

■ 产品结构及性能简介 Introduction of product struture and performance

本蝶阀主要由阀体、蝶阀、阀板、阀座、润滑衬套、键销、蜗轮蜗杆机构组成，靠手柄或蜗轮蜗杆机构或气动、电动执行器带动转轴及阀板旋转实现启闭和控制流量。

当关闭阀板时,手柄机构压下压把,按顺时针方向旋转90°,然后放下压把由定位盘定位(0°~90°之间有10个定位位置),达到关闭及调节流量的目的。法兰连接尺寸符合国标GB/T9113、欧标DIN EN1092、英标BS4504、日标JIS B2220、美标ASME B16.5、ASME B16.47、俄标GOST 12815等。

其产品特点为：
 小型轻便，容易拆装及维修，并可在任意位置上安装；
 结构简单、紧凑、90° 运转启闭迅速；
 操作扭矩小，省力轻巧；
 达到完全密封，气体试验泄露为零；
 选择不同零部件材质，可适用多种介质；
 流量特性趋于直线，调节性好；
 启闭试验次数多达数万次、寿命长。

This series of butterfly valves are mainly composed of body, shaft, disc valve seat, lubrication bushing, taper pin and wormgear mechanism, by rotating shaft and disc with handle, wormgear mechanism, pneumatic or electric actuator the valve can open and close as well as control the service media.

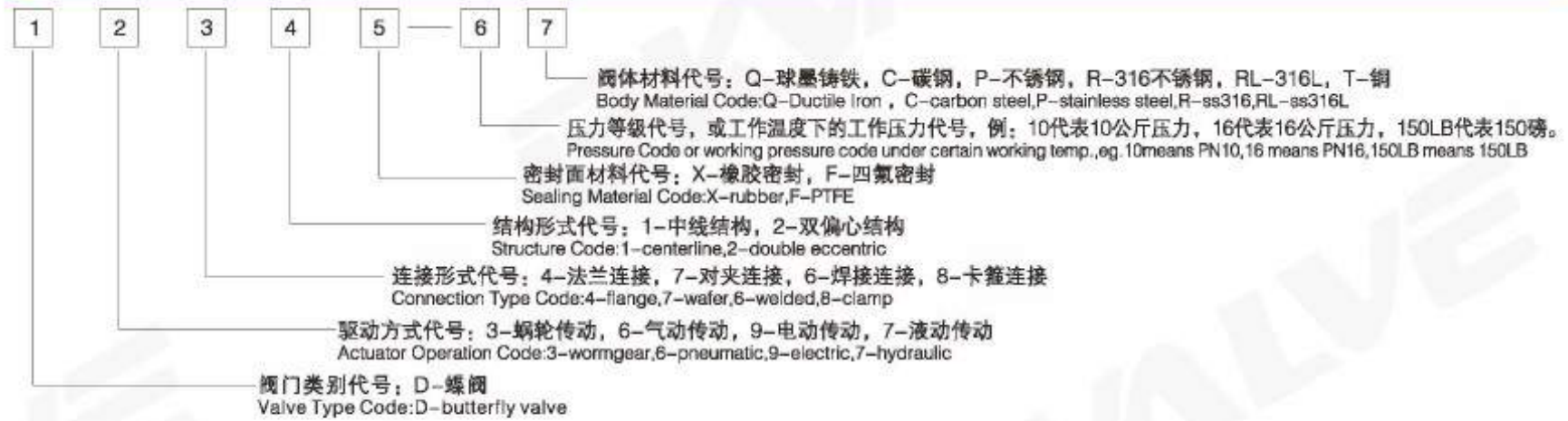
When you need to close the valve, please press down the handle tongue, rotate the handle clockwise for 90°, and then put down the tongue, it will be positioned by plate positioning device (there are 10 positioning location range between 0° to 90°), in this way you can achieve the goal of shutting down the valve and adjusting the flow.

The flange connection size accords with national standard GB/T9113, Europe standard EN1092 DIN, British standard BS4504, Japanese standard JIS B2220, American standard ASME B16.5, ASME B16.47, Russian standard GOST 12815 etc.

Product features:

- Small size, lightweight, easy disassembling and maintenance, and can be installed in any position;
- Simple structure, compact, quickly open-close operation between 90°;
- Small operating torque, energy saving;
- Completely sealed, zero leakage by gas sealing test;
- Available for different materials for spare parts to support varieties of media;
- Flow curve tending to straight line. Excellent regulation performance;
- Open/close test time as many as tens of thousands, long service life.

产品型号表示方法 Product model representation method



如 Such as: D371X-16Q

对夹式蜗轮传动软密封中线蝶阀
Wafer type wormgear operated soft
sealing centerline butterfly valve

压力等级1.6MPa
Pressure rate : 1.6MPa

D341X-16C

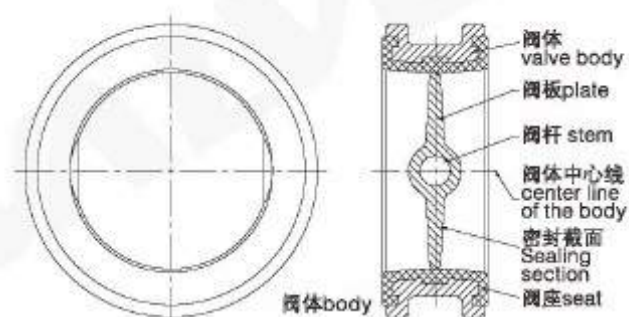
法兰式蜗轮传动软密封蝶阀
Flange type wormgear operated soft
sealing centerline butterfly valve

压力等级1.6MPa
Pressure rate : 1.6MPa

产品用途 Application

本蝶阀适用于石油、化工、食品、医药、造纸、水电、船舶、给排水、冶炼、能源等系统管路上，可在多种腐蚀性、非腐蚀性气体、液体、半流体以及固体粉末管和容器上作为调节和截流设备使用。

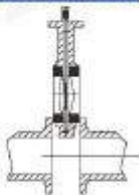
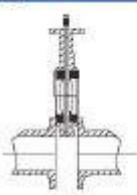
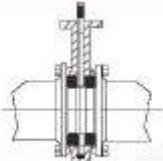
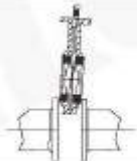
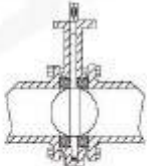
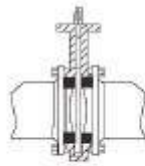
This range of butterfly valves are used in pipes of different industrial systems like petroleum, chemical, food, machinery, paper making, hydro-power, shipping, water supply and drainage, metallurgy, energy and so on. They can serve for a variety of corrosive and non - corrosive gases, liquids semi-fluid and solid powder in pipes and containers as adjustment and closure device.



蝶阀的回转中心（即阀轴的中心）位于阀体的中心线和蝶板的密封面截面上。阀座采用合成橡胶或聚四氟乙烯。关闭时蝶板的外圆密封面挤压阀座，使阀座产生弹性变形而形成弹性力作为密封比压，保证蝶阀的密封。该阀可设计成法兰连接、对夹连接和单夹连接。阀轴可设计成通轴无铜、双半轴无铜和有铜结构。

The rotary center of the butterfly valve (i.e., the center of the valve stem) located in the centerline of the body and disc sealing surface on the cross section. Valve seat is made of synthetic rubber or PTFE. When closing the valve, the outer circle sealing surface of disc will extrude seat, making seat produce elastic deformation and elastic force as the specific sealing pressure to ensure that the butterfly valve being well sealed. The valve can be designed as flange connected, clamp connected and half clamp connected. The valve stem can be designed as one through shaft pinless structure, two half shaft pinless structure and one shaft with pin structure.

蝶阀安装说明 Butterfly valve installation instructions

正确的安装方法 The correct installation method	错误安装方法 Error installing method
 将法兰撑至最大距离保证有一定间隙。 The flange support to the maximum distance guarantee a certain gap.	 法兰之间预留空间不够，会损伤阀座。 The space between the flange is not enough, will damage the valve seat.
 阀门先关闭状态安装，装上的所有的螺钉螺母。带住螺母切勿拧紧螺母。 First off valve installation, put the screw on all. Do not tighten the nut with nut	 不得用阀做为杠杆 Shall not be used as a lever valve
 将蝶阀开到最大，检查有无刮碰、阀门是否对中，螺母沿对角线逐个旋紧。 The butterfly valve open to the maximum, check whether the valve, scratching, nut along the diagonal line.	 阀门在开启状态下安装容易损伤螺母。 The valve in the open state of installation is easy to damage the nut.

■ 在出泵口安装阀门 Install valve at the outlet of the pump

The diagrams illustrate the correct and incorrect valve shaft orientations for different pump types. The top row shows '错误的阀轴方向' (Incorrect valve shaft direction) and '正确的阀轴方向' (Correct valve shaft direction). The bottom row shows '泵吸入' (Pump suction) and '泵出口' (Pump outlet).

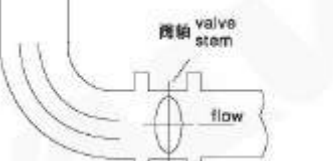
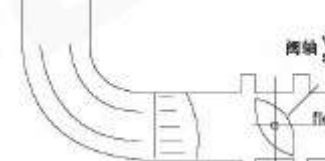
错误的阀轴方向 (Incorrect valve shaft direction):

- 离心泵 (水平轴) (horizontal shaft):** Diagram showing a horizontal pump shaft with a horizontal valve stem. Labels: 离心泵 (horizontal shaft), 水平阀轴 (horizontal valve stem), 水平阀壳 (horizontal valve shell).
- 离心泵 (垂直轴) (vertical shaft):** Diagram showing a vertical pump shaft with a horizontal valve stem. Labels: 离心泵 (垂直轴), 水平阀轴 (horizontal valve stem), 水平阀壳 (horizontal valve shell).
- 轴流泵 (垂直轴) (vertical shaft):** Diagram showing a vertical pump shaft with a horizontal valve stem. Labels: 轴流泵 (vertical shaft), 垂直泵轴 (vertical pump shaft), 水平阀轴 (horizontal valve stem), 水平阀壳 (horizontal valve shell).

正确的阀轴方向 (Correct valve shaft direction):

- 离心泵 (水平轴) (horizontal shaft):** Diagram showing a horizontal pump shaft with a vertical valve stem. Labels: 离心泵 (horizontal shaft), 垂直阀轴 (vertical valve stem), 垂直阀壳 (vertical valve shell).
- 离心泵 (垂直轴) (vertical shaft):** Diagram showing a vertical pump shaft with a vertical valve stem. Labels: 离心泵 (垂直轴), 垂直阀轴 (vertical valve stem), 垂直阀壳 (vertical valve shell).
- 轴流泵 (垂直轴) (vertical shaft):** Diagram showing a vertical pump shaft with a vertical valve stem. Labels: 轴流泵 (垂直轴), 垂直泵轴 (vertical pump shaft), 垂直阀轴 (vertical valve stem), 垂直阀壳 (vertical valve shell).

 安裝彎管或鎖徑管 Install elbow pipe or lock diameter pipe

正确的阀轴方向 The valve shaft in the right direction	错误的阀轴方向 The valve axis error
 阀轴 valve stem flow	 阀轴 valve stem flow
 阀轴 valve stem flow	 阀轴 valve stem flow
 阀轴 valve stem flow	 阀轴 valve stem flow

软密封蝶阀概述

Soft Sealing Butterfly Valve Description

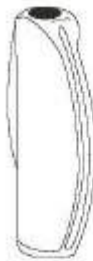
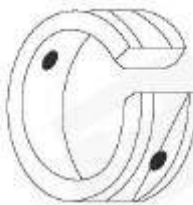
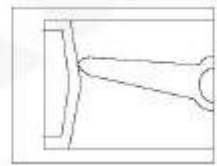
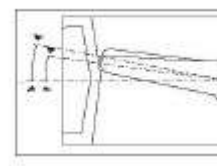
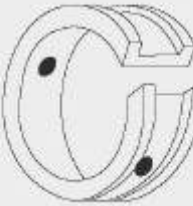
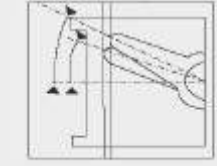
软密封蝶阀概述

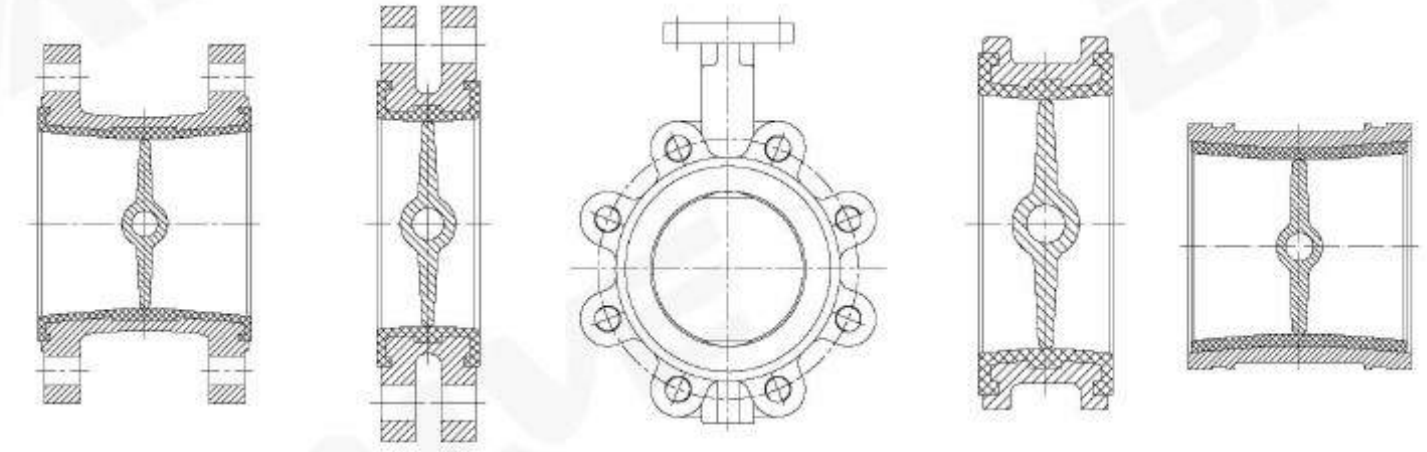
Soft Sealing Butterfly Valve Description

性能规范 Performance specification

公称通径 DN(mm) Nominal diameter	50 (2")~1000(40")	50(2")~800(32")
公称压力 PN(MPa) Nominal pressure	1.0	1.6
试验能力(MPa) Test capability	壳体 Housing	2.4
	密封 Seal up	1.76
适用温度℃ Applicable temperature	-15~+150	
适用介质 Applicable medium	淡水、污水、海水、空气、蒸气、食品、药品、各种油类、酸类、碱类、盐类等 Fresh water, sewage, sea water, air, steam, food, drugs, all kinds of oils, acids, bases, salts, etc.	

密封性能特点比较 Good sealing property

				●阀杆轴与阀板缘加工精度高。 ●组合式阀座防止变形，允差范围小。 ●有效的阀杆密封。 ●阀座的膨胀的潜在影响小。 ●结构合理，扭矩限定在适当的范围内。 ●Stem shaft and valve plate edge processing high precision. ●Combined valve seat to prevent deformation, the tolerance range is small. ●Effective stem seal. ●The potential impact of the expansion of the valve seat is small. ●The structure is reasonable and the torque is limited to the proper range.
A、 "LT"型 结构 *A*、 "LT" type structure 阀板经过精加工处理，外径与板面尺寸的精度高允差范围小板缘是经过抛光处理的半球面，可减少操作力矩。 The valve plate after finishing processing, the diameter and size of the plate of high precision allowed error range of marginal platelet is after hemispheric surface polishing treatment can reduce operating torque.	具有酚醛靠背的橡胶密封垫整体支承性能好、稳定牢固，既保证了支承力矩又不易变形。 The rubber sealing pad with phenolic back has good supporting performance, stable and firm, which not only ensures the bearing moment, but also is not easy to deform.	阀座与阀板的结构先进新颖，密封性能好阀座力矩小。结构可以避免阀座隆起和撕裂现象，延长阀座使用寿命。 The valve seat and the valve plate structure is advanced, the sealing performance is good, the valve seat moment is small. The structure can avoid the phenomenon of the uplift and tearing of the valve seat, and prolong the service life of the valve seat.	阀座橡胶用量少，减小了因橡胶膨胀而造成的不良影响，从而将扭矩控制在合理和角度范围内。 The rubber consumption of the valve seat is little, and the adverse effect caused by the expansion of the rubber is reduced, and the torque is controlled in a reasonable range.	
				增加控制装置造价的因素： Factors to increase the cost of control device: ●阀板尺寸精度无法保证； ●安装与工作时阀座变形； ●阀座寿命短； ●隆起与膨胀造成扭矩增大。 ●Valve plate size accuracy can not be guaranteed; ●Installation and operation of the valve seat deformation; ●Valve seat life short; ●The increase of torque caused by uplift and expansion.
传统 结构 Traditional structure 传统的阀板是铸造成形经磨削加工而成的无法保证精确的尺寸。 The traditional valve plate is formed by grinding process and can not guarantee the accuracy of the size.	无加强结构的阀座在安装和关闭的过程中容易变形造成泄漏，增加启闭扭矩弊端。 No strengthening of the structure of the valve seat in the process of installation and closure of easy deformation caused by leakage, increase the torque of the open and close.	传统结构依靠阀座隆起来实现密封的缩短了使用寿命增加了维修费用和检修时间。 The traditional structure is marked by the seat long up to achieve the seal of the reduced service life increased the maintenance cost and maintenance time.	橡胶容易膨胀对液体有吸收作用增加了橡胶的体积常常导致阀座扭矩增加等不良现象，缩短了使用寿命。 Rubber is easy to expand the absorption of liquid to increase the volume of rubber often lead to increased valve seat torque and other undesirable phenomena.	



蝶阀是用来打开和关闭管道内介质流通或调节管道内介质流量。其结构简单、体积小、重量轻、安装尺寸小。根据体连接形式可分为对夹式（包括凸耳对夹式和U型对夹式）连接、和法兰连接、卡箍式连接三种基本连接形式。

Butterfly valve is used to adjust the medium flow in the pipe by opening and closing. It is simple structured, small volume, light weighted with small installation size. It can be divided into three basic forms of connection as wafer type connection (including lug wafer and U wafer connection), flange type connection and clamped type connection according to the body connection formation.

主要零部件材质 Materials of main parts

阀体 Valve body		阀板 Valve plate		转轴 Shaft	衬套 bushing	阀座 Valve seat		
材料名称 Material name	代号 Code	材料名称 Material name	代号 Code	材料名称 Material name	材料名称 Material name	材料名称 Material name	代号 Code	适用温度℃ proper temperature
灰铸铁 grey cast iron	Z	电镀球墨铸铁 Galvanized Ductile Iron	B1	不锈钢 stainless steel	润滑青铜 Lubricated bronze	天然胶 Natural rubber	X1	-20 ~ +85℃
球墨铸铁 Ductile iron	Q	铝青铜 Aluminum bronze	B2	碳钢 Carbon steel	聚四氟乙烯 Teflon	海帕伦 Heparen	X2	-18 ~ +135℃ 短时 -18~+149
铝青铜 Aluminum bronze	T	不锈钢 stainless steel ZG1Cr18Ni9Ti	B3			乙丙橡胶 Ethylene propylene rubber	X3	-45 ~ +135℃ 短时 -50~+150
ZG1Cr18Ni9Ti 不锈钢 stainless steel	P	钛钢 Titanium steel	B4			氯丁橡胶 Neoprene	X4	-7 ~ +93℃ 短时 -7~+107
CF8M不锈钢 stainless steel	R	CF8M不锈钢 stainless steel	B5			丁腈橡胶 Nitrile rubber	X5	-12 ~ +82℃ 短时 -12~+93
碳钢 Carbon steel	C	碳钢 Carbon steel	B6			耐磨橡胶 Wear-resistant rubber	X6	-10 ~ +100℃
		CF8不锈钢 stainless steel	B7			氟橡胶 fluororubber	X7	-23 ~ +200℃
						耐热乙丙橡胶 Heat-resistant ethylene -propylene rubber	X9	-23 ~ +135℃
						聚四氟乙烯 Teflon	F4	+10 ~ 150℃

软密封对夹式蝶阀的安装用螺栓规格

Bolt Specification For Soft Sealing Butterfly Valve Installation

D3/6/971X A型对夹蝶阀

"A" Type Wafer Butterfly Valve

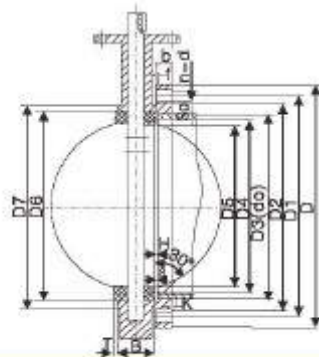
安装示意图 Installation Diagram

注:

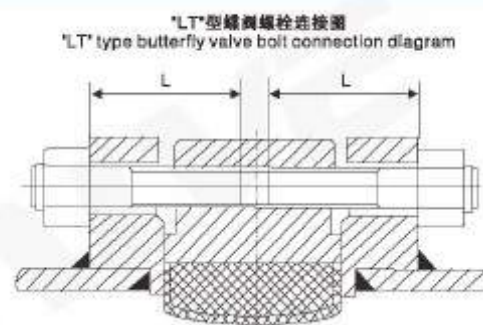
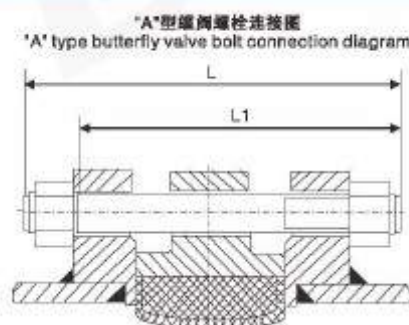
1. 法兰连接尺寸符合 GB4216.4-4216.5-84的规定, 同时符合的国外法兰标准。
2. 管子外径尺寸"do"符合 GB8163-87《热轧无缝钢管标准》, DN700(28")~1000(40")大口径钢管外径尺寸由设计者自定。
3. 图中尺寸T为橡胶阀座凸出阀体端面作为法兰密封垫的厚度尺寸。
4. 用户自配法兰时, 内凸圆直径D4应按样本提供的尺寸执行。

Note:

1. flange connection size in line with the provisions of the GB4216.4-4216.5-84, while in line with the foreign flange standards.
2. pipe diameter size "do" in line with the GB8163-87 "hot rolled seamless steel pipe standard", DN700 (28 ") ~1000 (40 ") diameter of large diameter steel pipe is determined by the designer.
3. The size of T in thickness and the size of the rubber valve acne protruding body end as the flange gasket.
4. the user from the flange, inner diameter convex D4 should be provided by the sample size of execution.



安装阀门用螺栓规格数量 Specification for mounting valves for valves



主要连接尺寸 Main connection dimensions

PN1.0/1.6MPa

公称通径 Nominal diameter DN		1.0MPa				1.6MPa			
		双头螺栓 (适用'A'型蝶阀) Double headed stud (for 'A' type butterfly valve)		六角螺栓 (适用'LT'型蝶阀) Six angle stud (for 'LT' type butterfly valve)		双头螺栓 (适用'A'型蝶阀) Double headed stud (for 'A' type butterfly valve)		六角螺栓 (适用'LT'型蝶阀) Six angle stud (for 'LT' type butterfly valve)	
(mm)	(in)	数量 number	直径xL1 Diameter xL1	总长L Total length	数量 number	直径xL1 Diameter xL1	总长L Total length	数量 number	直径xL1 Diameter xL1
50	2"	4	M16-110	130	4x2	M16-40	130	4x2	M16-40
65	2.5"	4	M16-120	140	4x2	M16-45	140	4x2	M16-45
80	3"	8	M16-120	140	8x2	M16-45	140	8x2	M16-45
100	4"	8	M16-120	150	8x2	M16-50	150	8x2	M16-50
125	5"	8	M16-130	150	8x2	M16-50	150	8x2	M16-50
150	6"	8	M16-140	165	8x2	M16-50	165	8x2	M20-50
200	8"	8	M20-150	175	8x2	M20-55	175	12x2	M20-55
250	10"	12	M20-160	185	12x2	M20-60	185	12x2	M24-60
300	12"	12	M20-170	195	12x2	M20-65	200	12x2	M24-65
350	14"	16	M20-170	195	16x2	M20-65	200	16x2	M24-65
400	16"	16	M24-190	220	16x2	M24-75	230	16x2	M27-75
450	18"	20	M24-220	250	20x2	M24-80	254	20x2	M27-80
500	20"	20	M24-260	290	20x2	M24-90	294	20x2	M30-90
600	24"	20	M27-290	324	20x2	M27-100	334	20x2	M33-100
700	26"	24	M27-300	334	-	-	341	4x2	M33-99
800	32"	24	M30-300	364	-	-	375	-	-
900	36"	24	M30-350	338	4x2	M30-100	-	-	-
1000	40"	24	M33-370	411	4x2	M33-100	-	-	-

1. 双头螺栓采用标准为GB898-88bm=1.25d。 2. 六角螺栓采用标准为GB5780-86。
3. 900 (36"), 1000(40")PN1.0MPa及700 (28")PN1.6MPa 'A' 型阀体二脖颈处采用六角螺栓连接, 数量分别为4x2, 列于六角螺栓栏中。
1. Stud stud standard for 25d GB898-88bm=1.25d. 2. Six angle bolts using standard for GB5780-86.
3. 900 (36), 1000 (40) and 700 PN1.0MPa (28 ") PN1.6MPa 'A' type two body neck with six angle bolts, the number was 4x2, on the six angle bolt bar.

产品简介 Product introduction

本厂生产的A型、LT型对夹蝶阀是引进美国先进技术, 具有多年该产品生产历史, 多次获得国家优质奖。传动方式有: 手柄、蜗轮蜗杆传动、气动、电动等。通径范围为DN25~DN1200。

本厂蝶阀可用于石油、化工、食品、医药、造纸、水电、船舶、给排水、冶金、能源等系统的管路上, 适用于多种腐蚀性气体、液体、半液体以及固体粉末介质。

The factory production of type A, type LT wafer butterfly valve is to introduce advanced technology the United States, with many years of the production history, has won the national quality award. Transmission mode: handle, worm gear, pneumatic, electric etc.. The diameter range of DN25~DN1200.

The factory butterfly valve can be used in petroleum, chemical industry, food, medicine, paper making, water and electricity, shipping, to the pipeline of the drainage, metallurgy, energy, and the system, applicable to a variety of corrosive gas, liquid, semi liquid and solid powder medium.

产品特点 Feature

蝶阀主要由阀体、转轴、阀板、阀座及驱动机构(手柄、蜗轮蜗杆、气动装置或电动装置)等组成, 靠驱动机构带动轴及蝶板旋转以实现启闭和控制流量的目的。其特点如下:

Butterfly valve is mainly consists of the valve body, a rotating shaft, valve plate, seat and drive mechanism (handle, worm and worm wheel, gas dynamic or electronic device) etc., by driving mechanism driven shaft and the butterfly plate rotation to achieve the purpose of opening and closing and flow control. Its characteristics are as follows:

1. 结构简单紧凑、小巧轻便、运输、安装、拆卸容易;
Simple and compact structure, compact and lightweight, easy disassembly, transportation and installation;

2. 90启闭, 开关迅速。操作扭矩小, 省力轻巧;
The 90 on-off switch quickly. Operation torque small lightweight effort;

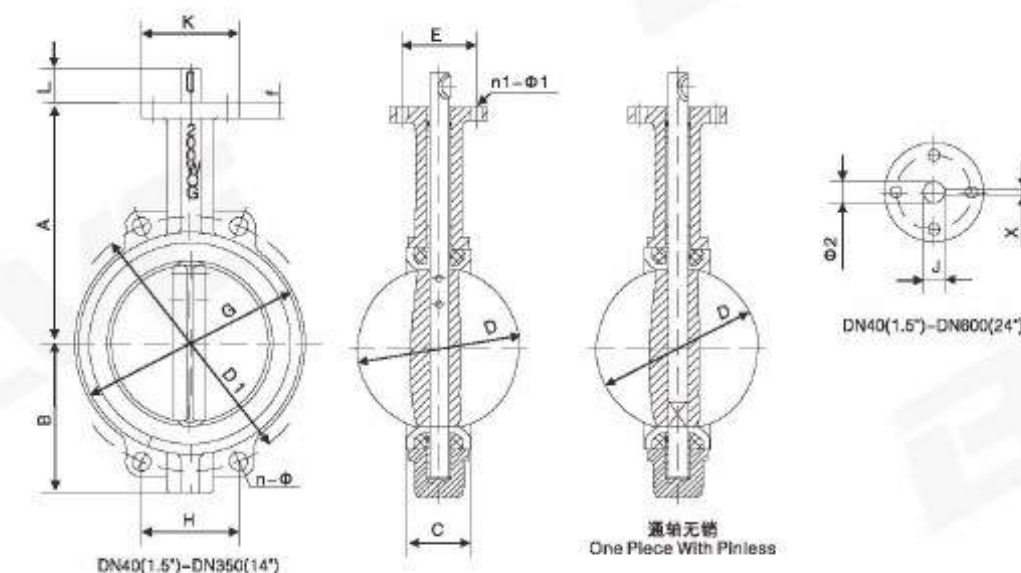
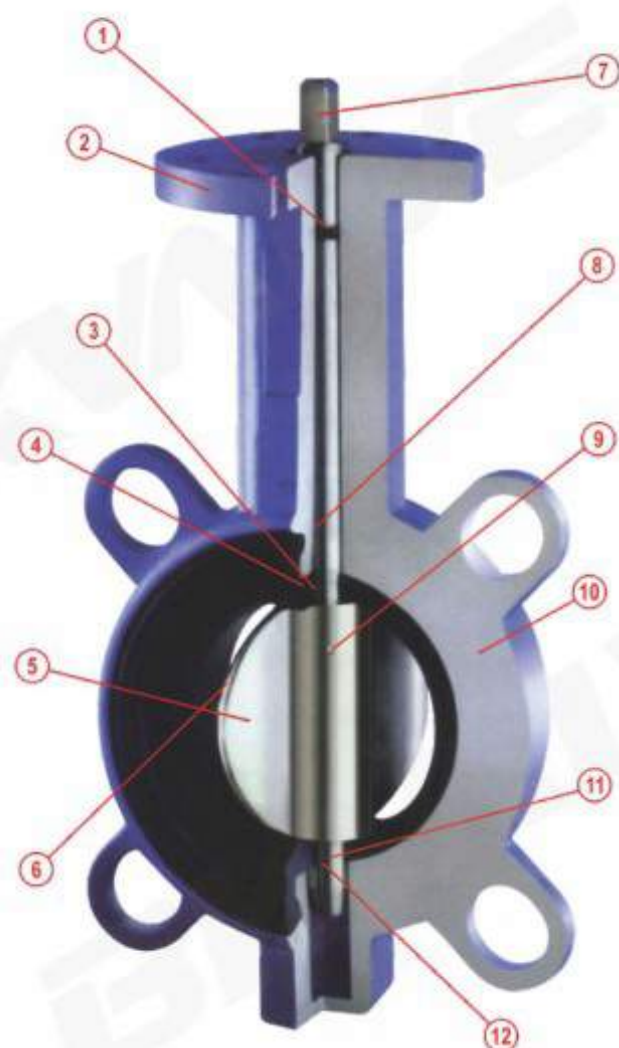
3. 密封性能好, 使用寿命长, 可达到零泄漏;
Good sealing performance, long service life, can achieve zero leakage;

4. 选择不同的零部件材质, 可适用于多种介质;
Wide selection of materials, applicable for various media;

5. 流量特性近似于直线, 调节性能好。
Similar to the linear flow characteristics, good regulating performance.

主要性能参数 Main performance parameters

公称压力 Nominal pressure	公称通径 Nominal diameter	试验压力(MPa) Test pressure		适用介质 Suitable medium	驱动方式 Driving method
		壳体 Housing	密封 Seal up		
1.0	25~1200	1.5	1.1	淡水、污水、海水、空气、蒸汽、食品、药品、各种油类、酸类、碱类等 Fresh water, sewage, sea water, air, Steam, food, medicine, oil, Acid, alkali etc.	手柄、蜗轮蜗杆传动、电动、气动 Handle, worm gear, electric, Pneumatic
1.6		2.4	1.76		

D3/6/971X A型对夹蝶阀
"A" Type Wafer Butterfly ValveD3/6/971X A型对夹蝶阀
"A" Type Wafer Butterfly Valve

主要连接尺寸 Main connection dimensions

PN1.0/1.6MPa(150/200PSI)

规格 Size		A	B	C	D	L	H	D1	n-Φ	K	E	n1-Φ1	Φ2	G	n2-M	f	J	X	重量 Weight (kg)
mm	inch																		
40	1.5	136	69	33	42.6	30	77.77	110	4-18	77	50	4-6.7	12.6	100	-	13	13.8	3	2.3
50	2	161	80	43	52.9	32	84.84	125	4-23	77	57.15	4-6.7	12.6	100	-	13	13.8	3	2.5
65	2.5	175	89	46	64.5	32	96.2	145	4-26.5	77	57.15	4-6.7	12.6	120	-	13	13.8	3	3.2
80	3	181	95	46	78.8	32	61.23	160	8-18	77	57.15	4-6.7	12.6	127	-	13	13.8	3	3.6
100	4	200	114	52	104	32	70.8	180	4-24.5	92	69.85	4-10.3	15.77	156	-	13	17.77	5	4.9
125	5	213	127	56	123.3	32	82.28	210	4-23	92	69.85	4-10.3	18.92	190	-	13	20.92	5	7
150	6	226	139	56	155.6	32	91.08	240	4-25	92	69.85	4-10.3	18.92	212	-	13	20.92	5	7.8
200	8	260	175	60	202.5	45	112.89 76.35	295	4-25 4-23	115	88.9	4-14.3	22.1	268	-	13	24.1	5	13.2
250	10	292	203	68	250.5	45	92.4	350 355	4-29	115	88.9	4-14.3	28.45	325	-	13	31.45	8	19.2
300	12	337	242	78	301.6	45	105.34	400 410	4-29	140	107.95	4-14.3	31.6	403	-	20	34.6	8	32.5
350	14	368	267	78	333.3	45	91.11	460 470	4-30	140	107.95	4-14.3	31.6	436	-	20	34.6	8	41.3
400	16	400	309	86	389.6	51.2	100.47	515	4-26	197	158.75	4-20.6	33.15	488	-	20	36.15	10	61
450	18	422	328	102	440.51	72	102.42	525	4-30	197	158.75	4-20.6	37.95	536	-	20	41	10	79
500	20	480	361	105	491.6	82	101.68	565	4-26	197	158.75	4-20.6	41.15	590	-	22	44.15	10	128
600	24	562	459	114	592.5	82	120.46	620	4-33	276	215.9	4-22.2	50.65	816	-	22	54.65	16	188
700	28	624	520	127	695	86	109.65	725	20-30	300	254	8-18	63.35	895	-	30	71.4	18	284
800	32	672	591	165	794.7	66	124	840	24-30	300	254	8-18	63.35	1015	-	30	71.4	18	368
900	36	720	656	190	864.7	118	117.57	950	24-33	300	254	8-18	75	1115	4-M30	34	84	20	713
1000	40	800	721	203	965	142	129.89	1050	24-36	300	254	8-18	85	1230	4-M33	35	95	22	864
1200	48	940.7	864	216	1160	150	101.5	1180/1390	32-39	350	298	8-22	105	1455	4-M36	35	117	28	1210

1 阀杆密封圈 stem seal

2 控制装置法兰——可以配用手动、蜗轮蜗杆传动、电动液压和气动等各种控制装置。
The control device can be equipped with flange - manual, worm gear, electric hydraulic and pneumatic control device etc..

3 阀板密封——密封垫的阀杆孔与阀杆配合紧密并牢固地镶嵌在阀座内，具有极好的密封性能，阀杆周围无泄漏现象。
Valve plate seal - the stem hole of the sealing gasket and the valve stem with tight and firmly embedded in the valve seat, with excellent sealing performance, no leakage around the valve stem.

4 酚醛靠背阀座——具有不脱落、抗拉、防泄漏、更换方便等特点。
Phenolic seat back seat - with no shedding, tensile, anti leakage, easy replacement, etc..

5 高精度阀板——阀板经抛光处理，与阀座配合精度高，具有良好的密封性，阀杆处无泄漏现象。
High precision valve plate - the valve plate after polishing treatment, with the valve seat with high precision, good sealing, no leakage at the valve stem.

6 阀板外形尺寸精确，截流后密封性好，阀板与阀座间无干涉现象，从而保证了操作力矩小，阀座使用寿命长等特点。
The valve plate is precise in size, good sealing performance, no interference between the valve plate and the valve seat, thereby ensuring the operating torque is small, the valve seat service life is long and so on.

7 连接处精度高、强度大——既适用于安装操纵手柄又适用于各种控制装置。
High precision and high strength——the device is suitable for installing the control handle and is suitable for various control devices.

8 润滑青铜轴套——既起支撑阀杆的作用又便于将阀杆脱离阀座。
Bronze sleeve——both supporting the role of stem and easy to out of the valve seat.

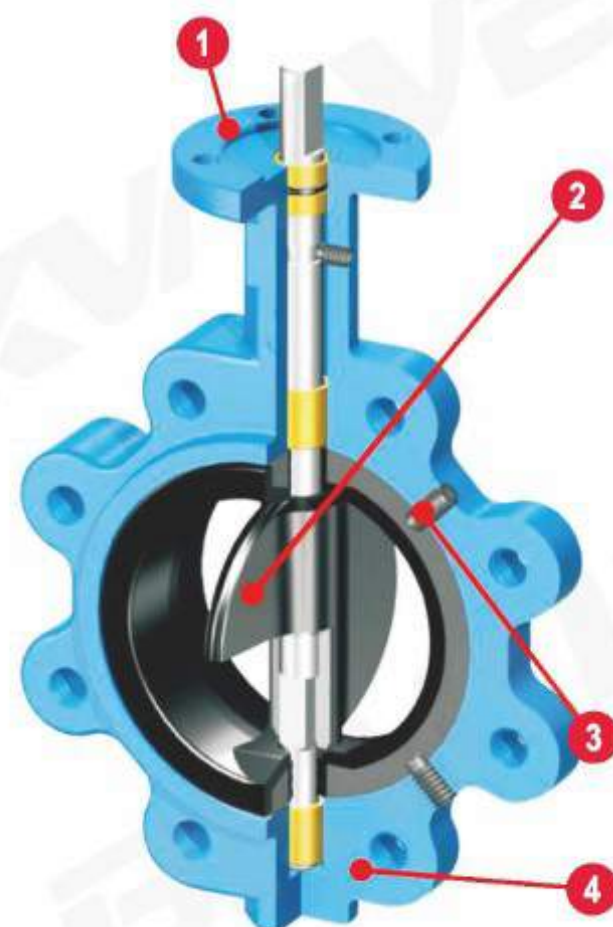
9 锥形销——精度高，将阀杆与阀板连接在一起后具有防振脱特点，并且易于更换。
Cone pin——with high precision, the valve stem and valve plate are connected together with the characteristics of anti vibration and desorption, and easy to replace.

10 具有对夹和单夹型阀体，阀体上衬有各种材质的阀座，包括聚四氟乙烯。
A pair of clamps and a single clip body, the valve body on a variety of materials, including the valve seat, including pte.

11 整体阀杆结构——整体性好，便于控制阀板启闭。
Integral valve stem structure——good integrity, easy to control valve plate opening and closing.

12 阀杆密封不易变形，从而避免了通常的阀杆泄漏现象。
Stem seal is not easy to deform, so as to avoid the common valve stem leakage.

▲ D7L1X型剖面图 Type profile



1

2'-8"可以配用手柄传动
2'-8" can be matched with the handle drive

3

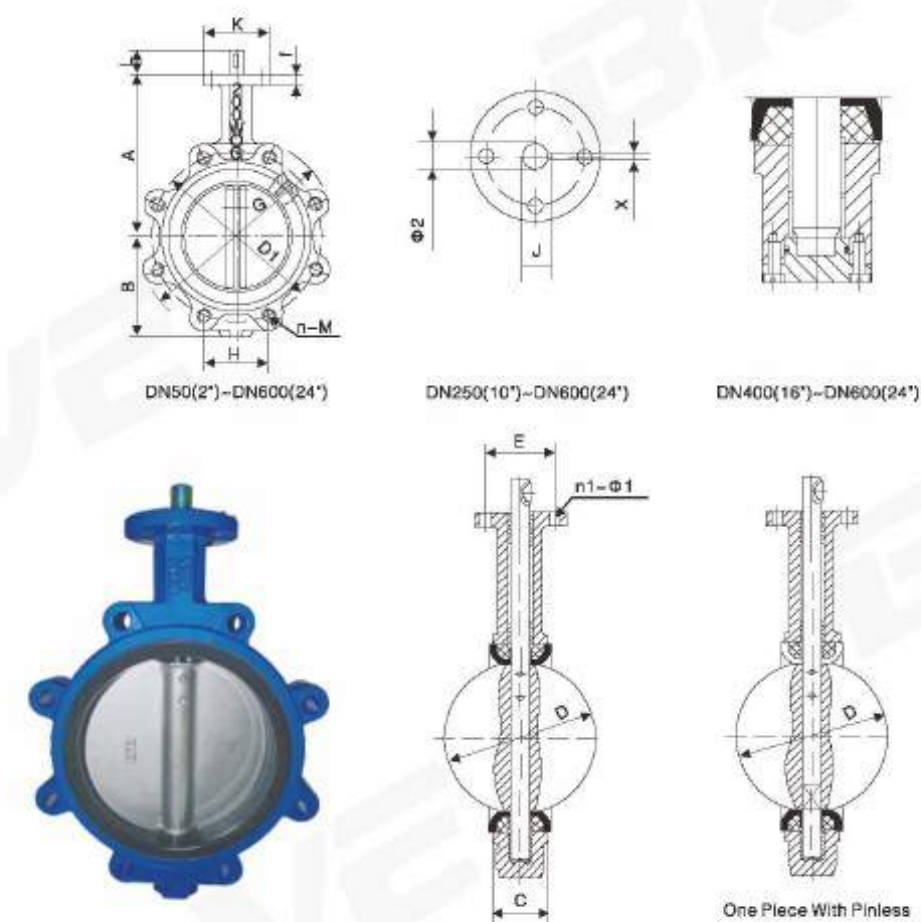
定位螺杆Positioning screw:
确保阀座处在正确的位置
Ensure the seat in the right place

2

板衬胶Rubber lining plate:
阀板与介质接触部分全部覆盖橡胶, 耐磨性更高。
The valve plate and the contact part of media coverage of all rubber, higher wear resistance.

4

LT型阀体对中性好, 安装方便省时,
可安装在管端
LT type valve on the neutral, easy to install, can be installed on the pipe end



▲ 主要连接尺寸 Main connection dimensions

PN1.0/1.6MPa(150/200PSI)

Size		A	B	C	D	L	H	D1	n-M	K	E	n1-Φ1	Φ2	G	J	X	f	Weight (kg)
mm	inch																	
50	2	161	80	43	52.9	32	88.38	125	4-M16	77	57.15	4-6.7	12.6	155	13.8	3	13	3.8
65	2.5	175	89	46	64.5	32	102.54	145	4-M16	77	57.15	4-6.7	12.6	179	13.8	3	13	4.2
80	3	181	95	46	78.8	32	61.23	160	8-M16	77	57.15	4-6.7	12.6	190	13.8	3	13	4.7
100	4	200	114	52	104	32	68.88	180	8-M16	92	69.85	4-10.3	15.77	220	17.77	5	13	9
125	5	213	127	56	123.3	32	80.36	210	8-M16	92	69.85	4-10.3	18.92	254	20.92	5	13	10.9
150	6	226	139	56	155.6	32	91.84	240	8-M20	92	69.85	4-10.3	18.92	285	20.92	5	13	14.2
200	8	260	175	60	202.5	45	112.89 76.35	295	8-M20 12-M20	115	88.9	4-14.3	22.1	339	24.1	5	13	18.2
250	10	292	203	68	250.5	45	90.59 91.88	350 355	12-M20 12-M24	115	88.9	4-14.3	28.45	406	31.45	8	13	26.8
300	12	337	242	78	301.6	45	103.52 106.12	400 410	12-M20 12-M24	140	107.95	4-14.3	31.6	477	34.6	8	20	40
350	14	368	267	78	333.3	45	89.74 91.69	460 470	16-M20 16-M24	140	107.95	4-14.3	31.6	515	34.6	8	20	56
400	16	400	309	86 102	389.6	51.2 72	100.48 102.42	515 525	16-M24 16-M27	197	158.75	4-20.6	33.15	579	36.15	10	20	96
450	18	422	328	105 114	440.51	51.2 72	88.38 91.51	565 585	20-M24 20-M27	197	158.75	4-20.6	37.95	627	41	10	20	122
500	20	480	361	127	491.6	57 82	96.99 101.68	620 650	20-M24 20-M30	197	158.75	4-20.6	41.15	696	44.15	10	22	202
600	24	562	459	154	592.5	70.2 82	113.42	725 770	20-M27 20-M33	276	215.9	4-22.2	50.65	821	54.65	16	22	270

D3/6/941X型法兰式中线蝶阀 Flange Centerline Butterfly Valve



产品简介 Product introduction

法兰连接中心板蝶阀是最新获得的专利产品。综合了偏心法兰蝶阀和对夹蝶阀的部分优点，填补偏心法兰蝶阀与对夹蝶阀之间的一块空白。
Flange center plate butterfly plate is the latest patented products. The eccentric flanged butterfly valve and butterfly valve part of the advantages, and to fill the eccentric flanged butterfly valve butterfly valve between a piece of blank.

产品特点 Feature

- 双向密封性能优良，扭矩值小，零件加工性能优越；
- 流量特性趋于直线，调节性能好；
- 法兰连接安装便捷，立式、卧式安装均可；
- 密封副材料的多样性，客供用户选择；
- 阀门可用于管端做放空阀用，性能可靠；
- 阀座密封圈与阀体有机地结合为一体，使阀门具有较长的寿命；
- 抗冲刷性能好，适应较恶劣工况环境，可用于介质截断和调节。
- Excellent bidirectional sealing performance and low torque, machining performance;
- Flow characteristic is linear, good regulating performance;
- Flange connection installed easily, vertical and horizontal installation are all right;
- Multiplicity sealing materials for user, guest;
- The valve can be used for pipe end do vent valve with reliable performance;
- The valve seat ring and body are combined, so that the valve has a longer life;
- Anti erosion performance is good, suitable for harsh environmental conditions, can be used for cutting off and regulating medium.

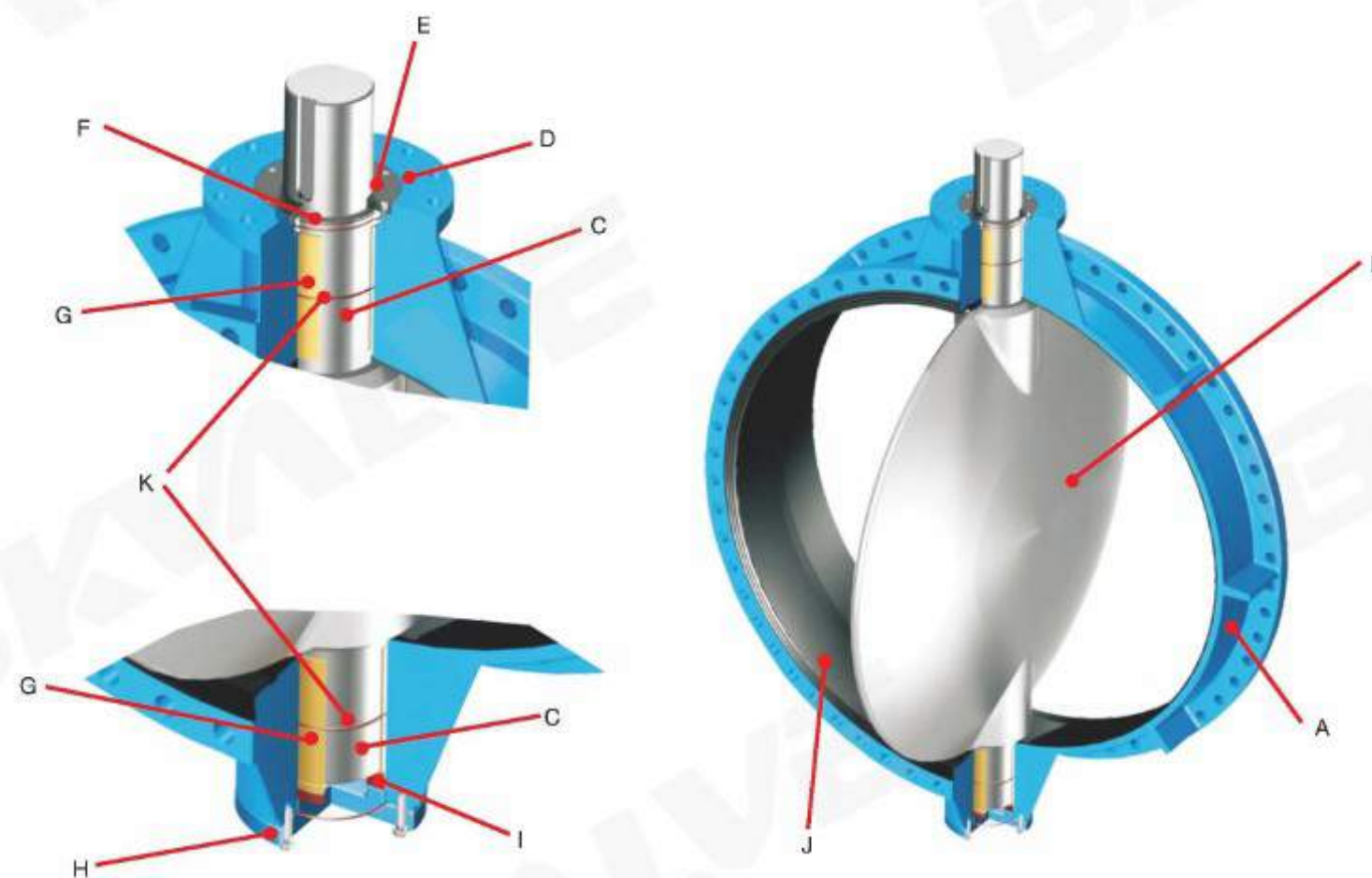
主要性能参数 Main performance parameters

公称压力 PN(MPa) Nominal pressure	DN50-DN1400	DN50-DN1400
公称口径 DN(mm) Nominal diameter	PN10	PN16
试验压力 Test pressure	1.5	2.4
密封 Seal up	1.1	1.76
适用温度 Temperature	-15℃~+110℃	
适用介质 suitable medium	淡水、污水、海水、空气、食品、各种油类等 Fresh water, sewage, sea water, air, food, oil etc.	
驱动方式 Driving method	手柄、蜗轮蜗杆、气动或电动装置 Handle, worm gear, pneumatic or electric device	

主要零部件材质 Materials of main parts

零件名称 Part name	材料 Material Science
阀体Body	灰铸铁+橡胶 球墨铸铁+橡胶 Gray cast iron, nodular cast iron + rubber + rubber
轴套 Axle sleeve	轮滑青铜 复合F4-PTFE Skating bronze composite F4-PTFE
转轴 Shaft	不锈钢 Stainless steel
阀板 Plate	球墨铸铁，铝青铜，不锈钢 Nodular cast iron, aluminum bronze, stainless steel
圆锥销 Taper pin	不锈钢 Stainless steel
O型圈 O-ring	橡胶 Rubber
键 Key	45钢 Carbon steel

D3/6/941X型法兰式中线蝶阀 Flange Centerline Butterfly Valve



A: 阀体
结构短、重量轻、强度高，可适用于对夹
(小口径)与法兰连接。

Body
The structure is short, light weight, high strength, can be used to clip (small caliber) and flange connection

B: 阀板
高强度阀板，经过精密加工可完全达到双向承压零泄漏的要求。

Plate
The high strength of the valve plate, through precision processing can completely meet the requirement of zero leakage bi-directional bearing.

C: 阀轴
高强度不锈钢阀轴可有效的传递力矩。

Valve shaft
High strength stainless steel valve shaft can be effectively transmitted torque.

D: 上法兰
可与各种连接标准的传动装置相连。

Top flange
The transmission device can be connected with a variety of standard connection.

E: 填料压盖 Packing gland
通过压紧填料，可有效防止轴端渗漏。

Packing gland
Through the compression packing, can effectively prevent the leakage of the shaft end.

F: 密封环
阀轴第二道轴向密封，防止杂质进入并有效的保护了阀轴。

Seal ring
Second axial sealing valve shaft, to prevent impurities entering and effectively protect the valve shaft.

G: 轴套
由润滑且摩擦系数小的材料制成，有效的支承阀轴并降低传动力矩。

Axle sleeve
Made of lubrication and friction coefficient of material, effective supporting the valve shaft and reduce driving torque.

H: 底端盖
通过减摩擦及阀轴能有效的支承阀板，防止阀板下垂，保证阀门的密封性能。

The bottom end cover
The wear pad and the valve shaft supporting the valve plate can effectively prevent the valve plate, sagging, ensure the sealing performance of the valve.

I: 减摩擦垫
可防止轴端的磨损，降低转动力矩，保证阀轴的正常位置。

Antifriction pad
Can prevent the abrasion of shaft, reduce the torque, ensure the normal position of the valve shaft.

J: 阀座密封圈
固定阀体上的高质量橡胶圈可达到零泄漏，阀门与法兰连接时无需加入垫片。

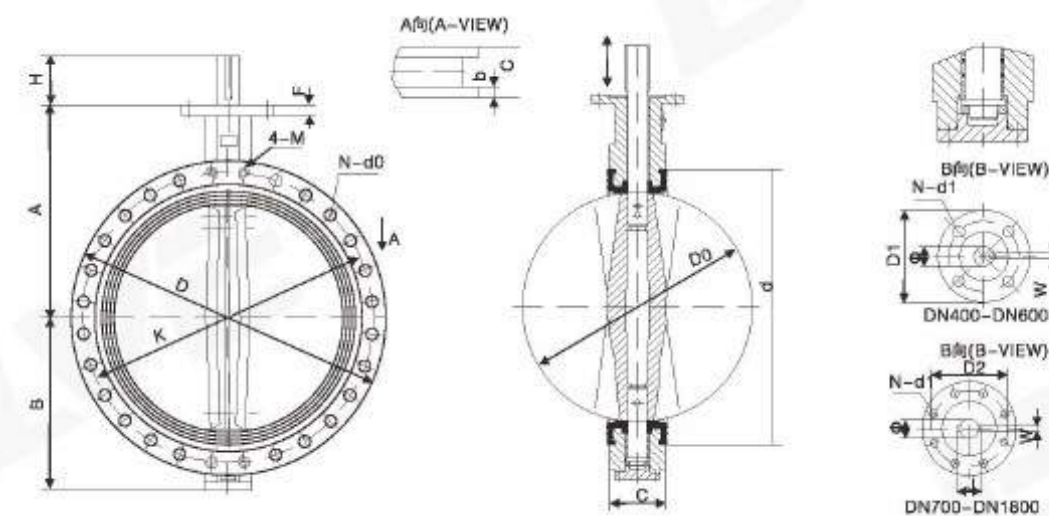
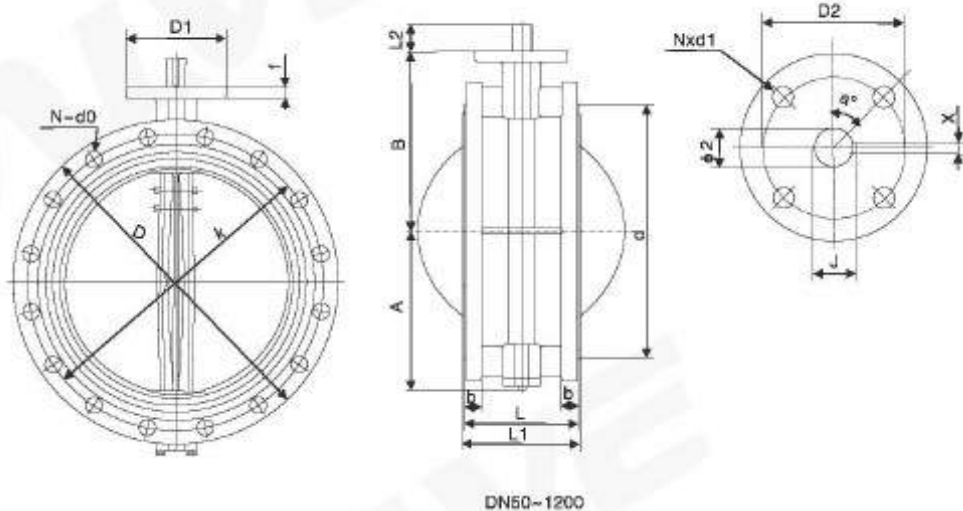
Seat ring
High quality rubber ring is fixed on the valve body can achieve zero leakage, valve and flange connection without adding gasket.

K: O型圈
作为辅助密封，防止轴端泄漏。

O-ring
As an auxiliary seal to prevent leakage of shaft end.

D3/6/941X型法兰式中线蝶阀 Flange Centerline Butterfly Valve

"U" 型蝶阀 "U" Type Butterfly Valve



主要连接尺寸 Main connection dimensions

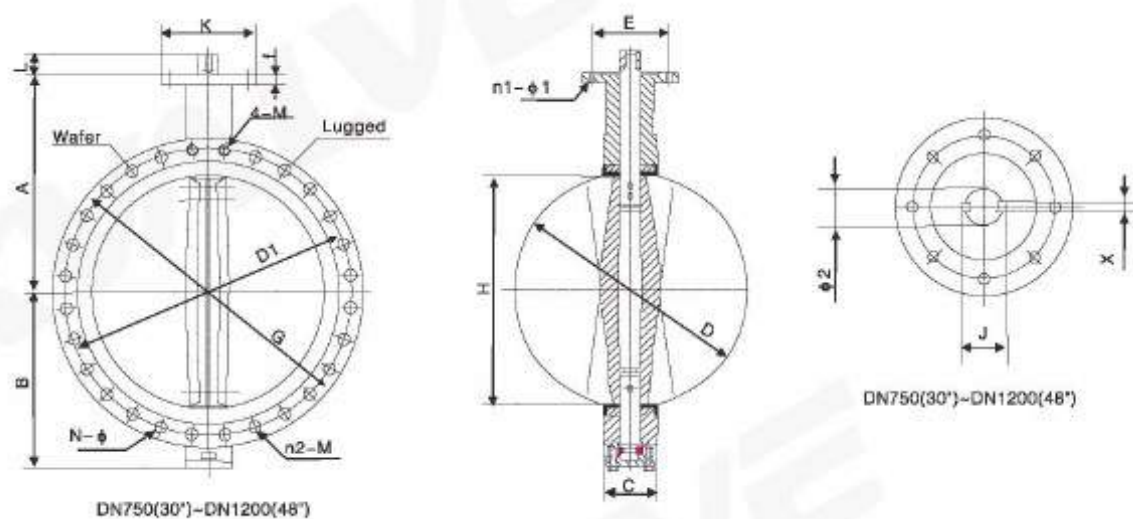
PN1.0/1.6MPa

DN	A	B	b	f	D	PN1.0 K	PN1.6 K	d	F	PN1.0 NxΦd0	PN1.6 NxΦd0	L	L1	D1	D2	NxΦd1	a°	J	X	L2	Φ2
50	83	120	19	3	165	125	125	99	13	4x19	4x19	108	111	65	50	4-7	45	13.8	3	32	12.6
65	93	130	19	3	185	145	145	118	13	4x19	4x19	112	115	65	50	4-7	45	13.8	3	32	12.6
80	100	145	19	3	200	160	160	132	13	8x19	8x19	114	117	65	50	4-7	45	13.8	3	32	12.6
100	114	155	19	3	220	180	180	156	13	8x19	8x19	127	130	90	70	4-10	45	17.77	5	32	15.77
125	125	170	19	3	250	210	210	184	13	8x19	8x19	140	143	90	70	4-10	45	20.92	5	32	18.92
150	143	190	19	3	285	240	240	211	13	8x23	8x23	140	143	90	70	4-10	45	20.92	5	32	18.92
200	170	205	20	3	340	295	295	266	13	8x23	12x23	152	155	125	102	4-12	45	24.1	5	45	22.1
250	198	235	22	3	395	350	355	319	13	12x23	12x28	165	168	125	102	4-12	45	31.5	8	45	28.45
300	223	280	24.5	4	445	400	410	370	20	12x23	12x28	178	182	125	102	4-12	45	34.6	8	45	31.6
350	270	310	24.5	4	505	460	470	429	20	16x23	16x28	190	194	150	125	4-14	45	34.6	8	45	31.6
400	300	340	24.5	4	565	515	525	480	20	16x28	16x31	216	221	175	140	4-18	45	36.15	10	51	33.15
450	340	375	25.5	4	615	565	585	530	20	20x28	20x31	222	227	175	140	4-18	45	40.95	10	51	38
500	355	430	26.5	4	670	620	650	582	22	20x28	20x34	229	234	175	140	4-18	45	44.12	10	57	41.15
600	410	500	30	5	780	725	770	682	22	20x31	20x37	267	272	210	165	4-22	45	51.62	16	70	50.65
700	478	560	32.5	5	895	840	840	794	30	24x31	24x37	292	299	300	254	8-18	22.5	71.35	18	66	63.36
800	529	620	35	5	1015	950	950	901	30	24x34	24x41	318	325	300	254	8-18	22.5	71.35	18	66	63.36
900	584	665	37.5	5	1115	1050	1050	1001	34	28x34	28x41	330	337	300	254	8-18	22.5	84	20	118	75
1000	657	735	40	5	1235	1160	1170	1112	34	28x37	28x44	410	417	300	254	8-18	22.5	95	22	142	85
1200	799	917	45	5	1455	1380	1380	1328	34	32x40	32x50	470	478	350	298	8-22	22.5	117	28	150	105
1400	919	1040	46	5	1675	1590	1590	1530	40	36x44	36x50	530	538	415	356	8-33	22.5	134	32	200	120
1500	965	1050	47.5	5	1785	1700	1710	1630	40	36x44	36x57	570	580	415	356	8-32	22.5	156	36	200	140
1600	1045	1150	49	5	1915	1820	1820	1700	50	40x50	40x57	600	610	415	356	8-32	22.5	156	36	200	140
1800	1280	1290	52	5	2115	2020	2020	1914	55	44x50	44x57	670	682	475	406	8-40	22.5	178	40	280	160
2000	1350	1323	55	5	2325	2230	2230	2130	55	48x50	48x62	760	772	475	406	8-40	22.5	178	40	280	160
2200	1430	1500	60	5	2555	2440		2320	55	52x56		636	648	560	483	12-40	15	200	45	300	180
2400	1523	1560	68	5	2760	2650		2530	55	56x56		750	762	686	603	20-40	9	242	50	400	220

主要连接尺寸 Main connection dimensions

PN1.0/1.6MPa

SIZE DN	A	B	H	D0	C	D	K	d	N-d0	4-M	b	D1	D2	N-d1	F	Φ	W	J	重量(kg) weight
400	360	320	60	390	102	580	525	460	12-31	4-M27	28.0	175	140	4-18	22	37.95	10	41.0	102
450	400	360	60	441	114	640	585	496	16-31	4-M27	30.0	175	140	4-18	22	42.86	12	45.9	141
500	455	390	75	492	127	715	650	560	16-34	4-M30	31.5	175	140	4-18	22	45.72	14	49.2	158
600	520	450	75	593	154	840	770	658	16-37	4-M33	36.0	210	165	4-22	22	53.98	16	58.0	232
700	580	505	70	695	165	910	840	773	20-37	4-M33	39.5	300	254	8-18	30	63.35	18	71.4	308
800	670	560	75	795	190	1025	950	872	20-41	4-M36	43.0	300	254	8-18	30	70.00	20	79.0	420
900	705	630	110	865	203	1125	1050	987	24-41	4-M36	46.5	300	254	8-18	34	80.00	22	90.0	550
1000	780	670	135	965	216	1255	1170	1073	24-44	4-M39	50.0	300	254	8-18	34	90.00	25	100.0	895
1100	840	740	135	1065	251	1355	1270	1203	28-44	4-M39	53.5	350	298	8-22	34	95.00	25	105.0	1170
1200	910	790	150	1160	254	1485	1390	1302	28-50	4-M45	57.0	350	298	8-22	34	105.00	28	117.0	1350
1300	990	910	150	1260	279	1585	1490	1395	24-50	8-M45	60.0	415	356	8-33	40	120.00	32	134.0	2350
1400	1017	993	200	1359	279	1685	1590	1495	28-50	8-M45	60.0	415	356	8-33	40	120.00	32	134.0	2650
1500	1080	1040	200	1457	318	1820	1710	1638	28-57	8-M52	62.5	415	356	8-33	40	140.00	36	156.0	2920
1600	1150	1132	200	1556	318	1930	1820	1696	32-57	8-M52	65.0	475	406	8-40	50	140.00	36	156.0	3140
1800	1280	1270	280	1775	356	2130	2020	1893	36-57	8-M52	70.0	560	483	12-40	55	160.00	40	178.0	4890
2000	1390	1350	280	1955	406	2345	2230	2105	40-62	8-M56	75.0	560	483	12-40	55	180.00	45	200.0	7120



主要连接尺寸 Main connection dimensions

CWP=200PSI

SIZE	A	B	H	D0	C	D	K	d	N-d0	4-M	b	D1	D2	N-d1	F	Φ	W	J	重量 weight (kg)
16"	360	320	60	390	102	597	539.7	460	12-28.7	4-1	36.6	175	140	4-18	22	37.95	10	41.0	122
18"	400	360	60	441	114	635	577.8	496	12-31.8	4-1 1/8	39.6	175	140	4-18	22	42.86	12	45.9	169
20"	455	390	75	492	127	699	635.0	560	16-31.8	4-1 1/8	42.7	175	140	4-18	22	45.72	14	49.2	190
22"	500	420	75	544	154	749	692.1	610	16-35.1	4-1 1/4	46.0	175	140	4-22	22	45.72	14	49.2	248
24"	520	450	75	592	151	813	749.3	658	16-35.1	4-1 1/4	47.8	210	165	4-22	22	53.98	16	58.0	280
26"	550	480	75	644	165	870	806.4	722	20-35.1	4-1 1/4	50.8	300	254	8-18	30	53.98	16	58.0	338
28"	580	505	70	695	165	927	863.6	773	24-35.1	4-1 1/4	52.3	300	254	8-18	30	63.35	18	71.4	368
30"	580	530	70	744	167	984	914.4	832	24-35.0	4-1 1/4	54.1	300	254	8-18	30	63.35	18	71.4	428
32"	670	560	75	795	190	1061	977.9	872	24-41.1	4-1 1/2	57.2	300	254	8-18	30	70.00	20	79.0	505
36"	705	630	110	865	203	1168	1085.8	987	28-41.1	4-1 1/2	60.5	300	254	8-18	34	80.00	22	90.0	660
40"	780	670	135	965	216	1289	1200.2	1073	32-41.1	4-1 1/2	63.5	300	254	8-18	34	90.00	25	100.0	1070
42"	810	710	135	1030	251	1346	1257.3	1152	32-41.1	4-1 1/2	66.8	300	254	8-18	34	95.00	25	105.0	1275
44"	840	740	135	1065	251	1403	1314.4	1203	36-41.1	4-1 1/2	66.8	350	298	8-22	34	95.00	25	105.0	1400
48"	910	790	150	1160	276	1511	1422.4	1302	40-41.1	4-1 1/2	69.9	350	298	8-22	34	105.00	28	117.0	1600
54"	1030	940	150	1310	390	1683	1593.8	1476	36-47.6	4-1 3/4	76.2	415	356	8-33	40	120.00	32	134.0	3000
60"	1080	1040	200	1457	381	1854	1758.9	1638	44-47.6	4-1 3/4	79.5	415	356	8-33	40	140.00	36	156.0	3500
66"	1150	1132	200	1610	457	2032	1930.4	1802	44-47.6	8-1 3/4	85.8	475	406	8-40	50	140.00	36	156.0	4000
72"	1280	1270	200	1775	457	2197	2095.5	1893	52-47.6	8-1 3/4	88.9	560	483	12-40	55	160.00	40	178.0	5625

产品简介 Product introduction

本蝶阀系我公司最新研制的软密封偏心法兰蝶阀，主要适用于水厂、电厂、钢厂冶炼、造纸、化工、水源工程、环境设施建设等系统供排水用，尤其适用于水道管路上作为调节和截流设备使用。

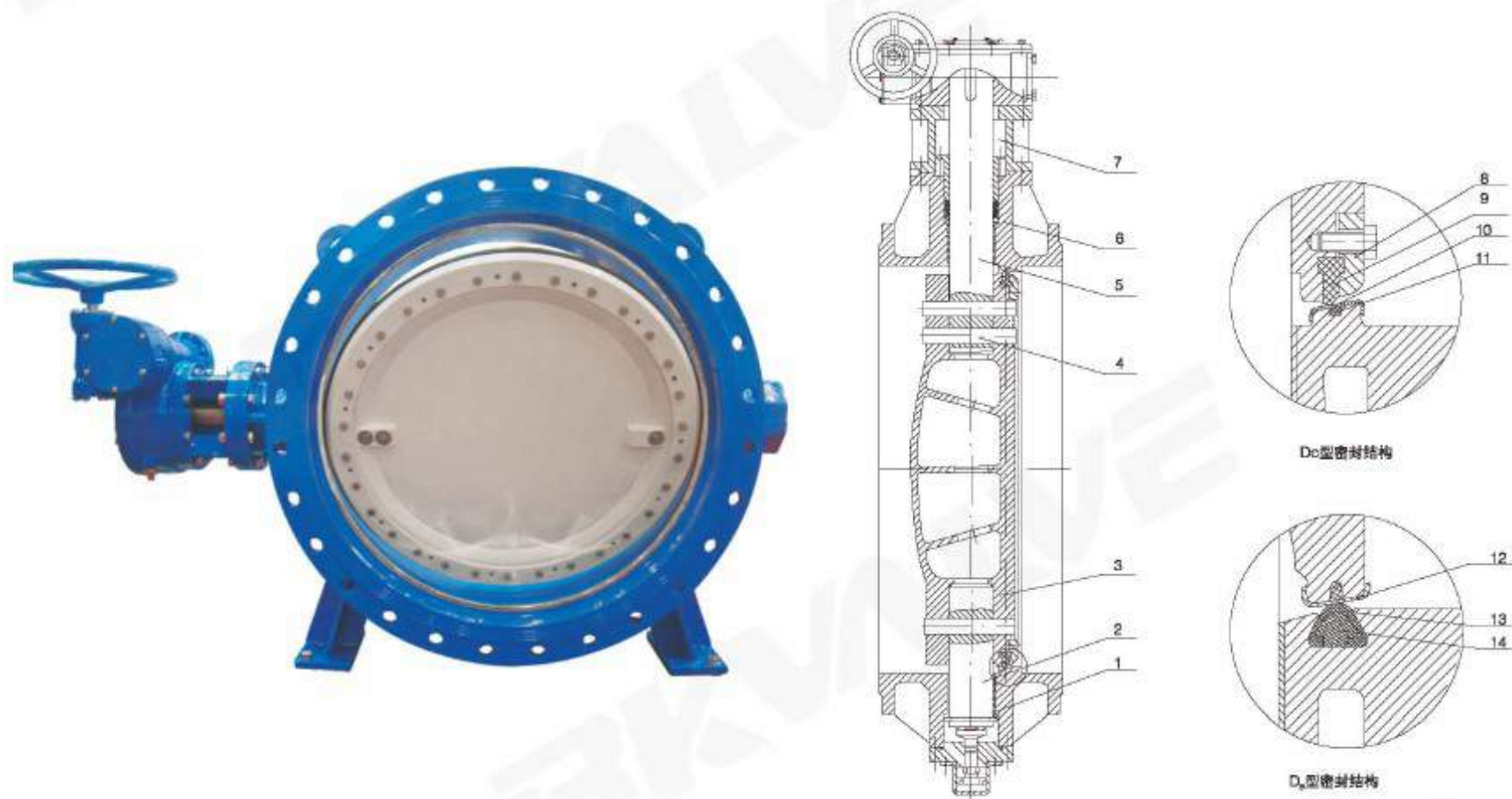
The valve system of the latest development of our company soft sealing flange eccentric butterfly valve. It is mainly used in waterworks, power plants, steel smelting, papermaking, chemical, water projects, environmental facilities, etc. system for draining off water, especially in the waterway pipe as the regulation and the use of closure devices.

产品特点 Feature

- 1 设计合理、结构紧凑、装拆容易，便于维修；
Reasonable design, compact structure, easy assembly and disassembly, convenient maintenance;
- 2 采用偏心结构，减少密封圈的摩擦，延长阀门寿命；
With the eccentric structure, reduce the friction of the sealing ring, prolong the service life of the valve;
- 3 阀板密封圈采用“T”形结构，密封副呈线性密封；
The valve plate sealing ring with "T" shaped structure, sealing linear sealing;
- 4 完全密封，泄漏为零；
Completely sealed, leakage is zero;
- 5 更换阀板密封圈、“O”形圈、蝶板、转轴等材质，可适用多种介质和不同温度。
Replace the stem seal, "O" ring, disc, shaft and other materials, applicable to a variety of media and different temperatures.

主要性能参数 Main performance parameters

公称压力 PN(MPa) Nominal pressure		1.0	1.5
公称通径 DN(mm) Nominal diameter		10~1200	100~1200
试验压力 Test pressure (MPa)	壳体 housing	1.5	2.4
	密封 seal up	1.1	1.76
适用温度(℃) Temperature		-15~+110	
适用介质 suitable medium		淡水、污水、海水、空气等 Fresh water, sewage, sea water, air, etc.	

D3/6/942X型软密封双偏心法兰蝶阀
Soft Sealing Double Eccentric Flange Butterfly Valve

执行标准 Performance standard

符合GB/T12238-89《通用阀门法兰和对夹连接蝶阀》标准。

试验符合GB/T13927-92《通用阀门压力试验》标准。

侧法兰连接符合GB/T9119《整体铸铁管法兰》标准。同时符合BS4504, ISO20284, DIN2501中PN1.0Mpa, PN1.6Mpa法兰连接标准。

According to GB/T12238-89 'universal valve and butterfly valve flange connection standard of' clip.

The test in accordance with GB/T13927-92 'universal valve pressure test standard'.

The lateral flange connection with GB/T9119 'flange' standard integral cast iron pipe. At the same time with BS4504, ISO20284, DIN2501, PN1.0Mpa, PN1.6Mpa standard flange connection.

结构长度标准 Face to face dimension

(1)短结构符合GB12221-89《法兰连接金属阀门结构长度》中16系列尺寸规定。

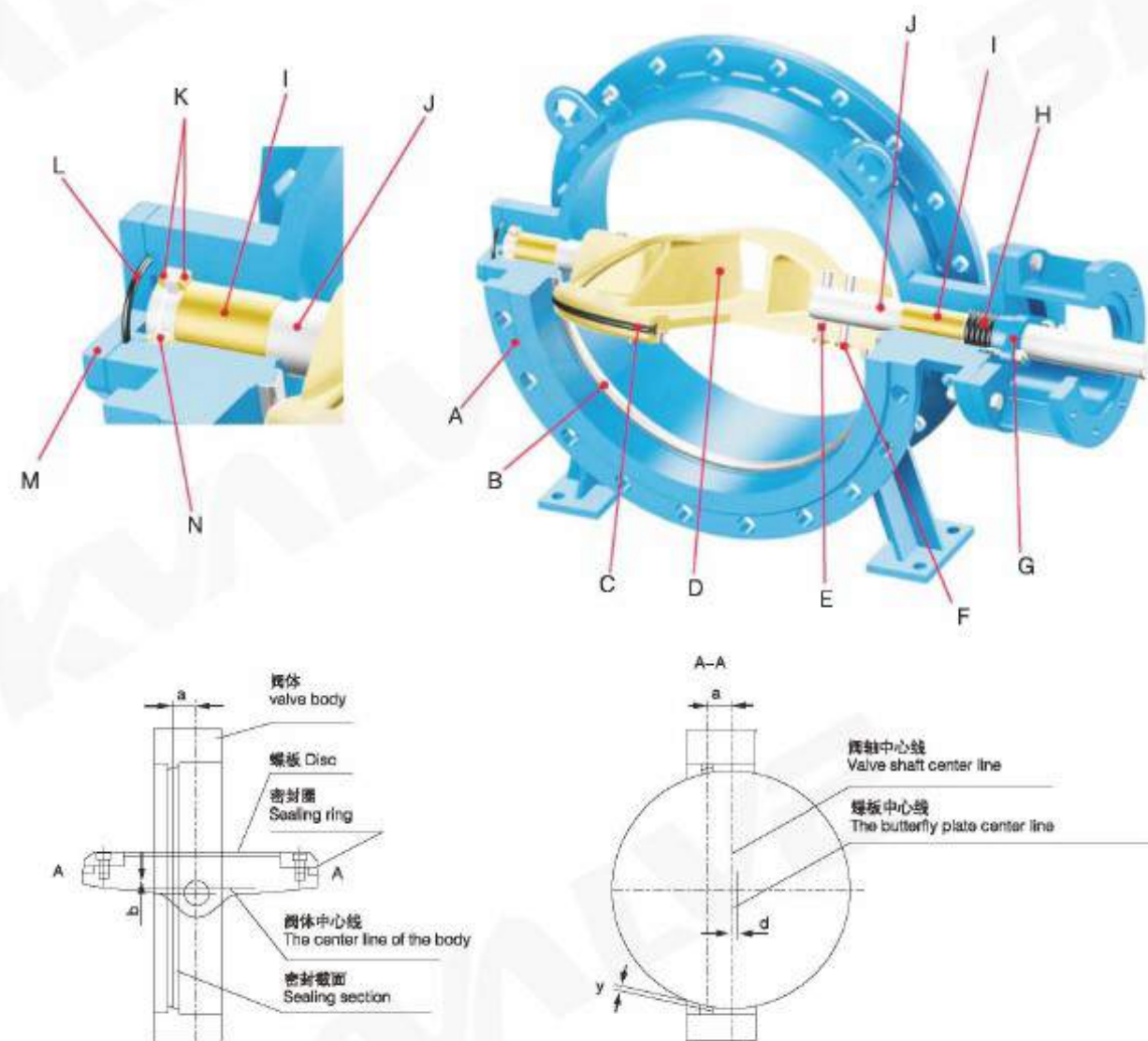
(2)长结构符合GB12221-89《法兰连接金属阀门结构长度》中13系列尺寸规定。

(1) GB12221-89 'flange connection metal valve structure length' in the 16 series of rules with short structure size.

(2) GB12221-89 'flange connection metal valve structure length' in the 13 series of dimensions in accordance with long structure.

主要零部件材质 Materials of main parts

零件名称 Part name	1轴套 axle sleeve	2下转轴 Under the shaft	3阀板 Valve plate	4圆柱销 Cylindrical pin	5上转轴 On the shaft	6阀体 valve body	7填料 filler
材料牌号 Material	ZCuZn38Mn2Pb2 、铜背F4	304 416 420 431	QT450-10 A536 65-45-12	304 416 420 431	304 416 420 431	HT200 A126 ClassB QT450-10 A536 65-45-12	NBR EPDM
名称 name	8压环 Pressure ring	9阀板密封圈 valve plate sealing ring	10阀体钢环 body of steel ring	11密封圈 Sealing ring	12阀板钢环 valve plate steel ring	13填充物 Filler	14阀体密封圈 valve body sealing ring
材料牌号 Material	QT450-10 Q235-AGr33	NBR EPDM	316	NBR EPDM	304	环氧树脂 Epoxy resin	NBR EPDM

D3/6/942X型软密封双偏心法兰蝶阀
Soft Sealing Double Eccentric Flange Butterfly Valve

双偏心密封蝶阀密封结构
Double eccentric butterfly valve seal structure

A:阀体
由高强度材料制成，变形小，适用于较恶劣的工况。
Valve body
Made from high strength materials, small deformation, suitable for harsh conditions.

B:阀体密封圈
整体滚压在阀体上的不锈钢密封圈，精度高，耐磨损，寿命长。
The valve body sealing ring
The whole rolling on the body of the stainless steel ring, high precision, wear resistance, long service life.

C:阀板密封圈
T型密封橡胶圈，整体模压成形，精度高，可实现双向密封。
The valve plate sealing ring
T type rubber seal ring, integral molding, high precision, can realize bidirectional sealing.

D:阀板
拱桥式形状，强度高、变形小，流通面积大。
Valve plate
The arch bridge type shape, high strength, small deformation, large circulation area.

E:圆柱销
高精度的锥形销，可有效的将阀轴与阀板连接在一起。
Cylindrical pin
Taper pins with high precision, which can effectively turn the valve shaft and the valve plate are connected together.

F:密封环
可将圆锥销可靠固定，防止脱落。
Sealing ring pin
The taper pin fixation, to prevent the loss.

G:填料压盖
可实现上轴轴向定位，并固定密封环。
Packing gland
Can realize axial positioning on the shaft, and the fixed seal ring.

H:O型圈
多重O型圈可有效的防止轴端渗漏。
O-ring
Multiple O ring can effectively prevent the leakage of the shaft

I:轴套
油润滑且摩擦系数小的材料制成，有效地支撑阀轴并降低转动扭矩。
Axle sleeve
Oil lubrication and friction coefficient of the material made of small, effectively supporting the valve shaft and reduce torque.

J:阀轴
高强度不锈钢阀轴可有效的传递力矩
Valve shaft
High strength stainless steel valve shaft can be effectively transmitted torque

K:减磨垫
可防止对开环及轴肩的磨损，降低转动扭矩，并能保证阀轴的正确位置。
Antifriction pad
To prevent the wear ring opening and the shaft shoulder, reduce torque, and can guarantee the correct position of the valve shaft.

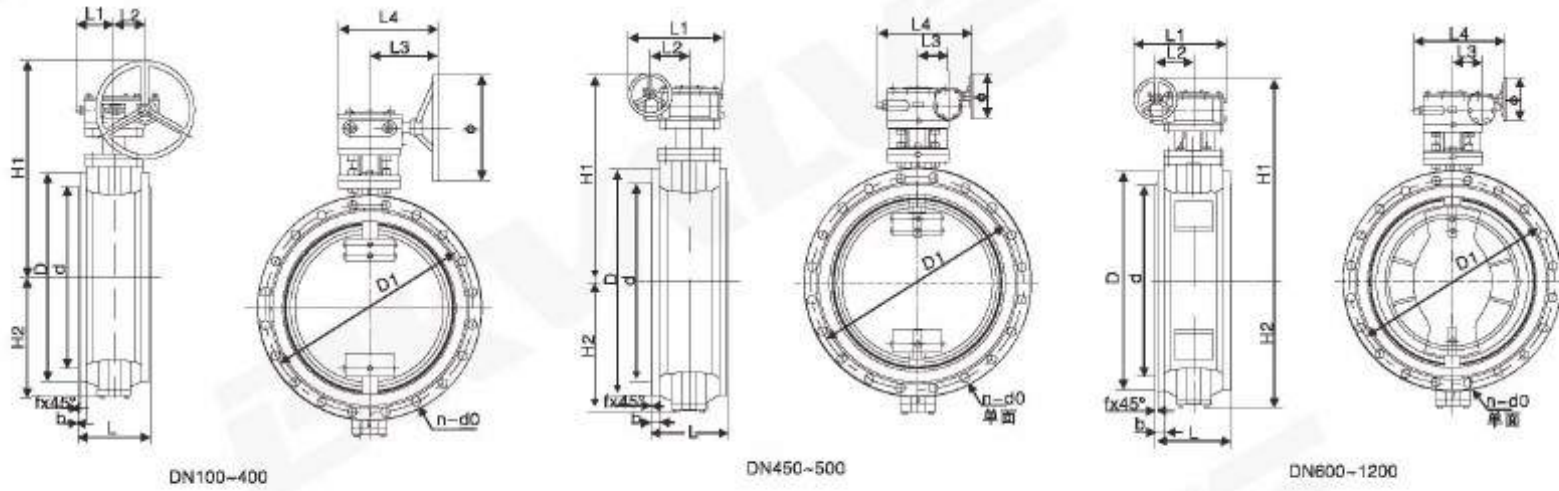
L:O型密封圈
可有效的防止底端渗漏。
O-ring
Can effectively prevent the bottom leakage.

M:底端盖
通过支撑对开环，防止阀板下垂，保证阀板的密封性能。
The bottom end cover
Through the support of ring opening, the valve plate to prevent sagging, ensure the sealing performance of the valve plate.

N:对开环
可使阀轴处于正确位置。
On the open loop
The valve shaft is in the correct position.

D3/6/942X型软密封双偏心法兰蝶阀 Soft Sealing Double Eccentric Flange Butterfly Valve

美标中线蝶阀 API/ANSI Centerline Butterfly Valve



双偏心密封蝶阀的密封原理 The sealing principle of double eccentric butterfly valve

双偏心由于在单偏心蝶阀的基础上将蝶板的回转中心(即阀轴中心)与阀体中心线形成尺寸b偏置,使得蝶阀在开启过程中,蝶板的密封面会比单偏心密封蝶阀更快地脱离阀座密封面,蝶板转动至8°-12°时,蝶板密封面完全脱离阀座密封面。完全开启时,两密封面之间形成一个更大的间隙Y,该类型蝶阀的设计,大大降低了两密封面之间的机械损伤及挤压变形,使蝶阀的密封性能更为提高。

其结构特征为在阀杆轴心既偏心蝶板中心,也偏离本体中心。双偏心的效果使阀门被开启后蝶板能迅速脱离阀座、大幅度地消除了蝶板与阀座的不必要的过度挤压、刮擦现象、减轻开启阻力、降低了磨损、提高了阀座寿命,刮擦的幅度降低,同时还使得双偏心蝶阀也可以采用金属阀座,提高了蝶阀在高温领域的应用。但因其密封原理属位置密封结构,即蝶板与阀座密封面为线接触,通过蝶板挤压阀座所造成的弹性变形产生密封效果,故对关闭位置要求很高(特别是金属阀座)、承压能力低,这就是为什么传统上人们认为蝶阀并不耐高压、泄漏量大的原因。

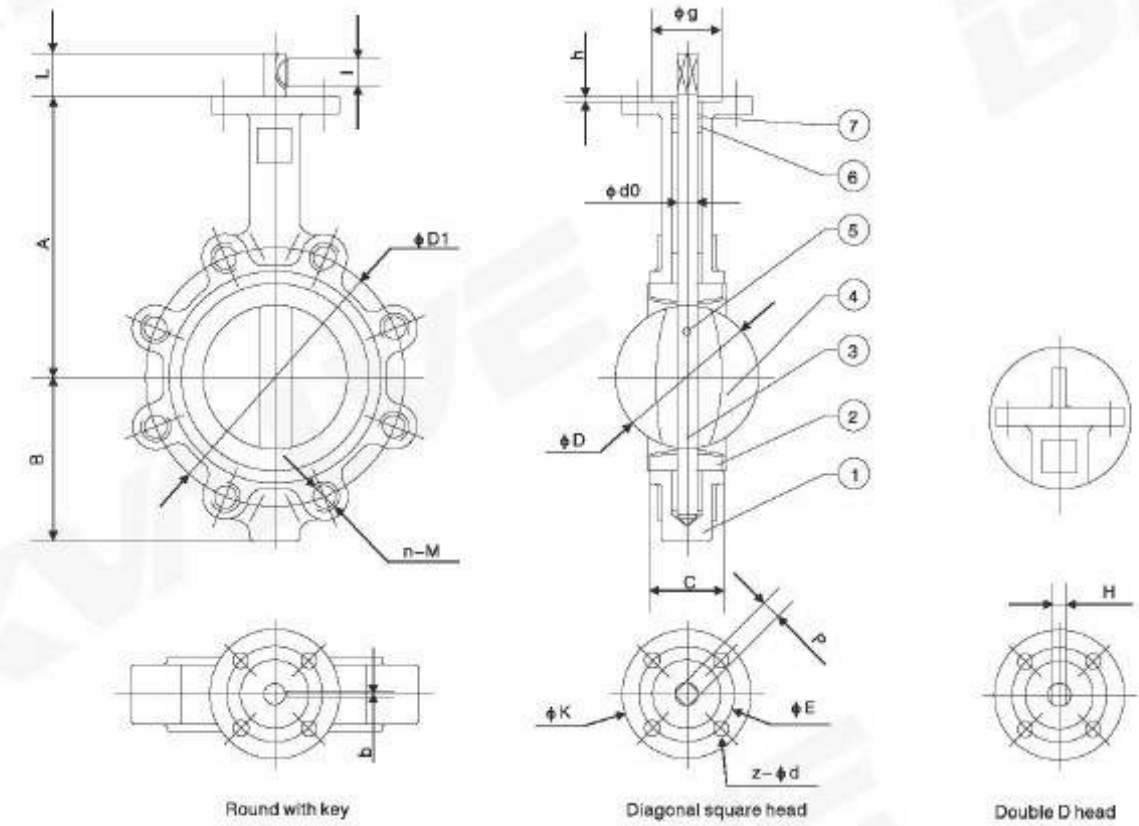
Double eccentric due to the formation of size B bias in single eccentric butterfly valve will be the basis of the butterfly plate rotation center (i.e., valve shaft center) and the body center line, making the valve in the opening process, the disc sealing surface will than single eccentric butterfly valve seal more quickly from the sealing surface of the valve seat, disc rotates to 8 degrees to 12 degrees, butterfly plate sealing surface completely from the valve seat sealing surface. Fully open, a larger gap Y is formed between the two sealing surface design, the type of butterfly valve, greatly reducing the extrusion deformation and mechanical damage between the two sealing surface, the valve seal performance is improved.

The structural characteristics of both the stem axis eccentric butterfly plate center also deviated from the body center. Double eccentric effect causes the valve is turned on the butterfly plate can quickly from the valve seat, substantially to eliminate the unnecessary disc and valve seat excessive squeeze, scratch phenomenon, reduce the resistance from the open, reducing the wear and increasing the service life of the valve seat, scraping is greatly reduced, and at the same time, the double eccentric butterfly valve metal valve seat can also be used to improve the butterfly valve in the field of high-temperature applications. But because of its position of sealing principle is sealing structure made, namely the butterfly plate and the valve seat sealing surface for line contact, through the disc extrusion seat caused by the elastic deformation produced sealing effect, so the closed position requirements is very high (especially metal seat), the ability of low pressure, which is why people think the traditional butterfly valve does not bear the high pressure and large amount of leakage.

主要连接尺寸结构长13系列和14系列 Main connection dimensions and face to face of series 13 and 14 PN1.0MPa

DN	L	D	D1	d	n	d0	b	f	H1	H2	L1	L2	L3	L4	Φ
100	127/190	220	180	156	8	19	19	3	310	109	52	45	158	210	150
150	140/210	285	240	211	8	23	19	3	440	143	52	45	158	210	150
200	152/230	340	295	266	8	23	20	3	510	182	77	63	238	315	300
250	165/250	395	350	319	12	23	22	3	565	219	77	63	238	315	300
300	178/270	445	400	370	12	23	24.5	4	630	344	95	72	167	242	300
350	190/290	505	460	429	16	23	24.5	4	715	283	110	91	188	275	400
400	216/310	565	515	480	16	28	24.5	4	750	312	110	91	188	275	400
450	222/330	615	565	530	20	28	25.5	4	820	344	147	109	109	420	400
500	229/350	670	620	582	20	28	26.5	4	845	381	147	109	109	420	400
600	267/390	780/755	725/705	686/667	20	31/26	30	5	950	451	533	179	138	476	400
700	292/430	895/860	840/810	794/772	24	31/26	36.5	5	1010	526	533	179	138	476	400
800	318/470	1015/975	950/920	901/878	24	34/31	35	5	1140	581	655	217	170	577	500
900	330/510	1115/1075	1050/1020	1001/978	28/24	34/31	37.5	5	1197	643	655	217	170	577	500
1000	410/550	1230/1175	1160/1120	1112/1078	28	37/31	40	5	1277	722	655	217	170	577	500
1200	470/630	1455/1405	1380/1340	1328/1295	32	40/34	45	5	1511	840	748	262	202	664	500

表中有两个数据,分别表示PN1.0/1.6Mpa两种不同压力级的尺寸
There are two data tables, PN1.0/1.6Mpa respectively two different pressure level size



主要零部件材质 Materials of main parts

序号 NO.	零件名称 Part name	材料 Material
1	阀体 Body	铸铁、球墨铸铁、碳钢、不锈钢 Cast Iron, Ductile Iron, Carbon Steel, Stainless Steel
2	阀座 Seat	丁腈橡胶、乙丙橡胶、氟橡胶、氯丁橡胶、氯磺化聚乙烯、硅 NBR, EPDM, Viton, Neoprene, Hypalon, Silicon
3	阀轴 Shaft	不锈钢 Stainless Steel 410, 316, 17-4PH
4	闸板 Disc	球墨铸铁+镍 Ductile Iron+Ni, CF8, CF8M, Bronze
5	销 Pin	不锈钢 Stainless Steel
6	衬套 Bushing	聚四氟乙烯 PTFE, Bronze
7	O型圈 O ring	丁腈橡胶、乙丙橡胶 NBR, EPDM

主要连接尺寸 Main connection dimensions

Size		A	B	C	D	L	d0	P	H	KEY bxI	上部法兰 Upper Flange					ANSI 150		DIN PN10/16		Weight (kg)
in	DN										K	E	z-d	g	h	D1	n-M	D1	n-M	
1 1/2"	40	145	75	33	42.4	32	12.6	9	10	3x16	77	50	4-7	35	3	98.5	4-1/2	110	4-M16	3.2
2"	50	161	80	42	52.6	32	12.6	9	10	3x16	77	50	4-7	35	3	120.5	4-5/8	125	4-M16	3.8
2 1/2"	65	175	89	44.7	64.5	32	12.6	9	10	3x16	77	50	4-7	35	3	139.5	4-5/8	145	4-M16	4.2
3"	80	181	95	45.2	78.8	32	12.6	9	10	3x16	77	50	4-7	35	3	152.5	4-5/8	160	4/8-M16	4.7
4"	100	200	114	52.1	104	32	15.77	11	12	5x19	90	70	4-9	55	3	190.5	8-5/8	180	8-M16	9.0
5"	125	213	127	54.4	123.3	32	18.92	14	14	5x19	90	70	4-9	55	3	216	8-3/4	210	8-M16	10.9
6"	150	226	139	55.8	155.6	32	18.92	14	14	5x19	90	70	4-9	55	3	241.5	8-3/4	240	8-M20	14.2
8"	200	260	175	60.6	202.5	45	22.1	17	17	5x19	125	102	4-12	70	3.5	298.5	8-3/4	295	8/12-M20	18.2
10"	250	292	203	65.6	250.5	45	28.45	22	22	8x28	125	102	4-12	70	3.5	362	12-7/8	350/355	12-M20/M24	26.8
12"	300	337	242	76.9	301.6	45	31.6	22	24	8x28	140	102	4-12	70	3.5	432	12-7/8	400/410	12-M20/M24	40
14"	350	368	267	75.6	333.3	45	31.6	22	24	8x28	140	102	4-12	70	3.5	476	12-1	460/470	16-M20/M24	56
16"	400	400	309	86.5	389.6	51.2	33.15	24	24	10x50	197	140	4-18	100	4	540	16-1	515/525	16-M24/M27	96
18"	450	422	328	105.6	440.5	51.2	38	27	27	10x50	197	140	4-18	100	4	578	16-1 1/8	565/585	20-M24/M27	122
20"	500	480	361	131.8	491.6	64.2	41.15	36	32	10x50	197	140	4-18	100	4	635	20-1 1/8	620/650	20-M24/M30	202
24"	600	562	459	152	592.5	70.2	50.65	36	36	2-16x60	276	165	4-23	130	5	749.5	20-1 1/4	725/770	20-M27/M33	270

注: 1、14"-24" 最大工作压力1.6MPa (200psi) 可根据客户要求提供。

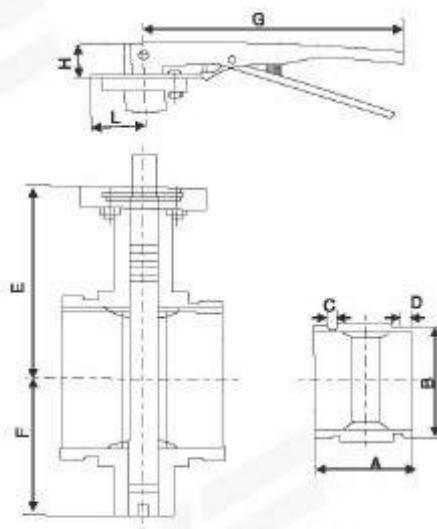
2、尺寸16"大尺寸的键的类型是平的。

3、橡胶阀座硫化直接在阀体可根据客户要求提供。

Note: 1、14"-24" maximum working pressure with 1.6MPa (200PSI) can be supplied as per customer requirement.

2、The type of key for size 16" & larger is flat.

3、The valve with rubber seat vulcanized directly on the body can be supplied as per customer requirement.

D(3)81X沟槽蝶阀
Groove Butterfly Valve

产品用途 Application

沟槽式(卡箍)连接阀门是引进美国与德国同类先进产品而设计制造的一系列新型连接阀门。它具有安装快速、简易、安全、可靠、不受安装场地限制、便于管道与阀门的维修保养,有隔振隔音与一定的角度范围内有克服管道连接不同轴而产生误差,解决温差所产生热胀冷缩等优点。

广泛应用于输送流体管道的给排水,消防、空调、燃气、石油、化工、水处理、市政、造船等管道工程作为控制流体作用。

Trench (clamp) connected to the valve is the introduction of the United States and Germany similar advanced products and the design and manufacture of a series of new connection valve. It has fast installation, simple, safe, reliable, and without installation site constraints, so that pipeline and valve repair and maintenance, a vibration noise and certain angle range have overcome the pipeline connecting different axis and limitation, solve the temperature generated advantages such as thermal expansion and contraction.

Widely used in conveying fluid drainage pipes, fire, air, gas, petroleum, chemical industry, water treatment, municipal, shipbuilding and other pipeline projects as a control fluid.

性能规范 Performance specification

公称压力 Nominal pressure		1.0		1.6		2.5					
试验压力 Test pressure	壳体强度 Shell strength	1.5		2.4		3.75					
	密封性能 Sealing performance	1.1		1.76		2.75					
适用介质 Suitable medium	产品类型 Product types	铸铁、球墨铸铁 Cast iron, ductile cast iron		铜 Copper		碳钢 Carbon steel		不锈钢 Stainless steel			
	适用介质 Suitable medium	水、水蒸汽、油品、空气 Water, steam, oil, air		水、水蒸汽 Water, water vapor		水、水蒸汽、油品、空气 Water, steam, oil, air				硝酸类 Nitric acid	
工作温度 Working temperature	密封面材质 Sealing surface material	橡胶 Rubber		乙腈橡胶 Acetonitrile rubber		乙丙橡胶 Ethylene propylene rubber		氟橡胶 聚四氟塑料 铜 不锈钢 Fluorine rubber, PTFE plastic copper and stainless steel			
	工作温度 Working temperature	≤60		≤80		≤250		≤250 ≤200 ≤200 ≤200			

主要连接尺寸 Main connection dimensions

DN		A	B	C	D	E	F	G	H	L
mm	inch									
50	2"	88	60	8	14.5	100	53	266.7	32	52
65	2 1/2"	90	76	8	14.5	106	57	266.7	32	52
80	3"	90	89	8	14.5	110	65	266.7	32	52
100	4"	100	114	10	14.5	140	87	266.7	32	52
125	5"	110	140	10	16	153	100	266.7	32	52
150	6"	110	165	10	16	171	112	266.7	32	52
200	8"	135	219	13	19	230	145	359	50	75.2

D(3)71X压铸铝合金防结露蝶阀
Cast Aluminum Alloy Anti-condensation Butterfly Valve

产品简介 Product introduction

传动: 手柄、蜗轮、气动、电动(带手动)
Transmission: the handle, worm gear, pneumatic, electric (with manual)

连接: 对夹式
Connection: the clip type

结构: 中线式
Structure: the center line type

密封: 软密封
Sealing: soft seal

口径: DN25≤DN300
Diameter: DN25≤DN300

温度: -20℃≤120℃
Temperature :-20℃≤120℃

压力: 1.0MPa/1.6MPa
Pressure: 1.0MPa/1.6MPa

介质: 水、油品、蒸汽等
Medium: water, oil, steam, etc.

执行标准 Performance standard

结构长度: JIS GB API
Structure length: GB API JIS

顶部法兰标准: 国标标准 ISO 5211
Top flange standard: GB standard ISO 5211

法兰连接尺寸: JIS ANSI GB
Flange connection size: ANSI GB JIS

主要性能参数 Main performance parameters

公称通径 Nominal diameter	DN(mm)	25-300	25-150
公称压力 Nominal pressure	PN(MPa)	1.0	1.6
试验压力(MPa) Test pressure	强度试验 Strength test	1.5	2.4
	密封试验 Seal test	1.1	1.76

主要零部件材质 Materials of main parts

零件名称 Part name	材质 Texture of material
阀体 Body	压铸铝合金 Die casting aluminum alloy (25-200为ADC12、250-300为AC4C)
阀板 Plate	不锈钢 Stainless steel(304、316、316L)
阀座 Seat	乙丙EPDM、丁腈NBR、氟橡胶 Fluorine rubber
阀杆 Stem	不锈钢 Stainless steel (416、304、316、316L)

产品特点 Feature

超轻铝合金阀体扭矩小、使用安装方便、杜绝锈蚀。适用于空调、工业水处理设备有很强防结露功能;
Ultra light aluminum alloy valve torque is small, easy to use, to prevent corrosion. For air conditioning, industrial water treatment equipment has strong anti condensation function;

优异持久的密封性能,防结露蝶阀有多层次渐进接触式阀座设计,使阀板在关闭过程中逐渐接触阀座在保证良好的密封性能的同时减少不必要的扭矩,从而延长阀座的使用寿命;

Excellent durable sealing performance, anti condensation butterfly valve multi-level progressive contactThe design of the valve seat, the valve plate in the process of close contact with the valve seat to ensure good sealing performance at the same time reduce unnecessary torque, thereby prolonging the service life of the valve seat;

扭矩减小实现了驱动装置的轻量化和小型化;
Torque reduction to achieve the lightweight and miniaturization of the drive device;

独有的阀杆密封环防止流体泄漏;
Unique stem sealing ring to prevent fluid leakage;

不同材质的阀座适应不同工况,具有良好的防腐和密封性能;
Different materials of the valve seat to adapt to different conditions, with good corrosion and sealing performance;

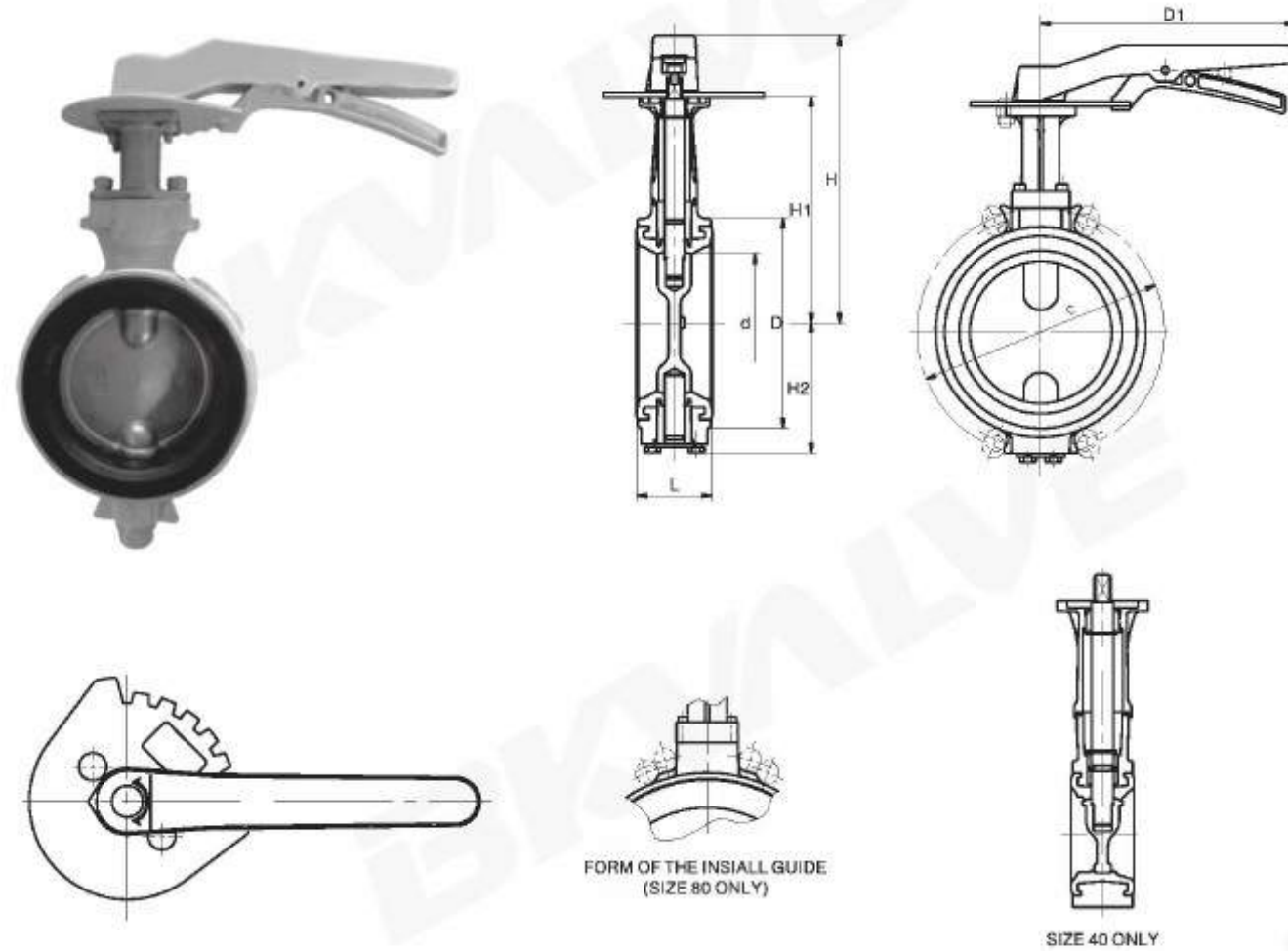
球形阀板运动轨迹使得阀门转动灵活自如。
The ball valve plate movement makes the valve rotation flexible.

产品用途 Application

适用于暖通、中央空调上下水成套设备,广泛应用于:水、气、油、化工、冶炼、能源、造船、电力、石油、水处理、建筑等各行业。

Suitable for HVAC, central air conditioning water equipment, widely used in various industries: water, gas, oil, chemical industry, metallurgy, energy, shipbuilding, electric power, petroleum, water treatment, construction etc..

D(3)71X压铸铝合金防结露蝶阀 Cast Aluminum Alloy Anti-condensation Butterfly Valve



产品特点 Feature

F500系列蝶阀在防结露方面发挥超群的功能。利用多年积累的技术和经验开发的独特的多层次渐近接触式阀座，以及综合其他多项技术的F500系列蝶阀正在越来越多的领域替代其它阀门，具有施工简单，使用寿命长的特点。

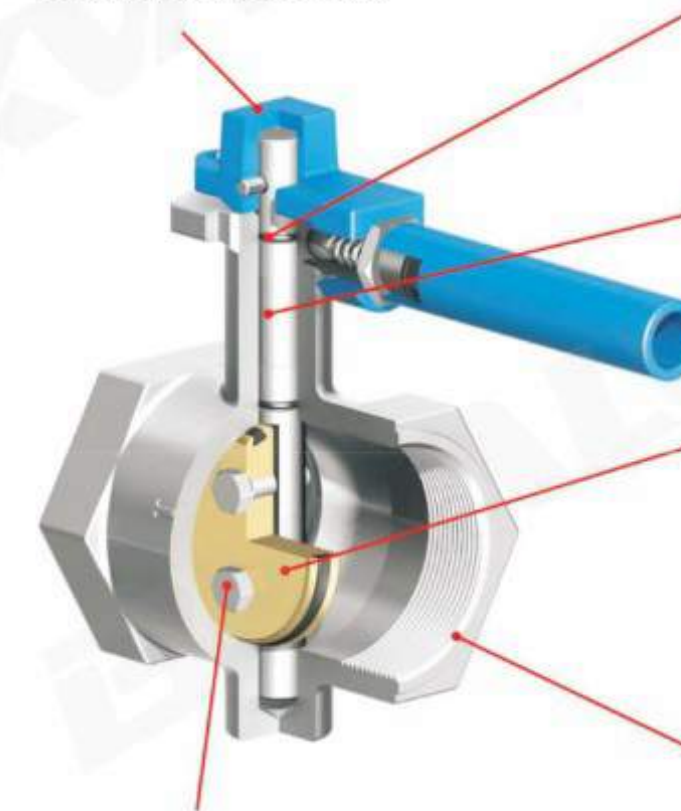
F500 series butterfly valves play a superior function in the aspect of anti condensation. Based on years of accumulation of technology and experience to develop a unique multi-level asymptotic contact seat, and integrated a number of other technology f500 series butterfly valve is more and more alternative other valves, has the advantages of simple construction, long life characteristics.

主要连接尺寸Main connection dimensions

公称压力 Nominal pressure		d	H	H1	H2	L	D	C		D1	kg
A	B							5K	10K		
40	1 1/2"	40	172	128	40	33	80	95	105	180	0.9
50	2"	50	176	132	66	43	93	105	120	180	1.3
65	2 1/2"	65	185	141	74	46	118	130	140	180	1.6
80	3"	80	193	149	83	46	129	145	150	180	1.8
100	4"	100	204	160	94	52	149	165	175	180	2.2
125	5"	125	249	195	122	56	184	200	210	230	4.1
150	6"	150	261	207	135	56	214	230	240	230	5.1

丝扣蝶阀 Thread Butterfly Valve

专用手柄：操作简单方便。
Special handle:
the operation is simple and convenient.



六角头螺栓：
该方式的板轴连接，可方便更换密封圈。

Hexagon headed bolt:
The plate shaft connection of the method can be convenient to replace the sealing ring.

"O" 型圈：阀轴双密封
"O" type: double seal valve shaft

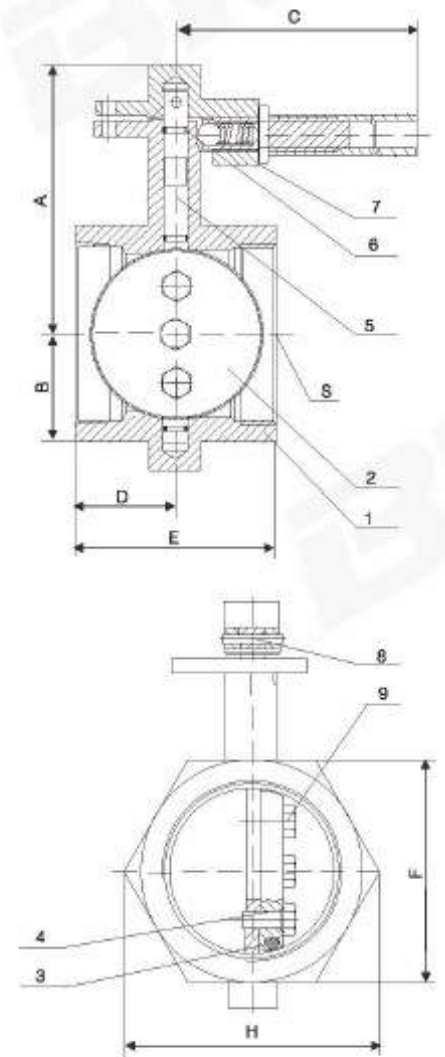
整体阀杆结构
整体性好，便于控制阀板启闭。
Integral valve stem structure
Good integrity, easy to control
valve plate opening and closing.

阀板：
标准抛光青铜阀板带有可替换的Buna N
"O" 型圈，也可采用氟橡胶 "O" 型圈，
阀板和阀轴 "O" 型圈都容易被替换。

Valve plate:
Standard polished bronze valve plate with
replaceable N O 'Buna' type ring, but also the
use of fluorine rubber 'O' type of ring, the valve
plate and the valve shaft 'O' ring is easy to
replace.

阀体：
阀体采用NPT螺旋与管道连接，可
节省安装空间；阀体电镀

Valve body:
The valve body is connected with the pipeline
by NPT spiral, which can save installation
space.



主要连接尺寸Main connection dimensions

规格 Size		A	B	C	D	E	F	H	S	重量 Weight(kg)
mm	inch									
DN50	2	105.41	57.15	203.2	53.98	107.95	76.2	87.9	2"-111/2NPT	4.8
DN80	3	152.91	69.85	203.2	61.72	123.7	103.12	119.1	3"-8NPT	7.1
DN105	4	161.04	93.73	203.2	65.02	130.05	134.87	155.7	4"-8NPT	10.1
DN150	6	231.24	120.65	330.2	88.9	177.8	196.85	277.3	6"-88NPT	21.8

主要连接尺寸Main connection dimensions

序号 No.	零件名称 Part name	材料名称 Material
1	阀体 Body	HT200 ASTM A126-84 CL B
2	阀板 Plate	ZCuZn40Pb2 ASTM B148-90 C95400
3	阀板O型圈 Plate O type ring	丁腈橡胶 NBR
4	O型圈 O type circle	丁腈橡胶 NBR
5	转轴 Shaft	Y1Cr13 416
6	转轴O型圈 Rotating shaft O type ring	丁腈橡胶 NBR
7	手柄操作杆 Handle lever	Q235-A Gr.33
8	圆锥销 Taper pin	35 035
9	六角头螺栓 Hexagon headed bolt	Y1Cr13 416

金属硬密封蝶阀概述

Hard Sealing Butterfly Valve Description

金属硬密封蝶阀概述

Hard Sealing Butterfly Valve Description

产品结构及性能简介 Introduction of product struture and performance

硬密封蝶阀(三维偏心)系列产品, 系我公司蝶阀系列中的主导型产品, 具有密封性能好、寿命长的特点。产品符合国家标准JB/T8527(金属密封蝶阀)、GB/T13927(工业阀门 压力试验)及阀门其它相关标准的规定。

本产品由阀体、蝶板、密封圈、传动机构等主要部件组成。其结构采用三维偏心原理设计, 弹性密封和硬软多层次密封兼容的加工新工艺, 使蝶阀在运行时, 减少其扭矩, 达到省力、节能之功效。同时确保蝶阀整体的抗腐蚀、耐高温、抗磨损的可靠性。其主要性能特点是:

- 1、结构独特, 型小轻便、操作灵活、省力、方便;
- 2、密封可靠, 可满足各级标准;
- 3、流量特性好, 且具有调节功能;
- 4、采用三偏心原理, 使密封面近似零磨损, 延长了阀门使用寿命;
- 5、应用范围广。如: 可用于水、蒸汽、油品、空气、煤气及其它酸碱介质等;
- 6、适用不同温度及6.4MPa以下的压力等级、腐蚀等各种工况之管线。

Hard sealing butterfly valve (three-dimensional) series of products, the Department of the leading products of our company butterfly valve series, with good sealing performance, long life characteristics. Products meet the national standard JB/T8527 (metal sealing butterfly valve), GB/T13927 (industrial valve pressure test) and other relevant standards of the valve.

This product is composed of valve body, butterfly plate, sealing ring, transmission mechanism and other major components. The structure of the utility model adopts the three-dimensional eccentric principle design, and the flexible sealing and the hard and soft multi-layer sealing are compatible with the new processing technology, so that the butterfly valve is in operation, and reduces the torque to achieve the effect of saving energy and saving energy. At the same time to ensure the overall corrosion of the butterfly valve, high temperature resistance, wear resistance. The main performance characteristics are:

- 1, the structure is unique, the type is small and light, the operation is flexible, labor saving, convenient;
- 2, sealed and reliable, can meet the standards at all levels;
- 3, the flow characteristic is good, and has the adjustment function;
- 4, using the three eccentric principle, so that the sealing surface to approximate zero wear, to extend the life of the valve;
- 5, a wide range of applications. Such as: can be used for water, steam, oil, air, gas and other acid and alkali media, etc.;
- 6, suitable for different temperature and 6.4MPa pressure level, corrosion and other conditions of the pipeline.

产品型号表示方法 Product model representation method

1 2 3 4 5 6 7

阀体材料代号: C-碳钢、P-不锈钢、R-铬镍钢

The code body material: C- carbon steel, P- stainless steel, R-chrome nickel steel

压力等级代号: 公称压力为MPa的10倍、磅级为实际数

Pressure rating code: nominal pressure of 10 times the MPa, the actual number of pounds

密封面为材料代号: W-本体、H-Cr13系列不锈钢、P-不锈钢

Sealing surface for the material code: W- body, H-Cr13 series stainless steel, P- stainless steel

结构形式代号: 3-偏心式

Structure of code: 3- eccentric

连接型式代号: 7-对夹式、4-法兰式、6-焊接式(预埋式)

Connection type code: 7- clamping type, 4- type, 6- type welding flange (embedded)

传动方式代号: 3-蜗轮传动、9-电动传动、6-气动传动、7-液动

Transmission code: 3- worm gear drive, electric drive, 9- 6-, 7- hydraulic pneumatic transmission

阀门类别代号: D-蝶阀

Category code: D- butterfly valve

如 Such as: D373H-16C

对夹式蜗轮传动硬密封蝶阀

Clamp type worm gear drive hard seal butterfly valve

压力等级1.6MPa

The pressure rating of 1.6MPa

D343H-16C

法兰式蜗轮传动硬密封蝶阀

Flange type worm gear transmission hard sealing butterfly valve

压力等级1.6MPa

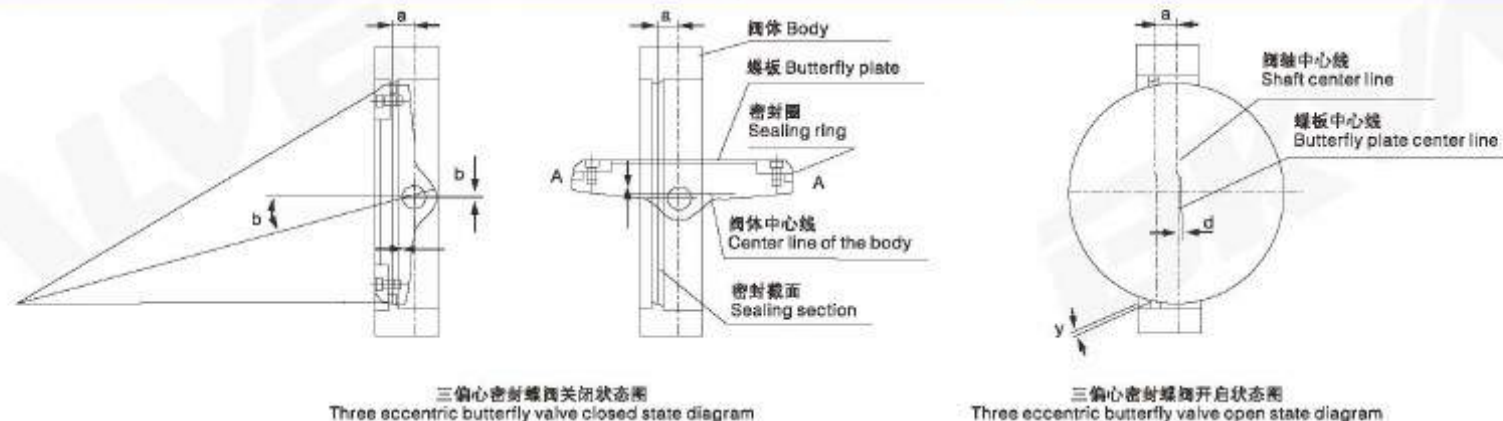
The pressure rating of 1.6MPa

产品用途 Application

本蝶阀适用于石油化工、电厂、钢厂、工业环保水处理、城市建设管道、食品、医药上作调节流量和可靠性截断流体最佳装置。

The butterfly valve is suitable for the best device of the oil and chemical industry, power plant, steel plant, industrial environmental protection water treatment, urban construction pipeline, food and medicine for regulating flow and reliability.

三偏心密封蝶阀密封副结构 Three eccentric butterfly valve seal sealing structure



三偏心由于在双片蝶阀的基础上将阀座中心线再与阀体中心线形成一个 β 角偏置, 使得蝶阀在启闭过程中, 碟板的密封面在开启瞬间立即脱离阀座密封面, 而在关闭瞬间才会接触并压紧阀座密封面。当完全开启时, 两密封面之间形成一个与双偏心密封蝶阀相同间隙Y, 该类蝶阀的设计, 彻底消除了两密封面之间的机械磨损损伤和擦伤, 使蝶阀的密封性能和使用寿命得到大大提高。阀门关闭时, 密封圈受阀体密封面各蝶板的挤压, 产生了两个方向的弹性变形。密封面在长轴方向上受到了向外的张力, 在短轴方向上受到向内的压应力, 长短轴产生不同方向的弹性形变。从而使阀门密封面间的密封力逐渐达到最大值。

这一独特的偏心组合, 即利用凸轮效应, 又完全消除了摩擦, 从而实现阀门90°行程中, 阀座与蝶板上的密封圈之间无摩擦, 去除了磨损和泄漏的可能。

Three eccentric in double disc butterfly valve will be the basis of the centerline of the valve seat again with the center line of the body form a beta angle bias due to, making the valve in the opening and closing process, edition disc sealing surface in the opening moments immediately from the valve seat sealing surface, and in the closing moments will contact and compress the valve seat sealing surface. When fully opened, between the two sealing surface formed with a double eccentric sealing butterfly valve of the same space Y, the kind of butterfly valve design, the complete elimination of the sealing surface between the mechanical grinding induced damage and abrasion, so that valve sealing performance and service life are greatly improved. The valve closed, the sealing ring by squeezing the valve sealing surface of the butterfly plate has two direction elastic deformation. The sealing surface by the outward tension in the direction of the long axis, under inward compressive stress in the short axis direction, the elastic deformation of long axis and short axis produced in different directions. So that the valve sealing surface of the sealing force gradually reached the maximum.

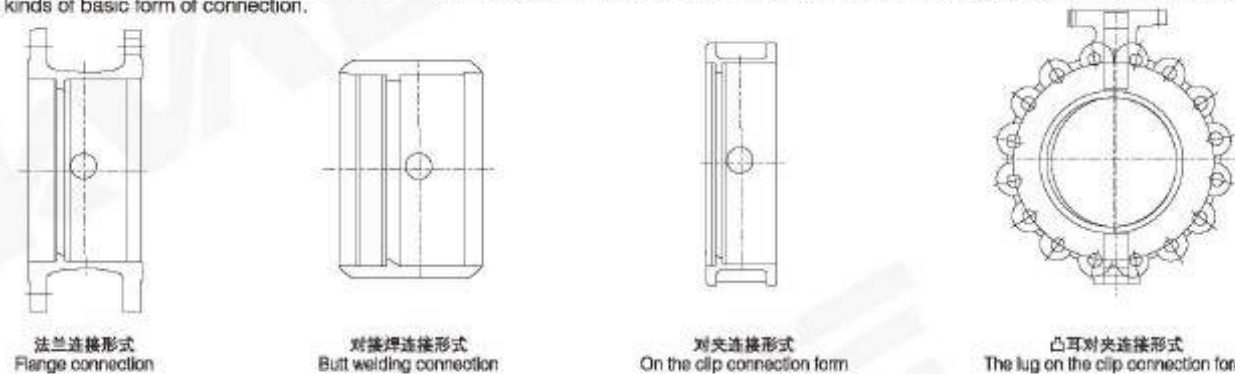
This unique eccentric combination, namely the use of cam effect, and completely eliminates friction, so as to realize the 90 degree valve stroke, no friction between the sealing ring and the valve seat disc, remove the wear and leakage may.

蝶阀是用来打开和关闭管道内介质流通或调节管道内介质流量。它们主要结构及特点如下:

The butterfly valve is used to open and close the medium circulation pipe or medium flow regulator pipe. The following are the main structure and characteristics:

1、结构简单、体积小、重量轻、安装尺寸小。根据体连接形式可对夹式(包括凸耳对夹式)、法兰连接和对焊连接三种基本连接形式。

1, simple structure, small volume, light weight, installation of small size. According to the connecting forms can be divided into clamping type (including lug wafer type), flanged and butt welding of three kinds of basic form of connection.

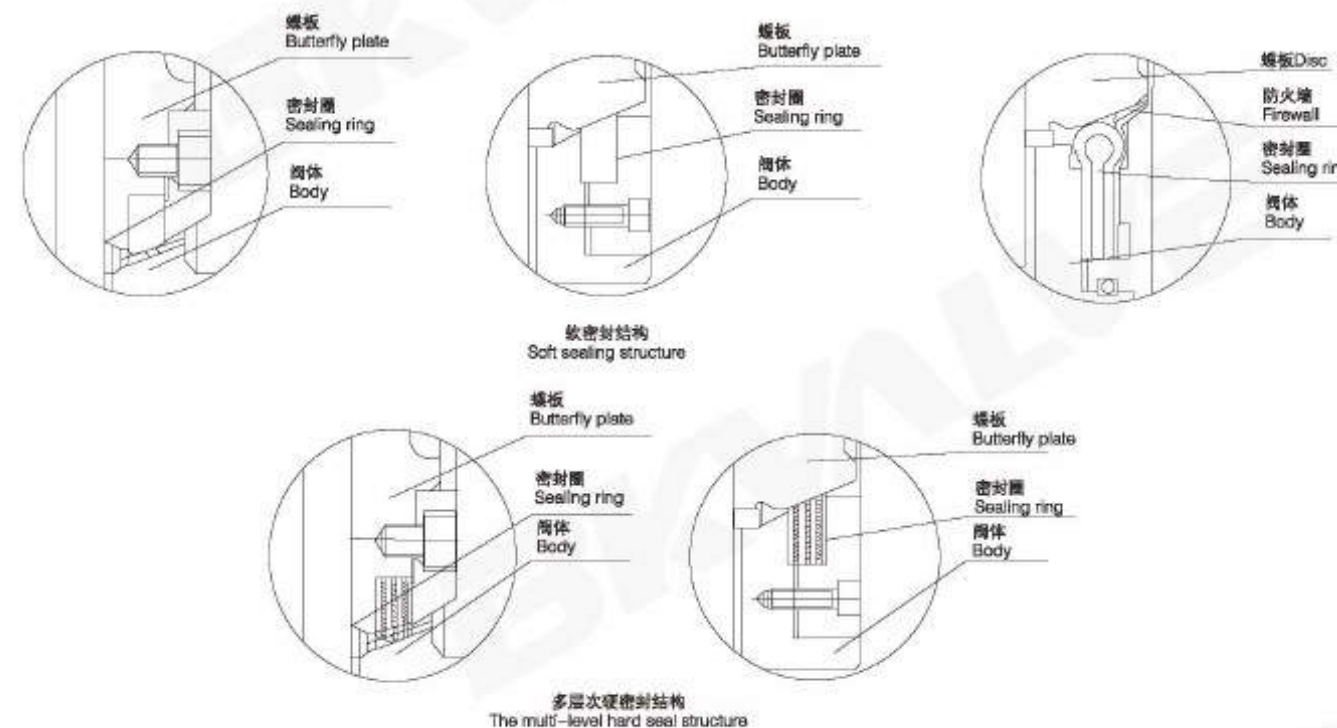


2、密封结构形式有多层次硬密封、整板式硬密封和弹性硬密封三种, 可用于各种不同工况, 且密封性能好, 使用寿命长。

1) 多层次硬密封和整板式硬密封蝶阀(分别见下图和右上图), 全部采用了三偏心、锥面密封结构形式, 密封副具有越关越紧的功能, 并能有效消除阀座上的结垢, 大锥角设计能承受600°C的高温。本系列蝶阀压力等级达到CLASS600。

2, seal structure has a multi-layer hard seal, the whole plate and elastic hard sealing seal three, can be used for a variety of different conditions, and good sealing performance, long service life.

1) Multi-layer hard seal and the whole board seal butterfly valve (see below and above right), in all the three eccentric, conical surface seal structure, sealing with more tightly related with the more functions, and can effectively remove the fouling on the seat, large cone angle design can withstand the high temperature of 600 degrees Celsius. This series of butterfly valve pressure rating up to CLASS600.



2) 弹性硬密封结构(见上图)采用J型金属密封圈结构, 适用于双偏心结构的蝶阀, 压力等级<CLASS300, 具有优良的密封性, 寿命长、易加工制造。

3、本系列蝶阀所有的密封部件均采用了防火设计, 即使着火后还能保证各个位置的密封性能。

4、蝶阀在完全开启的情况下, 流阻较小、部分开启的情况下能进行灵敏的流量控制。

5、驱动力矩小, 操作简便、迅速。

2) elastic seal structure (pictured above) using J type metal seal butterfly valve structure, suitable for double eccentric structure, pressure grade <CLASS300, with excellent sealing performance, long service life, easy processing and manufacturing.

3, All the sealing parts of this series are used in fire protection design of butterfly valve, even after the fire can ensure the sealing performance of each location.

4, The butterfly valve in the fully open condition, small flow resistance, partially open the case for sensitive flow control.

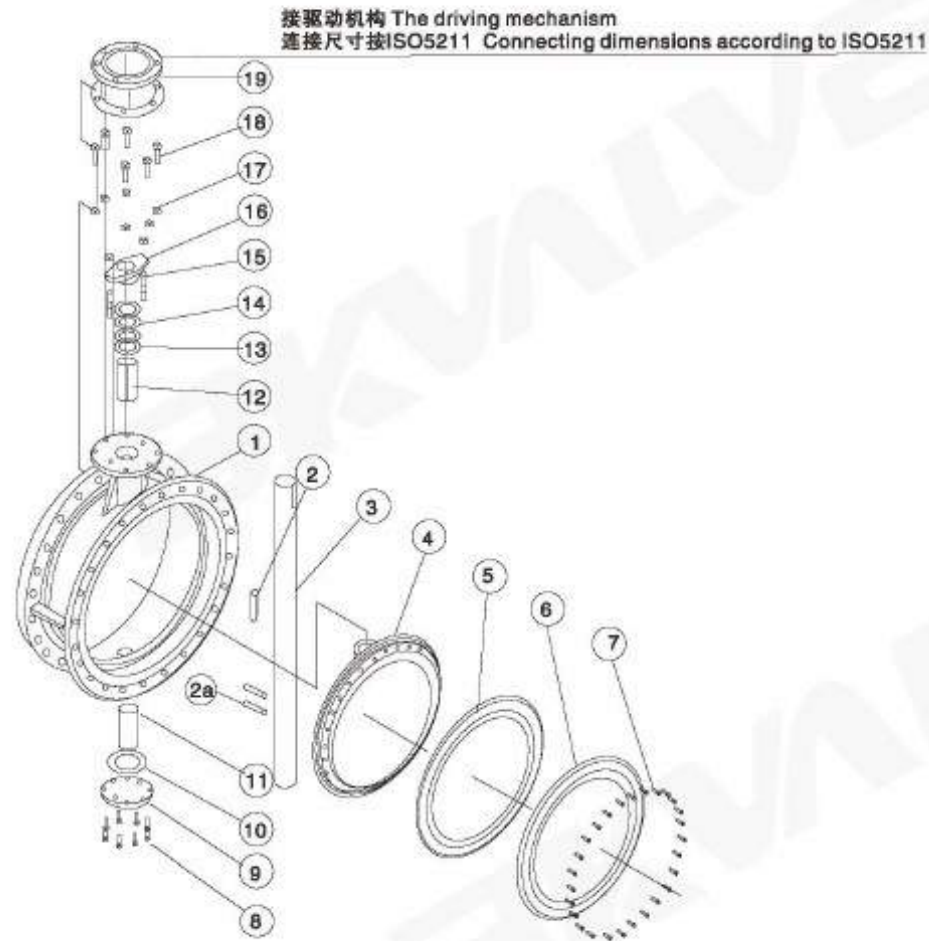
5, The driving torque is small, convenient and quick operation.

金属硬密封蝶阀概述

Hard Sealing Butterfly Valve Description

金属硬密封蝶阀概述

Hard Sealing Butterfly Valve Description



阀体连接型式三偏心蝶阀阀体与管道的连接有双法兰连接，对夹连接和凸耳对夹连接三种。
The valve connection type three eccentric butterfly valve and pipe connected with double flanged connection and clamping lugs on the clip connection three.

主要零部件材质 Materials of main parts

No.	零件名称 Part name	材料 Material Science	可选材料 Optional materials
1	阀体 Body	铸钢 Cast steel	不锈钢、蒙乃尔 Stainless steel, Meng Naier
2	键 Key	不锈钢 Stainless steel	不锈钢、蒙乃尔 Stainless steel, Meng Naier
2a	销轴 Pin shaft	不锈钢 Stainless steel	蒙乃尔 Meng Naier
3	阀杆 Stem	不锈钢 Stainless steel	不锈钢、蒙乃尔 Stainless steel, Meng Naier
4	蝶板 Butterfly plate	铸钢 Cast steel	不锈钢、蒙乃尔 Stainless steel, Meng Naier
5	密封圈 Sealing ring	PTFE+SS	SS+柔性石墨 Flexible graphite
6	压板圈 Platen	碳钢 Carbon steel	不锈钢、蒙乃尔 Stainless steel, Meng Naier
7	螺钉 Screw	B7	不锈钢 Stainless steel
8	螺栓 Bolt	B7	不锈钢 Stainless steel
9	底盖 Bottom cover	碳钢 Carbon steel	不锈钢、蒙乃尔 Stainless steel, Meng Naier
10	垫片 Shim	SS+柔性石墨 SS+ flexible graphite	
11	下轴套 Under the sleeve	聚四氟乙烯+黄铜 PTFE + bronze	自润滑黄铜 Self lubricating brass
12	上轴套 On the sleeve	聚四氟乙烯+黄铜 PTFE + bronze	自润滑黄铜 Self lubricating brass
13	填料垫 Packing	不锈钢 Stainless steel	不锈钢、蒙乃尔 Stainless steel, Meng Naier
14	填料 Packing	柔性石墨 Flexible graphite	TPFE
15	螺栓 Bolt	B7	不锈钢 Stainless steel
16	填料压套 Packing set	不锈钢 Stainless steel	不锈钢 Stainless steel
17	螺母 Nut	2H	不锈钢 Stainless steel
18	螺栓 Bolt	B7	不锈钢 Stainless steel
19	连接支架 Connecting bracket	碳钢 Carbon steel	-

提示：1、壳体材料压力温度等级表见附录F
2、壳体材料化学成分及力学性能见附录G
3、内件材料及推荐服务范围见附录E

Tips: 1, Shell material pressure temperature rating table in Appendix F
2, The material chemical composition and mechanical properties of the shell see Appendix G
3, In a range of materials and services recommended in Appendix E

产品简介 Product introduction

对夹式金属密封蝶阀是本厂研制开发的三偏心结构型金属密封的蝶阀，此产品具有安全可靠、流阻系数小，耐高温，适用于腐蚀性介质等特点。可作为调节和截止装备，广泛应用于蒸汽、热水、水、油品、煤气、天然气、化工、酸碱盐等工艺管路中。

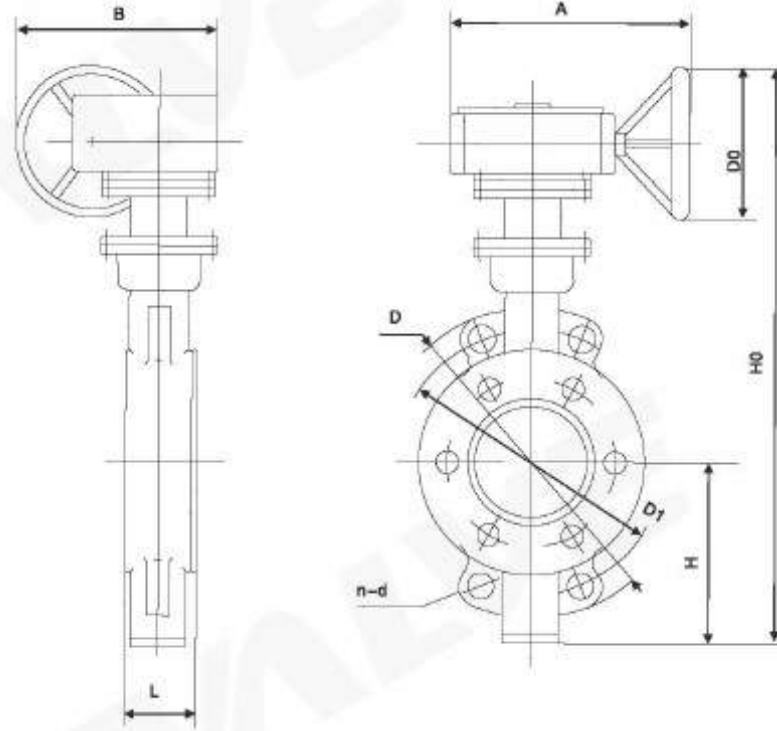
The clip type metal seal butterfly valve butterfly valve three eccentric metal structure is developed by this factory sealed, this product is safe and reliable, small coefficient of flow resistance, high temperature resistance, suitable for corrosive medium and so on. As the adjusting and stopping equipment, widely used in the process of steam, hot water, water, oil, gas, natural gas, chemical, acid alkali and salt in the pipeline.

产品特点 Feature

- 设计合理、结构紧凑、启闭迅速；
Reasonable design, compact structure, rapid opening and closing;
- 采用三偏心金属复合锥斜切结构，可达到泄露为零；
The three eccentric metal composite cone oblique structure, can achieve zero leakage;
- 开启力矩小，密封副无摩擦转动，阀门使用寿命长；
Small open torque, rotating the valve sealing friction, long service life;
- 更换阀体材质和密封圈复合夹层可适用不同介质；
Different body materials and seal ring composite sandwich suitable for different medium;
- 合理的锥楔设计确保均匀接触性密封。
Wedge design to ensure reasonable uniform contact seal.

执行标准 Performance standard

- 该产品制造和验收技术条件符合JB/8527-97《金属密封蝶阀》标准。
The product manufacture and acceptance requirements in accordance with JB/8527-97 'metal sealing butterfly valve' standard.
- 侧法兰连接符合GB9115.6-10-88《钢制管法兰国家标准》规定。
The lateral flange connection with GB9115.6-10-88 'national standards' provisions of steel pipe flanges.
- 结构长度符合GB12221-89《法兰连接金属阀门结构长度》中对夹式蝶阀短，中系列结构长度标准。
The length of the structure with GB12221-89 'flange connection metal valve structure length' in the clip on butterfly valve in series structure short length standard.

D3/6/973H/Y/W型对夹式金属密封蝶阀
Hard Sealing Wafer Butterfly Valve

主要性能参数 Main performance parameters

公称压力 Nominal pressure PN(MPa)	公称通径 Nominal diameter DN(mm)	试验压力(MPa) Test pressure		适用温度 Temperature ℃	型号 Model						
		壳体 Housing	密封 Seal up								
1.0	50-1600	1.5	1.1	≤400℃	D73H-10C	D373H-10C	D73H-10P	D373H-10P	D73H-10R	D373H-10R	
1.6	50-1200	2.4	1.76		D73H-16C	D373H-16C	D73H-16P	D373H-16P	D73H-16R	D373H-16R	
2.5	50-1000	3.75	2.75		D73H-25C	D373H-25C	D73H-25P	D373H-25P	D73H-25R	D373H-25R	
驱动方式 Driving method					手柄传动 Handle driving	蜗轮蜗杆传动 Worm drive	手柄传动 Handle driving	蜗轮蜗杆传动 Worm drive	手柄传动 Handle driving	蜗轮蜗杆传动 Worm drive	
适用介质 Suitable medium					水、汽、油品 Water, steam, oil		硝酸类腐蚀介质 Nitric acid corrosion medium		醋酸类腐蚀介质 Acetic acid corrosion medium		
气动蝶阀型号 Pneumatic butterfly valve type					在相应的手动型号D后插入“6”， 示例：D673H-16C In the manual model D is inserted after '6', for example: D673H-16C						
电动蝶阀型号 Electric butterfly valve type					在相应的手动型号D后插入“9”， 示例：D973H-16C In the manual model D is inserted after '9', for example: D973H-16C						

主要零部件材质 Materials of main parts

零件名称 Part name	阀体 Body	阀板 Plate	密封圈 Sealing ring	转轴 Shaft	填料 Filler
材料 Material Science	铸钢、碳钢、不锈钢 Cast steel, carbon steel, stainless steel	铸钢、不锈钢 Cast steel, stainless steel	不锈钢、不锈钢+石墨 Stainless steel, stainless steel and graphite	不锈钢 Stainless steel	聚四氟乙烯、柔性石墨 PTFE, flexible graphite

D3/6/973H/Y/W型对夹式金属密封蝶阀
Hard Sealing Wafer Butterfly Valve

主要连接尺寸 Main connection dimensions

PN1.0/2.5MPa

公称压力 NP(MPa)	公称通径 DN(mm)	尺寸 size(mm)									
		L	D1	D	n-d	H	H0	A	B	D0	(kg)
PN1.0	50	43	125	165	4-18	115	418	200	200	160	13
	65	46	145	185	4-18	125	442	200	200	160	16
	80	64	160	200	8-18	130	453	220	200	160	21
	100	64	180	220	8-18	145	475	240	200	160	26
	125	70	210	250	8-18	175	522	260	200	160	31
	150	76	240	285	8-22	180	638	280	280	240	35
	200	89	295	340	8-22	215	705	320	280	240	41
	250	114	350	395	12-22	250	775	360	280	240	54
	300	114	400	445	12-22	290	955	460	420	310	65
	350	127	460	505	16-22	305	990	500	420	310	100
	400	127	515	565	16-26	340	1070	540	420	310	180
	450	140	565	615	20-26	380	1145	580	420	310	210
	500	152	620	670	20-26	410	1200	620	420	310	250
	600	154	725	780	20-30	480	1350	660	420	310	370
	700	165	840	895	24-30	535	1550	750	550	400	460
	800	190	950	1015	24-33	590	1665	800	550	400	590
PN1.6	900	203	1050	1115	28-33	630	1726	850	550	400	730
	1000	216	1160	1230	28-36	690	1965	1000	750	500	920
	1200	254	1380	1455	32-39	875	2360	1050	750	500	1200
	1400	279	1590	1675	36-42	975	2560	1050	750	600	1600
	1600	318	1820	1915	40-48	1100	2780	1050	750	600	2100
	50	43	125	165	4-18	115	418	200	200	160	15
	65	46	145	185	4-18	125	442	200	200	160	17
	80	64	160	200	8-18	130	453	220	200	160	23
	100	64	180	220	8-18	145	475	240	200	160	28
	125	70	210	250	8-18	175	522	260	200	160	34
	150	76	240	285	8-22	180	638	280	280	240	38
	200	89	295	340	12-22	215	705	320	280	240	44
	250	114	355	405	12-22	250	775	360	280	240	58
	300	114	410	460	16-26	290	955	460	420	310	73
	350	127	470	520	16-30	305	990	500	420	310	150
	400	127	525	580	20-30	340	1070	540	420	310	240
PN2.5	450	140	585	640	20-33	380	1145	580	420	310	280
	500	152	650	715	20-36	410	1200	620	420	310	350
	600	154	770	840	24-36	480	1350	660	420	310	470
	700	165	840	910	24-39	535	1550	750	550	400	600
	800	190	950	1025	28-39	590	1665	800	550	400	700
	900	203	1050	1125	28-42	630	1725	850	550	400	840
	1000	216	1170	1255	28-42	690	1965	1000	750	500	1100
	1200	254	1390	1485	32-48	875	2360	1050	750	500	1300
	50	43	125	165	4-18	112	260	200	200	160	15
	65	46	145	185	8-18	115	280	200	200	160	17
	80	64	160	200	8-18	120	355	220	200	160	23
	100	64	190	235	8-22	140	390	240	230	160	28
	125	70	220	270	8-26	170	490	260	200	160	35
	150	76	250	300	8-26	180	630	260	280	240	40
	200	89	310	360	12-26	210	690	320	280	240	50
	250	114	370	425	12-30	240	830	360	280	240	68

D3/6/943H/Y/W型法兰金属硬密封蝶阀
Hard Sealing Flange Butterfly ValveD3/6/943H/Y/W型法兰金属硬密封蝶阀
Hard Sealing Flange Butterfly Valve

产品简介 Product introduction

本蝶阀适用于食品、饮料、医药、化工等纯净管路及工业环保、水处理、高层建筑、给排水管路作为启闭或调节介质流量之用。
This butterfly valve is suitable for food, beverage, pharmaceutical, chemical and other industrial pure pipeline and environmental protection, water treatment, high-rise buildings, water supply and drainage pipeline as a hoist or adjust the medium flow in.

主要零部件材质 Materials of main parts

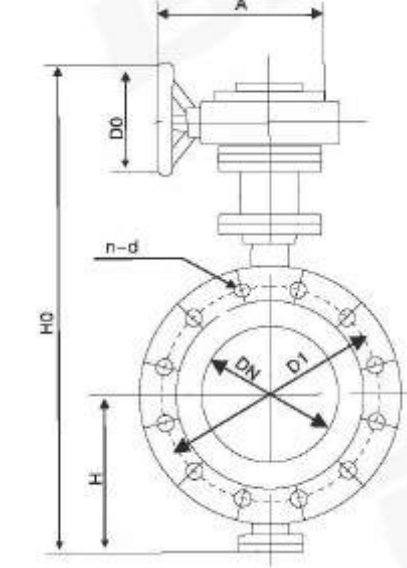
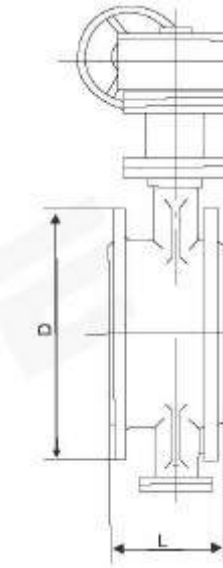
零件名称 Part name	材料 Material
阀体 Body	HT250 WCB ZG1Cr18Ni9Ti 12CrMoV ZG1Cr18Ni12Mo2Ti
阀板 Plate	QT500-7 WCB ZG1Cr18Ni9Ti 12CrMoV ZG1Cr18Ni12Mo2Ti
阀杆 Stem	2Cr13 1Cr18Ni9Ti 1Cr18Ni12Mo2Ti
密封圈 Sealing ring	1Cr18Ni9Ti 304 316
填料 Filler	柔性石墨 Flexible graphite

执行标准 Performance standard

结构长度 The length of the structure	法兰连接尺寸 Connecting flange size	压力试验 Pressure test
GB12221-89	GB9113.3-88 GB9115.8-88 GB9115.9-88	GB/T13927-92 JB/T8527-97

主要性能参数 Main performance parameters

公称口径 Nominal diameter DN(mm)	公称压力 Nominal pressure PN(MPa)	试验压力 Test pressure		适用温度℃ Applicable temperature	适用介质 Suitable medium
		壳体 Housing	密封 Seal up		
50-2000	1.0	1.5	1.1	X: ≤80 F: ≤180 H: ≤300	水、蒸汽、油品、 海水、酸类 Water, steam, oil, Sea water, acid
	1.6	2.4	1.76		



主要连接尺寸 Main connection dimensions

PN1.0MPa

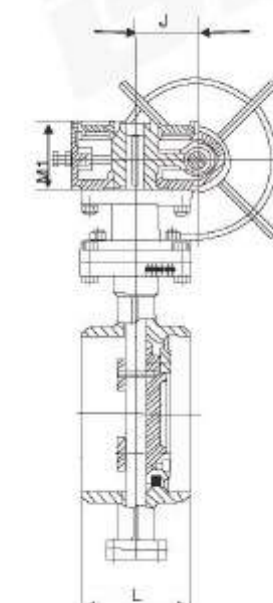
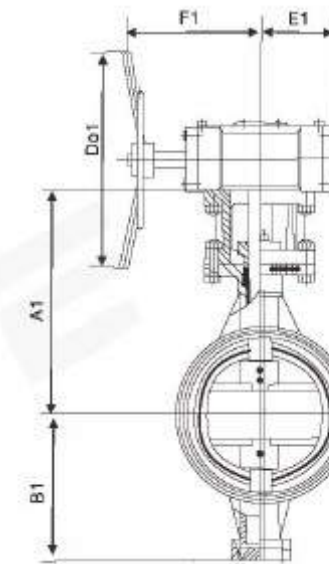
公称压力 PN(MPa)	公称通径 DN(mm)	尺寸 size(mm)											重量 Weight(kg)
		L	D1	D	n-d	H	H0	A	A1	B	B1	D0	
PN1.0	50	108	125	165	4-18	125	435	128	53	130	53	160	30
	65	112	145	185	4-18	130	439	128	53	130	53	160	37
	80	114	160	200	8-18	140	475	128	53	130	53	160	45
	100	127	180	220	8-18	155	495	128	53	130	53	160	74
	125	140	210	250	8-18	180	535	128	53	130	53	160	100
	150	140	240	285	8-22	195	645	178	84	195	84	230	110
	200	152	295	340	8-22	220	703	178	84	195	84	230	150
	250	165	350	395	12-22	240	765	178	84	195	84	230	190
	300	178	400	445	12-22	285	948	209	110	258	110	300	230
	350	190	460	505	16-22	315	1005	209	110	258	110	300	290
	400	216	515	565	16-26	355	1078	269	150	319	150	350	350
	450	222	565	615	20-26	385	1175	269	150	319	150	350	450
	500	229	620	670	20-26	430	1240	269	150	319	150	350	550
	600	267	725	780	20-30	505	1375	269	150	319	150	350	710
	700	292	840	895	24-30	525	1536	340	201	425	201	450	850
	800	318	950	1015	24-33	585	1656	340	201	425	201	450	1100
	900	330	1050	1115	28-33	635	1761	421	238	355	238	450	1300
	1000	410	1160	1230	28-36	705	2110	421	238	355	238	500	1600
	1200	470	1380	1455	32-39	835	2910	421	238	355	238	500	1980
	1400	530	1590	1675	36-42	975	2560					600	2840
	1600	600	1820	1915	40-48	1100	2780					600	4500
	1800	670	2020	2115	44-48								5800
	2000	760	2230	2325	44-48								

D3/6/943H/Y/W型法兰金属硬密封蝶阀
Hard Sealing Flange Butterfly ValveD3/6/963H/Y/W型对焊连接金属密封蝶阀
Hard Sealing Butt-welding Butterfly Valve

主要连接尺寸 Main connection dimensions

PN1.6/4.0MPa

公称压力 PN(MPa)	公称口径 DN(mm)	尺寸 size(mm)											重量 Weight(kg)
		L	D1	D	n-d	H	H0	A	A1	B	B1	D0	
PN1.6	50	108	125	165	4-18	125	435	128	53	130	53	160	30
	65	112	145	185	4-18	130	439	128	53	130	53	160	37
	80	114	160	200	8-18	140	475	128	53	130	53	160	45
	100	127	180	220	8-18	155	495	128	53	130	53	160	75
	125	140	210	250	8-18	180	535	128	53	130	53	160	105
	150	140	240	285	8-22	195	645	178	84	195	84	230	115
	200	152	295	340	12-22	220	703	178	84	195	84	230	160
	250	165	355	405	12-26	240	765	178	84	195	84	230	220
	300	178	410	460	12-26	285	948	209	110	258	110	300	260
	350	190	470	520	12-26	315	1005	209	110	258	110	300	340
	400	216	525	580	16-30	355	1078	269	150	319	150	350	410
	450	222	585	640	20-30	385	1175	269	150	319	150	350	490
	500	229	650	715	20-33	430	1240	269	150	319	150	350	600
	600	267	770	840	20-36	505	1375	269	150	319	150	350	780
	700	292	840	910	24-36	525	1536	340	201	425	201	450	960
	800	318	950	1025	24-39	585	1656	340	201	425	201	450	1150
PN2.5	900	330	1050	1125	28-39	635	1761	421	238	355	238	450	1500
	1000	410	1170	1255	28-42	705	2110	421	238	355	238	500	1800
	1200	470	1390	1485	32-48	835	2910	421	238	355	238	500	2300
	50	108	125	165	4-18	125	592	297	121	192	116	-	50
	65	112	145	185	8-18	130	600	297	121	192	116	-	58
	80	114	160	200	8-18	140	720	297	121	192	116	-	65
	100	127	190	235	8-22	155	740	297	121	192	116	-	105
	125	140	220	270	8-26	190	803	297	121	192	116	-	120
	150	140	250	300	8-26	205	860	360	225	290	116	-	140
	200	152	310	360	8-26	235	930	360	225	290	116	-	180
	250	165	370	425	12-30	268	995	360	225	290	116	-	260
	300	178	430	485	16-30	295	1107	360	225	290	116	-	340
	350	190	490	555	16-33	332	1235	469	225	327	186	-	450
	400	216	550	620	16-36	365	1275	469	233	327	186	-	590
	450	222	600	670	20-36	390	1350	469	233	327	186	-	660
	500	229	660	730	20-36	430	1470	524	386	345	203	-	780
PN4.0	600	267	770	845	20-39	505	1600	524	386	345	203	-	1100
	700	292	875	980	24-42	540	1800	524	386	345	203	-	1200
	800	318	990	1085	24-48	603	-	-	-	-	-	-	1600
	900	330	1090	1185	28-48	653	-	-	-	-	-	-	1900
	1000	410	1210	1320	28-56	720	-	-	-	-	-	-	2300
	50	108	125	165	4-18	125	682	297	121	192	116	-	55
	65	112	145	185	8-18	130	690	297	121	192	116	-	65
	80	114	160	200	8-18	140	720	297	121	192	116	-	80
	100	127	190	235	8-22	150	750	297	121	192	116	-	110
	125	140	220	270	8-26	190	813	360	225	290	116	-	128
	150	140	250	300	8-26	205	870	360	225	290	116	-	150
	200	152	320	375	12-30	235	930	360	225	290	116	-	190
	250	165	385	450	12-33	280	1020	360	225	290	186	-	272
	300	178	450	515	16-33	315	1168	469	233	327	186	-	350
	350	190	510	580	16-36	350	1260	469	233	327	186	-	465
	400	216	585	660	16-39	390	1380	524	233	345	203	-	605
	450	222	610	685	20-39	403	1450	524	386	345	203	-	680
	500	229	670	755	20-42	430	1510	524	386	345	203	-	810



产品简介 Product introduction

本系列蝶阀采用蜗轮传动，操作轻便并具有自锁功能。
应用先进的三偏心结构设计(径向偏心、轴向偏心和角度偏心)，采用先进的工艺方法和专用的工艺装备加工制造，确保了零件精度和装配精度。保证了密封付的全部锥面吻合，完全消除了密封面间的干涉与磨损。因此，开关阻力小、密封可靠、密封面磨损小，整机工作寿命长。
本产品广泛应用于冶金、石化、炼油、给排水工程等行业中。

This series of butterfly valve adopts worm gear drive, easy to operate and has the self-locking function.
Three eccentric structure design and application of advanced (radial eccentricity, axial and eccentric eccentric angle), using advanced processes and special processing technology and equipment manufacturing, to ensure the accuracy and precision of parts assembly. To ensure the sealing cone all pay agreement, to eliminate the interference and wear of the sealing surface to ask completely. Therefore, the switch resistance, reliable sealing, sealing surface wear, the long working life.
The products are widely used in metallurgy, petrochemical, oil refining, water supply and drainage engineering etc..

产品特点 Feature

本蝶阀适用于高温、高压、防火、保温等管道上作后闭或调节介质之用。
其主要特点如下：
结构紧凑、体积小、重量轻、操作灵活、使用方便；
采用三偏心弹性或多层硬密封结构，其密封性能可靠达到零泄漏；
此阀无法兰，对管道的保温包扎带来很大方便和美观；
具有耐高温、高压、耐腐蚀、耐磨损等优点。

The butterfly valve is suitable for high temperature, high pressure, fire protection, heat insulation and other pipes for the use of closed or regulating media.
Its main features are as follows:
Compact structure, small size, light weight, flexible operation, easy to use;
The sealing performance of the three-dimensional eccentric elastic or multi layer hard sealing structure is reliable to achieve zero leakage;
The valve has no flange, which brings great convenience and beauty to the heat insulation of the pipeline;
With high temperature resistance, high pressure, corrosion resistance, wear resistance and other advantages.

主要零部件材质 Materials of main parts

零件名称 Part name	材料 Material
阀体 Body	铸钢、不锈钢、铬钼钢及特殊材料 Cast steel, stainless steel, chrome molybdenum steel and special materials
蝶板 Disc	铸钢、合金钢(镀硬铬)、不锈钢、铬钼钢及特殊材料 Cast steel, alloy steel (Du Yinggang), stainless steel, chrome molybdenum steel and special materials
密封圈 Sealing ring	不锈钢、抗磨材料 Stainless steel, wear-resistant material
阀杆 Stem	2Cr13、1Cr13不锈钢、铬钼钢 2Cr13, 1Cr13 stainless steel, chrome molybdenum steel
填料 Packing	柔性石墨 Flexible graphite

主要性能参数 Main performance parameters

公称口径 Nominal diameter	DN(mm)	80~2400				
公称压力 Nominal pressure	PN(MPa)	0.6	1.0	1.6	2.5	4.0
试验压力 Test pressure (MPa)	强度试验 Strength test	0.9	1.5	2.4	3.75	6.0
	密封试验 Seal test	0.66	1.1	1.76	2.75	4.4
	气密封试验 Air-tight seal test	0.6	0.6	0.6	0.6	0.6
适用介质 Suitable medium	水、蒸汽、油品酸类腐蚀性等 Water, steam, oil, corrosive acids etc.					
适用温度 Applicable temperature	碳钢: -29℃~425℃ 不锈钢: -40℃~600℃ Carbon steel: -29℃~425℃ stainless steel: -40℃~600℃					

D3/6/963H/Y/W型对焊连接金属密封蝶阀
Hard Sealing Butt-welding Butterfly Valve美标硬密封对焊蝶阀
API Standard Hard Sealing Butt Welded Butterfly Valve

主要连接尺寸 Main connection dimensions

PN1.0/1.6MPa

公称压力PN(MPa) Nominal pressure	蜗轮蜗杆传动 worm drive									电动 Electric				气动 Pneumatic					重量 weight(kg)		
	DN	L	A1	B1	M1	E1	F1	J	Do1	A2	B2	E2	F2	A3	B3	E3	F3	M3	蜗轮	电动	气动
PN1.0	80	180	203	125	75	90	205	83	200	203	125	475	505	203	125	93	282	110	-	-	-
	100	190	208	130	75	90	205	83	200	208	130	475	505	208	130	93	282	110	-	-	-
	125	200	218	140	75	90	205	83	200	218	140	475	505	218	140	115	344	140	-	-	-
	150	210	285	155	95	90	205	83	200	285	155	475	505	285	155	115	344	140	58	73	-
	200	230	320	180	95	90	205	83	200	320	180	475	505	320	180	150	450	187	76	91	-
	250	250	349	220	95	90	205	83	200	349	220	475	505	349	220	290	762	270	115	130	-
	300	270	398	250	115	90	205	83	200	398	250	475	505	398	250	290	762	270	145	165	-
	350	290	417	275	115	90	205	83	200	417	275	475	505	417	275	330	900	305	185	205	-
	400	310	455	315	134	90	205	83	250	455	315	566	505	455	315	370	1084	350	245	265	-
	450	330	480	340	134	90	205	83	250	480	340	566	545	480	340	370	1084	350	315	335	-
	500	350	512	375	159	120	265	141	315	512	375	615	545	512	375	405	1182	390	375	395	-
	600	390	636	425	159	120	265	141	315	562	425	615	545	562	425	405	1182	390	510	530	-
	700	430	706	490	163	185	250	115	315	636	490	820	520	636	490	500	1442	470	770	790	-
	800	470	756	550	163	185	250	115	315	706	550	820	545	706	550	630	1865	500	1070	1090	-
	900	510	816	600	185	185	250	115	315	756	600	945	545	756	600	-	-	-	1435	1455	-
	1000	550	944	650	185	245	400	145	315	846	650	945	545	816	650	-	-	-	1745	1755	-
PN1.6	1200	630	1084	775	220	310	460	191	400	944	775	1140	545	944	775	-	-	-	2725	2745	-
	1400	710	1204	895	220	310	460	191	400	1084	895	1337	545	1084	895	-	-	-	3510	3550	-
	1600	790	1395	1025	220	410	555	270	400	1204	1025	1337	545	1204	1025	-	-	-	4470	4510	-
	1800	870	1449	1095	320	520	640	351	400	1395	1095	1337	545	1395	1095	-	-	-	4945	-	-
	2000	950	1569	1195	320	520	640	351	400	1449	1195	1337	715	1449	1195	-	-	-	6230	-	-
	2200	1000	1325	1325	320	520	640	351	400	1569	1325	1443	715	1569	1325	-	-	-	-	-	-
	2400	1100	1445	1445	320	520	640	351	400	1704	1445	1443	845	1704	1445	-	-	-	-	-	-
	80	180	203	125	115	90	205	83	200	203	125	475	505	203	125	115	344	140	27	45	-
	100	190	208	130	115	90	205	83	200	208	130	475	505	208	130	115	344	140	34	57	-
	125	200	218	140	115	90	205	83	200	218	140	475	505	218	140	150	450	187	41	63	-
	150	210	285	155	115	90	205	83	200	285	155	475	505	285	155	290	762	270	43	71	-
	200	230	309	180	115	90	205	83	200	309	180	475	505	309	180	290	762	270	81	83	-
	250	250	343	220	134	90	205	83	250	343	220	475	505	343	220	330	900	305	102	126	-
	300	270	368	245	134	90	205	83	250	368	245	475	505	368	245	370	1084	350	132	151	-
	350	290	401	275	159	120	265	141	250	401	275	566	505	401	275	370	1084	350	164	195	-
	400	310	443	300	159	120	265	141	250	443	300	566	545	443	300	405	1182	390	193	273	-
	450	330	469	340	163	185	250	115	315	469	340	615	545	469	340	405	1182	390	238	790	-
	500	350	501	375	163	185	250	115	315	501	375	615	507	501	375	500	1442	470	302	414	-
	600	390	606	440	185	245	400	145	315	606	440	820	545	606	440	630	1865	500	457	545	-
	700	430	686	500	185	245	400	145	315	684	500	820	545	-	-	-	-	-	810	825	-
	800	470	734	550	220	310	460	191	400	734	550	945	545	-	-	-	-	-	1093	1005	-
	900	510	794	625	220	310	460	191	400	794	625	945	545	-	-	-	-	-	1410	1560	-
	1000	550	874	690	255	410	555	270	400	874	690	1140	545	-	-	-	-	-	1870	1910	-
	1200	630	1049	795	255	410	555	270	400	1049	795	1140	545	-	-	-	-	-	2082	2450	-
	1400	710	1204	945	320	520	640	351	400	1204	945	1337	545	-	-	-	-	-	2850	3250	-
	1600	790	1324	1065	320	520	640	440	630	1324	1065	1423	270	-	-	-	-	-	4235	4400	-
	1800	870	1395	1095	335	520	785	440	630	1395	1095	1423	270	-	-	-	-	-	5346	5670	-
	2000	950	1449	1195	335	520	785	440	630	1449	1195	1423	270	-	-	-	-	-	7328	7565	-
	2200	1000	1569	1325	335	450	785	440	630	1569	1325	1423	270	-	-	-	-	-	-	-	-
	2400	1100	1704	1445	335	450	785	440	630	1705	1445	1423	270	-	-	-	-	-	-	-	-

注：1、阀门的结构长度按照ISO5752的14系列。2、焊接端坡口按GB/T12224的规定。
Note: 1, face to face in accordance with the 14 series ISO5752. 2, groove welding end according to the provisions of GB/T12224.

产品特点 Feature

本蝶阀适用于高温、高压、防火、保温等管道上作启闭或调节介质之用。其主要特点如下：
The butterfly valve is suitable for high temperature, high pressure, fire protection, heat preservation and other pipelines for opening or closing or regulating the media. Its main features are as follows:

- 1 结构紧凑、体积小、重量轻、操作灵活、使用方便；
compact structure, small size, light weight, flexible operation, easy to use;
- 2 采用三维偏心弹性或多层次硬密封结构，其密封性能可靠达到零泄漏；
using three-dimensional eccentric elastic or multi-level hard sealing structure, its sealing performance is reliable to zero leakage;
- 3 此阀无法兰，对管道和保温包扎带来很大方便和美观；
this valve has no flange, the pipe and insulation to bring a lot of convenience and beautiful;
- 4 具有耐高温、高压、耐腐蚀、耐磨损等特点。
with high temperature, high pressure, corrosion resistance, wear resistance and other characteristics.

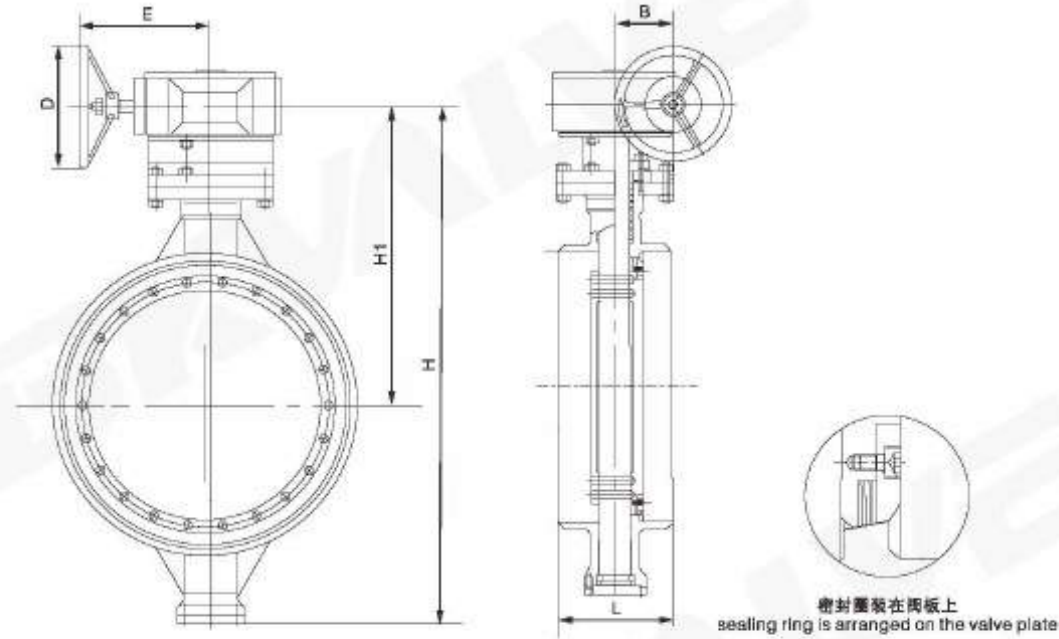
执行标准 Performance standard

设计和制造 Design and manufacture	API 609	法兰端尺寸 Flange size	ISO 5052 Series 13
温压等级 Temperature and pressure level	ASEM B16.34	对焊端尺寸 Butt weld size	ASME B16.25
结构长度 Face to face	API 598		

性能规范 Performance specification

压力等级 Pressure rating	常温试验压力(Mpa) Test pressure at room temperature			适用温度 Applicable temperature	适用介质 Applicable medium
	壳体试验 Shell test	高压密封 High pressure seal	低压密封 Low pressure seal		
150	2.93	2.07	0.6	-46℃~550℃(不同的工况温度选用不同的材质) (different temperature conditions use different materials)	水、油、气及各类腐蚀性介质(不同的介质选用不同的材质) Water, oil, gas and other corrosive media (different media use different materials)
磅(LB)	300	5.52	0.6		
600	15.0	11.03	0.6		

美标硬密封对焊蝶阀 API Standard Hard Sealing Butt Welded Butterfly Valve



主要连接尺寸 Main connection dimensions

Class150Lb

NPS	L	H1	H	E	B	D	重量(kg) Weight
3"	114	295	430	198	84	200	32
4"	127	305	460	198	84	200	35
6"	140	366	536	211	84	250	43
8"	152	396	594	267	145	250	60
10"	165	429	660	254	114	315	90
12"	178	483	752	254	114	315	107
14"	190	498	795	404	145	315	153
16"	216	579	912	404	145	315	207
18"	222	630	996	404	191	315	267
20"	229	655	1049	465	191	400	327
24"	267	744	1196	465	191	400	473
28"	292	790	1301	465	191	400	653
30"	308	815	1351	559	269	400	760
32"	318	874	1451	559	269	400	1033
36"	330	899	1501	559	269	400	1200

主要连接尺寸 Main connection dimensions

Class300Lb

NPS	L	H1	H	E	B	D	重量(kg) Weight
3"	114	295	427	198	84	200	34
4"	127	358	508	198	84	200	44
6"	140	389	577	254	114	315	73
8"	152	417	638	254	114	315	132
10"	165	465	717	404	145	315	151
12"	178	546	836	404	145	315	257
14"	190	579	897	465	191	400	286
16"	216	642	1010	465	191	400	416
18"	222	673	1069	465	191	400	497
20"	229	701	1123	559	269	400	571
24"	267	775	1270	559	269	400	881
28"	292	904	1463	648	351	400	1320
30"	308	963	1557	648	351	400	1478
32"	318	1054	1671	648	351	400	1699
36"	330	1161	1837	805	429	630	2379

美标硬密封对夹蝶阀 API Standard Hard Sealing Wafer Butterfly Valve

产品特点 Feature

- 1 三向偏心的独特设计使密封面之间无摩擦传动，延长了阀门使用寿命。
Three to the unique design of the eccentric sealing surface friction between the drive to extend the service life of the valve.
- 2 由扭矩产生弹性密封。
The torque generated by the elastic sealing.
- 3 巧妙的楔形设计使阀门有越关越紧的自动密封功能，密封面之间具有补偿性、零泄漏。
Clever wedge design makes the valve with automatic sealing function is closed tightly, with compensatory, zero leakage between the sealing surface.
- 4 体积小、重量轻、操作轻巧、便于安装。
Small volume, light weight, easy operation, easy to install.
- 5 可根据用户要求配置气动、电动装置，满足遥控和程控的需要。
Can be configured according to user requirements of pneumatic and electric device, to meet the needs of remote control and program control.
- 6 更换零件材质可适用于各种介质，并可进行衬里防腐(衬F46、GXPP、PO等)。
Replacement parts can be applied to various dielectric materials, and the anti-corrosion lining (lining F46, GXPP, PO etc.).

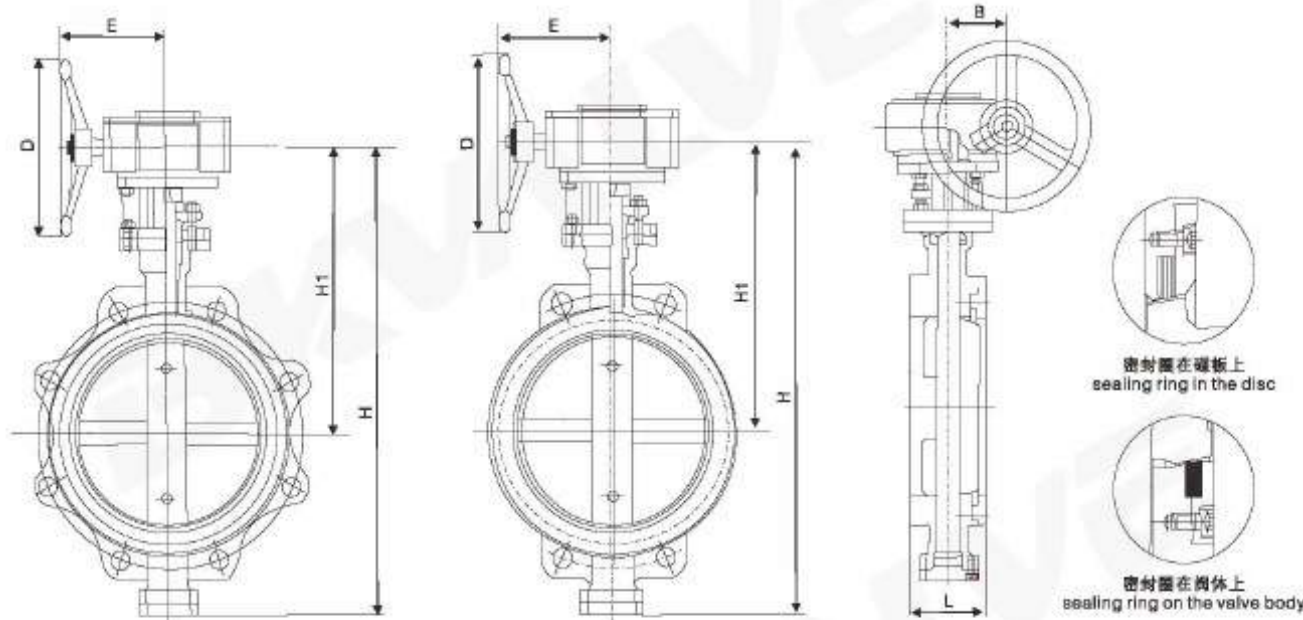
执行标准 Performance standard

设计和制造 Design and manufacture	API 609	法兰连接尺寸 Flange size
温压等级 Temperature and pressure level	ASEM B16.34	口径Size≤24" to 根据 ANSI B16.5
结构长度 Length of the structure	API 609 Series B	口径Size>24" to 根据 ANSI B16.47 Series B

性能规范 Performance specification

压力等级 Pressure rating	常温试验压力(Mpa) Test pressure at room temperature			适用温度 Applicable temperature	适用介质 Applicable medium
	壳体试验 Shell test	高压密封 High pressure seal	低压密封 Low pressure seal		
150	2.93	2.07	0.6	-46℃~550℃(不同的工 况温度选用不同的材质) (different temperature conditions use different materials)	水、油、气及各类腐蚀性介质(不同 的介质选用不同的材质) Water, oil, gas and other corrosive media (different media use different materials)
磅(LB) 300	7.58	5.52	0.6		
600	15.0	11.03	0.6		

美标硬密封对夹蝶阀 API Standard Hard Sealing Wafer Butterfly Valve



主要连接尺寸 Main connection dimensions

Class150Lb

NPS	L	H	H1	E	B	D	重量(kg) Weight	
							WF	WL
3"	48	320	185	140	63	160	9	9
4"	54	342	195	140	63	160	11	14
6"	57	415	243	140	63	300	17	20
8"	64	510	263	150	84	400	25	31
10"	71	567	295	150	84	400	40	49
12"	81	665	342	200	108	600	61	79
14"	92	739	385	200	108	600	82	107
16"	102	825	430	240	152	600	123	150
18"	114	910	469	240	152	800	204	253
20"	127	990	500	300	168	800	150	182
24"	154	1210	618	320	192	800	300	398
30"	167	1453	875	512	279	400	454	490
36"	184	1775	939	512	279	400	762	771

主要连接尺寸 Main connection dimensions

Class300Lb

NPS	L	H	H1	E	B	D	重量(kg) Weight	
							WF	WL
3"	48	320	185	140	63	160	13.5	15.5
4"	54	342	195	140	63	160	18	21
6"	59	415	243	140	63	300	28	34
8"	73	510	263	150	84	400	49	60
10"	83	567	295	150	84	400	68	88
12"	92	665	342	200	108	600	109	117
14"	117	739	385	200	108	600	186	207
16"	133	825	430	240	152	600	264	308
18"	149	910	469	240	152	800	297	408
20"	159	990	500	300	168	800	363	468
24"	181	1210	618	320	192	800	454	748
30"	254	1937	1180	512	279	600	816	1338
36"	305	2198	1298	570	368	600	1429	2154

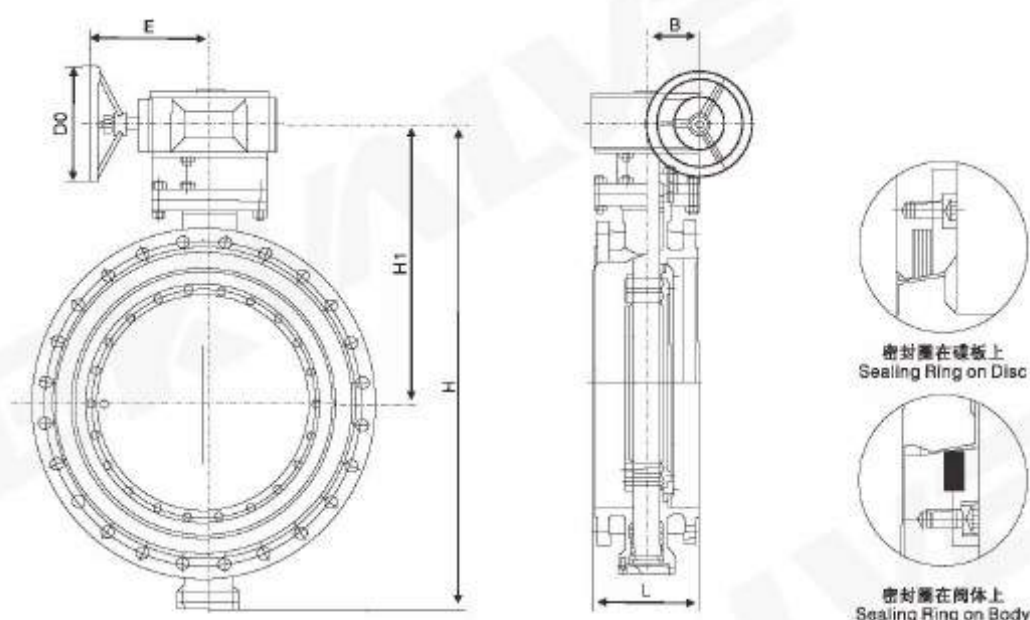
美标硬密封法兰蝶阀 API Standard Hard Sealing Flange Butterfly Valve

执行标准 Performance standard

设计和制造 Design and manufacture		API 609	试验和检验 Test and inspection	API 598
温压等级 Temperature and pressure level		ASEM B16.34	口径Size≤24"to 根据 ANSI B16.5	
结构长度 Face to face	短结构 Short structure	ISO5752 basic series 13	法兰连接尺寸 Flange size	口径Size>24" to 根据 ANSI B16.47 Series B
	长结构 Long structure	ASME B16.10	防火制造 Fireproofing	API 607

性能规范 Performance specification

压力等级 Pressure rating		常温试验压力(Mpa) Test pressure at room temperature			适用温度 Applicable temperature	适用介质 Applicable medium
		壳体试验 Shell test	高压密封 High pressure seal	低压密封 Low pressure seal		
磅(LB)	150	2.93	2.07	0.6	-46℃~550℃(不同的工况温度选用不同的材质) (different temperature conditions use different materials)	水、油、气及各类腐蚀性介质(不同的介质选用不同的材质) Water, oil, gas and other corrosive media (different media use different materials)
	300	7.58	5.52	0.6		
	600	15.0	11.03	0.6		

美标硬密封法兰蝶阀
API Standard Hard Sealing Flange Butterfly Valve高性能对夹式蝶阀
High Performance Wafer Butterfly Valve

主要连接尺寸 Main connection dimensions

Class150Lb

NPS	短结构 Short structure	长结构 Long structure	H	H1	B	E	D0	重量(kg) Weight
3"	114	203	472	350	50	203	203	15.4
4"	127	229	520	386	60	191	203	23
6"	140	267	653	475	67	289	305	33
8"	152	292	773	565	67	308	460	50
10"	165	330	880	640	86	346	460	73
12"	178	356	989	710	111	403	610	108
14"	190	381	1044	760	60	601	356	143
16"	216	406	1142	826	60	605	457	186
18"	222	432	1228	887	60	652	610	234
20"	229	457	1337	959	60	805	762	277
24"	267	508	1554	1109	103	763	762	408
28"	292	610	1456	956	245	400	315	653
30"	308	610	1541	991	310	460	400	816
32"	318	660	1611	1036	310	460	400	914
36"	330	711	1743	1103	410	480	400	1157

主要连接尺寸 Main connection dimensions

Class300Lb

NPS	短结构 Short structure	长结构 Long structure	H	H1	B	E	D0	重量(kg) Weight
3"	180	282	378	253	73	229	152	29
4"	190	305	421	274	73	229	305	39
6"	210	403	543	351	108	354	305	54
8"	230	419	628	392	108	354	305	84
10"	250	457	855	480	133	305	610	118
12"	270	502	812	515	133	305	610	170
14"	290	762	885	555	194	256	610	231
16"	310	838	951	590	194	356	356	299
18"	330	914	1106	636	194	356	356	390
20"	350	991	1308	685	194	356	356	499
24"	390	1143	1445	934	165	686	686	726
28"	-	-	1495	1039	165	686	686	1360
30"	-	-	1535	1060	165	686	686	1429
32"	-	-	1575	1120	165	686	686	1757
36"	-	-	1605	1190	165	686	686	2223

产品特点 Feature

1

阀门用于需要双向密封、频繁启闭、高可靠性要求的管道系统，特别适用于食品、饮料、医药、化工等纯净管路和石化、电力、冶金、交通、大型建筑等领域的重要管道，作启闭或调节介质流量用。

Valve used for that require two-way sealing, frequent opening and closing, high reliability requirements of pipeline systems, especially for in an important channel for food, beverage, pharmaceutical, chemical and other pure pipeline and petrochemical, electric power, metallurgy, transportation, large-scale construction and other fields, for opening and closing or regulating media flow.

2

阀门采用高性能复合材料密封副，或者堆焊合金钢密封副，耐腐蚀、零泄漏、长寿命。独特的浮动阀座结构确保了阀门的双向密封，彻底解决了偏心蝶阀只能单向密封的问题。本阀门既有三偏心蝶阀的所有优点，又具有高可靠的双向密封性能。

The valve adopts high performance composite sealing material, or welding alloy steel sealing, corrosion resistance, zero leakage, long life. The unique floating seat structure to ensure that the two-way sealing valve, completely solve the problem of the one-way eccentric butterfly valve seal. This valve has all the advantages of the three eccentric butterfly valve, and has high sealing performance and reliable two-way.

3

阀门有通用对夹式和凸耳对夹式二种连接方式；有蜗轮手动、电动机启动三种驱动方式可供用户选择。选用电动蝶阀应在合同中注明所有需要配件明细，气动装置由电磁换向阀、气源三元件、信号盒、手动机构、定位器等配件可供选用。

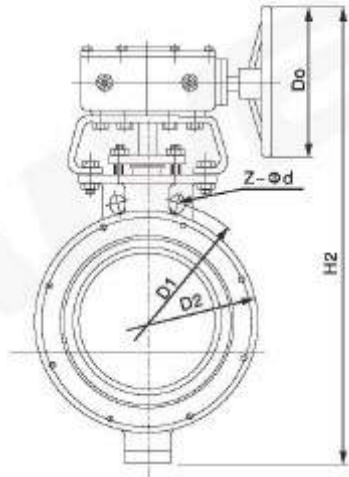
The valve has the universal wafer and lug wafer type two connection; gear manual, motor starting three driving modes for choice of users. The selection of electric butterfly valve should be indicated in the contract all the necessary accessories details, a pneumatic device by electromagnetic reversing valve, gas components, signal box, manual mechanism locator and other accessories available for selection.

主要性能参数 Main performance parameters

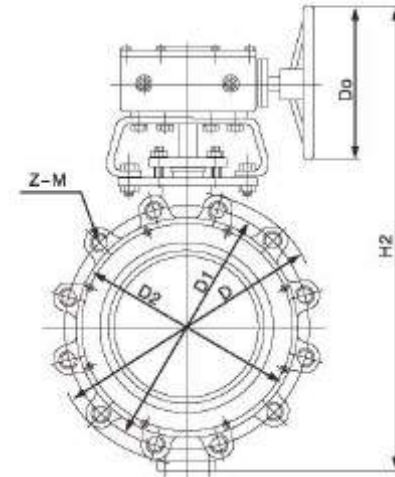
型号 model	3 GD675 9	H G	10C 16C 25C	3 GD675 9	H G	10C 16C 25C	3 GD675 9	H G	10P(R) 16P(R) 25P(R)
适用介质 Suitable medium	水、蒸气、油品等 Water, steam, oil etc.			水、蒸气、油品等 Water, steam, oil etc.			腐蚀性介质、纯净介质 The corrosive medium, pure medium		
适用温度 Applicable temperature	≤200℃			≤200℃			≤200℃		
材料 Material									
阀体 Body	WCB			WCB			不锈钢 stainless steel CF8; ZG1Cr18Ni9Ti		
蝶板 Disc	WCB			WCB			不锈钢 stainless steel CF8; ZG1Cr18Ni9Ti		
密封圈 Ring	高性能复合材料 High performance composite materials			密封面堆焊Cr13合金 The sealing surface surfacing Cr13 alloy			G型-高性能复合材料 H型-不锈钢304 (316)		
阀杆 Stem	不锈钢: 2Cr13 Stainless steel			不锈钢: 2Cr13 Stainless steel			不锈钢 stainless steel 304; 1Cr18Ni9Ti (316)		
填料 Packing	柔性石墨 Flexible graphite			柔性石墨 Flexible graphite			柔性石墨、聚四氟乙烯 Flexible graphite, PTFE		

高性能对夹式蝶阀 High Performance Wafer Butterfly Valve

高性能对夹式蝶阀 High Performance Wafer Butterfly Valve



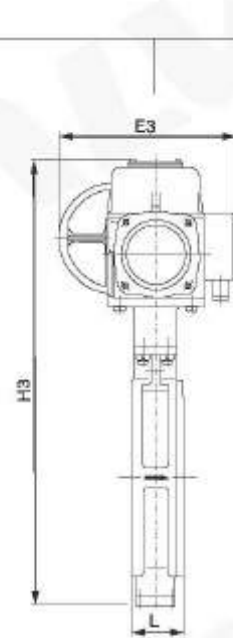
图Figure-1
通用对夹式GD375型结构图
General wafer type GD375 structure diagram



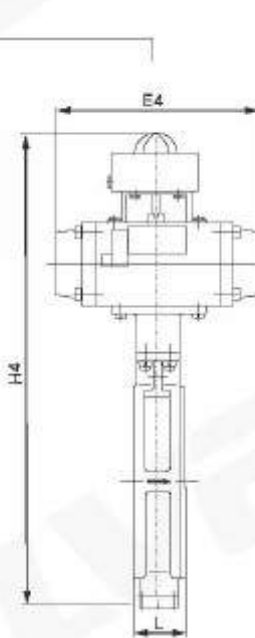
图Figure-2
凸耳对夹式GD375型结构图
Structure diagram of lug wafer type GD375



图Figure-3
蜗轮手动GD375型
Worm gear manual GD375



图Figure-4
电动GD975型
Electric GD975



图Figure-5
气动GD675型
Pneumatic GD675

执行标准 Performance standard

设计与制造 Design and manufacture	JB/8527、GB/T12238, 也可按用户要求 Can also be according to user requirements
结构长度 Face to face	GB/T12221
法兰连接尺寸 Connecting flange size	GB/T9113.1
压力试验 Pressure test	GB/T13927 JB/T9092

主要性能参数 Main performance parameters

公称通径 Nominal diameter		DN50~800	DN50~800	DN50~800
公称压力 Nominal pressure		PN10	PN16	PN25
试验压力 (Mpa) Test pressure	壳体强度 Shell	1.5	2.4	3.8
	气体密封 Gas seal	双向0.6 two-way	双向0.6 two-way	双向0.6 two-way
	高压密封 High pressure seal	主向1.1 The Lord	主向1.8 The Lord	主向2.8 The Lord
工作压力(MPa) Working pressure		≤0.1	≤1.6	≤2.5

主要连接尺寸 Main connection dimensions

DN	PN	L	对夹连接法兰 Fitting the flange					蜗轮手轮 Worm wheel			重量 Weight	电动 Electric		气动 Pneumatic	
			D	D1	D2	Z-Φd	凸耳式螺孔 Z-M Lug screw hole	D0	E2	H2	DHT375 重量kg	E3	H3	E4	H4
50	10/16 /25	43	165	125	99	4-18	4-M16	160	185	418	13	308	575	185	443
65	10/16	46	185	145	118	4-18	4-M16	160	185	446	16	308	600	185	467
	25	46	185	145	118	8-14	8-M16	160	185	446	17	308	600	240	473
80	10/16	49	200	160	132	8-18	8-M16	160	185	453	23	308	610	240	495
	25	49	200	160	132	8-18	8-M16	160	185	453	23	308	610	285	525
100	10/16	56	220	180	156	8-18	8-M16	160	185	475	28	308	630	285	540
	25	56	235	190	156	8-22	8-M20	160	185	475	28	308	630	340	598
125	10/16	64	250	210	184	8-18	8-M16	160	185	522	34	308	680	340	622
	25	64	270	220	184	8-26	8-M24	160	185	522	35	308	680	340	622
150	10/16	70	285	240	211	8-22	8-M20	230	280	590	38	308	760	340	685
	25	70	300	250	211	8-26	8-M24	230	280	590	40	406	830	445	718
200	10	71	340	295	266	8-22	8-M20	230	280	650	41	308	805	340	750
	16	71	340	295	266	12-22	12-M20	230	280	650	44	406	895	445	785
250	10	71	360	310	274	12-26	12-M24	230	280	650	50	406	895	445	785
	16	76	395	350	319	12-22	12-M20	230	280	720	54	308	965	690	943
300	16	76	405	355	319	12-26	12-M24	300	375	760	63	406	1050	690	943
	25	76	425	370	330	12-30	12-M27	300	375	760	68	406	1050	690	943
350	10	83	445	400	370	12-22	12-M20	300	375	836	70	406	1107	690	1000
	16	83	460	410	370	12-26	12-M24	300	375	836	73	406	1107	690	1000
400	25	83	485	430	389	16-30	16-M27	300	375	836	80	406	1107	690	1000
	10	92	505	460	429	16-22	16-M20	300	375	990	96	406	1140	690	1035
450	16	92	520	470	429	16-26	16-M24	300	375	990	110	406	1140	690	1035
	25	92	555	490	448	16-33	16-M30	300	375	990	120	513	1200	820	1076
500	10	102	565	515	480	16-26	16-M24	350	400	1080	125	406	1220	690	1115
	16	102	580	525	480	16-30	16-M27	350	400	1080	135	513	1256	820	1170
550	25	102	620	550	503	16-36	16-M33	350	400	1080	150	513	1256	820	1170
	10	114	615	565	530	20-26	20-M24	350	400	1150	190	513	1285	820	1235
600	16	114	640	585	548	20-30	20-M27	350	400	1150	210	513	1285	820	1235
	25	114	670	600	548	20-36	20-M33	350	400	1150	230	513	1285	1200	1280
650	10	127	670	620	582	20-26	20-M24	400	496	1230	240	513	1370	820	1340
	16	127	715	650	609	20-33	20-M30	400	496	1230	270	513	1370	820	1340
700	25	127	730	660	609	20-36	20-M33	400	496	1230	290	548	1430	1200	1385
	10	154	780	725	682	20-30	20-M27	400	496	1360	370	513	1525	820	1480
750	16	154	840	770	720	20-36	20-M33	450	637	1440	460	548	1585	1200	1530
	25	154	845	770	720	20-39	20-M36	450	637	1440	490	548	1585	1200	1530
800	10	165	895	840	794	24-30	24-M27	450	637	1550	460	548	1735	1380	1645
	16	165	910	840	794	24-36	24-M33	450	637	1550	600	548	1735	1380	1645
850	10	190	1015	950	901	24-33	24-M30	450	637	1665	590	548	1880	1380	1760
	16	190	1025	950	901	24-39	24-M36	450	637	1665	700	548	1880	1380	1760