C Temperature	150#					300#				
	WCB	CF8	CF8M	CF3	CF3M	WCB	CF8	CF8M	CF3	CF3M
-29 ~ +38	19.6	19.0	19.0	15.9	15.9	51.1	49.6	49.6	41.4	41.4
+50	19.2	18.3	18.4	15.3	15.3	50.1	47.8	48.1	40.0	40.0
+100	17.7	15.7	16.2	13.3	13.3	46.6	40.6	42.2	34.8	34.8
+150	15.8	14.2	14.8	12.0	12.0	45.1	37.0	38.5	31.4	31.4
+200	13.8	13.2	13.7	11.2	11.2	43.8	34.5	35.7	29.2	29.2
+250	12.1	12.1	12.1	10.5	10.5	41.9	32.5	33.4	27.5	27.5
+300	10.2	10.2	10.2	10.0	10.0	39.8	30.9	31.6	26.1	26.1

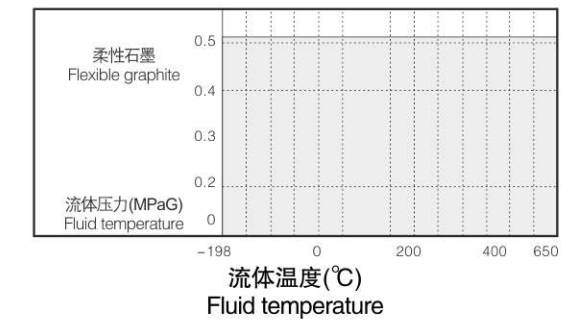
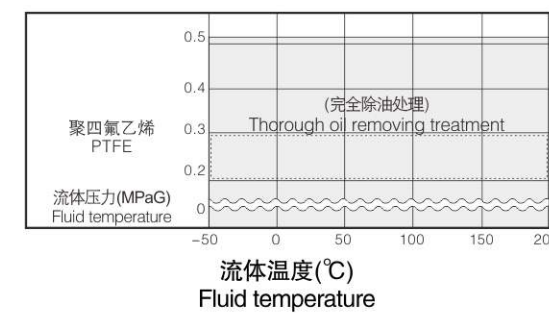
表2 本体、阀内件材质组合及使用温度范围、阀门检验与试验

Table 2 Body and trim material combination and working temperature range, valve inspection and testing

密封形式		弹性密封 表2-1 本体材质: 碳钢(A216 WCB) Table 2-1 Body material: Carbon steel (A216 WCB)	弹性密封 表2-2 本体材质: 不锈钢(A351 CF8M) Table 2-2 Body material Stainless steel(A351 CF8M)
阀体 Body	材质 Material	A216 WCB	A351 CF8M
	处理 Treatment	-	-
阀板 Disc	材质 Material	A216 WCB/ A351 CF8	A351 CF8
	处理 Treatment	碳钢时密封面堆焊不锈钢When carbon steel, the sealing face is subject to stainless steel overlaying welding	-
阀座密封圈 Seat ring	材质 Material	PTFE/RTFE/PPL	PTFE/RTFE/PPL
	处理 Treatment	-	-
压板 Pressing plate	材质 Material	A216 WCB	A351 CF8M
阀杆 Stem	材质 Material	A276 420/ A564 T630	A276 316
	处理 Treatment	调质/固溶+时效处理 Tempering/solid solution + ageing treatment	固溶+时效处理 Solid solution + ageing treatment
导向轴套 Guiding shaft sleeve	材质 Material	A182 F304	A182 F316
	处理 Treatment	氮化/喷涂 Nitriding/spray coating	氮化/喷涂 Nitriding/spray coating
使用温度范围°C Working temperature range °C		-29 ~ 300	-46 ~ 300
填料 Packing		PTFE, 柔性石墨, 钢丝增强柔性石墨 Flexible graphite, steel wire reinforced flexible graphite	PTFE, 柔性石墨, 钢丝增强柔性石墨 Flexible graphite, steel wire reinforced flexible graphite
阀门检验与试验 Valve inspection and testing		ANSI/ FCI 70-2 \ API 598	ANSI/ FCI 70-2 \ API 598

图2 填料 使用温度、压力范围

Figure 2 Packing Working temperature and pressure range



流量特性 Flow characteristic

流通能力 Flow capacity (Kv) (见表3)

表3

公称直径 Nominal diameter DN(mm)	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
转角0~70° Rotation angle Kv值	120	230	395	560	960	1550	2100	2810	3680	4650	5740	8260	11855	15500	19890	24280
转角0~90° Rotation angle Kv值	225	460	708	1245	1695	2565	3915	5270	6888	8880	10780	15580	23060	27680	35820	45800

流量特性曲线图: 近似等百分比 (见图3)

Flow characteristic curve: approximate equal percentage

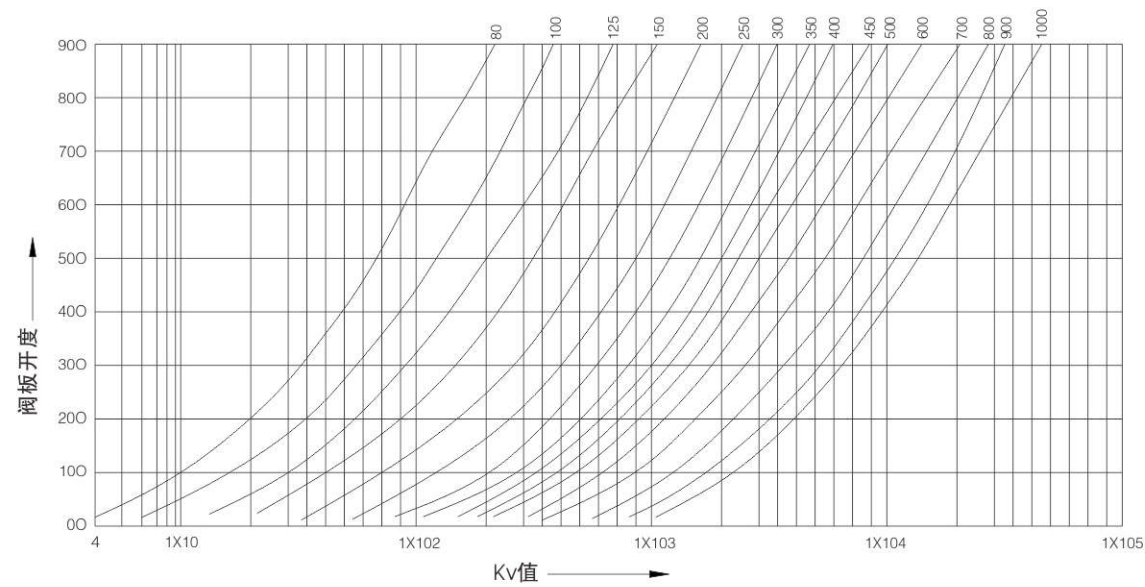
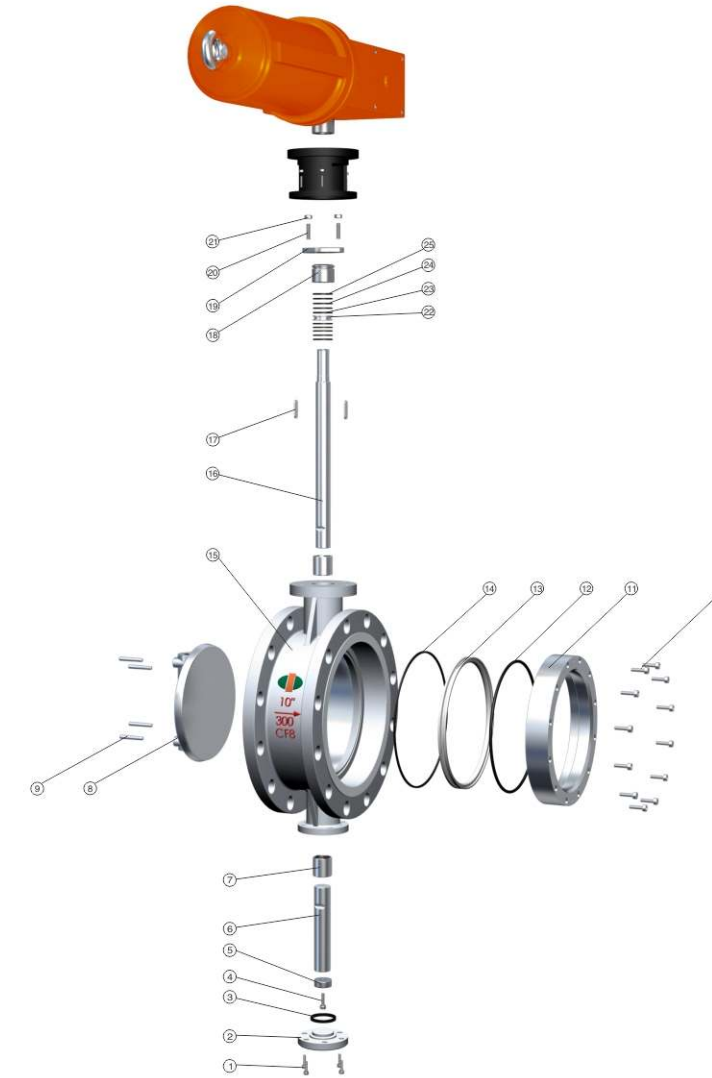


图3 蝶阀流量特性曲线

Figure 3 Butterfly valve flow characteristic curve

图4 双偏心弹性密封蝶阀分解图 Exploded view of double-eccentric resilient seal butterfly valve



1	内六角圆柱头螺钉 Hexagon socket head cap screw	6	轴一 Shaft 1.	11	压圈 Pressure ring	16	轴二 Shaft 2	21	六角厚螺母 Hexagon thick nut
2	密封盖 Sealing gland	7	轴套 Shaft sleeve	12	O形圈 O ring	17	键 Key	22	填料隔套 Lantern ring
3	密封垫 Sealing gasket	8	阀板 Disc	13	阀座 Seat	18	填料压套 Packing bushing	23	填料垫 Packing gasket
4	内六角圆柱头螺钉 Hexagon socket head cap screw	9	圆锥销 Conic pin	14	密封垫 Sealing gasket	19	压板 Pressing plate	24	中填料 Middle packing
5	调整块 Adjusting block	10	内六角圆柱头螺钉 Hexagon socket head cap screw	15	阀体 Body	20	螺杆 Screw	25	上填料 Upper packing

图5 结构原理

Figure5 Structure and principle

双偏心弹性密封结构

双偏心弹性密封蝶阀的阀板密封面为部分球面，双偏心结构设计使阀板与阀座间的摩擦降至最低。当阀门打开时，阀板的密封面快速脱离U型弹性阀座，可大大降低摩擦阻力及表面磨损，减少了阀门开启力矩、延长阀门使用寿命。关闭时阀板旋转，在偏心轴的作用下，通过阀板密封面的轴向作用力，使密封副紧密贴合，从而保证了密封。U型阀座设计为自动补偿结构，当阀门微量磨损时能自动补偿。具有密封可靠、使用寿命长等特点。（见图5-1、5-2）

Double-eccentric resilient seal structure

The disc sealing face of the double-eccentric resilient seal butterfly valve is partial ball face. The double-eccentric structure is designed to minimize the friction between the disc and seat. When the valve is opened, the sealing face of the disc will quickly leave the U type elastic seat, so that the friction resistance and surface wear can be greatly reduced, valve opening torque is reduced, and valve service life is prolonged. During closing, the disc turns. Under the action of the eccentric shaft, through the axial force of the disc sealing face, the sealing pair fits closely, so as to ensure sealing. The U type seat is designed with automatic compensation structure to realize automatic compensation in case of valve micro wear. It has such features as reliable sealing, long service life, etc.

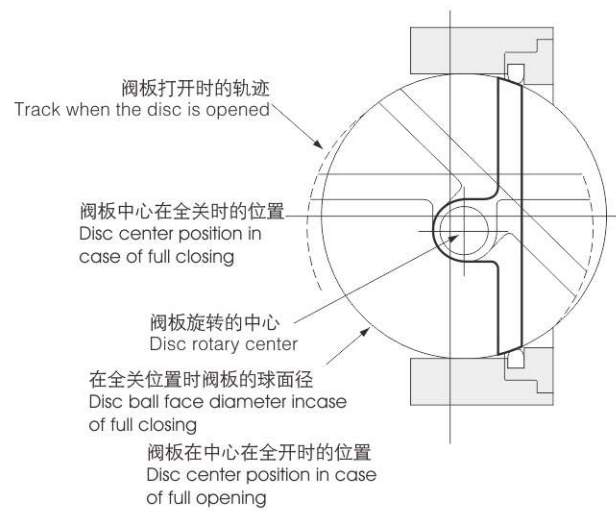


图5-1 双偏心结构图
Figure 5-1 Double eccentric structure diagram

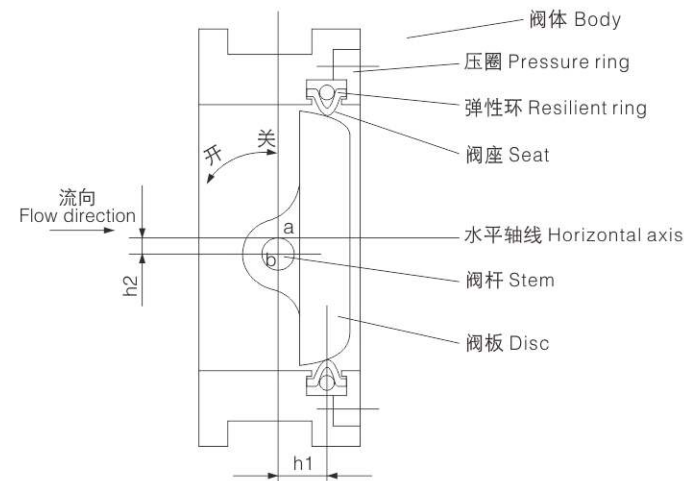


图5-2 双偏心弹性密封蝶阀结构图
Figure 5-2 Exploded view of double-eccentric resilient seal butterfly valve

防火型结构

Fireproof structure

双偏心弹性密封防火型蝶阀具有软硬密封的双重密封功能，当火灾发生后，弹性软阀座被烧掉，金属密封层能够保证阀门实现二次密封，满足API 607防火要求。防火结构分两种形式：

The double-eccentric resilient seal fireproof butterfly valve has double sealing function of soft and hard seals. In case of fire, after the resilient soft seat is burnt, the metal sealing layer ensures that the valve can realize secondary sealing, meeting API 607 fireproof requirements. The fireproof structure includes two forms:

(一) 阀门口径 $\leq 12''$ 时，采用锻压成型的弹性密封圈作为金属密封层。阀座及弹性密封圈置于阀板上，通过阀座压圈固定。当弹性软阀座被烧掉后，介质压力能够施加给弹性密封圈一定的力，使之紧贴阀体密封面，从而实现二次密封。（见图5-3）

(I) When the valve size is less than or equal to 12", the resilient seal ring formed by forging is used as the metal sealing layer. The seat and resilient seal ring are placed on the disc and fixed through the seat pressure ring. After the resilient soft seat is burnt, the medium pressure will exert certain force onto the resilient seal ring to make it fit closely with the body sealing face, so as to realize secondary sealing (see figure 5-3).

(二) 阀门口径 $> 12''$ 时，采用金属密封圈作为金属密封层。金属密封圈及阀座置于阀体上，通过阀座压圈固定。当弹性软阀座被烧掉后，能够通过金属密封圈实现阀门二次密封。阀板密封面及金属密封圈密封面均堆焊硬质合金，提高耐磨性，增加使用寿命。（见图5-4）

(II) When the valve size is more than 12", the metal seal ring is used as the metal sealing layer. The metal seal ring and seat are placed on the body and fixed through the seat pressure ring. After the resilient soft seat is burnt, secondary sealing of the valve can be realized through the metal seal ring. The disc sealing face and the metal seal ring sealing face are subject to hard alloy overlaying welding to enhance wear resistance and prolong service life (see figure 5-4).

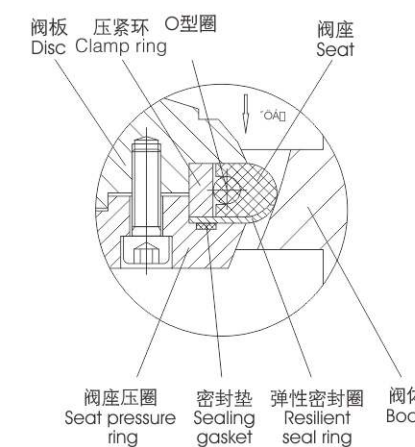


图5-3 弹性密封圈实现防火结构图
Figure 5-3 Structure diagram of resilient seal ring realizing fire prevention

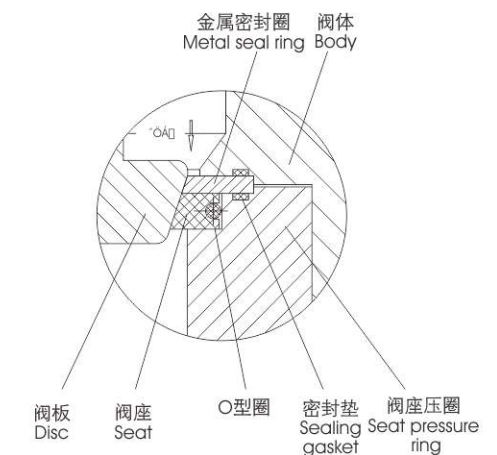


图5-4 金属密封圈实现防火结构图
Figure 5-4 Structure diagram of metal seal ring realizing fire prevention



最大关闭压差(bar) Maximum closing differential pressure

表4-1 执行机构：双动作型立推式执行器(ZSS) Table4-1 Actuator: Double acting vertical push type actuator(ZSS)

执行机构型号 Actuator model		ZSS1	ZSS2	ZSS3	ZSS4	ZSS5	ZSS6	ZSS7	ZSS8	ZSS9	ZSS10
阀门口径 Valve size	气源压力 Bar G Air supply pressure										
2"	4	27.3									
3"	4	17.5	32.2								
4"	4	8.0	19.2	38.6							
5"	4		11.2	27.2	40.2						
6"	4		7.8	18.5	27.2	38.2					
8"	4		4.2	14.3	21.3	26.6					
10"	4			7.5	12.3	17.1	36.5				
12"	4			3.0	5.8	12.0	26.3				
14"	4				3.4	7.2	16.3	36.3			
16"	4					4.2	12.3	25.6	31.8		
18"	4					1.8	9.6	16.5	23.5	36.4	
20"	4						5.1	11.6	14.6	26.7	
24"	4						3.2	9.6	10.8	17.4	33.1
28"	4							5.2	7.7	11.1	23.6
32"	4							2.3	3.2	9.6	16.1
36"	4								1.6	5.8	10.7
40"	4									2.7	8.7

表4-2 执行机构：双动作型横推式执行器(ZSH) Table4-2 Actuator: Double acting horizontal push type actuator(ZSH)

执行机构型号 Actuator model		DR 00100	DR 00150	DR 00220	DR 00300	DR 00450	DR 00600	DR 00900	ZD-P180	ZD-P200	ZD-P250	DR05000/ ZD-P300	ZD-P350	ZD-P400	ZD-P500
阀门口径 Valve size	气源压力 Bar G Air supply pressure														
2"	4	17.3	27.3												
3"	4	10.1	16.2	23.7											
4"	4		9.6	15.2	25.2										
5"	4			8.2	16.2	31.2	33.1								
6"	4				9.3	17.2	20.3	26.5	31.1						
8"	4					11.2	11.6	15.2	17.2	28.9					
10"	4					6.5	7.2	9.8	12.2	16.3	28.8				
12"	4						3.1	4.1	8.3	10.5	20.8				
14"	4								1.8	6.6	15.6	31.6			
16"	4									2.1	9.7	21.5	35.6		
18"	4										6.7	15.6	27.2		
20"	4										3.5	4.3	12.5	28.9	
24"	4											1.6	6.2	18.1	30.5
28"	4												2.2	14.5	24.3
32"	4													9.8	17.5
36"	4														10.2
40"	4														6.8

表4-3 执行机构：单动作型立推式执行器(ZSST) Table4-3 Actuator: Single acting vertical push type actuator(ZSST)

执行机构型号 Actuator model		ZST2	ZST3	ZST4	ZST5	ZST6	ZST7	ZST8	ZST10
阀门口径 Valve size	气源压力 Bar G Air supply pressure								
2"	4	10.6	25.6						
3"	4	8.6	18.6						
4"	4		11.2	25.3					
5"	4		6.8	17.6					
6"	4		2.3	9.6	22.3				
8"	4			5.3	16.1				
10"	4				9.2	21.2			
12"	4				3.2	12.3	18.3	22.3	
14"	4					6.3	11.2	13.5	19.3
16"	4						6.8	7.9	10.6

表4-4 执行机构：单动作型横推式执行器(ZSHT) Table4-4 Actuator: Single acting horizontal push type actuator(ZSHT)

执行机构型号 Actuator model		SC00150	SC00220	SC00300	SC00450	SC00600	SC00900 /ZD-P180S	SC01200 /ZD-P200S	SC02000 /ZD-P250S	SC03000 /ZD-P300S	SC05000 /ZD-P350S	ZD-P400S
阀门口径 Valve size	气源压力 Bar G Air supply pressure											
2"	4	11.8	17.8									
3"	4	6.5	11.2	20.1								
4"	4		4.2	11.2	19.3	26.2						
5"	4			5.9	12.3	16.8	25.6					
6"	4				7.2	11.2	13.2	20.1				
8"	4				4.6	6.8	11.5	26.1	29.2			
10"	4						5.7	13.2	20.3	16.3		
12"	4							7.3	11.2	14.2	32.1	
14"	4								4.5	9.1	19.7	
16"	4									3.6	9.6	



图6 ZSS/ZSSTW气动立推式蝶阀 Figure6 Pneumatic vertical push type butterfly valve

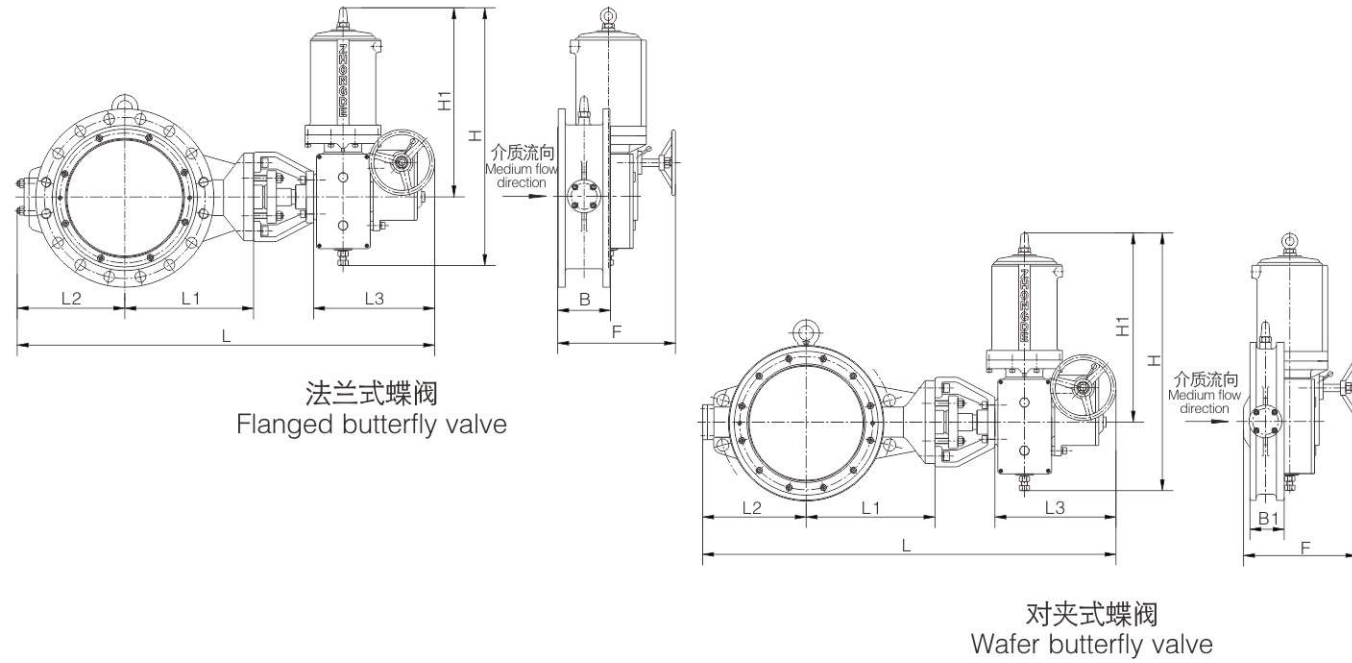


表5-1 ZSSW气动蝶阀外型尺寸——双作用 Table5-1 ZSSW Pneumatic butterfly valve outline dimensions—double acting

阀门口径 Valve size	150LB											300LB										
	B	B1	L	L1	L2	L3	F	F1	H	H1	重量(kg) Weight	B	B1	L	L1	L2	L3	F	F1	H	H1	重量(kg) Weight
2"	108	60	580	130	100	250	334	330	540	385	30	150	60	610	150	110	250	355	330	540	385	34
3"	114	64	630	150	130	250	334	330	540	385	34	180	64	690	170	140	280	420	390	670	540	69
4"	127	64	675	160	145	250	344	330	540	385	42	190	64	750	185	165	280	425	390	670	545	78
5"	140	70	750	185	165	280	400	390	670	545	74	200	70	780	200	180	280	430	390	670	545	90
6"	140	70	810	210	180	280	410	390	670	545	80	210	76	900	225	205	330	445	410	960	710	141
8"	152	71	870	235	215	280	416	390	670	545	114	230	89	990	270	250	330	455	410	960	710	177
10"	165	76	990	270	250	330	425	410	960	710	179	250	114	1090	295	275	380	515	460	970	720	258
12"	178	83	1050	300	280	330	430	410	960	710	222	270	114	1290	330	300	520	630	565	960	720	362
14"	190	92	1180	340	320	380	495	460	970	720	318	290	127	1360	360	340	520	640	565	960	720	443
16"	216	102	1250	375	355	380	508	460	970	720	391	310	140	1440	400	380	520	660	565	995	750	573
18"	222	114	1430	405	365	520	615	565	960	720	452	330	152	1490	425	405	520	670	565	995	750	680
20"	229	127	1510	435	415	520	620	565	960	720	520	350	152	1650	460	440	610	690	660	1335	990	1085
24"	267	154	1660	490	470	520	635	565	995	750	752	390	178	1860	540	530	610	710	660	1335	990	1427
28"	292	165	1980	550	730	520	650	565	995	750	878	430	229	2160	575	795	610	730	660	1335	990	1680
32"	318	190	2190	610	790	610	675	660	1335	990	1426	470	241	2290	640	860	610	750	660	1335	990	2245
36"	330	203	2290	660	840	610	680	660	1335	990	1776	510	241	2820	700	920	980	950	800	1500	1050	3073
40"	410	216	2800	720	920	980	900	800	1500	1050	2692	550	300	2920	750	970	980	970	800	1500	1050	3787

表5-2 ZSSTW气动蝶阀外型尺寸——单作用 Table5-2 ZSSTW Pneumatic butterfly valve outline dimensions—single acting

阀门口径 in Valve size	150LB											300LB										
	B	B1	L	L1	L2	L3	F	F1	H	H1	重量 Weight (kg)	B	B1	L	L1	L2	L3	F	F1	H	H1	重量 Weight (kg)
2"	108	60	610	130	100	250	334	330	740	595	62	150	60	640	150	110	250	355	330	740	595	72
3"	114	64	660	150	130	250	337	330	740	595	70	180	64	690	170	140	250	370	330	740	595	112
4"	127	64	685	160	145	250	344	330	740	595	80	190	64	770	185	165	280	415	380	1250	950	126
5"	140	70	770	185	165	280	350	330	740	595	115	200	70	800	200	180	280	420	380	1250	950	236
6"	140	70	810	210	180	280	390	380	1250	950	135	210	76	850	225	205	280	425	380	1250	950	275
8"	152	71	870	235	215	280	396	380	1250	950	260	230	89	1180	270	250	520	610	565	1332	1060	537
10"	165	76	990	270	250	330	402	380	1250	950	302	250	114	1230	295	275	520	620	565	1332	1060	601
12"	178	83	1240	300	280	520	585	565	1332	1060	558	270	114	1290	330	300	520	630	565	1420	1125	762
14"	190	92	1320	340	320	520	590	565	1332	1060	630	-	-	-	-	-	-	-	-	-	-	-
16"	216	102	1390	375	355	520	605	565	1336	1040	720	-	-	-	-	-	-	-	-	-	-	-

图7 ZSH/ZSHTW气动横推式蝶阀 Figure7 ZSH/ZSHTW Pneumatic horizontal push type butterfly valve

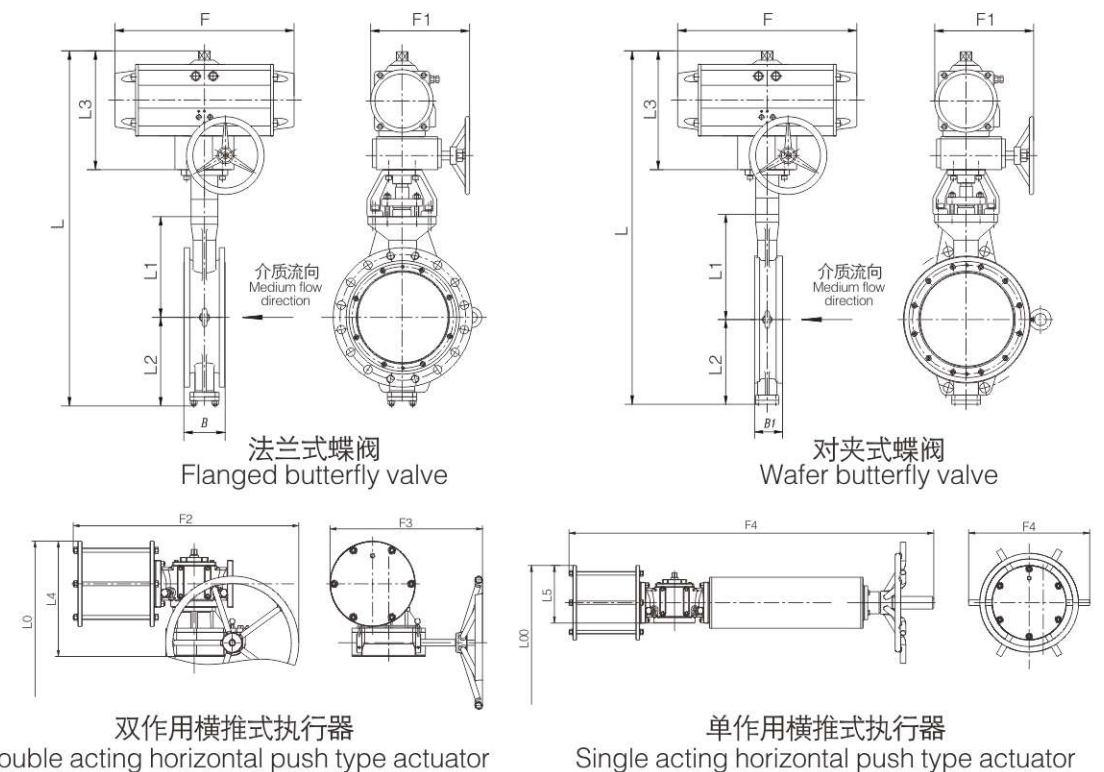


表6-1 ZSH/ZSHTW气动蝶阀外型尺寸 Table6-1 ZSH/ZSHTW Pneumatic butterfly valve outline dimensions

阀门口径 in Valve size	150LB																重量(kg) Weight
	B	B1	L	L0	L00	L1	L2	L3	L4	L5	F	F1	F2	F3	F4	F5	
2"	108	60	540	-	-	130	100	217	-	-	248	242	-	-	-	-	17.5
3"	114	64	587	-	-	150	130	217	-	-	248	242	-	-	-	-	22
4"	127	64	650	-	-	160	145	244	-	-	268	248	-	-	-	-	31
5"	140	70	715	-	-	185	165	262	-	-	315	256	-	-	-	-	40
6"	140	70	775	-	-	210	180	274	-	-	345	262	-	-	-	-	49
8"	152	71	855	880	825	235	215	294	330	275	409	305	627	300	1120	270	78
10"	165	76	955	950	966	270	250	313	330	326	438	313	627	300	1495	350	112
12"	178	83	1060	1010	1026	300	280	358	330	326	487	324	627	300	1495	350	162
14"	190	92	1190	1182	1106	340	320	397	402	326	543	343	850	362	1495	350	201
16"	216	102	1335	1252	1206	375	355	476	402	326	633	407	850	362	1630	375	320
18"	222	114	1428	1354	1246	405	365	508	454	326	728	487	1158	440	1630	375	389
20"	229	127	1592	1434	1426	435	415	592	454	396	876	551	1158	440	1955	460	507
24"	267	154	-	1544	1536	490	470	-	454	396	-	-	1158	440	1955	460	720
28"	292	165	-	1865	-	550	730	-	455	-	-	-	1158	440	-	-	898
32"	318	190	-	1985	-	610	790	-	455	-	-	-	1158	440	-	-	1167
36"	330	203	-	2196	-	660	840	-	546	-	-	-	1448	622	-	-	1562
40"	410	216	-	2336	-	720	920	-	546	-	-	-	1448	622	-	-	2218

表6-2 ZSH/ZSHTW气动蝶阀外型尺寸 Table6-2 ZSH/ZSHTW Pneumatic butterfly valve outline dimensions

阀门口径 in Valve size	300LB																重量(kg) Weight
	B	B1	L	L0	L00	L1	L2	L3	L4	L5	F	F1	F2	F3	F4	F5	
2"	150	60	595	-	-	150	110	244	-	-	268	248	-	-	-	-	22
3"	180	64	662	-	-	170	140	262	-	-	315	256	-	-	-	-	35
4"	190	64	725	800	-	185	165	274	330	-	345	262	627	300	-	-	47
5"	200	70	775	830	-	200	180	294	330	-	409	305	627	300	-	-	69
6"	210	76	853	880	-	225	205	313	330	-	438	313	627	300	-	-	88
8"	230	89	988	1052	996	270	250	358	402	326	487	324	850	362	1495	350	132
10"	250	114	1087	1102	1046	295	275	397	402	326	543	343	850	362	1495	350	180
12"	270	114	1226	1162	1106	330	300	476	402	326	633	407	850	362	1630	375	290
14"	290	127	1338	1304	1176	360	340	508	454	326	728	487	1158	440	1630	375	400
16"	310	140	1386	1500	1356	400	380	592	454	396	876	551	1158	440	1955	460	572
18"	330	152	1456	1550	-	425	405	592	454	-	876	551	1158	440	-	-	648
20"	350	152	-	1535	-	460	440	-	454	-	-	-	1158	440	-	-	930
24"	390	178	-	1924	-	540	530	-	674	-	-	-	1448	622	-	-	1272
28"	430	229	-	2224	-	575	795	-	674	-	-	-	1448	622	-	-	1485
32"	470	241	-	2120	-	640	860	-	440	-	-	-	1880	845	-	-	2252
36"	510	241	-	2260	-	700	920	-	440	-	-	-	1880	845	-	-	2823
40"	550	300	-	2410	-	750	970	-	490	-	-	-	1880	870	-	-	3667

注：以上阀门重量为法兰式蝶阀标准配置双作用执行器带手操的重量，具体配置时需重新核算。
Note: The weight of the above valve is the weight of flanged butterfly valve with standard configuration of double acting actuator and manual operating mechanism. The weight shall be recalculated when detailed configuration is made.

图8 ZDJW电动蝶阀 Figure8 ZDJW Electric butterfly valve

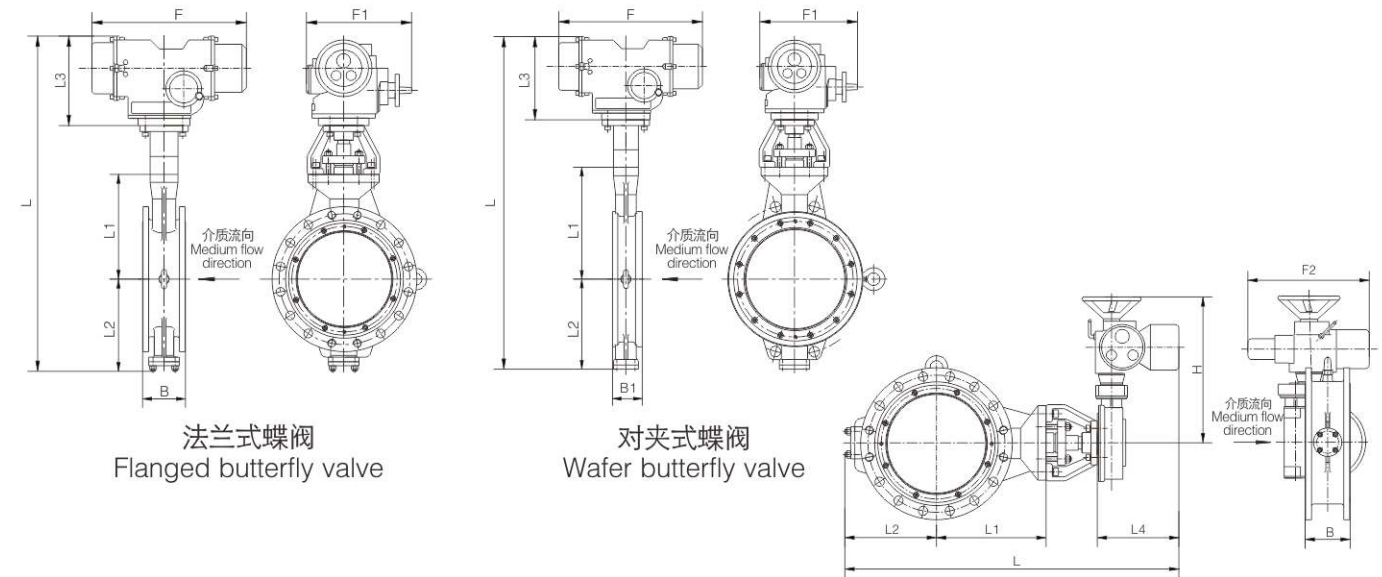
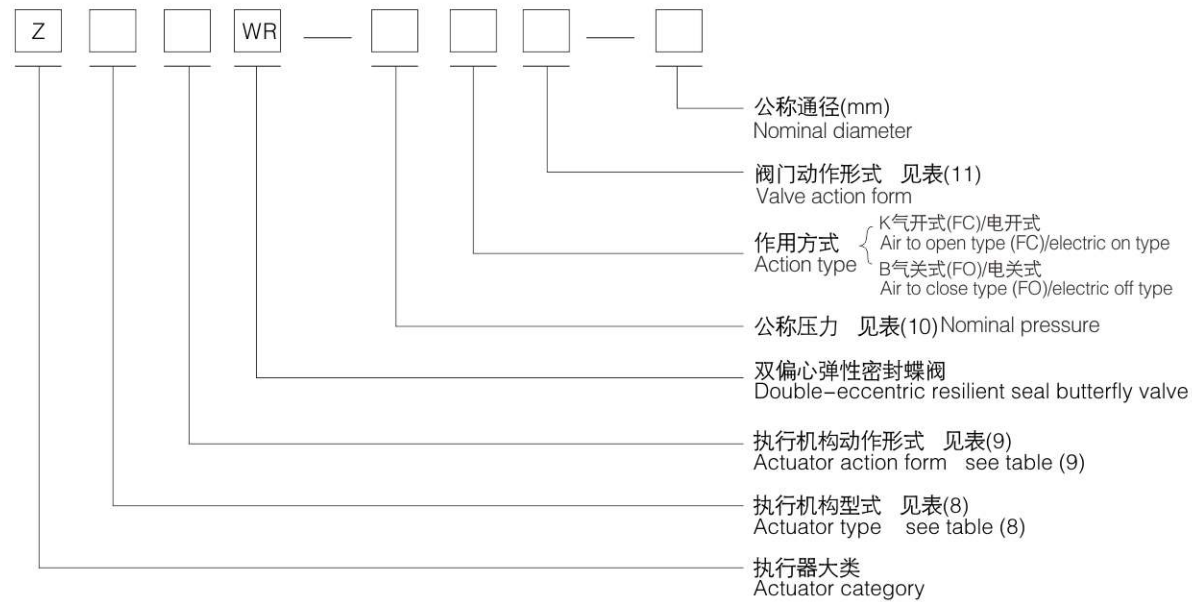


表7 电动蝶阀外型尺寸 Table7 Electric butterfly valve outline dimensions

阀门口径 in Valve size	150LB												300LB												重量(kg) Weight
	B	B1	L	L1	L2	L3	L4	F	F1	F2	H	重量(kg)	B	B1	L	L1	L2	L3	L4	F	F1	F2	H	重量(kg)	
2"	108	60	657	130	100	277	330	440	338	-	-	35	150	60	687	150	110	277	-	440	338	-	-	38	
3"	114	64	707	150	130	277	330	440	338	-	-	41	180	64	737	170	140	277	-	440	338	-	-	50	
4"	127	64	732	160	145	277	330	440	338	-	-	68	190	64	777	185	165	277	-	440	338	-	-	79	
5"	140	70	777	185	165	277	335	440	338	-	-	76	200	70	807	200	180	277	-	440	338	-	-	92	
6"	140	70	817	210	180	277	335	440	338	-	-	82	210	76	919	225	205	339	-	440	368	-	-	131	
8"	152	71	877	235	215	277	382	440	338	-	-	124	230	89	1009	270	250	339	-	440	368	-	-	167	
10"	165	76	1039	270	250	339	382	440	368	-	-	154	250	114	1080	295	275	-	330	-	-	626	619	237	
12"	178	83	1099	300	280	339	-	440	368	-	-	197	270	114	1140	330	300	-	330	-	-	626	619	301	
14"	190	92	1179	340	320	339	-	440	368	-	-	258	290	127	1210	360	340	-	330	-	-	626	619	382	
16"	216	102	1249	375	355	339	-	440	368	-	-	331	310	140	1335	400	380	-	335	-	-	626	648	540	
18"	222	114	1280	405	365	-	-	-	-	626	619	440	330	152	1345	425	405	-	335	-	-	626	648	647	
20"	229	127	1360	435	415	-	-	-	-	626	619	508	350	152	1442	460	440	-	362	-	-	626	648	825	
24"	267	154	1490	490	470	-	-	-	-	626	619	720	390	178	1635	540	530	-	365	-	-	733	669	1167	
28"	292	165	1815	550	730	-	-	-	-	626	648	898	430	229	1935	575	795	-	365	-	-	733	669	1485	
32"	318	190	1935	610	790	-	-	-	-	626	648	1166	470	241	2082	640	860	-	382	-	-	733	669	1977	
36"	330	203	2085	660	840	-	-	-	-	733	669	1562	510	241	2222	700	920	-	382	-	-	733	669	2873	
40"	410	216	2225	720	920	-	-	-	-	733	669	2218	550	300	2335	750	970	-	395	-	-	733	721	3039	

注：以上为参考尺寸，根据阀门实际所配执行机构形式、型号或品牌不同，阀门整体外形尺寸不同，具体可咨询我公司。
Note: The above size is only for reference. The outline dimensions of the valve may vary according to different actuator types, models or brands for the valve. Please contact our company for more details.

型号编制 Model establishment



表(8) Table8

执行机构型式 Actuator type	薄膜式 Diaphragm type	活塞式 Piston type	电动式 Electric type	电液联动式 Electro-hydraulic type
代号 Code	M	S	D	Y

表(9) Table9

执行机构动作形式 Actuator action form	气动双作用横推式 Pneumatic double acting horizontal push type	气动双作用立推式 Pneumatic double acting vertical push type	气动单作用弹簧复位式 Pneumatic single acting spring return type	电动/电液动转角式 Electric/electro-hydraulic rotary angle type
代号 Code	H	S	T	J

表(10) Table10

公称压力PN Nominal pressure	CL150LB	CL300LB
代号 Code	20	50

表(11) Table11

阀门动作形式 Valve action form	调节型 Control type	二位切断型 Two-position shut-off type	快速切断调节型 Fast shut-off control type
代号 Code	I	II	III

示例:

ZSSWR-20K III -500 气动双偏心弹性密封蝶阀, 公称压力 150LB, 气开式, 快速切断调节蝶阀, 双作用立推式执行器, 公称口径为 20"(500mm)。

ZSTWR-50BI-200 气动双偏心弹性密封蝶阀, 公称压力 300LB, 气关式, 调节型, 单作用执行器, 公称口径为 8"(200mm)。

配管安装位置

- 蝶阀可在水平或垂直管道上安装, 但气动立推式执行机构一般正立安装(除特殊说明外)见图9。使用前应对管道及压缩空气管路进行吹扫, 彻底清洗管路和阀内腔污物、焊渣、润滑油脂等异物。
- 对于公称口径 DN ≥ 500 的阀门, 建议将执行机构增加弹性支撑或悬吊装置, 以免执行机构过重, 影响阀门正常操作。
- 双偏心蝶阀为单流向结构, 请在订货时一定要注明安装位置。

正确操作

- 阀门在出厂时已经过必要性的性能测试, 且按订单要求进行了整定, 用户一般可直接安装使用。
- 使用手轮操作时, 先将气缸内的残余气体通过电磁阀(或控制元件)排空(在气缸内有残余气体的情况下)。
- 双作用气缸先将执行器的平衡阀打开, 然后将转换手柄置于“手动”位置, 使蜗杆与蜗轮处于完全吻合状态。用手轮操作时请勿用力过大(不可借用其他的外力工具)。

特别提示: 带手动操作机构的阀门在弹簧复位(关闭阀门)或是气动开启(关闭)阀门过程中, 任何一个开度都不能使用“自动手动”切换。

- 操作时, 请参照执行器上铭牌指示。
- 对于单作用执行机构, 在拆卸气缸时, 一定要使用专用工具。

For example:

ZSSWR-20K III -500 Pneumatic double-eccentric resilient seal butterfly valve, nominal pressure 150LB, air to open type, fast shut-off control butterfly valve, double acting vertical push type actuator, nominal diameter 20"(500mm)

ZSTWR-50BI-200 Pneumatic double-eccentric resilient seal butterfly valve, nominal pressure 300LB, air to close type, control type, single acting actuator, nominal diameter 8"(200mm).

Pipe installation position

- The butterfly valve can be installed on horizontal or vertical pipe, but the pneumatic vertical push type actuator shall be generally installed vertically (except those specially noted). See figure 9. Before the use, please scavenge the pipe and compressed air pipe to thoroughly clean away foreign matters such as dirty things, welding slag, lubricating grease, etc. in the pipes and valve cavity.
- For valves with nominal diameter DN ≥ 500, the actuator advice be additionally provided with elastic supporting or hoisting device. Otherwise, too heavy actuator may influence normal operation of the valve.
- The double-eccentric butterfly valve is of single flow direction structure. Please make sure to specify the installation position when placing orders.

Proper operation

- The valve has undergone necessary performance tests before leaving the factory, and setting has been made according to order requirements, so users can install and use it directly.
- When using the operating mechanism for operation, first empty the residual gas in the cylinder through the solenoid valve (or control element) (in case there is residual gas in the cylinder).
- For the double acting cylinder, first open the balancing valve of the actuator, turn the change-over handle to the "manual" position to make the worm and worm gear fully fit with each other. Do not use excessive force when operating the handwheel (other tools shall not be used).

Special hint: For the valve with manual operating mechanism, during spring return (closing the valve) or pneumatic valve opening (closing), any opening cannot be switched through using "automatic-manual".

- During operation, please refer to the indication on the nameplate of the actuator.
- For single acting actuators, please use special tools when removing the cylinder.

维护与保养

- 1、正常检查：每年进行一次，检查各管接着部分有无漏气，应换O型密封圈或有关螺钉，检查空气的净化情况，排除过滤器中冷凝水，检查各螺纹连接部有无松动。
- 2、输出轴上的轴承、手操机构切换轴上的轴承等转动部位每三个月或半年加一次足够的润滑油脂。
- 3、检修时应检查并清洗缸套及活塞，如发现O型密封圈有损坏或老化时应及时更换，装配时应气缸壁和密封圈沟槽内涂滑油，并注意缓慢将活塞推入气缸，以免损坏O型密封圈。
- 4、气源压力应在0.35~0.7MPa(G)范围内，气源应经除尘、脱水等净化处理。

Maintenance and servicing

1. Normal check: Carry out normal check once every year to check if there is any gas leakage at the connecting parts, and replace the O rings or relevant bolts if there is any. Check the air cleanliness. Eliminate condensate in the filter. Check if the connecting parts of all threads are loose.
2. The bearings on the output shaft and the bearings on the change-over shaft of the manual operating mechanism and other moving parts shall be added with sufficient lubricating grease once every three or six months.
3. During maintenance, please check and clean the cylinder cover and piston. If it is found that the O rings are damaged or age, please replace them in time. During assembly, please spread lubricating grease on the cylinder wall and inside the groove of seal rings. Notice that the piston shall be slowly pushed into the cylinder. Otherwise, the O rings may be damaged.
4. The air supply pressure shall be within the range of 0.35~0.7MPa(G). The air supply shall be subjected to dust removing and dehydrating treatment.

订货须知

当您订货时，请明确注明以下各项内容：

- 1、阀门口径及阀内孔径
- 2、阀体规格及连接形式
- 3、阀体材质及阀内件材质
- 4、阀门特性及阀芯形式
- 5、阀盖形式
- 6、执行机构型号是否配手操及气源压力
- 7、阀门动作(气源故障要求)
- 8、是否要带定位器、电磁阀、空气过滤减压阀等
- 9、是否要除油、除水、无铜等特殊规格
- 10、配管尺寸、管壁厚(入口侧、出口侧)
- 11、流体的名称、状态(液、气、蒸汽等)
- 12、常用流量及最大、最小流量
- 13、流体压力及压差(全开、全闭时)
- 14、流体的温度、比重或密度
- 15、流体的粘度、有无浆料、闪蒸
- 16、是否用于高压、高温场合
- 17、其他特殊要求

Ordering notes

When placing orders, please specify the following items:

1. Valve size and valve bore
2. Body specification and type of connection
3. Body material and trim material
4. Valve characteristic and valve plug form
5. Bonnet form
6. Actuator model and shall it be provided with manual operating mechanism and air supply pressure
7. Valve action (air supply failure requirement)
8. Shall it be provided with positioner, solenoid valve, Air set, etc.
9. Are products of special specifications such as oil removing, water removing and copper-free needed
10. Tube size, tube wall thickness (inlet side, outlet side)
11. Fluid name and status (liquid, gas, steam, etc.)
12. Common flow and maximum and minimum flow
13. Fluid pressure and differential pressure (during full opening and full closing)
14. Fluid temperature, specific gravity or density
15. Fluid viscosity, containing slurry or not, flash evaporation
16. Is it used for high pressure and high temperature applications
17. Other special requirements

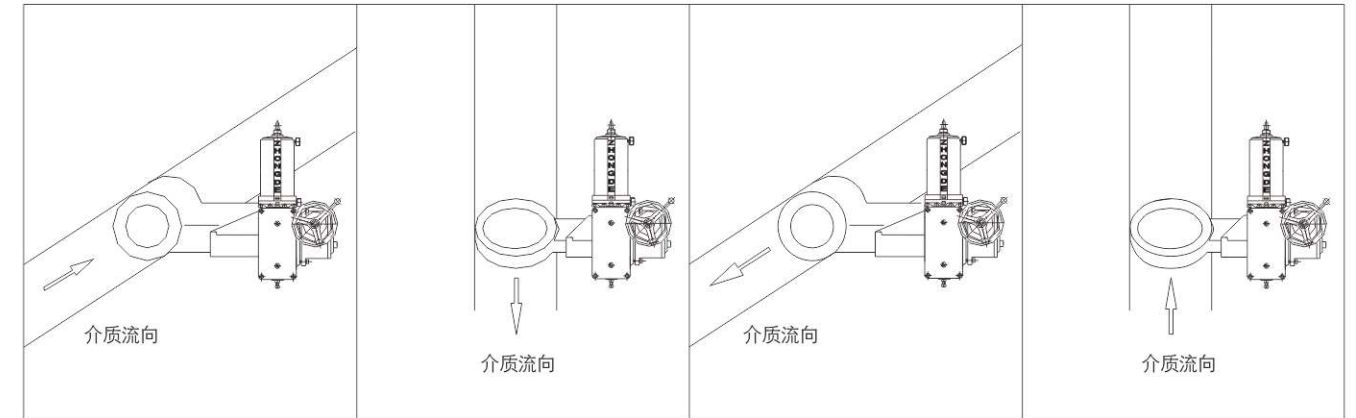


图9 双偏心蝶阀安装示意图
Figure 9 Double-eccentric butterfly valve installation schematic figure

