



2013 EDITION



# ED3000系列蝶式斜置密封多功能止回阀

## ED3000 Series Butterfly slanting sealing multifunctional check valve

### 产品特性

#### 更合理的结构形式

阀板采用大倾斜度设计，阀座斜置，有效提高了阀门对介质流向的响应速度，更好的利用了介质流动力和重力。同时阀板的桁架流线型设计，可增大过流面积，降低流阻系数，降低运行成本。

#### 更小的流阻

采用独特的偏心摆式结构和外部缓冲机构；  
阀板采用双偏心摆动结构，有利于减少流阻和振动；  
独特的缓冲阻尼油缸有效控制阀门关闭速度减小和消灭水锤，使用时无震动、无噪音、运行平稳。

#### 更优质的材料

阀板采用球墨铸铁，强度高，耐腐蚀；  
轴承采用复合材料，具有承载能力强、耐磨性好、摩擦阻力小等特点；  
密封采用不锈钢和耐磨橡胶，无污染。

#### 更长久的使用寿命和环保形象

密封为橡胶对金属的软密封，密封性可靠，耐磨损，启闭摩擦小，使用寿命长；  
完全自适应流向开关，无外挂操作系统，低碳环保。  
无论活塞处于任何位置，缩流断面均为环形，从而确保完美的线性调节特性。

#### A more reasonable structural form

Valve plate with large inclination seat design, oblique, effectively improve the response speed of the valve on the flow, make better use of the media flow and gravity. At the same time, the valve plate truss streamlined design, can increase the flow area, flow resistance coefficient, reducing operation cost.

#### Flow resistance is smaller

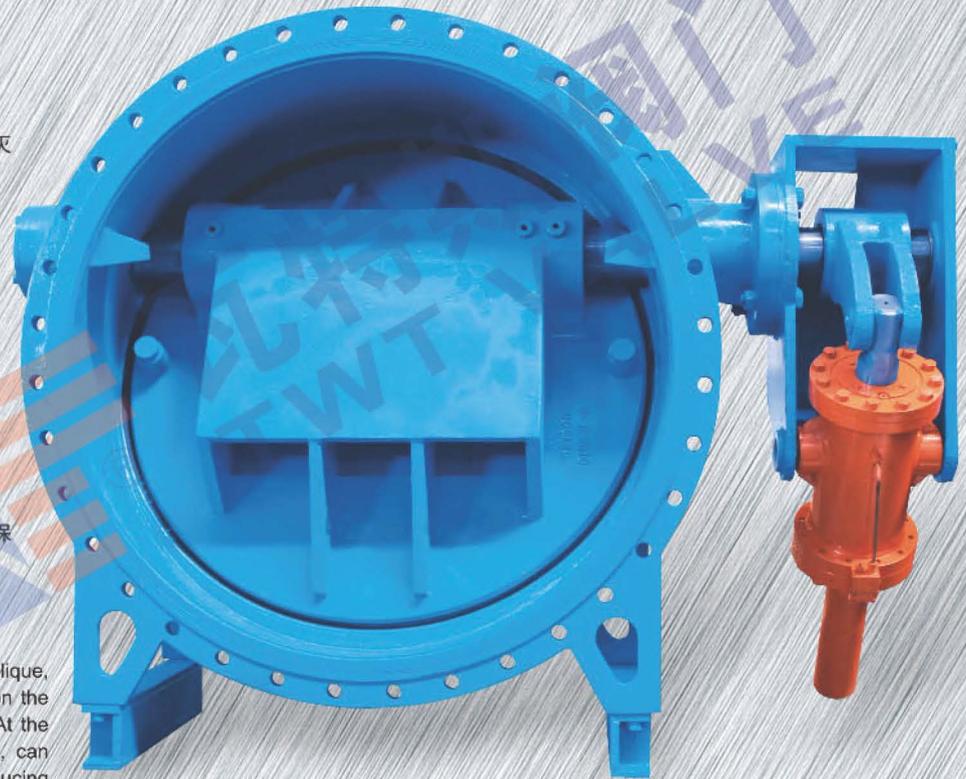
Special eccentric pendulum structure and external buffer mechanism;  
The valve plate adopts the double eccentric swing structure, to reduce the flow resistance and vibration;  
Buffer damping cylinder unique effective control valve is closed to reduce and eliminate water hammer speed, when in use, no vibration, no noise, smooth operation.

#### Better quality materials

Plate is made of ductile cast iron, high strength, corrosion resistance;  
Bearing with composite material, has the characteristic of strong bearing capacity, good wear resistance, small friction resistance etc.;  
Seal with stainless steel and wear resistant rubber, no pollution.

#### More long life and environmental image

Sealing soft rubber seal for metal, reliable sealing performance, wear resistance, friction small opening and closing, long service life;  
Fully adaptive flow switch, not external operating system, low carbon environmental protection.



■适用压力 Applicable Pressure: PN0.6~1.6MPa

■适用规格 Applicable Size: DN300~2600

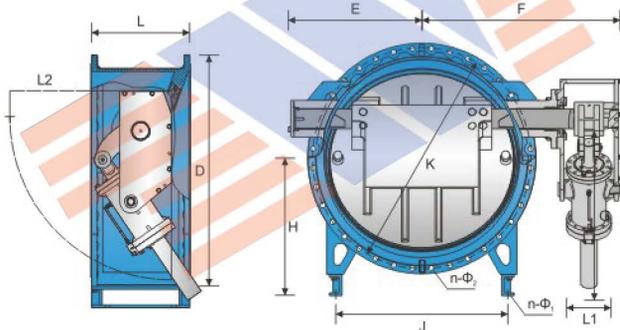
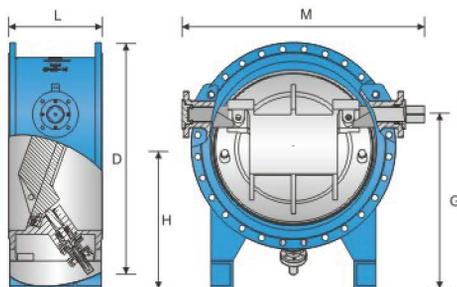
■适用温度 Applicable temperature: -20℃~120℃

■主体材质 Body material: 铸铁、球墨铸铁  
Cast Iron, Nodular Cast Iron

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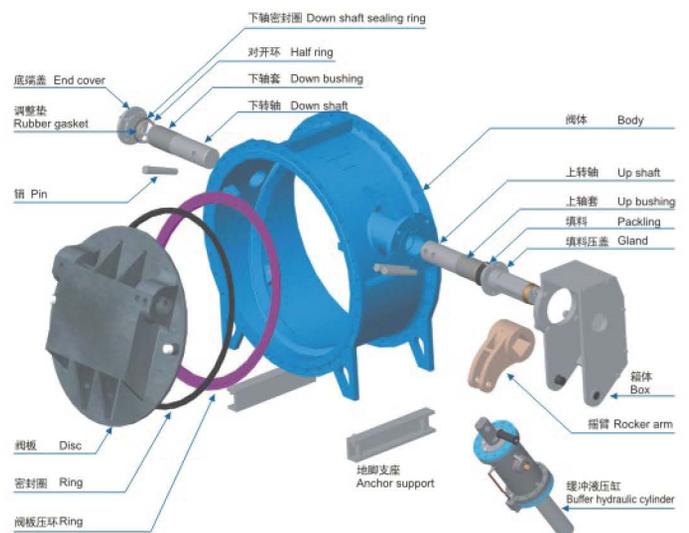
[www.twtvalve.com](http://www.twtvalve.com)

**蝶式斜置密封多功能止回阀 · 技术参数**  
**Control Valves Technical Parameters**

**DIMENSIONS: PN6 · PN10 · PN16**

**DN300~1800**

**DN300~900**

| 部件    | Component                 | 材质 Material |
|-------|---------------------------|-------------|
| 下轴密封圈 | Down shaft sealing ring   | NBR         |
| 对开环   | Half ring                 | 2Cr13       |
| 下轴套   | Down bushing              | DF-1        |
| 下转轴   | Down shaft                | 2Cr13       |
| 底端盖   | End cover                 | QT450-10    |
| 调整垫   | Rubber gasket             | ZCuZn382Pb2 |
| 上转轴   | Up shaft                  | 2Cr13       |
| 上轴套   | Up bushing                | DF-1        |
| 填料    | Packling                  | NBR         |
| 销     | Pin                       | 2Cr13       |
| 填料压盖  | Gland                     | QT450-10    |
| 阀板    | Disc                      | QT450-10    |
| 阀体    | Body                      | QT450-10    |
| 密封圈   | Ring                      | NBR         |
| 箱体    | Box                       | Q235-A      |
| 阀板压环  | Ring                      | Q235-A      |
| 摇臂    | Rocker arm                | Q235-A      |
| 地脚支座  | Anchor support            | Q235-A      |
| 缓冲液压缸 | Buffer hydraulic cylinder | 部件 Parts    |

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.

**产品结构说明 Control Valves Product srructure**


**蝶式斜置密封多功能止回阀外型尺寸**  
**Control Valves Overall Dimension**

| PN   | DN   | L    | D    | K      | n-Φ <sub>2</sub> | E    | F    | J    | M    | G    | H    | L1  | L2    | n-Φ <sub>1</sub> |
|------|------|------|------|--------|------------------|------|------|------|------|------|------|-----|-------|------------------|
| PN6  | 1200 | 630  | 1405 | 1340   | 32-Φ34           | 880  | 1230 | 1040 | 941  | 1180 | 920  | 287 | 570   | 4-Φ26            |
|      | 1400 | 710  | 1630 | 1560   | 36-Φ37           | 995  | 1380 | 1500 | 1009 | 1180 | 870  | 287 | 665   | 4-Φ33            |
|      | 1600 | 790  | 1830 | 1760   | 40-Φ37           | 1078 | 1525 | 1600 | 1225 | 1420 | 1060 | 344 | 775   | 4-Φ33            |
|      | 1800 | 870  | 2045 | 1970   | 44-Φ40           | 1125 | 1575 | 1900 | 1290 | 1420 | 1010 | 344 | 885   | 4-Φ33            |
| PN10 | 300  | 270  | 445  | 400    | 12-Φ23           | 300  | 485  | 380  | 605  | 500  | 490  | 116 | 75    | 4-Φ20            |
|      | 350  | 290  | 505  | 460    | 16-Φ23           | 320  | 510  | 400  | 634  | 500  | 470  | 116 | 103   | 4-Φ20            |
|      | 400  | 310  | 565  | 515    | 16-Φ28           | 330  | 540  | 442  | 693  | 500  | 470  | 116 | 130   | 4-Φ20            |
|      | 450  | 330  | 615  | 565    | 20-Φ28           | 355  | 585  | 450  | 753  | 590  | 510  | 170 | 157   | 4-Φ20            |
|      | 500  | 350  | 670  | 620    | 20-Φ28           | 380  | 645  | 490  | 832  | 590  | 495  | 170 | 185   | 4-Φ20            |
|      | 600  | 390  | 780  | 725    | 20-Φ31           | 440  | 725  | 672  | 941  | 590  | 490  | 170 | 240   | 4-Φ20            |
|      | 700  | 430  | 895  | 840    | 24-Φ31           | 498  | 808  | 700  | 1009 | 770  | 560  | 211 | 295   | 4-Φ20            |
|      | 800  | 470  | 1015 | 950    | 24-Φ34           | 570  | 850  | 790  | 1225 | 770  | 540  | 211 | 350   | 4-Φ26            |
|      | 900  | 510  | 1115 | 1050   | 28-Φ34           | 638  | 935  | 870  | 1290 | 920  | 785  | 236 | 405   | 4-Φ26            |
|      | 1000 | 550  | 1230 | 1160   | 28-Φ37           | 695  | 1050 | 950  |      | 920  | 765  | 236 | 460   | 4-Φ26            |
|      | 1200 | 630  | 1455 | 1380   | 32-Φ40           | 880  | 1230 | 1040 |      | 1180 | 920  | 287 | 570   | 4-Φ26            |
|      | 1400 | 710  | 1675 | 1590   | 36-Φ43           | 995  | 1380 | 1500 |      | 1180 | 870  | 287 | 665   | 4-Φ33            |
|      | 1600 | 790  | 1915 | 1820   | 40-Φ49           | 1078 | 1525 | 1600 |      | 1420 | 1060 | 344 | 775   | 4-Φ33            |
| 1800 | 870  | 2115 | 2020 | 44-Φ49 | 1125             | 1575 | 1900 |      | 1420 | 1010 | 344  | 885 | 4-Φ33 |                  |
| PN16 | 300  | 270  | 460  | 410    | 12-Φ28           | 300  | 485  | 380  | 605  | 500  | 490  | 116 | 75    | 4-Φ20            |
|      | 350  | 290  | 520  | 470    | 16-Φ28           | 320  | 510  | 400  | 634  | 500  | 470  | 116 | 103   | 4-Φ20            |
|      | 400  | 310  | 580  | 525    | 16-Φ31           | 330  | 540  | 442  | 693  | 500  | 470  | 116 | 130   | 4-Φ20            |
|      | 450  | 330  | 640  | 585    | 20-Φ31           | 355  | 585  | 450  | 753  | 590  | 510  | 170 | 157   | 4-Φ20            |
|      | 500  | 350  | 715  | 650    | 20-Φ34           | 380  | 645  | 490  | 832  | 590  | 495  | 170 | 185   | 4-Φ20            |
|      | 600  | 390  | 840  | 770    | 20-Φ37           | 440  | 725  | 672  | 941  | 590  | 490  | 170 | 240   | 4-Φ20            |
|      | 700  | 430  | 910  | 840    | 24-Φ37           | 498  | 808  | 700  | 1009 | 770  | 560  | 211 | 295   | 4-Φ20            |
|      | 800  | 470  | 1025 | 950    | 24-Φ40           | 570  | 850  | 790  | 1225 | 770  | 540  | 211 | 350   | 4-Φ26            |
|      | 900  | 510  | 1125 | 1050   | 28-Φ40           | 638  | 935  | 870  | 1290 | 920  | 785  | 236 | 405   | 4-Φ26            |
|      | 1000 | 550  | 1255 | 1170   | 28-Φ43           | 695  | 1050 | 950  |      | 920  | 765  | 236 | 460   | 4-Φ26            |

注：欲订购标中未列出的产品可与本公司销售部门联系。  
 Note: For sizes and classes not shown, please contact our Sales Department.

## 蝶式斜置密封多功能止回阀 · 流量特性

## Butterfly slanting sealing multifunctional check valve, discharge characteristic

### ■ 介质为常温水，流速为3m/s时的技术参数

Medium for the technical parameters of warm water, flow rate of 3m/s.

| 规格 Size DN(mm)                              | 300  | 350  | 400   | 450   | 500   | 600   | 700   | 800   | 900   | 1000  | 1200   | 1400   | 1600   | 1800   |
|---|------|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| 流量<br>Flow (m³/s)                           | 665  | 923  | 1224  | 1568  | 1953  | 2852  | 3920  | 5158  | 6417  | 7977  | 11850  | 15680  | 20632  | 26261  |
| 压头损失<br>Head loss (m)                       | 0.13 | 0.12 | 0.11  | 0.10  | 0.10  | 0.09  | 0.12  | 0.11  | 0.11  | 0.09  | 0.06   | 0.06   | 0.06   | 0.07   |
| 压力损失<br>Pressure loss (Pa)                  | 1300 | 1200 | 1100  | 1000  | 1000  | 900   | 1200  | 1100  | 1100  | 900   | 600    | 600    | 600    | 700    |
| 流阻系数<br>The flow resistance coefficient (ξ) | 0.39 | 0.35 | 0.32  | 0.29  | 0.26  | 0.23  | 0.32  | 0.29  | 0.29  | 0.23  | 0.17   | 0.15   | 0.16   | 0.16   |
| C值<br>The value of C                        | 5875 | 8487 | 11672 | 15459 | 19878 | 30709 | 35257 | 48610 | 61521 | 85292 | 142845 | 204775 | 258832 | 317644 |

### ■ 流量曲线 Curve of flow rate

C值定义 Definition of C value

当阀门全开时，水流经阀门的两端压差为100kPa时某给定行程，所流过的流量以m³/h计，介质密度取kg/m³的流量数值，m²。

When the valve fully open, the flow through the valve at both ends of the pressure difference is 100kPa for a given stroke, the flow of m³/h, Flow medium density from kg/m³, m².

$$C=25.56 \frac{d^2}{\sqrt{\xi}}$$

C: 流量系数(米²)

Q: 流量(米³/小时)

ρ: 介质密度(千克/米³)

P1: 流入侧压力(100千帕)

P2: 流出侧压力(100千帕)

ΔP: 阀门压力损失(100千帕)

C: flow coefficient (m²)

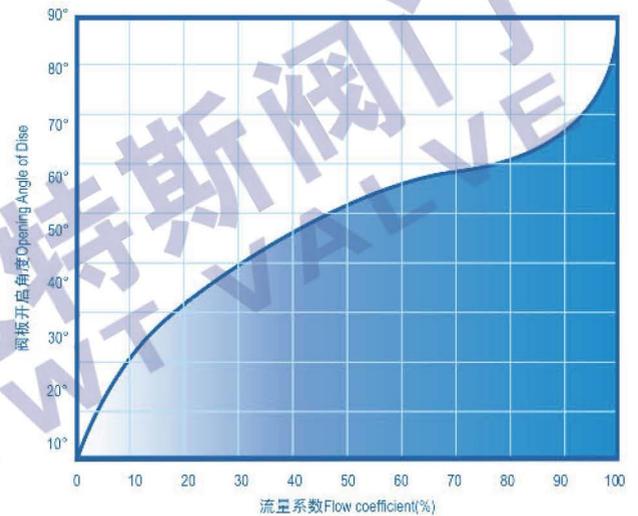
Q: flow (m³/ hours)

P: medium density (kg /m³)

P1: into the side pressure (100000 PA)

P2: the outflow side pressure (100000 PA)

P: valve pressure loss (100000 PA)



### ■ 流量系数 ξ 与 C 值的换算关系

The conversion relationship between flow coefficient and C value.

C: 阀门内径(英寸)

C: The valve diameter (Inch)

ξ: 流阻系数数量(无量纲)

ξ: The flow resistance coefficient (Dimensionless)

### ■ 故障及排除方法 Troubles and troubleshooting

| 可能发生的故障<br>The faults may occur  | 发生故障的原因<br>The trouble   | 消除故障的方法<br>Method for eliminating fault  |
|--|--|--|
| 密封面泄露<br>The sealing surface leakage<br>左、右轴端泄露<br>Left, right shaft end leakage<br>阀门启闭困难<br>The valve opening and closing difficult<br>活塞杆处漏油<br>Oil leakage from piston rod<br>缓闭慢关段效果不明显<br>Slow closing slowly off section of the effect is not obvious | 密封圈划伤<br>Sealing ring scuffing<br>左、右端盖松动<br>The left, the right end cover loose<br>溢流阀流量太小<br>Overflow valve flow rate is too small<br>上、下缸盖“O”形密封圈破损<br>Last, under the "O" ring breakage<br>溢流阀流量太大，活塞上密封圈破损。<br>The overflow valve flow is too large, the sealing ring on the piston damage. | 更换密封圈<br>Replace sealing ring<br>均匀拧紧左、右端盖处螺栓<br>Uniformly tighten left, the right end cover bolt<br>将溢流阀流量调大(左旋调松)<br>The overflow valve flow adjustment (levorotatory loosen)<br>更换“O”形密封圈<br>Replace "O" shaped sealing ring<br>将溢流阀流量调小(右旋调紧)，更换密封圈。<br>The overflow valve flow adjustment is small (right hand tightening), replace the sealing ring. |

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