

## HLSW/HTSW/HCBW/HCPW 气动波纹管密封调节阀

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阀体结构、材质与温度极限

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气动薄膜执行机构

### ■选择附件

SIPART PS2 型智能定位器 SIEMENS ①

其它附件

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安装尺寸

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选型规则

本产品简介只包括一些比较常用的规格、材质、温度、选项、以及附件。

特殊的工况可根据要求定制提供。

需要这些产品的选型方面的协助，可联系本公司销售办事处、营销中心及全球各地代理商。

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(INT: +86 23 62815577/67300026)

注：① SIEMENS 系德国SIEMENS 集团的商标，本公司  
智能定位器战略合作商

## HLSW/HTSW/HCBW/HCPW Pneumatic Bellows Sealing Control Valve

### ■Applicable Condition

### ■Product characteristics

### ■Applicable Standard

### ■Body Selection

Specification

Performance

Structure, materials and temperature limits

### ■Actuator

Pneumatic diaphragm actuator

### ■Accessories

SIPART PS2 intelligent positioner SIEMENS ①

Others Accessories

### ■Reference

Allowable DP

Tube & Wire for Power/Air Supply Connection

Installation diagram

Valve, hand wheel and pipe installation diagram

Installation Dimension

Product weight

Model selection

This literature/Brochure only includes some common specification、materials、temperature、option and accessories

Special service condition could be customized.

Please contact with our sales offices、marketing center and worldwide agents for assistance in model selection.

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### Note:

① SIEMENS is the trademark of Germany SIEMENS group, the company's strategic partner.

## ■适用场合 Applicable Condition

适用于化工、石油、冶金、轻工等行业需对管道中液体、气体介质进行调节的自动化控制场合。

Applicable to chemical, Petroleum, metallurgy, light industry and other industries under automated control occasions of mediums of liquid and gas.



## ■产品特点 Characteristics

|                                                                               |                                                                                                           |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| 压降损失小<br>Low pressure drop                                                    | -阀体流道呈S型<br>S-shaped flow pass                                                                            |
| 可调范围大、流量特性精度高<br>Wide adjustable range; High accuracy of flow characteristics | -符合IEC534-2-1976 标准<br>Comply with IEC534-2-1976                                                          |
| 泄漏量小<br>Low leakage                                                           | -符合ANSI B16.104 标准<br>Comply with ANSI B16.104 s                                                          |
| 双重密封<br>High seal performance of packing                                      | -采用波纹管一体式密封和填料密封;<br>adapting spring preload compensation structure, Can be compensated when packing wear |
| 结构紧凑、体积小<br>Small and compact structure                                       | -配用多弹簧薄膜执行机构<br>Multi-spring diaphragm actuator                                                           |

## ■应用标准 Applicable Standard

|                                | 中国标准<br>Chinese Standard     | 美国标准<br>American Standard |
|--------------------------------|------------------------------|---------------------------|
| 质量保证<br>Quality                | ISO9001、<br>TS2710J59        | ISO9001                   |
| 设计制造<br>Design and manufacture | GB12224-2005                 | ASME B16.34               |
| 法兰标准<br>Flange                 | GB9112-9124、<br>HG20592-2009 | ASME B16.5                |
| 结构长度<br>Face to Face           | GB12221-2005                 | ASME B16.10               |
| 检验和试验标准<br>Inspection & test   | GB/T4213-2008                | API598                    |

## ■选择阀体部件 Body Selection

### 阀体规格 Specification

|                 |                                                 |                   |     |     |     |     |     |     |  |  |  |  |  |  |  |
|-----------------|-------------------------------------------------|-------------------|-----|-----|-----|-----|-----|-----|--|--|--|--|--|--|--|
| 公称通径<br>DN      | mm                                              | 20                | 25  | 40  | 50  | 65  | 80  | 100 |  |  |  |  |  |  |  |
|                 | inch                                            | 3/4               | 1   | 1.5 | 2   | 2.5 | 3   | 4   |  |  |  |  |  |  |  |
| 产品型号<br>model   | HLSW                                            | △                 | △   |     |     |     |     |     |  |  |  |  |  |  |  |
|                 | HTSW                                            |                   |     | △   | △   | △   | △   | △   |  |  |  |  |  |  |  |
|                 | HCBW                                            |                   |     | △   | △   | △   | △   | △   |  |  |  |  |  |  |  |
|                 | HCPW                                            |                   |     | △   | △   | △   | △   | △   |  |  |  |  |  |  |  |
| 公称通径<br>DN      | mm                                              | 125               | 150 | 200 | 250 | 300 | 350 | 400 |  |  |  |  |  |  |  |
|                 | inch                                            | 5                 | 6   | 8   | 10  | 12  | 14  | 16  |  |  |  |  |  |  |  |
| 产品型号<br>model   | HTSW                                            | △                 | △   | △   | △   |     |     |     |  |  |  |  |  |  |  |
|                 | HCBW                                            | △                 | △   | △   | △   | △   | △   | △   |  |  |  |  |  |  |  |
|                 | HCPW                                            | △                 | △   | △   | △   | △   | △   | △   |  |  |  |  |  |  |  |
| 公称压力<br>PN      | PN                                              | 16、40、64          |     |     |     |     |     |     |  |  |  |  |  |  |  |
|                 | ANSI                                            | CL150、CL300、CL600 |     |     |     |     |     |     |  |  |  |  |  |  |  |
| 连接型式connection  | 法兰式; Flange, 焊接式 Weld                           |                   |     |     |     |     |     |     |  |  |  |  |  |  |  |
| 阀体型式body type   | 直通单座铸造球型阀 Straightway Single Seated Globe valve |                   |     |     |     |     |     |     |  |  |  |  |  |  |  |
| 压盖型式bonnet type | 螺栓压紧式 bolt clamp                                |                   |     |     |     |     |     |     |  |  |  |  |  |  |  |

续上表

| 公称通径<br>DN                               | mm             | 20                                                       | 25 | 40  | 50 | 65  | 80                                    | 100 |
|------------------------------------------|----------------|----------------------------------------------------------|----|-----|----|-----|---------------------------------------|-----|
|                                          | inch           | 3/4                                                      | 1  | 1.5 | 2  | 2.5 | 3                                     | 4   |
| 产品名称及阀芯形式<br>product name<br>& plug type | HLSW           | 波纹管密封小口径单座调节阀<br>Bellows Seal Globe Control Valve        |    |     |    |     | 单座柱塞型 single-seated plunger           |     |
|                                          | HTSW           | 波纹管密封单座调节阀<br>Bellows Seal Globe Control Valve           |    |     |    |     |                                       |     |
|                                          | HCBW           | 波纹管密封平衡笼式调节阀<br>Bellows Seal balanced cage control valve |    |     |    |     | 压力平衡式阀芯balanced cage plug             |     |
|                                          | HCPW           | 波纹管密封笼式单座调节阀<br>Bellows Seal cage control valve          |    |     |    |     | 压力平衡式阀芯<br>Cage single-seated plunger |     |
| 主密封 seal                                 | 波纹管<br>Bellows |                                                          |    |     |    |     |                                       |     |

注: △表示各种阀的规格范围

Note: '△' Various valve specifications

## ■主要性能指标Performance

表1 性能参数table 1 HCB/HCN/HC performance parameter

|                                                                                                                                                  |                    |                                                          |                                                                                                                |  |                                                                |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------|--|--|
| 流量特性<br>flow<br>characteristics                                                                                                                  | HLSW               | 金属阀座<br>metal seat                                       | 等百分比特性 (%CF) 和线性特性 (LCF) 参考图 1 和图 3<br>Refer to Fig. 1 for equal percentage (%CF) Linear (LCF) refer to Fig. 3 |  |                                                                |  |  |
|                                                                                                                                                  |                    | 软阀座<br>soft seat                                         | 等百分比特性 (%TF) 和线性特性 (LTF) 参考图2和图3<br>Refer to Fig. 2 for equal percentage (%TF) Linear (LTF) refer to Fig. 3    |  |                                                                |  |  |
|                                                                                                                                                  | HTSW               | 金属阀座<br>metal seat                                       | 高容量流量特性<br>High capacity flow characteristics                                                                  |  | 等百分比特性 (%C) 和线性特性 (LC) 参考图 4<br>EQ% and liner refer to Fig.4   |  |  |
|                                                                                                                                                  |                    | 软阀座<br>soft seat                                         |                                                                                                                |  | 等百分比特性 (%T) 和线性特性 (LT) 参考图 4<br>EQ% and liner refer to Fig.4   |  |  |
|                                                                                                                                                  | HCBW/H<br>CPW      | 金属阀座<br>metal seat                                       | 高精度流量特性<br>High precision flow characteristics                                                                 |  | 等百分比特性 (%CF) 和线性特性 (LCF) 参考图 5<br>EQ% and liner refer to Fig.5 |  |  |
|                                                                                                                                                  |                    | 软阀座<br>soft seat                                         |                                                                                                                |  | 等百分比特性 (%TF) 和线性特性 (LTF) 参考图 5<br>EQ% and liner refer to Fig.5 |  |  |
|                                                                                                                                                  |                    | 金属阀座<br>metal seat                                       | 高容量流量特性<br>High capacity flow characteristics                                                                  |  | 等百分比特性 (%V) 和线性特性 (LV) 参考图 6<br>EQ% and liner refer to Fig.6   |  |  |
|                                                                                                                                                  |                    | 软阀座<br>soft seat                                         |                                                                                                                |  | 等百分比特性 (%T) 和线性特性 (LT) 参考图 6<br>EQ% and liner refer to Fig.6   |  |  |
|                                                                                                                                                  |                    | 金属阀座<br>metal seat                                       | 高精度流量特性<br>High precision flow characteristics                                                                 |  | 等百分比特性 (%VF) 和线性特性 (LVF) 参考图 7<br>EQ% and liner refer to Fig.7 |  |  |
|                                                                                                                                                  |                    | 软阀座<br>soft seat                                         |                                                                                                                |  | 等百分比特性 (%TF) 和线性特性 (LTF) 参考图 7<br>EQ% and liner refer to Fig.7 |  |  |
| 备注: 关于软阀座的工作温度和压差范围, 参考图 8, 司太莱堆焊的适用范围, 参考图 9.<br>Remarks: Refer to Fig.6 for operating temperature and DP of soft seat; Refer to Fig.9 for STL. |                    |                                                          |                                                                                                                |  |                                                                |  |  |
| 可调范围<br>adjustable<br>range                                                                                                                      | HLSW               | 50: 1 (0.25≤Cv≤14)、30: 1 (Cv≤0.16)                       |                                                                                                                |  |                                                                |  |  |
|                                                                                                                                                  | HTSW/HCBW/<br>HCPW | 50: 1                                                    |                                                                                                                |  |                                                                |  |  |
| 阀座泄漏量<br>leakage                                                                                                                                 | HLSW               | 硬密封 Hard sealing: ANSI B16.104 IV (V、VI 可选 optional)     |                                                                                                                |  | 软密封 soft seal: ANSI B16.104VI                                  |  |  |
|                                                                                                                                                  | HTSW               | 硬密封 Hard sealing: ANSI B16.104 IV (V、VI 可选 optional)     |                                                                                                                |  | 软密封 soft seal: ANSI B16.104VI                                  |  |  |
|                                                                                                                                                  | HCBW               | 硬密封 Hard sealing: ANSI B16.104 III (IV、V、VI 可选 optional) |                                                                                                                |  | 软密封 soft seal: ANSI B16.104VI                                  |  |  |
|                                                                                                                                                  | HCPW               | 硬密封 Hard sealing: ANSI B16.104 IV (V、VI 可选 optional)     |                                                                                                                |  | 软密封 soft seal: ANSI B16.104VI                                  |  |  |

续上表

|                      |                     |                                                                                      |
|----------------------|---------------------|--------------------------------------------------------------------------------------|
| 性 能<br>performance   | 回 差<br>hysteresis   | 带智能定位器: 小于全行程的 0.5%;<br>with intelligent positioner: less than 0.5% of total range   |
|                      | 基本误差<br>Basic Error | 带智能定位器: 小于全行程的 ± 0.5%;<br>with intelligent positioner: less than 0.5% of total range |
| 允许压差表<br>allowableDP | HLSW                | 见表 12 Refer to table 12                                                              |
|                      | HTSW                | 见表 13 Refer to table 13                                                              |
|                      | HCBW/HCPW           | 见表 14 Refer to table 14                                                              |

表2: HLSW Cv值和额定行程

Table 2:HLSW Cv value & Rated Stroke

| 阀芯型式<br>Plug type       | 流量特性<br>Flow characteristics |         | 额定行程<br>Rated stroke | 0.01 | 0.04 | 0.1 | 0.16 | 0.25 | 0.4 | 0.63 | 1.0 | 1.6 | 2.5 | 4.0 | 6.3 | 10 | 14 |
|-------------------------|------------------------------|---------|----------------------|------|------|-----|------|------|-----|------|-----|-----|-----|-----|-----|----|----|
| 柱塞阀芯<br>Plunger<br>plug | 金属阀座<br>metal seat           | 等百分比%   |                      | —    | —    | —   | —    | ○    | △   | △    | △   | △   | △   | △   | △   | △  | △  |
|                         | 线性liner                      | 线性liner | 14.3                 | ○    | ○    | ○   | ○    | ○    | △   | △    | △   | △   | △   | △   | △   | △  | △  |
|                         |                              |         |                      | —    | —    | —   | —    | ○    | ○   | ○    | ○   | ○   | ○   | ○   | ○   | ○  | ○  |
|                         | 软阀座<br>soft seat             | 等百分比%   |                      | —    | —    | ○   | ○    | ○    | ○   | ○    | ○   | ○   | ○   | ○   | ○   | ○  | ○  |
| 公称通径DN                  |                              | mm/inch | 20                   | 3/4  | √    | √   | √    | √    | √   | √    | √   | √   | √   | √   | √   | √  | √  |
|                         |                              |         | 25                   | 1    | √    | √   | √    | √    | √   | √    | √   | √   | √   | √   | √   | √  | √  |

注: 1、符号○、√、△表示流量系数的规格范围;

2、符号△也表示阀的流量特性符合IEC534-2-1976 标准

Note:

1. ‘○, √, △’ stand for the range of the flow coefficient and
2. ‘△’ also indicates that the flow characteristics complies with IEC534 -2-11976

表3: HTSW 高容量阀芯 ( %C、LC、%T、LT ) CV 值和额定行程

Table 3:HTSW high capacity plug ( %C、LC、%T、LT ) & rated stroke

| 公称通径(DN)                    | mm   | 40  | 50 | 65  | 80  | 100 | 125 | 150 | 200 | 250  | 300 |
|-----------------------------|------|-----|----|-----|-----|-----|-----|-----|-----|------|-----|
|                             | inch | 1.5 | 2  | 2.5 | 3   | 4   | 5   | 6   | 8   | 10   | 12  |
| 阀座直径(mm)<br>seat diameter   | 40   | 50  | 65 | 80  | 100 | 125 | 150 | 200 | 250 | 300  |     |
| 额定 Cv 值<br>ratedCv value    | 30   | 50  | 85 | 125 | 200 | 235 | 420 | 700 | 820 | 1170 |     |
| 额定行程 ( mm )<br>rated stroke | 25   |     | 38 |     |     | 50  |     | 75  | 100 |      |     |

表4：HTSW高精度流量特性阀芯(%CF、LCF、%TF、LT) Cv值和额定行程

table 4: HTSW high-accuracy flow characteristics plug (%CF、LCF、%TF、LT) Cv value and rated stroke

| 公称通径(DN)                    | mm   | 40  |    |    | 50 |    |    | 65  |    |    | 80 |    |    | 100 |    |     |
|-----------------------------|------|-----|----|----|----|----|----|-----|----|----|----|----|----|-----|----|-----|
|                             | inch | 1.5 |    |    | 2  |    |    | 2.5 |    |    | 3  |    |    | 4   |    |     |
| 阀座直径(mm)<br>seat diameter   |      | 25  | 32 | 40 | 32 | 40 | 50 | 40  | 50 | 65 | 50 | 65 | 80 | 65  | 80 | 100 |
| 额定 Cv 值<br>ratedCv value    |      | 10  | 17 | 24 | 17 | 24 | 44 | 24  | 44 | 68 | 44 | 68 | 99 | 68  | 99 | 175 |
| 额定行程 ( mm )<br>rated stroke |      | 25  |    |    |    |    | 38 |     |    |    |    |    |    |     |    |     |

表4(续)：高精度流量特性阀芯(%CF、LCF、%TF、LT) CV 值和额定行程

table 4(continued): HTSW high-accuracy flow characteristics plug (%CF、LCF、%TF、LT) CV value and rated stroke

| 公称通径(DN)                    | mm   | 125 |     |     | 150 |     |     | 200 |     |     | 250 |     |     | 300 |     |      |
|-----------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|                             | inch | 5   |     |     | 6   |     |     | 8   |     |     | 10  |     |     | 12  |     |      |
| 阀座直径(mm)<br>seat diameter   |      | 80  | 100 | 125 | 100 | 125 | 150 | 125 | 150 | 200 | 150 | 200 | 250 | 200 | 250 | 300  |
| 额定 Cv 值<br>ratedCv value    |      | 99  | 175 | 275 | 175 | 275 | 360 | 275 | 360 | 640 | 360 | 640 | 820 | 650 | 820 | 1440 |
| 额定行程 ( mm )<br>rated stroke |      | 50  |     |     |     |     | 75  |     |     |     |     | 100 |     |     |     |      |

表5: HCBW/HCPW 高容量阀芯 ( %C、LC、%T、LT )

Table 5 : HCBW/HCPW high-capacity plug ( %C、LC、%T、LT )

| 公称通径(DN)                    | mm                         | 40  |  | 50 |  | 65  |    | 80  |  | 100 |  | 125 |  | 150 |  | 200 |    | 250  |     | 300  |  |
|-----------------------------|----------------------------|-----|--|----|--|-----|----|-----|--|-----|--|-----|--|-----|--|-----|----|------|-----|------|--|
|                             | inch                       | 1.5 |  | 2  |  | 2.5 |    | 3   |  | 4   |  | 5   |  | 6   |  | 8   |    | 10   |     | 12   |  |
| 阀座直径(mm)<br>seat diameter   |                            | 40  |  | 50 |  | 65  |    | 80  |  | 100 |  | 125 |  | 150 |  | 200 |    | 250  |     | 300  |  |
| 额定 Cv 值<br>ratedCv value    | 等百分比特性<br>Equal percentage | 36  |  | 60 |  | 100 |    | 140 |  | 220 |  | 320 |  | 420 |  | 820 |    | 1000 |     | 1440 |  |
|                             | 线性特性 linear                | 40  |  | 75 |  | 110 |    | 150 |  | 240 |  | 365 |  | 435 |  | 850 |    | 1035 |     | 1490 |  |
| 额定行程 ( mm )<br>rated stroke |                            | 25  |  |    |  |     | 38 |     |  |     |  | 50  |  |     |  |     | 75 |      | 100 |      |  |

表6: HCBW/HCPW 高精度流量特性阀芯(%CF、LCF、%TF、LT)

Table 6: HCBW/HCPW high-accuracy flow characteristics plug (%CF、LCF、%TF、LT)

| 公称通径(DN)                    | mm   | 40  |    |    | 50 |    |    | 65  |    |    | 80 |    |    | 100 |    |     | 125 |     |     | 150 |     |     |
|-----------------------------|------|-----|----|----|----|----|----|-----|----|----|----|----|----|-----|----|-----|-----|-----|-----|-----|-----|-----|
|                             | inch | 1.5 |    |    | 2  |    |    | 2.5 |    |    | 3  |    |    | 4   |    |     | 5   |     |     | 6   |     |     |
| 阀座直径(mm)<br>seat diameter   |      | 25  | 32 | 40 | 32 | 40 | 50 | 40  | 50 | 65 | 50 | 65 | 80 | 65  | 80 | 100 | 80  | 100 | 125 | 100 | 125 | 150 |
| 额定 Cv 值<br>ratedCv value    |      | 11  | 17 | 24 | 17 | 24 | 44 | 24  | 44 | 68 | 44 | 68 | 99 | 68  | 99 | 175 | 99  | 175 | 275 | 175 | 275 | 360 |
| 额定行程 ( mm )<br>rated stroke |      | 25  |    |    |    |    | 38 |     |    |    |    |    |    |     |    |     | 50  |     |     |     |     |     |

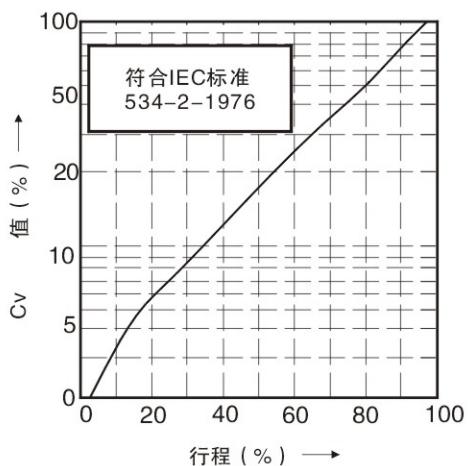
表6 (续) : HCBW/HCPW 高精度流量特性阀芯(%CF、LCF、%TF、LTf)

Table 6 continued : HCBW/HCPW high-accuracy flow characteristics plug (%CF、LCF、%TF、LTf)

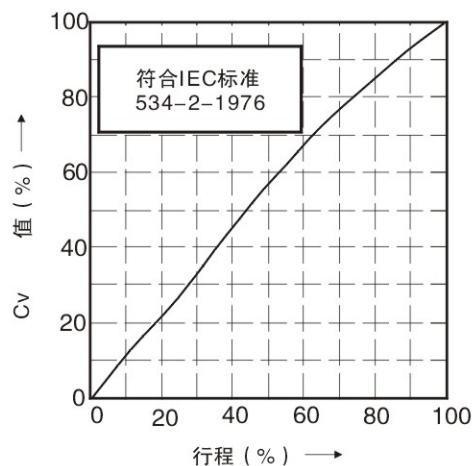
| 公称通径(DN)                    | mm   | 200 |     |     | 250 |     |     | 300 |     |      | 350 |      |      | 400  |      |      |
|-----------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|------|------|------|------|------|
|                             | inch | 8   |     |     | 10  |     |     | 12  |     |      | 14  |      |      | 16   |      |      |
| 阀座直径(mm)<br>seat diameter   |      | 125 | 150 | 200 | 150 | 200 | 250 | 200 | 250 | 300  | 250 | 300  | 350  | 300  | 350  | 400  |
| 额定 Cv 值<br>ratedCv value    |      | 275 | 360 | 650 | 360 | 650 | 820 | 650 | 820 | 1440 | 820 | 1440 | 1900 | 1440 | 1900 | 2900 |
| 额定行程 ( mm )<br>rated stroke |      | 75  |     |     |     |     | 100 |     |     |      |     | 120  |      |      |      |      |

### ◎ 流量特性 Flow characteristics

HLSW 流量特性曲线图 HLSW flow characteristic curve

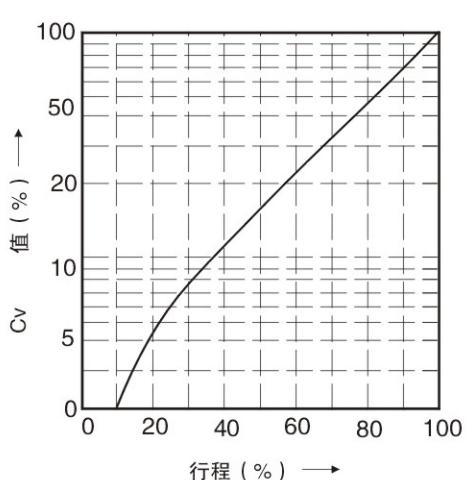


液体温度(℃)  
等百分比特性EQ% (%CF 金属阀座metal seat)

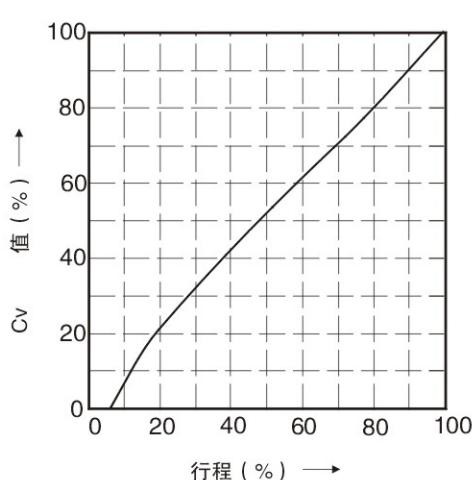


线性特性Linear ( LCF 金属阀座metal seat )

图 1 高精度流量特性曲线图 ( CV=0.4 ~ 14 ) Fig. 1 High-accuracy flow characteristics curve ( CV=0.4 ~ 14 )

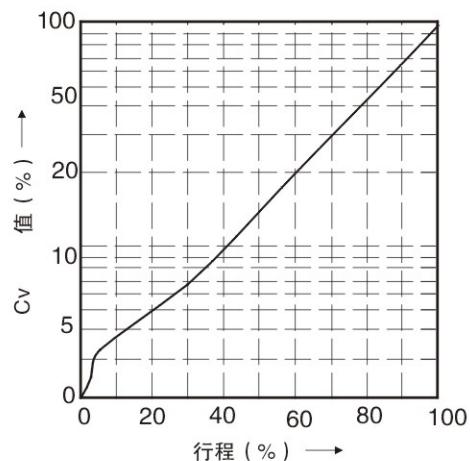


等百分比特性EQ% (%TF 软阀座soft seat)

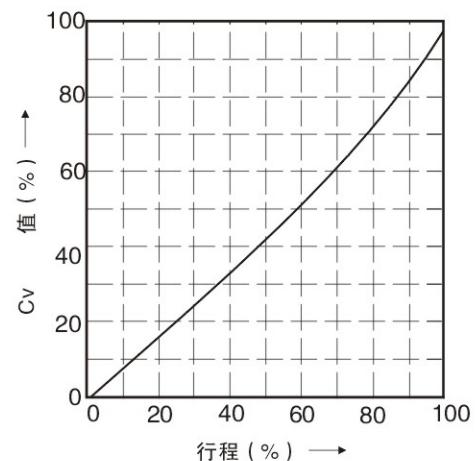


线性特性Linear ( LTF 软阀座soft seat )

图 2 柱塞型阀芯流量特性曲线图 ( CV=0.4 ~ 14 ) Fig. 2 plunger plug flow characteristics curve



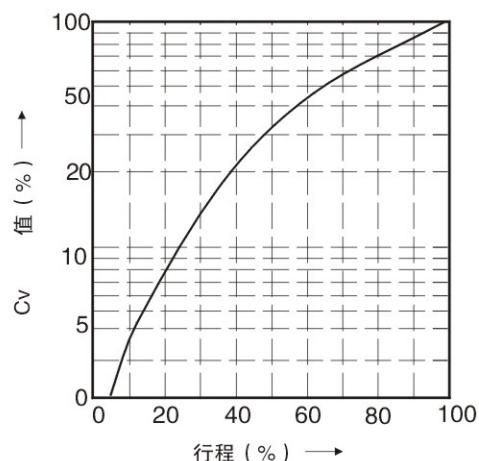
等百分比特性EQ%  
( %CF 金属阀座metal seat、%TF 软阀座soft seat )



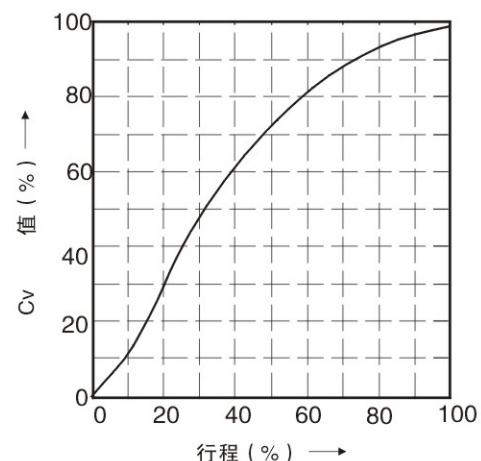
线性特性Linear  
( LCF 金属阀座metal seat、LTF 金属阀座metal seat )

图3 柱塞型阀芯流量特性曲线图 ( CV=0.01 ~ 0.25 ) Fig. 3 plunger plug flow characteristics curve ( CV=0.01 ~ 0.25 )

#### HTSW 流量特性曲线图HTSW flow characteristic curve

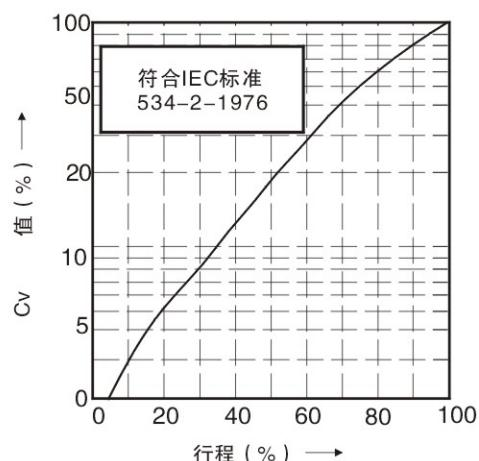


等百分比特性EQ%  
( %C 金属阀座metal seat、%T 软阀座soft seat )

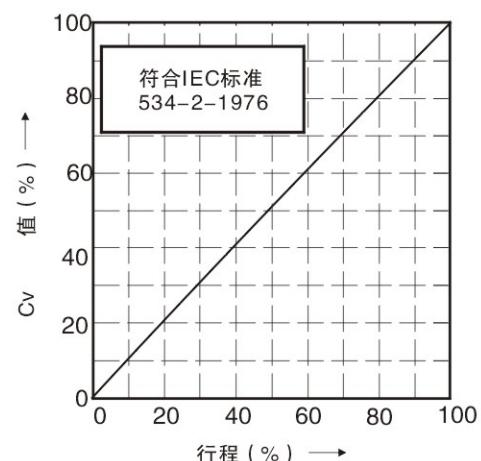


线性特性Linear  
( LC 金属阀座metal seat、LT 软阀座soft seat )

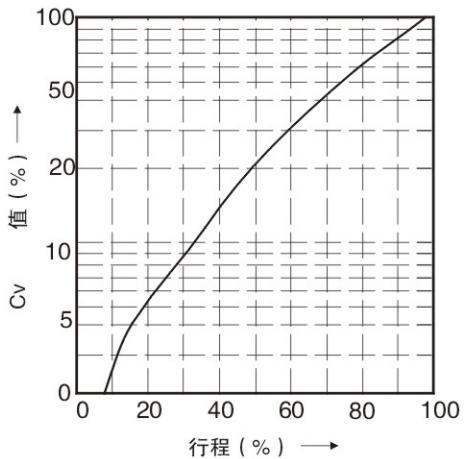
图4 高容量流量特性曲线Fig. 4 high capacity flow characteristics curve



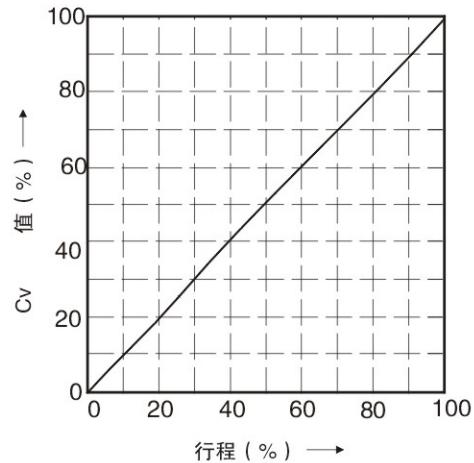
等百分比特性EQ% ( %CF 金属阀座metal seat )



线性特性Linear ( LCF 金属阀座metal seat )



等百分比特性EQ% (%TF 软阀座soft seat)

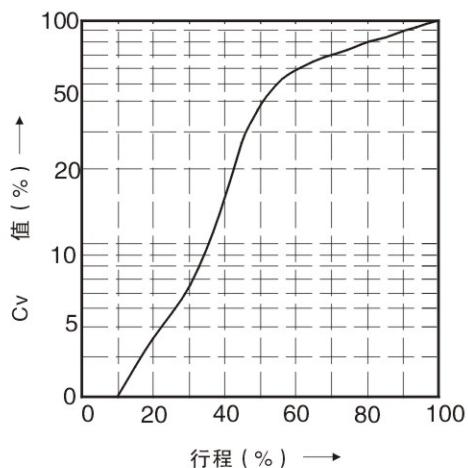


线性特性Linear (LTF软阀座soft seat)

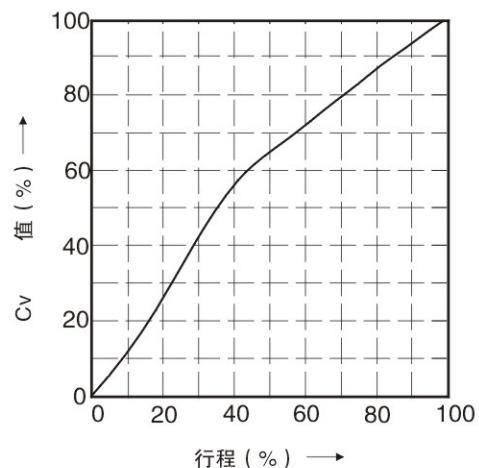
图 5 高精度流量特性曲线图

Fig. 5 high-accuracy flow characteristics curve

### HCBW/HCPW 流量特性曲线图 HCBW/HCPW flow characteristics curve



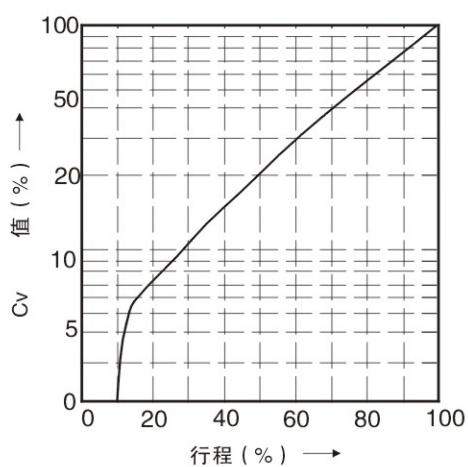
等百分比特性EQ%  
(%C 金属阀座metal seat、%T 软阀座soft seat)



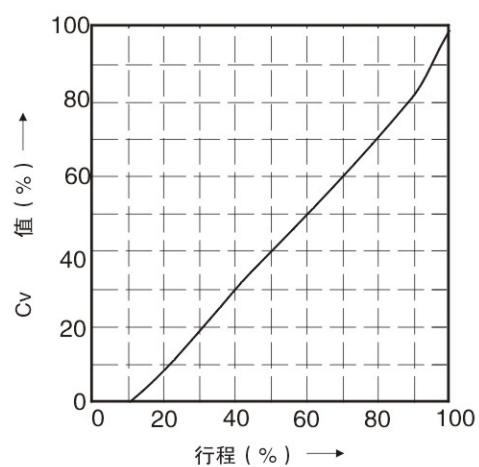
线性特性Linear  
(LV 金属阀座metal seat、LT 软阀座soft seat)

图 6 高容量流量特性曲线图

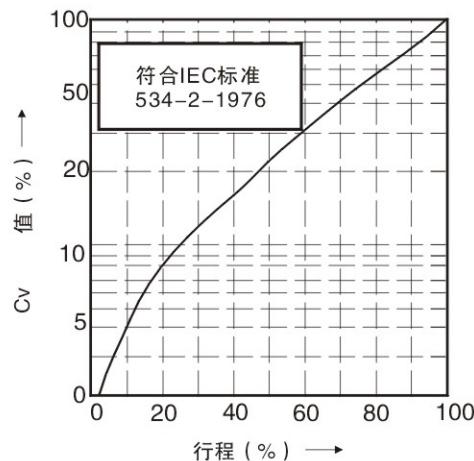
Fig 6 High-capacity flow characteristics



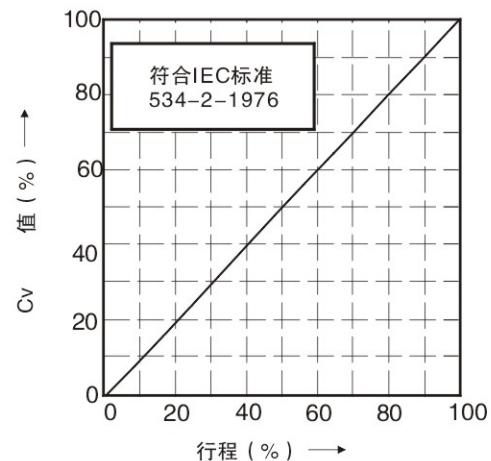
等百分比特性EQ% (%VF 金属阀座metal seat)



线性特性Linear (LVF 金属阀座metal seat)



等百分比特性EQ% ( %TF 软阀座soft seat )



线性特性Linear ( LTF 软阀座soft seat )

图7 高精度流量特性曲线图 Fig.7 high-accuracy flow characteristics curve

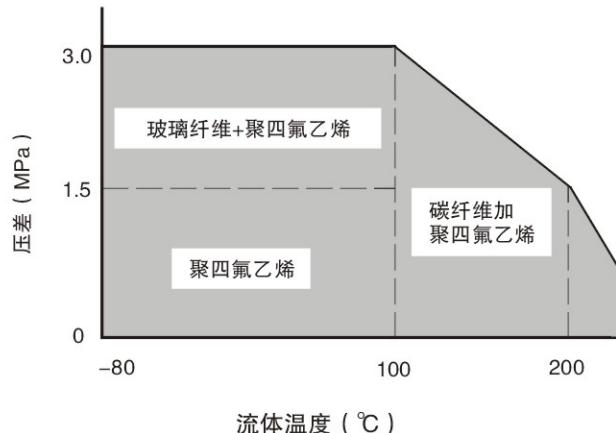


图8 软阀座的工作温度和压差的范围

Fig.8 working temperature and DP range for soft seat

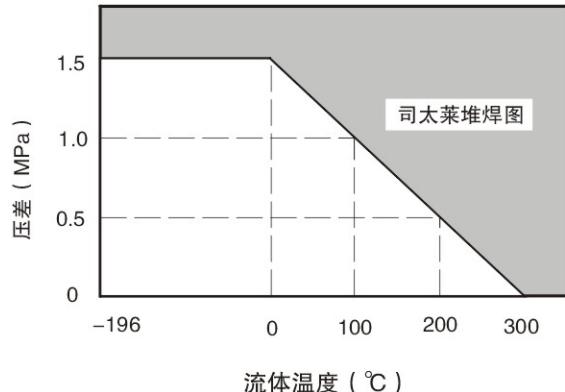


图9 司太莱堆焊的工作范围

Fig. 9 Working temperature for STL

注：

- 1、空化、闪蒸不仅水的温度超过100℃过热场合，建议用9Cr18硬化不锈钢；
- 2、空化、闪蒸、禁油及常处于关闭状态下的调节阀、不管工作温度和压差多大，建议堆焊司太莱合金；
- 3、如Cv≤0.16，阀芯全部堆焊司太莱合金或用9Cr18硬化不锈钢；
- 4、17-4PH不锈钢（SCS24）不需堆焊。

Note:

1. Please use 9Cr18 in the conditions of cavitations or flashing or water temperature over 100°C.
2. Without considering the working temperature and DP, please surface STL in the conditions of cavitations, flashing, oil-free or in normal close state.
3. If Cv≤0.16, please surface STL on the plug or use 9Cr18 as material of plug.
4. No surfacing for SS. 17-4PH.

◎ 阀体结构 Body structure

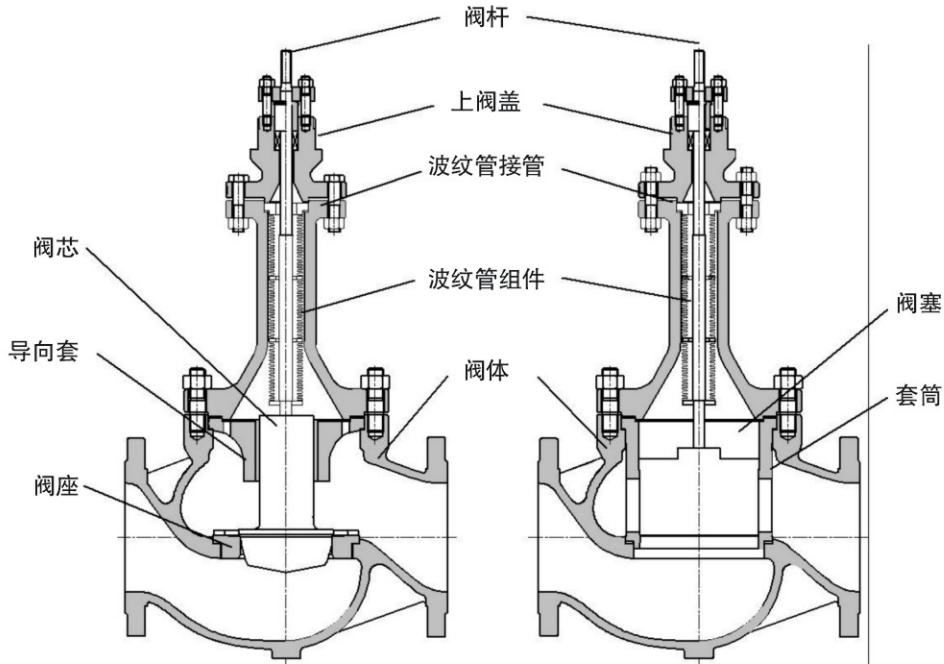


图10 HLSW/HTSW 波纹管密封单座调节阀

Fig 10 HLSW/HTSW Bellows seal globe control valve

图11 HCBW/HCPW 波纹管密封平衡笼式调节阀

Fig 11 HCBW/HCPW Bellows seal balance cage control valve

◎ 材质与温度极限 material and temperature limits

表7 主要零件及材质极限使用温度 Table 7. working temperature limits of main parts and materials

| 零件名称<br>name | 材质<br>material | 极限温度<br>temperature limits | 零件名称<br>name | 材质<br>material | 处理方式<br>processing | 极限温度<br>temperature limits |
|--------------|----------------|----------------------------|--------------|----------------|--------------------|----------------------------|
| 阀体 body      | WCB            | -29 ~ +425°C               | 阀芯(阀塞)plug   | 304            | +PTFE              | -20 ~ +180°C               |
|              | CF8            | -196 ~ +538°C              |              |                | +STL               | -196 ~ +538°C              |
|              | CF8M           | -196 ~ +538°C              |              | 316            | +PTFE              | -196 ~ +538°C              |
|              | CF3M           | -196 ~ +455°C              |              |                | +STL               | -196 ~ +538°C              |
| 上阀盖 bonnet   | WCB            | -29 ~ +425°C               | 316L         | +PTFE          | -20 ~ +180°C       |                            |
|              | CF8            | -196 ~ +538°C              |              | +STL           | -196 ~ +450°C      |                            |
|              | CF8M           | -196 ~ +538°C              | 阀座 (套筒) seat | 304            | +STL               | -196 ~ +538°C              |
|              | CF3M           | -196 ~ +455°C              |              | 316            | +STL               | -196 ~ +538°C              |
| 填料 packing   | PTFE           | -20 ~ +180°C               |              | 316L           | +STL               | -196 ~ +450°C              |

◎ 阀体材质的使用温度–压力范围 working temperature & pressure limits of main parts and materials

表8 JB/79-94 或 HG20592-2009

Unit:Mpa G

| 温度Temp °C | WCB  |      |      | CF8  |      |      | CF8M |      |      |
|-----------|------|------|------|------|------|------|------|------|------|
|           | PN16 | PN40 | PN64 | PN16 | PN40 | PN64 | PN16 | PN40 | PN64 |
| -29 ~ 38  | 1.6  | 4.1  | 6.5  | 1.5  | 4.0  | 6.3  | 1.5  | 3.9  | 6.3  |
| 93        | 1.4  | 3.7  | 5.9  | 1.4  | 3.3  | 5.2  | 1.3  | 3.4  | 5.4  |
| 149       | 1.3  | 3.6  | 5.7  | 1.3  | 3.0  | 4.7  | 1.2  | 3.1  | 4.9  |

◎ 阀体材质的使用温度–压力范围 working temperature & pressure limits of main parts and materials

表8 JB/79-94 或HG20592-2009

Unit:Mpa G

| 温度Temp °C | WCB  |      |      | CF8  |      |      | CF8M |      |      |
|-----------|------|------|------|------|------|------|------|------|------|
|           | PN16 | PN40 | PN64 | PN16 | PN40 | PN64 | PN16 | PN40 | PN64 |
| 204       | 1.1  | 3.4  | 5.6  | 1.1  | 2.8  | 4.3  | 1.1  | 2.8  | 4.5  |
| 260       | 1.0  | 3.2  | 5.2  | 1.0  | 2.6  | 4.0  | 1.0  | 2.6  | 4.1  |
| 315       | 0.8  | 2.8  | 4.8  | 0.8  | 2.3  | 3.7  | 0.8  | 2.4  | 3.9  |
| 343       | 0.7  | 2.7  | 4.7  | 0.7  | 2.3  | 3.7  | 0.7  | 2.3  | 3.8  |
| 371       | 0.6  | 2.7  | 4.7  | 0.6  | 2.2  | 3.7  | 0.6  | 2.2  | 3.7  |
| 399       | 0.5  | 2.6  | 4.4  | 0.5  | 2.1  | 3.6  | 0.5  | 2.2  | 3.7  |
| 427       | 0.5  | 2.1  | 3.6  | 0.5  | 2.0  | 3.5  | 0.5  | 2.1  | 3.6  |
| 454       | 0.4  | 1.4  | 2.3  | 0.4  | 2.0  | 3.4  | 0.4  | 2.0  | 3.6  |
| 482       | 0.3  | 0.9  | 1.5  | 0.3  | 1.9  | 3.3  | 0.3  | 1.9  | 3.6  |
| 510       | 0.2  | 0.5  | 0.9  | 0.2  | 1.8  | 3.2  | 0.2  | 1.8  | 3.3  |
| 538       | 0.1  | 0.3  | 0.4  | 0.1  | 1.5  | 2.8  | 0.1  | 1.6  | 3.0  |

表9 ANSI

Unit:Mpa G

| 温度Temp °C | WCB   |       |       | CF8   |       |       | CF8M  |       |       |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|           | CL150 | CL300 | CL600 | CL150 | CL300 | CL600 | CL150 | CL300 | CL600 |
| -29 ~ 38  | 2.0   | 5.2   | 10.4  | 1.9   | 5.0   | 10.1  | 1.0   | 5.0   | 10.1  |
| 93        | 1.8   | 4.7   | 9.5   | 1.7   | 4.2   | 8.4   | 1.6   | 4.3   | 8.7   |
| 149       | 1.6   | 4.6   | 9.3   | 1.6   | 3.8   | 7.6   | 1.5   | 3.9   | 7.8   |
| 204       | 1.4   | 4.4   | 8.9   | 1.4   | 3.5   | 7.0   | 1.4   | 3.6   | 7.2   |
| 260       | 1.2   | 4.2   | 8.4   | 1.2   | 3.3   | 6.5   | 1.2   | 3.4   | 6.7   |
| 315       | 1.0   | 3.8   | 7.7   | 1.0   | 3.0   | 6.1   | 1.0   | 3.1   | 6.3   |
| 343       | 0.9   | 3.7   | 7.5   | 0.9   | 3.0   | 6.0   | 0.9   | 3.1   | 6.3   |
| 371       | 0.8   | 3.7   | 7.5   | 0.8   | 3.0   | 6.0   | 0.8   | 3.0   | 6.1   |
| 399       | 0.7   | 3.5   | 7.1   | 0.7   | 2.9   | 5.8   | 0.7   | 3.0   | 6.0   |
| 427       | 0.6   | 2.9   | 5.8   | 0.6   | 2.8   | 5.6   | 0.6   | 2.9   | 6.0   |
| 454       | 0.5   | 1.9   | 3.7   | 0.4   | 2.8   | 5.5   | 0.4   | 2.9   | 5.9   |
| 482       | 0.4   | 1.2   | 2.4   | 0.3   | 2.7   | 5.5   | 0.3   | 2.9   | 5.8   |
| 510       | 0.2   | 0.7   | 1.4   | 0.2   | 2.6   | 5.4   | 0.2   | 2.7   | 5.4   |
| 538       | 0.1   | 0.4   | 0.7   | 0.1   | 2.2   | 4.5   | 0.1   | 2.4   | 4.9   |

◎ 阀体材质对照 Body material

阀体常用材质中外牌号对照表 Table of body material

|          |                            |                    |                    |                     |
|----------|----------------------------|--------------------|--------------------|---------------------|
| 美国标准ASTM | A216-WCB                   | A351-CF8           | A351-CF8M          | A351-CF3M           |
| 中国标准GB   | ZG230-450                  | ZG0Cr18Ni9         | ZG00Cr18Ni12Mo2Ti  | ZG0Cr18Ni9Ti        |
| 日本标准JS   | SCPH2                      | SCS13A             | SCS14A             | SCS16A              |
| 备注Note   | 成分同 (same as)<br>ZG230-450 | 成分同(same as) 304SS | 成分同(same as) 316SS | 成分同(same as) 316LSS |

## ■执行机构的选择 Actuator

表10 气动薄膜执行机构参数表 Table 10 pneumatic diaphragm actuator

|                     |                          |                                                                                                   |         |          |           |         |
|---------------------|--------------------------|---------------------------------------------------------------------------------------------------|---------|----------|-----------|---------|
| 作用方式<br>action mode | 正作用(D)<br>direct action  | 气压增大输出轴下降，实现阀的气关（故障时阀开 Fo）<br>Pressure increase output shaft decline, to realize air to close(FO) |         |          |           |         |
|                     | 反作用(R)<br>reverse action | 气压增大输出轴上升，实现阀的气开（故障时阀关 Fc）<br>Pressure increase output shaft goes up, to realize air to open(FC)  |         |          |           |         |
| 型号<br>model         | 正作用<br>direct action     | HA2D                                                                                              |         | HA3D     |           | HA4D    |
|                     | 反作用<br>reverse action    | HA2R                                                                                              |         | HA3R     |           | HA5R    |
| 额定行程 mmrated stroke |                          | 14.3                                                                                              | 25      | 38       | 50        | 75      |
| 配阀口径 DN             | mm                       | 20 ~ 25                                                                                           | 40 ~ 50 | 65 ~ 100 | 125 ~ 150 | 200     |
|                     | inch                     | 3/4 ~ 1                                                                                           | 1.5 ~ 2 | 2.5 ~ 4  | 5 ~ 6     | 8       |
|                     |                          |                                                                                                   |         |          |           | 10 ~ 16 |

## ■选择附件 Accessories

表11 附件参数表

|                                       |                                   |                                                                                                                                                                                                                                                                                       |                                |
|---------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 型号 model                              |                                   | SIPART PS2 型智能定位器(SIEMENS<br>SIPART PS2 intelligent positioner (SIEMENS)                                                                                                                                                                                                              |                                |
| 用途 Application                        |                                   | 1、实现系统信号分程控制，扩大调节范围<br>control system signals , expanding the adjustment range<br>2、实现控制系统过程的电-气转换<br>to achieve electrical-gas conversion though control system process.<br>3、消除调节阀不平衡力对阀位的影响，实现精确控制<br>to achieve precise control, eliminate unbalanced force on the valve position |                                |
| -输入信号 input signal                    |                                   | 2 线制 4~20mA<br>2 wiring system                                                                                                                                                                                                                                                        | 2 线制 4~20mA<br>2 wiring system |
| 额定行程 rate stroke                      |                                   | 10~100mm                                                                                                                                                                                                                                                                              | 3~130mm                        |
| 供气压力 air supply pressure              |                                   | 280 KPa                                                                                                                                                                                                                                                                               | 280 KPa                        |
| 气源接头 air supply connect               |                                   | 1/4 NPT 或 G1/4                                                                                                                                                                                                                                                                        | 1/4 NPT 或 G1/4                 |
| 电气接头 elec.connect                     |                                   | 1/2 NPT 或 M20×1.5                                                                                                                                                                                                                                                                     | 1/2 NPT 或 M20×1.5              |
| 防护等级 protection level                 |                                   | 防护等级 IP 66 ( NEMA 4X )                                                                                                                                                                                                                                                                | IP68/NEMA 4x                   |
| 使用环境温度<br>Working ambient temperature |                                   | -40~+85°C                                                                                                                                                                                                                                                                             | -30~+80°C                      |
| 性能指标<br>perfomance                    | 特性偏差<br>Characteristics deviation | ≤0.5%                                                                                                                                                                                                                                                                                 | ≤0.2%                          |
|                                       | 滞后性 hysteretic                    | 20ms                                                                                                                                                                                                                                                                                  | 10ms                           |
|                                       | 耗气量 air consumption               | 0.025 Nm³/h                                                                                                                                                                                                                                                                           | 0.036 Nm³/h                    |
| 可选项 optional                          |                                   | 本体、本体带反馈、本体带 HART 、本体带 HART 带反馈<br>Positioner(main part) /positioner with feedback/ positioner with HART/ positoner with HART &feedback                                                                                                                                               |                                |
| 其它定位器<br>other positioner             |                                   | SVP 系列山武智能定位器 azbil SVP series<br>YT-1000R 型机械电气阀门定位器 YT-1000R mechanical positoner<br>S-500 ( Hopeway )                                                                                                                                                                              |                                |

续上表

| 型号 model                  |                                 | SIPART PS2 型智能定位器(SIEMENS)<br>SIPART PS2 intelligent positioner (SIEMENS)                                                                            |
|---------------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 其它附件<br>Other accessories | 空气过滤减压阀<br>Air Filter Regulator | T-50 (HOPEWAY)、AW ( SMC )                                                                                                                            |
|                           | 电磁阀<br>solenoid valve           | 气源接头 1/4、3/8、1/2 可选；隔爆，本安防爆， <b>浇封防爆可选</b><br>Connector 1/4/ 3/8、1/2;Exid /Exia / Ex mb                                                              |
|                           | 限位开关<br>limit switch            | 把阀的开关位置信号传送到控制室，以便了解现场阀的开关位置情况<br>Transmit the signal of valve's open/close position to the control room                                             |
|                           | 手轮机构<br>handwheel               | 当自动调节出现问题或需要现场手动操作时用来转动阀<br>Driving the valve to rotate in case the automaticadjusting device goes wrong or handwheel operation is required on site. |

## ■参考信息 Reference

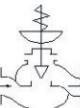
### ◎ 允许压差 Allowable DP

表12:HLSW 允许压差表 Table 12: HLSW allowable DP

柱塞阀芯、金属阀座 ( %CF、LCF ) 、软阀座 ( %TF、LTf )

Plunger plug、metal seat ( %CF、LCF ) 、soft seat ( %TF、LTf )

100 Kpa

| 气-关式阀<br>Air-to-close<br>sevalve                                                    | 执行机构<br>Actuator | 供气压力<br>airsupply | 弹簧范围<br>springrange | 定位器<br>positioner | 阀座型式<br>Seat type  | 允许压差 allowable DP     |     |      |     |     |     |     |     |     |     |
|-------------------------------------------------------------------------------------|------------------|-------------------|---------------------|-------------------|--------------------|-----------------------|-----|------|-----|-----|-----|-----|-----|-----|-----|
|                                                                                     |                  |                   |                     |                   |                    | 额定Cv 值 Rated Cv value |     |      |     |     |     |     |     |     |     |
|                                                                                     |                  |                   |                     |                   |                    | ≤0.25                 | 0.4 | 0.63 | 1.0 | 1.6 | 2.5 | 4.0 | 6.3 | 10  | 14  |
|  | HA2D             | 4.0               | 0.8~2.4             | yes               | 金属密封<br>metal seal | —                     | —   | —    | —   | —   | 40* | —   | 40* | 40* | 40* |
|                                                                                     |                  |                   |                     |                   | 软密封<br>softseal    | —                     | —   | —    | —   | —   | —   | —   | 30  | 30  | 30  |

100 Kpa

| 气-关式阀<br>Air-to-close<br>sevalve                                                    | 执行机构<br>Actuator | 供气压力<br>airsupply | 弹簧范围<br>springrange | 定位器<br>positioner | 阀座型式<br>Seat type  | 允许压差 allowable DP     |     |      |     |     |     |     |     |    |    |
|-------------------------------------------------------------------------------------|------------------|-------------------|---------------------|-------------------|--------------------|-----------------------|-----|------|-----|-----|-----|-----|-----|----|----|
|                                                                                     |                  |                   |                     |                   |                    | 额定Cv 值 Rated Cv value |     |      |     |     |     |     |     |    |    |
|                                                                                     |                  |                   |                     |                   |                    | ≤0.25                 | 0.4 | 0.63 | 1.0 | 1.6 | 2.5 | 4.0 | 6.3 | 10 | 14 |
|  | HA2R             | 2.8               | 0.8~2.4             | 有yes              | 金属密封<br>metal seal | —                     | 40* | 40*  | 40* | 40* | 40* | 40* | 40* | 35 | 35 |
|                                                                                     |                  |                   |                     |                   | 软密封<br>softseal    | —                     | 30  | 30   | 30  | 30  | 30  | 30  | 30  | 30 | 30 |

注：1、最大允许压差表不准超过ANSI B16.34-1981 或JIS B2201-1984 标准规定的最大工作压力；

2、同一格上面的数字表示常开允许压差，下方数字表示阀全关时允许压差；

Note:

1.The maximum allowable DP shall not exceed the maximum operation pressure specified in ANSI 816.34-1981 or JIS B2201-1984.

2.In same column, the upper number stands for DP in normal open state, and the lower number stands for DP in normal close state.

表13:HLSW 允许压差表 Table 13: HLSW allowable DP  
 柱塞阀芯、金属阀座 ( %CF、LCF ) 、软阀座 ( %TF、LTF )  
 Plunger plug、metal seat ( %CF、LCF ) 、soft seat ( %TF、LTF )

100 Kpa

| 气-关式阀<br>Air-to-close<br>sevalve                                                    | 执行机构<br>Actuator | 供气压力<br>airsupply | 弹簧范围<br>spring<br>range | 定位器<br>positioner | 阀座型式<br>Seat type  | 允许压差 allowable DP     |     |     |     |      |      |      |      |      |      |     |     |   |   |
|-------------------------------------------------------------------------------------|------------------|-------------------|-------------------------|-------------------|--------------------|-----------------------|-----|-----|-----|------|------|------|------|------|------|-----|-----|---|---|
|                                                                                     |                  |                   |                         |                   |                    | 额定Cv 值 Rated Cv value |     |     |     |      |      |      |      |      |      |     |     |   |   |
|                                                                                     |                  |                   |                         |                   |                    | 25                    | 32  | 40  | 50  | 65   | 80   | 100  | 125  | 150  | 200  | 250 | 300 |   |   |
|    | HA2D             | 4.0               | 0.8 ~ 2.4               | 有yes              | 金属密封<br>metal seal | 40*                   | 40* | 40* | 21. | 14.9 | 10.5 | 5.9  | —    | —    | —    | —   |     |   |   |
|                                                                                     |                  |                   |                         |                   |                    | 94                    | 57  | 41  | 7   |      |      |      |      |      |      |     |     |   |   |
|                                                                                     | HA3D             | 4.0               | 0.8 ~ 2.4               | 有yes              | 金属密封<br>metal seal | 30                    | 30  | 28  | 15  | 10.4 | 7.4  | 4.1  | —    | —    | —    | —   | —   |   |   |
|                                                                                     |                  |                   |                         |                   |                    | 40*                   | 40* | 40* | 40* | 26.5 | 18.7 | 10.5 | 6.7  | 4.1  | —    | —   | —   |   |   |
|  | HA4D             | 4.0               | 0.8 ~ 2.4               | 有yes              | 软密封softseal        | 100                   | 100 | 72  | 42  |      |      |      |      |      |      |     |     |   |   |
|                                                                                     |                  |                   |                         |                   |                    | 30                    | 30  | 30  | 28  | 18   | 13   | 7.4  | 4.7  | 2.9  | —    | —   | —   |   |   |
|                                                                                     | HA5D             | 1.6               | 0.8 ~ 2.4               | 有yes              | 金属密封<br>metal seal | —                     | —   | —   | —   | 40*  | 40*  | 40*  | 32.2 | 18.2 | 11.6 | 7.1 | 4.5 | — | — |
|                                                                                     |                  |                   |                         |                   |                    | —                     | —   | 30  | 30  | 100  | 72   | 45   |      |      |      |     |     |   |   |

100 Kpa

| 气-开式阀<br>Air to open                                                                | 执行机构<br>Actuator | 供气压力<br>airsupply | 弹簧范围<br>spring<br>range | 定位器<br>positioner | 阀座型式<br>Seat type  | 允许压差 allowable DP     |     |      |      |      |      |      |     |     |     |     |     |
|-------------------------------------------------------------------------------------|------------------|-------------------|-------------------------|-------------------|--------------------|-----------------------|-----|------|------|------|------|------|-----|-----|-----|-----|-----|
|                                                                                     |                  |                   |                         |                   |                    | 额定Cv 值 Rated Cv value |     |      |      |      |      |      |     |     |     |     |     |
|                                                                                     |                  |                   |                         |                   |                    | 25                    | 32  | 40   | 50   | 65   | 80   | 100  | 125 | 150 | 200 | 250 | 300 |
|  | HA2R             | 2.8               | 0.8 ~ 2.4               | 有yes              | 金属密封<br>metal seal | 40*                   | 27  | 14.1 | 11.1 | 6.9  | 4.9  | 2.8  | —   | —   | —   | —   |     |
|                                                                                     |                  |                   |                         |                   |                    | 44*                   |     |      |      |      |      |      |     |     |     |     |     |
|                                                                                     | HA3R             | 2.8               | 0.8 ~ 2.4               | 有yes              | 软密封softseal        | 30                    | 19  | 9.9  | 7.8  | 4.8  | 3.4  | 2.0  | —   | —   | —   | —   | —   |
|                                                                                     |                  |                   |                         |                   |                    | 40*                   | 40* | 34   | 19.6 | 12.3 | 8.7  | 4.9  | 3.1 | 1.9 | —   | —   | —   |
|  | HA4R             | 2.8               | 0.8 ~ 2.4               | 有yes              | 金属密封<br>metal seal | 78                    | 47  |      |      |      |      |      |     |     |     |     |     |
|                                                                                     |                  |                   |                         |                   |                    | 30                    | 30  | 23.8 | 13.7 | 8.6  | 6.1  | 3.4  | 2.1 | 1.3 | —   | —   | —   |
|                                                                                     | HA5R             | 2.8               | 0.8 ~ 2.4               | 有yes              | 软密封softseal        | —                     | —   | 30   | 22   | 14.9 | 10.5 | 5.9  | 3.7 | 2.3 | 1.4 | —   | —   |
|                                                                                     |                  |                   |                         |                   |                    | —                     | —   | —    | —    | 40*  | 31.5 | 21.3 | 15  | 8.5 | 5.4 | 3.3 | 2.1 |

注：1、最大允许压差表不准超过ANSI B16.34-1981 或JIS B2201-1984 标准规定的最大工作压力；

2、同一格上面的数字表示常开允许压差，下方数字表示阀全关时允许压差；

3、黑线框内数字表示阀配用标准规格执行机构。

Note:

1.The maximum allowable DP shall not exceed the maximum operation pressure specified in ANSI B816.34-1981 or JIS B2201-1984

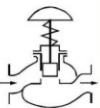
2. In same column, the upper number stands for DP in normal open state, and the lower stands for DP in normal close state.

3. The number in black line indicates that the valve is equipped with standard actuator.

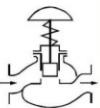
表14: HCBW/HCPW 允许压差表 Table 14: HCBW/HCPW allowable DP

金属阀座metal seat ( %VF、LVF、%V、LV ) 、软阀座soft seat ( %TF、LTF、%T、LT )

100 Kpa

| 气-关式阀<br>Air-to-close<br>sevalve                                                    | 执行机构<br>Actuator | 供气压力<br>air supply | 弹簧范围<br>spring<br>range | 定位器<br>positioner | 阀座型式<br>Seat type  | 允许压差 allowable DP     |     |      |      |      |      |     |      |      |
|-------------------------------------------------------------------------------------|------------------|--------------------|-------------------------|-------------------|--------------------|-----------------------|-----|------|------|------|------|-----|------|------|
|                                                                                     |                  |                    |                         |                   |                    | 额定Cv 值 Rated Cv value |     |      |      |      |      |     |      |      |
|                                                                                     |                  |                    |                         |                   |                    | 40                    | 50  | 65   | 80   | 100  | 150  | 200 | 250  | 300  |
|    | HA2D             | 4.0                | 0.8 ~ 2.4               | 有yes              | 金属密封<br>metal seal | 40                    | 40  | 40   | 40   | 40   | —    | —   | —    | —    |
|                                                                                     |                  |                    |                         |                   | 金属密封<br>metal seal | 100                   | 100 | 98.7 | 82.3 | 62.8 | —    | —   | —    | —    |
|                                                                                     |                  |                    |                         |                   | 软密封softseal        | 30                    | 30  | 30   | 30   | 30   | —    | —   | —    | —    |
|                                                                                     | HA3D             | 4.0                | 0.8 ~ 2.4               | 有yes              | 金属密封<br>metal seal | 40                    | 40  | 40   | 40   | 40   | 40   | —   | —    | —    |
|                                                                                     |                  |                    |                         |                   | 金属密封<br>metal seal | 100                   | 100 | 100  | 100  | 100  | 78.6 | —   | —    | —    |
|                                                                                     |                  |                    |                         |                   | 软密封softseal        | 30                    | 30  | 30   | 30   | 30   | 30   | —   | —    | —    |
|  | HA4D             | 4.0                | 0.8 ~ 2.4               | 有yes              | 金属密封<br>metal seal | —                     | —   | 40   | 40   | 40   | 40   | 40  | —    | —    |
|                                                                                     |                  |                    |                         |                   | 金属密封<br>metal seal | 100                   | 100 | 100  | 100  | 100  | 100  | 100 | 100  | 100  |
|                                                                                     |                  |                    |                         |                   | 软密封softseal        | —                     | —   | 30   | 30   | 30   | 30   | 30  | —    | —    |
|                                                                                     | HA5D             | 2.5                | 0.8 ~ 2.4               | 有yes              | 金属密封<br>metal seal | —                     | —   | —    | —    | —    | —    | —   | 26   | 22   |
|                                                                                     |                  |                    |                         |                   | 软密封softseal        | —                     | —   | —    | —    | —    | —    | —   | 18.2 | 15.4 |

100 Kpa

| 气-开式阀<br>Air to open                                                                | 执行机构<br>Actuator | 供气压力<br>air supply | 弹簧范围<br>spring<br>range | 定位器<br>positioner | 阀座型式<br>Seat type  | 允许压差 allowable DP     |      |      |      |      |      |     |     |      |
|-------------------------------------------------------------------------------------|------------------|--------------------|-------------------------|-------------------|--------------------|-----------------------|------|------|------|------|------|-----|-----|------|
|                                                                                     |                  |                    |                         |                   |                    | 额定Cv 值 Rated Cv value |      |      |      |      |      |     |     |      |
|                                                                                     |                  |                    |                         |                   |                    | 40                    | 50   | 65   | 80   | 100  | 150  | 200 | 250 | 300  |
|  | HA2R             | 2.8                | 0.8 ~ 2.4               | 有yes              | 金属密封<br>metal seal | 40                    | 40   | 40   | 38.4 | 29.3 | —    | —   | —   | —    |
|                                                                                     |                  |                    |                         |                   | 金属密封<br>metal seal | 68.1                  | 53.9 | 46   |      |      | —    | —   | —   | —    |
|                                                                                     |                  |                    |                         |                   | 软密封softseal        | 30                    | 30   | 30   | 26.9 | 20.5 | —    | —   | —   | —    |
|                                                                                     | HA3R             | 2.8                | 0.8 ~ 2.4               | 有yes              | 金属密封<br>metal seal | 40*                   | 40*  | 40*  | 40*  | 40*  | 36.7 | —   | —   | —    |
|                                                                                     |                  |                    |                         |                   | 金属密封<br>metal seal | 100                   | 95.7 | 81.7 | 68   | 51.8 |      | —   | —   | —    |
|                                                                                     |                  |                    |                         |                   | 软密封softseal        | 30                    | 30   | 30   | 30   | 30   | —    | —   | —   | —    |
|    | HA4R             | 2.8                | 0.8 ~ 2.4               | 有yes              | 金属密封<br>metal seal | —                     | —    | 40   | 40   | 40   | 40   | 40  | —   | —    |
|                                                                                     |                  |                    |                         |                   | 金属密封<br>metal seal | 100                   | 100  | 89.7 | 63   | 51   | —    | —   | —   | —    |
|                                                                                     |                  |                    |                         |                   | 软密封softseal        | —                     | —    | 30   | 30   | 30   | 30   | 30  | —   | —    |
|                                                                                     | HA5R             | 2.8                | 0.8 ~ 2.4               | 有yes              | 金属密封<br>metal seal | —                     | —    | —    | —    | —    | 40   | 40  | 40  | 40   |
|                                                                                     |                  |                    |                         |                   | 金属密封<br>metal seal | —                     | —    | —    | —    | —    | 100  | 80  | 70  | 36   |
|                                                                                     |                  |                    |                         |                   | 软密封softseal        | —                     | —    | —    | —    | —    | —    | —   | 28  | 25.2 |

注: 1、最大允许压差表不准超过ANSI B16.34-1981 或JIS B2201-1984 标准规定的最大工作压力;

2、同一格上面的数字表示常开允许压差，下方数字表示阀全关时允许压差;

3、带有★阀的泄漏量≤10<sup>-4</sup>，符合标准ANSI B16.04-1976IV，无★的阀符合泄漏量≤10<sup>-7</sup>，符合标准ANSI B16.04-1976VI级;

4、黑线框内数字表示阀配用标准规格执行机构。

Note:

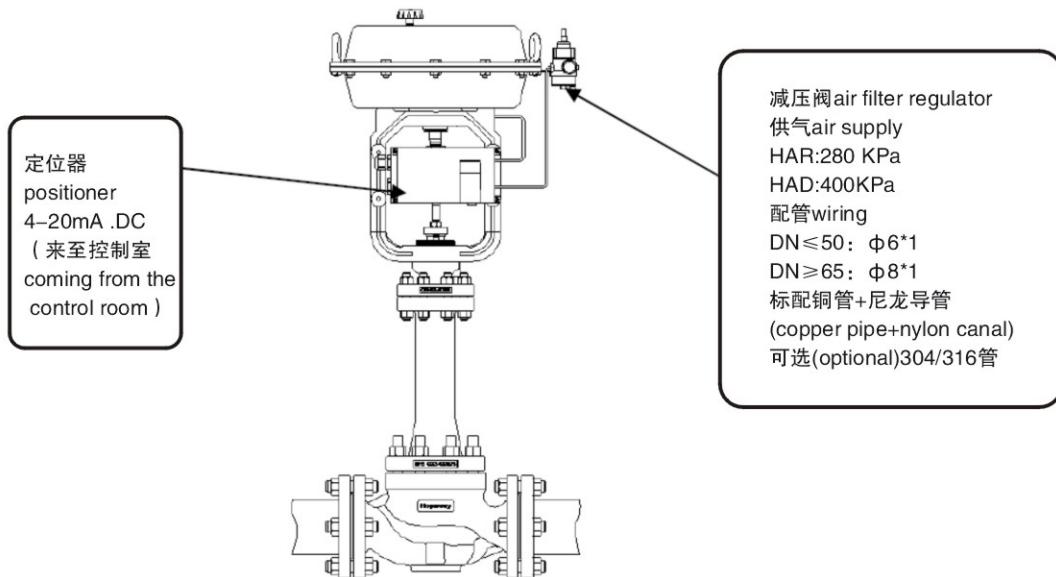
1.The maximum allowable DP shall not exceed the maximum operation pressure specified in ANSI B816.34-1981 or JIS B2201-1984

2. In same column, the upper number stands for DP in normal open state, and the lower stands for DP in normal close state.

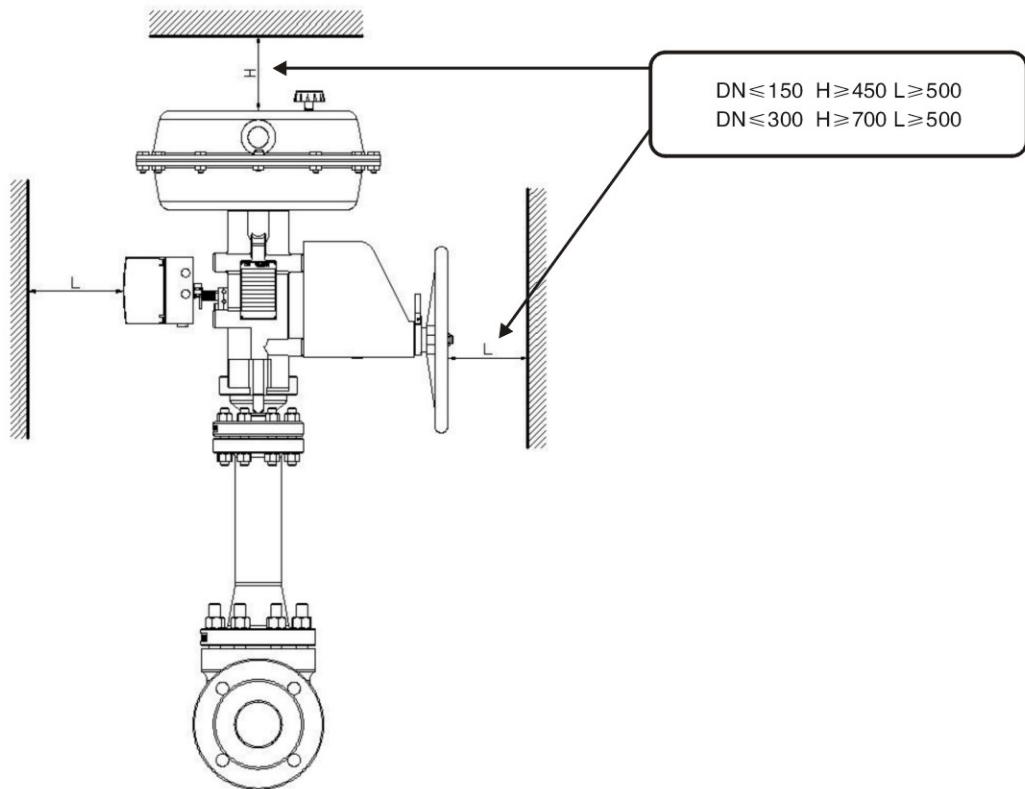
3. With \* valve leakage≤10<sup>-4</sup>, comply with ANSI B16.04-1976IV, no \*valve leakage≤10<sup>-7</sup>. comply with ANSI B16.04-1976VI

4. The number in black line indicates that the valve is equipped with standard actuator.

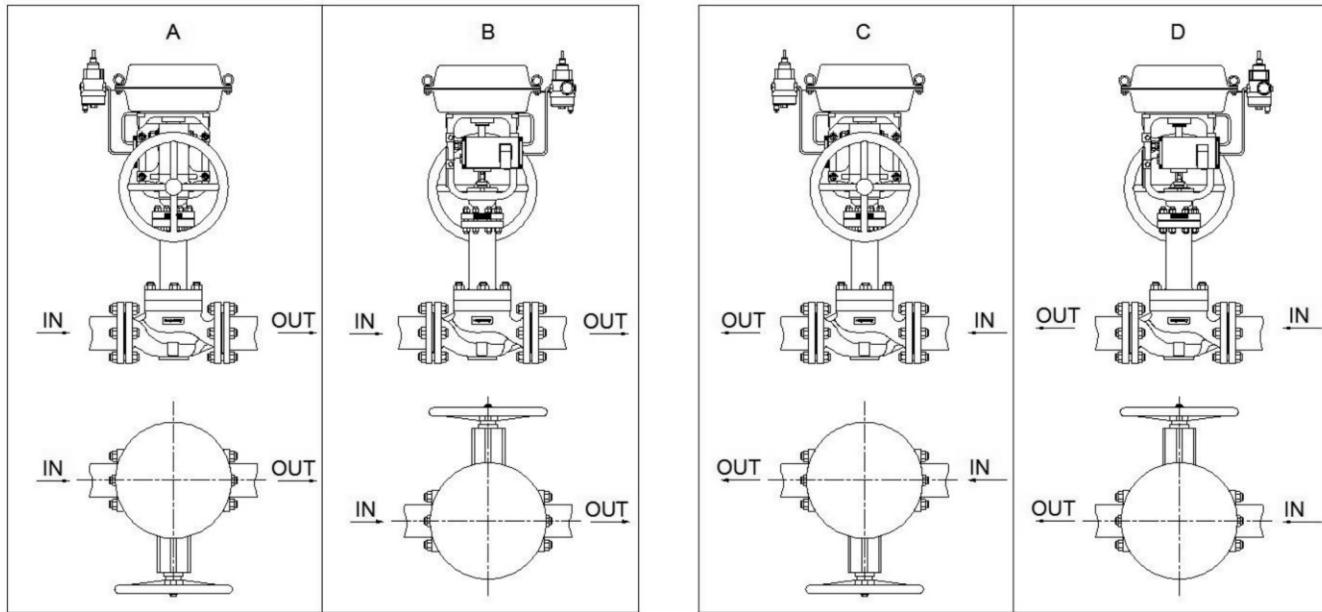
## ◎电/气安装配管线Tube & Wire for Power/Air Supply Connection



## ◎阀门安装示意图 Valve Installation Diagram



◎阀门、手轮与管道相对安装示意图 Valve, hand wheel and pipe installation diagram



HLSW/HTSW 安装方式(installation)

HCBW/HCPW 安装方式(installation)

注：安装时请注意阀体上的介质流向箭头，切勿反装。

Note: the media flow arrow on the body, Don't reverse mounted.

◎安装尺寸installation dimension

安装尺寸图

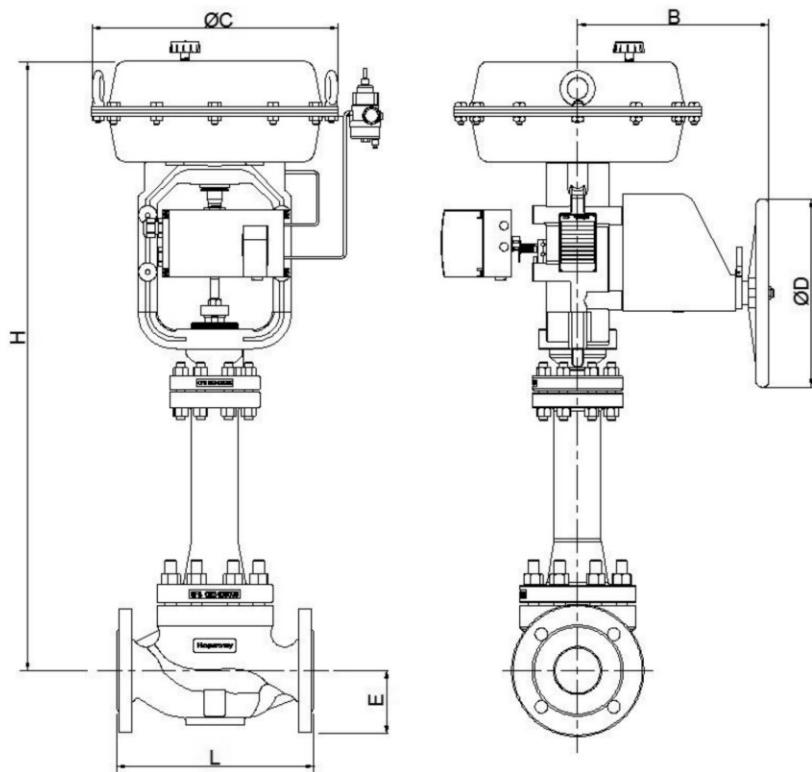


表15：安装尺寸表

Table15: table of installation demension

Unit: mm

| model              | DN  |      | L              |                |                | Actuator | H    | C   | E   | B   | D   |
|--------------------|-----|------|----------------|----------------|----------------|----------|------|-----|-----|-----|-----|
|                    | mm  | inch | Pn16、<br>Cl150 | Pn40、<br>Cl300 | Pn64、<br>Cl600 |          |      |     |     |     |     |
| HLSW               | 20  | 3/4  | 184            | 194            | 206            | HA2D、R   | 610  | 281 | 40  | 283 | 202 |
|                    | 25  | 1    | 184            | 197            | 210            | HA2D、R   | 610  | 281 | 40  | 283 | 202 |
| HTSW/HCBW/<br>HCPW | 40  | 1.5  | 222            | 235            | 251            | HA2D、R   | 690  | 281 | 70  | 283 | 202 |
|                    | 50  | 2    | 254            | 267            | 286            | HA2D、R   | 690  | 281 | 80  | 283 | 202 |
|                    | 65  | 2.5  | 276            | 292            | 311            | HA3D、R   | 880  | 363 | 88  | 283 | 202 |
|                    | 80  | 3    | 298            | 317            | 337            | HA3D、R   | 890  | 363 | 98  | 352 | 355 |
|                    | 100 | 4    | 352            | 368            | 394            | HA3D、R   | 910  | 363 | 113 | 352 | 355 |
|                    | 125 | 5    | 403            | 425            | 457            | HA3D、R   | 1000 | 363 | 170 | 352 | 355 |
|                    | 150 | 6    | 451            | 473            | 508            | HA3D、R   | 1000 | 363 | 220 | 352 | 355 |
|                    | 200 | 8    | 543            | 568            | 610            | HA4D、R   | 1270 | 520 | 305 | 520 | 575 |
|                    | 250 | 10   | 670            | 740            | 750            | HA5D、R   | 1380 | 620 | —   | 620 | 400 |
|                    | 300 | 12   | 770            | 805            | 820            | HA5D、R   | 1700 | 620 | 345 | 620 | 400 |
|                    | 350 | 14   | 889            | 927            | 972            | HA5D、R   | 1750 | 620 | 385 | —   | —   |
|                    | 400 | 16   | 1016           | 1057           | 1108           | HA5D、R   | 1800 | 620 | —   | —   | —   |

◎产品重量表product weight

Unit: Kg

| 公称通径DN |      | 执行机构<br>actuator | 法兰连接 flange connection |      |           |               |      |            |               |      |           |
|--------|------|------------------|------------------------|------|-----------|---------------|------|------------|---------------|------|-----------|
|        |      |                  | PN16、Class150          |      |           | PN40、Class300 |      |            | PN64、Class600 |      |           |
| mm     | inch |                  | HLSW                   | HTSW | HCBW/HCPW | HLSW          | HTSW | -HCBW/HCPW | HLSW          | HTSW | HCBW/HCPW |
| 20     | 3/4  | HA2D、R           | 28                     | —    | —         | 29            | —    | —          | 30            | —    |           |
| 25     | 1    | HA2D、R           | 28                     | —    | —         | 29            | —    | —          | 30            | —    |           |
| 40     | 1.5  | HA2D、R           | —                      | 37   | 37        | —             | 42   | 42         | —             | 50   | 52        |
| 50     | 2    | HA2D、R           | —                      | 44   | 44        | —             | 52   | 52         | —             | 53   | 53        |
| 65     | 2.5  | HA3D、R           | —                      | 64   | 64        | —             | 70   | 70         | —             | 86   | 86        |
| 80     | 3    | HA3D、R           | —                      | 74   | 74        | —             | 84   | 84         | —             | 97   | 97        |
| 100    | 4    | HA3D、R           | —                      | 84   | 85        | —             | 99   | 99         | —             | 135  | 136       |
| 125    | 5    | HA3D、R           | —                      | 120  | 120       | —             | 135  | 135        | —             | 213  | 214       |
| 150    | 6    | HA3D、R           | —                      | 170  | 171       | —             | 200  | 201        | —             | 250  | 252       |
| 200    | 8    | HA4D、R           | —                      | 281  | 282       | —             | 335  | 336        | —             | 453  | 455       |
| 250    | 10   | HA5D、R           | —                      | 610  | 612       | —             | 638  | 640        | —             | 710  | 713       |
| 300    | 12   | HA5D、R           | —                      | 710  | 710       | —             | 765  | 767        | —             | 868  | 870       |
| 350    | 14   | HA5D、R           | —                      | —    | 900       | —             | —    | 958        | —             | —    | 1060      |
| 400    | 16   | HA5D、R           | —                      | —    | 975       | —             | —    | 1040       | —             | —    | 1180      |

◎手轮机构重量 Weight of hand-wheel

|                        |       |       |       |       |
|------------------------|-------|-------|-------|-------|
| 执行机构型号 Actuator type   | HA2   | HA3   | HA4   | HA5   |
| 配对手轮型号 Hand-wheel type | SHM-2 | SHM-3 | SHM-4 | SHM-5 |
| 手轮重量 Hand-wheel weight | 11    | 18    | 52    | 72    |

◎HLSW/HTSW/HCBW/HCPW 选型规则 selection

| 选型举例<br>Example       | 基本型号<br>Basic Model | 口径<br>DN | 公称压力<br>PN | 阀体材质<br>Body Mat.               | 阀内件材质<br>Trim Mat.              | 泄漏等级<br>Leakage Class | 阀作用方式<br>Action Mode |
|-----------------------|---------------------|----------|------------|---------------------------------|---------------------------------|-----------------------|----------------------|
| 例 1                   | HLSW                | 20       | 16         | WCB                             | 304                             | 4                     | B                    |
| 例 2                   | HTSW                | 40       | 16         | CF8                             | 316L                            | 4                     | K                    |
| 例 3                   | HCBW                | 100      | 40         | WCB                             | 304                             | 2                     | B                    |
| 例 4                   | HCPW                | 150      | 40         | WCB                             | 304                             | 4                     | K                    |
| 例 5                   | HTSW                | 100      | CL300      | CF8                             | 316                             | 4                     | B                    |
| 公称通径<br>DN            |                     | 20       |            |                                 |                                 |                       |                      |
|                       |                     | 25       |            |                                 |                                 |                       |                      |
|                       |                     | 40       |            |                                 |                                 |                       |                      |
|                       |                     | 50       |            |                                 |                                 |                       |                      |
|                       |                     | 65       |            |                                 |                                 |                       |                      |
|                       |                     | 80       |            |                                 |                                 |                       |                      |
|                       |                     | 100      |            |                                 |                                 |                       |                      |
|                       |                     | 125      |            |                                 |                                 |                       |                      |
|                       |                     | 150      |            |                                 |                                 |                       |                      |
|                       |                     | 200      |            |                                 |                                 |                       |                      |
|                       |                     | 250      |            |                                 |                                 |                       |                      |
|                       |                     | 300      |            |                                 |                                 |                       |                      |
|                       |                     | 350      |            |                                 |                                 |                       |                      |
|                       |                     | 400      |            |                                 |                                 |                       |                      |
| 公称压力<br>PN            |                     | Cl150    | Pn16       |                                 |                                 |                       |                      |
|                       |                     | CL300    | PN40       |                                 |                                 |                       |                      |
|                       |                     | CL600    | PN64       |                                 |                                 |                       |                      |
| 阀体材料<br>Body material |                     |          |            | WCB                             |                                 |                       |                      |
|                       |                     |          |            | CF8                             |                                 |                       |                      |
|                       |                     |          |            | CF8M                            |                                 |                       |                      |
|                       |                     |          |            | CF3M                            |                                 |                       |                      |
|                       |                     |          |            | 其他 ( 注明 )<br>Other(Please note) |                                 |                       |                      |
|                       |                     |          |            |                                 |                                 |                       |                      |
| 内件材质<br>Trim material |                     |          |            |                                 | 304                             |                       |                      |
|                       |                     |          |            |                                 | 316                             |                       |                      |
|                       |                     |          |            |                                 | 316L                            |                       |                      |
|                       |                     |          |            |                                 | 其他 ( 注明 )<br>Other(Please note) |                       |                      |

续上表

| 选型举例<br>Example     | 基本型号<br>Basic Model | 口径<br>DN | 公称压力<br>PN | 阀体材质<br>Body Mat. | 阀内件材质<br>Trim Mat. | 泄漏等级<br>Leakage Class | 阀作用方式<br>Action Type |
|---------------------|---------------------|----------|------------|-------------------|--------------------|-----------------------|----------------------|
| 泄漏等级<br>Leakage     |                     |          |            |                   |                    | II ( 2 )              |                      |
|                     |                     |          |            |                   |                    | IV ( 4 )              |                      |
|                     |                     |          |            |                   |                    | V ( 5 )               |                      |
|                     |                     |          |            |                   |                    | VI ( 6 )              |                      |
| 作用方式<br>action mode |                     |          |            |                   |                    |                       | 气开<br>Air to open    |
|                     |                     |          |            |                   |                    |                       | 气闭<br>Air to close   |

代理商:

Agent:

制造商: 重庆海王仪器仪表有限公司

Manufacturer: Chongqing Hopeway Instrument Co., Ltd.

网址 website: [www.cqhw.com](http://www.cqhw.com)