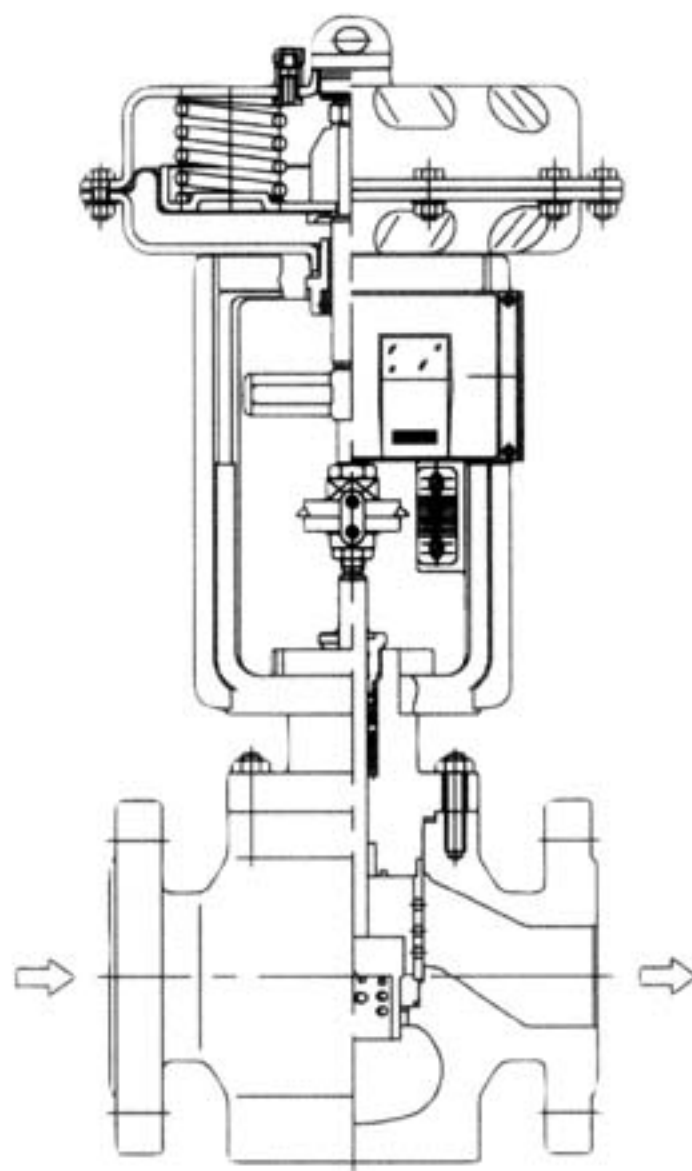


# ECOTROL SERIES

## APN 快速式高压低噪音笼式单座调节阀 HIGH-PRESSURE LOW NOISE CAGED CONTROL VALVE



## APN 快换式高压低噪音笼式单座调节阀

## APN High-Pressure Low Noise Caged Globe Valve

### 概要:

APN 高压低噪音笼式调节阀是为降低可压缩流体的噪音而设计的,除具有 APC 的优点外,还具有压降损失小、噪音低等优点,适用于介质为高压差气体、蒸汽等场合。

配用多弹簧气动薄膜执行机构或电动执行机构。执行机构与定位器等附件之间采用无管路连接,使得安装空间大大缩小,且安装快速方便、可靠性高。

### GENERAL

The valve is specially designed to reduce the noise of compressible fluid.

It not only has the advantage as APC valve has, but also features small loss of pressure drop and low noise. It is suitable to the services such as high pressure air and steam.

Multi-spring pneumatic actuator or electric motor supplies the power of the valves' action. Pipe-less connection makes the valve more compact, more conveniently to assemble and disassemble, and have higher reliability

### 阀体部分 BODY

|  |   |
|--|---|
| 形式 Type                                      | 不平衡型阀芯 Unbalance plug type  |
| 公称通径 Body size                               | DN25~DN200(1"~8")   |
| 阀芯形状 Plug form                               | 打孔阀芯 Perforated pressure balanced plug type   |
| 流量特性 Characteristics                         | 等百分比、线性 Equal percentage, linear  |
| 阀内件材质 Trim materials<br>阀内件处理 Trim treatment | 标准材质组合及使用温度、压力范围,请参见表 1 及图 1<br>See table 1 and fig. 1 for standard combination of material and operating pressure-temperature.   |
| 公称压力 Body ratings                            | JB/T79-94 HG20592 DIN2543/2544/2545<br>PN6.3、PN10、PN16、PN25MPa;<br>ANSI B16.5 ANSI600、ANSI900、ANSI1500  |
| 连接方式 Body connections                        | 法兰式(RF、FM、RTJ)<br>Flanged(RF、FM、RTJ)  |
| 法兰距 Face to Face dimension                   | 符合 IEC 534-4-1976,详细见表 6.1、6.2<br>According with IEC 534-4-1976. See Table 6.1、6.2 for details  |
| 阀体及上阀盖材质<br>Body&Bonnet Material             | A216-WCB/1.0619, A217-WC6/1.7357, A217-C5, A217-WC9/1.7379, A352-LCB, A351-CF8/1.4308, A351-CF8M/1.4408 and other alloy steel<br>各种材质的使用温度、压力范围参见表 1、表 2 及图 2。<br>As to the operating pressure-temperature limitation for each material, see tables 1 and tables 2 & Fig2 |
| 上阀盖形式 Bonnet type                            | 标准型 Standard type: -46 ~ 200℃; 200℃ ~ 300℃<br>散热片型 Fin-extension type: 300℃ ~ 530℃  |
| 填料 Packing                                   | 石墨组合填料、石墨填料等<br>使用温度、压力范围请参阅表 3、图 2<br>Grafoil and PTFE combination packing, grafoil packing.<br>See table 2 & fig. 2 for selection.  |
| 垫圈 Gasket                                    | 金属夹石墨密封垫<br>Spiral wound metal, with grafoil filler.  |
| 表面涂层 Painting color                          | 碳钢阀体喷银色环氧树脂 Argentate munsell on carbon steel<br>不锈钢阀体喷钢灰丙烯酸瓷漆 Steel grey crylic acid enamel on stainless steel   |

**执行机构 ACTUATOR**

|   |   |                      |   |
|---|---|----------------------|---|
| 规格<br>Specification                     | 型号 Type   | 气动薄膜式 Diaphragm type | 电动式 Electric Motor type   |
|   |   | MF                   | PEL   |
|   |   | 多弹簧型 Multi-spring    |   |
| 用途<br>Purpose                           | 调节 Modulation   |                      | 调节 Modulation   |
| 供气压力或供给电压<br>Air supply or Power supply | 200(75-150)Kpa G, 300(75-150)Kpa G<br>450(170-360)Kpa G, 450(180-370)Kpa G<br>550(200-360)Kpa G, 550(220-440)Kpa G<br>300(96-171)Kpa G, 350(145-256)Kpa G |                      | 供电电源: 220V 50Hz<br>Power supply<br>输入信号: 4~20mA<br>Input signal |
| 接口 Connection                           | G1/8(MF2), G1/4(MF3)<br>G3/4(MF5)   |                      | 进出线口: M20X1.5(2个)<br>Conduit entry                              |
| 正作用 Direct action                       | 供气压力增加, 阀门关闭<br>Air to valve shut   |                      | 输入信号增加阀闭<br>Signal increase to valve shut                       |
| 反作用 Reverse action                      | 供气压力增加, 阀门打开<br>Air to valve open   |                      | 输入信号增加阀开<br>Signal increase to valve open                       |
| 滞后<br>Hysteresis                        | ≤ 1%(带定位器) With positioner  |                      | ≤ 0.8%  |
| 线性 Linearity                            | ≤ ± 1%(带定位器) With positioner  |                      | ≤ ± 1%  |
| 允许环境温度<br>Ambient Temp                  | -30℃ ~ +80℃   |                      | -20℃ ~ +60℃   |
| 标准涂层色 /Painting                         | 中国蓝 /China blue   |                      | 中国蓝 /China blue   |
| 选购设备 Option                             | 电气阀门定位器, 智能阀门定位器<br>空气过滤减压阀, 电磁阀, 行程开关, 阀位变送器<br>E/P P/P-Positioner, Air-set, Solenoid, Limit switch,<br>Transmitter                                      |                      | 限位开关<br>Limit switch  |

**性能 PERFORMANCE**

|                                  |                              |
|----------------------------------|------------------------------|
| 额定 Cv 值<br>Rated Cv              | 请参见表 4<br>See Table 4        |
| 流量特性<br>Flow characteristics     | 请参见图 4<br>See Fig 4          |
| 可调比 R<br>Rangeability            | 50:1 (Plug size ≤ 1/4B-30:1) |
| 阀座泄漏量<br>Seat leakage            | 请参见表 1<br>See Table 1        |
| 允许压差<br>Allowable pressure drops | 请参见表 5<br>See Table 5        |

**特殊规格(有偿) OPTIONAL SPECIAL SPECIFICATIONS (additional cost is required)**

|   |  |
|---|--|
| 阀体特殊检查<br>Special testing for Body                      | 材料检查、液体渗透探伤检查、放射线检查、流量特性检查、<br>Material certificate, liquid penetrant testing, Radiographic testing, Flow characteristics testing  |
| 阀体特殊清洗<br>Special cleaning for body                     | 禁油、除水处理<br>Oil-free, water-proof   |
| 阀体及执行机构特殊规格<br>Special specifications for body actuator | 防砂、防尘型、防盐腐蚀型、寒冷地区用、热带地区用、禁铜、特殊空气配管及特殊气源<br>接头、真空工作条件用、指定涂层色<br>Sand and dust proof, salty environment proof, cold area proof, tropical area proof. Do not use<br>copper alloy, special piping and fitting, vacuum service proof, SUS bolt and nut for exposed<br>parts, Non-standard painting. |
| 认证<br>Authorization                                     | 通过中国 VTI 和美国 FMRC ISO9001 国际质量体系认证、国家技术监督局 ISO<br>10012-1 完善计量检测体系认证<br>Authorization of China CQC, ISO9001 ISO 10012-1  |



**表 1. 阀体、阀内件材质组合及使用温度范围、阀座允许泄漏量**
**Table1.BODY/TRIM STANDARD MATERIAL COMBINATION, OPERATING TEMPERATURE AND SEATLEAKAGE**

阀内件材质、处理使用温度、压力范围 请参见图 1

Trim material/treatment vs operating temperature–pressure range : See Fig1

**表 1-1 阀体材质:碳钢**
**Table1-1 BODY MATERIAL :CARBON STEEL**

| 阀体材质 Body material            |                 | A216-WCB/SCPH2,A217-WC6/SCPH21,A217-WC9,A217-C5,A352-LCB/SCPL1 |                  |              |              |
|-------------------------------|-----------------|--|------------------|--------------|--------------|
| 阀芯 Plug                       | 材质 Material     | 420/1.4021   | 3Cr17NiMo/1.4122 | 440B/1.4112  | 316/1.4571   |
|                               | 处理 Treatment    | HT   | NT               | HT           | NT           |
| 阀座 Seat                       | 材质 Material     | A217-420/1.4021  | 3Cr17NiMo/1.4122 | 440B/1.4112  | 316/1.4571   |
|                               | 处理 Treatment    | HT   | HT               | HT           | NT           |
| 导向套 Guide                     | 材质 Material     | 440B/1.4112  | 440B/1.4112      | 440B/1.4112  | 316/1.4571   |
|                               | 处理 Treatment    | HT   | HT               | HT           | NT           |
| 密封垫圈 Gasket                   |                 | 316+GRF  | 316+GRF          | 316+GRF      | 316+GRF      |
| 阀座允许泄漏量 Seat Leakage          | ANSI B16.104    | CLASS IV   | CLASS IV 或 V     | CLASS IV 或 V | CLASS IV 或 V |
| 使用温度 Operating temperature °C | SCPH2/WCB       | -5~425℃  | -5~425℃          | -5~425℃      | -5~425℃      |
|                               | A217-WC6/SCPH21 | -5~538℃  | -5~538℃          | -5~538℃      | -5~538℃      |
|                               | A217-WC9        | -5~538℃  | -5~538℃          | -5~538℃      | -5~538℃      |
|                               | A352-LCB/SCPL1  | -45~230℃   | -45~230℃         | -45~230℃     | -45~230℃     |

备注:1.不推荐阀内件材质使用司太莱堆焊工艺; 2. DN25-50 阀芯为整体式, DN80-200 阀芯为分体式

Remarks: 1.Stellited plug is not recommended to use; 2. Integral plug for DN25-50, separated plug as called plug and stem for DN80-200.

2. HT= 硬化处理 Hardening Treatment, NT= 渗氮处理 Nitriding Treatment

**表 1.2 阀体材质:不锈钢**
**Table1-2 BODY MATERIAL :STAINLESS STEEL**

| 阀体材质 Body material            |                 | A351-CF8/L4308 |    |            |    | A351-CF8M/L4408 |    |
|-------------------------------|-----------------|----------------|----|------------|----|-----------------|----|
| 阀芯 Plug                       | 材质 Material     | 304            |    | 316/1.4571 |    | 316/1.4571      |    |
|                               | 处理 Treatment    | NT             |    | NT         |    | NT              |    |
| 阀座 Seat                       | 材质 Material     | 304            |    | 316/1.4571 |    | 316/1.4571      |    |
|                               | 处理 Treatment    | ST             | -- | ST         | -- | ST              | -- |
| 导向套 Guide                     | 材质 Material     |                |    |            |    |                 |    |
|                               | 处理 Treatment    | NT             |    |            |    | NT              |    |
| 密封垫圈 Gasket                   |                 | 316+GRF        |    |            |    | 316+GRF         |    |
| 阀座允许泄漏量 Seat Leakage          | ANSI B16.104    | CLASSIV 或(or)V |    |            |    | CLASSIV 或(or)V  |    |
| 使用温度 Operating temperature °C | A351-CF8/L4308  | -45~538℃       |    |            |    | -45~538℃        |    |
|                               | A351-CF8M/L4408 | -45~538℃       |    |            |    | -45~538℃        |    |

备注:1. DN25-50 阀芯为整体式, DN80-200 阀芯为分体式 2.可根据用户需求铸造双相不锈钢 ASTM A-890-99 Grade 3A (1.4468)及哈氏合金等特殊材质的阀门 3. HT= 硬化处理 Hardening Treatment, NT= 渗氮处理 Nitriding Treatment

Remarks: 1. Integral plug for DN25-50, separated plug as called plug and stem for DN80-200. 2. Several stainless steels such as ASTM A-890-99 Grade 3A(1.4468)double metallic phases steel and Hastelloy can be supplied according to clients' requirements;



表 2 各国常用阀门用铸钢对照表

表 2-1 各国常用阀门用铸钢对照表 Comparison table for steels used in valves

| 国家标准<br>Standard of country | 材料牌号 Symbol of material |            |             |          |              |                |                  |
|-----------------------------|-------------------------|------------|-------------|----------|--------------|----------------|------------------|
|                             | 铸钢 Cast steel           |            |             |          |              |                |                  |
| 美国 ASTM 标准<br>ASTM Standard | A216 CB                 | A217 C5    | A217 WC6    | A217 WC9 | A315 CF8     | A351 CF8M      | A-890-99 Grade3A |
| 德国 DIN 17001<br>W-NrGerman  | 1.0619                  |            | 1.7357      | 1.7379   | 1.4308       | 1.4408         | 1.4468           |
| 中国 GB/T17616<br>China       | ZG15Cr5Mo               | ZG15Cr1MoG | ZG12Cr2Mo1G | 2.5CrMo  | ZG0Cr18Ni9   | ZG0Cr17Ni12Mo2 | ZG0Cr25Ni6Mo2N   |
| 日本 JIS<br>Japan             | SCPH2                   | SCPH61     | SCPH21      | SCPH32   | SCS13/SCS13A | SCS14          |                  |

表 2-2 各国常用阀门用不锈钢对照表 Comparison table for stainless steels used in valves

| 国家标准<br>Standard of country | 材料牌号(近似对照) Symbol of material (approximately comparing) |               |          |            |        |          |          |           |
|-----------------------------|---|---------------|----------|------------|--------|----------|----------|-----------|
|                             | 不锈钢 Stainless steel                                     |               |          |            |        |          |          |           |
| 美国 ASTM 标准<br>ASTM Standard | 316   | 316L          | 304      | 304L       | 410    | 420      | 440B     |           |
| 德国 DIN 17001<br>W-NrGerman  | 1.4571  | 1.4435        | 1.4308   | 1.4306     | 1.4006 | 1.4021   | 1.4112   | 1.4122    |
| 中国 GB/T17616<br>China       | 0Cr17Ni12Mo2  | 00Cr17Ni14Mo2 | 0Cr18Ni9 | 00Cr18Ni10 | 1Cr13  | 2Cr13    | 9Cr18MoV | 3Cr17NiMo |
| 日本 JIS<br>Japan             | SUS316  | SUS316L       | SUS304   | SUS304L    | SUS410 | SUS420J1 | SUS440B  |           |

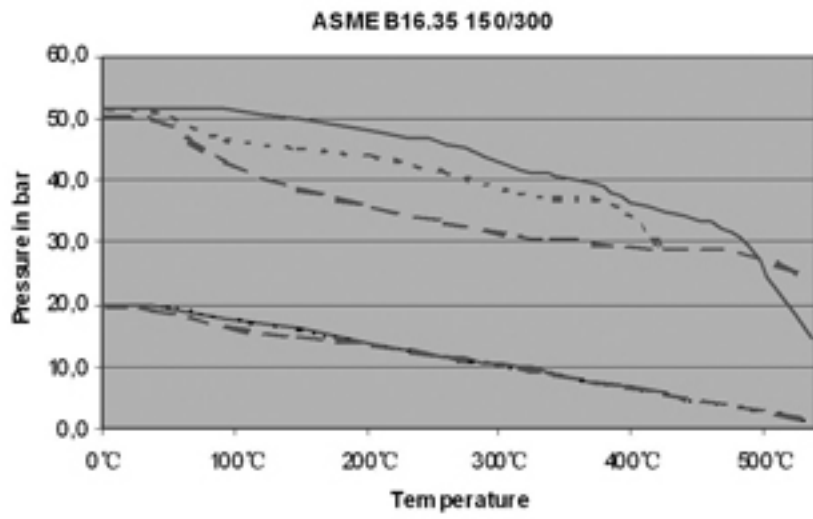
表 3 阀体材质的使用温度·压力范围

Table2 BODY MATERIAL/OPERATING PRESSURE-TEMPERATURE RATINGS

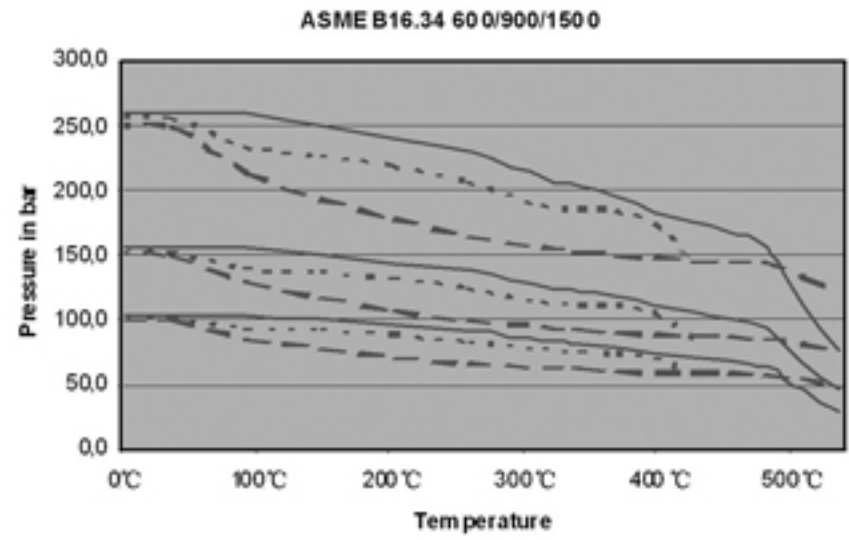
UNIT:MPa G

| 温度<br>Temp.<br>℃ | ANSI 600 |       |       |       |      |      | ANSI 900 |       |       |       |       |       | ANSI 1500 |       |       |       |       |       |
|------------------|----------|-------|-------|-------|------|------|----------|-------|-------|-------|-------|-------|-----------|-------|-------|-------|-------|-------|
|                  | LCB      | WCB   | WC6   | WC9   | CF8  | CF8M | LCB      | WCB   | WC6   | WC9   | CF8   | 6CF8M | LCB       | WCB   | WC6   | WC9   | CF8   | CF8M  |
| -196~38          | --       | --    | --    | --    | 9.91 | 9.92 | --       | --    | --    | --    | 14.88 | 14.88 | --        | --    | --    | --    | 24.79 | 24.79 |
| -45~38           | 9.56     | --    | --    | --    | 9.91 | 9.92 | 14.35    | --    | --    | --    | 14.88 | 14.88 | 23.92     | --    | --    | --    | 24.79 | 24.79 |
| -5~38            | 9.56     | 10.02 | 10.32 | 10.32 | 9.91 | 9.92 | 14.35    | 15.31 | 15.50 | 15.50 | 14.88 | 14.88 | 23.92     | 25.51 | 25.84 | 25.84 | 24.79 | 24.79 |
| 50               | 9.45     | 10.01 | 10.22 | 10.32 | 9.56 | 9.62 | 14.18    | 15.01 | 15.33 | 15.35 | 14.34 | 14.43 | 23.64     | 25.02 | 25.55 | 25.58 | 23.90 | 24.04 |
| 100              | 9.01     | 9.27  | 9.74  | 10.29 | 8.17 | 8.43 | 13.52    | 13.90 | 14.62 | 14.70 | 12.25 | 12.65 | 22.53     | 23.16 | 24.36 | 24.50 | 20.42 | 21.09 |
| 150              | 8.78     | 9.04  | 9.26  | 10.03 | 7.26 | 7.69 | 13.18    | 13.56 | 13.90 | 13.98 | 10.89 | 11.54 | 21.96     | 22.60 | 23.18 | 23.30 | 18.16 | 19.24 |
| 200              | 8.53     | 8.75  | 9.09  | 9.75  | 6.54 | 7.12 | 12.79    | 13.14 | 13.63 | 13.45 | 9.82  | 10.69 | 21.32     | 21.89 | 22.73 | 22.40 | 16.37 | 17.83 |
| 250              | 8.11     | 8.33  | 8.88  | 9.26  | 6.10 | 6.67 | 12.17    | 12.51 | 13.33 | 13.26 | 9.15  | 10.02 | 20.28     | 20.84 | 22.22 | 22.10 | 15.26 | 16.68 |
| 300              | 7.53     | 7.74  | 8.48  | 8.48  | 5.80 | 6.32 | 11.30    | 11.61 | 12.72 | 12.72 | 8.71  | 9.49  | 18.84     | 19.36 | 21.20 | 21.20 | 14.52 | 15.80 |
| 350              | 7.18     | 7.38  | 8.04  | 8.04  | 5.60 | 6.07 | 10.78    | 11.08 | 12.06 | 12.06 | 8.42  | 9.12  | 17.96     | 18.46 | 20.11 | 20.11 | 14.02 | 15.20 |
| 375              |          | 7.28  | 7.75  | 7.75  | 5.54 | 5.93 |          | 10.94 | 11.63 | 11.63 | 8.32  | 8.91  |           | 18.22 | 19.38 | 19.38 | 13.86 | 14.84 |
| 400              |          | 6.89  | 7.31  | 7.31  | 5.48 | 5.81 |          | 10.34 | 10.98 | 10.98 | 8.23  | 8.72  |           | 17.24 | 18.28 | 18.28 | 13.72 | 14.55 |
| 425              |          | 5.74  | 7.01  | 6.91  | 5.42 | 5.72 |          | 8.62  | 10.53 | 10.53 | 8.14  | 8.59  |           | 14.37 | 17.54 | 17.54 | 13.57 | 14.32 |
| 450              |          | 4.00  | 6.75  | 6.17  | 5.37 | 5.61 |          | 6.01  | 10.13 | 10.13 | 8.06  | 8.42  |           | 10.02 | 16.89 | 16.89 | 13.42 | 14.03 |
| 475              |          | 2.70  | 6.32  | 5.17  | 5.30 | 5.46 |          | 4.06  | 9.50  | 9.50  | 7.97  | 8.20  |           | 6.76  | 15.82 | 15.82 | 13.27 | 13.67 |
| 500              |          | 1.75  | 5.55  | 4.04  | 5.20 | 5.37 |          |       | 8.33  | 8.33  | 7.81  | 8.05  |           |       | 13.89 | 13.89 | 13.02 | 13.40 |
| 525              |          | 1.03  | 4.04  | 3.07  | 4.77 | 5.15 |          |       | 6.08  | 6.58  | 7.15  | 7.73  |           |       | 10.12 | 10.96 | 11.94 | 12.89 |
| 550              |          | 0.72  | 3.26  | 2.69  | 4.55 | 5.06 |          |       | 3.83  | 4.91  | 6.54  | 7.49  |           |       | 6.38  | 8.17  | 10.91 | 12.48 |
| 575              |          |       |       |       |      |      |          |       | 2.55  | 3.51  | 6.02  | 7.22  |           |       | 4.24  | 5.85  | 10.04 | 12.04 |
| 600              |          |       |       |       |      |      |          |       | 1.75  | 2.29  | 5.01  | 6.43  |           |       | 2.94  | 3.82  | 8.35  | 10.71 |
| 625              |          |       |       |       |      |      |          |       |       |       | 3.92  | 5.48  |           |       |       |       | 6.54  | 9.12  |
| 650              |          |       |       |       |      |      |          |       |       |       | 3.16  | 4.23  |           |       |       |       | 5.25  | 7.06  |
| 675              |          |       |       |       |      |      |          |       |       |       | 2.33  | 3.78  |           |       |       |       | 3.88  | 6.31  |

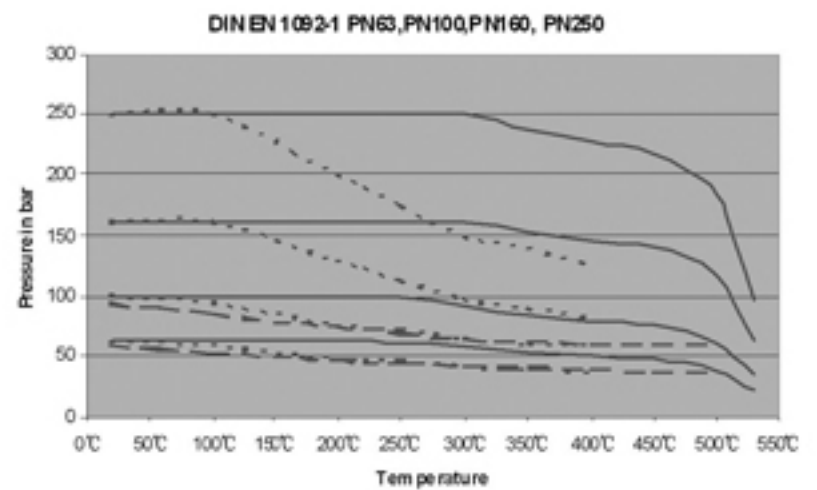
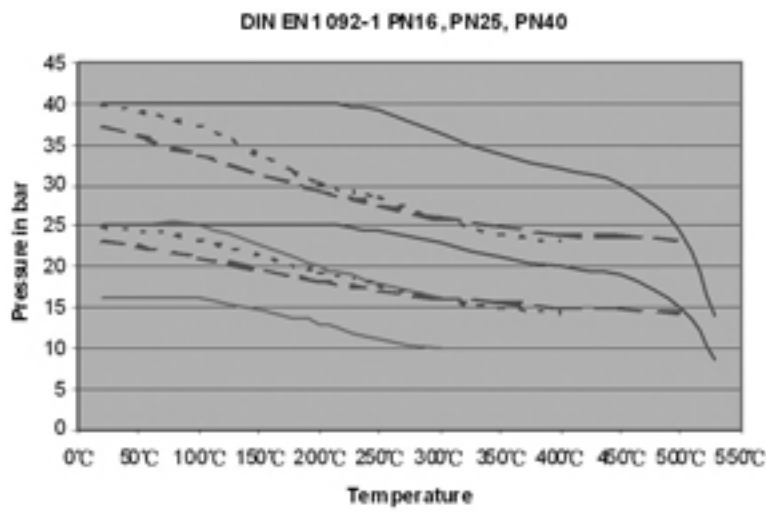
图 1.温压曲线  
Fig.2 PRESSURE -TEMPERATURE DIAGRAMS



ASME  
B16.34/B16.35



DIN EN  
1092-1



|           |             |
|-----------|-------------|
| —————     | WC6/1.7357  |
| - - - - - | CF8M/1.4581 |
| .....     | WCB/1.0619  |
| - · - · - | 0.7043      |



表 3: 填料的使用温度及压力范围

Table 3: The allowable operating pressure-temperature limitation for packing

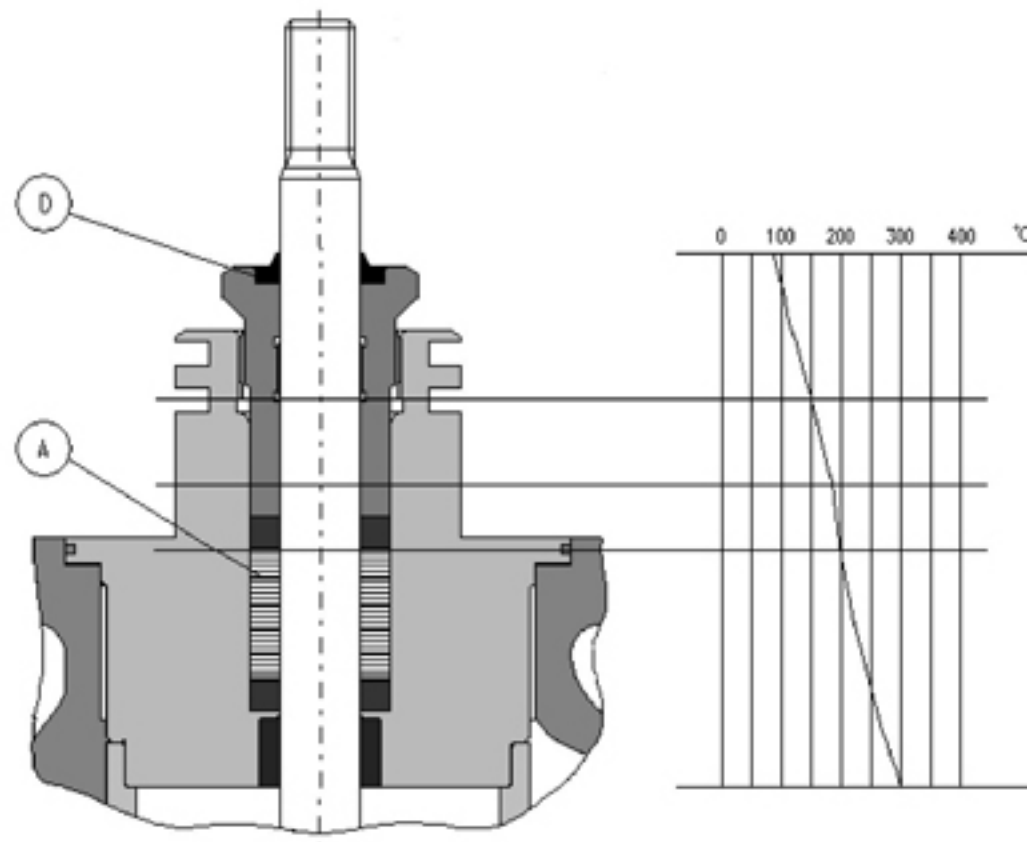
| 填料类型<br>(A 所示)<br>Packing type<br>Showed with A | 代码<br>Code | 防尘圈材质<br>(D 所示)<br>Wiper Showed with D | 温度范围<br>Temperature limitation | 上阀盖型式<br>Bonnet type                     | 备注说明<br>Remarks                   |
|---|------------|--|--------------------------------|--|-----------------------------------|
| 石墨 + 因科镍填料<br>Graphite with inconel             | 3          | NBR(丁腈橡胶)<br>VITON(氟橡胶)                | -20℃ ~ 400℃                    | 标准型 / 带散热片型<br>Standard or Fin-extension | 一般场合<br>Common Service            |
| 纯石墨填料<br>(Flexible graphite)                    | 5          | VITON(氟橡胶)                             | -196℃ ~ 530℃                   | 标准型 / 带散热片型<br>Standard or Fin-extension | 高、低温场合<br>High or low temperature |
| 石墨 + PTFE<br>Graphite + PTFE                    | 6          | NBR(丁腈橡胶)                              | -196℃ ~ 200℃                   | 标准型 / 加长型<br>Standard or long-extension  | 低温场合<br>Low temperature           |

注: 选择温度范围时, 如无特殊要求, 应就近选择。

Note: If no special requirements, immediate temperature scope is recommended.

图 2. 填料使用温度·压力范围

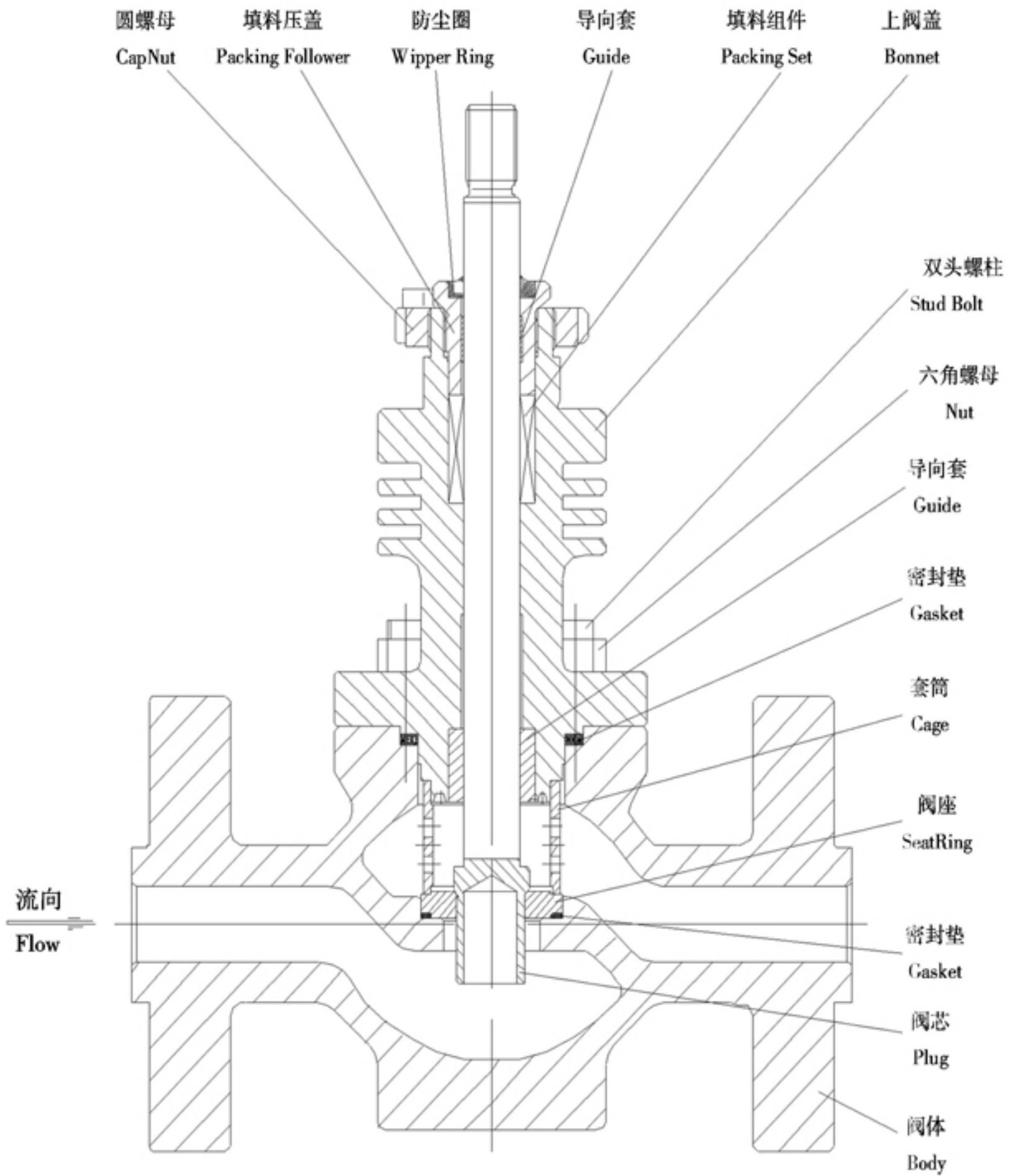
Fig.3 GLAND PACKING OPERATING PRESSURE-TEMPERATURE RATINGS



Temperature of fluid

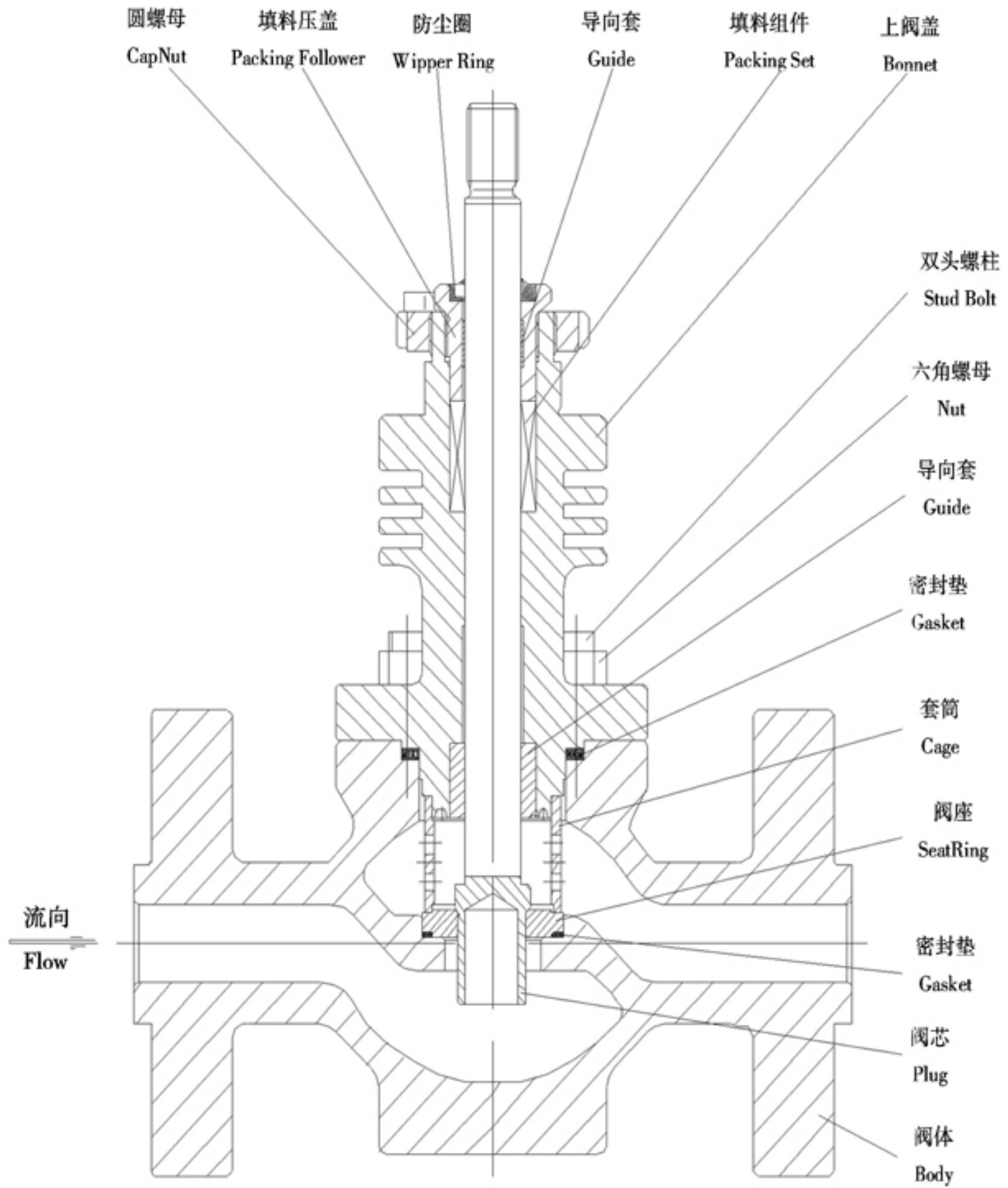
图 3.本体部构造 Fig.3 BODY SECTION VIEW

图 3-1 公称通径 DN80 以下 Fig.3-1 BODY SIZE UNDER DN80



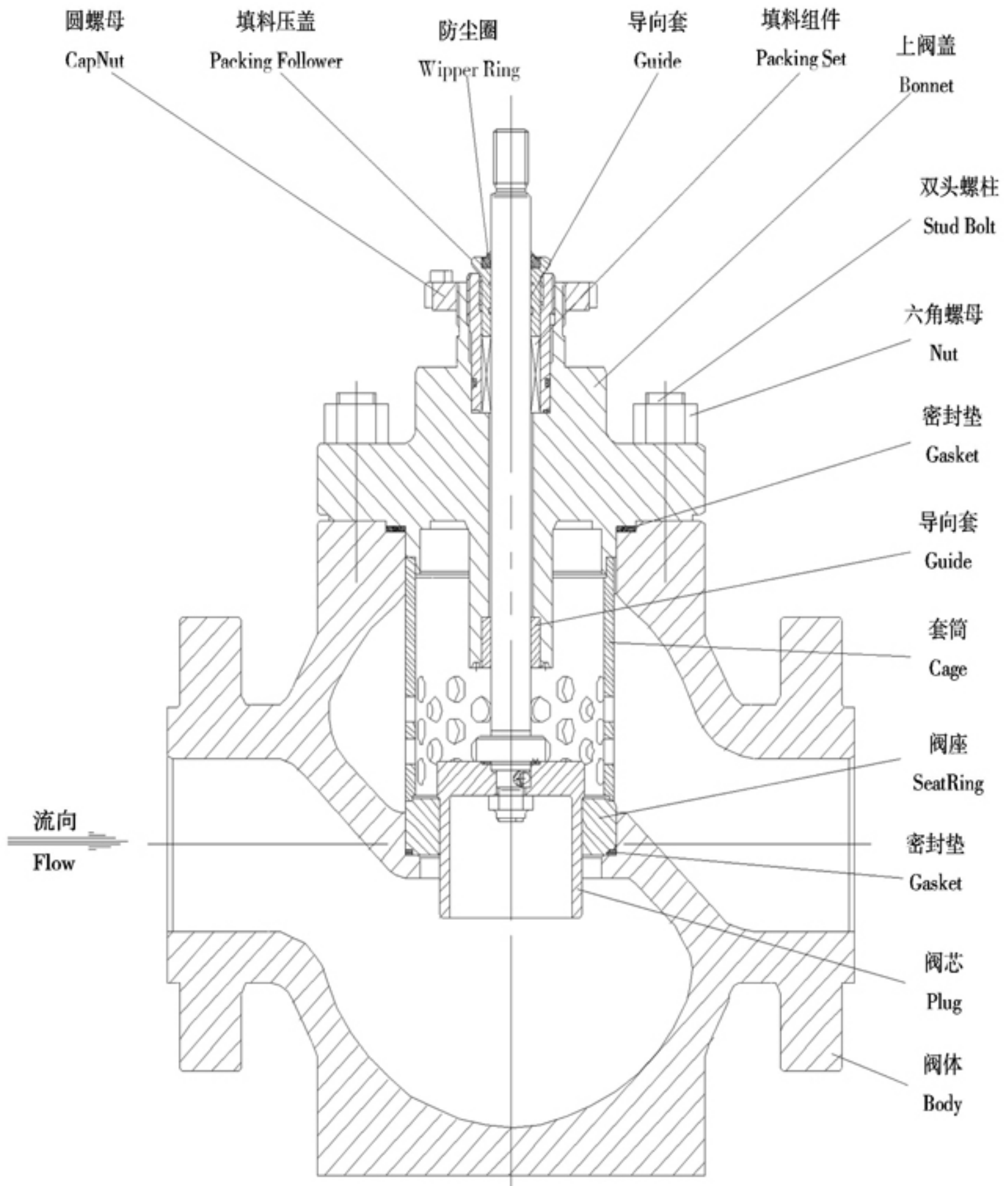
常温 Normal temperature



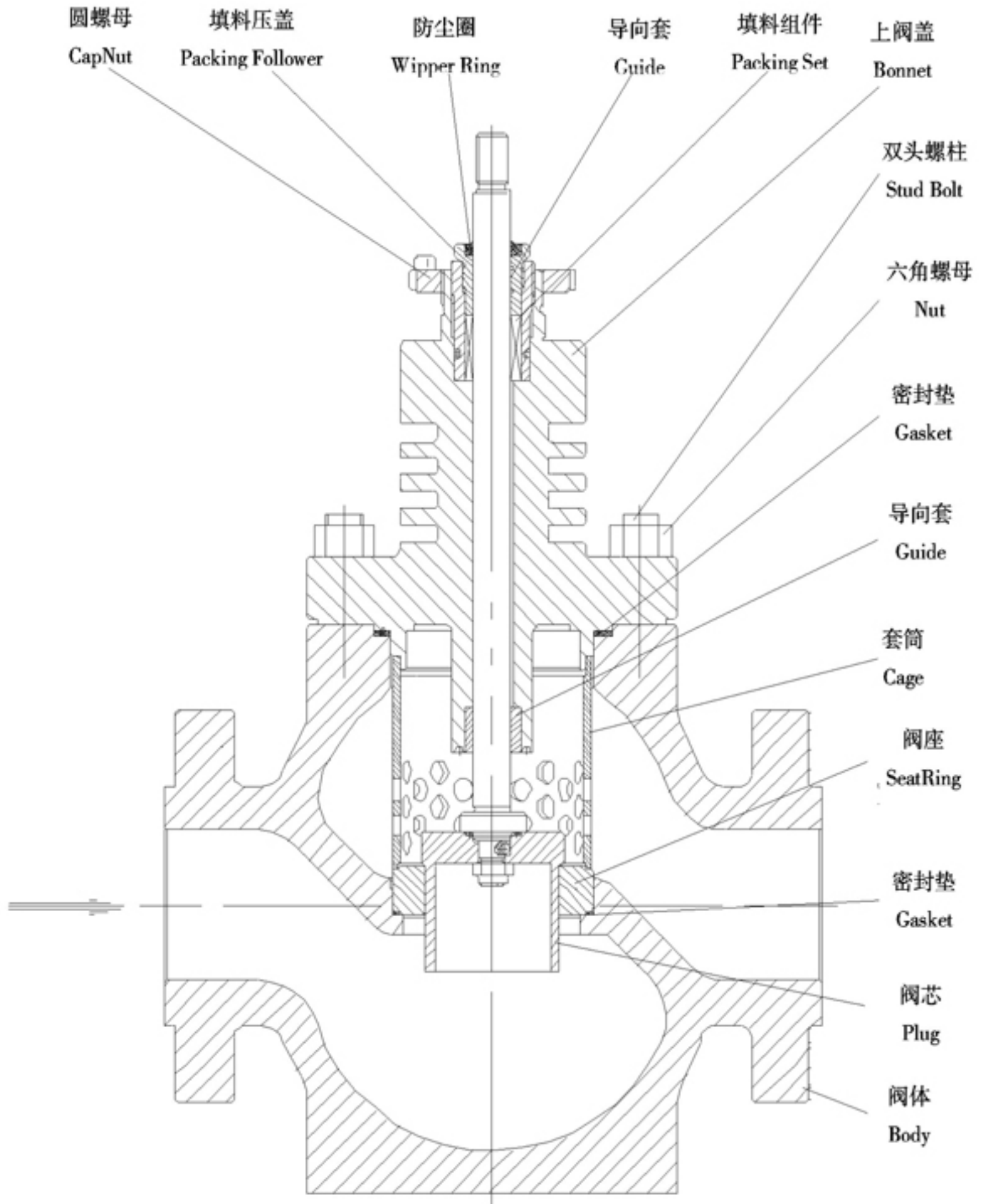


高温 High temperature

图 3-2.公称通径 DN80 (3")、DN100 (4") Fig.3-2 BODY SIZEDN80 (3")、DN100 (4")



常温 Normal temperature



高温 High temperature



**表 4. 额定 Cv·行程及缩腔型阀芯制造范围**
**Table4 Cv VALUE, STROKE AND REDUCED PLUG MANUFACTURING RANGE**
**Table.4: 额定 Cv 值 Rated Cv**

| 阀芯形式 Plug type               |           | 打孔阀芯 Perforated plug |     |     |                       |     |     |
|------------------------------|-----------|----------------------|-----|-----|-----------------------|-----|-----|
| 流量特性<br>Flow characteristics |           | 线性 linear            |     |     | 等百分比 Equal percentage |     |     |
| 公称通径<br>Rated size           | 行程 Stroke | Cv1                  | Cv2 | Cv3 | Cv1                   | Cv2 | Cv3 |
| 25                           | 20        | 11.7                 | 8.2 | 4.7 | 8.2                   | 4.7 |     |
| 40                           | 20        | 31                   | 21  |     | 19                    | 13  |     |
| 50                           | 20        | 50                   | 31  |     | 41                    | 25  |     |
| 80                           | 30        | 94                   | 70  | 65  | 65                    | 50  | 44  |
| 100                          | 30        | 129                  | 94  | 70  | 80                    | 65  | 50  |
| 50                           | 60        | 445                  | 304 | 198 | 246                   | 176 | 146 |
| 200                          | 60        | 527                  | 445 | 304 | 304                   | 246 | 176 |

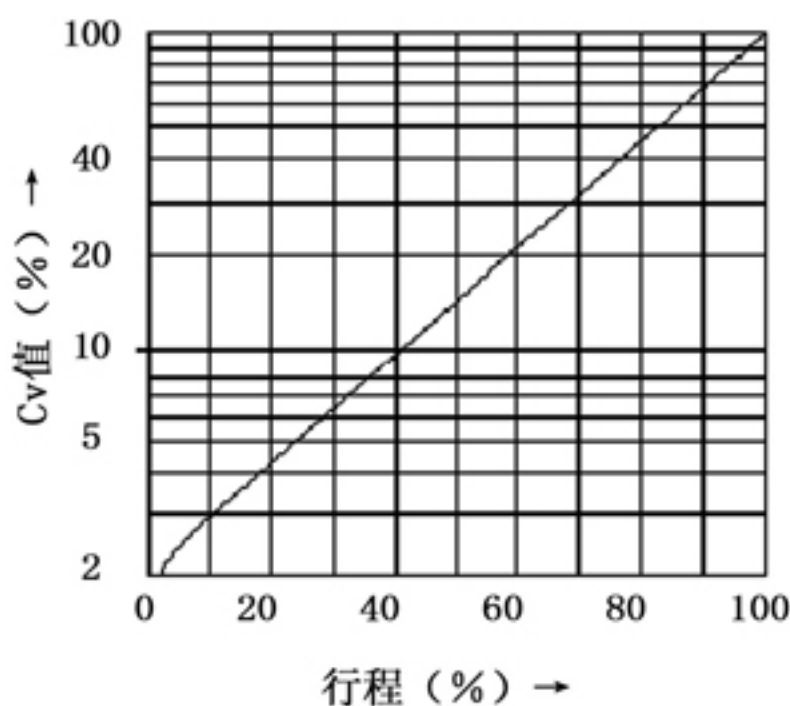
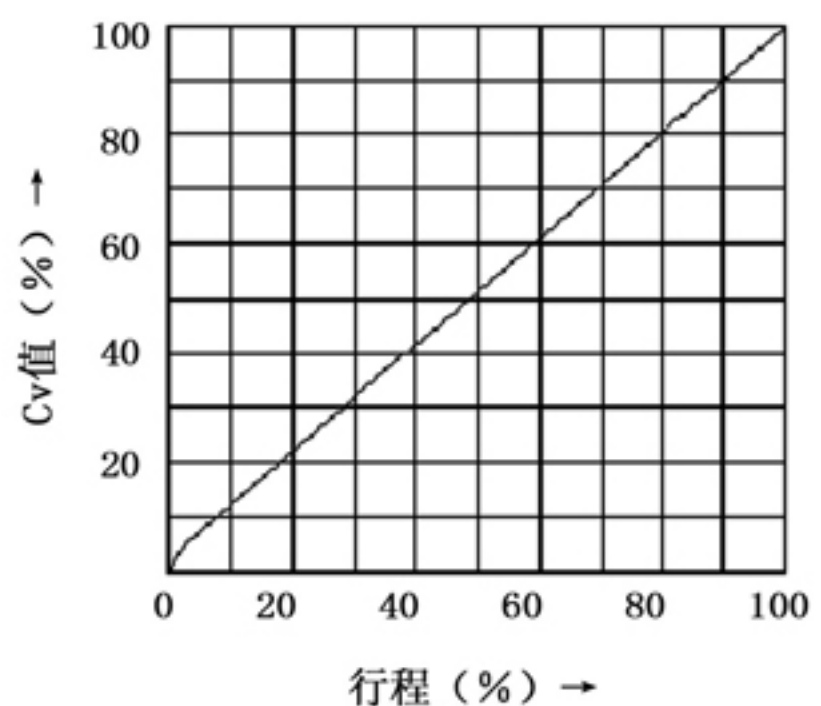
**图 4. 流量特性符合 IEC 标准。**
**Fig.4 FLOW CHARACTERISTICS UNDER IEC STANDARD**

 等百分比特性(% 金属阀座)  
 Equal percentage (% metal sealing)

 线性特性(L 金属阀座)  
 Linear (L metal sealing)

表 5 最大允许压差(单位:bar)

Table 5 Allowable pressure drops(nuit:bar)

表 5.1:配 MF2,3 系列气动薄膜执行机构允许压差(泄漏等级IV级):

Table 5.1: Allowable pressure drop MF2, 3 series actuator ( leakage class IV)

| 执行机构 MF2,3 系列<br>MF2, 3 series actuator |                        |  |      |                           | 作用型式:气开<br>弹簧数量<br>Air to open<br>Spring number |      |      |      | 作用型式:气关<br>弹簧数量<br>Air to close<br>Spring number |       |       |      |       |
|---|------------------------|--|------|---------------------------|---|------|------|------|--|-------|-------|------|-------|
| 公称通径<br>DN(mm)<br>Rated size            | 最大行程<br>(mm)<br>Stroke | 执行机构尺寸参数<br>Actuator parameter                                     | Cv   | 阀座直<br>径(mm)<br>Seat size | 3   | 6    | 9    | 12   | 3  | 3     | 3     | 6    | 6     |
|   |                        |  |      |                           | 供气压力(bar)Air supply                             |      |      |      |  |       |       |      |       |
|   |                        |  |      |                           | 2.5   | 4.0  | 4.5  | 5.5  | 3.0  | 4.5   | 6.0   | 4.5  | 6.0   |
| 25<br>1"                                | 20                     | MF2 $\frac{D}{R}$ -3XX<br>320cm <sup>2</sup> (50in <sup>2</sup> )  | 11.7 | 24                        | -   | 53.6 | -    | -    | 53.6   | 159.7 | 160.0 | 53.6 | 159.7 |
|   |                        |  | 8.2  | 24                        | -   | 53.6 | -    | -    | 53.6   | 159.7 | 160.0 | 53.6 | 159.7 |
|   |                        |  | 4.7  | 19                        | -   | 88.3 | -    | -    | 88.3   | 160.0 | 160.0 | 88.3 | 160.0 |
| 40<br>1 1/2"                            | 20                     | MF2 $\frac{D}{R}$ -3XX<br>320cm <sup>2</sup> (50in <sup>2</sup> )  | 31   | 37                        | -   | 20.6 | -    | -    | 20.6   | 65.3  | 110.0 | 20.6 | 65.3  |
|   |                        |  | 21   | 37                        | -   | 20.6 | -    | -    | 20.6   | 65.3  | 110.0 | 20.6 | 65.3  |
|   |                        |  | 19   | 37                        | -   | 20.6 | -    | -    | 20.6   | 65.3  | 110.0 | 20.6 | 65.3  |
|   |                        |  | 13   | 37                        | -   | 20.6 | -    | -    | 20.6   | 65.3  | 110.0 | 20.6 | 65.3  |
| 50<br>2"                                | 30                     | MF2 $\frac{D}{R}$ -5XX<br>320cm <sup>2</sup> (50in <sup>2</sup> )  | 50   | 48                        | -   | 11.3 | -    | -    | 11.3   | 37.9  | 64.4  | 11.3 | 37.9  |
|   |                        |  | 41   | 48                        | -   | 11.3 | -    | -    | 11.3   | 37.9  | 64.4  | 11.3 | 37.9  |
|   |                        |  | 31   | 37                        | -   | 20.6 | -    | -    | 20.6   | 65.3  | 110.0 | 20.6 | 65.3  |
|   |                        |  | 25   | 37                        | -   | 20.6 | -    | -    | 20.6   | 65.3  | 110.0 | 20.6 | 65.3  |
|   |                        | MF3 $\frac{D}{R}$ -1XX<br>720cm <sup>2</sup> (111in <sup>2</sup> ) | 50   | 48                        | 12.4  | 40.1 | 56.7 | 73.2 | 44.5   | 104.2 | 160.0 | 44.5 | 104.2 |
|   |                        |  | 41   | 48                        | 12.4  | 40.1 | 56.7 | 73.2 | 44.5   | 104.2 | 160.0 | 44.5 | 104.2 |
|   |                        |  | 31   | 37                        | 22.5  | 69.0 | 97.0 | 124  | 76.5   | 160.0 | 60.0  | 76.5 | 160.0 |
| 80<br>3"                                | 30                     | MF2 $\frac{D}{R}$ -5XX<br>320cm <sup>2</sup> (50in <sup>2</sup> )  | 94   | 73                        | -   | 4.0  | -    | -    | 4.0  | 15.4  | 26.9  | 4.0  | 15.4  |
|   |                        |  | 65%  | 73                        | -   | 4.0  | -    | -    | 4.0  | 15.4  | 26.9  | 4.0  | 15.4  |
|   |                        |  | 70   | 62                        | -   | 6.1  | -    | -    | 6.1  | 22.0  | 37.9  | 6.1  | 22.0  |
|   |                        |  | 50   | 62                        | -   | 6.1  | -    | -    | 6.1  | 22.0  | 37.9  | 6.1  | 22.0  |
|   |                        |  | 65L  | 48                        | -   | 11.3 | -    | -    | 11.3   | 37.9  | 64.4  | 11.3 | 37.9  |
|   |                        |  | 44   | 48                        | -   | 11.3 | -    | -    | 11.3   | 37.9  | 64.4  | 11.3 | 37.9  |
|   |                        | MF3 $\frac{D}{R}$ -1XX<br>720cm <sup>2</sup> (111in <sup>2</sup> ) | 94   | 73                        | 4.4   | 16.4 | 23.6 | 30.7 | 18.3   | 44.1  | 69.9  | 18.3 | 44.1  |
|   |                        |  | 65%  | 73                        | 4.4   | 16.4 | 23.6 | 30.7 | 18.3   | 44.1  | 69.9  | 18.3 | 44.1  |
|   |                        |  | 70   | 62                        | 6.7   | 23.3 | 33.2 | 43.2 | 25.9   | 61.7  | 97.5  | 25.9 | 61.7  |
|   |                        |  | 50   | 62                        | 6.7   | 23.3 | 33.2 | 43.2 | 25.9   | 61.7  | 97.5  | 25.9 | 61.7  |
|   |                        |  | 65L  | 48                        | 12.4  | 40.1 | 56.7 | 73.2 | 44.5   | 104.2 | 160.0 | 44.5 | 104.2 |
|   |                        |  | 44   | 48                        | 12.4  | 40.1 | 56.7 | 73.2 | 44.5   | 104.2 | 160.0 | 44.5 | 104.2 |
| 100<br>4"                               | 30                     | MF2 $\frac{D}{R}$ -5XX<br>320cm <sup>2</sup> (50in <sup>2</sup> )  | 129  | 90                        | -   | 2.2  | -    | -    | 2.2  | 9.7   | 17.3  | 2.2  | 9.7   |
|   |                        |  | 80   | 90                        | -   | 2.2  | -    | -    | 2.2  | 9.7   | 17.3  | 2.2  | 9.7   |
|   |                        |  | 94   | 73                        | -   | 4.0  | -    | -    | 4.0  | 15.4  | 26.9  | 4.0  | 15.4  |
|   |                        |  | 65   | 73                        | -   | 4.0  | -    | -    | 4.0  | 15.4  | 26.9  | 4.0  | 15.4  |
|   |                        |  | 70   | 62                        | -   | 6.1  | -    | -    | 6.1  | 22.0  | 37.9  | 6.1  | 22.0  |
|   |                        | MF3 $\frac{D}{R}$ -1XX<br>720cm <sup>2</sup> (111in <sup>2</sup> ) | 129  | 90                        | 2.5   | 10.4 | 15.1 | 19.8 | 11.6   | 28.6  | 45.6  | 11.6 | 28.6  |
|   |                        |  | 80   | 90                        | 2.5   | 10.4 | 15.1 | 19.8 | 11.6   | 28.6  | 15.6  | 11.6 | 28.6  |
|   |                        |  | 94   | 73                        | 4.4   | 16.4 | 23.6 | 30.7 | 18.3   | 44.1  | 69.9  | 18.3 | 44.1  |
|   |                        |  | 65   | 73                        | 4.4   | 16.4 | 23.6 | 30.7 | 18.3   | 44.1  | 69.9  | 18.3 | 44.1  |
|   |                        |  | 70   | 62                        | 6.7   | 23.3 | 33.2 | 43.2 | 25.9   | 61.7  | 97.5  | 25.9 | 61.7  |
| 150<br>6"                               | 60                     | MF3 $\frac{D}{R}$ -2XX<br>720cm <sup>2</sup> (111in <sup>2</sup> ) | 50   | 62                        | 6.7   | 23.3 | 33.2 | 43.2 | 25.9   | 61.7  | 97.5  | 25.9 | 61.7  |
|   |                        |  | 445  | 143                       | -   | 4.1  | 6.2  | 8.3  | 4.7  | 12.2  | 19.8  | 4.7  | 12.2  |
|   |                        |  | 246  | 143                       | -   | 4.1  | 6.2  | 8.3  | 4.7  | 12.2  | 19.8  | 4.7  | 12.2  |
|   |                        |  | 304  | 113                       | -   | 6.2  | 9.2  | 12.2 | 7.0  | 17.8  | 28.6  | 7.0  | 17.8  |
|   |                        |  | 176  | 113                       | -   | 6.2  | 9.2  | 12.2 | 7.0  | 17.8  | 28.6  | 7.0  | 17.8  |
|   |                        |  | 198  | 90                        | -   | 10.4 | 15.1 | 19.8 | 11.6   | 28.6  | 45.6  | 11.6 | 28.6  |
| 200<br>8"                               | 60                     | MF3 $\frac{D}{R}$ -2XX<br>720cm <sup>2</sup> (111in <sup>2</sup> ) | 146  | 90                        | -   | 10.4 | 15.1 | 19.8 | 11.6   | 28.6  | 45.6  | 11.6 | 28.6  |
|   |                        |  | 527  | 172                       | -   | 2.3  | 3.6  | 4.9  | 2.6  | 7.3   | 11.9  | 2.6  | 7.3   |
|   |                        |  | 304  | 172                       | -   | 2.3  | 3.6  | 4.9  | 2.6  | 7.3   | 11.9  | 2.6  | 7.3   |
|   |                        |  | 445  | 143                       | -   | 4.1  | 6.2  | 8.3  | 4.7  | 12.2  | 19.8  | 4.7  | 12.2  |
|   |                        |  | 246  | 143                       | -   | 4.1  | 6.2  | 8.3  | 4.7  | 12.2  | 19.8  | 4.7  | 12.2  |
|   |                        |  | 304  | 113                       | -   | 6.2  | 9.2  | 12.2 | 7.0  | 17.8  | 28.6  | 7.0  | 17.8  |
| 176                                     | 113                    | -  | 6.2  | 9.2                       | 12.2  | 7.0  | 17.8 | 28.6 | 7.0  | 17.8  |       |      |       |



| 执行机构 MF5 系列<br>MF5 series actuator |                        |  |     |                           | 作用型式:气开<br>弹簧数量<br>Air to open<br>Spring number |      |      | 作用型式:气关<br>弹簧数量<br>Air to close<br>Spring number |      |      |      |      |      |      |
|------------------------------------|------------------------|--|-----|---------------------------|---|------|------|--|------|------|------|------|------|------|
|                                    |                        |  |     |                           | 4   | 6    | 8    | 4  | 4    | 4    | 6    | 6    | 6    | 6    |
| 公称通径<br>DN(mm)<br>Rated size       | 最大行程<br>(mm)<br>Stroke | 执行机构尺寸参<br>数 Actuator<br>parameter                                 | Cv  | 阀座直<br>径(mm)<br>Seat size | bar   | bar  | bar  | 供气压力(bar)Air supply                              |      |      |      |      |      |      |
|                                    |                        |  |     |                           |   |      |      | 3.0  | 4.0  | 5.0  | 3.0  | 4.0  | 5.0  | 6.0  |
| 150<br>6"                          | 60                     | MF5 $\frac{D}{R}$ -3X<br>1600cm <sup>2</sup> (248in <sup>2</sup> ) | 445 | 143                       | 7.8   | 13.8 | 19.0 | 14.4   | 25.6 | 36.8 | 6.3  | 17.5 | 28.7 | 40.0 |
|                                    |                        |  | 246 | 143                       | 7.8   | 13.8 | 19.0 | 14.4   | 25.6 | 36.8 | 6.3  | 17.5 | 28.7 | 40.0 |
|                                    |                        |  | 304 | 113                       | 12.4  | 21.4 | 29.4 | 22.4   | 40.4 | 58.4 | 9.4  | 27.4 | 45.4 | 63.4 |
|                                    |                        |  | 176 | 113                       | 12.4  | 21.4 | 29.4 | 22.4   | 40.4 | 58.4 | 9.4  | 27.4 | 45.4 | 63.4 |
|                                    |                        |  | 198 | 90                        | 20.5  | 34.7 | 47.3 | 36.2   | 64.6 | 92.9 | 15.8 | 44.1 | 72.5 | 100  |
|                                    |                        |  | 146 | 90                        | 20.5  | 34.7 | 47.3 | 36.2   | 64.6 | 92.9 | 15.8 | 44.1 | 72.5 | 100  |
| 200<br>8"                          | 60                     | MF5 $\frac{D}{R}$ -3X<br>1600cm <sup>2</sup> (248in <sup>2</sup> ) | 527 | 172                       | 4.8   | 8.7  | 12.3 | 9.0  | 17.0 | 24.8 | 3.5  | 11.3 | 19.1 | 27.0 |
|                                    |                        |  | 304 | 172                       | 4.8   | 8.7  | 12.3 | 9.0  | 17.0 | 24.8 | 3.5  | 11.3 | 19.1 | 27.0 |
|                                    |                        |  | 445 | 143                       | 7.8   | 13.8 | 19.0 | 14.4   | 25.6 | 36.8 | 6.3  | 17.5 | 28.7 | 40.0 |
|                                    |                        |  | 246 | 143                       | 7.8   | 13.8 | 19.0 | 14.4   | 25.6 | 36.8 | 6.3  | 17.5 | 28.7 | 40.0 |
|                                    |                        |  | 304 | 113                       | 12.4  | 21.4 | 29.4 | 22.4   | 40.4 | 58.4 | 9.4  | 27.4 | 45.4 | 63.4 |
|                                    |                        |  | 176 | 113                       | 12.4  | 21.4 | 29.4 | 22.4   | 40.4 | 58.4 | 9.4  | 27.4 | 45.4 | 63.4 |

注:

1. 8根弹簧只用在MF5R反作用执行机构中;执行机构型号中"XX"的代码详见执行机构样本;
2. 表中数值为最大允许关闭压差。

Note:

1. 8 springs is only used in the actuator of MF5R. The code "XX" of actuator type is detailed in the catalogue of actuator.
2. The number showed in above table is the max. of allowable pressure drops.



表 5.2: 允许压差(泄漏等级 V 级):

Table 5.2: Allowable pressure drop ( leakage class V )

| 执行机构 MF2,3 系列<br>MF2, 3 series actuator |                        |  |      |                           | 作用型式:气开<br>弹簧数量<br>Air to open<br>Spring number |      |      |       | 作用型式:气关<br>弹簧数量<br>Air to close<br>Spring number |       |       |      |       |
|---|------------------------|--|------|---------------------------|---|------|------|-------|--|-------|-------|------|-------|
| 公称通径<br>DN(mm)<br>Rated size            | 最大行程<br>(mm)<br>Stroke | 执行机构尺寸参数<br>Actuator parameter                                     | Cv   | 阀座直<br>径(mm)<br>Seat size | 3   | 6    | 9    | 12    | 3  | 3     | 3     | 6    | 6     |
|   |                        |  |      |                           | 供气压力(bar) Air supply                            |      |      |       |  |       |       |      |       |
|   |                        |  |      |                           | 2.5   | 4.0  | 4.5  | 5.5   | 3.0  | 4.5   | 6.0   | 4.5  | 6.0   |
| 25<br>1"                                | 20                     | MF2 $\frac{D}{R}$ -3XX<br>320cm <sup>2</sup> (50in <sup>2</sup> )  | 11.7 | 24                        | -   | 20.3 | -    | -     | 20.3   | 126.4 | 160.0 | 20.3 | 126.4 |
|   |                        |  | 8.2  | 24                        | -   | 20.3 | -    | -     | 20.3   | 126.4 | 160.0 | 20.3 | 126.4 |
|   |                        |  | 4.7  | 19                        | -   | 46.2 | -    | -     | 46.2   | 160.0 | 160.0 | 46.2 | 160.0 |
| 40<br>1 1/2"                            | 20                     | MF2 $\frac{D}{R}$ -3XX<br>320cm <sup>2</sup> (50in <sup>2</sup> )  | 31   | 37                        | -   | -    | -    | -     | -  | 43.7  | 88.4  | -    | 43.7  |
|   |                        |  | 21   | 37                        | -   | -    | -    | -     | -  | 43.7  | 88.4  | -    | 43.7  |
|   |                        |  | 19   | 37                        | -   | -    | -    | -     | -  | 43.7  | 88.4  | -    | 43.7  |
|   |                        |  | 13   | 37                        | -   | -    | -    | -     | -  | 43.7  | 88.4  | -    | 43.7  |
| 50<br>2"                                | 30                     | MF2 $\frac{D}{R}$ -5XX<br>320cm <sup>2</sup> (50in <sup>2</sup> )  | 50   | 48                        | -   | -    | -    | -     | -  | 21.2  | 47.7  | -    | 21.2  |
|   |                        |  | 41   | 48                        | -   | -    | -    | -     | -  | 21.2  | 47.7  | -    | 21.2  |
|   |                        |  | 31   | 37                        | -   | -    | -    | -     | -  | 43.7  | 88.4  | -    | 43.7  |
|   |                        |  | 25   | 37                        | -   | -    | -    | -     | -  | 43.7  | 88.4  | -    | 43.7  |
|   |                        | MF3 $\frac{D}{R}$ -1XX<br>720cm <sup>2</sup> (111in <sup>2</sup> ) | 50   | 48                        | -   | 23.4 | 40.0 | 56.6  | 27.8   | 87.5  | 147.2 | 27.8 | 87.5  |
|   |                        |  | 41   | 48                        | -   | 23.4 | 40.0 | 56.6  | 27.8   | 87.5  | 147.2 | 27.8 | 87.5  |
|   |                        |  | 31   | 37                        | 0.9   | 47.4 | 75.3 | 103.2 | 54.9   | 155.4 | 160.0 | 54.9 | 155.4 |
|   |                        |  | 25   | 37                        | 0.9   | 47.4 | 75.3 | 103.2 | 54.9   | 155.4 | 160.0 | 54.9 | 155.4 |
| 80<br>3"                                | 30                     | MF2 $\frac{D}{R}$ -5XX<br>320cm <sup>2</sup> (50in <sup>2</sup> )  | 94   | 73                        | -   | -    | -    | -     | -  | 4.5   | 15.9  | -    | 4.5   |
|   |                        |  | 65%  | 73                        | -   | -    | -    | -     | -  | 4.5   | 15.9  | -    | 4.5   |
|   |                        |  | 70   | 62                        | -   | -    | -    | -     | -  | 9.1   | 25.0  | -    | 9.1   |
|   |                        |  | 50   | 62                        | -   | -    | -    | -     | -  | 9.1   | 25.0  | -    | 9.1   |
|   |                        |  | 65L  | 48                        | -   | -    | -    | -     | -  | 21.2  | 47.7  | -    | 21.2  |
|   |                        |  | 44   | 48                        | -   | -    | -    | -     | -  | 21.2  | 47.7  | -    | 21.2  |
|   |                        | MF3 $\frac{D}{R}$ -1XX<br>720cm <sup>2</sup> (111in <sup>2</sup> ) | 94   | 73                        | -   | 5.4  | 12.6 | 19.8  | 7.3  | 33.2  | 59.0  | 7.3  | 33.2  |
|   |                        |  | 65%  | 73                        | -   | 5.4  | 12.6 | 19.8  | 7.3  | 33.2  | 59.0  | 7.3  | 33.2  |
|   |                        |  | 70   | 62                        | -   | 10.4 | 20.3 | 30.3  | 13.0   | 48.8  | 84.6  | 13.0 | 48.8  |
|   |                        |  | 50   | 62                        | -   | 10.4 | 20.3 | 30.3  | 13.0   | 48.8  | 84.6  | 13.0 | 48.8  |
|   |                        |  | 65L  | 48                        | -   | 23.4 | 40.0 | 56.6  | 27.8   | 87.5  | 147.2 | 27.8 | 87.5  |
|   |                        |  | 44   | 48                        | -   | 23.4 | 40.0 | 56.6  | 27.8   | 87.5  | 147.2 | 27.8 | 87.5  |
| 100<br>4"                               | 30                     | MF2 $\frac{D}{R}$ -5XX<br>320cm <sup>2</sup> (50in <sup>2</sup> )  | 129  | 90                        | -   | -    | -    | -     | -  | 0.8   | 8.4   | -    | 0.8   |
|   |                        |  | 80   | 90                        | -   | -    | -    | -     | -  | 0.8   | 8.4   | -    | 0.8   |
|   |                        |  | 94   | 73                        | -   | -    | -    | -     | -  | 4.5   | 15.9  | -    | 4.5   |
|   |                        |  | 65   | 73                        | -   | -    | -    | -     | -  | 4.5   | 15.9  | -    | 4.5   |
|   |                        |  | 70   | 62                        | -   | -    | -    | -     | -  | 9.1   | 25.0  | -    | 9.1   |
|   |                        | MF3 $\frac{D}{R}$ -1XX<br>720cm <sup>2</sup> (111in <sup>2</sup> ) | 50   | 62                        | -   | -    | -    | -     | -  | 9.1   | 25.0  | -    | 9.1   |
|   |                        |  | 129  | 90                        | -   | 1.5  | 6.2  | 10.9  | 2.7  | 19.7  | 36.7  | 2.7  | 19.7  |
|   |                        |  | 80   | 90                        | -   | 1.5  | 6.2  | 10.9  | 2.7  | 19.7  | 36.7  | 2.7  | 19.7  |
|   |                        |  | 94   | 73                        | -   | 5.4  | 12.6 | 19.8  | 7.3  | 33.2  | 59.0  | 7.3  | 33.2  |
|   |                        |  | 65   | 73                        | -   | 5.4  | 12.6 | 19.8  | 7.3  | 33.2  | 59.0  | 7.3  | 33.2  |
| 150<br>6"                               | 60                     | MF3 $\frac{D}{R}$ -2XX<br>720cm <sup>2</sup> (111in <sup>2</sup> ) | 70   | 62                        | -   | 10.4 | 20.3 | 30.3  | 13.0   | 48.8  | 84.6  | 13.0 | 48.8  |
|   |                        |  | 50   | 62                        | -   | 10.4 | 20.3 | 30.3  | 13.0   | 48.8  | 84.6  | 13.0 | 48.8  |
|   |                        |  | 445  | 143                       | -   | -    | 0.3  | 2.4   | -  | 6.3   | 13.8  | -    | 6.3   |
|   |                        |  | 246  | 143                       | -   | -    | 0.3  | 2.4   | -  | 6.3   | 13.8  | -    | 6.3   |
|   |                        |  | 304  | 113                       | -   | -    | 2.1  | 5.1   | -  | 10.7  | 21.5  | -    | 10.7  |
|   |                        |  | 176  | 113                       | -   | -    | 2.1  | 5.1   | -  | 10.7  | 21.5  | -    | 10.7  |
| 200<br>8"                               | 60                     | MF3 $\frac{D}{R}$ -2XX<br>720cm <sup>2</sup> (111in <sup>2</sup> ) | 198  | 90                        | -   | 1.5  | 6.2  | 10.9  | 2.7  | 19.7  | 36.7  | 2.7  | 19.7  |
|   |                        |  | 146  | 90                        | -   | 1.5  | 6.2  | 10.9  | 2.7  | 19.7  | 36.7  | 2.7  | 19.7  |
|   |                        |  | 527  | 172                       | -   | -    | -    | 0.2   | -  | 2.6   | 7.3   | -    | 2.6   |
|   |                        |  | 304% | 172                       | -   | -    | -    | 0.2   | -  | 2.6   | 7.3   | -    | 2.6   |
|   |                        |  | 445  | 143                       | -   | -    | 0.3  | 0.24  | -  | 6.3   | 13.8  | -    | 6.3   |
|   |                        |  | 246  | 143                       | -   | -    | 0.3  | 0.24  | -  | 6.3   | 13.8  | -    | 6.3   |
| 200<br>8"                               | 60                     | MF3 $\frac{D}{R}$ -2XX<br>720cm <sup>2</sup> (111in <sup>2</sup> ) | 304L | 113                       | -   | -    | 2.1  | 5.1   | -  | 10.7  | 21.5  | -    | 10.7  |
|   |                        |  | 176  | 113                       | -   | -    | 2.1  | 5.1   | -  | 10.7  | 21.5  | -    | 10.7  |

| 执行机构 MF5 系列<br>MF5 series actuator |                        |  |     |                           | 作用型式:气开<br>弹簧数量<br>Air to open<br>Spring number |      |      | 作用型式:气关<br>弹簧数量<br>Air to close<br>Spring number |      |      |      |      |      |      |
|------------------------------------|------------------------|--|-----|---------------------------|---|------|------|--|------|------|------|------|------|------|
|                                    |                        |  |     |                           | 4   | 6    | 8    | 4  | 4    | 4    | 6    | 6    | 6    | 6    |
| 公称通径<br>DN(mm)<br>Rated size       | 最大行程<br>(mm)<br>Stroke | 执行机构尺寸参<br>数 Actuator<br>parameter   | Cv  | 阀座直<br>径(mm)<br>Seat size | bar   | bar  | bar  | 供气压力(bar)Air supply                              |      |      |      |      |      |      |
|                                    |                        |  |     |                           |   |      |      | 3.0  | 4.0  | 5.0  | 3.0  | 4.0  | 5.0  | 6.0  |
| 150<br>6"                          | 60                     | MF5 <sup>D</sup> <sub>R</sub> -3X<br>1600cm <sup>2</sup> (248in <sup>2</sup> ) | 445 | 143                       | 3.7   | 9.3  | 15.2 | 9.9  | 21.1 | 32.4 | 7.4  | 13.0 | 24.2 | 35.5 |
|                                    |                        |  | 246 | 143                       | 3.7   | 9.3  | 15.2 | 9.9  | 21.1 | 32.4 | 7.4  | 13.0 | 24.2 | 35.5 |
|                                    |                        |  | 304 | 113                       | 7.3   | 16.2 | 24.6 | 17.1   | 35.1 | 53.1 | 13.1 | 22.1 | 40.1 | 58.1 |
|                                    |                        |  | 176 | 113                       | 3.7   | 9.3  | 15.2 | 9.9  | 21.1 | 32.4 | 7.4  | 13.0 | 24.2 | 35.5 |
|                                    |                        |  | 198 | 90                        | 14.3  | 28.3 | 41.6 | 29.7   | 58.1 | 86.4 | 23.4 | 37.6 | 66.0 | 94.3 |
|                                    |                        |  | 146 | 90                        | 14.3  | 28.3 | 41.6 | 29.7   | 58.1 | 86.4 | 23.4 | 37.6 | 66.0 | 94.3 |
| 200<br>8"                          | 60                     | MF5 <sup>D</sup> <sub>R</sub> -3X<br>1600cm <sup>2</sup> (248in <sup>2</sup> ) | 527 | 172                       | 1.1   | 5.0  | 8.6  | 5.4  | 13.2 | 21.0 | 3.6  | 7.5  | 15.4 | 23.2 |
|                                    |                        |  | 304 | 172                       | 1.1   | 5.0  | 8.6  | 5.4  | 13.2 | 21.0 | 3.6  | 7.5  | 15.4 | 23.2 |
|                                    |                        |  | 445 | 143                       | 3.7   | 9.3  | 15.2 | 9.9  | 21.1 | 32.4 | 7.4  | 13.0 | 24.2 | 35.5 |
|                                    |                        |  | 246 | 143                       | 3.7   | 9.3  | 15.2 | 9.9  | 21.1 | 32.4 | 7.4  | 13.0 | 24.2 | 35.5 |
|                                    |                        |  | 304 | 113                       | 7.3   | 16.2 | 24.6 | 17.1   | 35.1 | 53.1 | 13.1 | 22.1 | 40.1 | 58.1 |
|                                    |                        |  | 176 | 113                       | 7.3   | 16.2 | 24.6 | 17.1   | 35.1 | 53.1 | 13.1 | 22.1 | 40.1 | 58.1 |

注:

1. 8 根弹簧只用在 MF5R 反作用执行机构中;执行机构型号中 "XX" 的代码详见执行机构样本;
2. 表中数值为最大允许关闭压差。

Note:

1. 8 springs is only used in the actuator of MF5R. The code "XX" of actuator type is detailed in the catalogue of actuator.
2. The number showed in above table is the max. of allowable pressure drops.

表 5.3:配 PEL 系列电动执行机构允许压差(泄漏等级IV):

Table 5.3 Allowable pressure drops with PEL electric motor ( Leakage class IV)

| 公称通径<br>Rated sizeDN<br>(mm) | 行程<br>Stroke(mm) | Cv   | 阀座直径<br>Seat size(mm) | 允许压差(bar) Allowable pressure drop |        |        |        |        |        |        |        |
|------------------------------|------------------|------|-----------------------|-----------------------------------|--------|--------|--------|--------|--------|--------|--------|
|                              |                  |      |                       | PEL202                            | PEL204 | PEL206 | PEL208 | PEL210 | PEL312 | PEL316 | PEL320 |
| 25<br>1"                     | 20               | 11.7 | 24                    | 3.0                               | 32.6   | 62.3   | 91.9   | 121.5  | 151.2  | -      | -      |
|                              |                  | 8.2  | 24                    | 3.0                               | 32.6   | 62.3   | 91.9   | 121.5  | 151.2  | -      | -      |
|                              |                  | 4.7  | 19                    | 6.7                               | 54.4   | 102.0  | 149.6  | -      | -      | -      | -      |
| 40<br>1 1/2"                 | 20               | 31   | 37                    | -                                 | 11.8   | 24.3   | 36.7   | 49.2   | 61.7   | 86.6   | 111.5  |
|                              |                  | 21   | 37                    | -                                 | 11.8   | 24.3   | 36.7   | 49.2   | 61.7   | 86.6   | 111.5  |
|                              |                  | 19   | 37                    | -                                 | 11.8   | 24.3   | 36.7   | 49.2   | 61.7   | 86.6   | 111.5  |
|                              |                  | 13   | 37                    | -                                 | 11.8   | 24.3   | 36.7   | 49.2   | 61.7   | 86.6   | 111.5  |
| 50<br>2"                     | 20               | 50   | 48                    | -                                 | 4.9    | 12.3   | 19.7   | 27.1   | 34.5   | 49.3   | 64.2   |
|                              |                  | 41   | 48                    | -                                 | 4.9    | 12.3   | 19.7   | 27.1   | 34.5   | 49.3   | 64.2   |
|                              |                  | 31   | 37                    | -                                 | 11.8   | 24.3   | 36.7   | 49.2   | 61.7   | 86.6   | 111.5  |
|                              |                  | 25   | 37                    | -                                 | 11.8   | 24.3   | 36.7   | 49.2   | 61.7   | 86.6   | 111.5  |
| 80<br>3"                     | 30               | 94   | 73                    | -                                 | -      | 4.4    | 7.6    | 10.8   | 14.0   | 20.3   | 26.7   |
|                              |                  | 65%  | 73                    | -                                 | -      | 4.4    | 7.6    | 10.8   | 14.0   | 20.3   | 26.7   |
|                              |                  | 70   | 62                    | -                                 | 2.2    | 6.6    | 11.0   | 15.5   | 19.9   | 28.8   | 37.6   |
|                              |                  | 50   | 62                    | -                                 | 2.2    | 6.6    | 11.0   | 15.5   | 19.9   | 28.8   | 37.6   |
|                              |                  | 65L  | 48                    | -                                 | 4.9    | 12.3   | 19.7   | 27.1   | 34.5   | 49.3   | 64.2   |
|                              |                  | 44   | 48                    | -                                 | 4.9    | 12.3   | 19.7   | 27.1   | 34.5   | 49.3   | 64.2   |
| 100<br>4"                    | 30               | 129  | 90                    | -                                 | -      | 1.6    | 3.7    | 5.8    | 7.9    | 12.1   | 16.3   |
|                              |                  | 80   | 90                    | -                                 | -      | 1.6    | 3.7    | 5.8    | 7.9    | 12.1   | 16.3   |
|                              |                  | 94   | 73                    | -                                 | -      | 4.4    | 7.6    | 10.8   | 14.0   | 20.3   | 26.7   |
|                              |                  | 65   | 73                    | -                                 | -      | 4.4    | 7.6    | 10.8   | 14.0   | 20.3   | 26.7   |
|                              |                  | 70   | 62                    | -                                 | 2.2    | 6.6    | 11.0   | 15.5   | 19.9   | 28.8   | 37.6   |
|                              |                  | 50   | 62                    | -                                 | 2.2    | 6.6    | 11.0   | 15.5   | 19.9   | 28.8   | 37.6   |
| 150<br>6"                    | 60               | 445  | 143                   | -                                 | -      | -      | -      | -      | 3.2    | 4.9    | 6.5    |
|                              |                  | 246  | 143                   | -                                 | -      | -      | -      | -      | 3.2    | 4.9    | 6.5    |
|                              |                  | 304  | 113                   | -                                 | -      | -      | -      | -      | 4.4    | 7.0    | 9.7    |
|                              |                  | 176  | 113                   | -                                 | -      | -      | -      | -      | 4.4    | 7.0    | 9.7    |
|                              |                  | 198  | 90                    | -                                 | -      | -      | -      | -      | 7.9    | 12.1   | 16.3   |
|                              |                  | 146  | 90                    | -                                 | -      | -      | -      | -      | 7.9    | 12.1   | 16.3   |
| 200<br>8"<br>"               | 60               | 527  | 172                   | -                                 | -      | -      | -      | -      | -      | 2.4    | 3.6    |
|                              |                  | 304% | 172                   | -                                 | -      | -      | -      | -      | -      | 2.4    | 3.6    |
|                              |                  | 445  | 143                   | -                                 | -      | -      | -      | -      | 3.2    | 4.9    | 6.5    |
|                              |                  | 246  | 143                   | -                                 | -      | -      | -      | -      | 3.2    | 4.9    | 6.5    |
|                              |                  | 304L | 113                   | -                                 | -      | -      | -      | -      | 4.4    | 7.0    | 9.7    |
|                              |                  | 176  | 113                   | -                                 | -      | -      | -      | -      | 4.4    | 7.0    | 9.7    |

注:表中数值为最大允许关闭压差。

Note: The number showed in above table is the max. of allowable pressure drops.



**表 5.4:配 PEL 系列电动执行机构允许压差(泄漏等级 V):**
**Table 5.4 Allowable pressure drops with PEL electric motor ( Leakage class V)**

| 公称通径<br>Rated size DN<br>(mm) | 行程<br>Stroke(mm) | Cv   | 阀座直径<br>Seat size(mm) | 允许压差(bar) Allowable pressure drop |        |        |        |        |        |        |        |
|-------------------------------|------------------|------|-----------------------|-----------------------------------|--------|--------|--------|--------|--------|--------|--------|
|                               |                  |      |                       | PEL202                            | PEL204 | PEL206 | PEL208 | PEL210 | PEL312 | PEL316 | PEL320 |
| 25<br>1"                      | 20               | 11.7 | 24                    | -                                 | -      | 2.5    | 32.1   | 61.7   | 91.4   | 150.6  | -      |
|                               |                  | 8.2  | 24                    | -                                 | -      | 2.5    | 32.1   | 61.7   | 91.4   | 150.6  | -      |
|                               |                  | 4.7  | 19                    | -                                 | -      | 2.5    | 32.1   | 61.7   | 91.4   | 150.6  | -      |
| 40<br>1 1/2"                  | 20               | 31   | 37                    | -                                 | -      | -      | 3.8    | 16.2   | 28.7   | 53.6   | 78.5   |
|                               |                  | 21   | 37                    | -                                 | -      | -      | 3.8    | 16.2   | 28.7   | 53.6   | 78.5   |
|                               |                  | 19   | 37                    | -                                 | -      | -      | 3.8    | 16.2   | 28.7   | 53.6   | 78.5   |
|                               |                  | 13   | 37                    | -                                 | -      | -      | 3.8    | 16.2   | 28.7   | 53.6   | 78.5   |
| 50<br>2"                      | 20               | 50   | 48                    | -                                 | -      | -      | -      | 4.5    | 11.9   | 26.7   | 41.5   |
|                               |                  | 41   | 48                    | -                                 | -      | -      | -      | 4.5    | 11.9   | 26.7   | 41.5   |
|                               |                  | 31   | 37                    | -                                 | -      | -      | 3.8    | 16.2   | 28.7   | 53.6   | 78.5   |
|                               |                  | 25   | 37                    | -                                 | -      | -      | 3.8    | 16.2   | 28.7   | 53.6   | 78.5   |
| 80<br>3"                      | 30               | 94   | 73                    | -                                 | -      | -      | -      | -      | -      | 6.9    | 13.3   |
|                               |                  | 65%  | 73                    | -                                 | -      | -      | -      | -      | -      | 6.9    | 13.3   |
|                               |                  | 70   | 62                    | -                                 | -      | -      | -      | -      | 3.7    | 12.6   | 21.4   |
|                               |                  | 50   | 62                    | -                                 | -      | -      | -      | -      | 3.7    | 12.6   | 21.4   |
|                               |                  | 65L  | 48                    | -                                 | -      | -      | -      | 4.5    | 11.9   | 26.7   | 41.5   |
|                               |                  | 44   | 48                    | -                                 | -      | -      | -      | 4.5    | 11.9   | 26.7   | 41.5   |
| 100<br>4"                     | 30               | 129  | 90                    | -                                 | -      | -      | -      | -      | -      | 2.5    | 6.7    |
|                               |                  | 80   | 90                    | -                                 | -      | -      | -      | -      | -      | 2.5    | 6.7    |
|                               |                  | 94   | 73                    | -                                 | -      | -      | -      | -      | -      | 6.9    | 13.3   |
|                               |                  | 65   | 73                    | -                                 | -      | -      | -      | -      | -      | 6.9    | 13.3   |
|                               |                  | 70   | 62                    | -                                 | -      | -      | -      | -      | 3.7    | 12.6   | 21.4   |
|                               |                  | 50   | 62                    | -                                 | -      | -      | -      | -      | 3.7    | 12.6   | 21.4   |
| 150<br>6"                     | 60               | 445  | 143                   | -                                 | -      | -      | -      | -      | -      | -      | -      |
|                               |                  | 246  | 143                   | -                                 | -      | -      | -      | -      | -      | -      | -      |
|                               |                  | 304  | 113                   | -                                 | -      | -      | -      | -      | -      | -      | 2.4    |
|                               |                  | 176  | 113                   | -                                 | -      | -      | -      | -      | -      | -      | 2.4    |
|                               |                  | 198  | 90                    | -                                 | -      | -      | -      | -      | -      | 2.5    | 6.7    |
|                               |                  | 146  | 90                    | -                                 | -      | -      | -      | -      | -      | 2.5    | 6.7    |
| 200<br>8"                     | 60               | 527  | 172                   | -                                 | -      | -      | -      | -      | -      | -      | -      |
|                               |                  | 304% | 172                   | -                                 | -      | -      | -      | -      | -      | -      | -      |
|                               |                  | 445  | 143                   | -                                 | -      | -      | -      | -      | -      | -      | -      |
|                               |                  | 246  | 143                   | -                                 | -      | -      | -      | -      | -      | -      | -      |
|                               |                  | 304L | 113                   | -                                 | -      | -      | -      | -      | -      | -      | 2.4    |
|                               |                  | 176  | 113                   | -                                 | -      | -      | -      | -      | -      | -      | 2.4    |

注:表中数值为最大允许关闭压差。

Note: The number showed in above table is the max. of allowable pressure drops.

图 5.调节阀安装位置

Fig. 5. MOUNTING FORMS FOR THE CONCOL VALVE

图 5-1 .配 MF2,3 执行机构的安装位置 Fig.5-1. Mounting forms with MF2, 3 actuator

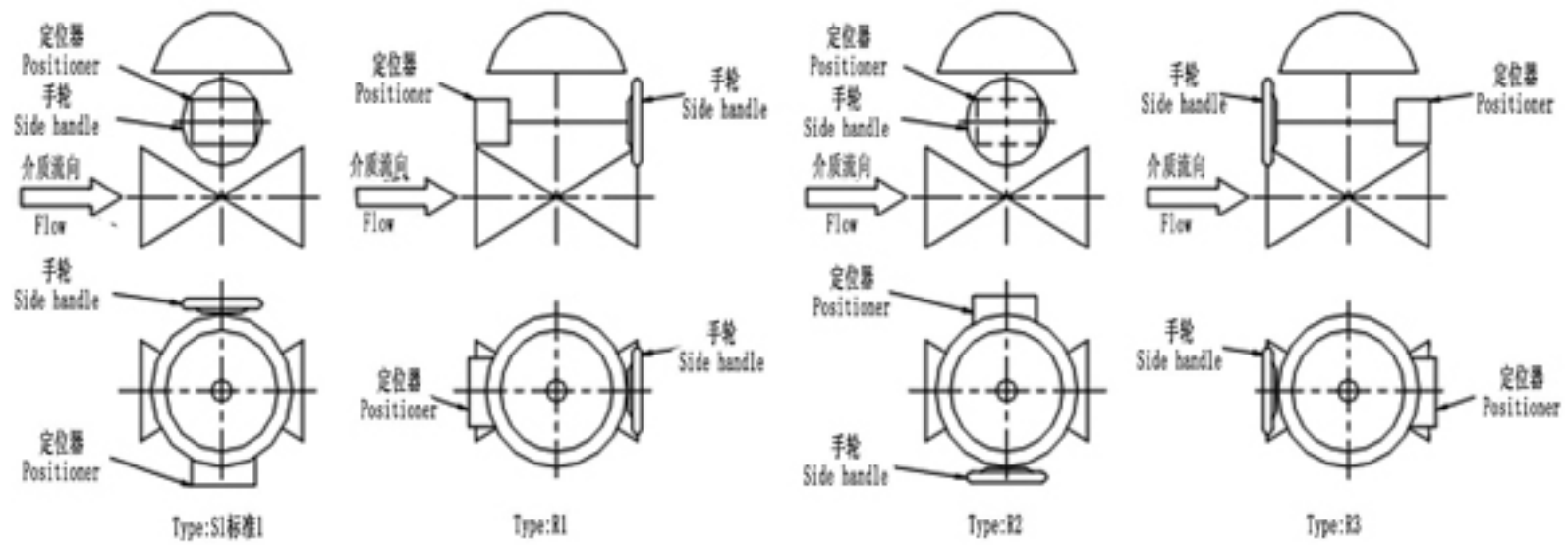


图 5-2 .配 MF5 执行机构的安装位置 Fig.5-2. Mounting forms with MF5 actuator

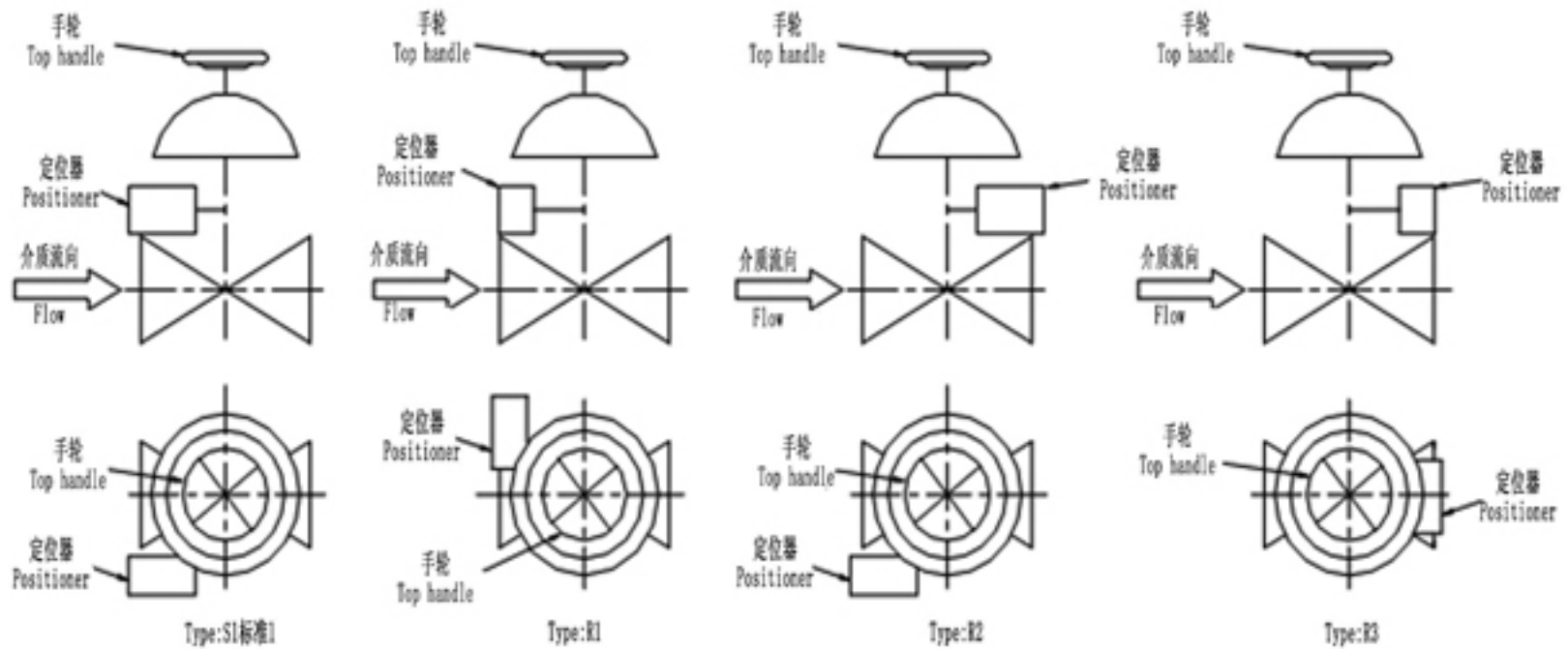


图 6.外形尺寸图 Fig.6 Out line

图 6-1 DN25 ~ DN200(1" ~ 8" )带顶装手轮机构外形图

Figure 6-1 Outline with top handwheel for DN25 ~ DN200(1" ~ 8" )

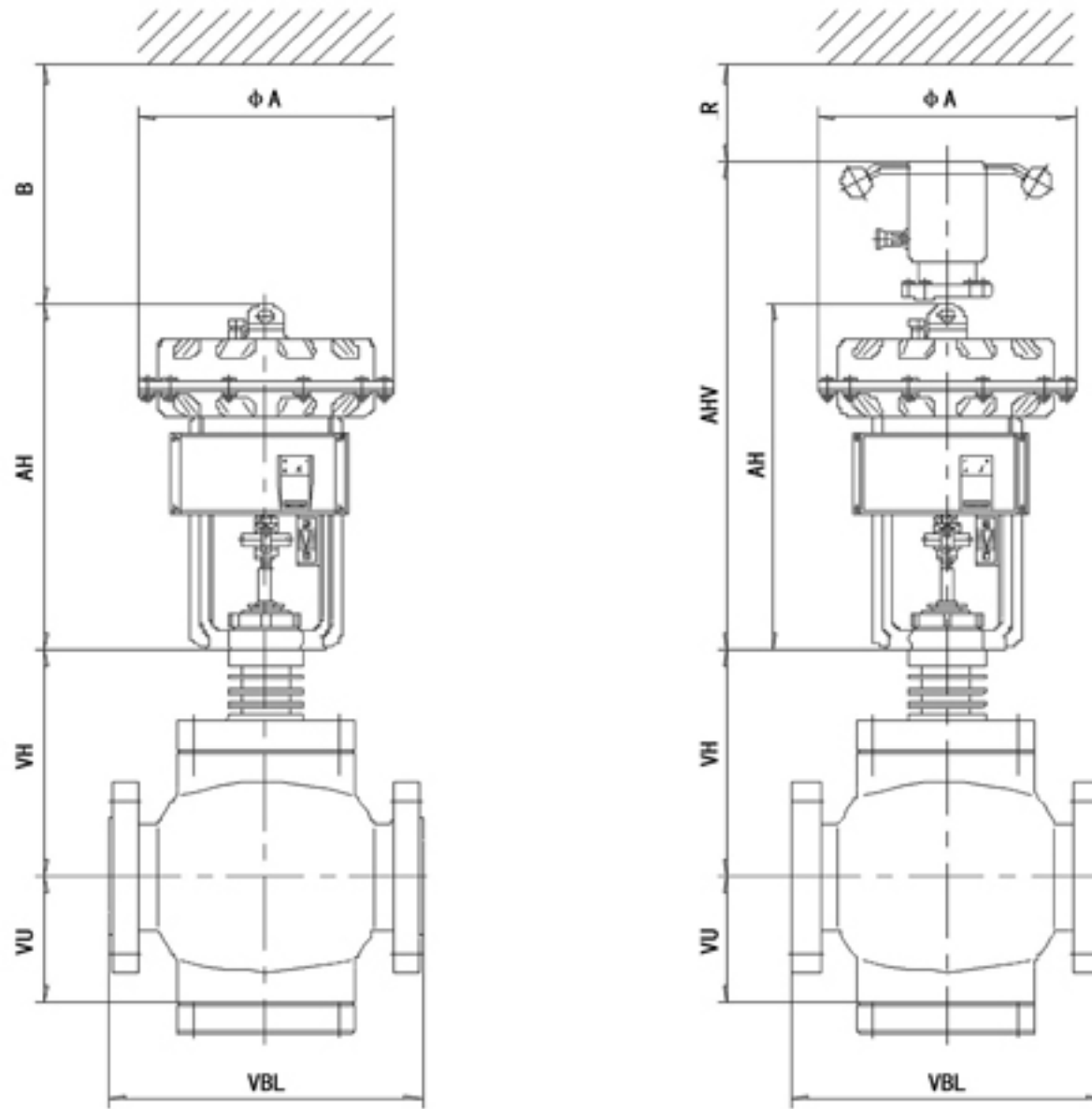


图 6-2 DN25 ~ DN200(1" ~ 8" )带侧装手轮机构外形图

Figure 6-2 Outline with side handwheel from DN15 to DN100(1" ~ 8" )

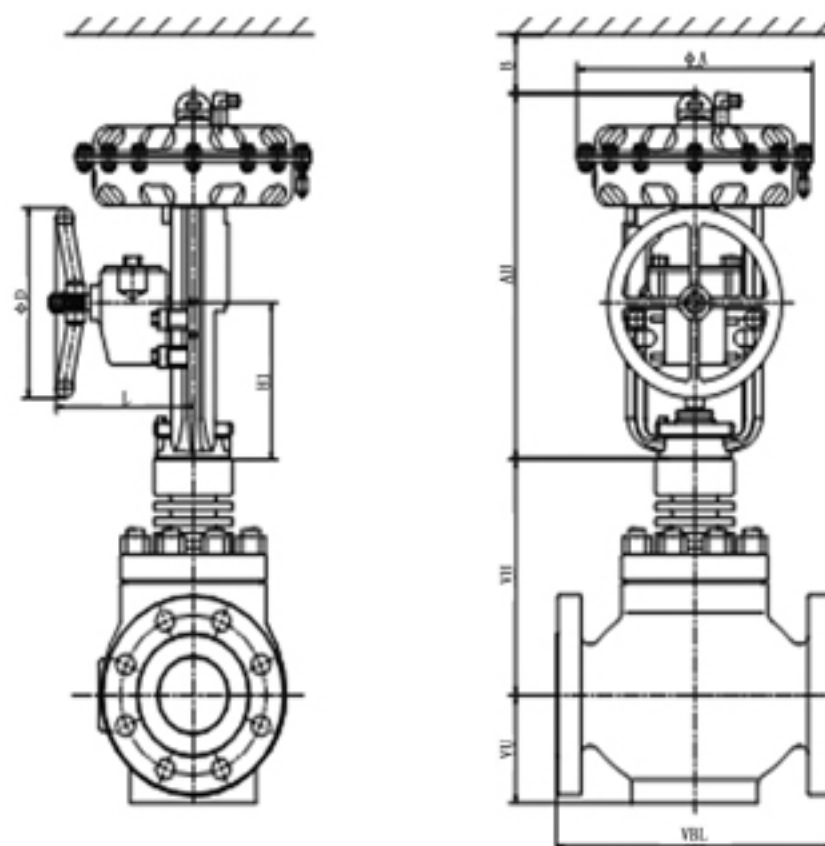




表 6.外形尺寸及重量 Table 6 Outline size and weight

表 6.1:外形尺寸及重量(配气动执行机构 DN25 ~ DN200,PN63/100/160/250)外形见图 6-1、6-2

Table 6.1: Outline size and weight (with pneumatic actuator DN25 ~ DN200,PN63/100/160/250), see Figure 6-1、6-2 for outline

| 阀体主要外形尺寸 (mm), 阀体法兰尺寸符合 DIN 2543/2544/2545 JB/T79.2、HG20592-97, 法兰距符合 DIN 3202-F1。<br>Main outline sizes (mm), connection sizes of flange comply with DIN 2543/2544/2545 JB/T79.2、HG20592-97, face to face dimensions comply with DIN 3202-F1. |   |        |                         |     |                           |                           |     |     |                           |     |
|--|---|--------|-------------------------|-----|---------------------------|---------------------------|-----|-----|---------------------------|-----|
| 阀<br>Valve   | DN                                      |        |                         | 25  | 40                        | 50                        | 80  | 100 | 150                       | 200 |
|  | VBL                                     | PN63   | RF/FM                   | 230 | 260                       | 300                       | 380 | 430 | 550                       | 700 |
|  |   |        | RJ                      | 243 | 268                       | 312                       | 380 | 440 | 557                       | 710 |
|  |   | PN100  | RF/FM                   | 230 | 260                       | 300                       | 380 | 430 | 550                       | 700 |
|  |   |        | RJ                      | 243 | 268                       | 316                       | 392 | 440 | 557                       | 716 |
|  |   | PN160  | RF/FM                   | 230 | 260 <sup>#</sup> /<br>272 | 300 <sup>#</sup> /<br>320 | 380 | 462 | 550 <sup>#</sup> /<br>610 | 700 |
|  |   |        | RJ                      | 243 | 281                       | 336                       | 396 | 472 | 613                       | 716 |
|  | PN250 <sup>#</sup>                      | RF     | 260                     | 300 | 350                       | 450                       | 520 | 700 | 800                       |     |
|  | VH                                      | < 300℃ |                         | 132 | 159                       | 178                       | 220 | 255 | 342                       | 357 |
|  |   | ≥ 300℃ |                         | 167 | 239                       | 243                       | 300 | 332 | 402                       | 447 |
| VU   | 3 法兰                                    |        | 68                      | 103 | 113                       | 153                       | 178 | 228 | 260                       |     |
| 执行机构<br>Actuator   | φ A                                     | MF2    | 270                     |     |                           | -                         |     |     |                           |     |
|  |   | MF3    | -                       |     |                           | 400                       |     |     |                           |     |
|  |   | MF5    | -                       |     |                           | -                         |     | 630 |                           |     |
|  | AH                                      | MF2    | 361                     |     |                           | -                         |     |     |                           |     |
|  |   | MF3    | -                       |     |                           | 489                       |     | 625 |                           |     |
|  |   | MF5    | -                       |     |                           | 840                       |     |     |                           |     |
|  | AHV                                     | MF2    | 508                     |     |                           | -                         |     |     |                           |     |
|  |   | MF3    | -                       |     |                           | 657                       |     | 888 |                           |     |
|  | φ D                                     | MF2    | 200                     |     |                           | -                         |     |     |                           |     |
|  |   | MF3    | -                       |     |                           | 355                       |     |     |                           |     |
|  | L                                       | MF2    | 147.5                   |     |                           | -                         |     |     |                           |     |
|  |   | MF3    | -                       |     |                           | 240                       |     |     |                           |     |
|  | H1                                      | MF2    | 165(MF2R)或(or)108(MF2D) |     |                           | -                         |     |     |                           |     |
|  |   | MF3    | -                       |     |                           | 165(MF3R)或(or)125(MF3D)   |     |     |                           |     |
|  | B                                       |        |                         | 130 |                           |                           | 150 |     | 200                       |     |
|  | 重量约为<br>weight<br>approximately<br>(kg) | MF2    | 34                      | 42  | 72                        | 101                       | 136 | -   |                           |     |
| MF3  |   | -      |                         |     | 98                        | 127                       | 162 | 317 | 607                       |     |
| MF5  |   | -      |                         |     | -                         |                           | 460 | 750 |                           |     |

1、重量: 阀 + 不带手轮的执行机构 weight: valve + actuator without handwheel;

2、带 # 的法兰距是 DIN 标准的法兰距; The face to face dimensions marked with # comply with DIN;

3、DIN 标准只有 RF 法兰密封形式; There is only RF sealing surface in DIN;

4、JB/T79.2、HG20592-97 压力等级只有 PN63、100、160; There only have PN63、100、160 for available in standard for JB/T79.

2、HG20592-97

**表 6.2:外形尺寸及重量(1" ~ 8" ,ANSI600/900/1500)外形见图 6-1、6-2**
**Table 6.2: Outline size and weight (1" ~ 8" ,ANSI600/900/1500), see Figure 6-1,6-2 for outline**

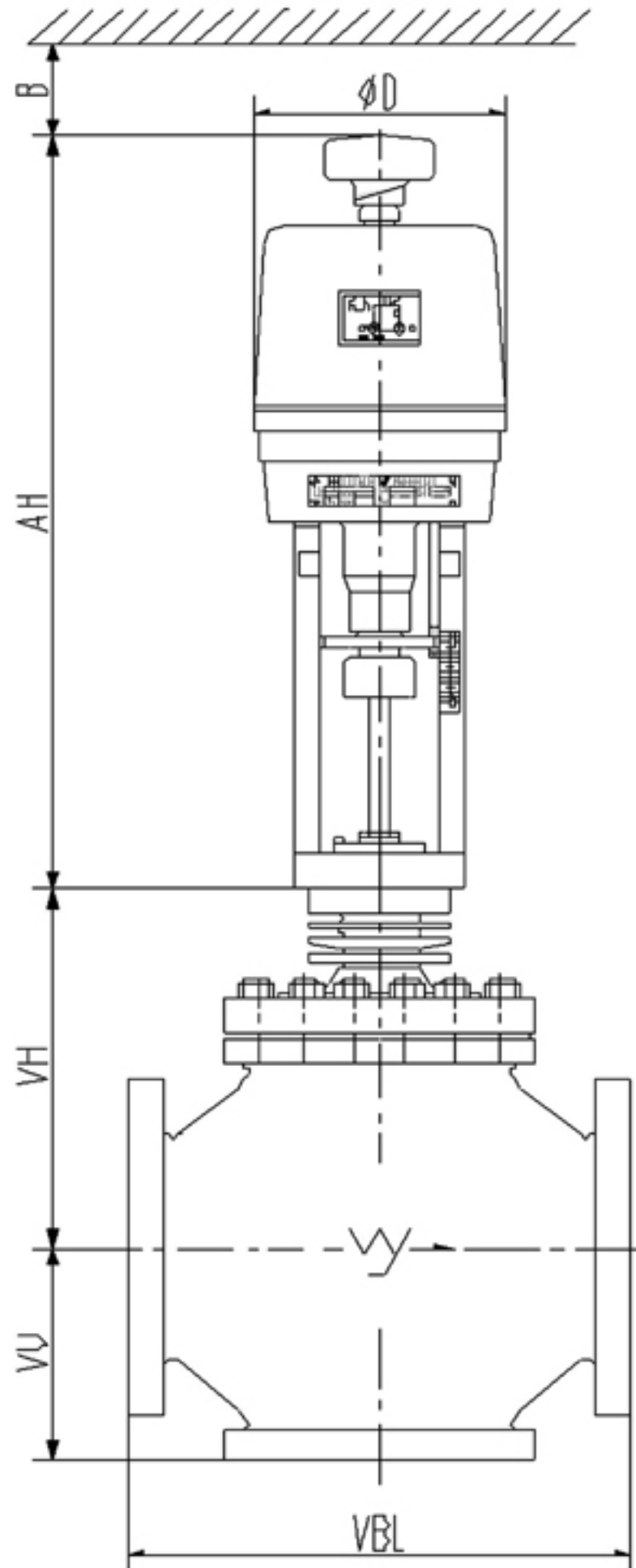
| 阀体主要外形尺寸 (mm), 阀体法兰尺寸符合 ANSI 600/900/1500 ,HG20615-97 PN11.0/15.0/26.0 RF/RTJ<br>Main outline size(mm),connection sizes of flange comply with ANSI 600/900/1500 ,HG20615-97 PN11.0/15.0/26.0 RF/RTJ |   |       |     |        |     |     |     |     |     |
|---|---|-------|-----|--------|-----|-----|-----|-----|-----|
| 阀<br>Valve  | DN                                      |       | 1"  | 1 1/2" | 2"  | 3"  | 4"  | 6"  | 8"  |
|   | VBL<br>Cl. 600                          | RF    | 216 | 241    | 292 | 356 | 432 | 559 | 660 |
|   |   | RTJ   | 216 | 241    | 295 | 359 | 435 | 562 | 664 |
|   | VBL<br>Cl. 900                          | RF    | 254 | 305    | 368 | 381 | 457 | 610 | 737 |
|   |   | RTJ   | 254 | 305    | 372 | 384 | 460 | 613 | 740 |
|   | VBL<br>Cl. 1500                         | RF    | 254 | 305    | 368 | 470 | 546 | 705 | 832 |
|   |   | RTJ   | 254 | 305    | 372 | 473 | 549 | 711 | 841 |
|   | VH                                      | <300℃ | 132 | 159    | 178 | 220 | 255 | 342 | 357 |
|   |   | ≥300℃ | 167 | 239    | 243 | 300 | 332 | 402 | 447 |
|   | VU                                      | 3 法兰  | 68  | 103    | 113 | 153 | 178 | 228 | 260 |
| 4 法兰  |   |       |     | 174    | 219 | 254 | 314 | 366 |     |
| 执行机构<br>Actuator  | φ A                                     | MF2   | 270 |        | -   |     |     | -   |     |
|   |   | MF3   |     |        |     | 400 |     |     |     |
|   |   | MF5   | -   |        |     |     |     | 630 |     |
|   | AH                                      | MF2   | 361 |        | -   |     |     | -   |     |
|   |   | MF3   | -   |        | 489 |     |     | 625 |     |
|   |   | MF5   | -   |        | -   |     |     | 840 |     |
|   | AHV                                     | MF2   | 580 |        | -   |     |     | -   |     |
|   |   | MF3   | -   |        | 657 |     |     | 888 |     |
|   | 重量约为<br>weight<br>approximately<br>(kg) | B     |     | 130    |     | 150 |     |     | 200 |
| 重量约为<br>weight<br>approximately<br>(kg)   |   | MF2   | 34  | 42     | 72  | 101 | 136 | -   |     |
|   |   | MF3   | -   |        | 98  | 127 | 162 | 317 | 607 |
|   |   | MF5   | -   |        | -   |     |     | 460 | 750 |

重量: 阀 + 不带手轮的执行机构。

weight: valve +actuator without handwheel.

图 7 DN25 ~ DN200(1" ~ 8" )带 PEL 电动执行机构外形图

Figure 7 Outline with PEL electric motor for DN25 ~ DN200(1" ~ 8" )





**表 7.1: 外形尺寸及重量(配 PEL 电动头 DN25 ~ DN200, PN63/100/160/250 )外形见图 7**

Table 7.1: Outline size and weight (With PEL Electric Motor DN25 ~ DN200, PN63/100/160/250), see Figure 7 for outline.

| 阀体主要外形尺寸 (mm), 阀体法兰尺寸符合 DIN 2543/2544/2545、JB/T79.2、HG20592-97, 法兰距符合 DIN 3202-F1。<br>Main outline sizes (mm), connection sizes of flange comply with DIN 2543/2544/2545、JB/T79.2、HG20592-97, face to face dimensions comply with DIN 3202-F1. |                                      |           |       |                           |                           |     |     |                           |     |     |
|--|--------------------------------------|-----------|-------|---------------------------|---------------------------|-----|-----|---------------------------|-----|-----|
| 阀<br>Valve   | DN                                   |           | 25    | 40                        | 50                        | 80  | 100 | 150                       | 200 |     |
|  | PN63                                 | RF/FM     | 230   | 260                       | 300                       | 380 | 430 | 550                       | 700 |     |
|  |                                      | RTJ       | 243   | 268                       | 312                       | 380 | 440 | 557                       | 710 |     |
|  | PN100                                | RF/FM     | 230   | 260                       | 300                       | 380 | 430 | 550                       | 700 |     |
|  |                                      | RTJ       | 243   | 268                       | 316                       | 392 | 440 | 557                       | 716 |     |
|  | PN160                                | RF/FM     | 230   | 260 <sup>#</sup> /<br>272 | 300 <sup>#</sup> /<br>320 | 380 | 462 | 550 <sup>#</sup> /<br>610 | 700 |     |
|  |                                      | RTJ       | 243   | 381                       | 336                       | 396 | 472 | 613                       | 716 |     |
|  | PN250                                | RF        | 260   | 300                       | 350                       | 450 | 520 | 700                       | 800 |     |
|  |                                      | VH        | <300℃ | 132                       | 159                       | 178 | 220 | 255                       | 342 | 357 |
|  |                                      |           | ≥300℃ | 167                       | 239                       | 243 | 300 | 332                       | 402 | 447 |
|  | VU                                   |           | 68    | 103                       | 113                       | 153 | 178 | 228                       | 260 |     |
| 执行机构<br>Actuator   | φD                                   | PEL2XX 系列 | φ 195 |                           |                           |     |     | -                         |     |     |
|  |                                      | PEL3XX 系列 | -     | φ 280                     |                           |     |     |                           |     |     |
|  | AH                                   | PEL2XX 系列 | 570   |                           |                           |     |     | -                         |     |     |
|  |                                      | PEL3XX 系列 | -     |                           |                           |     | 745 | 785                       |     |     |
|  | B                                    | PEL2XX 系列 | 140   |                           |                           |     |     | -                         |     |     |
|  |                                      | PEL3XX 系列 | -     | 240                       |                           |     |     |                           |     |     |
|  | weight<br>(kg)<br>approx-<br>imately | PEL202    | -     | -                         | -                         | -   | -   | -                         | -   |     |
|  |                                      | PEL204    | -     | -                         | -                         | -   | -   | -                         | -   |     |
|  |                                      | PEL206    | 32    | 40                        | 68                        | -   | -   | -                         | -   |     |
|  |                                      | PEL208    | 36    | 44                        | 72                        | 101 | 136 | -                         | -   |     |
| PEL210   |                                      | 40        | 48    | 76                        | 105                       | 140 | -   | -                         |     |     |
| PEL312   |                                      | 42        | 50    | 78                        | 107                       | 142 | 292 | 582                       |     |     |
| PEL316   |                                      | -         | 53    | 81                        | 110                       | 145 | 295 | 585                       |     |     |
| PEL320   | -                                    | 56        | 84    | 113                       | 148                       | 298 | 580 |                           |     |     |

1、重量: 阀 + 不带手轮的执行机构 weight: valve + actuator without handwheel;

2、PEL2XX 系列: PEL202、PEL204、PEL206、PEL208、PEL210; PEL2XX series: PEL202、PEL204、PEL206、PEL208、PEL210;

3、PEL3XX 系列: PEL312、PEL316、PEL320; PEL3XX series: PEL312、PEL316、PEL320;

4、带 # 的法兰距是 DIN 标准的法兰距; The face to face dimensions marked with compy with DIN;

5、DIN 标准只有 RF 法兰密封形式; There only RF sealing Surface in DIN;

6、JB/T79.2、HG20592-97 压力等级只有 PN63、100、160; There only have PN63、100、160 for available in standard of JB/T79.2、HG20592-97;

表 7.2: 外形尺寸及重量(配 PEL 电动头 DN25 ~ DN200,ANSI600/900/1500 )外形见图 7。

Table 7.2: Outline size and weight (With PEL Electric Motor DN25 ~ DN200,ANSI600/900/1500),see Figure 7 for outline

| 阀体主要外形尺寸(mm), 阀体法兰尺寸符合 ANSI 600/900/1500 ,HG20615-97 PN11.0/15.0/26.0 RF/RTJ。<br>Main outline sizes(mm), connection sizes of flange comply with ANSI 600/900/1500 ,HG20615-97 PN11.0/15.0/26.0 RF/RTJ. |                                      |              |       |        |     |       |     |     |     |
|--|--------------------------------------|--------------|-------|--------|-----|-------|-----|-----|-----|
| 阀<br>Valve   | DN                                   |              | 1"    | 1 1/2" | 2"  | 3"    | 4"  | 6"  | 8"  |
|  | VBL<br>Class<br>600                  | RF           | 216   | 241    | 292 | 356   | 432 | 559 | 660 |
|  |                                      | RTJ          | 216   | 241    | 295 | 359   | 435 | 562 | 664 |
|  | VBL<br>Class<br>900                  | RF           | 254   | 305    | 368 | 381   | 457 | 610 | 737 |
|  |                                      | RTJ          | 254   | 305    | 372 | 384   | 460 | 613 | 740 |
|  | VBL<br>Class<br>1500                 | RF           | 254   | 305    | 368 | 470   | 546 | 705 | 832 |
|  |                                      | RTJ          | 254   | 305    | 372 | 473   | 549 | 711 | 841 |
|  | VH                                   | < 300℃       | 132   | 159    | 178 | 220   | 255 | 342 | 357 |
|  |                                      | ≥ 300℃       | 167   | 239    | 243 | 300   | 332 | 402 | 447 |
| VU   |                                      | 68           | 103   | 113    | 153 | 178   | 228 | 260 |     |
| 执行机构<br>Electric<br>Motor  | φD                                   | PEL2XX<br>系列 | φ 195 |        |     |       |     | -   |     |
|  |                                      | PEL3XX<br>系列 | -     |        |     | φ 280 |     |     |     |
|  | AH                                   | PEL2XX<br>系列 | 580   |        |     |       |     | -   |     |
|  |                                      | PEL3XX<br>系列 | -     |        |     | 745   |     | 785 |     |
|  | B                                    | PEL2XX<br>系列 | 140   |        |     |       |     | -   |     |
|  |                                      | PEL3XX<br>系列 | -     | 240    |     |       |     |     |     |
|  | weight<br>(kg)<br>approxi-<br>mately | PEL202       | 25    | -      | -   | -     | -   | -   | -   |
|  |                                      | PEL204       | 30    | 38     | 66  | 95    | 130 | -   | -   |
|  |                                      | PEL206       | 32    | 40     | 68  | 97    | 132 | -   | -   |
|  |                                      | PEL208       | 36    | 44     | 72  | 101   | 136 | -   | -   |
|  |                                      | PEL210       | 40    | 48     | 76  | 105   | 140 | -   | -   |
|  |                                      | PEL212       | 42    | 50     | 78  | 107   | 142 | 292 | 582 |
|  |                                      | PEL316       | -     | 53     | 81  | 110   | 145 | 295 | 585 |
| PEL320   | -                                    | 56           | 84    | 113    | 148 | 298   | 580 |     |     |

重量: 阀 + PEL 执行机构, Weight: valve+PEL electric motor.

PEL2XX 系列: PEL202、PEL204、PEL206、PEL208、PEL210

PEL3XX 系列: PEL312、PEL316、PEL320

附表一 APN 单座调节阀型号编制说明


**阀体组件**
**执行机构**
**一、阀体组件**

| 1 编码 | 公称通径<br>INCH mm |
|------|-----------------|
| 21   | 1 25            |
| 23   | 1 1/2 40        |
| 24   | 2 50            |
| 26   | 3 80            |
| 27   | 4 100           |
| 29   | 6 150           |
| 30   | 8 200           |

| 2 编码 | 公称压力             |
|------|------------------|
| 07   | JB/79.2-94 PN6.3 |
| 08   | JB/79.2-94 PN10  |
| 09   | JB/79.2-94 PN16  |
| 43   | ANSI600          |
| 44   | ANSI900          |
| 45   | ANSI1500         |
| 77   | HG20592 PN6.3    |
| 78   | HG20592 PN10     |
| 79   | HG20592 PN16     |
| 86   | DIN2546 PN6.3    |
| 87   | DIN2547 PN10     |
| 88   | DIN2548 PN16     |
| 89   | DIN2549 PN25     |
| X    | 特殊规格             |

| 3 编码 | 连接形式<br>法兰形状 |
|------|--------------|
| 1    | RF           |
| 2    | FM           |
| 4    | RTJ          |
| 5    | SW           |
| 6    | BW           |
| 7    | LG           |
| X    | 特殊规格         |

| 4 编码 | 额定 Cv | 4 编码 | 额定 Cv |
|------|-------|------|-------|
| 32   | 4.7   | 34   | 8.2   |
| 36   | 11.7  | f5   | 13    |
| 38   | 19    | g5   | 21    |
| g9   | 25    | h2   | 31    |
| 40   | 41    | i2   | 44    |
| i5   | 50    | 43   | 65    |
| j4   | 70    | j7   | 80    |
| 45   | 94    | 48   | 129   |
| 65   | 146   | 51   | 176   |
| 53   | 198   | 54   | 246   |
| 55   | 304   | 56   | 445   |
| 57   | 527   |      |       |

| 5 编码 | 流量特性 |
|------|------|
| L    | 线性   |
| %    | 等百分比 |

| 6 编码 | 阀内组件<br>温度范围 |
|------|--------------|
| 1    | -46℃~300℃    |
| 3    | 300℃~530℃    |

| 7 编码 | 上阀盖温度范围   |
|------|-----------|
| A    | -46℃~200℃ |
| C    | 300℃~530℃ |

| 8 编码 | 泄漏等级           |
|------|----------------|
| IV   | ANSI B16.104IV |
| V    | ANSI B16.104 V |

| 9 编码 | 填料                   |
|------|----------------------|
| 3    | Graphit with Inconel |
| 5    | Graphit              |
| 6    | Graphit+PTFE         |

| 10 编码 | 阀体材质     |
|-------|----------|
| 03    | WCB      |
| 04    | CF8M     |
| 05    | CF8      |
| 30    | A217 WC6 |
| 31    | A217 WC9 |
| 32    | A217-C5  |
| 55    | CF3M     |
| L9    | CF3      |
| X     | 其它材质     |

| 11 编码 | 阀内件材质 |
|-------|-------|
| 04    | 316   |
| 05    | 304   |
| 06    | 410   |
| 07    | 420   |
| 28    | 440B  |
| 55    | 316L  |
| L9    | 304L  |
| X     | 其它材质  |

| 12 编码 | 阀芯及处理 |
|-------|-------|
| 0     | 不处理   |
| 1     | HT    |
| 2     | NT    |
| X     | 特殊要求  |

| 13 编码 | 阀座及处理 |
|-------|-------|
| 0     | 不处理   |
| 1     | HT    |
| 2     | ST    |
| X     | 特殊要求  |

| 14 编码 | 特殊要求 |
|-------|------|
| e     | 禁油   |
| b     | 禁铜   |
| c     | 禁水   |
| d     | 禁硫   |
| X     | 其它要求 |

**二、执行机构**

见执行机构代码表。



|   |  |              |             |                           |                           |                |      |
|---|--|--------------|-------------|---------------------------|---------------------------|----------------|------|
| 银星能源·吴忠仪表<br>YINXING ENERGY·WUZHONG INSTRUMENT<br>调节阀数据表<br>SPECIFICATION FOR CONTROL VALVE |  | 项目名称 PROJECT |             |                           |                           |                |      |
|   |  | 合同号 CONT.NO  |             |                           |                           |                |      |
|   |  | 装置名称 DEVICE  |             |                           |                           |                |      |
| 概 况<br>GENERAL  | 第 1 / 1 页 Sheet 1 of 1                 |              | 型 式<br>Type | ECOTROL 系列                |                           |                |      |
|   | 位 号 TAG No                             | 用户提供         |             | 型 号<br>Mode No.           | APN                       |                |      |
|   | 数 量 Quantity                           | 用户提供         |             | 公称通径<br>Body Size (DN)    | 公司提供                      |                |      |
|   | 管道编号 P & ID No                         | 用户提供         |             | 阀座直径<br>Ports Size(dN)    | 公司提供                      |                |      |
|   | 管道规格 Line Size                         | 用户提供         |             | 额定 CV 值<br>Valve CV       | 公司提供                      |                |      |
|   | 管道材质 Line Material                     | 用户提供         |             | 公称压力<br>Rating            | 公司提供                      |                |      |
|   | 用 途 Server                             | 用户提供         |             | 法兰型式<br>Connect           | 公司提供                      |                |      |
| 操 作 条 件 及 结 果<br>OPERATION AND RESULT   | 流体名称 Fluid Name                        | 用户提供         |             | 阀 体 组 件<br>BODY           | 阀体 Body                   | 公司提供           |      |
|   | 流体状态 Fluid State                       | 用户提供         |             |                           | 阀芯 Plug                   | 公司提供           |      |
|   |  | 最大 Max       | 正常 Nor      |                           | 最小 Min                    | 阀座 Seat        | 公司提供 |
|   | 操作温度 Operation Temp (°C)               | 用户提供         |             |                           | 阀杆 Stem                   | 公司提供           |      |
|   | 流量单位 Flow Rate Unit                    | 用户提供         |             |                           | 泄漏等级<br>Leakage Class     | 公司提供           |      |
|   | 流 量 Flow Rate                          | 用户提供         |             | 流量特性<br>Characteristic    | 公司提供                      |                |      |
|   | 压力单位 Pressure Unit                     | MPa(A)       |             | 上盖型式<br>Bonnet Type       | 公司提供                      |                |      |
|   | 阀前压力 Input Pressure                    | 用户提供         |             | 填 料<br>Packing            | 公司提供                      |                |      |
|   | 阀后压力 Outlet Pressure                   | 用户提供         |             | 作用型式<br>Action            | 公司提供                      |                |      |
|   | 压 差 Different Pressure                 | 系统生成         |             | 执 行 机 构<br>ACTUATOR       | 型 式<br>Type               | 公司提供           |      |
|   | 关闭压力 Shut off Pressure                 | 用户提供         |             |                           | 型 号<br>Mode No            | 公司提供           |      |
|   | 比 重 SP.Gr.                             | 用户提供         |             |                           | 行 程<br>Travel(mm)         | 公司提供           |      |
|   | 操作密度 Opera Density(Kg/m <sup>3</sup> ) | 用户提供         |             |                           | 供气压力<br>Air Supply (MPa)  | 公司提供           |      |
|   | 标准密度 ST Density (Kg/m <sup>3</sup> )   | 用户提供         |             |                           | 弹簧范围<br>Spring (MPa)      | 公司提供           |      |
|   | 气体分子量 M.W                              | 系统生成         |             |                           | 电 压<br>Voltage            | 公司提供           |      |
|   | 动力粘度 Dynamic Viscosity(CP)             | 用户提供         |             |                           | 输入信号<br>Input Signal      | 公司提供           |      |
|   | 压力恢复系数 FL                              | 系统生成         |             |                           | 手轮机构<br>Hand Wheel        | 公司提供           |      |
|   | 汽化压力 Vapor Pressure                    | 系统生成         |             |                           | 关闭压差<br>Shut Off DP (Mpa) | 公司提供           |      |
|   | 临界压力 Critical Pressure                 | 系统生成         |             |                           | 定 位 器<br>POSITIONER       | 型 号<br>Mode No | 公司提供 |
|   | 气源故障时阀位 Position Of Air Fail           | 关(FC)        |             | 供气压力<br>Air Supply (MPa)  |                           | 公司提供           |      |
|   | 计算 CV 值 Calculate CV                   | 系统生成         |             | 输入信号<br>Input Signal      |                           | 公司提供           |      |
|   | 开 度 Travel(%)                          | 系统生成         |             | 防爆等级<br>EXP.Class         |                           | 公司提供           |      |
|   | 噪 音 Noise Level (dB)                   | 系统生成         |             | 气源接口<br>Air Input Connect |                           | 公司提供           |      |
| 特 殊 需 求<br>SEPCIAL REQUIREMENTS   | 特殊检查 Sepcial Inspection                | 用户提供         |             | 电 磁 阀<br>SOLENOID         | 电 压<br>Voltage            | 公司提供           |      |
|   | 禁铜处理 Forbidding Copper Treatment       | 用户提供         |             |                           | 气源接口<br>Air Input Connect | 公司提供           |      |
|   | 指定色涂层 Specified Painting Coat          | 用户提供         |             | 减 压 阀<br>AIR SET          | 型 号<br>Mode No            | 公司提供           |      |
|   | 除油除水处理 Removing Oil and Water          | 用户提供         |             |                           | 电 压<br>Voltage            | 公司提供           |      |
|   | 热寒带地区 Used in Tropic or Frigid Zone    | 用户提供         |             | 气源接口<br>Air Input Connect | 公司提供                      |                |      |
|   | 防沙防尘型 Preventing Sand and Dust         | 用户提供         |             | 外 形 尺 寸<br>DIMENSIONS     |                           |                |      |
|   | 防强腐蚀型 High-crodent substance Proof     | 用户提供         |             |                           |                           |                |      |
|   | 动作频次高 High frequent Action             | 用户提供         |             |                           |                           |                |      |
| 开启关闭时间 Open/Close Time  | 用户提供                                   |              |             |                           |                           |                |      |
| 备 注<br>REMARKED   |  |              |             |                           |                           |                |      |

50年控制阀制造经验  
**QUALITY SINCE 1959**

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