



DC2442 一体式多喷嘴调节阀

Integrated multi nozzle control valve

专业提供过程控制阀门解决方案
Professionally provide process control valve solutions

Rev.2020





企业简介

Company profile

浙江东辰阀门科技有限公司（原杭州东辰热力辅机有限公司）成立于2006年，专业设计、制造特种阀门，各种高中压调节阀、减温减压器、汽机旁路阀、锅炉给水调节阀、最小流量阀、闸阀、球阀、蝶阀、截止阀、止回阀、排污阀等阀门及相关的汽轮机辅机、锅炉辅机。产品广泛应用于各种参数的燃煤火电机组，燃机热电联产项目以及炼油、化工、冶金、集中供热等领域。

公司拥有一批专业从事阀门设计和开发的技术人员，掌握着国内外领先的阀门专业技术，有着丰富的设计、制造和现场调试经验。产品最高压力等级为PN76MPa，最高温度620℃，应用于最大单机容量为1030MW超超临界机组。

公司目前有40多项发明专利和实用新型专利，经过多年发展建立了一套完整的符合《特种设备生产和充装单位许可规则》的压力管道元件制造管理体系，并取得国家市场监管总局颁发的TS特种设备制造许可A1级证书，许可项目为电动调节阀、气动调节阀、闸阀、截止阀、止回阀、球阀、蝶阀、减温减压装置。取得中国质量认证中心CQC颁发的ISO9001质量管理体系认证，ISO14001&45001环境与职业健康安全体系认证。

公司被评为国家高新技术企业，浙江省科技型企业，浙江省守合同重信用AAA单位，浙江省阀门研发中心，浙江省信用管理示范单位，安全生产标准化单位，同时也是中国阀门协会成员单位，中国石油化工热工协会理事单位；现已成为中石油、中石化、中海油、中国神华、中核集团、华能、华电、国电、大唐、中电投、浙能集团等合格供应商。

结合市场特点，公司在技术创新，产品选型、投标、合同签订、产品设计、工艺制造、检验试验，供货安装、运行调试、售后服务、以及用户回访等各个环节，都严格遵循质量管理体系程序。

Zhejiang Dongchen Valve Technology Co., Ltd. (formerly Hangzhou Dongchen Heating Auxiliary Machinery Co., Ltd.) was established in 2006. It specializes in designing and manufacturing special valves, various high and medium pressure regulating valves, temperature reducing and reducing devices, steam turbine bypass valves, and boiler feed water. Regulating valve, minimum flow valve, gate valve, ball valve, butterfly valve, globe valve, check valve, blowdown valve and other valves and related steam turbine auxiliary equipment, boiler auxiliary equipment. The products are widely used in various parameters of coal-fired thermal power units, gas-fired combined heat and power projects, as well as in the fields of oil refining, chemical industry, metallurgy, and central heating.

The company has a group of technical personnel who are specialized in valve design and development, mastering the leading valve technology at home and abroad, and has rich experience in design, manufacturing and field commissioning. The highest pressure level of the product is PN76MPa, the highest temperature is 620 ° C, and it is used in ultra-supercritical units with a maximum single-unit capacity of 1030MW.

The company currently has more than 40 invention patents and utility model patents. After many years of development, it has established a complete set of pressure pipeline component manufacturing management system that complies with the "Special Equipment Production and Filling Unit Licensing Rules" and has been issued by the State Administration of Market Supervision. TS special equipment manufacturing license A1 certificate, the approved items are electric regulating valve, pneumatic regulating valve, gate valve, globe valve, check valve, ball valve, butterfly valve, temperature reducing and reducing device. Obtained ISO9001 quality management system certification, ISO14001 & 45001 environmental and occupational health and safety system certification issued by China Quality Certification Center CQC.

The company has been rated as a national high-tech enterprise, a science and technology enterprise in Zhejiang Province, an AAA unit in Zhejiang Province that abides by its contract, and is a AAA unit in Zhejiang Province. Member of China Petrochemical Thermal Engineering Association; has now become a qualified supplier of PetroChina, Sinopec, CNOOC, China Shenhua, China Nuclear Group, Huaneng, Huadian, Datang, China Power Investment Corporation, Zhejiang Energy Group.

Combining market characteristics, the company strictly follows the quality management system in all aspects of technological innovation, product selection, bidding, contract signing, product design, process manufacturing, inspection and testing, supply and installation, commissioning, after-sales service, and customer return visits. program.

DC2442系列一体式多喷嘴调节阀

Integrated multi nozzle control valve

◆主要特点 Main features

阀体部分 Body part

尺 寸：减温水侧：3/4" 至3" (DN20~80)
蒸汽管道：3", 4" 或6" , (DN80~DN150)
取决于选择流量系数CV

连接方式：ANSI 、 GB/T12224法兰
ANSI B16.25、GB/T12224对焊
*按客户要求

压力等级：减温水：ANSI 150至2500 (PN16~420)
蒸汽：ANSI 150至2500 (PN16~420)
*如需更高压力等级可特殊设计

材 料：锻制碳钢/CrMo合金钢

Size: Desuperheating water side: 3 / 4 " to 3" (dn20~80)
Steam pipe: 3", 4" or 6", (DN80 ~ DN150)
Depends on the selected flow coefficient Cv

Connection mode: ANSI, GB/t12224 flange
ANSI B16.25, GB/t12224 butt welding
*According to customer requirements

Pressure rating: Desuperheating water: ANSI 150 to 2500 (PN16 to 420)
Steam: ANSI 150 to 2500 (PN16 to 420)
*Special design for higher pressure rating

Material Science: Forged carbon steel / CrMo alloy steel

阀芯部分 Valve element part

由活塞（11）在喷嘴座中滑动进行流量控制，由阀芯（5）和阀座（6）提供密封
The flow control is performed by the piston (11) sliding in the nozzle seat, and the sealing is provided by the valve core (5) and the valve seat (6)

尺 寸：根据蒸汽连接法兰尺寸及喷嘴布置决定（尺寸范围见CV表）

可调范围：取决于最大选取CV，任何喷嘴可调比都不低于30:1

导 向：活塞由喷嘴座提供导向

阀 座：夹于上下阀体之间，便于拆装

泄漏等级：优于V IEC 60534-4或GB/T4213

Size: According to the size of steam connection flange and nozzle layout (ruler See CV table for inch range)

Adjustable range: Any nozzle can be adjusted depending on the maximum selected CV No less than 30:1

Guide: The piston is guided by the nozzle seat

Valve seat: Clamped between the upper and lower valve bodies, convenient for disassembly and assembly

Leakage level: Better than V IEC 60534-4 or GB/t4213



东辰阀门DC2442系列一体式多喷嘴调节阀具有最佳的雾化性能和最大范围工况的使用范围。由活塞滑动控制的喷嘴在最小流量条件下也能提供良好的喷雾化效果。同时为了对蒸汽温度进行精确控制以及极端工况的正常使用(例如：蒸汽流速或水蒸汽压差很低时)，DC2442系列可以提供多种不同尺寸的喷嘴以供使用。

减温水调节阀和喷嘴一体式的设计使整体尺寸减小，而且操作可靠便捷。上下阀体分离设计可以使减温水和喷雾的方向不同随意调整，而且便于阀座的更换。

Dongchen valve dc2442 series integrated multi nozzle control valve has the best atomization performance and the largest range of operating conditions. The nozzle controlled by piston sliding can also provide good spray atomization effect under the condition of minimum flow. At the same time, in order to accurately control the steam temperature and normal use of extreme conditions (for example, when the steam flow rate or water steam pressure difference is very low), dc2442 series can provide a variety of nozzles with different sizes for use.

The integral design of desuperheating water regulating valve and nozzle reduces the overall size, and the operation is reliable and convenient. The separation design of the upper and lower valves can make the direction of the temperature reducing water and spray different and adjust at will, and is convenient for the replacement of the valve seat.

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◆表1 Table1

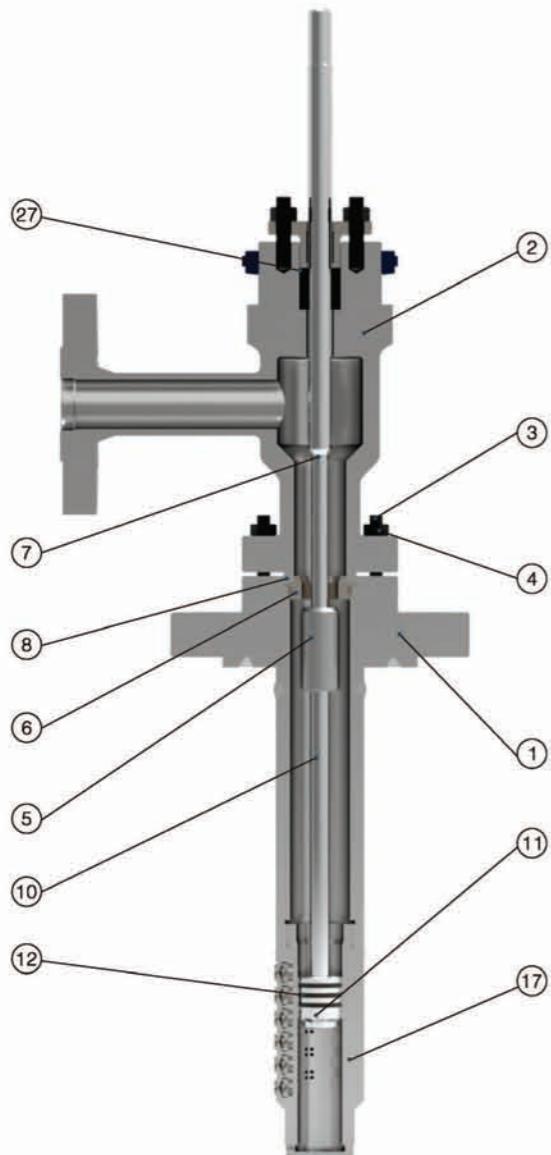
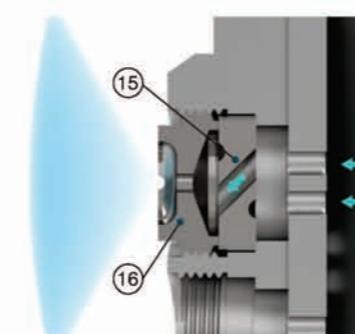


图1 本体部结构图
Fig. 1 Structure of main body



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◆表2 一体式多喷嘴调节阀标准材质组合

Table2 Standard material combination of integrated multi nozzle regulating valve

温度范围 Temperature range		A	D	V	G
序号 No.	部件名称 Part name	ASME – ASTM			
1	下阀体 Lower valve body	20 / A105	15CrMo/12Cr1MoV /A182 F11/F22	A182 F91	A182 F316 / SA 479 316
2	上阀体 Upper valve body	20 / A105	15CrMo/12Cr1MoV /A182 F11/F22	A182 F91	A182 F316 / SA 479 316
3	双头螺柱 Stud	35	35CrMo/25Cr2Mo1V	GH4145	A 193 B8M Cl.1
4	螺母 Nut	25	30CrMo/35CrMo	25Cr2Mo1V	A194 Gr.8
5	阀芯 Plug	17-4PH	A479 XM-19		A 479 316 + 渗氮 Nitriding
6	阀座 Seat	A 479 F6NM + STL6			A 479 F6NM + STL6
7	上阀杆 Upper Stem	17-4PH	A 479 XM-19		
8	金属缠绕垫 Spiral Gasket	柔性石墨+S30408 Flexible graphite + s30408			
10	下阀杆 Lower Stem	17-4PH	A 479 XM-19		
11	活塞 Piston	17-4PH	A 479 XM-19		
12	密封环 Seal ring	A182 F6NM			
15	喷嘴孔板 Nozzle orifice plate	A182 F6NM+渗氮Nitriding			
16	喷嘴 Nozzle	A 479 316+渗氮Nitriding			
17	喷嘴座 Nozzle holder	柔性石墨 Flexible graphite			

◆表3 喷嘴组件 Table3 Nozzles as

序号 No.	部件名称 Part name	A	D	V	G
17	喷嘴座 Nozzle seat	A182 F6NM+渗氮Nitriding			A 479 316+渗氮Nitriding
15	喷嘴孔板 Nozzle orifice	A182 F6NM			
16	喷头 Nozzle	A182 F6NM+渗氮Nitriding			A 479 316+渗氮Nitriding



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◆表4一体式多喷嘴调节阀CV-行程对照表

Table4 CV stroke comparison table of integrated multi nozzle control valve

水进口 Water inlet DN	蒸汽出口 Steam outlet DN	执行机构 类型 Actuator type	行程 Trip mm	喷嘴 数量 Injector number	行程% Trip %	
					5	100
1"-1 1/2"	3"	1-X280 D39 1-X280 D46	45	7	0.01 0.07	
					0.01 0.11	
					0.01 0.16	
					0.01 0.24	
					0.01 0.35	
					0.01 0.60	
					0.01 0.80	
					0.01 1.0	
					0.14 1.8	
					0.01 0.10	
1 1/2"-2"	6"	1-X280 D46	60	10	0.01 0.16	
					0.01 0.22	
					0.01 0.34	
					0.01 0.50	
					0.01 0.77	
					0.01 1.1	
					0.01 1.7	
					0.14 2.6	
					0.01 0.16	
					0.01 0.24	
1 1/2"-2"	4"	1-X250 D46	100	16	0.01 0.36	
					0.01 0.54	
					0.01 0.81	
					0.01 1.2	
					0.01 1.8	
					0.01 2.7	
					0.14 4.2	
					0.01 0.16	
					0.01 0.24	
					0.01 0.36	
1 1/2"-2"	76	1-X280 D46 1-X280 D63	76	16	0.01 0.54	
					0.01 0.80	
					0.01 1.2	
					0.01 1.8	
					0.01 2.7	
					0.14 4.2	
					0.08 2.0	
					0.08 2.4	
					0.08 2.7	
					0.08 3.1	
1 1/2"-2"	4"	1-X280 D46 1-X280 D63	100	10	0.08 3.6	
					0.08 3.9	
					0.08 4.2	
					0.14 4.7	
					0.14 5.2	
					0.32 5.9	
					0.01 0.22	
					0.01 0.33	
					0.01 0.49	
					0.01 0.74	
1 1/2"-2"	2"-3"	1-X250 D63	200	10	0.01 1.1	
					0.01 1.7	
					0.01 2.5	
					0.01 3.7	
					0.01 5.6	
					0.14 8.4	
					0.14 7.7	
					0.14 8.9	
					0.14 10.2	
					0.22 11.7	
1 1/2"-2"	6"	1-X280 D63	120	40	0.44 13.6	
					0.01 0.41	
					0.01 0.61	
					0.01 0.92	
					0.01 1.4	
					0.01 2.1	
					0.01 3.1	
					0.01 4.7	
					0.01 7.0	
					0.14 10.4	
1 1/2"-2"	2"-3"	1-X250 D63	150	21	0.14 9.4	
					0.14 10.3	
					0.14 11.5	
					0.14 12.6	
					0.14 13.8	
					0.22 15.2	
					0.44 16.8	
					0.01 0.55	
					0.01 0.82	
					0.01 1.2	
1 1/2"-2"	6"	1-X280 D63	200	54	0.01 1.9	
					0.01 2.8	
					0.01 4.2	
					0.01 6.3	
					0.01 9.4	
					0.14 14.1	
					0.14 13.3	
					0.14 15.3	
					0.22 17.5	
					0.22 20.3	
1 1/2"-2"	4"	1-X250 D63	150	29	0.44 23.2	
					0.22 20.3	
					0.44 23.2	
					0.22 20.3	
					0.44 23.2	
					0.22 20.3	

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◆表6 整体尺寸(mm)与质量(kg) Table6 Overall dimension (mm) and mass (kg)

水进口 Water inlet DN	蒸汽 出口 Steam outlet DN	减温水进口 压力等级(1) Desuperheating water inletPressure rating (1)	执行机构 类型 Actuator type	行程 Trip mm	最小蒸汽 管道尺寸 Minimum steam pipe size	A		B	C	D(3)	E	F	G	J	K		L(5) inches
						RF	RJ								RF	RJ	
1"- 1 1/2"	ANSI 150-1500 UNI/DIN PN 10-250	1-X280 D39	45	6"(4)	290	574	395	200	290	644	378	315	465	70	15	22	14"
		1-X280 D46				60	8"				282	787 767					16"
		1-X250 D46				100	10"				290	827 1020					16"
		1-X280 D39				45	6"(4)				350	574	395	465	70	15	22
		1-X280 D46	60	8"	250	350	644				394	318	14"				
		1-X280 D46				342	787 767				436	335	16"				
		1-X250 D46				100	10"				350	827 1020	16"				
	ANSI 2500 UNI/DIN PN 320-400	1-X280 D39	45	6"(4)	215	574	395	222	215	644	378	315	14"				
		1-X280 D46				60	8"				394	318	14"				
		1-X250 D46				100	10"				436	335	16"				

水进口 Water inlet DN	蒸汽 出口 Steam outlet DN	减温水进口 压力等级(1) Desuperheating water inletPressure rating (1)	执行机构 类型 Actuator type	行程 Trip mm	最小蒸汽 管道尺寸 Minimum steam pipe size	A		B	C	D(3)	E	F	G	J	K		L(5) inches
						1 1/2"	2"								RF	RJ	
1 1/2"- 2"	ANSI 150-1500 UNI/DIN PN 10-250	1-X280 D46	76	12"	360	735	465	250	265	796	548	447	95	15	22	20	24"
		1-X280 D63				787	465				920	572	459				24"
		1-X280 D46				920	640				827	465	24"				
		1-X280 D63				970	592				970	470	24"				
		1-X250 D46	120	14"	373	992	640	277	272	1218	572	459	95	15	22	20	26"
		1-X280 D63				992	572				992	470					26"
		1-X250 D63				992	470				992	465					26"
	ANSI 900-1500 UNI/DIN PN 160-250	1-X250 D63	100	12"	410	735	465	290	265	796	548	447	95	15	22	20	24"
		1-X280 D46				787	465				920	572	459				24"
		1-X280 D63				920	640				827	465	24"				
		1-X250 D46				920	465				920	465	24"				
	ANSI 2500 UNI/DIN 320-400	1-X250 D63	120	14"	423	992	1218	277	270	1218	592	470	95	15	22	20	26"
		1-X280 D46				992	640				992	470					26"
		1-X280 D63				992	470				992	465					26"
		1-X250 D46				992	465				992	465					26"

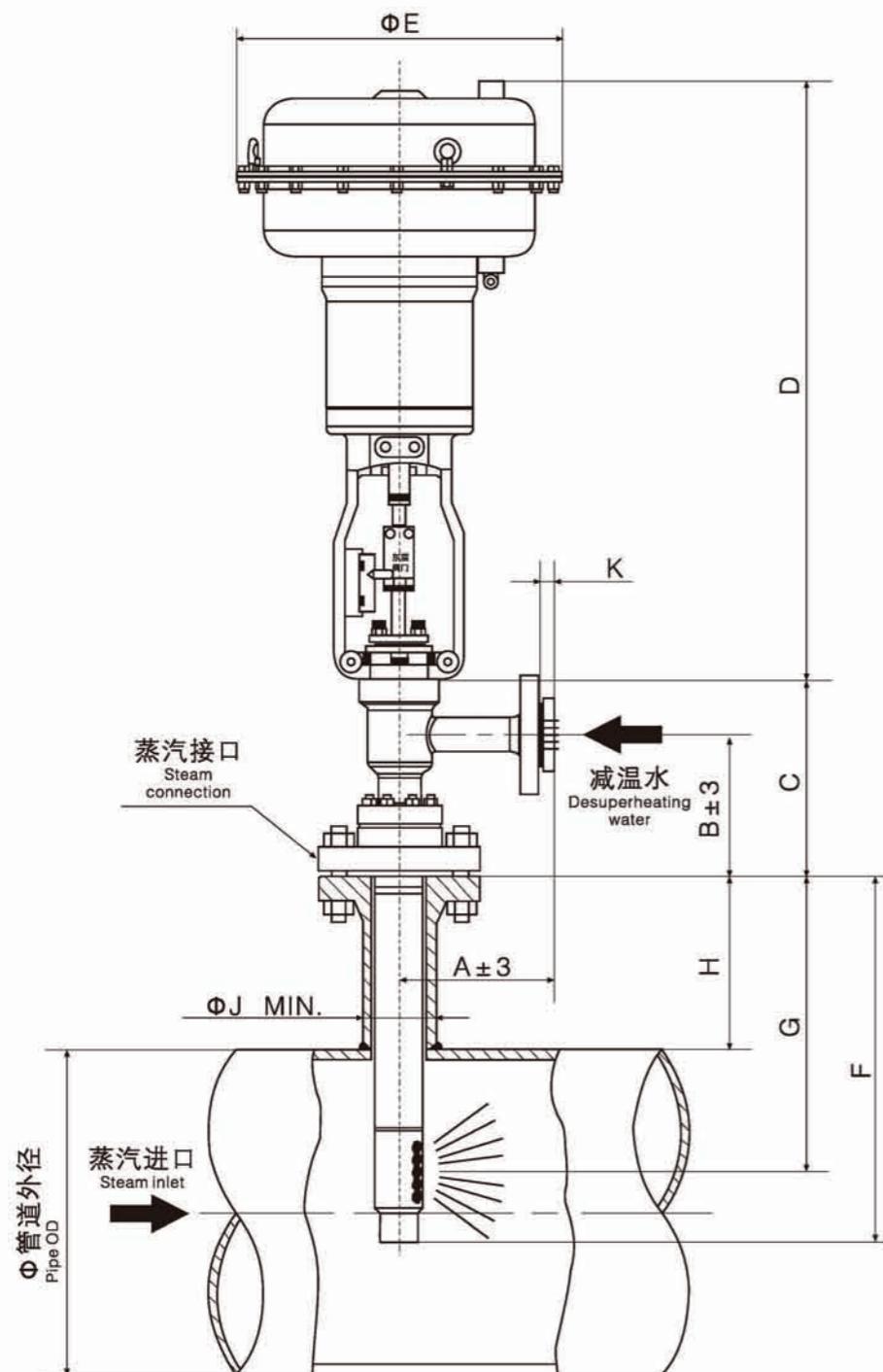
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水进口 Water inlet DN	蒸汽 出口 Steam outlet DN
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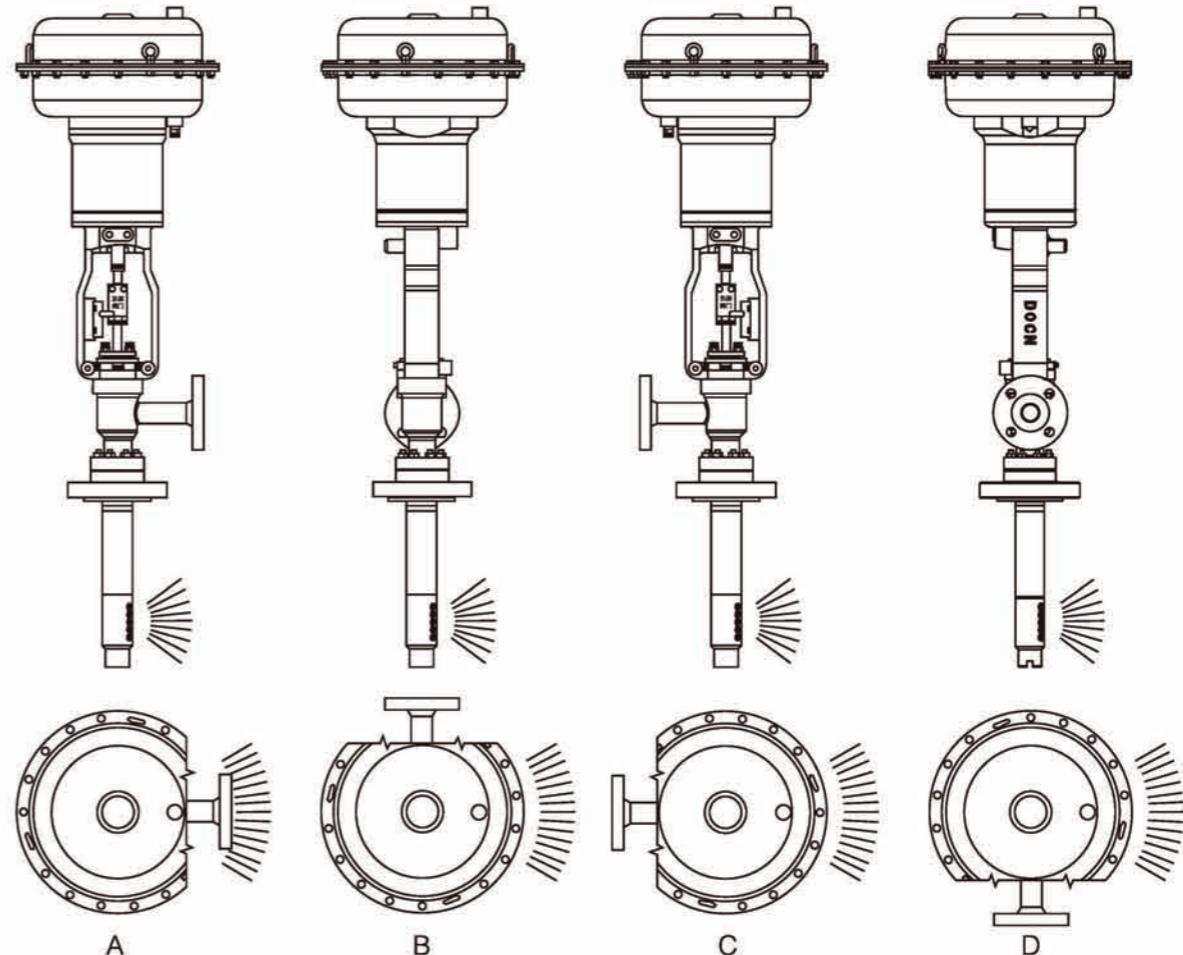
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◆ 可安装位置 Mounting position



◆表7 Table7

		减温水接口压力等级 Desuperheating water interface pressure class		
		ANSI 150-600 PN 16-100	ANSI 900-1500 PN 160-250	ANSI 2500 PN 320-420
蒸汽接口 压力等级 Steam interface pressure class	3"	ANSI 150-600 PN 16-100	ANSI 150-1500 PN 16-250	ANSI 1500-2500 PN 250-420
	4"	ANSI 150-600 PN 16-100	ANSI 600-1500 PN 250	ANSI 2500 PN 320-420
	6"	ANSI 150-600 PN 16-100	ANSI 300-1500 PN 25-250	ANSI 600-2500 PN 100-420

◆ 特殊规格 Special specifications

- 电动或液压执行机构
- 特殊材质
- 专业工具
- Electric or hydraulic actuator
- Special material
- Professional tools

◆ 推荐性备品备件 Recommended spare parts

- | | |
|------------------|--|
| 推荐性安装及试运行用备品备件 | Recommended spare parts for installation and commissioning |
| - 阀体垫片 | - Body gasket |
| - 阀杆填料 | - Stem packing |
| - 密封环(A182 F6NM) | - Seal ring (A182 F6NM) |