



2013 EDITION



# 法兰式偏心蝶阀 Eccentric Flanged Butterfly Valve



- 适用压力 Applicable Pressure: PN0.6~6.4MPa
- 适用规格 Applicable Size: DN100~4000
- 适用温度 Applicable Temperature: -10℃~120℃
- 主体材质 Body Material: 球墨铸铁、镍铬铸铁、碳钢、不锈钢、铝青铜  
Ductile iron, Nickel chromium cast iron, Carbon steel, Stainless steel, Aluminum bronze,
- 传动方式 Driving: 涡轮传动、气动、电动、液动控制  
Gear, Pneumatic, Electric, Hydraulic control

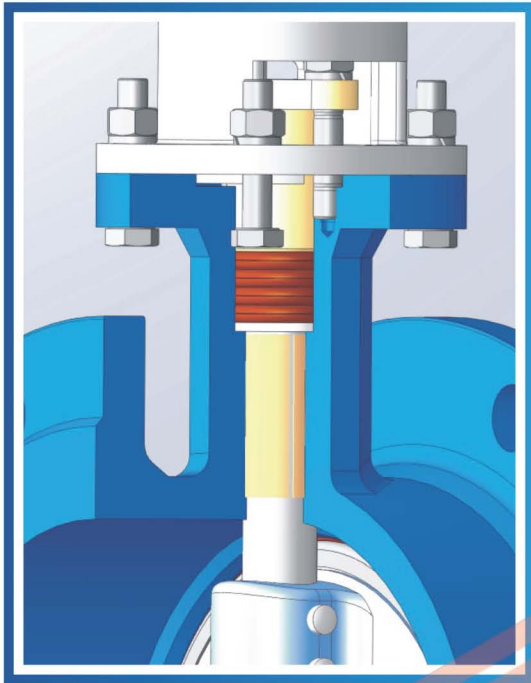
## A leader

*In Valve Technology*

天津塘沽瓦特斯阀门有限公司  
TIANJIN TANGGU TWT VALVE CO., LTD.

[www.twtvalve.com](http://www.twtvalve.com)

## DB系列软密封偏心法兰蝶阀 产品特性



### ■专利技术 带压在线修复设计

通过外置注入口对阀门内部密封面在使用中的正常磨损或因管道杂质造成的轻微损伤进行调整，无需拆卸管道，实现带压在线修复。

### ■更长久使用寿命

与普通蝶阀相比，DB型蝶阀内部无机械（紧固件）连接，无机械连接失效的可能，可靠性高，更能适应较恶劣的工况。

充填环氧树脂工艺使阀板与阀座的整个接触面上有相同的过盈量，消除机加工及装配误差，比压均匀，降低操作扭矩，减少密封面的磨损。

偏心结构设计，在开启和关闭阀门时密封面瞬间脱离，减少摩擦，延长密封使用寿命。

### ■更优质的阀杆与轴承

采用优质不锈钢阀杆，完全被O型圈和轴承所包覆，耐腐蚀。自润滑、套管式的轴承用于阀体的轴座上，轴承支撑阀杆，使阀杆在旋转时产生的摩擦最小。

### ■高性能抗气蚀设计

橡胶密封圈镶嵌在阀板上，阀板外缘包箍不锈钢环，无任何的销孔或紧固件，耐冲刷，抗气蚀能力强。

### ■更高的CV值（阀板结构）

阀板采用桁架结构设计，相对之前传统的阀板形状既减轻了重量，又提高了强度，同时又能保持一个较大的自由流通面积，增加流量系数，减少水头损失，降低对阀门自身的冲刷。

### ■更紧密的连接（圆锥销）

阀板和阀杆之间采用不锈钢圆锥销，使阀板和阀杆之间达到最紧密的连接，防止出现振颤。

### ■更耐腐的喷涂工艺（环氧树脂静电喷涂）

采用环氧树脂静电喷涂，高性能耐腐蚀，更能适应恶劣工况，延长使用寿命。

### ■更可靠的技术保证

使用Solidworks、CAD软件对阀门进行整体设计，采用有限元分析方法对阀门各部件的刚度和强度进行分析，对总体结构进行系统优化，保障了阀门更长久使用寿命。

## DB Series Soft Sealing Eccentric Butterfly Valve Flange, The Characteristics Of The Product

### ■ Patent technology on-line repair design with pressure

Through the external injection port on the valve sealing surface in use in normal wear or because of the pipeline caused minor damage magazine undertakes adjustment, without removing the pipeline with pressure, realize the online repair.

### ■ More long life

Compared with common butterfly valve, DB type butterfly valve has no mechanical (fasteners) connection, no mechanical connection failure happen , high reliability, it can better serve in the severe conditions.

Filled epoxy resin process so that the valve seat plate and the entire contact surface have the same magnitude of interference, eliminate machining and assembly errors, than the uniform pressure, reduce operating torque, reducing the wear of the sealing surface.

Eccentric structure design, in the opening and closing valve sealing surface instantaneous detachment, reduce friction, prolonging the service life of the seal.

### ■ Design of high performance stem and stem brushing

Uses the high quality stainless steel, was completely O ring and bearing coating, corrosion resistance. Self lubricating, sleeve type bearing used for the valve body of the shaft seat, bearing support stem, the stem rotates in the minimum friction.

### ■ Better stem and bearing

Rubber sealing ring is mounted on the valve body, the valve plate outer hoop stainless steel ring, no pin hole or fasteners, erosion resistant, anti cavitation ability.

### ■ Higher values of CV (valve plate)

The valve disc adopts the truss structure design, relative to traditional before the valve plate shape not only lightens the weight, but also improve the intensity, but also can keep a larger increase in free flow area, flow coefficient, reduce the loss, to reduce the flushing valve.

### ■ A closer connection (taper pin)

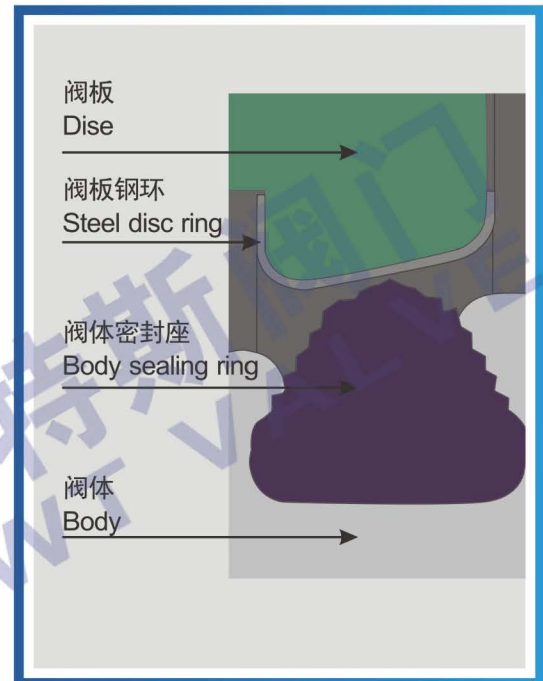
The stainless steel taper pin is fixed between disc and the valve stem to make sure the valve plate and the valve stem to the most closely connected, prevent vibration.

### ■ A corrosion-resistant coating process (epoxy electrostatic spraying)

Using epoxy resin, electrostatic spraying, high performance corrosion resistance, better adapted to the harsh working conditions, to extend the service life.

### ■ More reliable technical guarantee

The use of Solidworks, CAD software on the valve for the overall design, using finite element analysis method of valve parts of the stiffness and strength analysis, on the overall structure of system optimization, ensure long service life of the valve.



## DC系列软密封偏心法兰蝶阀 产品特性

### ■ n型密封设计

n型不锈钢环带镶嵌于阀体上，能长久防腐蚀，并能防止因水流速度不稳而引发的振颤及由此导致的紧固件松动、脱落而造成的阀门失效。

### ■ 简易而有效的维护

一体式360°压圈，无论管道应力如何变化，均可通过调整压圈实现双向关闭，且阀座未与阀板粘合，无需特殊工具即可对阀板密封圈进行在线更换。

### ■ 高强度阀杆及自润滑轴承

不锈钢阀杆伸入阀板长度为1.5倍阀杆直径，与阀板紧密配合。  
自润滑、非金属材质的轴承，摩擦系数极小，有效降低了操作扭矩，避免了金属电化学腐蚀。

### ■ 独特的偏心结构

偏心结构设计，独特的阀座与阀板外缘轮廓，有效减小操作扭矩，同时减少与阀座的接触，提高密封可靠性。

### ■ 拱式阀板设计

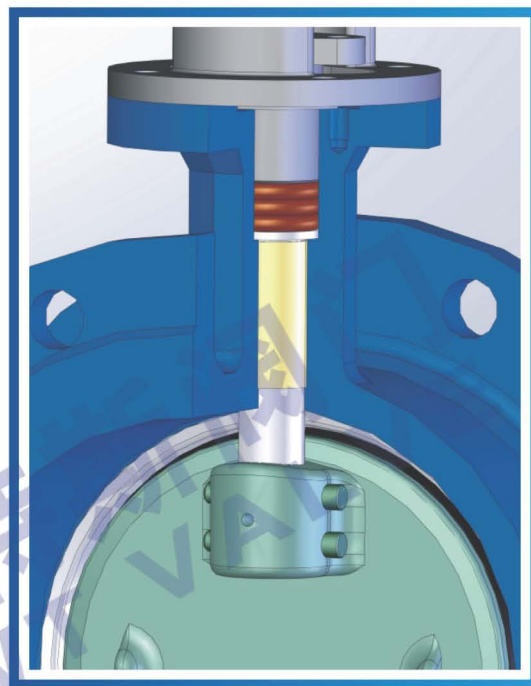
相对于传统阀板形式，拱式阀板具有非常低的水头损失和最完美的水流特性，有效减少水流对阀门的冲刷。

### ■ 全额定压力下双向密封设计

浮动自补偿密封设计，可自动补偿阀反向因支撑力不均匀而产生的密封面位移，可靠保证阀的双向密封。

### ■ 技术保证

使用Solidworks、CAD软件对阀门进行整体设计，采用有限元分析方法对阀门各部件的刚度和强度进行分析，对总体结构进行系统优化，保障了阀门更长久的使用寿命。



## DC Series Soft Sealing Eccentric Flange Butterfly Valve, The Characteristics Of The Product

### ■ N type sealing design

Type N stainless steel ring embedded in the body, can be a long time anti corrosion, and can prevent the water speed instability caused by the vibration and the resulting fastener loosening, caused by falling valve failure.

### ■ A simple and effective maintenance

One type 360 °pressure ring, regardless of pipe stress how to change, can be made by adjusting pressure ring closed in both directions, and valve seat and valve body adhesive, no special tools are required to the valve plate sealing ring are replaced on line.

### ■ High-strength stem and self-lubricating bearings

Stainless steel stem extending into the valve plate length is 1.5 times the diameter of the valve stem, and the valve plate closely.

Self lubricating, non-metallic materials of bearing, friction coefficient is extremely small, effectively reducing the operating torque, avoids metal electrochemical corrosion.

### ■ Special eccentric structure

Eccentric structure design, unique to the valve seat and the valve plate of the outer contour, effectively reduce operating torque, while reducing the engagement with the valve seat, to improve sealing reliability.

### ■ Design of valve plate arch

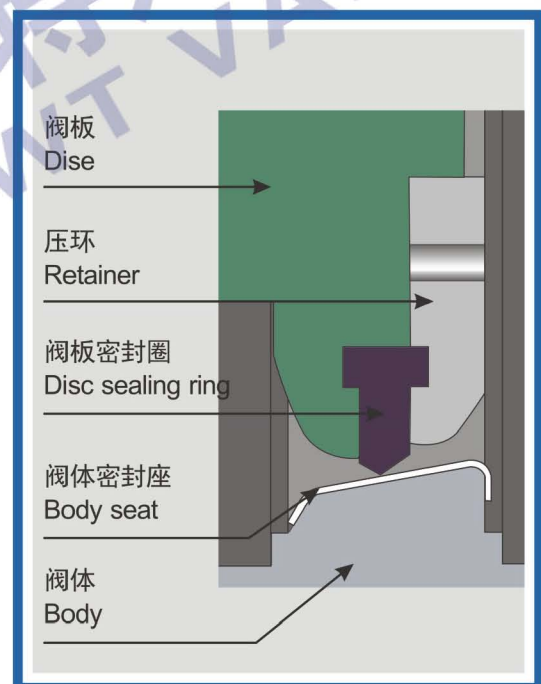
Compared with the traditional form of the valve plate valve plate arch, with a very low head loss and the most perfect flow characteristics, effectively reduce the flow valve on the scour.

### ■ Full pressure sealing design

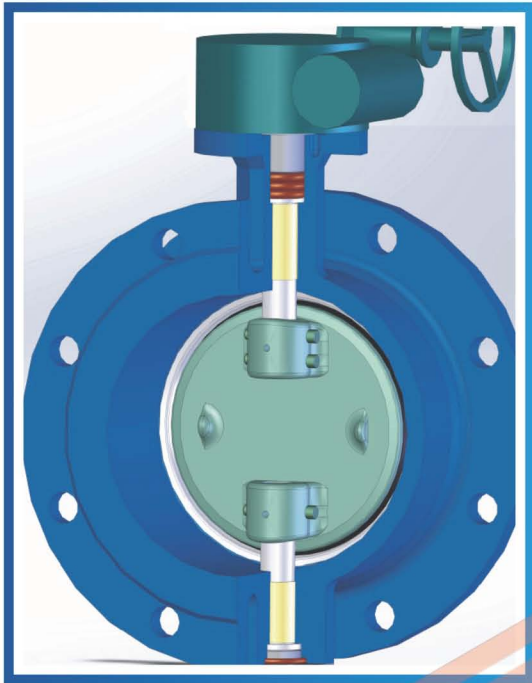
Floating self compensating sealing design, automatic compensation valve reverse due to support force is not uniform and the sealing surface displacement, reliable guarantee valve seal.

### ■ Technical guarantee

The use of Solidworks, CAD software on the valve for the overall design, using finite element analysis method of valve parts of the stiffness and strength analysis, on the overall structure of system optimization, ensure long service life of the valve.



## DH系列金属硬密封偏心法兰蝶阀 产品特性



### ■更适合高要求纯净系统

与传统多层次复合圈硬密封蝶阀相比，本产品不采用石棉或任何有毒的材料部件，板与阀的密封材料100%采用卫生型不锈钢或更高材料。密封形式为金属对金属结构密封，阀门整体采用环氧树脂静电喷涂，高性能耐腐蚀，更适合于高纯净系统或特殊工况的要求，最高温度可达180℃。

### ■独特的可浮动密封阀座

金属的密封阀座无紧固件与阀体固定，阀座密封圈360℃可浮动，并具有良好的弹性，在阀关闭时可自动补偿及调整密封圈与板的接触，达到最佳密封性能。

### ■双向密封设计

浮动式密封环利用流体力学的特点，在工作时对密封面进行双向补偿，以保证阀的双向密封，密封等级达到国家标准C级。

### ■更低的操作扭矩

360℃可浮动密封阀座以阀板为线性密封接触，结合偏心设计，在开关过程中具有更低的操作扭力。

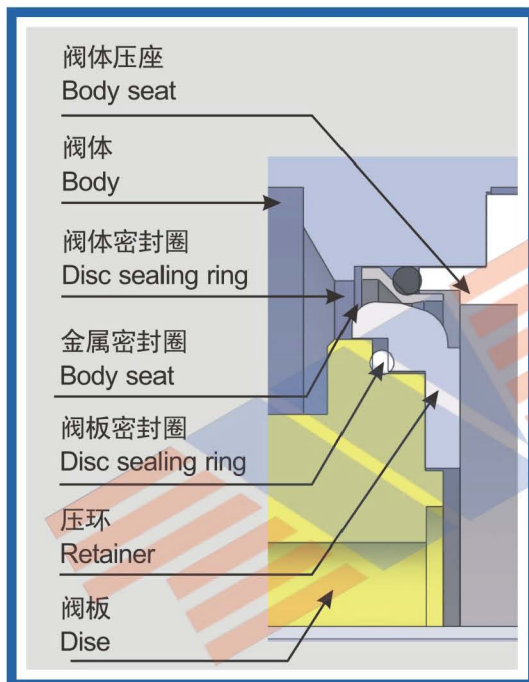
### ■更可靠的技术保证

使用Solidworks、CAD软件对阀门进行整体设计，采用有限元分析方法对阀门各部件的刚度和强度进行分析，对总体结构进行系统优化，保障了阀门更长久的使用寿命。

## DH Series Metal Hard Seal Eccentric Butterfly Valve Flange, The Characteristics Of The Product

### More suitable for high pure system

Compared with the traditional multi-layer composite hard seal butterfly valve. This product does not use of asbestos or any toxic materials. Disc and the valve seal material 100% used sanitary stainless steel or higher in materials. The seal form is metal to metal sealing. Valve using epoxy resin electrostatic spraying, high performance corrosion resistance, is more suitable for cleaner system or special conditions, the highest temperature is 180 °C.



### Unique floating seal valve

Metal valve without the fastener fixed with the valve body, valve seat ring of 360 °C can float, and has good elasticity, the valve closes automatically compensate and adjust the sealing ring and the contact plate, achieve the best sealing performance.

### Bidirectional sealing design

Floating seal ring adopting fluid mechanics characteristics realizes the sealing surface bidirectional compensation during service in order to ensure that the valve seal. Seal level is up to reach the national standard C.

### Lower operating torque

360 °C floating seal valve with valve plate for linear sealing contact, combined with eccentric design, has lower operating torque during operation.

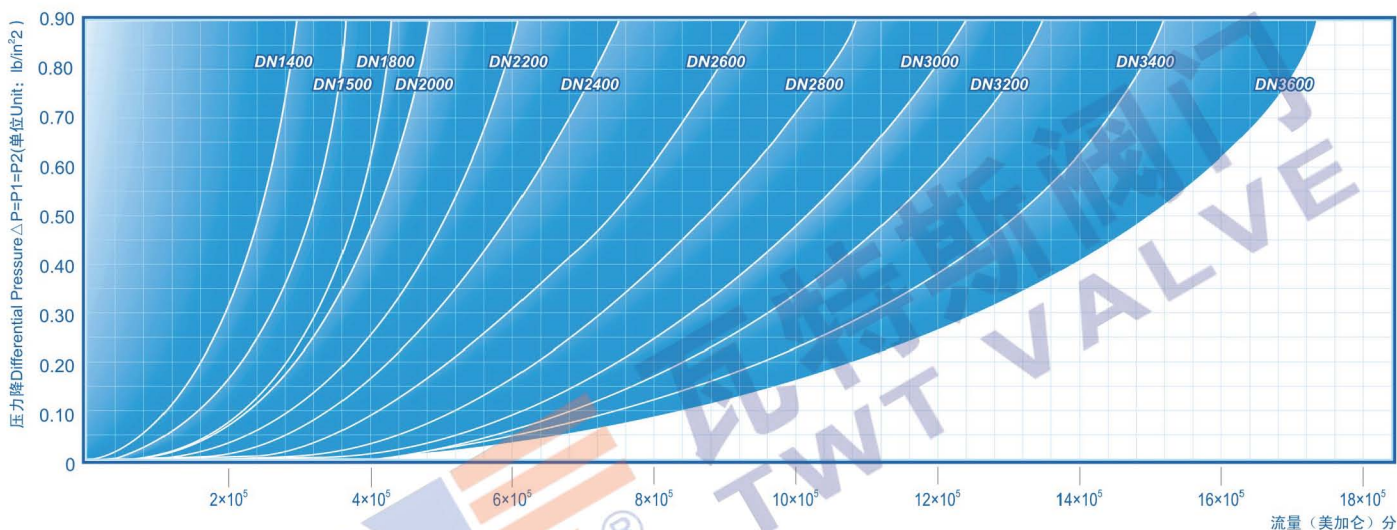
### More reliable technical guarantee

The use of Solidworks, CAD software on the valve for the overall design, using finite element analysis method of valve parts of the stiffness and strength analysis, on the overall structure of system optimization, ensure long service life of the valve.

## CV值—流量系数 (US-GPM@1△P) DN100-DN2800

### CV Valve-Flow Rate Coefficient

| 规格DN Size     | 100    | 125    | 150    | 200    | 250    | 300    | 350     | 400     | 450    |
|---------------|--------|--------|--------|--------|--------|--------|---------|---------|--------|
| Cv            | 594    | 1013   | 1568   | 3117   | 5087   | 7683   | 10458   | 14139   | 17894  |
| 规格DN Size(mm) | 500    | 600    | 700    | 800    | 900    | 1000   | 1200    | 1400    | 1500   |
| Cv            | 22497  | 34361  | 48849  | 63803  | 86892  | 110214 | 168335  | 244943  | 281185 |
| 规格DN Size(mm) | 1600   | 1800   | 2000   | 2200   | 2400   | 2600   | 2800    | 3000    |        |
| Cv            | 332002 | 391176 | 482934 | 604859 | 747006 | 876694 | 1015758 | 1214856 |        |



CV=当阀门全开时, 阀门两端压差为1磅/英寸<sup>2</sup>, 流体用60°F的清水时, 通过阀门的美加仑/分的流量数。

CV=when valve entirely opened, pressure difference in both sides of valve will be 1 pound/inch<sup>2</sup>, when fluid is 60°F clean water, flow volume of per gallon/min. flowing through valve.

$$CV=Q(G/\Delta P)^{1/2}$$

Q: 最大流量 (美加仑/分)

G: 比重 (水=1)

△P: 压力降 (磅/英寸<sup>2</sup>)

$$CV=Q(G/\Delta P)^{1/2}$$

Whereas: G=Specific gravity, clean water will be 1.0

Q=Max. flow rate

△P=Pressure difference, lb/in<sup>2</sup>

C=当阀门全开时, 阀两端压差为100KPa(1Kg/cm<sup>2</sup>), 流体用常温清水时, 某给定行程的流量以m<sup>3</sup>/h计, 介质密度取Kg/m<sup>3</sup>的流量数值(m<sup>2</sup>)。

CV=1.17C

C=The valve CV is the flow rate(m<sup>3</sup>/h) of pure water at normal temperature passing through the valve when the valve disc is fully opened and the pressure differential between the two ends of the valve is 100Kpa(1Kg/cm<sup>2</sup>)

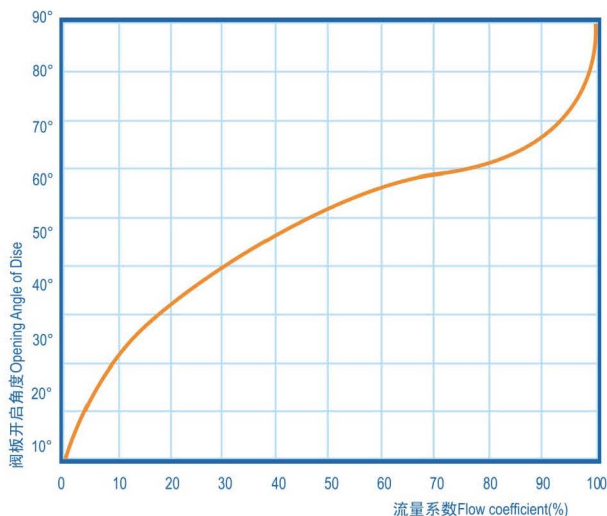
CV=1.17C

## 流量曲线

### Curve of Flow Rate

注: 流量特性曲线表示阀门开启程度和流量的关系, 一般蝶阀适用于流量控制, 当阀门开启角度在30°以下时, 不推荐用于控制流量。

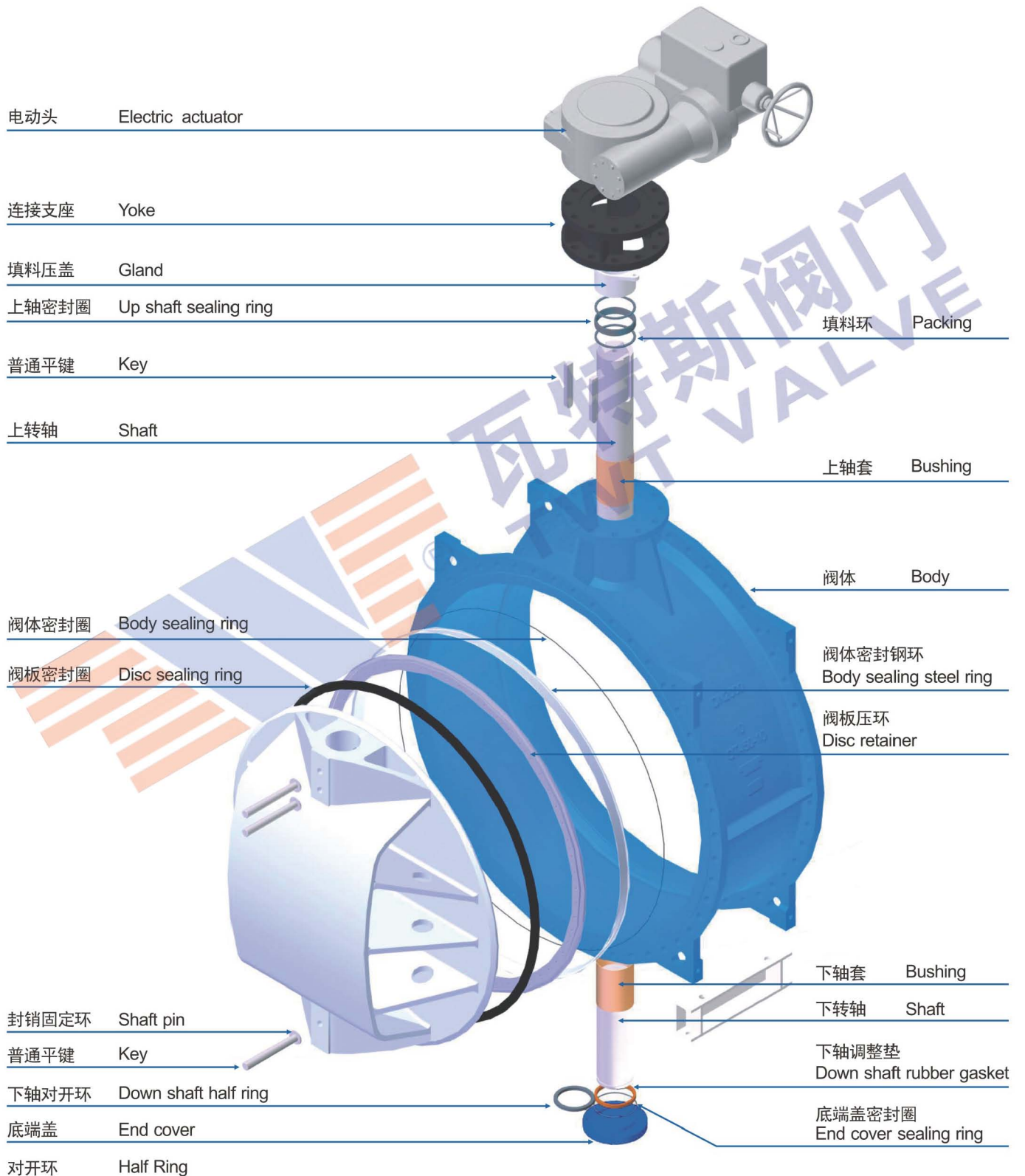
Note: Performance curve of flow volume means the relationship between open degree of valve and flow volume. Normally butterfly valve suitable to use in control flow. When valve's open degree under 30°, not recommend to use in flow volume control.



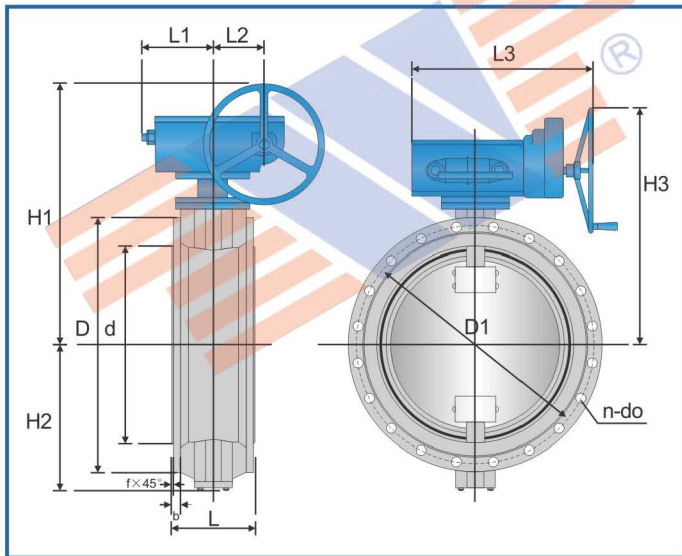


## 阀门结构示意图

### Structural Explosion Diagram Of Valve



**涡轮传动DB·DC·DH系列法兰蝶阀 技术参数**
**Gear Operation DB·DC·DH Series Flange Butterfly Valve And Technical Parameters**

**Dimensions DB · DC · DH: PN0.6 · 1.0 · 1.6**


| 部件     | Component                | 材质 Material   |
|--------|--------------------------|---------------|
| 连接支座   | Yoke                     | 铁QT450-10     |
| 填料压盖   | Gland                    | HT200         |
| 上轴密封圈  | Up shaft sealing ring    | 丁腈橡胶NBR       |
| 普通平键   | Key                      | 45            |
| 上转轴    | Shaft                    | 2Cr13         |
| 阀体密封圈  | Body sealing ring        | 丁腈橡胶NBR       |
| 阀板密封圈  | Disc sealing ring        | 丁腈橡胶NBR       |
| 填料环    | Packing                  | 304           |
| 上轴套    | Bushing                  | DF-1          |
| 阀体     | Body                     | 铁QT450-10     |
| 阀体密封钢环 | Body sealing steel ring  | Ss316         |
| 阀板压环   | Disc retainer            | 铁QT450-10     |
| 封销固定环  | Shaft pin                | 1Cr13         |
| 下轴对开环  | Down shaft half ring     | 2Cr13         |
| 底端盖    | End cover                | 铁QT450-10     |
| 对开环    | Half ring                | 2Cr13         |
| 下轴套    | Bushing                  | DF-1          |
| 下转轴    | Shaft                    | 2Cr13         |
| 下轴调整垫  | Down shaft rubber gasket | ZCuZn38Mn2Pb2 |
| 底端盖密封圈 | End cover sealing ring   | 丁腈橡胶NBR       |

注：所有部件可根据实际工况选用不同材质。  
 Note: All parts can choose different material, according to the actual condition of selection.

- 该产品符合GB/T12238-2008《法兰和对夹连接弹性密封蝶阀》标准。
- 试验符合GB/T13927-2008《工业阀门 压力试验》标准。
- 侧法兰连接符合GB/T17241.6-2008《整体铸铁法兰》标准。同时符合BS4504, ISO7005, DIN2501中PN1.0MPa, PN1.6MPa法兰连接标准。
- 结构长度：
  - (1) 13系列符合GB/T12221-2005《金属阀门结构长度》中法兰连接蝶阀13系列尺寸规定。
  - (2) 14系列符合GB/T12221-2005《金属阀门结构长度》中法兰连接蝶阀14系列尺寸规定。
- H3为无支架高度。

- The product is in conformity with standard GB/T12238-2008 Flange and Wafer resilient seated butterfly valve.
- Tests are in conformity with standard GB/T13927-2008 industrial valve pressure test.
- Connection between side flanges is in conformity with standard GB/T17241.6-2008 Integral Cast Iron Pipe Flanges and PN1.0MPa, PN1.6MPa flange connection standards provided in BS4504, ISO7005 and DIN2501 Respectively.
- Structre length
  - (1) 13 series meet dimension rules of 13 series flange connection butterfly valve of GB/12221-2005"metal stucture length"
  - (2) 14 series meet dimension rules of 14 series flange connection butterfly valve of GB/12221-2005"metal stucture length"
- H3 are non bracket height.

**涡轮传动DB·DC·DH系列法兰蝶阀 外形尺寸: PN0.6 · 1.0 · 1.6**
**Turbine Driven DB·DC·DH Series Flange Butterfly Valve Dimensions & Weights: PN0.6·1.0·1.6**

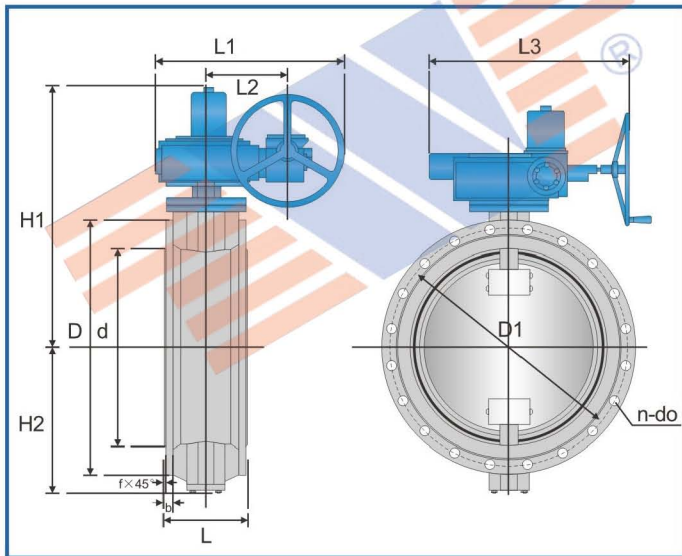
(单位 Unit:mm,kg)

| DN   | PN0.6 · 1.0 · 1.6 |      |      |      |       |      | PN0.6 |      |      |        | PN1.0 |      |      |        | PN1.6 |      |      |        | L    |      | 重量Weight |       |
|------|-------------------|------|------|------|-------|------|-------|------|------|--------|-------|------|------|--------|-------|------|------|--------|------|------|----------|-------|
|      | H1                | H2   | H3   | L1   | L2    | L3   | D     | D1   | d    | n-do   | D     | D1   | d    | n-do   | D     | D1   | d    | n-do   | 13系列 | 14系列 | 13系列     | 14系列  |
| 100  | 310               | 109  | 242  | 52   | 45    | 210  | 210   | 170  | 144  | 4-Φ19  | 220   | 180  | 156  | 8-Φ19  | 220   | 180  | 156  | 8-Φ19  | 127  | 190  | 19       | 25    |
| 150  | 440               | 143  | 340  | 52   | 45    | 210  | 265   | 225  | 199  | 8-Φ19  | 285   | 240  | 211  | 8-Φ23  | 285   | 240  | 211  | 8-Φ23  | 140  | 210  | 37       | 48    |
| 200  | 510               | 182  | 410  | 77   | 63    | 315  | 320   | 280  | 254  | 8-Φ19  | 340   | 295  | 266  | 8-Φ23  | 340   | 295  | 266  | 12-Φ23 | 152  | 230  | 51       | 63    |
| 250  | 565               | 219  | 445  | 77   | 63    | 315  | 375   | 335  | 309  | 12-Φ19 | 395   | 350  | 319  | 12-Φ23 | 405   | 355  | 319  | 12-Φ28 | 165  | 250  | 68       | 94    |
| 300  | 630               | 244  | 480  | 95   | 72    | 242  | 440   | 395  | 363  | 12-Φ23 | 445   | 400  | 370  | 12-Φ23 | 460   | 410  | 370  | 12-Φ28 | 178  | 270  | 93       | 110   |
| 350  | 715               | 283  | 565  | 110  | 91    | 275  | 490   | 445  | 413  | 12-Φ23 | 505   | 460  | 429  | 16-Φ23 | 520   | 470  | 429  | 16-Φ28 | 190  | 290  | 122      | 155   |
| 400  | 750               | 312  | 600  | 110  | 91    | 275  | 540   | 495  | 463  | 16-Φ23 | 565   | 515  | 480  | 16-Φ28 | 580   | 525  | 480  | 16-Φ31 | 216  | 310  | 152      | 205   |
| 450  | 820               | 344  | 670  | 147  | 147   | 420  | 595   | 550  | 518  | 16-Φ23 | 615   | 565  | 530  | 20-Φ28 | 640   | 585  | 548  | 20-Φ31 | 222  | 330  | 182      | 255   |
| 500  | 845               | 381  | 695  | 147  | 147   | 420  | 645   | 600  | 568  | 20-Φ23 | 670   | 620  | 582  | 20-Φ28 | 715   | 650  | 609  | 20-Φ34 | 229  | 350  | 230      | 305   |
| 600  | 950               | 451  | 785  | 533  | 179   | 476  | 755   | 705  | 667  | 20-Φ26 | 780   | 725  | 682  | 20-Φ31 | 840   | 770  | 720  | 20-Φ37 | 267  | 390  | 388      | 430   |
| 700  | 1010              | 526  | 845  | 533  | 179   | 476  | 860   | 810  | 772  | 24-Φ26 | 895   | 840  | 794  | 24-Φ31 | 910   | 840  | 794  | 24-Φ37 | 292  | 430  | 480      | 565   |
| 800  | 1140              | 581  | 975  | 655  | 217   | 577  | 975   | 920  | 878  | 24-Φ31 | 1015  | 950  | 901  | 24-Φ34 | 1025  | 950  | 901  | 24-Φ40 | 318  | 470  | 661      | 790   |
| 900  | 1197              | 643  | 1032 | 655  | 217   | 577  | 1075  | 1020 | 978  | 24-Φ31 | 1115  | 1050 | 1001 | 28-Φ34 | 1125  | 1050 | 1001 | 28-Φ40 | 330  | 510  | 813      | 925   |
| 1000 | 1277              | 722  | 1112 | 655  | 217   | 577  | 1175  | 1120 | 1078 | 28-Φ31 | 1230  | 1160 | 1112 | 28-Φ37 | 1255  | 1170 | 1112 | 28-Φ43 | 410  | 550  | 1018     | 1090  |
| 1200 | 1511              | 840  | 1286 | 748  | 262   | 664  | 1405  | 1340 | 1295 | 32-Φ34 | 1455  | 1380 | 1328 | 32-Φ40 | 1485  | 1390 | 1328 | 32-Φ49 | 470  | 630  | 1501     | 1650  |
| 1400 | 1750              | 1150 | 1515 | 884  | 334   | 790  | 1630  | 1560 | 1510 | 36-Φ37 | 1675  | 1590 | 1530 | 36-Φ43 | 1685  | 1590 | 1530 | 36-Φ49 | 530  | 710  | 2895     | 3940  |
| 1600 | 1870              | 1305 | 1635 | 884  | 334   | 790  | 1830  | 1760 | 1710 | 40-Φ37 | 1915  | 1820 | 1750 | 40-Φ49 | 1930  | 1820 | 1750 | 40-Φ56 | 600  | 790  | 3655     | 5110  |
| 1800 | 2125              | 1425 | 1850 | 977  | 357.5 | 855  | 2045  | 1970 | 1918 | 44-Φ40 | 2115  | 2020 | 1950 | 44-Φ49 | 2130  | 2020 | 1950 | 44-Φ56 | 670  | 870  | 5210     | 7435  |
| 2000 | 2280              | 1580 | 2005 | 1059 | 397.5 | 903  | 2265  | 2180 | 2125 | 48-Φ43 | 2325  | 2230 | 2150 | 48-Φ49 | 2345  | 2230 | 2150 | 48-Φ62 | 760  | 950  | 6721     | 9372  |
| 2200 | 2520              | 1710 | 2245 | 1222 | 436   | 1075 | 2475  | 2390 | 2335 | 52-Φ43 | 2550  | 2440 | 2370 | 52-Φ56 |       |      |      |        | 800  | 1000 | 7658     | 10640 |
| 2400 | 2760              | 1880 | 2420 | 1303 | 476   | 1191 | 2685  | 2600 | 2545 | 56-Φ43 | 2760  | 2650 | 2570 | 56-Φ56 |       |      |      |        | 850  | 1100 | 10350    | 14595 |
| 2600 | 3120              | 2010 | 2780 | 1744 | 605   | 2024 | 2905  | 2810 | 2750 | 60-Φ49 | 2960  | 2850 | 2780 | 60-Φ56 |       |      |      |        | 900  | 1200 | 13708    | 15200 |
| 2800 | 3480              | 2240 | 3140 | 2185 | 734   | 2857 | 3115  | 3020 | 2960 | 64-Φ49 | 3180  | 3070 | 2960 | 64-Φ56 |       |      |      |        | 950  | 1300 | 18580    | 18220 |
| 3000 | 4040              | 2540 | 3600 | 2726 | 963   | 3790 | 3315  | 3220 | 3160 | 68-Φ49 | 3410  | 3290 | 3200 | 68-Φ62 |       |      |      |        | 1000 | 1400 | 22708    | 23220 |

注: PN25及DN3000以上技术数据请向厂商索取

Note: PN25 and DN3000 above technical data please to manufacturers claim

**电动DB·DC·DH系列法兰蝶阀 技术参数**
**DB·DC·DH Series Electric Actuator Flange Butterfly Valve and Technical Parameters**

**Dimensions DB · DC · DH: PN0.6 · 1.0 · 1.6**


| 部件     | Component                | 材质 Material   |
|--------|--------------------------|---------------|
| 连接支座   | Yoke                     | 铁QT450-10     |
| 填料压盖   | Gland                    | HT200         |
| 上轴密封圈  | Up shaft sealing ring    | 丁腈橡胶NBR       |
| 普通平键   | Key                      | 45            |
| 上转轴    | Shaft                    | 2Cr13         |
| 阀体密封圈  | Body sealing ring        | 丁腈橡胶NBR       |
| 阀板密封圈  | Disc sealing ring        | 丁腈橡胶NBR       |
| 填料环    | Packing                  | 304           |
| 上轴套    | Bushing                  | DF-1          |
| 阀体     | Body                     | 铁QT450-10     |
| 阀体密封钢环 | Body sealing steel ring  | Ss316         |
| 阀板压环   | Disc retainer            | 铁QT450-10     |
| 封销固定环  | Shaft pin                | 1Cr13         |
| 下轴对开环  | Down shaft half ring     | 2Cr13         |
| 底端盖    | End cover                | 铁QT450-10     |
| 对开环    | Half ring                | 2Cr13         |
| 下轴套    | Bushing                  | DF-1          |
| 下转轴    | Shaft                    | 2Cr13         |
| 下轴调整垫  | Down shaft rubber gasket | ZCuZn38Mn2Pb2 |
| 底端盖密封圈 | End cover sealing ring   | 丁腈橡胶NBR       |

注：所有部件可根据实际工况选用不同材质。  
 Note: All parts can choose different material, according to the actual condition of selection.

1. 该产品符合GB/T12238-2008《法兰和对夹连接弹性密封蝶阀》标准。
2. 试验符合GB/T13927-2008《工业阀门 压力试验》标准。
3. 侧法兰连接符合GB/T17241.6-2008《整体铸铁法兰》标准。同时符合BS4504, ISO7005, DIN2501中PN1.0MPa, PN1.6MPa法兰连接标准。
4. 结构长度:
  - (1) 13系列符合GB/T12221-2005《金属阀门结构长度》中法兰连接蝶阀13系列尺寸规定。
  - (2) 14系列符合GB/T12221-2005《金属阀门结构长度》中法兰连接蝶阀14系列尺寸规定。
5. H3为无支架高度。

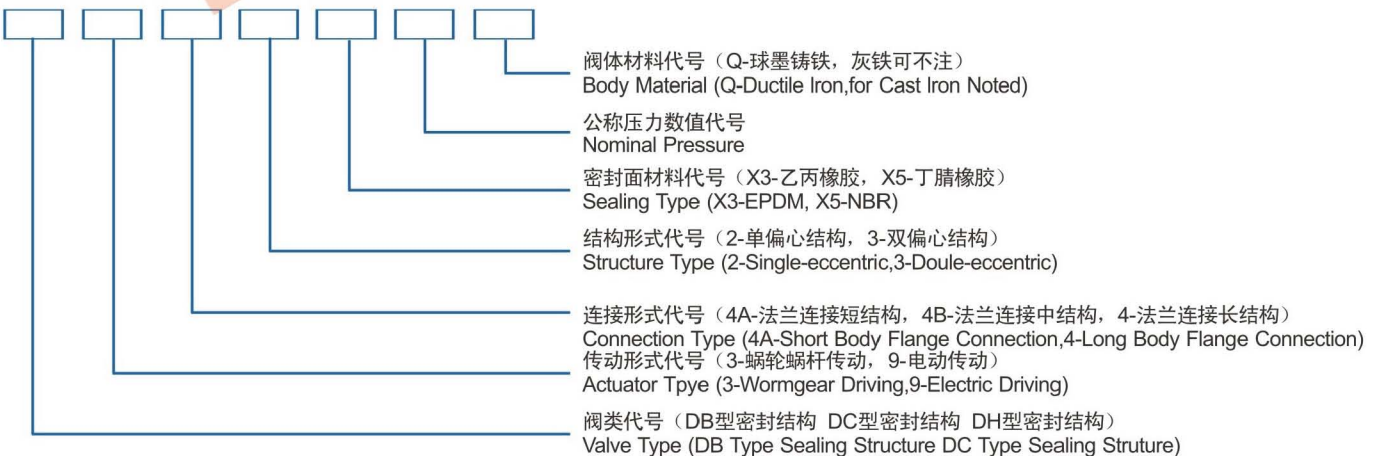
1. The product is in conformity with standard GB/T12238-2008 Flange and Wafer resilient seated butterfly valve.
2. Tests are in conformity with standard GB/T13927-2008 industrial valve pressure test.
3. Connection between side flanges is in conformity with standard GB/T17241.6-2008 Integral Cast Iron Pipe Flanges and PN1.0MPa, PN1.6MPa flange connection standards provided in BS4504, ISO7005 and DIN2501 Respectively.
4. Structure length
  - (1) 13 series meet dimension rules of 13 series flange connection butterfly valve of GB/T12221-2005 "metal structure length"
  - (2) 14 series meet dimension rules of 14 series flange connection butterfly valve of GB/T12221-2005 "metal structure length"
5. H3 are non bracket height.

**电动DB·DC·DH系列法兰蝶阀 外形尺寸: PN0.6 · 1.0 · 1.6**
**DB·DC·DH Series Electric Actuator Flange Butterfly Valve, Dimensions & Weights: PN0.6·1.0·1.6**

(单位 Unit:mm,kg)

| DN   | PN0.6 · 1.0 · 1.6 |      |      |      |      |      | PN0.6 |      |      |        | PN1.0 |      |      |        | PN1.6 |      |      |        | L    |      | 重量Weight |       |
|------|-------------------|------|------|------|------|------|-------|------|------|--------|-------|------|------|--------|-------|------|------|--------|------|------|----------|-------|
|      | H1                | H2   | H3   | L1   | L2   | L3   | D     | D1   | d    | n-do   | D     | D1   | d    | n-do   | D     | D1   | d    | n-do   | 13系列 | 14系列 | 13系列     | 14系列  |
| 100  | 460               | 109  | 392  | 340  | 79   | 430  | 210   | 170  | 144  | 4-Φ19  | 220   | 180  | 156  | 8-Φ19  | 220   | 180  | 156  | 8-Φ19  | 127  | 190  | 50       | 56    |
| 150  | 530               | 143  | 430  | 340  | 79   | 430  | 265   | 225  | 199  | 8-Φ19  | 285   | 240  | 211  | 8-Φ23  | 285   | 240  | 211  | 8-Φ23  | 140  | 210  | 60       | 67    |
| 200  | 570               | 182  | 470  | 340  | 79   | 430  | 320   | 280  | 254  | 8-Φ19  | 340   | 295  | 266  | 8-Φ23  | 340   | 295  | 266  | 12-Φ23 | 152  | 230  | 74       | 85    |
| 250  | 660               | 219  | 540  | 470  | 110  | 595  | 375   | 335  | 309  | 12-Φ19 | 395   | 350  | 319  | 12-Φ23 | 405   | 355  | 319  | 12-Φ28 | 165  | 250  | 111      | 135   |
| 300  | 715               | 244  | 565  | 470  | 110  | 595  | 440   | 395  | 363  | 12-Φ23 | 445   | 400  | 370  | 12-Φ23 | 460   | 410  | 370  | 12-Φ28 | 178  | 270  | 138      | 150   |
| 350  | 750               | 283  | 600  | 470  | 110  | 595  | 490   | 445  | 413  | 12-Φ23 | 505   | 460  | 429  | 16-Φ23 | 520   | 470  | 429  | 16-Φ28 | 190  | 290  | 160      | 195   |
| 400  | 785               | 312  | 635  | 470  | 110  | 595  | 540   | 495  | 463  | 16-Φ23 | 565   | 515  | 480  | 16-Φ28 | 580   | 525  | 480  | 16-Φ31 | 216  | 310  | 190      | 240   |
| 450  | 890               | 344  | 740  | 580  | 140  | 660  | 595   | 550  | 518  | 16-Φ23 | 615   | 565  | 530  | 20-Φ28 | 640   | 585  | 548  | 20-Φ31 | 222  | 330  | 245      | 315   |
| 500  | 920               | 381  | 770  | 580  | 140  | 660  | 645   | 600  | 568  | 20-Φ23 | 670   | 620  | 582  | 20-Φ28 | 715   | 650  | 609  | 20-Φ34 | 229  | 350  | 290      | 365   |
| 600  | 995               | 451  | 830  | 580  | 140  | 660  | 755   | 705  | 667  | 20-Φ26 | 780   | 725  | 682  | 20-Φ31 | 840   | 770  | 720  | 20-Φ37 | 267  | 390  | 420      | 460   |
| 700  | 1055              | 526  | 890  | 580  | 140  | 660  | 860   | 810  | 772  | 24-Φ26 | 895   | 840  | 794  | 24-Φ31 | 910   | 840  | 794  | 24-Φ37 | 292  | 430  | 511      | 595   |
| 800  | 1135              | 581  | 970  | 728  | 390  | 900  | 975   | 920  | 878  | 24-Φ31 | 1015  | 950  | 901  | 24-Φ34 | 1025  | 950  | 901  | 24-Φ40 | 318  | 470  | 719      | 840   |
| 900  | 1190              | 643  | 1025 | 728  | 390  | 900  | 1075  | 1020 | 978  | 24-Φ31 | 1115  | 1050 | 1001 | 28-Φ34 | 1125  | 1050 | 1001 | 28-Φ40 | 330  | 510  | 867      | 875   |
| 1000 | 1315              | 722  | 1150 | 885  | 453  | 943  | 1175  | 1120 | 1078 | 28-Φ31 | 1230  | 1160 | 1112 | 28-Φ37 | 1255  | 1170 | 1112 | 28-Φ43 | 410  | 550  | 1160     | 1220  |
| 1200 | 1505              | 840  | 1280 | 885  | 453  | 943  | 1405  | 1340 | 1295 | 32-Φ34 | 1455  | 1380 | 1328 | 32-Φ40 | 1485  | 1390 | 1328 | 32-Φ49 | 470  | 630  | 1564     | 1710  |
| 1400 | 1740              | 1150 | 1505 | 1110 | 558  | 1140 | 1630  | 1560 | 1510 | 36-Φ37 | 1675  | 1590 | 1530 | 36-Φ43 | 1685  | 1590 | 1530 | 36-Φ49 | 530  | 710  | 3003     | 4225  |
| 1600 | 1915              | 1305 | 1680 | 1195 | 572  | 1200 | 1830  | 1760 | 1710 | 40-Φ37 | 1915  | 1820 | 1750 | 40-Φ49 | 1930  | 1820 | 1750 | 40-Φ56 | 600  | 790  | 4054     | 5500  |
| 1800 | 2100              | 1425 | 1825 | 1275 | 612  | 1250 | 2045  | 1970 | 1918 | 44-Φ40 | 2115  | 2020 | 1950 | 44-Φ49 | 2130  | 2020 | 1950 | 44-Φ56 | 670  | 870  | 5569     | 7376  |
| 2000 | 2225              | 1580 | 1950 | 1650 | 1015 | 1135 | 2265  | 2180 | 2125 | 48-Φ43 | 2325  | 2230 | 2150 | 48-Φ49 | 2345  | 2230 | 2150 | 48-Φ62 | 760  | 950  | 7242     | 9280  |
| 2200 | 2325              | 1710 | 2050 | 1650 | 1015 | 1135 | 2475  | 2390 | 2335 | 52-Φ43 | 2550  | 2440 | 2370 | 52-Φ56 |       |      |      |        | 800  | 1000 | 7854     | 10830 |
| 2400 | 2570              | 1880 | 2230 | 1790 | 1070 | 1280 | 2685  | 2600 | 2545 | 56-Φ43 | 2760  | 2650 | 2570 | 56-Φ56 |       |      |      |        | 850  | 1100 | 10949    | 15180 |
| 2600 | 2850              | 2010 | 2510 | 2130 | 1200 | 1522 | 2905  | 2810 | 2750 | 60-Φ49 | 2960  | 2850 | 2780 | 60-Φ56 |       |      |      |        | 900  | 1200 | 14408    | 15920 |
| 2800 | 3230              | 2240 | 2890 | 2670 | 1430 | 1864 | 3115  | 3020 | 2960 | 64-Φ49 | 3180  | 3070 | 2960 | 64-Φ56 |       |      |      |        | 950  | 1300 | 18408    | 18920 |
| 3000 | 3710              | 2570 | 3270 | 3310 | 1760 | 2306 | 3315  | 3220 | 3160 | 68-Φ49 | 3410  | 3290 | 3200 | 68-Φ62 |       |      |      |        | 1000 | 1400 | 23408    | 23920 |

 注: PN25及DN3000以上技术数据请向厂商索取  
 Note: PN25 and DN3000 above technical data please to manufacturers claim

**产品型号编制**
**Constitution of Product Model**

**示例: 300DB34B3X5-10Q**  
**For Example: 300DB34B3X5-10Q**

 以上编码表示: DN300, DB型密封结构蝶阀, 蜗轮蜗杆传动, 13系列 (法兰连接中结构), 双偏心结构, 丁腈橡胶阀座, PN1.0Mpa, 球铁阀体。  
 Above codes indicate: DN300, Butterfly valve with DB type seal, gear operator, 13 Series (flanged connection, middle body), Double-eccentric structure, NBR seat, PN1.0Mpa, DI body.

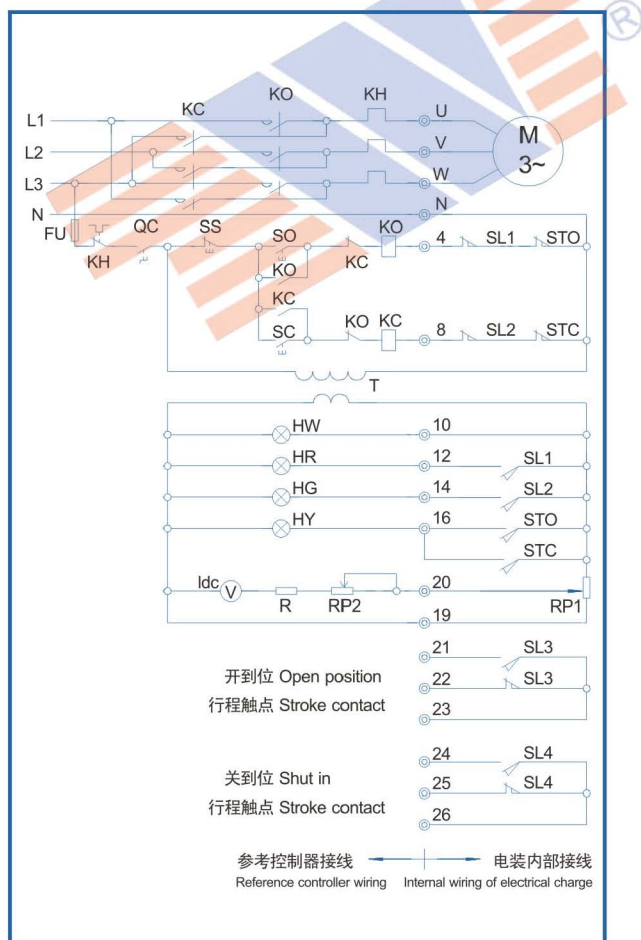
## NQB系列电动装置性能规范

### Performance of Electric Actuator for NQB



## NQB系列电气原理图

### Diagram of Electric Principle for NQB



| 电动装置型号<br>Type of<br>Electric Actuator | 额定输出转矩<br>Rating Torque | 输出转速<br>(r/min)<br>Output<br>Revolution | 旋转时间<br>Time for<br>90°turning(s) | 电机功率<br>Motor<br>Power |
|----------------------------------------|-------------------------|-----------------------------------------|-----------------------------------|------------------------|
| NQB5-1                                 | 50                      | 2                                       | 15                                | 0.04                   |
| NQB5-2                                 | 50                      | 1                                       | 7.5                               | 0.04                   |
| NQB10-1                                | 100                     | 2                                       | 15                                | 0.04                   |
| NQB10-2                                | 100                     | 1                                       | 7.5                               | 0.06                   |
| NQB15-1                                | 150                     | 2                                       | 15                                | 0.06                   |
| NQB15-2                                | 150                     | 1                                       | 7.5                               | 0.09                   |
| NQB20-1                                | 200                     | 2                                       | 15                                | 0.06                   |
| NQB20-2                                | 200                     | 1                                       | 7.5                               | 0.09                   |
| NQB30-1                                | 300                     | 2                                       | 15                                | 0.09                   |
| NQB30-2                                | 300                     | 1                                       | 7.5                               | 0.12                   |
| NQB40-1                                | 400                     | 2                                       | 15                                | 0.12                   |
| NQB40-2                                | 400                     | 1                                       | 7.5                               | 0.18                   |
| NQB60-1                                | 600                     | 2                                       | 15                                | 0.18                   |
| NQB60-2                                | 600                     | 1                                       | 7.5                               | 0.25                   |
| NQB90-1                                | 900                     | 1                                       | 15                                | 0.25                   |

#### 说明 Explain

本图表示阀门处于中间位置

The graph representation of the valve is in an intermediate position

#### (1) 普通型端子接线对照表 General Type Terminal Control Table

| 端子号<br>Terminal number      | 1 | 2 | 3 | 4 | 5 | 6 | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|-----------------------------|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|
| 原理图线号<br>Schematic Line No. | U | V | W | N | 4 | 8 | 10 | 12 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |

#### (2) 防爆型及SMC-3, 4, 5普通型端子接线对照表

Explosion-proof Type and SMC-3, 4, 5 Ordinary Type Terminal Control Table

| 端子号<br>Terminal number      | U  | V  | W  | E | 1 | 2 | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | ... | 20 | 21 |
|-----------------------------|----|----|----|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|
| 原理图线号<br>Schematic Line No. | L1 | L2 | L3 | N | 4 | 8 | 10 | 12 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |     |    |    |

| No. | 代号 Code  | 名称 Name                                | No.                                                         | 代号 Code | 名称 Name                                  |
|-----|----------|----------------------------------------|-------------------------------------------------------------|---------|------------------------------------------|
| 1   | KO KC    | 交流接触器<br>AC contactor                  | 9                                                           | M       | 三相异步电机<br>Three phase asynchronous motor |
| 2   | KH       | 热继电器<br>Thermal relay                  | 10                                                          | RP1     | 位置电位器<br>Position potentiometer          |
| 3   | FU       | 熔断器<br>Fuse                            | 11                                                          | RP2     | 调节电位器<br>Regulator potentiometer         |
| 4   | QC       | 电源开关<br>Power switch                   | 12                                                          | R       | 电阻<br>Electric resistance                |
| 5   | SS SO SC | 远控按钮开关<br>Remote control button switch | 13                                                          | Idc     | 开度表<br>Opening statement                 |
| 6   | HW HR HG | 指示灯<br>Pilot lamp                      | 14                                                          | SL1-SL4 | 限位开关<br>Limit switch                     |
| 7   | HY       | 过转矩指示灯<br>Torque indicator             | 15                                                          | STOSTC  | 转矩开关<br>Torque switch                    |
| 8   | T        | 变压器<br>Voltage changer                 | 备注: 基本型 带行程无源点<br>Note: the basic tour with a passive point |         |                                          |

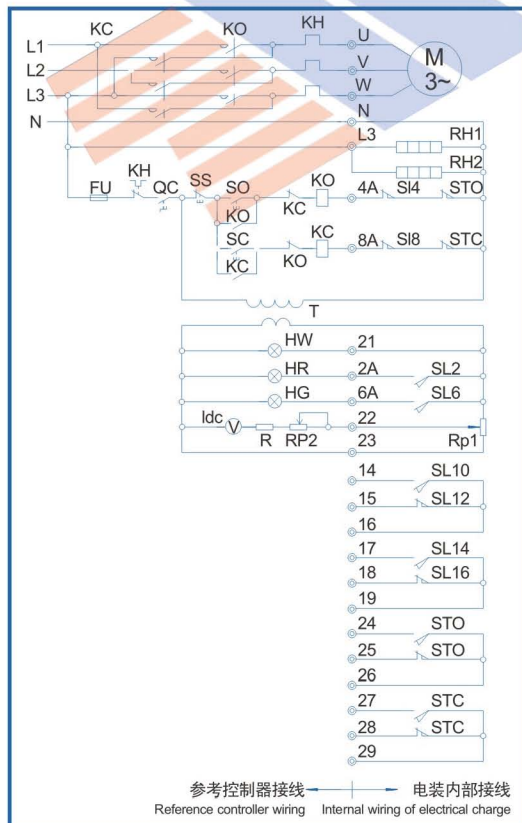
## SMC系列电动装置性能规范

### Performance of Electric Actuator for SMC

| 电动装置型号<br>Type of Electric Actuator | 额定输出转矩<br>Rating Torque | 输出转速(r/min)<br>Output Revolution | 旋转时间<br>Time for 90°turning(s) | 电机功率<br>Motor Power |
|-------------------------------------|-------------------------|----------------------------------|--------------------------------|---------------------|
| SMC-04/H0BC                         | 450                     | 1                                | 15                             | 0.12                |
| SMC-04/H0BC                         | 600                     | 1                                | 15                             | 0.20                |
| SMC-04/H1BC                         | 1100                    | 1                                | 15                             | 0.30                |
| SMC-03/H1BC                         | 2000                    | 1                                | 15                             | 0.40                |
| SMC-03/H2BC                         | 3000                    | 0.5                              | 30                             | 0.40                |
| SMC-03/H2BC                         | 3000                    | 1                                | 15                             | 0.60                |
| SMC-00/H3BC                         | 7800                    | 0.5                              | 30                             | 1.10                |
| SMC-00/H3BC                         | 7800                    | 1                                | 15                             | 1.50                |
| SMC-0/H4BC                          | 10000                   | 0.5                              | 30                             | 1.50                |
| SMC-0/H4BC                          | 17500                   | 0.3                              | 45                             | 1.50                |
| SMC-1/H5BC                          | 12500                   | 1                                | 15                             | 2.20                |
| SMC-1/H5BC                          | 27000                   | 0.3                              | 45                             | 2.20                |
| SMC-2/H6BC                          | 42000                   | 0.3                              | 45                             | 3.00                |
| SMC-2/H6BC                          | 50000                   | 0.25                             | 50                             | 4.00                |
| SMC-3/H6BC                          | 63500                   | 0.3                              | 40                             | 5.50                |
| SMC-3/H7BC                          | 87400                   | 0.25                             | 60                             | 5.50                |
| SMC-3/H8BC                          | 135000                  | 0.10                             | 150                            | 5.50                |
| SMC-3/H10BC                         | 200000                  | 0.10                             | 150                            | 7.50                |
| SMC-3/H12BC                         | 300000                  | 0.10                             | 150                            | 7.50                |

## SMC系列电动装置电气原理图

### Diagram of Electric Principle for SMC



#### 说明 Explain

1. 本图表示阀门处于中间位置
2. 其中SMC-3、4、5普通型电装的U、V、W电机线及N线接在单独的端子上，接线时按防爆型端子接线对照表。

1、The valve in drawing is in an intermediate position.

2、U, V, W motor line and N line for SMC-3, 4, 5 Common Electric is wired in a separate terminal board, line is wired according to explosion proof terminal control table.

#### (1) 普通型端子接线对照表 General Type Terminal Control Table

| 端子号<br>Terminal number      | 1 | 2 | 3 | 4 | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|-----------------------------|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 原理图线号<br>Schematic Line No. | U | V | W | N | L3 | 2A | 4A | 6A | 8A | 14 | 15 | 16 | 17 | 18 | 19 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |

#### (2) 防爆型及SMC-3, 4, 5普通型端子接线对照表

#### Explosion Proof Type and SMC-3, 4, 5 Ordinary Type Terminal Control Table

| 端子号<br>Terminal number      | U | V | W | E | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|-----------------------------|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 原理图线号<br>Schematic Line No. | U | V | W | N | L3 | 2A | 4A | 6A | 8A | 14 | 15 | 16 | 17 | 18 | 19 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |

| No. | 代号 Code  | 名称 Name                                  | No. | 代号 Code  | 名称 Name                       |
|-----|----------|------------------------------------------|-----|----------|-------------------------------|
| 1   | KO KC    | 交流接触器 AC contactor                       | 9   | R        | 电阻 Electric resistance        |
| 2   | M        | S三相异步电机 S three phase asynchronous motor | 10  | RP1      | 位置电位器 Position potentiometer  |
| 3   | KH       | 热继电器 Thermal relay                       | 11  | RP2      | 调节电位器 Regulator potentiometer |
| 4   | FU       | 熔断器 Fuse                                 | 12  | SL2-SL16 | 限位开关 Limit switch             |
| 5   | QC       | 电源开关 Power switch                        | 13  | STO STC  | 转矩开关 Torque switch            |
| 6   | HW HE HG | 指示灯 Pilot lamp                           | 14  | RH1 RH2  | 加热电阻 Heating resistor         |
| 7   | SS SO SC | 远控按钮开关 Remote control button switch      | 15  | ldc      | 开度表 Opening statement         |
| 8   | T        | 变压器 Voltage changer                      |     |          |                               |

备注：基本型 带行程、力矩无源点  
 Note: The basic type with stroke, torque passive point

# 声 明

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天津塘沽瓦特斯阀门有限公司  
二〇一二年



地址：天津市滨海新区塘沽国家海洋高新技术园区  
金江路1999号300451

Add : No. 1999 Jinjiang Rd., TMHT, Tanggu district,  
Binhai New Area, Tianjin 300451, China

Tel : 86-22-65728888 65727777

Fax : 86-22-65727744

Email: [service@twtvalve.com](mailto:service@twtvalve.com)

http: [www.twtvalve.com](http://www.twtvalve.com)

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