



HAS 高压单座角型阀

High Pressure Single Seated Angle Valve

HAS 高压单座角型阀，广泛应用于各种化工、炼油等行业，尤其适用于合成氨、尿素工业上高压和高压差介质调节。采用透镜式阀座结构，阀座易于更换，密封性能好。阀芯采用堆焊钨钴合金，具有耐气蚀，抗冲刷等优点，大大提高使用寿命。

产品符合 GB/T4213-2008 标准

HAS High Pressure Single Seated Angle Valve is applicable for the service of chemical industry, oil refining and other industries. Especially for controlling fluid with high pressure and high pressure drops in compound ammonia and carbamide industries. The lens-type seat structure is used to easy replacement and good sealing. The plug is welded of tungsten-cobalt alloy which are of cavitation resistance and erosion resistance to greatly improve the service life of valve.

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

标准规格 STANDARD SPECIFICATION

阀体 BODY

形式 Type	角型单座锻造阀 Angle, single seated, forge valve
公称通径 Normal size	6、10、15、25、32、40、50、65、80、100、125、150、200mm
公称压力 Pressure rating	PN16、22、32MPa *
连接型式 End connections	法兰型 Flanged: 透镜垫 (Lens ring washer)
尺寸 Dimensions	请参见表 5 See Table 5
阀体及上阀盖材质 Body & Bonnet Material	锻钢、锻不锈钢 (SUS304、SUS316、SUS316L、A4) 等 Forge steel, forge stainless stell(SUS304, SUS316, SUS316L,A4) and so on 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	常温型 (P) Plain type : -17~+230℃
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、JM397 石墨填料 各种填料的使用温度·压力范围, 请参见图 2 PTFE and JM397 Grafoil, see Fig.2 for selection
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.

* 法兰标准 Standard: JB/T2796-92

阀内组件 TRIM

阀芯型式 Valve plug type	单座柱塞型阀芯 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	等百分比特性和线性特性, 参见图 4 Equal percentage and Linear, see Fig.4

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
	HA	VA	VP	EIL	M8 系列
规格 Specification	多弹簧型 Multi-Spring type	单作用 Single acting	双作用 Double acting		
用途 Purpose	调节 Modulation	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) 140 (20~100) kPa 160 (20~100) kPa 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 (VA6) ; G1/2 (VP7)		配线: PG13.5 Wiring:PG13.5	配线: PG13.5 Wiring:PG13.5
正作用 Direct action	气压增加阀闭 Air to valve close	气压增加阀闭 Air to valve close		输入信号阀闭 Signal increase to valve shut	输入信号阀闭 Signal increase to valve shut
反作用 Reverse action	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
回差 Hysteresis error	≤1%FS (带定位器) ≤3%FS (不带定位器) ≤ 1%FS (With positioner) ≤ 3%FS (Without positioner)	≤1%FS (带定位器) ≤3%FS (不带定位器) ≤ 1%FS (With positioner) ≤ 3%FS (Without positioner)		≤1%FS	≤1%FS

基本误差 Limit of intrinsic error	$\leq \pm 1\%FS$ (带定位器) $\leq \pm 5\%FS$ (不带定位器) $\leq \pm 1\%FS$ (With positioner) $\leq \pm 5\%FS$ (Without positioner)	$\leq \pm 1\%FS$ (带定位器) $\leq \pm 5\%FS$ (不带定位器) $\leq \pm 1\%FS$ (With positioner) $\leq \pm 5\%FS$ (Without positioner)	$\leq \pm 1\%FS$	$\leq \pm 1\%FS$
环境温度 Ambient temperature	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℃
油漆颜色 Painting	蓝色 Munsell 色标 10B5/10 Blue (Munsell color 10B5/10)	蓝色 Munsell 色标 10B5/10 Blue (Munsell color 10B5/10)		
附件 Accessories	定位器、空气过滤减压阀、保位阀、阀传送器、手轮机构等 Positioner, Air-set, Lock-up valve, Position transmitter, Hand wheel and others	定位器、空气过滤减压阀、保位阀、阀传送器、手轮机构等 Positioner, Air-set, Lock-up valve, Position transmitter, Hand wheel 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 4 See Table 4
阀座泄漏量 Seat Leakage	$< \text{Rated Cv} \times 0.01\%$
可调范围 Rangeability	30 : 1
允许压差 Allowable Pressure Drops	请参见表 4 See Table 4

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		A105
阀芯 Plug	材质 material	SUS304/316/316L
	处理 treatment	SS/SF
阀座 Valve seat	材质 material	SUS304/316/316L
	处理 treatment	SS/SF
垫圈 Gasket	材质 material	SUS316L
阀座允许泄漏量 Seat Leakage		Class IV
使用温度 Operating Tep. °C		-17~+350

表 1-2 阀体材质: 不锈钢

Table 1-2 BODY MATERIAL: STAINLESS STEEL

阀体材质 Body material		SUS304/316/316L
阀芯 Plug	材质 material	SUS304/316/316L
	处理 treatment	SS/SF
阀座 Valve seat	材质 material	SUS304/316/316L
	处理 treatment	SS/SF
垫圈 Gasket	材质 material	SUS316L
阀座允许泄漏量 Seat Leakage		Class IV
使用温度 Operating Tep. °C		-45~+350

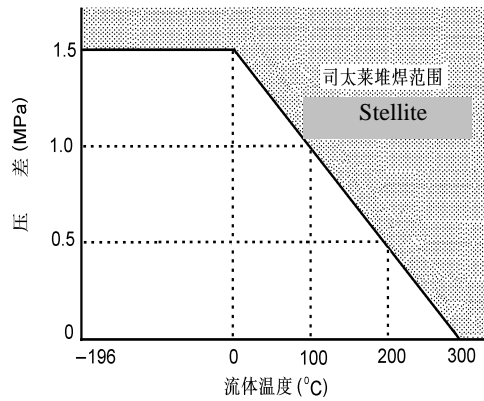
表 2 阀体材质使用温度· 压力范围

Table 2 BODY MATERIAL/OPERATING PRESSURE-TEMPERATURE RATING

温度 Temp. ℃	PN160/ANSI900						PN220/ANSI1500						PN320/ANSI2500					
	LCB	WCB A105	WC6 F11	WC9 F22	SCS13A F304 CF8	SCS14A F316 CF8M	LCB	WCB A105	WC6 F11	WC9 F22	SCS13A F304 CF8	SCS14A F316 CF8M	LCB	WCB A105	WC6 F11	WC9 F22	SCS13A F304 CF8	SCS14A F316 CF8M
-196~38	—	—	—	—	14.88	14.88	—	—	—	—	24.79	24.79	—	—	—	—	41.34	41.34
-45~38	14.35	—	—	—	14.88	14.88	23.92	—	—	—	24.79	24.79	39.87	—	—	—	41.34	41.34
-5~38	14.35	15.31	15.50	15.50	14.88	14.88	23.92	25.51	25.84	25.84	24.79	24.79	39.87	42.52	43.07	43.07	41.34	41.34
50	14.18	15.01	15.33	15.35	14.34	14.43	23.64	25.02	25.55	25.58	23.90	24.04	39.40	41.70	42.59	42.64	39.84	40.07
100	13.52	13.90	14.62	14.70	12.25	12.65	22.53	23.16	24.36	24.50	20.42	21.09	37.56	38.62	40.61	40.85	34.01	35.14
150	13.18	13.56	13.90	13.98	10.89	11.54	21.96	22.60	23.18	23.30	18.16	19.24	36.60	37.66	38.61	38.84	30.26	32.07
200	12.79	13.14	13.63	13.45	9.82	10.69	21.32	21.89	22.73	22.40	16.37	17.83	35.53	36.50	37.88	37.35	27.28	29.71
250	12.17	12.51	13.33	13.26	9.15	10.02	20.28	20.84	22.22	22.10	15.26	16.68	33.80	34.75	37.03	36.83	25.43	27.80
300	11.30	11.61	12.72	12.72	8.71	9.49	18.84	19.36	21.20	21.20	14.52	15.80	31.40	32.26	35.33	35.33	24.20	26.34
350	10.78	11.08	12.06	12.06	8.42	9.12	17.96	18.46	20.11	20.11	14.02	15.20	29.95	30.78	33.51	33.51	23.36	25.36
375		10.94	11.63	11.63	8.32	8.91		18.22	19.38	19.38	13.86	14.84		30.37	32.32	32.32	23.12	24.74
400		10.34	10.98	10.98	8.23	8.72		17.24	18.28	18.28	13.72	14.55		28.73	30.47	30.47	22.87	24.25
425		8.62	10.53	10.53	8.14	8.59		14.37	17.54	17.54	13.57	14.32		23.94	29.23	29.23	22.63	23.87
450		6.01	10.13	10.13	8.06	8.42		10.02	16.89	16.89	13.42	14.03		16.68	28.16	28.16	22.37	22.79
475		4.06	9.50	9.50	7.97	8.20		6.76	15.82	15.82	13.27	13.67		11.28	26.36	26.36	22.13	22.34
500			8.33	8.33	7.81	8.05			13.89	13.89	13.02	13.40			23.15	23.15	21.71	21.47
525			6.08	6.58	7.15	7.73			10.12	10.96	11.94	12.89			16.88	18.26	19.88	20.79
550			3.83	4.91	6.54	7.49			6.38	8.17	10.91	12.48			10.63	13.63	18.17	17.85
575			2.55	3.51	6.02	7.22			4.24	5.85	10.04	12.04			7.08	9.74	16.72	15.20
600			1.75	2.29	5.01	6.43			2.94	3.82	8.35	10.71			7.90	6.36	13.92	17.85
625					3.92	5.48					6.54	9.12					10.89	15.20
650					3.16	4.23					5.25	7.06					8.75	11.76
675					2.33	3.78					3.88	6.31					6.45	10.53

图 1 阀内件材质·处理

Fig.1 TRIM MATERIAL/TREATMENT



司太莱的工作范围
Temperature/normal differential pressure ranges requiring Stellite

注: 1. 17-4PH 不锈钢 (SCS24) 不需堆焊。

2. 空化、闪蒸、禁油场合, 不管温度和压力多大, 建议堆焊司太莱合金。

Note: 1. SCS24 (Precipitation-hardened stainless steel) requires no stellite.

2. For cavitation/flashing service, or oil prohibitive service, Stellite is recommended regardless of temperature or differential pressure.

图 2 填料使用温度·压力范围

Fig.2 PACKING PRESSURE · TEMPERATURE RATINGS

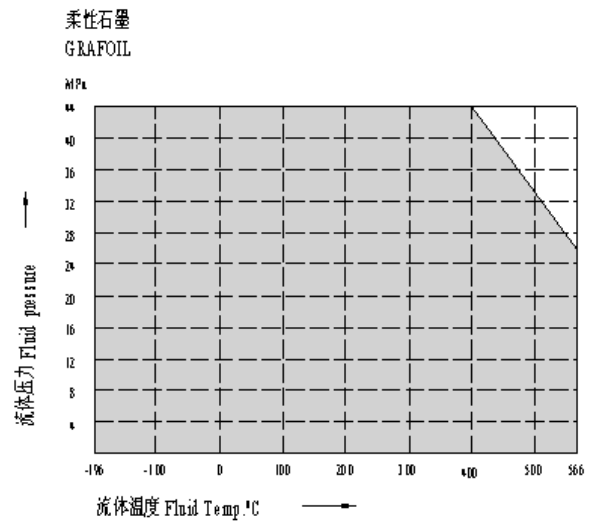
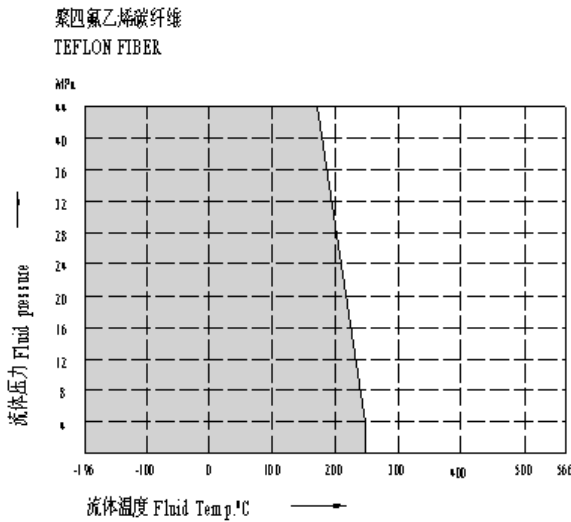


图 3 阀体部件结构
Fig.3 BODY SECTION

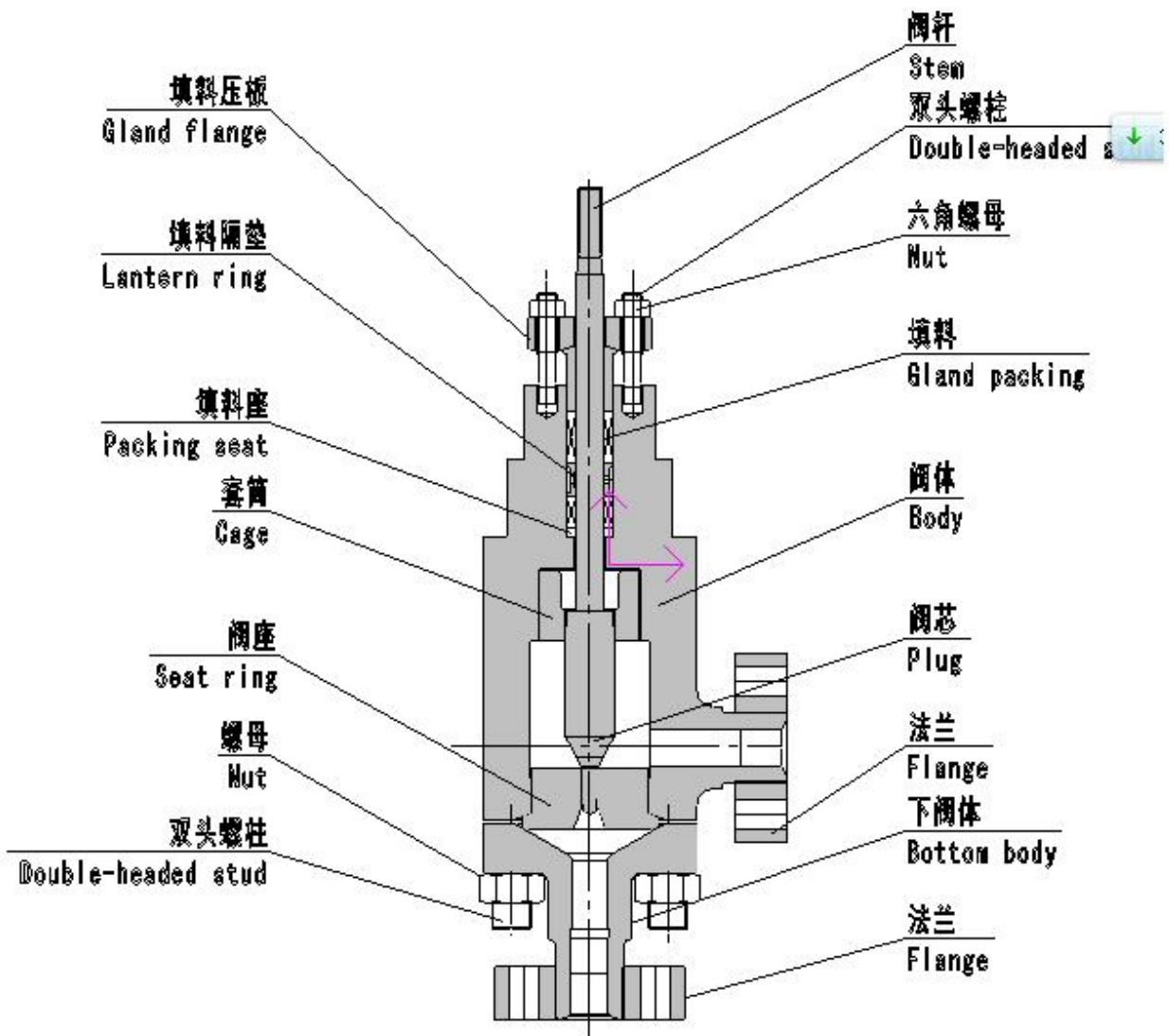
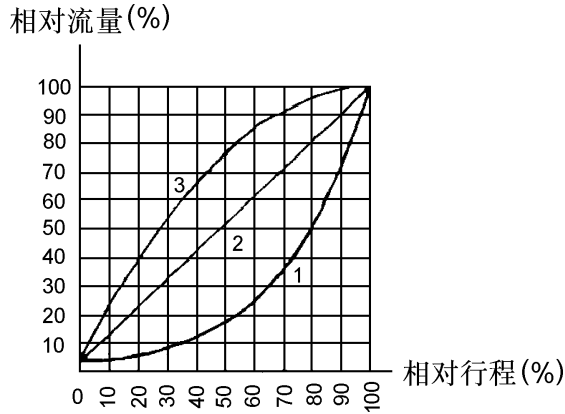


图 3 典型流量特性曲线

Fig.4 TYPICAL FLOW CHARACTERISTICS

1. 等百分比特性 Equal percentage
2. 线性特性 Liner
3. 快开特性 Quick-open



固有流量特性图

表 3 额定流量系数 Cv 和行程

Table 3 Rated Cv value AND and Travel

公称通径 Nominal size	6			10					15					25					
阀座直径 Valve seat size	3	4	6	4	6	7	8	10	6	7	8	10	12	7	8	10	12	16	25
额定行程 Rated travel	10			16															
流量系数 Cv Flow coefficient	0.05 0.08	0.12 0.2 0.3	0.47 0.74	0.12 0.2 0.3	0.47 0.74	1.2	2	3	0.47 0.74	1.2	2	3	4.7	1.2	2	3	4.7	7.4	9.4
公称通径 Nominal size	32			40		50		65		80		100		125		150		200	
阀座直径 Valve seat size	16	20	30	20	38	30	50	38	65	50	80	65	100	100	125	125	150	150	200
额定行程 Rated travel	25					40					60					75			
流量系数 Cv Flow coefficient	7.4	9.4	18.7	9.4	30	18.7	47	30	74	47	117	74	187	187	292	292	421	421	750

表 4 允许压差

Table 4 ALLOWABLE PRESSURE DROPS

表 4-1 薄膜式执行机构 (HA)

Table 4-1 DIAPURAGM ACTUATOR (HA)

100kPa

执行机构 Actuator	供气压力 Air supply	弹簧范围 Spring range	允许压差 Allowable pressure drops																		
			公称通径 Nominal size																		
			6			10				15				25							
			3	4	6	4	6	7	8	10	6	7	8	10	12	7	8	10	12	16	20
HA2D	4.0	08~2.4	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	148	89
HA2R	2.8	08~2.4	320	320	320	320	320	320	320	280	320	320	320	211	139	320	320	211	139	69	89
执行机构 Actuator	供气压力 Air supply	弹簧范围 Spring range	允许压差 Allowable pressure drops																		
			公称通径 Nominal size																		
			32			40		50		65		80		100		125		150		200	
			16	20	30	20	38	30	50	38	65	50	80	65	100	100	125	125	150	150	200
HA3D	4.0	08~2.4	290	180	74	180	43	74	22	—	—	—	—	—	—	—	—	—	—	—	
HA3R	2.8	08~2.4	150	91	34	91	18	34	8	—	—	—	—	—	—	—	—	—	—	—	
HA4D	4.0	08~2.4	—	—	—	—	—	—	—	85	25	46	15	25	9	—	—	—	—	—	
HA4R	2.8	08~2.4	—	—	—	—	—	—	—	42	11	21	6	11	3	—	—	—	—	—	
HA4DX2	4.0	08~2.4	—	—	—	—	—	—	—	—	—	—	—	—	23	14	14	9	9	4	
HA4RX2	2.8	08~2.4	—	—	—	—	—	—	—	—	—	—	—	—	11	6	6	4	4	1	
HA5YD	4.0	08~2.4	—	—	—	—	—	—	—	—	—	—	—	—	20	13	13	8	8	4	
HA5YR	2.8	08~2.4	—	—	—	—	—	—	—	—	—	—	—	—	20	13	13	8	8	4	

注：允许压差确定依据：1.PN22MPa 的阀允许压差不准超过 22MPa；
2. 阀关闭 P2=0；
3. 灰框内数值表示标配执行机构。

Note: Define allowable pressure drops according to :

- 1.The allowable pressure drops of valve(PN22MPa) does nor exceed to 22MPa.
- 2.Valve is closed P2=0.
- 3.The figures in gray denote the standard actuator specifications.

表 4-2 气缸式执行机构 (VP)

Table 4-2 CYLINDER ACTUATOR (VP) 100kPa

执行机构 Actuator	供气压力 Air supply	弹簧范围 Spring range	允许压差 Allowable pressure drops														
			公称通径 Nominal size														
			65		80		100		125		150		200				
			38	65	50	80	65	100	100	125	125	150	150	200			
VP4	4.0	无	124	40	70	24	—	—	—	—	—	—	—	—	—	—	—
VP5	4.0	无	180	58	100	38	58	22	22	14	—	—	—	—	—	—	
VP6	4.0	无	—	—	—	—	106	38	38	24	—	—	—	—	—	—	
VP7	4.0	无	—	—	—	—	—	—	70	45	45	31	31	16	—	—	
VP8	4.0	无	—	—	—	—	—	—	109	69	69	47	47	26	—	—	

表 4-3 电子式执行机构 (EIL) 及电动式执行机构 (M8)

Table 4-3 ELECTRONIC ACTUATOR (EIL) & ELECTRIC MOTOR ACTUATOR (M8) 100kPa

执行机构 Actuator	允许压差 Allowable pressure drops																			
	公称通径 Nominal size																			
	6			10					15				25							
	3	4	6	4	6	7	8	10	6	7	8	10	12	7	8	10	12	16	20	
EIL04	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	254	132	80	
执行机构 Actuator	允许压差 Allowable pressure drops																			
	公称通径 Nominal size																			
	32			40			50		65		80		100		125		150		200	
	16	20	30	20	38	30	50	38	65	50	80	65	100	100	125	125	150	150	200	
EIL04	132	80	28	80	15	28	6	—	—	—	—	—	—	—	—	—	—	—	—	
EIL08 M8610+L8210	260	158	60	158	32	60	14.4	—	—	—	—	—	—	—	—	—	—	—	—	
EIL12	—	—	—	—	—	—	—	75	22	40	14	22	7	—	—	—	—	—	—	
EIL20 M8620+L8220	—	—	—	—	—	—	—	130	41	72	26	41	16	—	—	—	—	—	—	
EIL25 M8620+L8230	—	—	—	—	—	—	—	—	—	—	—	51	20	20	13	13	8.5	8.5	4.0	
M8630+L8240	—	—	—	—	—	—	—	—	—	—	—	82	32	32	21	21	14	14	6.5	

表 5-1 法兰距、外形尺寸及重量

Table 5-1 DIMENSIONS AND WEIGHT

mm

公称通径 Nominal size	A1 (mm)	A (mm)	H (mm)	执行机构	B (mm)	B1 (mm)	B2 (mm)	B3 (mm)	B4 (mm)	重量 Weight (Kg)
6	98	83	390	HA2D、R	281	—	—	—	—	35
			540	EIL04	172	—	258	—	—	—
10	105	90	420	HA2D、R	281	—	—	—	—	40
			570	EIL04	172	—	258	—	—	—
15	105	105	420	HA2D、R	281	—	—	—	—	41
			570	EIL04	172	—	258	—	—	—
25	120	120	420	HA2D、R	281	—	—	—	—	45
			570	EIL04	172	—	258	—	—	—
32	135	135	560	HA3D、R	363	—	—	—	—	—
			610	EIL08	229	—	338	—	—	—
			1150	M8610+L8210	—	285	346	353	230	—
40	190	165	570	HA3D、R	363	—	—	—	—	—
			620	EIL08	229	—	338	—	—	—
			1160	M8610+L8210	—	285	346	353	230	—
50	225	190	585	HA3D、R	363	—	—	—	—	—
			635	EIL08	229	—	338	—	—	—
			1175	M8610+L8210	—	285	346	353	230	—
65	270	215	770	HA4D、R	520	—	—	—	—	—
			960	VP5	382	—	—	—	—	—
			670	EIL12	229	—	338	—	—	—
			1280	M8620+L8220	—	313	350	253	230	—
80	315	260	785	HA4D、R	520	—	—	—	—	—
			980	VP5	382	—	—	—	—	—
			685	EIL12	229	—	338	—	—	—
			1295	M8620+L8220	—	313	350	253	230	—
100	367	290	800	HA4D、R	520	—	—	—	—	—
			1100	VP6	500	—	—	—	—	—
			710	EIL12	229	—	338	—	—	—
			1320	M8620+L8220	—	313	350	253	230	—
125	391	290	870	HA4X2D、R	520	—	—	—	—	430
			1120	VP6	500	—	—	—	—	480
			950	EIL25	259	—	356	—	—	400
			1355	M8620+L8230	—	313	350	253	230	430

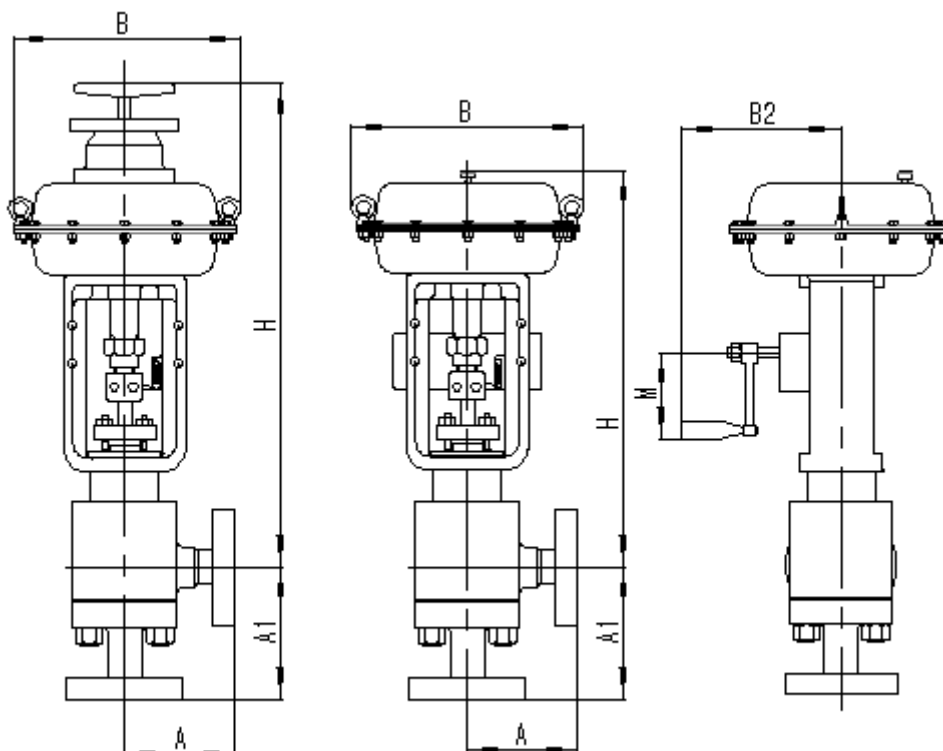
表 5-2 法兰距、外形尺寸及重量

Table 5-2 DIMENSIONS AND WEIGHT

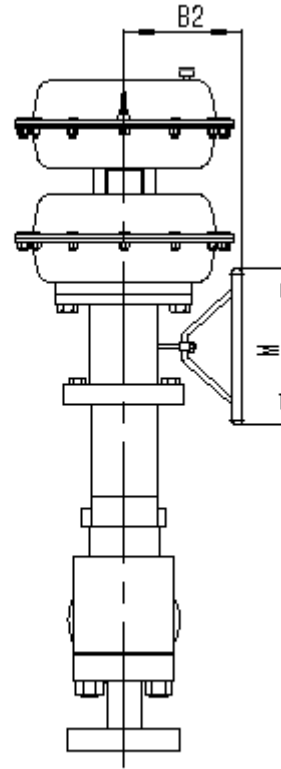
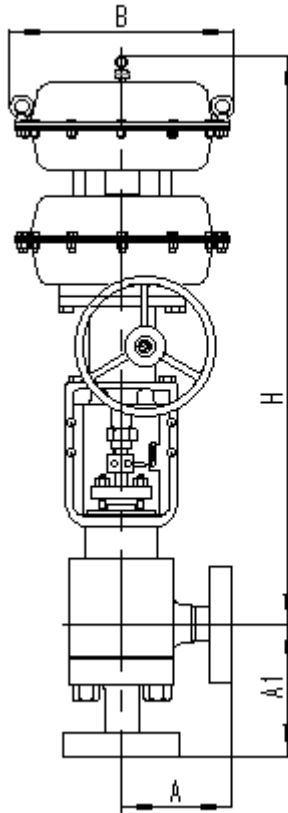
公称通径 Nominal size	A1 (mm)	A (mm)	H (mm)		执行机构	B (mm)	B2 (mm)	M (mm)	重量 Weight (Kg)
			侧装手轮 Side-mounted handwheel	顶装手轮 Top-mounted handwheel					
6	98	83	390	651	HA2D、R	281	273.5	175	—
10	105	90	420	681	HA2D、R	281	273.5	175	—
15	105	105	420	681	HA2D、R	281	273.5	175	—
25	120	120	420	681	HA2D、R	281	273.5	175	—
32	135	135	560	847	HA3D、R	363	278.5	175	—
40	190	165	570	857	HA3D、R	363	278.5	175	—
50	225	190	585	872	HA3D、R	363	278.5	175	—
65	270	215	770	1168	HA4D、R	520	303	φ 320	—
			1180	—	VP5	382	324	φ 380	—
80	315	260	785	1183	HA4D、R	520	303	φ 320	—
			1200	—	VP5	382	324	φ 380	—
100	367	290	800	1198	HA4D、R	520	303	φ 320	—
			1350	—	VP6	480	384	φ 380	—
125	391	290	1188	—	HA4X2D、R	520	310	φ 320	—
			1370	—	VP6	480	384	φ 380	—

注：表 5-2-2 上 H 栏尺寸是气动执行机构(带手轮)调节阀高度。

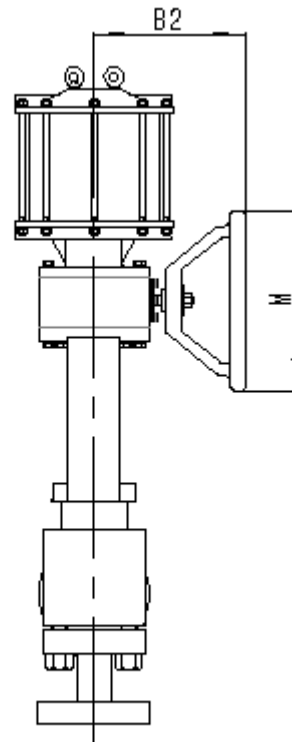
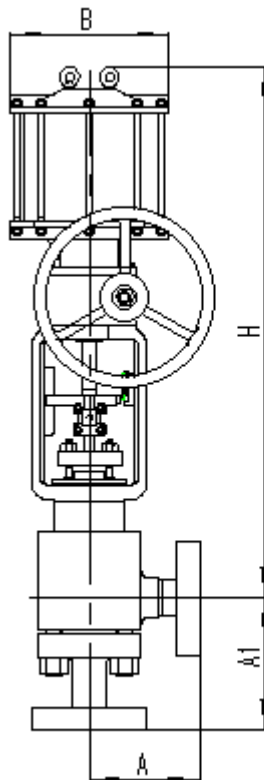
Note: The size of H in Table 5-2-2 shows the height of the valve and pneumatic actuator (with handwheel) combined



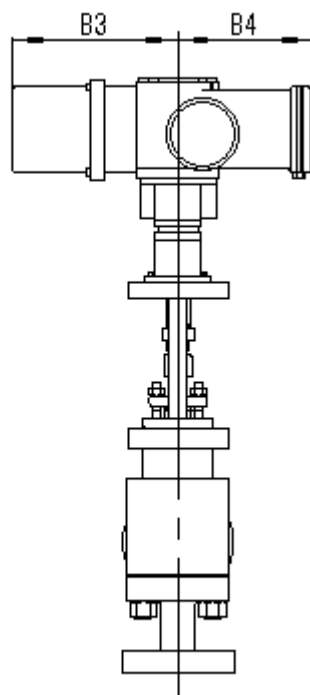
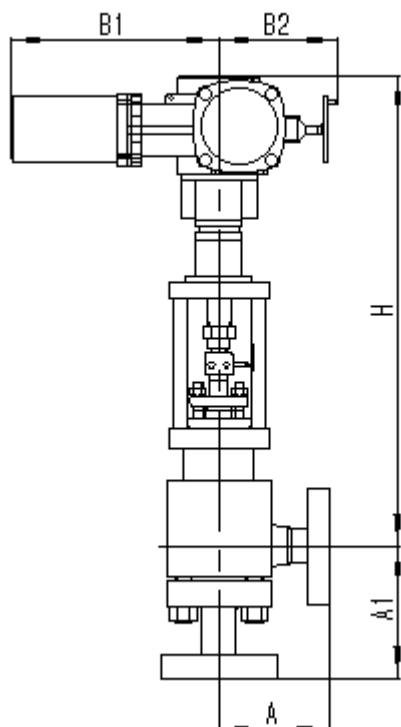
配 HA 执行机构
With type HA



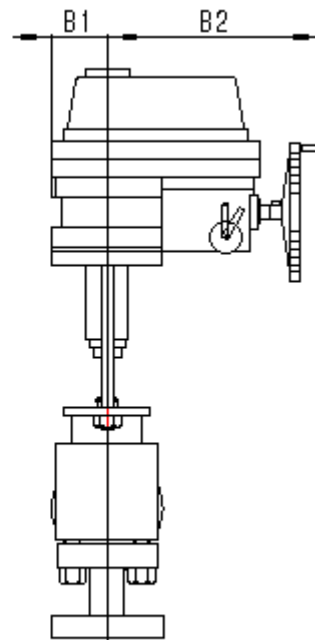
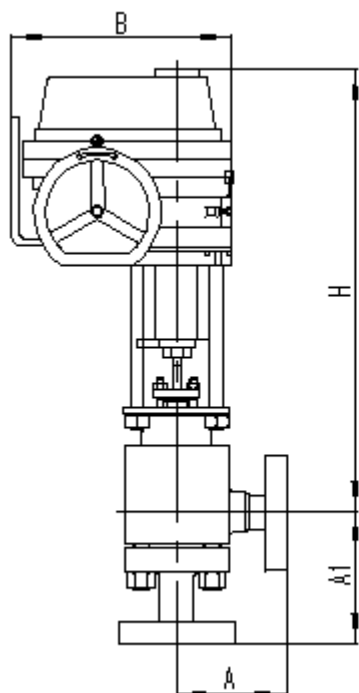
配 HA4X2 执行机构
With type HA4X2



配 VP 执行机构
With type VP



配 EIL 执行机构
 With type EIL



配 M8 执行机构
 With type M8

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