



## HTSW 波纹管密封单座调节阀

## Bellows Seal Single Seated Control Valves

**HTSW** 波纹管密封单座调节阀阀芯采用上导结构，阀体结构紧凑，流体通道呈 S 型，具有压降损失小，流量大，可调范围广，流量特性精度高，符合 IEC60534-2-1-2011 标准。调节阀泄漏量符合 ANSI FCI 70-2-2006 标准。其上阀盖采用波纹管密封结构，适用于极毒、易燃易爆易挥发和稀有贵重金属介质的。另外该阀也可用在真空的场合。

调节阀泄漏量符合 ANSI FCI 70-2-2006 标准。调节阀配用多弹簧薄膜执行机构，其结构紧凑，输出力大。

产品符合 GB/T4213-2008 标准。

**HTSW** Bellows Seal Single Seated Control Valves with a top-guided valve plug, a compact valve body and an S-shape flow passage which features low pressure loss, large flow capacity, wide rangeability and high accuracy flow characteristics. The design complies with the IEC60534-2-1-2011 standards and the leakage complies with the ANSI FCI 70-2-2006 standards. The bonnet with bellows seal is suitable for highly toxic, flammable, explosive, volatile process fluid and rare metal. Moreover, this valve is also available in vacuum situation.

The leakage rate accords with ANSI FCI 70-2-2006 standard. The compact size and large output force are available when the control valve is combined with multi-spring diaphragm actuator or cylinder actuator.

This product complies with the GB/T4213-2008 standards.

### 标准规格 STANDARD SPECIFICATION

#### 阀体 BODY

形式 Type	直通单座铸造球型阀 Straight-through, single seated, cast globe valve
公称通径 Normal size	40、50、65、80、100、125、150、200mm
公称压力 Pressure rating	ANSI Class 125, 150, 300; JIS 10K, 16K, 20K; PN 1.6, 4.0 MPa *
连接型式 End connections	法兰型 Flanged: FF、RF、RJ、TG、MFM 焊接型 Welded end: SW (40~50mm) ; BW (65~200mm)
尺寸 Dimensions	请参见表 5 See Table 5
阀体及上阀盖材质 Body & Bonnet Material	SCPH2/WCB, SCPH21/WC6, SCS13A/CF8, SCS14A/CF8M, SCS16A/CF3M and other alloy steels. 各种材质的使用温度·压力范围, 请参见表 1 和表 2 As to the operating pressure-temperature limitation for each material, see Table 1& 2
上阀盖型式 Bonnet type	波纹管密封型 Bellows seal : -196~+350℃
压盖型式 Gland type	螺栓压紧式 Bolted gland
填料 Packing	V 型聚四氟乙烯填料、石墨填料请参见图 2 Teflon V-ring, Grafoil, etc. See Fig.2.
垫片 Gasket	平型、锯齿型 (碳钢、不锈钢 (SUS304、SUS316、SUS316L)、其它合金) Flat type, Saw-tooth type (Carbon steel, Stainless steel or other alloy steels)

表面涂层 Surface coating	银灰色（环氧树脂）。但是阀体材质为不锈钢时，本体部不加涂层。 SLV (Epoxy resin group) is standard. In the case of stainless steel body, no painting is standard.
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\* 法兰标准 Standard: JIS B2201-1984、JB/T79.1-94(PN1.6MPa);JB/T79.2-94(PN4.0、6.4MPa);  
ANSI B16.5-2009;HG20592-2009、HG20615-2009

### 阀内组件 TRIM

阀芯型式 Valve plug type	单座柱塞型 Single seated, Contoured type
阀内件材质 Trim materials	标准材质组合及使用温度· 压力范围，请参见表 1 及图 1
阀内件处理 Trim materials	See Table 1&Fig.1 for hardening treatment and operating pressure-temperature
流量特性 Flow characteristics	<p>高容量流量特性，参见图 4</p> <ul style="list-style-type: none"> <li>● 金属阀座 等百分比特性（%C）和线性特性（LC）</li> <li>● 软阀座 等百分比特性（%T）和线性特性（LT）</li> </ul> <p>High-capacity flow characteristics, see Fig.4</p> <ul style="list-style-type: none"> <li>● Metal seat: Equal percentage（%C）and Linear（LC）</li> <li>● Soft seat: Equal percentage（%T）and Linear（LT）</li> </ul> <p>高精度流量特性，参见图 4</p> <ul style="list-style-type: none"> <li>● 金属阀座 等百分比特性（%CF）和线性特性（LCF）</li> <li>● 软阀座 等百分比特性（%TF）和线性特性（LTF）</li> </ul> <p>High-precision flow characteristics, see Fig.4</p> <ul style="list-style-type: none"> <li>● Metal seat: Equal percentage（%CF）and Linear（LCF）</li> <li>● Soft seat: Equal percentage（%TF）and Linear（LTF）</li> </ul>

### 执行机构 ACTUATOR

型号 Type	气动薄膜式 Pneumatic Diaphragm type	气缸活塞式 Cylinder piston type	电子式 Electronic type	智能式 Intelligent type
规格 Specification	HA 多弹簧型 Multi-Spring type	VA6 单作用 Single acting	EIL	M8 系列
用途 Purpose	调节 Modulation	调节 Modulation	调节 Modulation	
供气压力或 供给电压 Air supply or Power supply	供气压力（弹簧范围） Air supply（Spring range） 280（80~240）kPa 400（80~240）kPa	供气压力 Air supply 400~700kPa	电压：220 /380V 50HZ Power supply:220 /380V 50Hz 输入信号 Input signal: 4~20mA DC	电压：220 /380V 50HZ Power supply:220 /380V 50Hz 输入信号 Input signal: 4~20mA DC
接口 Connection	空气配管：Rc1/4 Air piping: Rc1/4	空气配管 Air piping: G3/8	配线: 2-PF3/4 Wiring: 2-PF3/4	配线: PG13.5 Wiring: PG13.5
正作用	气压增加阀闭	气压增加阀闭	输入信号阀闭	输入信号阀闭

<b>Direct action</b>	Air to valve close	Air to valve close	Signal increase to valve shut	Signal increase to valve shut
<b>反作用 Reverse action</b>	气压增加阀开 Air to valve open	气压增加阀开 Air to valve open	输入信号阀开 Signal increase to valve open	输入信号阀开 Signal increase to valve open
<b>回差 Hysteresis error</b>	≤3%FS (带定位器) ≤5%FS (不带定位器) ≤3%FS (With positioner) ≤5%FS (Without positioner)	≤3%FS (带定位器) ≤5%FS (不带定位器) ≤3%FS (With positioner) ≤5%FS (Without positioner)	≤1%FS	≤1%FS
<b>基本误差 Limit of intrinsic error</b>	≤±3%FS (带定位器) ≤±11%FS (不带定位器) ≤±3%FS (With positioner) ≤±11%FS (Without positioner)	≤±3%FS (带定位器) ≤±11%FS (不带定位器) ≤±3%FS (With positioner) ≤±11%FS (Without positioner)	≤±1%FS	≤±1%FS
<b>环境温度 Ambient temperature</b>	标准型 Standard type-30~+70℃ 高温型 High Temp.service 0~+100℃ 低温型 Low Temp.service -40~+40℃	标准型 Standard type-20~+60℃ 高温型 High Temp.service 0~+100℃ 低温型 Low Temp.service -50~+60℃	-20~+70℃	-25~+70℃
<b>油漆颜色 Painting</b>	蓝色 Munsell 色标 10B5/10 Blue (Munsell color 10B5/10)	蓝色 Munsell 色标 10B5/10 Blue (Munsell color 10B5/10)		
<b>附件 Accessories</b>	定位器、空气过滤减压阀、 限位阀、阀传送器、手轮机构等 Positioner, Air-set, Lock valve, Position transmitter, Manual handle and others	定位器、空气过滤减压阀、 限位阀、阀传送器、手轮机构等 Positioner, Air-set, Lock valve, Position transmitter, Manual handle and others	EIL 执行机构手轮 Handwheel	M8 执行机构手轮 Handwheel

**性能 PERFORMANCE**

CV 值及行程 Rated CV value and Travel	请参见表 3 See Table 3
阀座泄漏量 Seat Leakage	请参见表 1 See Table 1
可调范围 Rangeability	50 : 1
允许压差 Allowable pressure drops	请参见表 4 See Table 4
产品重量 Weight	请参见表 5 See Table 5

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

**Table 1 BODY/TRIM STANDARD MATERIAL COMBINATION, OPERATING TEMPERATURE AND SEAT LEAKAGE**

- R.TFE: 强化聚四氟乙烯      Reinforced Teflon
- HT : 热处理                      Heat treatment
- ST : 堆焊司太莱合金          Partial stellite
- SS : 部分堆焊司太莱合金      Stellite seat surface
- SF : 全部堆焊司太莱合金      Stellite full surface

表 1-1 阀体材质: 碳钢

**Table 1-1 BODY MATERIAL: CARBON STEEL**

阀体材质 Body material		SCPH2/A216-WCB,SCPH21/A217-WC6,SCPL1/A352-LCB		
阀芯 Plug	材质 material	SUS304/316	SUS304/316	SUS304/316
	处理 treatment	—	R.TFE	SS/SF
阀座 Seat ring	材质 material	SUS304/316	SUS304/316	SUS304/316
	处理 treatment	—	—	SS/SF
导向套 Guide	材质 material	SUS420	SUS420	SUS420
	处理 treatment	HT	HT	HT
垫圈 Gasket	材质 material	SUS316L	SUS316L	SUS316L
阀座允许泄漏量 Seat Leakage	ANSI	Class IV	Class VI	Class IV
	Rated Cv×	0.01%	Bubble-tight	0.01%
使用温度 Operating Tep. °C	SCPH2/WCB Body	-17~+350	-17~+230	-17~+350
	SCPH21/WC6 Body	-17~+350	-17~+230	-17~+350
	SCPL1/LCB Body	-45~+350	-45~+230	-45~+350

表 1-2 阀体材质: 不锈钢

**Table 1-2 BODY MATERIAL: STAINLESS STEEL**

阀体材质 Body material		SCS13A/CF8,SCS14A/CF8M,SCS16A/CF3M		
阀芯 Plug	材质 material	SUS304/316/316L	SUS304/316	SUS304/316/316L
	处理 treatment	—	R.TFE	SS/SF
阀座 Seat ring	材质 material	SUS304/316/316L	SUS304/316/316L	SUS304/316/316L
	处理 treatment	—	—	SS/SF
导向套 Guide	材质 material	SUS304/316/316L	SUS304/316/316L	SUS304/316/316L
	处理 treatment	—	R.TFE	ST
垫圈 Gasket	材质 material	SUS316L	SUS316L	SUS316L
阀座允许泄漏量 Seat Leakage	ANSI	Class IV	Class VI	Class IV
	Rated Cv×	0.01%	Bubble-tight	0.01%
使用温度 Operating Temp. °C		-196~+350	-45~+230	-196~+350

表 2 阀体材质使用温度· 压力范围

Table 2 BODY MATERIAL/OPERATING PRESSURE-TEMPERATURE RATIO

表 2-1 Table 2-1 ANSI

UNIT:MPa

温度 Temp. °C	ANSI150					ANSI300					ANSI600				
	LCB	WCB	WC6	SCS13A	SCS14A	LCB	WCB	WC6	SCS13A	SCS14A	LCB	WCB	WC6	SCS13A	SCS14A
				CF8	CF8M				CF8	CF8M				CF8	CF8M
-196~38	—	—	—	1.90	1.90	—	—	—	4.95	4.95	—	—	—	9.91	9.92
-45~38	1.84	—	—	1.90	1.90	4.78	—	—	4.95	4.95	9.57	—	—	9.91	9.92
-5~38	1.84	1.96	1.99	1.90	1.90	4.78	5.10	5.16	4.95	4.95	9.57	10.2	10.32	9.91	9.92
50	1.81	1.92	1.92	1.84	1.84	4.72	5.00	5.16	4.77	4.80	9.46	10.1	10.32	9.56	9.62
100	1.72	1.76	1.76	1.56	1.61	4.51	4.63	5.14	4.08	4.21	9.02	9.27	10.29	8.17	8.43
150	1.57	1.57	1.57	1.39	1.47	4.40	4.51	5.01	3.62	3.85	8.78	9.04	10.03	7.26	7.69
200	1.40	1.40	1.40	1.25	1.37	4.26	4.38	4.88	3.27	3.56	8.54	8.75	9.75	6.54	7.12
250	1.20	1.20	1.20	1.16	1.20	4.05	4.16	4.62	3.04	3.34	8.11	8.33	9.26	6.10	6.67
300	1.01	1.01	1.01	1.01	1.01	3.76	3.87	4.23	2.91	3.15	7.54	7.74	8.48	5.80	6.32
350	0.84	0.84	0.84	0.84	0.84	3.59	3.69	4.01	2.81	3.03	7.18	7.38	8.04	5.60	6.07
375		0.73	0.73	0.73	0.73		3.64	3.88	2.77	2.96		7.28	7.75	5.54	5.93
400		0.64	0.64	0.64	0.64		3.44	3.65	2.74	2.91		6.89	7.31	5.48	5.81
425		0.55	0.55	0.55	0.55		2.88	3.44	2.71	2.87		5.74	6.91	5.42	5.72
450		0.47	0.47	0.47	0.47		1.99	3.08	2.68	2.81		4.00	6.17	5.37	5.61
475		0.37	0.37	0.37	0.37		1.35	2.58	2.65	2.73		2.70	5.17	5.30	5.46
500		0.28	0.28	0.28	0.28		0.88	2.02	2.60	2.67		1.75	4.04	5.20	5.37
525		0.18	0.18	0.18	0.18		0.51	1.53	2.19	2.57		1.03	3.07	4.77	5.15
550		—						1.20	2.00	2.40			2.40	4.00	4.60
566								1.00	1.90	2.20			2.00	3.80	4.50

表 2-2 Table 2-2 JB/T79-94 或 HG20592-2009

UNIT:MPa

温度 Temp. °C	PN16	PN40	PN63	PN100	温度 Temp. °C	PN16	PN40	PN63	PN100
	ZG230-450					ZG0Cr18Ni9			
-5~200	1.60	4.00	6.30	10.0	-45~200	1.60	4.00	6.30	10.0
~250	1.40	3.50	5.40	9.00	~300	1.40	3.50	5.40	9.00
~300	1.20	3.00	4.80	7.50	~400	1.20	3.00	4.80	7.50
~350	1.10	2.60	4.00	6.60	~480	1.10	2.60	4.00	6.60
~400	0.90	2.30	3.70	5.80	~520	0.90	2.30	3.70	5.80
~425	0.80	2.00	3.20	5.00	~560	0.80	2.00	3.20	5.00
~435	0.70	1.80	2.80	4.50					
~445	0.62	1.60	2.50	4.20					
~455	0.57	1.40	2.30	3.60					

图 1 阀内件材质·处理

Fig.1 TRIM MATERIAL/TREATMENT

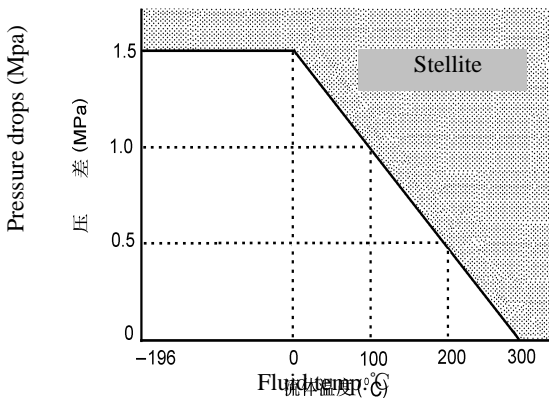


图 1-1 司太莱的工作范围  
Fig.1-1 Temperature/normal pressure drops ranges requiring Stellite

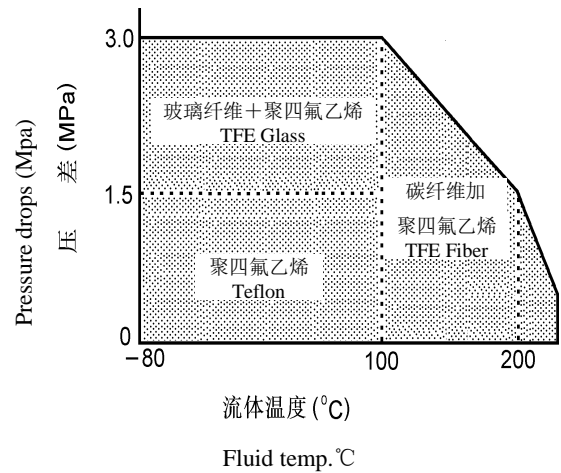


图 1-2 软阀座的工作温度和压差的范围  
Fig.1-2 Temperature and maximum pressure drops range for soft seat

- 注: 1. 空化和闪蒸或者水的温度超过 100℃ 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  
3. 如  $C_v \leq 0.16$ , 阀芯全部堆焊司太莱合金或用 9Cr18 硬化不锈钢。

**Note:** 1. 9Cr18 hardened stainless steel is recommended for valves for cavitation/flashing service or for superheated service of water higher than 100°C.

2. When cavitation/flashing service, oil prohibitive service, or retention of valve-close performance is required, use of Stellite is recommended regardless of temperature or pressure drops.  
3. When  $C_v$  is 0.16 or lower, Stellite faced valve plugs or 9Cr18 hardened stainless steel valve plugs is standard.

图 2 软阀座材质及填料使用温度·压力范围

Fig.2 SOFT SEAT MATERIAL & PACKING PRESSURE · TEMPERATURE RATINGS

图 2-1 软密封(增强聚四氟乙烯)  
Fig. 2-1 Soft seal (R. TFE V-RING)

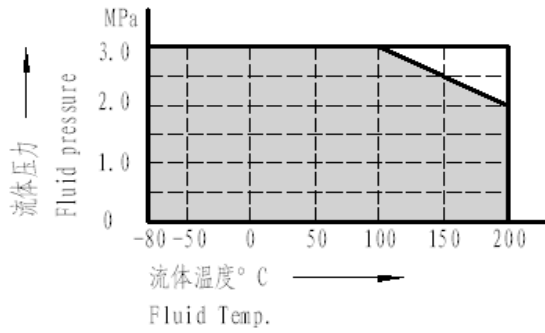


图 2-2 聚四氟乙烯碳纤维/聚四氟乙烯石棉  
Fig. 2-1 TFE FIBER/TFE-ASBESTOS

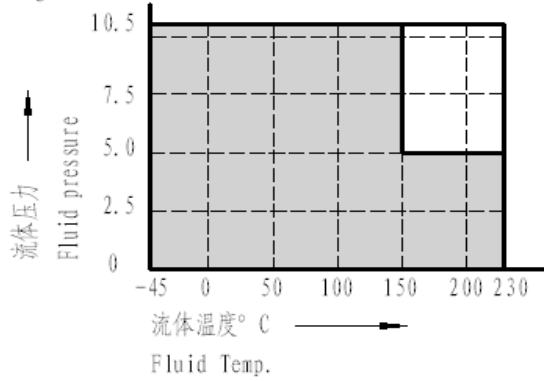


图 2-3 柔性石墨  
Fig. 2-3 GRAFOIL

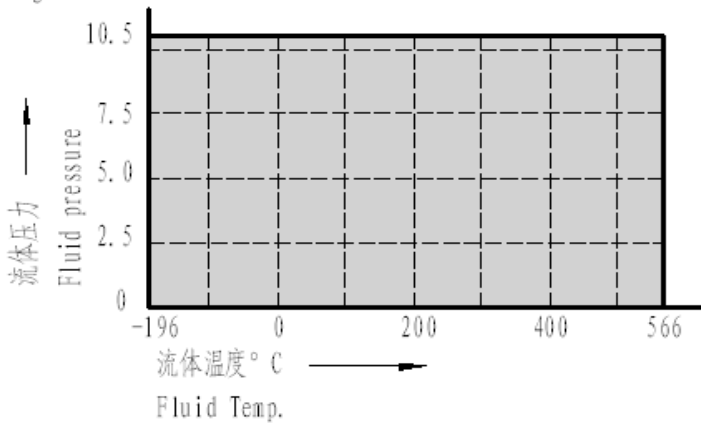


图 2-4 V型聚四氟乙烯填料  
Fig. 2-4 PTFE V-RING

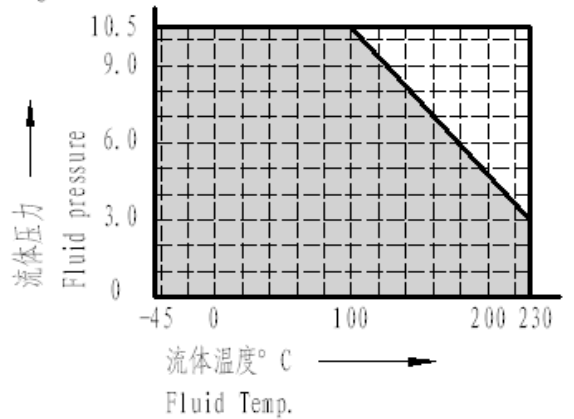


图 3 阀体部件结构 Fig.3 BODY SECTION

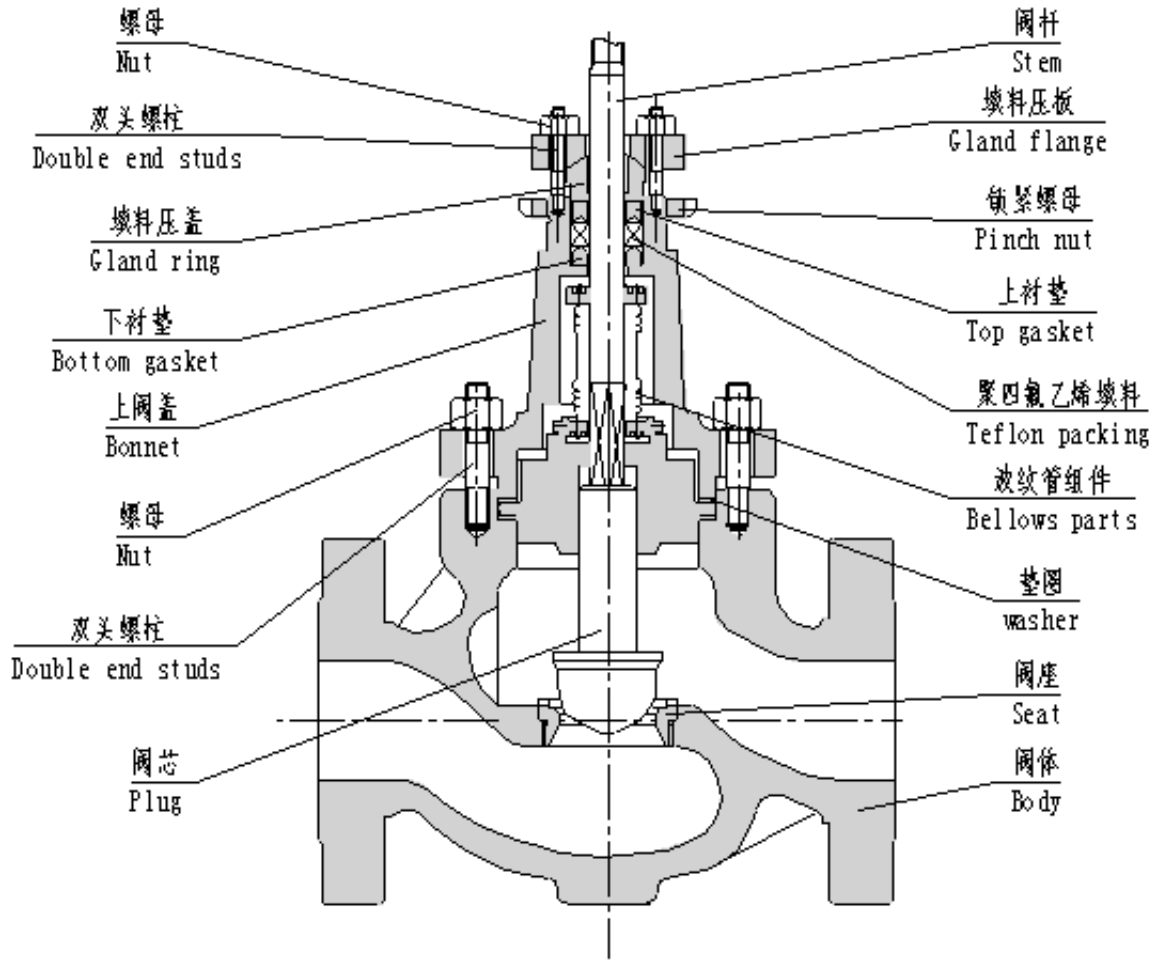


表 3 CV 值和行程

Table 3 Rated Cv value and travel

表 3-1 高容量阀芯 (%C,LC,%T,LT)

Table 3-1 High-capacity flow characteristics valve plug (%C,LC,%T,LT)

公称通径 Nominal size	40	50	65	80	100	125	150	200	
阀座直径 Seat size	40	50	65	80	100	125	150	200	
额定 Cv 值 Rated CV value	30	50	85	125	200	320	420	700	
额定行程 Rated travel	25			38			50		75

表 3-1 高精度阀芯 (%C,LC,%T,LT)

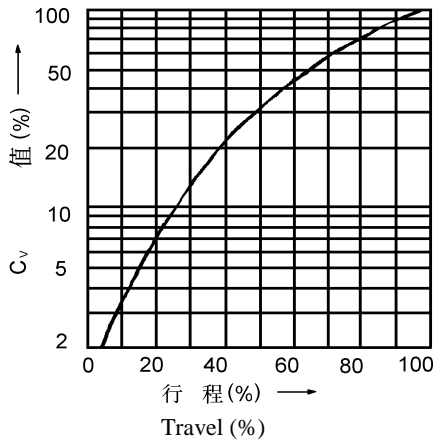
Table 3-1 High-precision flow characteristics valve plug (%C,LC,%T,LT)

公称通径 Nominal size	40			50			65			80			100			150			200		
阀座直径 Seat size	25	32	40	32	40	50	40	50	65	50	65	80	65	80	100	100	125	150	125	150	200
额定 Cv 值 Rated CV value	10	17	24	17	24	44	24	44	68	44	68	99	68	99	175	175	275	360	275	360	640
额定行程 Rated travel	25						38						50			75					



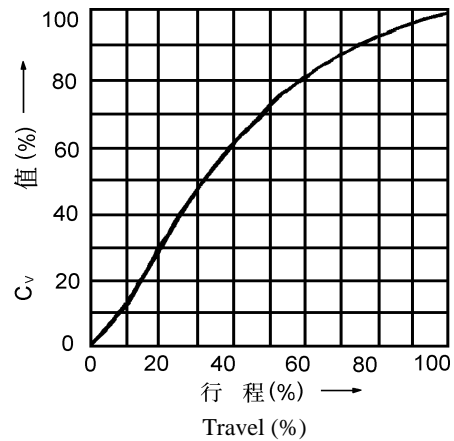
图 4 典型流量特性曲线

Fig.4 TYPICAL FLOW CHARACTERISTICS



等百分比特性 (%C 金属阀座、%T 软阀座)

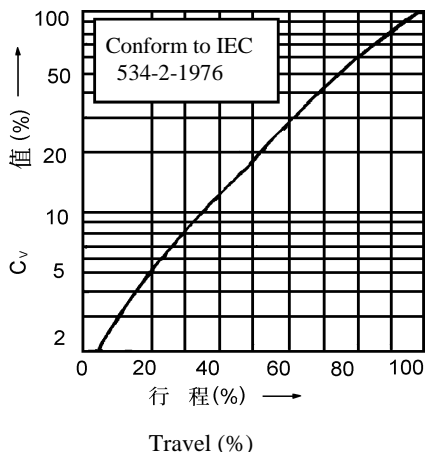
Equal percentage characteristics (%C metal seat, %T soft seat)



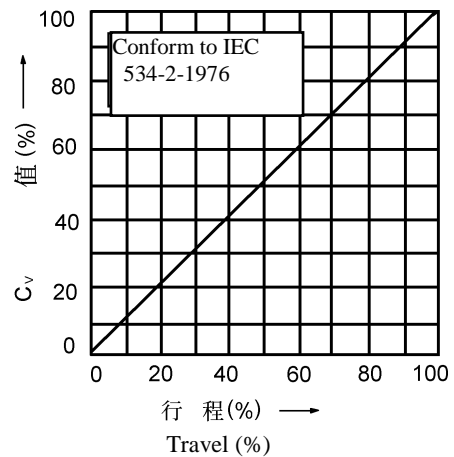
线性特性 (LC 金属阀座、LT 软阀座)

Linear characteristics (LC metal seat, LT soft seat)

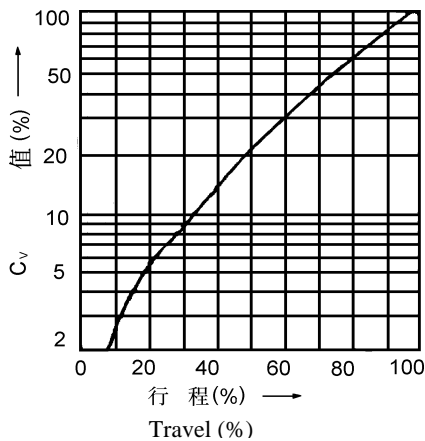
图 4-1 高容量流量特性曲线  
Fig.4-1 High-capacity flow characteristics



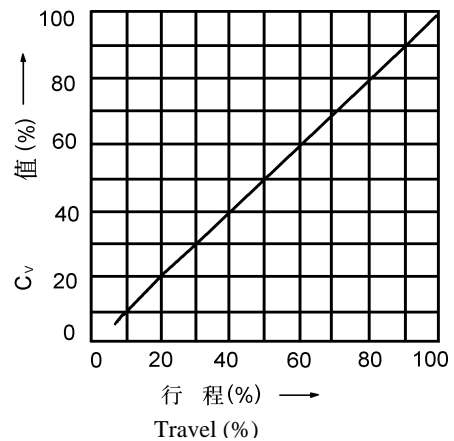
等百分比特性 (%CF 金属阀座)  
Equal characteristics (%CF metal seat)



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



等百分比特性 (%TF 软阀座)  
Equal percentage characteristics (%TF soft seat)



线性特性 (LTF 金属阀座)  
Linear characteristics (LTF soft seat)

图 4-3 高精度流量特性曲线  
Fig.4-3 High-precision flow characteristics

表 4 允许压差

**Table 4 ALLOWABLE PRESSURE DROPS**

表 4-1 薄膜式执行机构 (HA) 或气缸执行机构 (VA)

**Table 4-1 DIAPHRAGM ACTUATOR (HA) OR CYLINDER ACTUATOR (VA)**

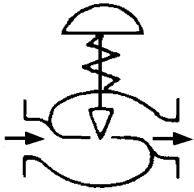
**I. 柱塞阀芯、金属阀座 (%CF,LCF)**

**I. Contoured-type plug and metal seat**

表 4-1-1 气—关式阀

**Table 4-1-1 Air-to-close**

**100kPa**

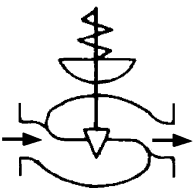


执行机构 Actuator	供气压力 Air supply	弹簧范围 Spring range	定位器 Positioner	允许压差 Allowable pressure drops									
				阀座直径 Valve seat size									
				25	32	40	50	65	80	100	125	150	200
HA2D	4.0	0.8~2.4	有 Yes	20	20	20	11	7.5	5.5	3.0	—	—	—
				47	29	20							
HA3D	4.0	0.8~2.4	有 Yes	20	20	20	20	13.2	9.8	5.2	3.3	2.05	—
				50	50	36	21						
HA4D	4.0	0.8~2.4	有 Yes	—	—	20	20	20	16.1	9.1	5.8	3.5	2.25
				—	—	50	36	22.5					

表 4-1-2 气—开式阀

**Table 4-1-2 Air-to-open**

**100kPa**



执行机构 Actuator	供气压力 Air supply	弹簧范围 Spring range	定位器 Positioner	允许压差 Allowable pressure drops									
				阀座直径 Valve seat size									
				25	32	40	50	65	80	100	125	150	200
HA2R	2.8	0.8~2.4	有 Yes	20	13.5	7.0	5.5	—	—	—	—	—	—
				22									
HA3R	2.8	0.8~2.4	有 Yes	20	20	17	9.8	6.1	4.4	2.4	1.5	0.95	—
				39	23.5								
HA4R	2.8	0.8~2.4	有 Yes	—	—	20	16.5	10.7	7.5	4.2	2.7	1.6	1.1
				—	—	29							
VA6R	4	1.9~3.5	有 Yes	—	—	—	—	20	20	12.1	7.0	5.0	2.6
				—	—	—	—	30	21.5				

- 注: 1. 最大允许压差不准超过 ANSI B16.34—1981 或 JIS B2201—1984 标准规定的最大工作压力。  
2. 同一格内的上方数字表示阀常开允许压差, 下方数字表示阀全关时的允许压差。  
3. 黑线框内数字表示阀配用标准规格执行机构。

**Note:** 1. Take care not to cause the allowable maximum pressure drops to exceed the maximum operating pressure designated by ANSI B16.34—1981 or JIS B2201—1984.

2. The upper figures denote the operating allowable pressure drops; the lower denote the allowable pressure drops at full closure.

3. The figures in gray denote the standard actuator specifications.

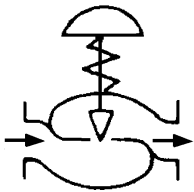
II. 柱塞阀芯、软阀座 (%TF、LTF)

II. Contoured-type plug and metal seat

表 4-1-3 气—关式阀

Table 4-1-3 Air-to-close

100kPa

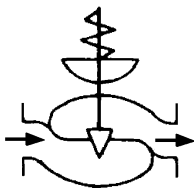


执行机构 Actuator	供气压力 Air supply	弹簧范围 Spring range	定位器 Positioner	允许压差 Allowable pressure drops									
				阀座直径 Valve seat size									
				25	32	40	50	65	80	100	125	150	200
HA2D	4.0	0.8~2.4	有 Yes	15	15	14	7.5	—	—	—	—	—	—
HA3D	4.0	0.8~2.4	有 Yes	15	15	15	14	9	6.5	3.7	2.35	1.45	—
HA4D	4.0	0.8~2.4	有 Yes	—	—	15	15	15	11	6.35	4.05	2.5	1.55

表 4-1-4 气—开式阀

Table 4-1-4 Air-to-open

100kPa



执行机构 Actuator	供气压力 Air supply	弹簧范围 Spring range	定位器 Positioner	允许压差 Allowable pressure drops									
				阀座直径 Valve seat size									
				25	32	40	50	65	80	100	125	150	200
HA2R	2.8	0.8~2.4	有 Yes	15	9.5	4.95	3.9	2.4	1.7	1.0	—	—	—
HA3R	2.8	0.8~2.4	有 Yes	15	15	11.9	6.85	4.3	3.05	1.7	1.05	0.65	—
HA4R	2.8	0.8~2.4	有 Yes	—	—	15	11	7.45	5.25	2.95	1.85	1.15	0.7
VA6R	4(1*)	1.9~3.5	有 Yes	—	—	—	—	15	15	8.45	7.0	5.0	2.6

注： 1. 最大允许压差不准超过 ANSI B16.34—1981 或 JIS B2201—1984 标准规定的最大工作压力。

2. 黑线框内数字表示阀配用标准规格执行机构。

Note: 1. Take care not to cause the allowable maximum pressure drops to exceed the maximum operating pressure designated by ANSI B16.34—1981 or JIS B2201—1984.

2. The figures in gray denote the standard actuator specifications.

表 4-2 气缸式执行机构 (VP)

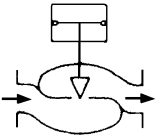
Table 4-1 CYLINDER ACTUATOR (HA)

I. 柱塞阀芯、金属阀座 (%CF,LCF)

I. Contoured-type plug and metal seat

表 4-2-1 Table 4-2-1

100kPa



执行机构 Actuator	供气压力 Air supply	定位器 Positioner	允许压差 Allowable pressure drops					
			阀座直径 Valve seat size					
			65	80	100	125	150	200
VP5	3	有 With	40	36.8	20.7	13.2	8	—
			52					
	4	有 With	40	40	27.8	17.8	10.8	—
			70	49				
	5	有 With	40	40	34.9	22.4	13.6	—
			88	62				
VP6	3	有 With	40	40	36.9	23.6	14.4	9.2
			93	65				
	4	有 With	40	40	40	31.8	19.3	12.4
			100	88	49			
	5	有 With	40	40	40	40	24.3	15.6
			100	100	62			
VP7	3	有 With	—	—	—	35.5	21.6	13.8
			—	—	—			
	4	有 With	—	—	—	40	29	18.6
			—	—	—	47		
	5	有 With	—	—	—	40	36.4	23.4
			—	—	—	60		

- 注：1. 如果执行机构带有辅助气源，应选二者中较小一个供气压力作为计算允许压差的基础。  
2. 最大允许压差不准超过 ANSI B16.34-1981 或 JIS B2201-1984 标准规定的最大工作压力。  
3. 同一格内上方数字为阀常开允许压差，下方数字为阀关闭时的允许压差。

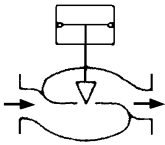
- Note:** 1. In case a back-up system is used for the actuator, select the pressure drops whichever is lower-the operating supply air pressure or the back-up system set pressure.  
2. Take care not to cause the allowable maximum pressure drops to exceed the maximum operating pressure designated by ANSI B16.34—1981 或 JIS B2201—1984.  
3. The upper figures denote the operating allowable pressure drops; the lower denote the allowable pressure drops at full closure.

II. 柱塞阀芯、软阀座 (%TF、LTF)

II. Contoured-type plug and metal seat (%TF、LTF)

表 4-2-2 Table 4-2-2

100kPa



执行机构 Actuator	供气压力 Air supply	定位器 Positioner	允许压差 Allowable pressure drops					
			阀座直径 Valve seat size					
			65	80	100	125	150	200
VP5	3	有 With	30	25.8	14.5	9.2	5.6	—
	4	有 With	30	30	19.5	12.5	7.6	—
	5	有 With	30	30	24.4	15.7	9.5	—
VP6	3	有 With	30	30	25.8	16.5	10.1	6.4
	4	有 With	30	30	30	22.3	13.5	8.7
	5	有 With	30	30	30	28	17	10.9
VP7	3	有 With	—	—	—	24.9	15.1	9.7
	4	有 With	—	—	—	30	20.3	13
	5	有 With	—	—	—	30	25.5	16.4

注：1. 如果执行机构带有辅助气源，应选二者中较小一个供气压力作为计算允许压差的基础。

2. 最大允许压差不准超过 ANSI B16.34-1981 或 JIS B2201-1984 标准规定的最大工作压力。

**Note:** 1. When the actuator with the added air supply, the lower one should be the base of calculating the allowable pressure drops.

2. Take care not to cause the allowable maximum pressure drops to exceed the maximum operating pressure designated by ANSI B16.34-1981 或 JIS B2201-1984.

表 4-3 电子式执行机构 (EIL) 及智能式执行机构 (M8)

Table 4-3 ELECTRONIC ACTUATOR (EIL) & INTELLIGENT ACTUATOR (M8)

100kPa

执行机构 Actuator	阀座形式 Valve seat	阀座直径 (mm) Valve seat size									
		25	32	40	50	65	80	100	125	150	200
EIL04	金属阀座 Metal seat	64	42	27	17.3	12.3	8.1	5.2	—	—	—
	软阀座 Soft seat	30	30	23.8	13.7	8.6	6.1	3.4	—	—	—
EIL08 M8610+L8210	金属阀座 Metal seat	100	100	72	43	29.9	21.1	11.8	7.5	4.8	2.8
	软阀座 Soft seat	—	—	30	30	19.8	14.3	8.1	5.2	3.2	1.8
M8620+L8220	金属阀座 Metal seat	—	—	—	—	45	32.2	18.2	11.6	7.1	3.1
	软阀座 Soft seat	—	—	—	—	30	22	12.7	8.1	5.0	3.1
EIL25 M8620+L8230	金属阀座 Metal seat	—	—	—	—	—	—	—	14.6	9.4	5.7
	软阀座 Soft seat	—	—	—	—	—	—	—	10.1	6.3	3.8

**Table 5 DIMENSIONS**

**表 5-1 法兰距尺寸**

**Table 5-1 Fact-to-Face dimensions**

mm

公称 通径 Nominal size	A								
	ANSI 125 FF ANSI 150 RF JIS 10K FF RF PN1.6 RF	JIS 16K RF	ANSI 300 RF JIS 20K PN4.0 MFM	JIS 16K TG	JIS 20K TG	ANSI 150 RJ	ANSI 300 RJ	ANSI 150 SW、BW	ANSI 300 SW、BW
40	222	231	235	235	236	235	248	251	251
50	254	263	267	265	267	267	283	286	286
65	276	288	292	290	292	289	308	311	311
80	298	313	317	310	317	311	333	337	337
100	352	364	368	360	368	365	384	394	394
125	403	—	425	—	425	—	—	—	—
150	451	465	473	475	473	464	489	473	508
200	543	560	568	570	568	556	584	568	610

注：法兰距符合 IEC 534—3—1976 标准。

Note: Face-to-face dimensions comfort to IEC 534-3-1976 Standard.

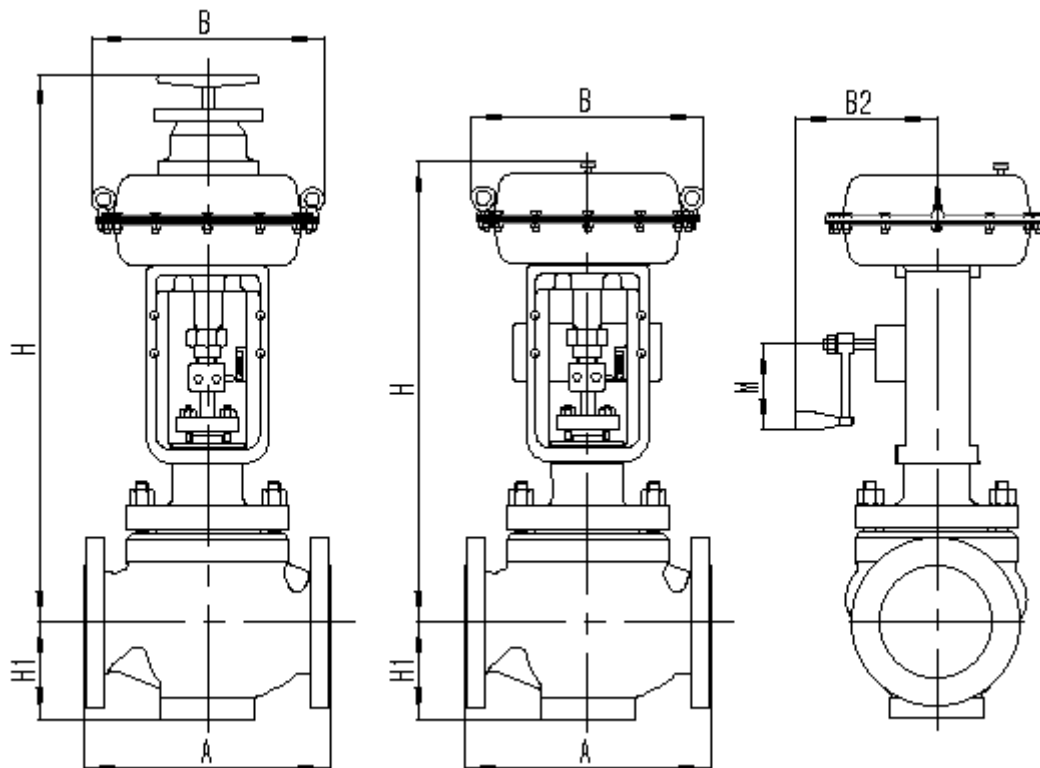
**表 5-2 外形尺寸**

**Table 5-2 Other dimensions**

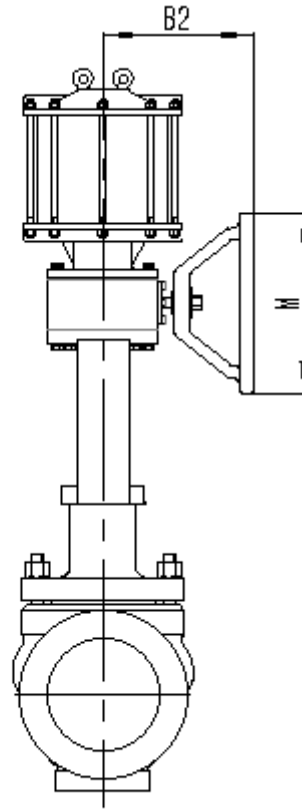
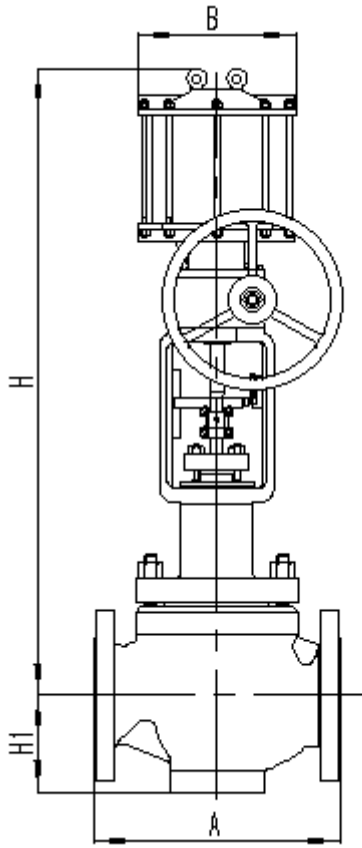
mm

公称 通径 Nominal size	执行机构 Actuator	H			B	B1	B2	B3	B4	M	H1
		不带手轮	侧装手轮	顶装手轮							
40	HA2D、R	770	770	1035	281	—	273.5	—	—	175	70
	HA3D、R	880	880	1170	363	—	278.5	—	—	175	
	EIL04	1010	—	—	172	—	258	—	—	—	
50	HA2D、R	780	780	1045	281	—	273.5	—	—	175	80
	HA3D、R	885	885	1175	363	—	278.5	—	—	175	
	EIL04	1010	—	—	172	—	258	—	—	—	
65	HA3D、R	1000	1000	1290	363	—	278.5	—	—	175	88
	HA4D、R	1155	1155	1555	520	—	303	—	—	φ 320	
	EIL08	1205	—	—	229	—	338	—	—	—	
	M8610+L8210	1240	—	—	—	285	346	253	350	—	
80	HA3D、R	1010	1010	1300	363	—	278.5	—	—	175	98
	HA4D、R	1160	1160	1560	520	—	303	—	—	φ 320	
	EIL08	1210	—	—	229	—	338	—	—	—	
	M8610+L8210	1250	—	—	—	285	346	253	350	—	
100	HA3D、R	1025	1025	1315	363	—	278.5	—	—	175	113
	HA4D、R	1180	1180	1580	520	—	303	—	—	φ 320	
	VA6R	1735	1870	—	480	—	384	—	—	φ 380	
	VP5	1440	1560	—	382	—	324	—	—	φ 380	
	EIL08	1230	—	—	229	—	338	—	—	—	
	M8610+L8210	1265	—	—	—	285	346	253	350	—	
125	HA3D、R	1095	1095	1385	363	—	278.5	—	—	175	146
	HA4D、R	1250	1250	1648	520	—	303	—	—	φ 320	
	VA6R	1790	1920	—	480	—	384	—	—	φ 380	
	VP5	1500	1615	—	382	—	324	—	—	φ 380	
	VP6	1610	1735	—	480	—	384	—	—	φ 380	
	VP7	1610	1735	—	580	—	384	—	—	φ 380	
	EIL08	1310	—	—	229	—	338	—	—	—	
	M8610+L8210	1410	—	—	—	285	346	253	350	—	

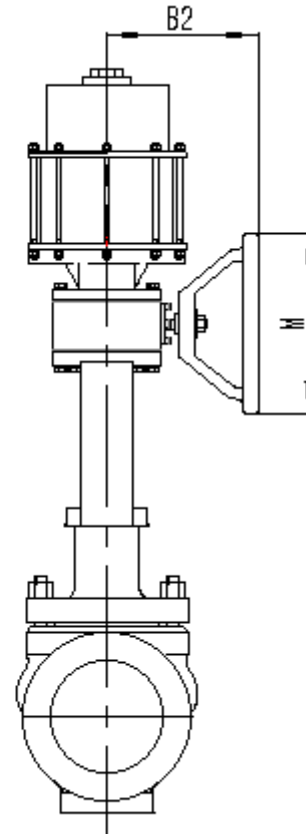
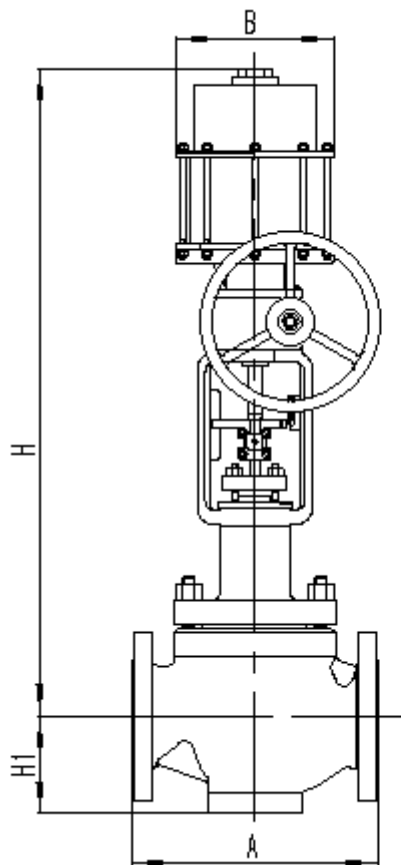
150	HA3D、R	1195	1195	1485	363	—	278.5	—	—	175	170
	HA4D、R	1350	1350	1750	520	—	303	—	—	φ 320	
	VA6R	1900	2030	—	480	—	384	—	—	φ 380	
	VP5	1610	1720	—	382	—	324	—	—	φ 380	
	VP6	1720	1845	—	480	—	384	—	—	φ 380	
	VP7	1720	1845	—	580	—	384	—	—	φ 380	
	EIL08	1410	—	—	229	—	338	—	—	—	
M8610+L8210	1510	—	—	—	285	346	253	350	—		
200	HA4D、R	1575	1575	1975	520	—	303	—	—	φ 320	220
	VP5	1820	1930	—	382	—	324	—	—	φ 380	
	VP6	1930	2060	—	480	—	384	—	—	φ 380	
	VP7	1930	2060	—	580	—	384	—	—	φ 380	
	M8620+L8220	1920	—	—	—	313	350	253	350	—	



配 HA 执行机构  
With type HA

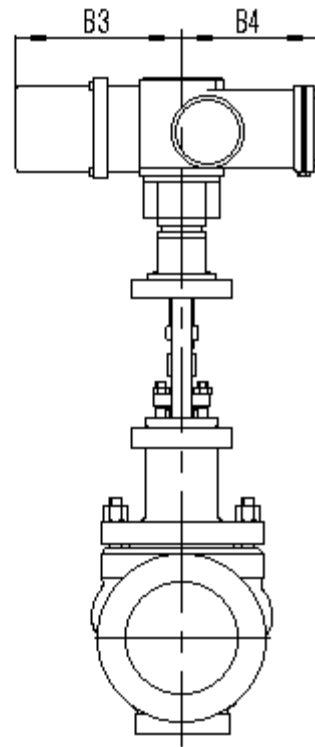
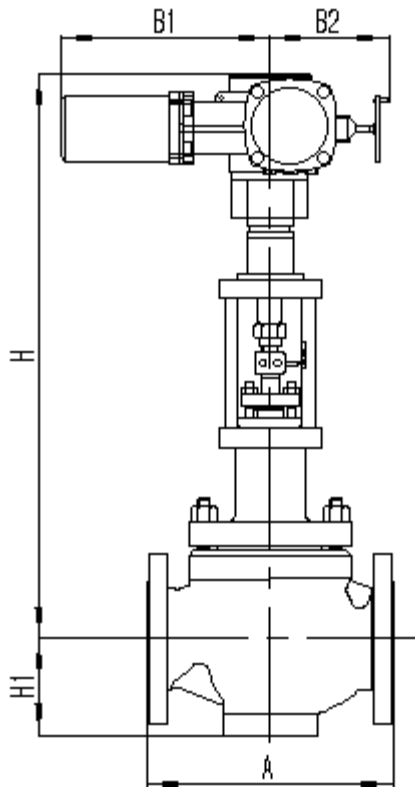


配 VA 执行机构  
With type VA

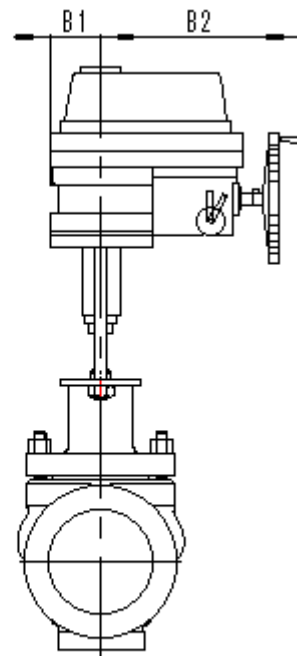
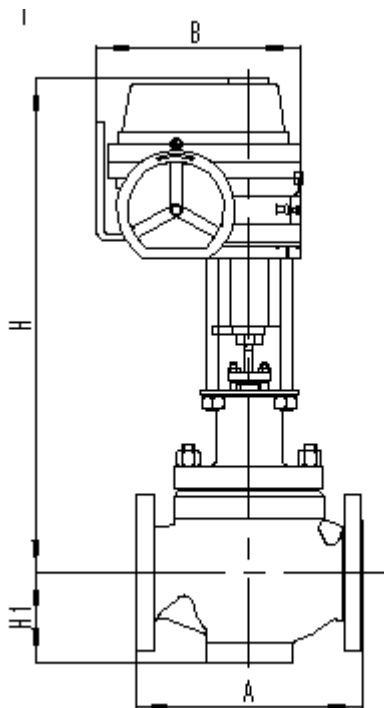


配 VP 执行机构  
With type VP





配 M8 执行机构  
With type M8



配 EIL 执行机构  
With type EIL

图 5 法兰距及外形尺寸  
Fig.5 Face-to-Face dimension and Other dimensions

表 6 重量

Table 4 WEIGHT

kg

公称 通径 Nomin al size	执行机构 Actuator	法兰连接 Flanged typ			焊接连接 Welded type
		ANSI 125、150 JIS 10K	ANSI 300 JIS 16、20、30K	ANSI 600 JIS 40K	ANSI 150 300 600 JIS 10、16、20、30K
40	HA2D、R	39	44	52	44
	HA3D、R	51	56	64	56
	EIL04	31	36	44	36
50	HA2D、R	45	50	55	50
	HA3D、R	57	62	67	62
	EIL04	37	42	50	56
65	HA3D、R	65	70	87	70
	HA4D、R	96	101	118	101
	EIL08	49	54	71	54
	M8610+L8210	71	76	93	76
80	HA3D、R	80	90	112	90
	HA4D、R	111	121	143	121
	EIL08	64	74	96	74
	M8610+L8210	86	96	118	96
100	HA3D、R	93	108	143	105
	HA4D、R	124	139	174	136
	VA6R	266	281	316	278
	VP5	141	156	191	153
	EIL08	77	92	127	89
	M8610+L8210	99	114	149	111
125	HA3D、R	182	212	262	202
	HA4D、R	213	243	293	233
	VA6R	355	385	435	375
	VP5	230	260	310	250
	VP6	305	335	385	325
	VP7	415	445	495	435
	EIL08	166	196	246	186
	M8610+L8210	188	218	268	208
150	HA3D、R	182	212	262	202
	HA4D、R	213	243	293	233
	VA6R	355	385	435	375
	VP5	230	260	310	250
	VP6	305	335	385	325
	VP7	415	445	495	435
	EIL08	166	196	247	186
	M8610+L8210	188	218	268	208
200	HA4D、R	303	353	473	343
	VP5	320	370	490	360
	VP6	395	445	565	435
	VP7	505	555	675	545
	M8620+L8220	283	333	453	323