煤化工阀门综合样本

Product description Coal chemical valve integrated sample

AEROSPACE PETROCHEMICAL

北京航天石化技术装备工程公司

BEIJING AEROSPACE PETROCHEMICAL TECHNOLOGY AND EQUIPMENT ENGINEERING CORPORATION

公司简介 Company Introduction

北京航天石化技术装备工程公司利用火箭发动机研制的技术和积累的经验，已开发了多种性能优良的特种阀门，目前已形成黑水调节阀、自控回流阀、偏心旋转阀、套筒调节阀、液压角阀、呼吸阀、熔体阀等主导产品，为国内外石化、冶金、煤化工等行业提供了许多产品，在用户中享有较高的声誉。

According to the technological and experiential advantages of liquid rocket engines (LRES), Beijing Aerospace Petrochemical Technology and Equipment Engineering Corporation has devised a number of special valves with high-tech and good-quality. The institute supplies key devices and equipments, such as decoking/ethylene gas valves, recirculation control valves, breather valves, survivor control valves and polymer valves to various industries, including: oil refinery, petrochemical, chemical and environment-protection industries.

我单位为军工企业，拥有先进的机加工设备，可确保调节阀各零件的加工精度，从而保证阀门的高质量；具备完善的大型流体试验室，可以对调节阀的流量、压力等性能进行精确的测试，完成调节阀出厂时进行的各项试验，确保了出厂产品的质量。同时我们还建立了军民结合、面向市场、运行高效的经营管理体系。ISO9001、ISO14001、ISO18001体系有效运行，连续被评为“守信企业”和“AAA信用等级”。

The institute is a defense industry enterprise, which owns the advanced machine tooling facilities to ensure the good-quality of valves. It can accurately test the flow and pressure of the control valve with the complete large-scale flow laboratory before they leave factory. The institute has established an efficient management system which covers military and industrial business and meets the requirements of market. The ISO9001, ISO14001, ISO18001 systems operate effectively. We also gained many national honors and certifications, such as “Promise Keeping Enterprise” and “AAA Credit Grade Certificate”.

依托“国家特种泵阀工程技术研究中心”的创新平台，北京航天石化技术装备工程公司着力推动特种阀的技术创新和产业化发展。“航天石化”已成为航天高技术应用于国民经济重要战略领域的知名品牌和旗帜。

Based on the innovation platform of “National Engineering Research Center for Special Pumps and Valves”, we focus on the technological innovation and industrialization of special valves. Beijing Aerospace Petrochemical Technology and Equipment Engineering Corporation has become a famous brand in petrochemical field and a banner of applying advanced aerospace technology to the key industrial areas of national economy.

黑水调节阀
Survivor Control Valves

煤化工气化工段
Gasification and Slurry Water Disposal Section

控制气化炉和碳洗塔的液位，对黑水进行多级闪蒸，回收黑水或灰水以及热量。
Controlling liquid level of gasification furnace and carbon scrubber while proceeding multistage flash evaporation of the discharged slurry water.

黑水 灰水
slurry water

偏心旋转阀
Eccentric Rotary Control Valves

煤化工气化工段
Gasification and Slurry Water Disposal Section

中低压大流量灰水的调节与控制
Large flow application with medium or low pressure.

灰水
slurry water

套筒调节阀
Cage Guided Valves

煤化工气化工段
Gasification and Slurry Water Disposal Section

中高压大流量介质的调节与控制
Large flow application with medium or high pressure.

灰水
slurry water

液压角阀
Survivor Valves With Hydra Actuator

煤化工气化工段
Gasification and Slurry Water Disposal Section

用于煤锁斗和灰锁斗的控制。
Control coal lock and ash lock hopper.

煤气 灰水
Gas Slurry water

自控回流阀
Automatic Recirculation Control Valves

低温甲醇洗和CO变换工段
Methanol Unit & CO shift unit
给水泵循环减压Feedwater regulator
输送泵Feeding Pump
动力中心锅炉给水泵
booster feed pump

最小流量阀 ARC valve
最小流量保护
Pump minimum flow protection.

甲醇Methanol／水Water／LPG／LNG／水Water

圆盘阀
Rotating disc valve

煤气化 Coal Gasification
炼油 Oil Refining
多晶硅 Poly—silicon

锁斗罐 Scum tank
FCC催化剂输送 FCC Catalyst Transfer
反应釜 Reactor
反应釜、料仓 Reactor、Storage Bin

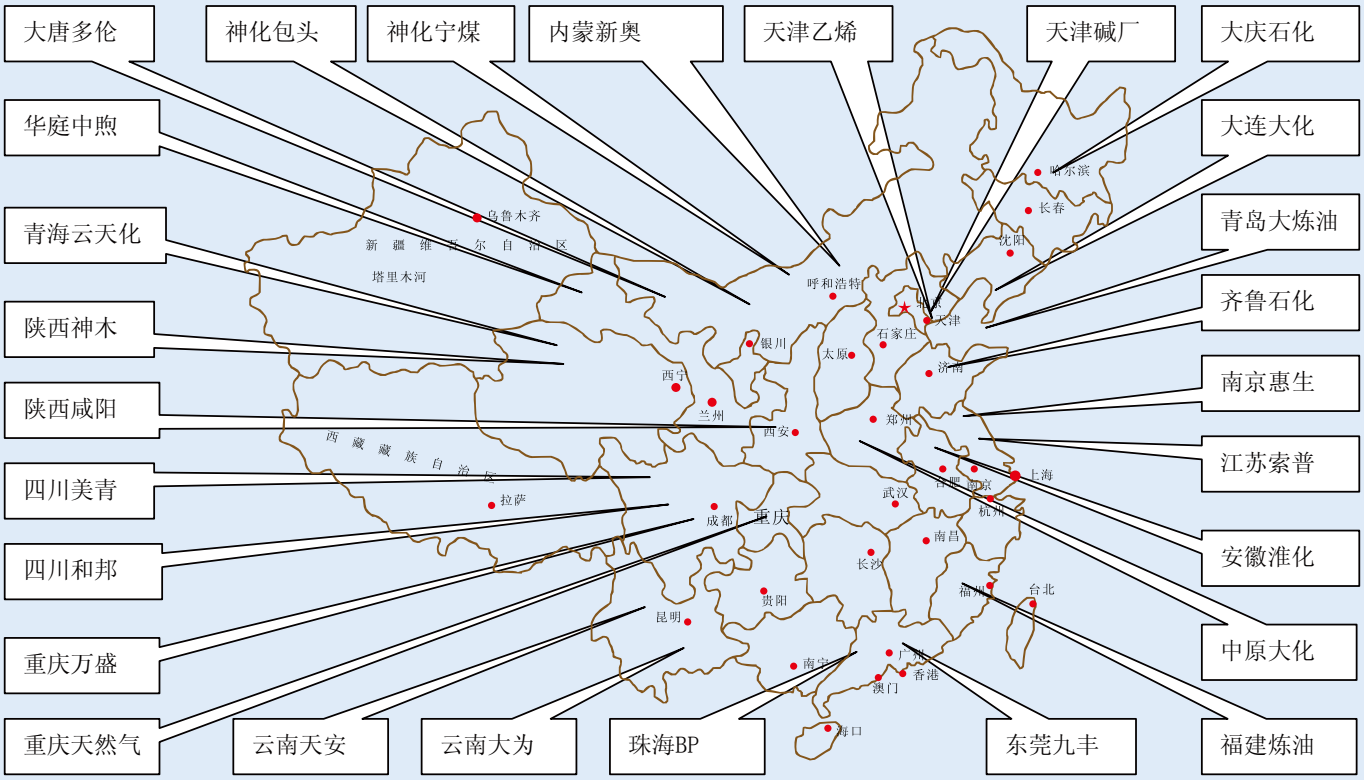
锁斗阀 Scum Valve 切断阀 Isolation Valve
进料阀Top loading valve 平衡阀 Balance valve

煤渣、飞灰和水 Cinder、 Ash、Water
硅、氧化铝催化剂Silicon、Alumina Catalyst

合作伙伴


SINOPEC
中国石油
Bayer
bp
ABB
兖矿集团
CUC
SIEMENS
BASF
The Chemical Company
wison
cnooc
DOW
KB
SEI
BLUESTAR
HNCC
SCIHC
FLUOR
MCC
yansan

产品业绩


大唐多伦
神化包头
神化宁煤
内蒙新奥
天津乙烯
天津碱厂
大庆石化
华庭中煦
大连大化
青海云天化
青岛大炼油
陕西神木
齐鲁石化
陕西咸阳
南京惠生
四川美青
江苏索普
四川和邦
安徽淮化
重庆万盛
中原大化
重庆天然气
云南天安
云南大为
珠海BP
东莞九丰
福建炼油
乌鲁木齐
新疆维吾尔自治区
塔里木河
西藏藏族自治区
拉萨
呼和浩特
银川
西宁
兰州
西安
太原
石家庄
济南
郑州
武汉
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重庆
长沙
贵阳
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哈尔滨
长春
沈阳
上海
南京
杭州
南昌
福州
台北
广州
香港
澳门
海口

No.HTV005A

黑水调节阀

Survivor Control Valves

北京航天石化技术装备工程公司

BEIJING AEROSPACE PETROCHEMICAL TECHNOLOGY AND EQUIPMENT ENGINEERING CORPORATION

用途 Application

北京航天石化技术装备工程公司设计和制造的黑水调节阀，专为德士古煤化工工艺精心打造，用于气化和渣水处理工段。主要作用是控制气化炉和碳洗塔的液位以及对排出的黑水进行多级闪蒸，以便回收灰水及热量。其工况具有高压差、强冲刷、强腐蚀、介质中含有固体颗粒的特点，因此，阀门的结构设计和材料选择都有其特殊性。

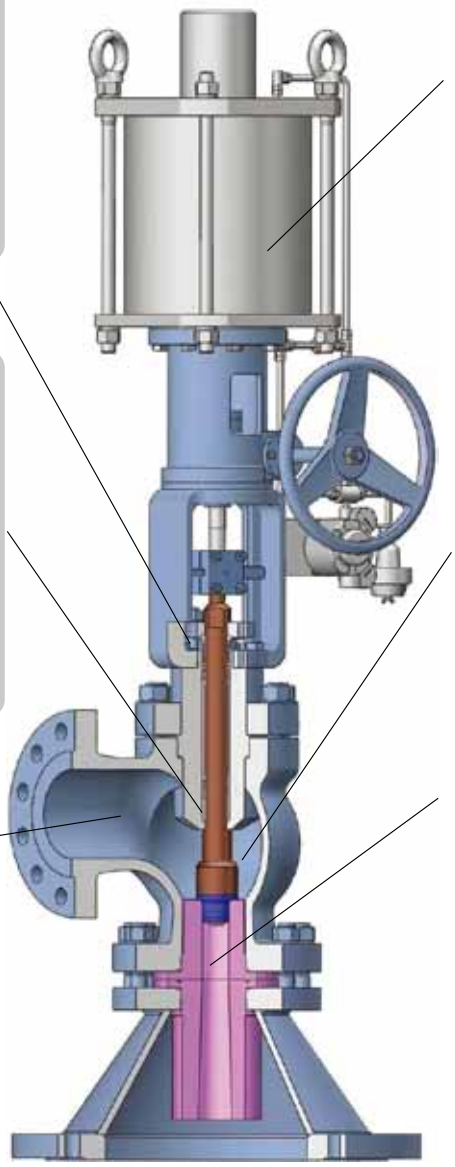
Survivor control valve developed by Beijing Aerospace Petrochemical Technology and Equipment Engineering Corporation is specifically designed for use in gasification and slurry water disposal section of the Texaco coal chemical industry techniques. The valve is capable of controlling liquid level of gasification furnace and carbon scrubber while proceeding multistage flash evaporation of the discharged slurry water, in order to recover lye and heat. It works in harshest erosive and corrosive and solid-particles-contained mediums under high psid, and thus, requires a lot in its structure design and material selection.

特点 Features and Advantage

阀门维修方便
Easy maintenance
阀门的设计充分考虑到零部件的易更换性，可以在现场方便的更换阀芯、阀杆、阀座和填料等零部件，整阀的维护十分方便。
Components such as trim, stem, seat, stuffing etc. can be replaced on site by the mature replaceable design. The maintenance of the whole valve can be very easy.

采用上下导向管结构
Guide pushing
上下导向管可以使阀杆更稳定的动作，而且下导向管不但可以刮除粘结在阀杆上附着物，有效地防止填料腔内结硅，又可抑制阀杆振动。
The stem can slip steadily due to the guide pushing. Lower guide pushing can not only scrape the cohered deposit off from the stem to effectively avoid junction silicon in stuffing cavity but also restrain the stem from vibration.

阀体为角型结构
Angle structure of valve body
流路简单、阻力小、泄漏少，适用于高压差、高粘度、含有悬浮物和颗粒状物质流体的调节，可以避免结焦、堵塞，也便于自清洗。
The valve has simple flow passage design, small resistance, low leakage rate, which is suitable for the control of fluids containing suspended and particulate substance in high differential pressure and viscosity while avoiding coking and blockage, and easy to be self cleaning.



采用弹簧返回式双作用气缸
Double-acting cylinder with fail-safe spring
不用增加储气罐即可实现故障位置的开关，而且增大了阀门的输出力，提高了稳定性以及调节精度。
Can bring into action on air failure without air tank, moreover increase export strength, stability and control performance of the valve.

流道设计流畅
Smooth flow path
阀体流道采用流线型设计，介质在阀内流动时，没有急转弯或滞流点，可最大限度地减小流阻及冲蚀。
When fluid flows in the streamlined valve path, it will encounter no sharp turn or stagnation point, which decreases flow resistance and erosion to the utmost extent.

材质选择考究
Excellent material selection
流体经过阀座喉部时，其压力降低到介质在此温度的饱和蒸汽压以下，介质被气化形成固液气三相流，闪蒸介质及固体颗粒冲蚀会对普通材料造成破坏。所以，阀头及阀座选择耐冲蚀、耐腐蚀的硬质合金碳化钨。
When fluid flows through valve seat throat, its pressure will drop to be below the fluid's saturation vapor pressure at the temporal temperature. The fluid will be vaporized into three-phase fluid with solid, liquid and gas. Flashing fluid and erosion by solid particles will damage ordinary material and thus for the material of valve head and seat, we have selected anti-erosive and anti-corrosive tungsten carbide.

主要技术参数 Valve Parameters

阀体
型　　式：单座铸造角阀
公称通径：50，80，100，125，150，200，250，300mm
公称压力：PN20，50，110，150，260
连接形式：
法 兰 式：FF，RF，RJ；
　　标准：ANSI B16.5，HG 20615，SH3406
材　　料：WCB，SS，Incoloy 825，SAF 2507
填　　料：PTFE填料，石墨填料
填料压板：螺栓压紧式

执行机构
型　　式：弹簧返回式双作用气缸
活塞直径：320，400，560mm
行　　程：15～100mm
供气压力：0.4～0.7MPa
气源接头：1/4 NPT，RC1/4
环境温度：-40～80℃
故障位置：开或关

阀内组件
阀芯形式：顶导向单座柱塞型阀芯
流量特性：等百分比（%C）和线性（LC）阀芯
材　　料：304，316，316L，630，WC

阀作用方式
作用方式：气—开式或气—关式

附件
附　　件：手轮机构（侧装），定位器，过滤减压阀，电磁阀，阀位变送器，气动继动器和保位阀等

性能
防爆等级：ExdIICT4，ExiaIICT6
防护等级：IP65
可调范围：50：1
回　　差：小于全行程的1.5%
线　　性：小于全行程的±1.5%
死　　区：小于全行程的0.6%
泄 漏 量：符合ANSI B16.104 IV级标准，小于额定CV的0.01%

Body
Type： foundry angle valve with single seat
Nominal diameter：50, 80, 100, 125, 150, 200, 250, 300mm
Nominal pressure： PN20, 50, 110, 150, 260
End connections:
Flange: FF, RF, RJ;
Standards: ANSI B16.5, HG 20615, SH3406
Materials：WCB, SS, Incoloy 825, SAF 2507
Package：PTFE, Graphite
Gland flange：bolting

Actuator
Type: double-acting cylinder with fail-safe spring
Piston diameter: 320, 400, 560mm
Travel：15~100mm
Air supply press: 0.4~0.7MPa
Inlet connection: 1/4 NPT, RC1/4
Ambient temperature：-40~80℃
Fail position：fail to open or fail to close

Valve internals
Trim type：piston trim with top guiding and single seat
Flow characteristics：equal percentage and Linear trim
Material: 304, 316, 316L, 630, WC

Valve acting of signal increase
Acting of signal increase: air to open or air to close

Accessories
Accessories: handwheel (side),positioner,air regulator,solenoid valve,valve position transmitter,booster relay,transfer valve

Performance
Explosion proof class: ExdIICT4, ExiaIICT6
Protection class：IP65
Rangeability：50：1
Backlash:less than 1.5% of travel
Linear: less than ±1.5% of travel
Dead zone: less than 0.6% of travel
Leakage:measure up to ANSI B16.104 IV, less than 0.01% of rated CV

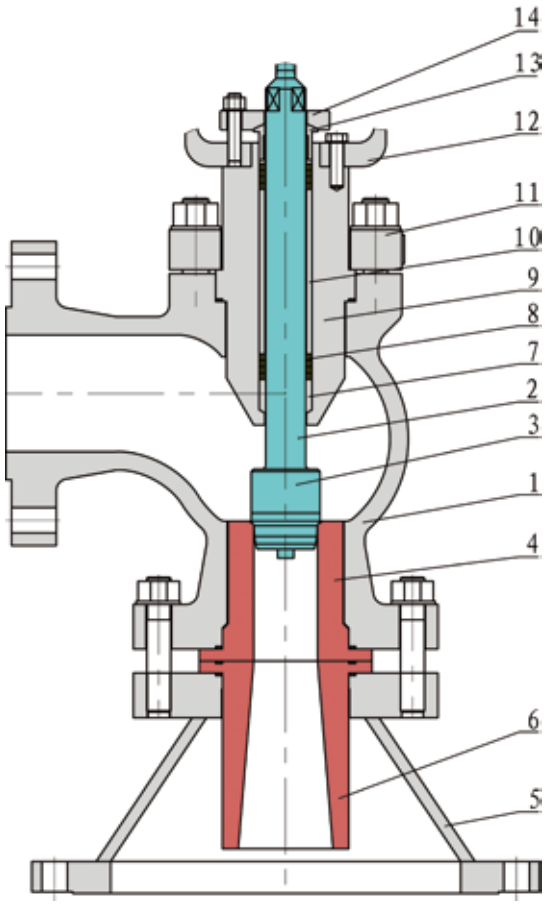
CV值和行程 CV and travel

公称通径(mm) Nominal diameter	50		80				100				125			
阀座直径(mm) Seat diameter	25	30	25	30	40	50	30	40	50	65	40	50	65	80
额定C_V值 Rated C_V	17	25	17	25	45	70	25	45	70	118	45	70	118	178
额定行程(mm) Rated travel	15	25	15	25	38	38	25	38	38	50	38	38	50	50

公称通径(mm) Nominal diameter	150					200					250/300				
阀座直径(mm) Seat diameter	50	65	80	100	120	65	80	100	120	150	80	100	120	150	200
额定C_V值 Rated C_V	70	118	178	278	401	118	178	278	401	626	178	278	401	626	1113
额定行程(mm) Rated travel	38	50	50	75	75	50	50	75	75	90	50	75	75	90	90

结构与材质 Structure and Materials

序号 Item No.	名称 Part	材质 Material
1	阀体 Body	WCB,CF3,CF3M,CF8,CF8M, Incoloy 825, SAF 2507
2	阀杆 Stem	316L+硬质合金 316L+tungsten carbide
3	阀头 Trim	WC
4	阀座组件 Seat	316L+WC
5	过渡段 Transition Section	304
6	扩散段 Diffuse Section	316L+WC
7	下导向管 Lower Guide Pushing	630
8	填料组件 Packing	石墨、PTFE graphite, PTFE
9	填料函 Stuffing Box	316L
10	填料隔离套管 Lantern Ring	316L
11	阀盖法兰 Stuffing Box Flange	304
12	气缸支架 Cylinder Bracket	WCB
13	上导向管组件 Upper Guide Pushing	316L+石墨 316L+graphite
14	填料压板 Gland Flange	304



阀门型号 Valve Code

型号 Type

代号 Code	型号 Type
SCV	黑水调节阀 Survivor Control Valve

口径 Size

代号 Code	口径 Size	
08	2″	50
10	3″	80
11	4″	100
12	5″	125
13	6″	150
15	8″	200
16	10″	250
17	12″	300

公称压力 Nominal Pressure

代号 Code	公称压力 Nominal Pressure	
03	PN 20	150Lb
05	PN 50	300Lb
06	PN 100	600Lb
07	PN 150	900Lb
08	PN 260	1500Lb

阀体材质 Body Material

代号 Code	材质 Material	
C	碳钢	Carbon Steel
S	不锈钢	Stainless Steel
I	Incoloy 825	
D	SAF 2507	

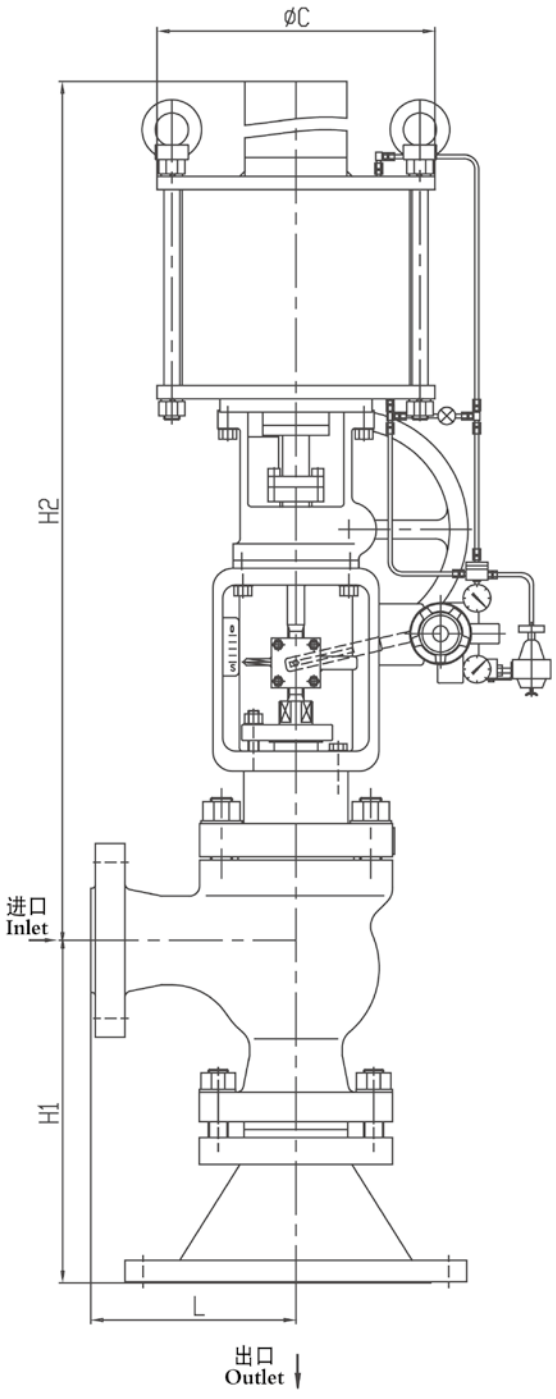
例 For Example SCV — 13 07 I 记为:SCV—1307I

表示:角式调节阀,口径为 6″,压力等级为 900Lb,阀体材质为 Incoloy825。

Means:SCV-13071 an angle control valve with 6″ flanges and ANSI 900Lb, INCONLOY825 body.

外型尺寸 Dimensions of Valves

规格(入口×出口) Body size (Inlet×Outlet)	磅级 Class	L	H1	H2	C	执行机构 Actuator	重量 Weight
inch	Lb	mm	mm	mm	mm		kg
2"×3"	150	180	300	1250	350	320×S-D1	260
	300						275
	600						290
	900	190	355	1320			320
	1500						350
3"×6"	150	185	350	1350	350	320×S-D1	280
	300						295
	600						315
	900	230	390	1365			355
	1500						390
4"×8"	150	225	490	1350	350	320×S-D1	300
	300						325
	600						370
	900	310	560	1700	470	400×S-D1	500
	1500						580
5"×12"	150	300	480	1400	350	320×S-D1	450
	300						500
	600						550
	900	330	600	1800	470	400×S-D1	710
	1500						780
6"×16"	150	300	590	1450	350	320×S-D1	510
	300	320	600				565
	600						720
	900	350	625	1900	470	400×S-D1	800
	1500						900
8"×20"	150	330	720	1510	350	320×S-D1	690
	300						770
	600	350	730				950
	900	417	750	2000	640	560×S-D1	1100
	1500						1200
10"×24"	150	376	810	1600	350	320×S-D1	750
	300						800
	600	390	830				1000
	900	430	900	2050	640	560×S-D1	1150
	1500						1250
12"×24"	150	400	850	1650	350	320×S-D1	890
	300						1050
	600	430	875	2100	640	560×S-D1	1250
	900	460	900	2350	640	560×S-D1	1500



备注 Remark：

1.表中 H2 栏尺寸是调节阀带手轮机构的高度，若不带手轮机构，则要减去手轮机构的尺寸；

The H2 in the list is height of valve with handwheel. The height of valve without handwheel must subtract the height of handwheel.

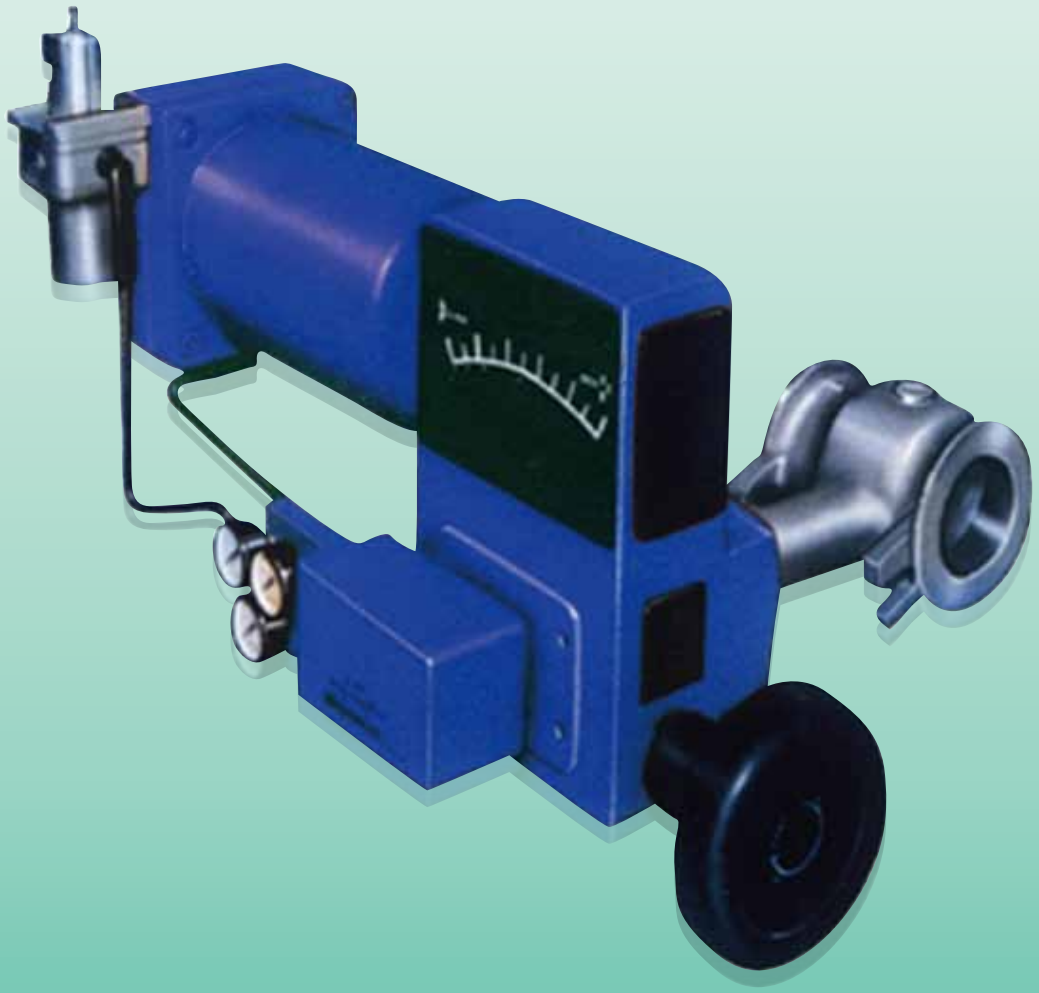
2.出口法兰不限于表中所列的尺寸，可根据用户需求定制。

The outlet flange is based on our supply records. We can manufacture different dimensions on request.

NO.HTV013A

偏心旋转阀

Eccentric Rotary Control Valves



北京航天石化技术装备工程公司

BEIJING AEROSPACE PETROCHEMICAL TECHNOLOGY AND EQUIPMENT ENGINEERING CORPORATION

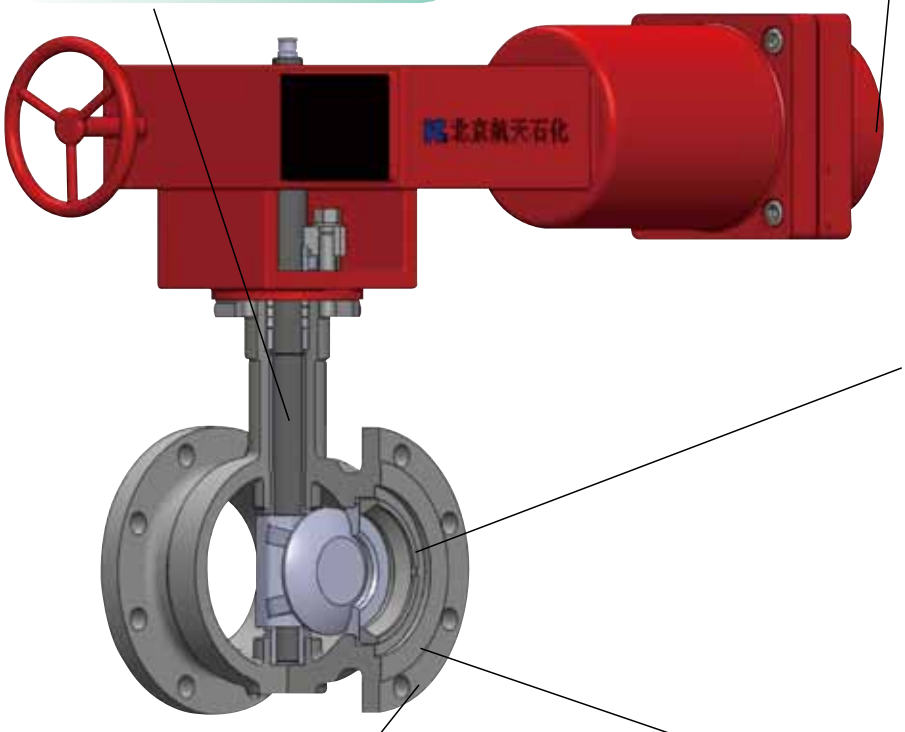
用途 Application

北京航天石化技术装备工程公司设计和制造的偏心旋转阀用途非常广泛，主要适用工况为中低压大流量介质的调节与控制。偏心旋转阀有多种规格可选，既可用于普通工况，也可用于强冲刷、强腐蚀工况（例如煤化工行业）。

Eccentric rotating valve designed by BAPC has broad applicability. For large flow application with medium or low pressure, it can offer modulation or on–off control. Different options of valve design are available for normal applications and severe applications, such as coal chemical industry, with strong scale and strong erosion.

结构特点 Features and Advantages

特殊的长阀颈设计，使得阀门的适用温度范围更广。
With specially designed long bonnet, eccentric rotating valve is applicable for services with wide temperature range.



弹簧返回式滚动膜片气缸配摇臂的执行机构
Actuator consisting of spring–diaphragm cylinder with rolling diaphragm and force–transfer lever
滚动膜片气缸能提供顺畅的线性动作，摇臂式的传力结构能极大地减小所需要的气缸力。
Spring–diaphragm cylinder with rolling diaphragm can offer smooth linear control, and the lever can reduce the force needed to actuate the valve a lot.

100：1的可调比，扩大了调节范围，特别是在低开度时有很好的调节性能。
100：1 Cv Ratio improves the valve's control range, and it performs well especially at low openings.

同一个阀门，只需更换阀座，即可改变阀门的Cv。相比其他阀门可省去大量费用。
For each eccentric rotating valve, Cv change only requires a simple change of the seat ring. Compared with other valves, it costs much less with eccentric rotating valve.

直通阀结构，流道流畅且流通能力大。
Designed in globe valve type, it has smooth flow path and large flow capacity.

结构与材质 Structures and Materials

零件 Part	阀体 Body	阀杆 Stem	阀头 Plug	阀座 Seat Ring	上导套 Upper Guide Bushing	下导套 Lower Guide Bushing
材质 Material	WCB,CF3,CF3M, CF8,CF8M,Incoloy 825, SAF 2507	316L ,630	316L,316L+WC ,316L+STL	316L,316+WC ,316L+STL	316L,440C	316L,440C

阀门型号 Valves Code

型号 Type

代号 Code	阀门 Valve
ERV	偏心旋转阀 Eccentric Rotary Control Valves

口径 Size

代号 Code	口径 Size
06	1"
07	1—1/2"
08	2"
10	3"
11	4"
13	6"
15	8"
16	10"
17	12"
18	14"

磅级 Class

代号 Code	磅级 Class	公称压力 PN
03	150	PN20
05	300	PN50
06	600	PN100

阀体材质 Body Material

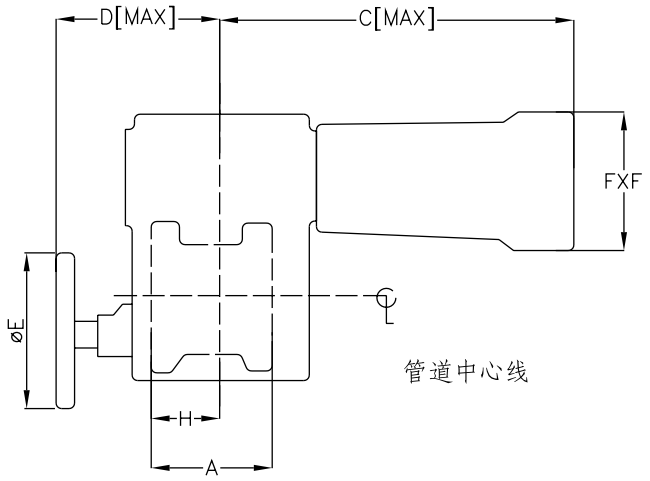
代号 Code	材质 Material
C	碳钢 Carbon Steel
S	不锈钢 Stainless Steel
I	Incoloy 825
D	SAF 2507

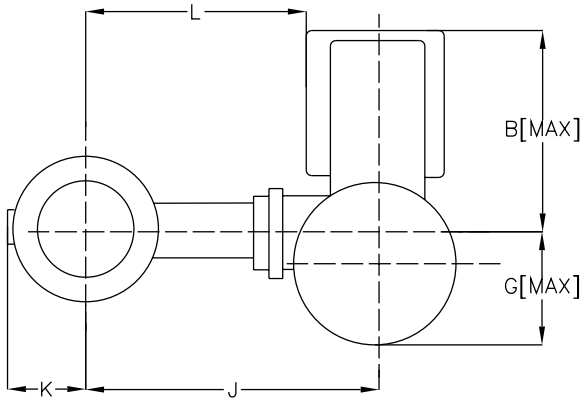
例For Example	ERV	—	13	06	I	记为：ERV—1306 I

表示：偏心旋转阀，口径为6"，压力等级为600Lb，阀体材质为Incoloy825.
Expression:ERV 1306 I is a 600Lb class eccentric Rotary valve sizing 6",flanged or flangeless,with a body of Incoloy 825.

外形尺寸 Dimensions of Valves

1.带弹簧复位的滚动膜片式执行机构的ERV型产品
1.ERV with actuator with spring—diaphragm cylinder with rolling diaphragm





口径（英寸）	A	B	C	D	E	F	G	H		J	K	L	M		
								对夹式	法兰式				压力等级 ANSI Class		
													150	300	600
1	102	173	297	208	163	140	114	67	51	206	38	137	165	229	229
1.5	114	175	300	211	163	140	117	62	57	234	51	165	165	254	254
2	124	175	300	211	163	140	117	62	62	239	66	170	267	267	267
3	165	262	434	229	163	175	122	97	88.5	333	84	244	300	343	356
4	194	264	437	229	163	175	122	106.5	106	356	109	267	330	356	419
6	229	330	533	302	254	218	213	127	127	432	147	323	394	406	470
8	243	333	536	305	254	218	216	147.5	—	470	203	361	394	470	533
10	297	335	538	310	254	218	221	167	—	574	251	465	508	521	622
12	338	338	541	312	254	218	224	184	—	610	277	500	508	572	658

注：M是对夹式阀装于管道时为双头螺柱所留的空间尺寸。
Note：M is the space dimension reserved for double ends bolts in valve installation.

No.HTV014A

套筒调节阀

Cage Guided Valves

北京航天石化技术装备工程公司

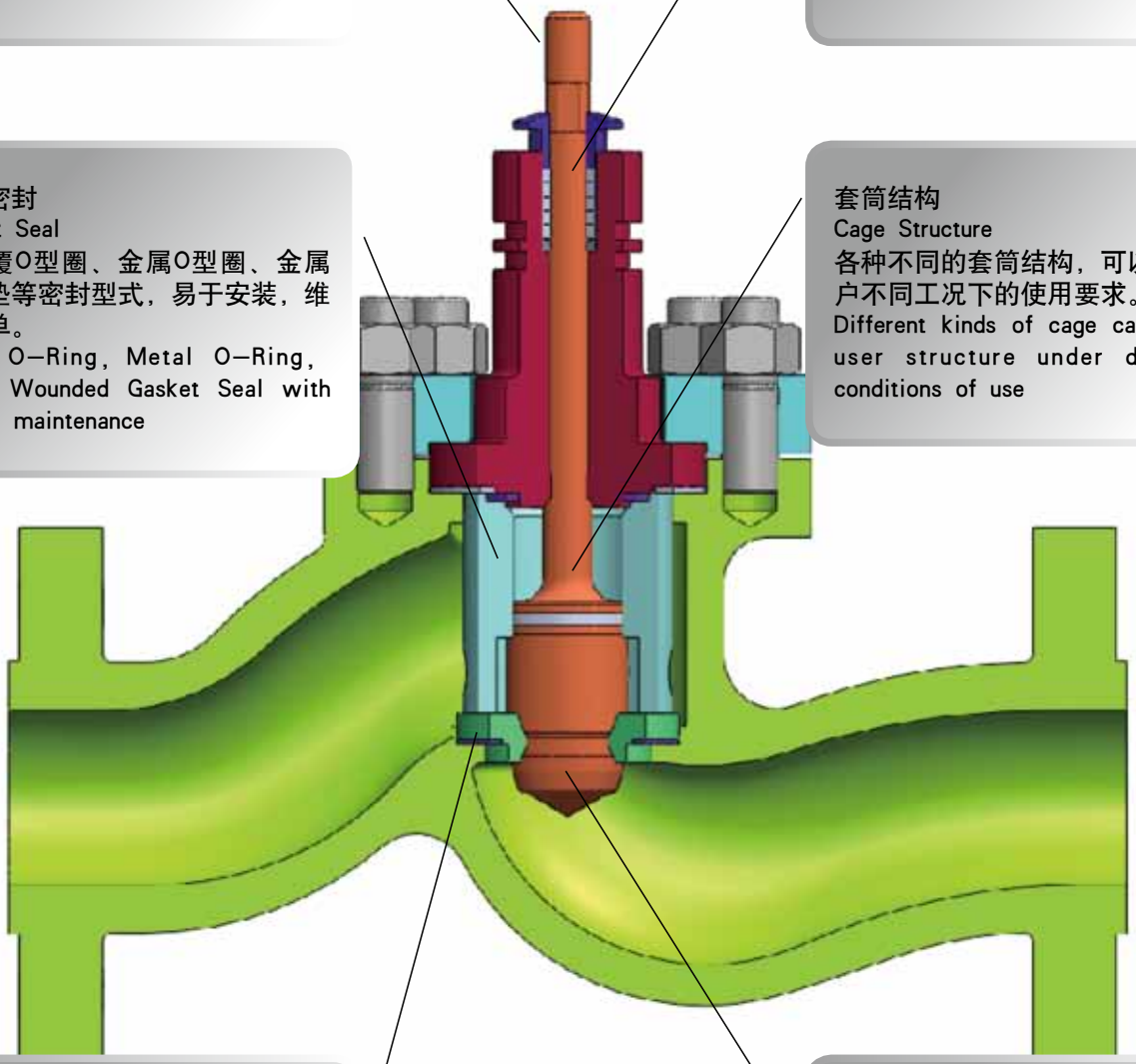
BEIJING AEROSPACE PETROCHEMICAL TECHNOLOGY AND EQUIPMENT ENGINEERING CORPORATION

结构特点 Features and Advantages

执行机构
Actuation
气动、液动、电动执行机构，选择多样，满足用户不同需求。
Air Cylinder, Hydraulic Cylinder, Electro—mechanical, multiple choice for the customer

阀杆密封
Stem Packing
复合PTFE、柔性石墨填料，确保无外漏
Smart choice between Multi—PTFE, Graphite packing design for leak free service

阀盖密封
Bonnet Seal
全包覆O型圈、金属O型圈、金属缠绕垫等密封型式，易于安装，维护简单。
PTFE O—Ring, Metal O—Ring, Metal Wounded Gasket Seal with simple maintenance



套筒结构
Cage Structure
各种不同的套筒结构，可以满足用户不同工况下的使用要求。
Different kinds of cage can satisfy user structure under different conditions of use

阀座密封
Seat Seal
金属锥面硬密封、加压密封、软密封阀座、密封等级可达VI级。
Hard Seat, Pressurized Seat or Soft Seat to ensure tight shutoff—repeatable class VI or better

阀芯结构
Valve Core Structure
阀芯为实心一体结构，可承受大推力，不会弯曲变形。
Valve Core bits of solid and can withstand a big thrust structure no distortion

结构与材质 Structures and Materials

阀座直径(mm) / 口径 DN		32	40	50	65	80	100	120	150	200
DN40	24	32	–	–	–	–	–	–	–	–
DN50	24	32	54	–	–	–	–	–	–	–
DN80	–	32	54	81	–	–	–	–	–	–
DN100	–	–	–	81	126	–	–	–	–	–
DN150	–	–	–	–	126	184	272	–	–	–
DN200	–	–	–	–	–	184	272	538	–	–
DN250	–	–	–	–	–	–	–	538	800	–
DN300	–	–	–	–	–	–	–	–	800	1120

阀门型号 Valves Code

型号 Type	口径 Size	公称压力 Nominal Pressure	阀体材质 Body Material
□	□	□	□

代号 Code	阀门 Valve
CTV	套筒调节阀 Cage Guided Valves

代号 Code	口径 Size	
07	1.5"	40
08	2"	50
10	3"	80
11	4"	100
13	6"	150
15	8"	200
16	10"	250
17	12"	300

代号 Code	磅级 Class	公称压力 PN
03	PN 20	150Lb
05	PN 50	300Lb
06	PN 100	600Lb
07	PN 150	900Lb
06	PN 260	1500Lb

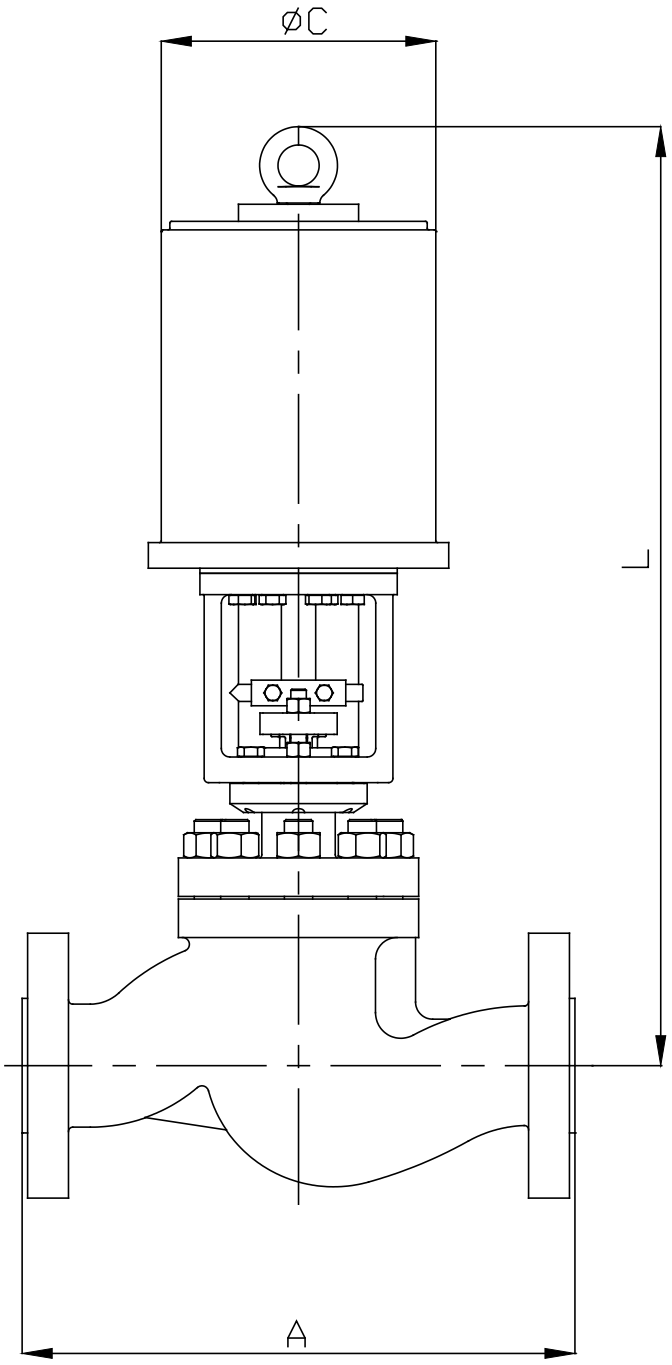
代号 Code	材质 Material
C	碳钢 Carbon Steel
S	不锈钢 Stainless Steel

例For Example	CTV	–	11	17	S	记为：CTV–1107S

表示：套筒阀，口径为4"，压力等级为900Lb，阀体材质为材质为不锈钢.
Meaning:CTV–1107S is a Cage Type Valve with 4"flanges and ANSI 900Lb,Stainless Steel body.

外型尺寸 Dimensions of Valves

规格 Body size		磅级 Class	A	L	ϕC
Inch	mm	Lb	mm		
1.5"	40	150	222	501	165
		300	235		
		600	251		
		900	330	747	230
		1500			
2"	50	150	254	506	165
		300	267		
		600	286		
		900	375	747	230
		1500			
3"	80	150	298	700	230
		300	318		
		600	337		
		900	460	975	318
		1500			
4"	100	150	353	740	230
		300	368		
		600	394		
		900	635	1002	318
		1500			
6"	150	150	451	782	230
		300	473	997	318
		600	508		
		900	762	1100	
		1500			
8"	200	150	543	1002	318
		300	568	1046	
		600	610		
		900	832	1159	
		1500			
10"	250	150	673	1044	318
		300	708	1046	
		600	752		
		900	—	—	—
		1500	—	—	—
12"	300	150	737	1044	318
		300	775	1097	
		600	819		
		900	—	—	—
		1500	—	—	—



备注 Remark：

1.出口法兰可根据用户需求定制。
The outlet flange can be manufactured in different dimensions on request of customers.

NO.HTV012A

液压角阀

Survivor Valves With Hydra Actuator

北京航天石化技术装备工程公司

BEIJING AEROSPACE PETROCHEMICAL TECHNOLOGY AND EQUIPMENT ENGINEERING CORPORATION

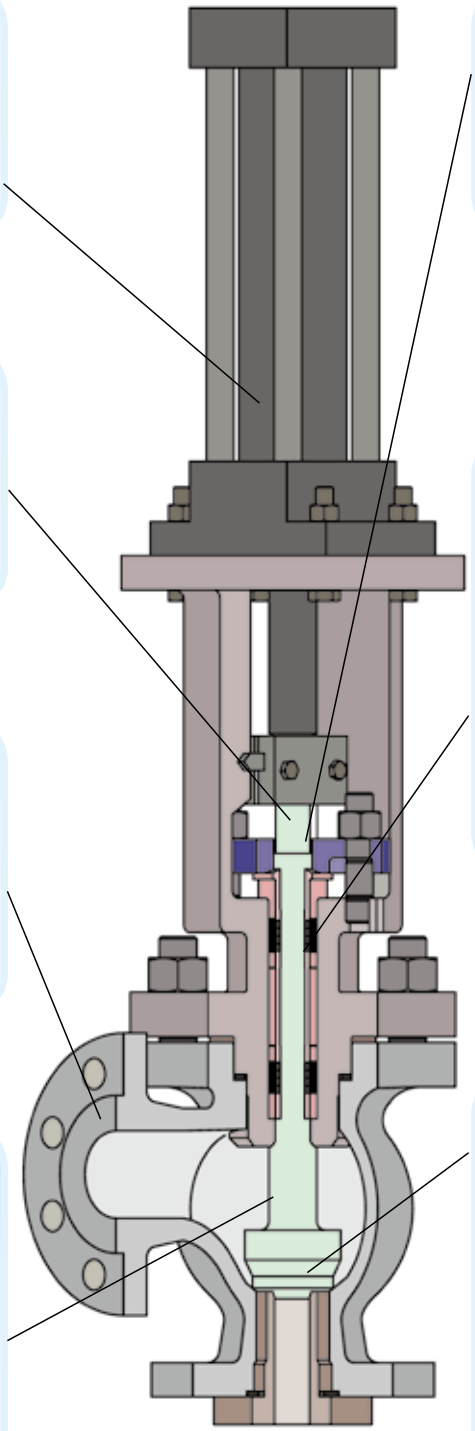
○ 结构特点 Features and Advantage

使用液压执行机构，动作迅速，全行程时间小于2s。
Using hydraulic actuators, action quick, all travel time less than 2s.

阀杆表面喷焊硬质合金，提高表面强度，增强抗擦伤性能。
Stem surface spray welding cemented carbide, improve the surface strength, enhance the resistance to scratch performance

根据实践和试验经验，阀体采用流线型设计，有效减小阀体冲蚀和介质在阀体内的堆积。
According to the practice and test experience, body streamlined, reduce the body erosion and medium in body build up.

阀头使用整体碳化钨结构，与阀杆采用特殊设计的缓冲结构联接，阻止因快速关断而带来冲击破坏的可能性。
Valve head use whole WC structure, and stem the use of special design of the buffer for structural connection, prevent cut-off and impact the possibility of damage.



上导向套采用柔性结构，有效抑制阀杆振动。
Guide set of using the flexible structure on, effectively suppress stem vibration

采用上下导向套结构，导向效果好。下导向套内表面喷焊硬质合金，可刮除粘结在阀杆上附着物。防止破坏填料密封。
Adopt fluctuation orientation set of structure, guide the effect is good. Next orientation set inside surface spray welding cemented carbide, can shave their bond on stem attached. Prevent damage packing seal.

阀座采用整体陶瓷结构，硬度高（HRC>80），有更好的耐磨性、耐冲刷性。采用压入式安装结构易于维护和更换。
Seat by whole ceramic structure, high hardness (HRC > 80), have better abrasion resistance, resistance to scour sex. Using pressure into style installation structure easy maintenance and replacement.

○ 用途 Application

液压角阀是鲁奇气化工段上的重要设备，安装在气化炉单元上，主要是用于煤锁斗和灰锁斗的控制。现场对阀门的整体耐磨性，耐腐蚀性有很高的要求。

Survivor Valves With Hydra Actuator installed in gasifier group as an important device in Lurgi gasification section, is used to control coal lock hopper and ash lock hopper. Good friction and erosion resistance of the valves are required for this service.

○ 材质选择 Materials

部件名称 Part	阀体 Body	阀杆 Stem	阀芯 Plug	阀座 Seat	填料 Packing
材料 Materials	WCB、WC6、WC9、CF3、CF8、CF3M、CF8M、2507	420、304、316、17—4PH	WC、SIC、SI3N4、Stllite	WC、SIC、SI3N4、Stllite	柔性石墨 Graphite

○ 阀门型号 Valve Code

型号 Type	口径 Size	公称压力 Nominal Pressure	阀体材质 Body Material
□	□	□	□

代号 Code
HXVA

代号 Code	口径 Size
08	2"
10	3"
11	4"
12	5"
13	6"
15	8"
16	10"
17	12"

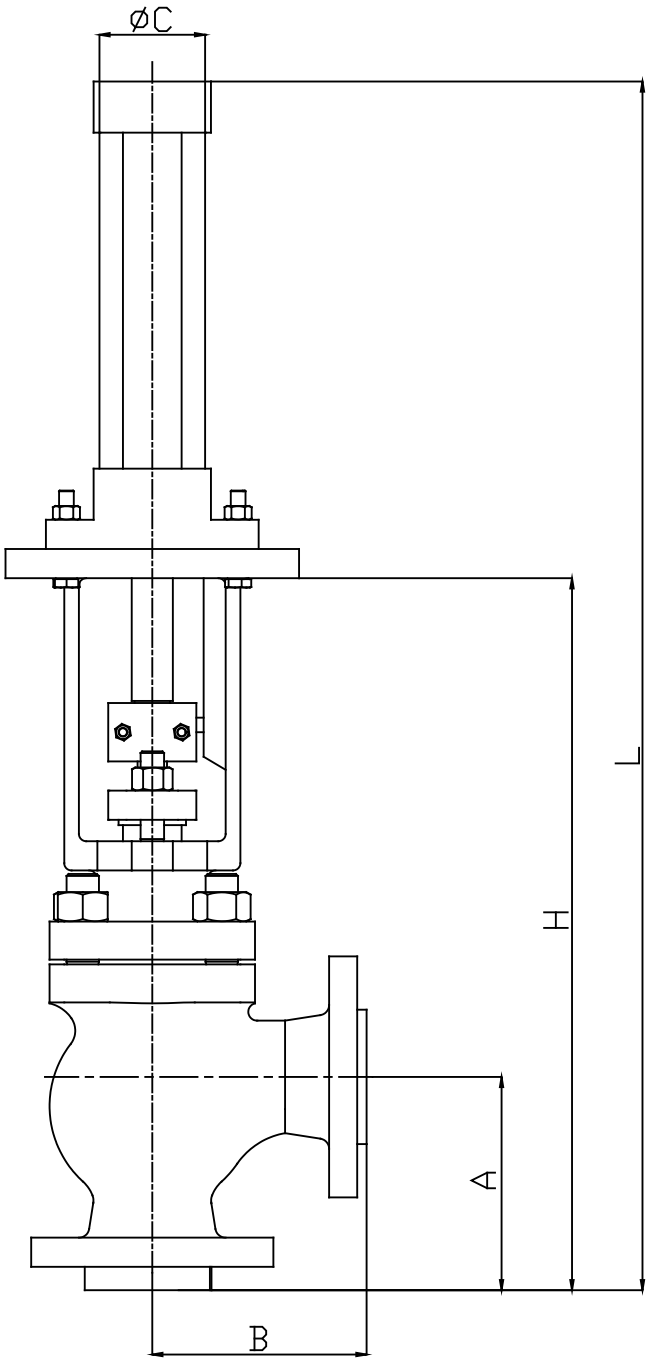
代号 Code	公称压力 NP
03	150Lb PN20
05	300Lb PN50
06	600Lb PN100
07	900Lb PN150
08	1500Lb PN260

代号 Code	材质 Material
C	WCB
C6	WC6
C9	WC9
S	Stainless Steel
D	2507

例 For Example HXVA—0806C6
表示：液压角阀，口径2"，压力等级600Lb，阀体材质为WC6。
Means: HXVA—0806C6 is a Survivor Valves With Hydra Actuator with 2" flange and ANSI 600Lb, WC6.

○ 外型尺寸 Dimensions of Valves

规格 Body Size	磅级 Class	L	H	A	C
2	300	900	370	133	63
	600	900		146	
	900	954	424	184	80
	1500	954		184	
3	300	1040	424	159	80
	600	1040		178	
	900	1100	480	190	100
	1500	1100		235	
4	300	1250	480	178	100
	600	1250		216	
	900	1330	560	229	125
	1500	1330		273	
5	300	1500	560	200	125
	600	1500		254	
	900	1620	670	279	160
	1500	1620		337	
6	300	1760	670	222	160
	600	1760		279	
	900	1870	750	305	200
	1500	1870		353	



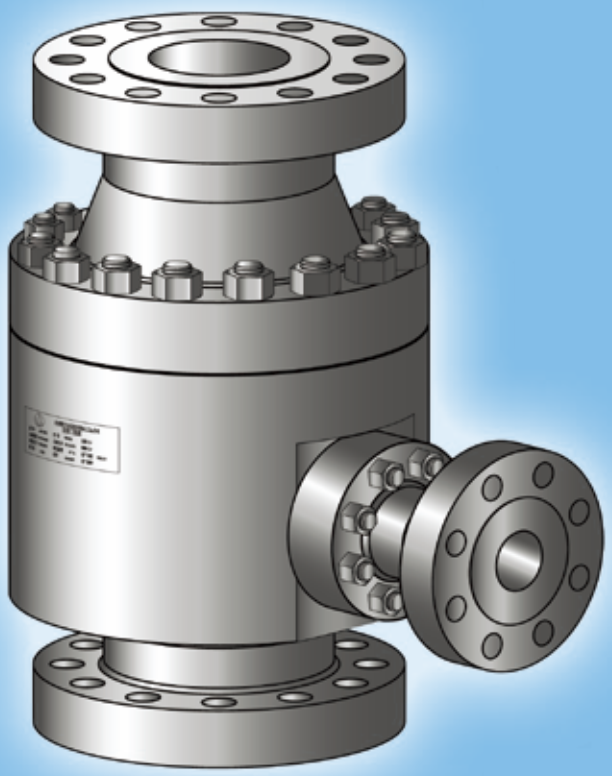
No.HTV008B

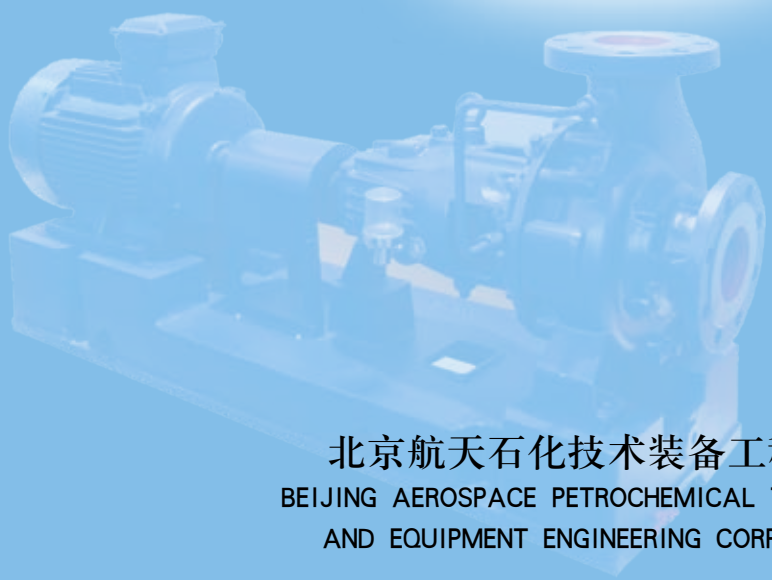
自控回流阀

AUTOMATIC RECIRCULATION VALVES

——用于泵的最小流量保护

—— For Centrifugal Pump
Minimum Flow Protection





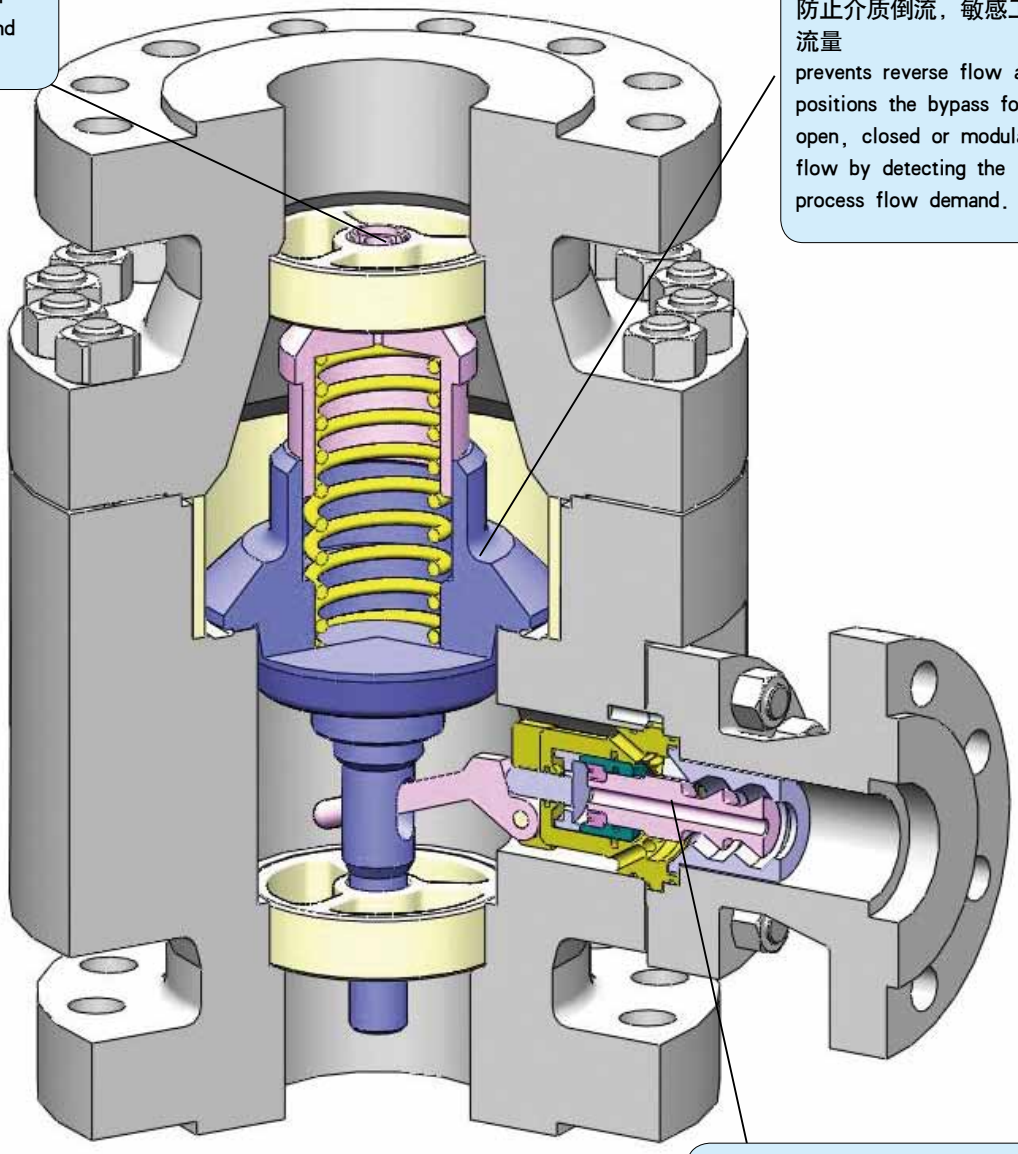
北京航天石化技术装备工程公司

BEIJING AEROSPACE PETROCHEMICAL TECHNOLOGY
AND EQUIPMENT ENGINEERING CORPORATION

○ ARC1000系列 ARC1000 Series

弹簧阻尼器
Dampening valve
减少波动，防止“水锤”
protects system from waterhammer if sudden changes in flow demand occur.

止回阀
Check Valve Disc
防止介质倒流，敏感工艺流量
prevents reverse flow and positions the bypass for open, closed or modulating flow by detecting the process flow demand.

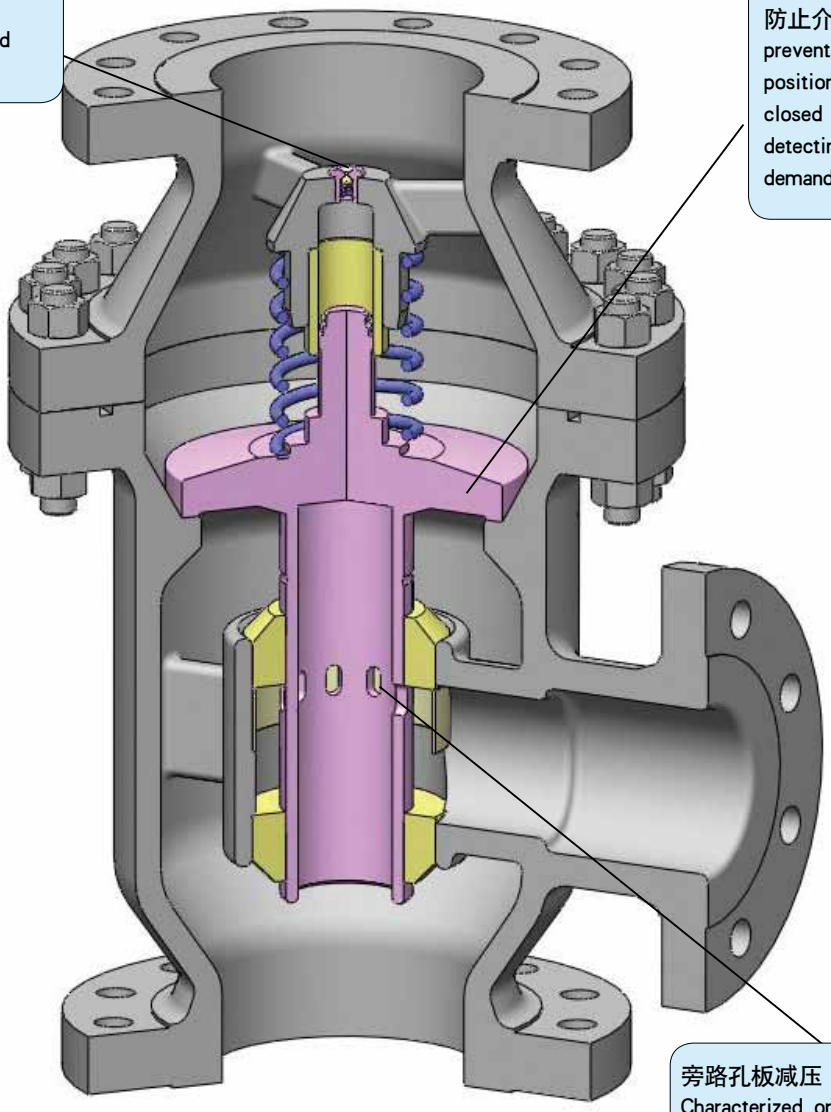


旁通阀多级减压
Multiple stage pressure reduction
防止汽蚀同时起到旁路止回的作用
Prevents from flashing/cavitation with integral check valve in bypass.

○ ARC2000系列 ARC2000 Series

弹簧阻尼器
Dampening valve
减少波动，防止“水锤”
protects system from waterhammer if sudden changes in flow demand occur.

止回阀
Check Valve Disc
防止介质倒流，敏感工艺流量
prevents reverse flow and positions the bypass for open, closed or modulating flow by detecting the process flow demand.



旁路孔板减压
Characterized orifices in the bypass
精准控制再循环流量
element provides accurate, modulated recirculation flow

自控回流阀机理介绍
Automatic recirculation valve mechanism introduced

自控回流阀集止回、流量感知、旁通流量控制功能于一身，是一个独立的系统。它能动态感知主路流量变化，随主路流量调整旁通流量，其工作原理可用三种状态来描述：当主阀完全关闭（图1）、旁通处于完全打开位置时，此时泵处于最小需求流量工况，可有效保护泵不致发生“气蚀”；随着主路止回阀逐渐开启（图2），旁通逐渐关闭，工艺流量和再循环流量之和大于泵的最小需求流量；随着工艺流量增加，当主阀处于全开位置时（图3），旁通完全关闭。

The heart of the ARC valve is a main flow sensing check valve disc, which is flow sensitive but pressure sensitive. The disc modulates to the demand for process flow while assuring a minimum flow through the pump. This modulating characteristic results in a consistent、stable、 and repeatable performance over full pressure range. The disc is shown in the closed position in Figure 1.In this position there is no process flow and the bypass is full open. The valve provides for single phase flow in the bypass eliminating the possibility of flashing or cavitation.; As the disc lifts(Figure 2) in response to an increase in flow to the process, the bypass element which is integral to the disc, closes the bypass flow orifices reducing recirculation flow. Recirculation flow is controlled with disc position. This modulation feature assures that the total of process flow and recirculation flow exceed the minimum flow through the pump as specified by the pump manufacturer; When the disc is full open, as in Figure3, the bypass is closed.

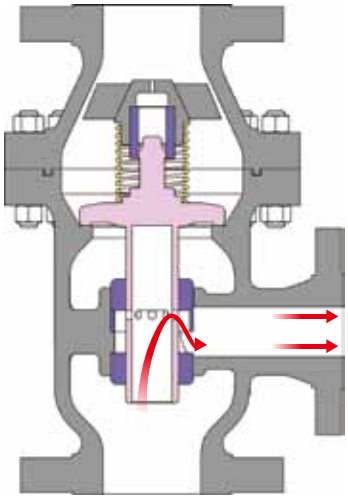


图1
figure1

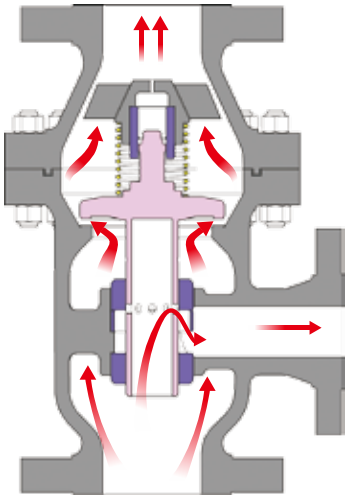


图2
figure2

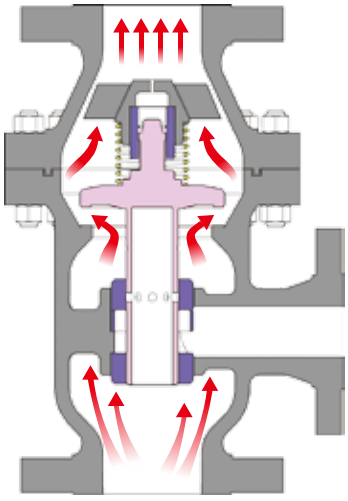


图3
figure3

最小流量保护方式
Minumum Flow Protection Methods

连续循环系统 Continuous Recirculation System

最小需求流量与工艺流量的变化无关，回路经降压孔板直接回储罐。连续的最小流量循环虽然可以很好地保护泵，但是泵必须提供更大的输出功率，造成额外的能量流费。见图4。

The desired minimum flow volume is recirculated regardless of the system demand for fluid. Fixed orifices reduce the pressure before discharging. Continuous recirculating provides reliable pump protection, however, it is very inefficient and costly. The pump and driver must be sized to allow for the additional flow that is recirculating even when the flow demand rate exceeds the required minimum flow. See Figure 4.

控制循环系统 Control Loop System

控制循环系统能够提供最小流量保护，当工艺流量大时，回路关闭，没有额外的能量损失。但控制循环系统由止回阀、流量计、降压孔板、回流控制阀、电磁阀组成，系统元件多，购买、安装、维护费用高。见图5。

Recirculating occurs only when the process flow demand drops below the required minimum flow rate. Instrument controlled systems eliminate the inefficient and costly to operate constant recirculating systems. However, the necessary system components; check valve, flow meter, pressure reducing valve and related piping result in a considerable expense to purchase, install and maintain. See Figure 5.

自控回流阀系统 Automatic Recirculation Valve System

自控回流阀是集流量感知元件、多级降压、旁通控制阀和止回的功能于一体的三通阀。无需动力源和信号源；采用静密封，无外漏；完全的无电连接，属本质安全型；减少了连接的数量，安装、维护费用低。见图6。

The automatic recirculating valve performs all flow sensing, bypass pressure reduction, reverse flow protection and modulating recirculating flow in an integral three port valve. The valve performs the same function of an instrumented system without the multitude of components, piping connections and system design expense. The valve is flow operated and does not require any air or electricity to operate. See Figure 6.

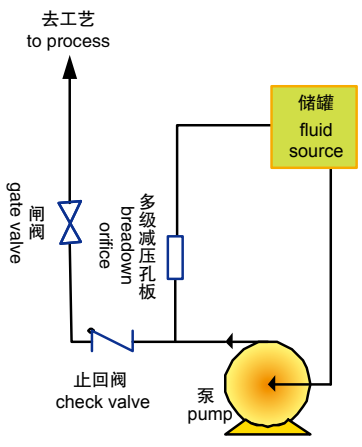


图4
figure4

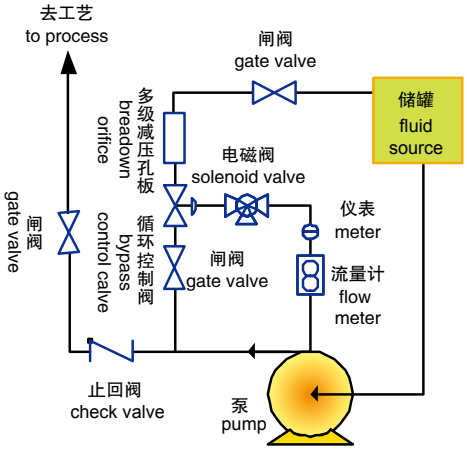


图5
figure5

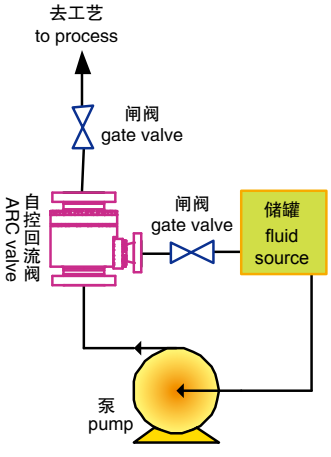
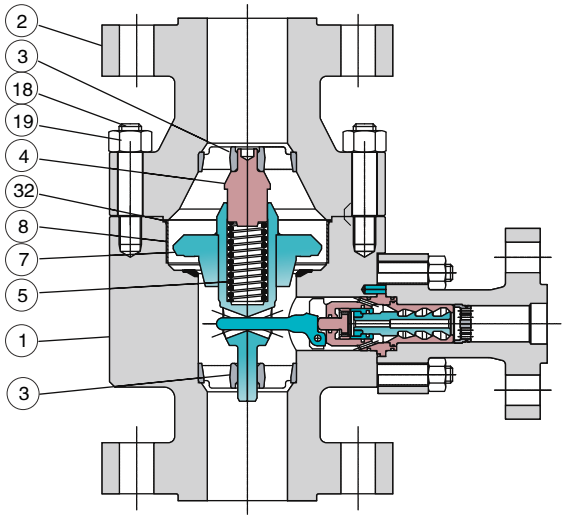
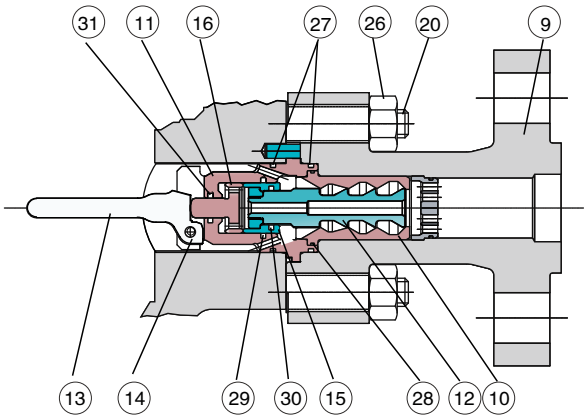


图6
figure6

ARC1000 结构与材质
ARC1000 main dimensions and materials

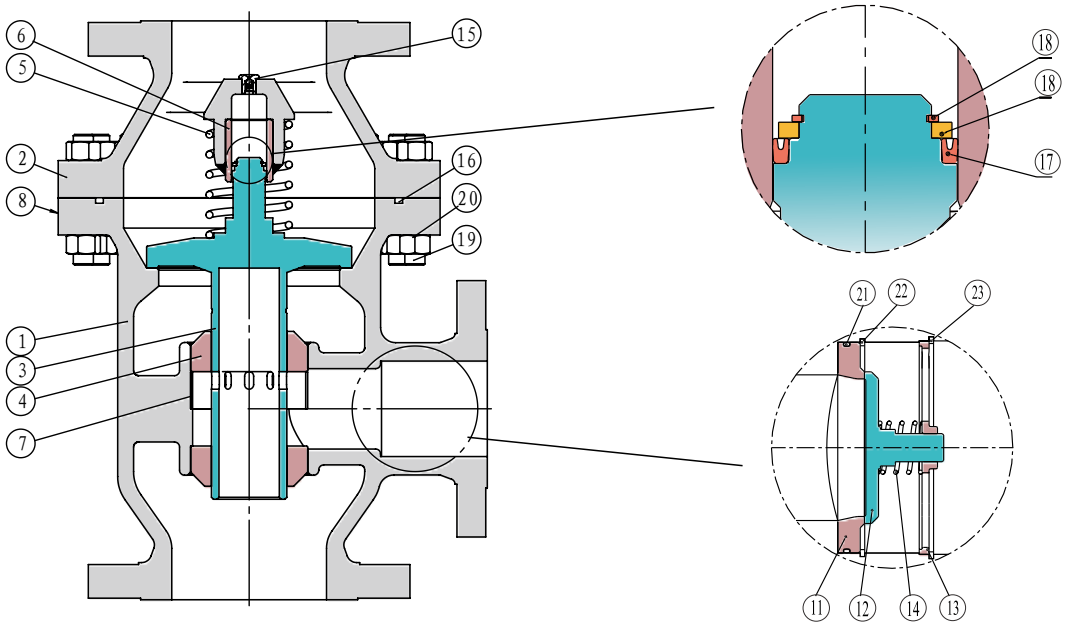




ARC 1000 材料 Materials

序号 Ref.No	零件名称 Part Name	材料代号Sign of Materials	
		01	02
1	阀　体　Body	ASTM A105	ASTM A182 F304
2	阀　盖　Bonnet	ASTM A105	ASTM A182 F304
3	支撑盘　Stem Guide	ASTM A276 304	ASTM A276 304
4	导杆螺套 Guide Bolt	ASTM A276 304	ASTM A276 304
5	弹　簧　Spring	ASTM A276 304	ASTM A276 304
6	标　牌　Nameplate	ASTM A276 304	ASTM A276 304
7	止回阀　Check Valve	ASTM A276 304	ASTM A276 304
8	衬　里　Liner	ASTM A276 304	ASTM A276 304
9	旁路阀体 Bypass Branch	ASTM A105	ASTM A182 F304
10	涡旋衬套 Vortex Housing	ASTM A564 630	ASTM A564 630
11	控制器盖 Control Head	ASTM A564 630	ASTM A564 630
12	涡旋塞　Vortex Plug	ASTM A564 630	ASTM A564 630
13	操纵杆　Lever	ASTM A564 630	ASTM A564 630
14	转　轴　Pivot Pin	ASTM A564 630	ASTM A564 630
15	减压衬套 Vortex Bushing	ASTM A564 630	ASTM A564 630
16	活　塞　Piston	ASTM A564 630	ASTM A564 630
17	锁紧螺母 Vortex Plate	ASTM A564 630	ASTM A564 630
18	双头螺柱 Stud	ASTM A193 B7	ASTM A193 B8
19	六角螺母 Hex Nut	ASTM A194 2H	ASTM A194 8
20	双头螺柱 Stud	ASTM A193 B7	ASTM A193 B8
26	六角螺母 Hex Nut	ASTM A194 2H	ASTM A194 8
27	O形圈　O—Ring	Elastomer	Elastomer
28	O形圈　O—Ring	Elastomer	Elastomer
29	Glyd圈 Glyd Ring	Elastomer+PTFE	Elastomer+PTFE
30	Glyd圈 Glyd Ring	Elastomer+PTFE	Elastomer+PTFE
31	Glyd圈 Glyd Ring	Elastomer+PTFE	Elastomer+PTFE
32	O形圈　O—Ring	Elastomer	Elastomer

ARC2000 结构与材质
ARC2000 main dimensions and materials



ARC 2000 材料 Materials

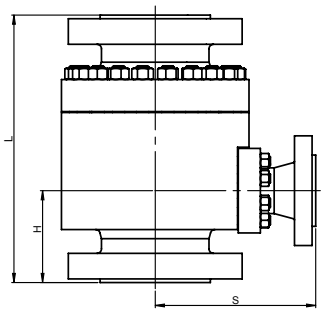
主路 Mainpass

序号 Ref.No	零件名称 Part Name	材料代号 Sign of Materials	
		01	02
1	阀 体 Body	ASTM A216 WCB	ASTM A351 GR.CF8M
2	阀 盖 Bonnet	ASTM A216 WCB	ASTM A351 GR.CF8M
3	止回阀 Check Valve	ASTM A276 316	ASTM A276 316
4	套 筒 Bypass Ring	ASTM A564 630	ASTM A564 630
5	主路弹簧 Main Spring	ASTM A276 316	ASTM A276 316
6	导向套 Slide Ring	ASTM A564 630	ASTM A564 630
7	衬 里 Lower Sline Ring	ASTM A564 630	ASTM A564 630
8	标 牌 Nameplate	ASTM A276 304	ASTM A276 304
9	挡 板 Baffle	ASTM A276 316	ASTM A276 316
15	弹簧阻尼器 Dampening valve	ASTM A276 304	ASTM A276 316
16	O型圈 O—ring	Elastomer	Elastomer
17	范塞密封圈 Variseal ring	Elastomer	Elastomer
18	挡 圈 Retaining Ring	ASTM A276 316	ASTM A276 316
19	螺 柱 Bolt	ASTM A193 B7	ASTM A193 B8
20	螺 母 Nut	ASTM A194 2H	ASTM A194 8

旁路 Bypass （可选 Optional）

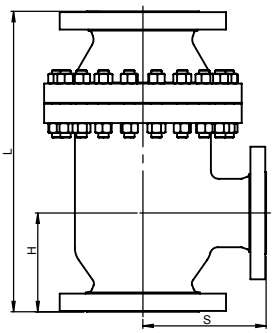
11	阀 座 Valve Seat	ASTM A276 316
12	阀 瓣 Disc	ASTM A276 316
13	支撑盘 Stemguide	ASTM A276 316
14	旁路弹簧 Bypass Spring	ASTM A276 316
21	O型圈 O—Ring	Elastomer
22	挡 圈 Retaining Ring	ASTM A276 316
23	挡 圈 Retaining Ring	ASTM A276 316

ARC1000外型尺寸、重量和流量参数
ARC1000 Dimensions, Weights and Flow Ratings



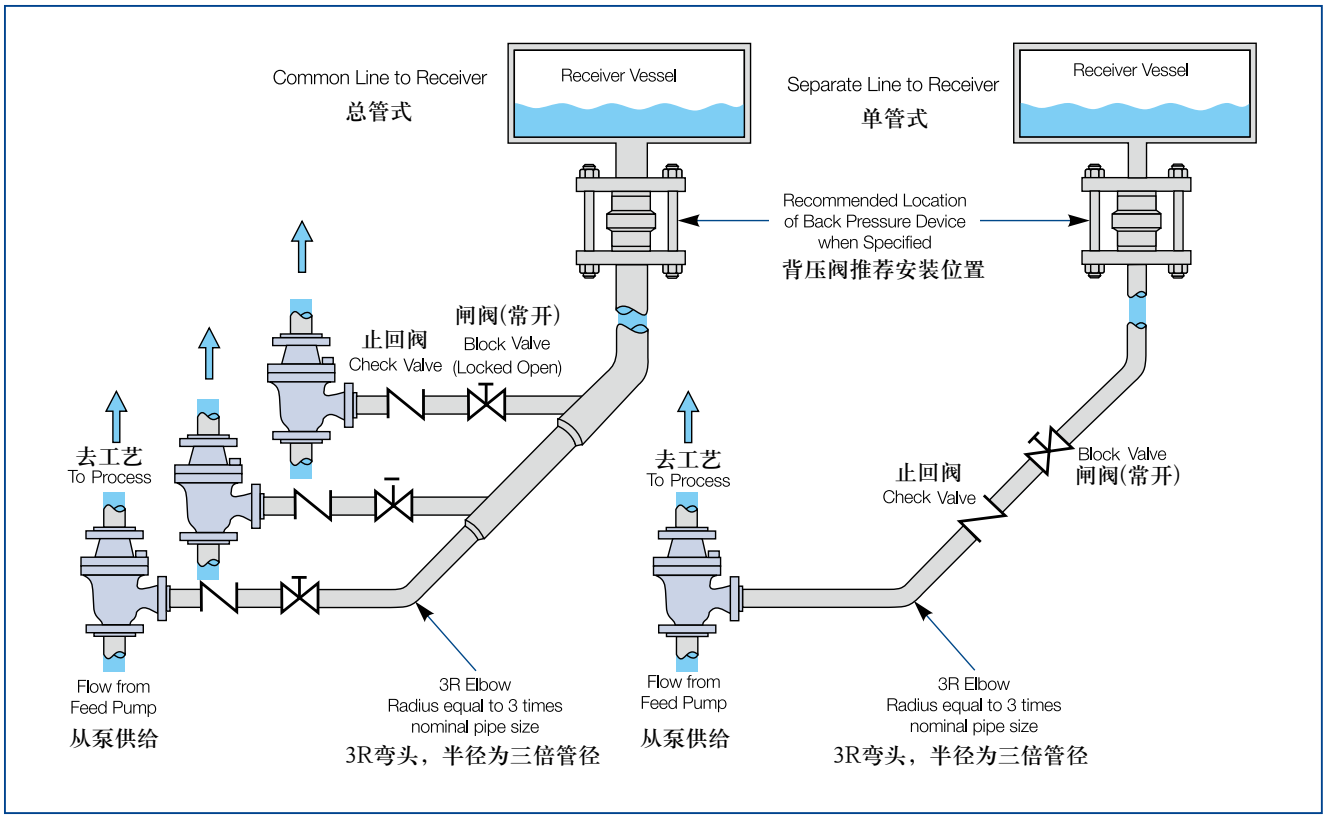
公称通径 Valve Size		法兰磅级	主路最大流量 Max. Main Flow (M^3/h)	旁路最大流量 Max. Bypass Flow (M^3/h)	旁路最大Cv Bypass Max. Cv	重量 Weight (Kg)	结构尺寸 Dimensions(mm)		
主路 Main mm(In)	旁路 Bypass mm(In)	ANSI					L (mm)	H (mm)	S (mm)
40 (1.5)	25 (1)	600 900 1500	34	14	1.3 1.1 0.9	32 42 57	260 300 310	90 110 120	190 200 215
50 (2)	25 (1)	600 900 1500	50	14	2.7 1.7 1.6	48 76 95	300 340 350	110 130 130	166 203 233
65 (2.5)	40 (1.5)	600 900 1500	75	34	3.5 2.6 2.4	68 88 103	340 380 400	125 140 145	220 230 250
80 (3)	40 (1.5)	600 900 1500	114	34	5.2 4 3.5	100 113 140	380 410 450	140 150 165	240 250 275
100 (4)	50 (2)	600 900 1500	204	57	8.5 5.6 5.2	149 176 222	430 450 520	155 160 190	266 280 300
125 (5)	65 (2.5)	600 900 1500	250	91	11 9.5 6.5	205 272 278	500 525 650	175 185 235	310 310 341
150 (6)	80 (3)	600 900 1500	454	125	14 12 10	375 430 496	550 585 700	190 200 250	335 350 405
200 (8)	100 (4)	600 900 1500	749	204	22 20 16	545 640 786	650 675 850	215 225 295	405 405 475
250 (10)	150 (6)	600 900 1500	999	279	35 25 22	822 1155 1483	800 800 975	270 270 330	520 520 568
300 (12)	150 (6)	600 900 1500	1498	431	55 35 30	1710 1978 2665	1051 1051 1149	360 360 400	649 649 700

ARC2000外型尺寸、重量和流量参数
ARC2000 Dimensions, Weights and Flow Ratings



公称通径 Valve Size		法兰磅级	主路最大流量	旁路			重量	结构尺寸 Dimensions(mm)		
主路 Main mm(In)	旁路 Bypass mm(In)	ANSI	Max. Main Flow (M^3/h)	最大流量 (m³/h)	最大Cv	最小Cv	Weight (Kg)	L (mm)	H (mm)	S (mm)
25 (1)	20 (3/4)	150 300 600	14	8	6.1	0.5	10 15 22	244 244 244	87 87 87	120 120 120
40 (1.5)	25 (1)	150 300 600	28	8	6.1	0.5	12 17 22	244 244 285	87 87 94	120 120 145
50 (2)	40 (1.5)	150 300 600	60	17	8.5	1.0	18 22 26	278 278 294	101 101 109	150 150 165
80 (3)	50 (2)	150 300 600	114	38	17	2.0	30 42 54	358 393 414	118 130 135	142 153 167
100 (4)	80 (3)	150 300 600	205	73	36.4	3.0	49 72 100	401 462 499	137 158 168	172 185 205
150 (6)	100 (4)	150 300 600	455	148	91	5.0	100 143 206	534 578 636	175 190 206	214 237 259
200 (8)	150 (6)	150 300 600	750	284	169.8	7.0	199 272 354	750 796 856	245 258 275	275 295 320
250 (10)	200 (8)	150 300 600	1250	545	425	25.0	430 610 875	900 950 1100	300 320 365	343 360 414
300 (12)	250 (10)	150 300 600	1650	950	830	42.0	520 790 1300	920 1015 1180	305 340 385	370 400 450
350 (14)	250 (10)	150 300 600	2750	1030	894	46	670 910 1642	1350 1330 1442	400 420 476	410 450 533
400 (16)	300 (12)	150 300 600	3526	1380	1221	62	825 1050 1950	1440 1522 1630	475 504 538	525 565 602
450 (18)	350 (14)	150 300 600	4460	1815	1630	95	974 1225 2320	1620 1710 1825	535 564 602	590 620 674
500 (20)	400 (16)	150 300 600	5510	2520	2401	137	1089 1420 2510	1800 1885 2012	595 622 664	655 696 744

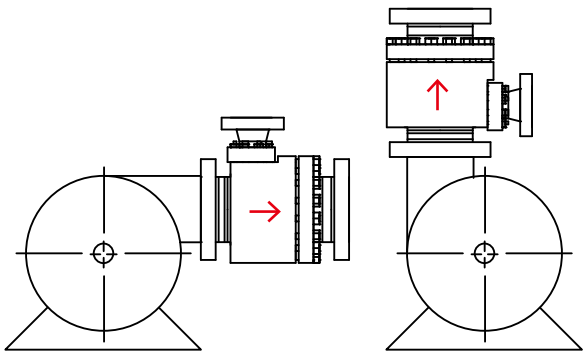
自控回流阀安装 ARC Valve installation



自控回流阀安装
ARC Valve installation

自控回流阀是严格按照客户提供的参数设计的，任何压力、温度、介质和流量参数变 化都需要对阀内件进行修正，如果上述参数有变请联系生产厂。

The valve and its components are selected according to specifications supplied by customers. Any change in pressure, temperature, type of fluid and flow condition, may require modification of valve internals. Please Consult with the factory if the aforementioned occurred.



水平 Horizontal　　垂直 Vertical

自控回流阀既可垂直安装又可水平安装，旁路安装方向任意，但水平安装时旁路不能向下。自控回流阀一般安装在泵出口法兰，介质流动方向必须和箭头方向一致。

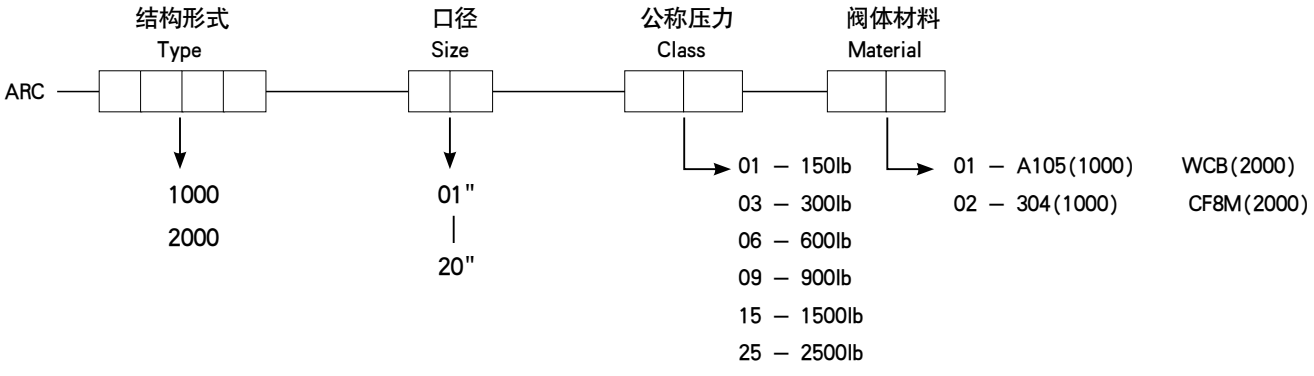
The installation of the ARC valve can be both Vertical (preferred) and Horizontal. The by—pass flow direction may be any but down when installation is horizontal. ARC valve is normal installed near or on the discharge flange of the centrifugal pump. Flow direction must be as indicated by the arrow stamped into the body.

如何订货 How to Order

订货参数表 Required Application Data

1. 主路流量 Main Flow
   - 最大 Maximum ---------- m^3/h
   - 正常 Normal ---------- m^3/h
   - 最小需求流量Minimum Pump Flow ---------- m^3/h
2. 泵出口压力 Pump Discharger Pressure
   - 正常流量时 Normal Flow ---------- MPa
   - 旁路最小需求流量时 Bypass Flow ---------- MPa
   - 关闭压力 Shut off Pressure ---------- MPa
   - 旁路出口背压 Bypass Back Pressure ---------- MPa
3. 温度 Temperature
   - 正常 Normal ---------- ℃
   - 最高 Maximum ---------- ℃
4. 介质 Liquid
   - 密度 Density ---------- Kg/m^3
   - 饱和蒸汽压 Vapor Pressure ---------- MPa
   - 动力粘度 Viscosity ---------- Cp
5. 安装方向 Install Direction
   - □水平 Horizontal □垂直 Vertical

阀门型号 Valve Code



编制示例 For Example：

公称压力为300Lb，公称通径3"，材质为CF8M，ARC2000自控回流阀的型号为ARC2000—03—03—02

Here is a valve with Pressure Class 300Lb, Valve DN 3", material CF8M, so its Valve Model is: ARC2000—03—03—02

产品展示
PRODUCTS SHOW

科技推动发展……

No.HTV006B

圆盘阀

ROTATING DISC VALVES

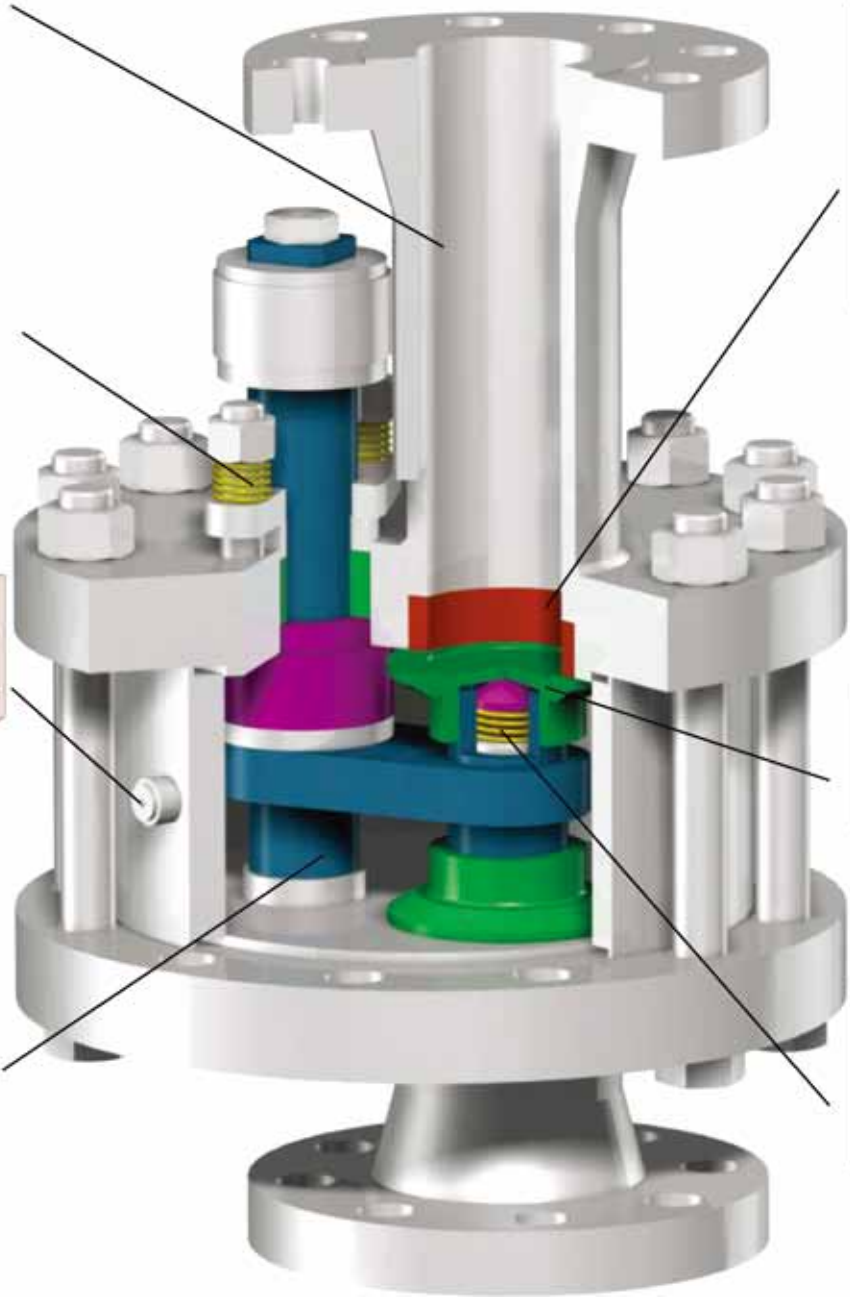
——专业处理研磨介质

for Applications of Abrasive Media

北京航天石化技术装备工程公司

BEIJING AEROSPACE PETROCHEMICAL TECHNOLOGY AND EQUIPMENT ENGINEERING CORPORATION

特点与优势 Features and Advantages



全流道
Full port
压降小
Minimal pressure drop

自动补偿填料
Live-loading packing
补偿热胀和磨损，密封好
Compensating for thermal expansion and contraction, high sealing performance

阀腔自排和吹扫
Self draining and purge body
动作灵活不卡滞，不积料
Easy handling, redure chances of jamming due to material entrance

旋转阀杆
Rotating stem
磨损小，使用寿命长，适用于各种执行器
Low abrasion, long lifespan and be suitable for various actuators

可更换式阀座
Renewable Seat
易维护并且费用低
Easy maintance and low expense

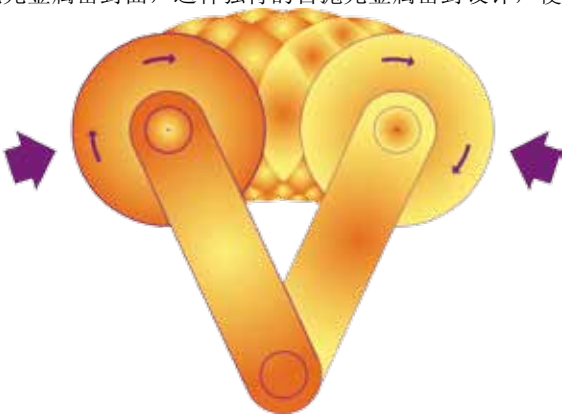
金属密封
Metal sealing
密封面宽，密封性好，磨损小，使用寿命长
Wide sealing surface, high sealing performance, anti-abrasion and long lifespan

独特的旋转-剪切圆盘
Unique rotating shearing disc
防止局部磨损，提高密封效果
Avoid partly wear, Sealing improves with use

弹簧加载阀瓣
Spring loaded connection between disc and drive
自动补偿热膨胀和磨损
Automatically compensate for thermal expansion and contraction

工作原理 Working Principal

工作过程中，执行器带动阀杆和驱动臂做1/4圈旋转从而驱动阀盘，运动中阀盘密封面在弹簧的作用下一直紧贴着阀座，弹簧可以让阀盘垂直运动，同时补偿阀的热胀和冷缩，克服背压，防止颗粒介质进入密封面。阀座密封面对阀盘在切线方向上的摩擦力之差使阀盘自转，从而抛光密封面。阀盘在介质中的转动会不断清洁和抛光金属密封面，这种独特的自抛光金属密封设计，使阀门能在恶劣工况下反复进行严密关闭，而密封面越来越光洁，密封性能越用越好。



The actuator moves the stem and lever arm a quarter turn, which drives the disc. The entire sealing surface of the disc is constantly in contact with the seat through force exerted by coiled springs. These springs allow the disc to move vertically. This compensates for thermal expansion and contraction of the valves. Components also overcoming the effect of any back pressure and prevents particles from lodging between the sealing surfaces. Differences in tangential disc to seat friction forces cause the disc to rotate on its seat as the valve cycles, thereby shearing and wiping away any process material that may accumulate. The unique self lapping metal seat design provides repeated tight shutoff in severe service, while sealing improved with use.

圆盘阀的应用 Applications of rotating Disc Valve

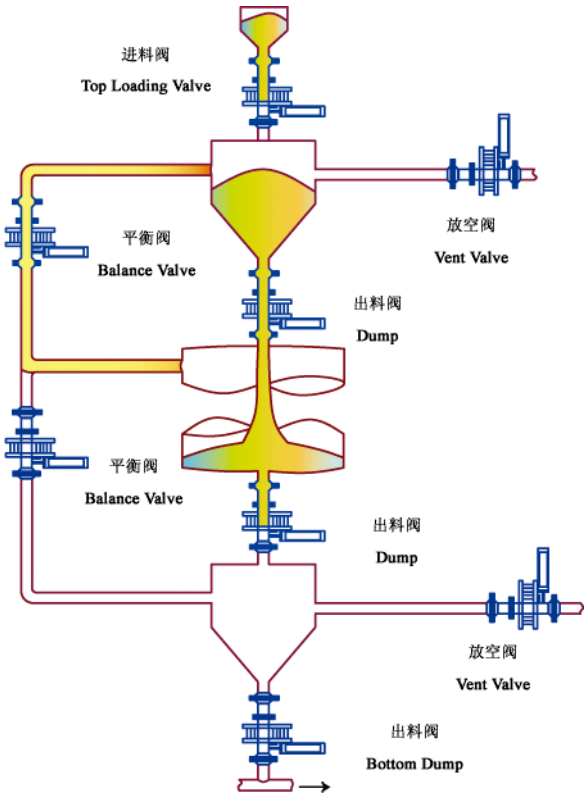
自从1904年旋转剪切圆盘的理念应用于蒸汽机车的排污阀门以后，由于其独特的自抛光性能，圆盘阀就广泛应用于排污和频繁开关领域，专业用于处理研磨性介质。

Since 1904, the rotating shearing disc concept had been applied on steam locomotive blowdown, with its unique self-lapping characteristic, the rotating disc valves are widely used in blowdown and frequent shut-off conditions, for applilcations of abrasive media.

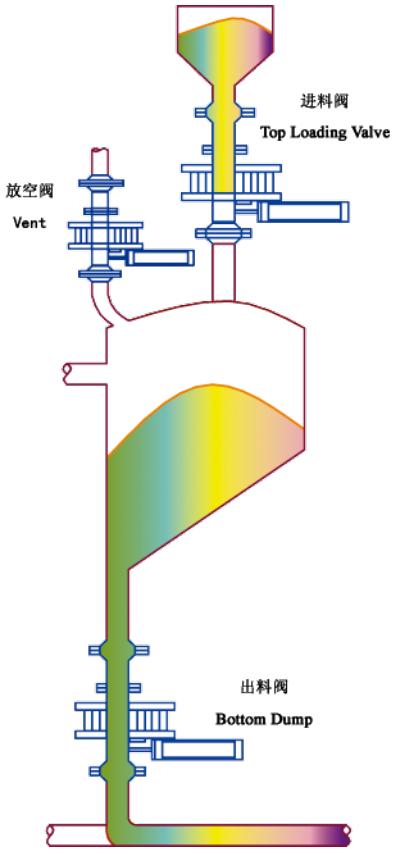
主要应用行业 Main Application Fields

行业Fields	应用位置Location	介质Fluid
水泥Cement	气力输送管线Pneumatic Conveying Pipe	硅酸盐水泥Silicate Cement
电力Power	省煤器Coal Economizer	飞灰、煤粉Ash、Coal Powder
合成燃料Synthesized Fuel	反应釜Reactor	碳氢化合物、氧化铝催化剂 Hydrocarbon、Alumina Catalyst
煤气化Coal Gasification	锁斗阀Scum Valve	煤渣、飞灰和水Cinder、Ash and Water
炼油Oil Refining	FCC催化剂输送、锁斗阀、反应釜切断阀FCC Catalyst Transfer、Scum Valve、Reactor Isolation Valve	硅、氧化铝催化剂 Silicon、Alumina Catalyst
精炼Refining	锁斗阀（气力输送）Scum Valve(Pneumatic Conveying)	氧化铝催化剂Alumina Catalyst
矿山Mine	隔离泵出口Isolating Pump Outlet	污泥、沙子、岩石和水 Slurries、Sand、Rock and Water
冶金Metallurgy	鼓风炉灰尘收集器、焦炭旋风除尘器 Blast Furnace Dustcatcher、Coke Cyclone Precipitator	烟道粉尘、焦炭灰和热空气 Flue Powder、Coke Powder and Hot Air
多晶硅 Poly-silicon	反应釜，料仓Reactor，Storage Bin	硅粉Silicon Powder

典型工艺系统 Typical Process Systems



反应釜系统Reactor Loading



气力输运系统Pneumatic Conveying

■ 反应釜系统 Reactor Loading

用作反应釜进料阀、出料阀、平衡阀和放空阀。平衡阀平衡料仓和反应釜的压力，控制反应釜的进料和出料。反应釜的压力经常在正压和负压之间变动，阀门需要频繁开关。

Being used as top loading, dump, balance valve and vent valves. Balance valve equalizes the pressure between the hopper and the reactor, alows the media to enter the loading hopper or the letdown hopper. Because the pressure in the reactor varies from neganive to positive, the valve is needs to be frequently on-off.

■ 气力输送系统 Pneumatic Conveying

用作进料阀、出料阀和放空阀。通常有多条输送系统交换运行，物料阀动作频繁，不足一分钟动作一次，流速快；放空阀流速快，充满颗粒，阀门耐磨要求高。

Being used as top loading, dump and vent valves. Usually there are trains of two or more vessels alternate continually to transport media. The vessel valves cycle frequently, one time within one minute. The vent valve is exposed to high-speed flow-rate, which is higher than the system velocity. It needs the high anti-abrasion performance of the valve.

■ 泥浆系统 Slurries

用作泥浆系统切断阀。自排阀腔使物料不会在阀盘周围堆积，特别适合泥浆系统。

Being used as isolation valves in slurries. The self-draining body prevents materials from accumulating near the discs, especially suits to slurries.

■ 分流系统 Diverting

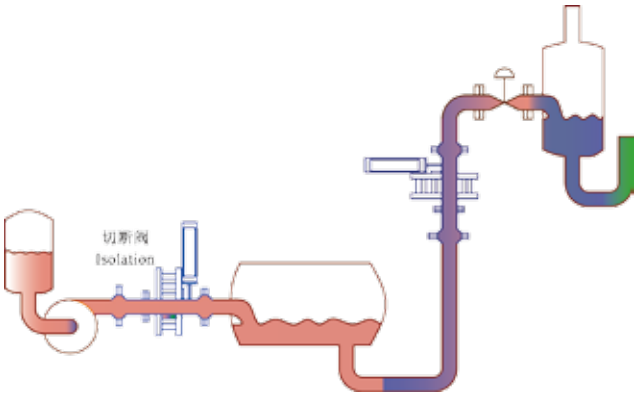
旋转圆盘结构很适合于管路切换，用在输送煤和煤浆混合物系统中，可以连续使用几年不需要维修。

The rotating disc structure is quite fit for pipe alternation, thus, rotating disc valves can operate for years without maintenance in 65% coal and sludge slurries.

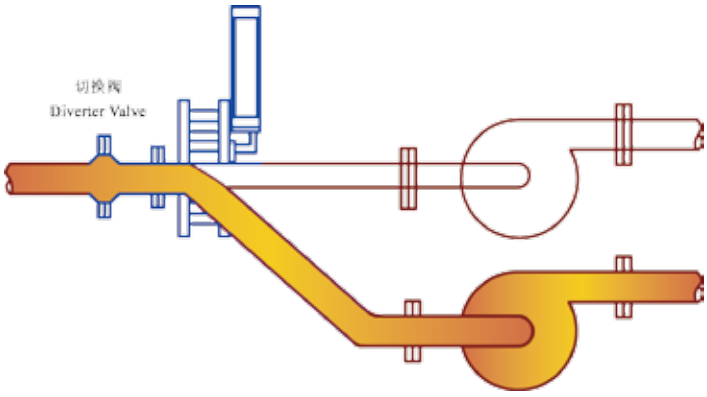
■ 干除灰系统 Ash banding

干除灰系统卸灰阀，使用温度高、开关频繁。直动式阀门可以在灰中开关而不需要任何润滑。

The lifting disc valve can be operated in ash for years without any lubrication, thus, can be used as the ash vent valve in dry ash precipitators system with high temperature and frequent on-off operations.



泥浆系统 Slurries

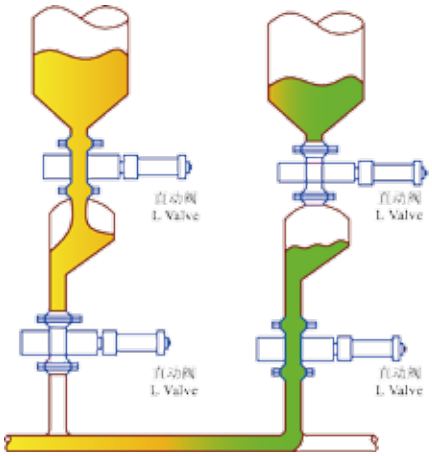


分流系统 Diverting

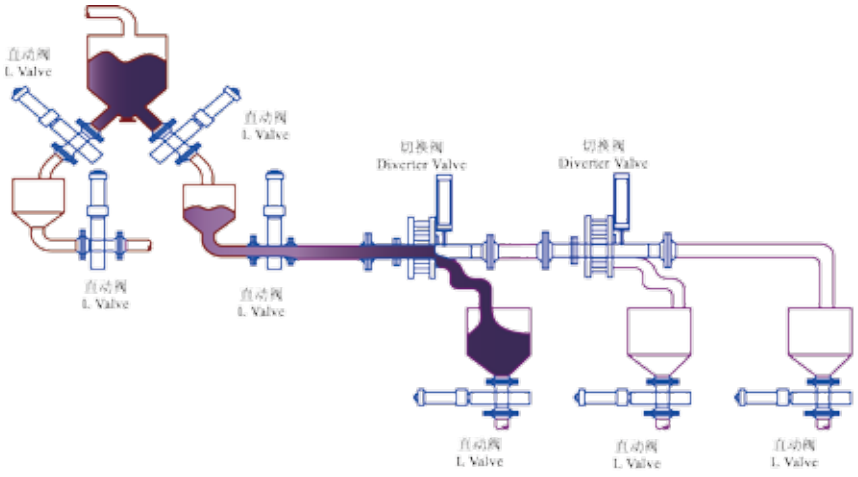
■ 无机颗粒系统 Inorganics

无机物通常是具有腐蚀性的颗粒，而且输送密度大，使用直动式圆盘阀，使系统免于维护。

Inorganic are usually erosive particles with high conveying density, the lifting disc valve can be used for years in inorganic systems without any maintenance.



干除灰系统 Ash banding



无机颗粒处理系统 Inorganics

圆盘阀种类 Series of Rotating Disc Valves

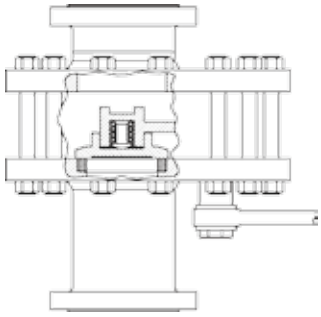
除了有旋转式圆盘阀、还有直动式圆盘阀（L）和切换式圆盘阀(Q) 三种。

Except for rotating disc valves, there are lifting disc valves and diverting valves.

旋转式圆盘阀（S、D、M、C）Rotating Disc Valve

旋转式圆盘阀可分为：单盘阀(S)、双盘阀(D)、镜像盘阀(M)、锁盘阀(C)。

Rotating disc valves can be divided into: single disc valve, double disc valve, mirror disc valve and lock disc valve.



单阀盘Single Disc Valve

■ 单盘阀(S) Single Disc Valve

只有一个阀盘。适用于关闭时静压力作用于阀盘背面的工况，或者反向压力很低的工况（≤2.5Bar）。

The one disc valve has one disc and is suitable for operation conditions where static pressure is applied on rear of the disc in closed position or the back pressure is very low（≤2.5Bar）.

■ 双盘阀(D) Double Disc Valve

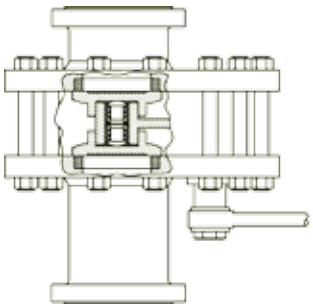
两个阀盘。双向承压、双向流动、双向密封。

The double disc valve has two discs and is designed to seal against pressure from either direction.

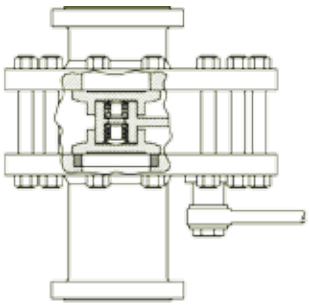
■ 镜像盘阀(M) Mirror Disc Valve

单座双盘。适用于关闭时物料、压力作用于阀盘背面的工况，或者反向压力≤2.5Bar的工况。

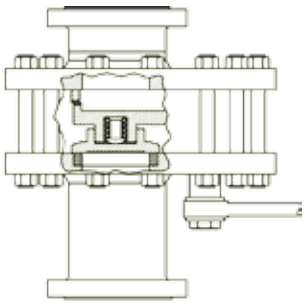
The lock disc valve has one seat and two discs, and is applied for working conditions where the media pressures on the rear face of the disc or the back media pressure is not higher than 2.5 bar.



双盘阀Double Discs Valve



镜像盘阀Mirror Disc Valve



锁盘阀Lock Disc Valve

■ 锁盘阀(C) Lock Disc Valve

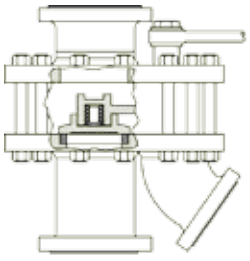
锁块单盘阀。由于设置了锁块，在一些垂直管线上，用于支撑物料和静压力，最大压力不宜超过4.0Bar。

The lock disc valve is one single disc valve with a lock.Therefore the valve is suitable for holding media and static media pressure in a vertital pipeline. The maximum pressure should not be higher than 4.0 Bar.

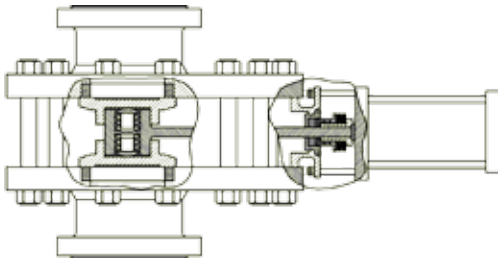
切换式圆盘阀（Q）Diverting Valve

三通阀。实现两个通道之间的切换，一个通道开启时，另一个通道关闭。

The diverting valve is a three-way valve, used as switchover valves to realize the switchover from one line to another, when one valve port is opened and the other one is closed.



切换式圆盘阀 Diverting Valve



直动式圆盘阀 Lifting Disc Valve

直动式圆盘阀（L）Lifting Disc Valve

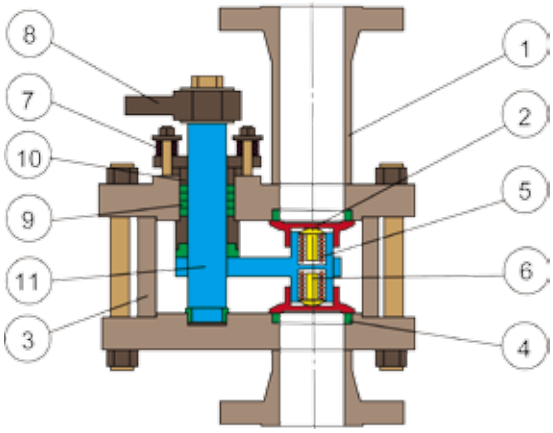
提升式阀杆。双向密封，双向流动。

The lifting valve has a lifting stem and is designed to seal against pressure from either direction.

旋转式圆盘阀的材料 Structure and Materials of Rotating Disc Valves

性能指标 Performance

公称压力：150Lb～2500Lb
Nominal pressure：150Lb～2500Lb
公称通径：1/2″～16″
Nominal diameter：1/2″～16″
使用压力：真空～400bar
Operating pressure: vacuum～400bar
使用温度：-200℃～900℃
Operating temperature：-200℃～900℃
连接方式：法兰、对焊、卡套
End connections: flange、butt weld、graylock
动作方式：手柄、气动、电动、液动
Actuation: handle、pneumatic、electric、hydraulic



制造规范 Codes and Standards

设计标准：API 6D、ANSI B16.34
Design standards: API 6D、ANSI B16.34
连接方式：ANSI B16.5
End connections: ANSI B16.5
试验验收：API 598
Testing and Inspection: API 598
材　　料：CS、304、316、316L
Materials：CS、304、316、316L

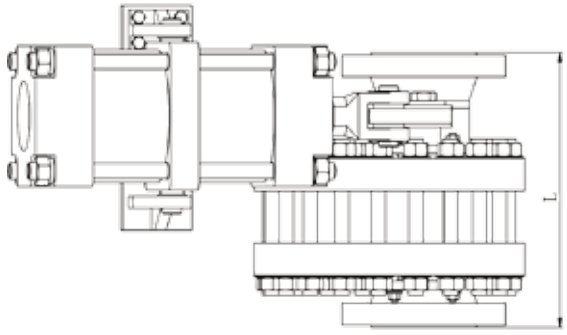
密封面材料 Material of Sealing Surface

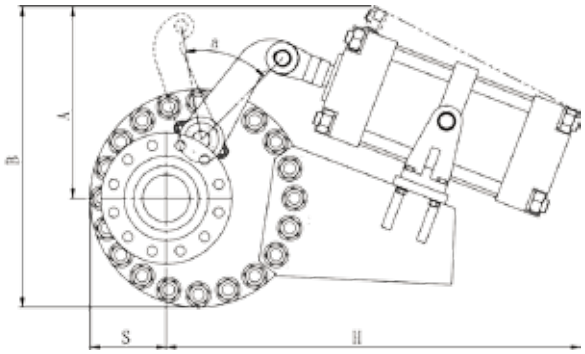
代号Code	材料Material	硬度Hardness
YA	整体硬质合金Steel bonded tungsten Carbide	HRA 84.5~86.5
YB	喷焊硬质合金Spraying tungsten Carbide	HRC 40~65
YC	堆焊合金钢Welding cobalt based alloy	HRC 35~58

材料明细表 Material List

序号Item No.	名称Part	材料代码Material Code			
		C	S	M	L
1	阀体Body	CS	304	316	316L
2	阀盘Disc	CS	304	316	316L
3	中阀体Middle Body	CS	304	316	316L
4	阀座Seat	CS	304	316	316L
5	弹簧Spring	17-7PH	17-7PH	17-7PH	17-7PH
6	弹簧座Spring Seat	17-4 PH	304	316	316L
7	碟簧Disc Spring	17-7 PH	Inconel-750	Inconel-750	Inconel-750
8	手柄Handle	CS	CS	CS	CS
9	填料Package	PTFE	graphite	graphite	graphite
10	填料腔Stuffing Box	CS	304	316	316L
11	阀杆Stem	17-4 PH	XM-19	XM-19	XM-19

旋转式圆盘阀的外形尺寸 Dimensions of Rotating Disc Valves





公称通径Nominal Diameter		磅级Class	L	A	B	S	H	α	重量 Weight	
									手动 Manual	气动 Pneum.
inch	mm	Lb	mm						kg	
1″	25	150	335	186	261	90	381	40	30	41
		300							32	43
		600							36	49
1.5″	40	150	350	326	424	97	620	50	40	56
		300							45	62
		600							53	71
2″	50	150	380	333	431	99	624	50	50	77
		300							53	81
		600							63	92
2.5″	65	150	445	345	462	102	693	55	77	104
		300							81	109
		600							97	125
3″	80	150	445	365	480	124	625	55	96	125
		300							104	134
		600							122	153
4″	100	150	500	410	506	132	714	55	144	202
		300							162	221
		600							199	259
5″	125	150	500	490	620	140	860	65	216	275
		300							240	300
		600							315	376
6″	150	150	550	524	762	153	980	65	288	371
		300							321	405
		600							405	490
8″	200	150	620	673	965	183	1205	65	528	666
		300							577	716
		600							740	880
10″	250	150	700	831	1200	232	1705	75	912	1054
		300							985	1128
		600							1186	1330
12″	300	150	830	965	1366	255	1928	75	1275	1571
		300							1372	1669
		600							1577	1875
		900	880	1010	1470	330	2015	75	1680	1914
14″	350	150	830	965	1366	255	1928	75	1890	2203
		300							2030	2344
		600							2383	2698
		900	912	1265	1782	350	1700	55	3140	3340
16″	400	150	920	1286	1624	320	1786	60	1937	2038
		300	965	1342	1780	350	1860		2354	2581
		600	987	1568	1896	370	1980		2860	3200

★如有特殊要求，可以根据用户要求提供设计、制造。
Above are based on our supply records, We can manufacture different dimensions and types on request.

阀门型号 Valve Code

类型 Type	阀型 Valve Type	传动方式 Actuator Type	口径 Size	公称压力 Nominal Pressure	材料 Material	连接方式 End Connection	密封面材料 Sealing Surface
HP							

代号 Code	结构 Structure
S	单盘 Single Disc
D	双盘 Double Disc
M	镜盘 Mirror Disc
C	锁盘 Lock Disc
L	直动 Lifting Disc
Q	切换 Diverting

代号 Code	口径 Dianmeter	
05	1″	25
06	1.25″	32
07	1.5″	40
08	2″	50
09	2.5″	65
10	3″	80
11	4″	100
12	5″	125
13	6″	150
15	8″	200
16	10″	250
17	12″	300
18	14″	350
20	16″	400

代号 Code	材料 Material
C	碳钢 Carbon Steel
S	304
M	316
L	316L

代号 Code	材料 Material
YA	整体硬质合金 Steel Bonded Tungsten Carbide
YB	喷焊硬质合金 Spraying Tungsten Carbide
YC	堆焊合金钢 Welding Cobalt Based Alloy

代号 Code	方式 Type
0	手柄 Handle
5	锥齿轮 Bevel Gear
6	气动 Pneumatic
7	液动 Hydraulic
9	电动 Electric

代号 Code	公称压力 Nominal Pressure	
01	PN 10	
02	PN 16	
03	PN 20/25	150Lb
04	PN 40	
05	PN 63	300Lb
06	PN 100	600Lb
07	PN 160	900Lb
08	PN 250	1500Lb
09	PN 320	
10	PN 400	2500Lb

代号 Code	方式 Type
F	法兰 Flange
B	对焊 Butt Weld

举例For Example：HPD6-10-06-S-B-YA

表示：600Lb-3″气动双盘阀，其口径为3″，压力等级为600Lb，对焊连接，阀体材质304，密封面为整体硬质合金。
Means: HPD6-10-06-S-B-YA is a pneumatic double disc valve with 3″ flanges, ANSI 600Lb, 304 body and steel bonded tungsten carbide sealing surface.

圆盘阀数据表 Date Sheet of Rotating Disc Valves

北京航天石化技术装备工程公司 Beijing Aerospace Petrochemical Technology & Equipment Engineering Corporation	圆盘阀数据表 DATA SHEET OF ROTATING DISC VALVES	项目PROJECT	
		位号TAG NO.	

	1	2	3		4	5	6
1	连接管线 LINE	位置 Location		26	执行机构 ACTUATOR	填料材料 Packing Matl.	
2		用途 Service		27		泄露量规范 Leakage Specifications	
3		管道识别编号 Pipe Identification No.		28		制造厂 MFR	
4		管道规格 Pipe Size		29		型号 Model	
5		管道材料 Pipe Material		30		形式 Type	
6		环境温度（℃） Ambient Temp.		31		气源压力 Supply Press	
7	使用条件 OPERATION CONDITIONS	工艺介质 Process Fluid		32		其他 Other	☐电动Elect. ☐液压Hydraulic ☐手动Manual
8		介质密度 Fluid Density		33		手轮 Handwheel	☐带With Handwheel ☐不带Without Handwheel
9		颗粒尺寸 Particle Size		34		故障位置 Failuere Pos.	☐开Open ☐关Closed ☐故障位Failuere Pos.
10		物料堆积比重 Material Accumulating Gravity		35	电磁阀 SOLENOID VALVE	制造厂 MFR	
11		开关频率 ON-OFF Frequency		36		型号 Model	
12		关闭时入口压力P_1 Shut-off Inlet Press. P_1		37		阀的形式 Valve Style	
13		关闭时出口压力P_2 Shut-off Outlet Press. P_2		38		电气接口尺寸 Air Connection Size	
14		开启时入口压力P_3 Open Inlet Press. P_3		39		规格 Size	
15		开启时出口压力P_4 Open Outlet Press. P_4		40		隔爆要求 Reduction of Haz.	☐本质安全Intrin.Saft ☐隔爆Explos-Proof
16		温度T_1 Temperature T_1		41	限位开关 LIMIT SWITCHES	制造厂 MFR	
17	阀门 VALVE	阀门类型 Valve Type		42		型号 Model	
18		压力等级 Pressure Rating		43		开关类型 Switch Type	☐机械Mech. ☐接近式Proximity ☐气动式Pneum.
19		公称通径 Nominal Size		44		隔爆要求 Reduction of Haz.	☐本质安全Intrin.Safe ☐隔爆Explos-Proof
20		连接形式标准 End Conection		45	转阀 ROTATING VALVE	制造厂 MFR	
21		阀盘密封面 Disc Sealing Surfaces		46		阀的形式 Valve Style	
22		阀座密封面 Seat Sealing Surfaces		47		接口规格 Connection Specifications	
23		阀体材料 Body Matl		48	其他 OTHER		
24		阀盘材料 Disc Matl.		49			
25		阀杆材料 Stem Matl.		50			

应用举例 Application Examples

行　　业：多晶硅
Filed：Poly-Silicon
工艺条件：硅粉输送
Process Condition：Silicon Powder Conveying

应用领域：反应釜出料阀
Application：Dumps of Reactors
处理介质：硅粉
Process Fluid：Silicon Powder

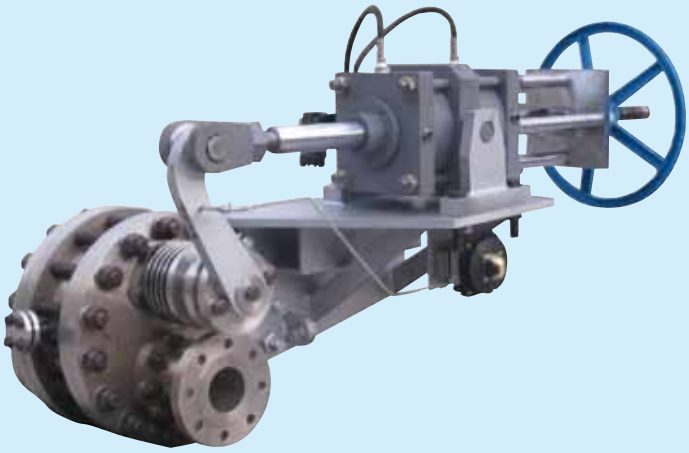
阀门参数 1 Valve Parameters 1

温　　度：300° C
Temperature：300° C
压　　力：2.5MPa
Pressure：2.5MPa
口　　径：2.5″
Nominal Diameter：2.5″
阀体材料：316
Valve Body:316
阀盘材料：硬质合金
Disc Material:Tungsten Carbide
阀座材料：硬质合金
Seat Material: Tungsten Carbide
结构型式：双盘
Structure: Double Disc
动作频率：30次/天
Operation Frequency: 30 Times/Day
动作压差：0.3Mpa
Operation Diff.Pressure:0.3MPa
关闭压差：2.5MPa
Shut-Off Diff. Pressure: 2.5MPa
动作方式：气动
Actuator: Pneumatic
安装时间：2008. 6
Installation Time：2008. 6

阀门参数 2 Valve Parameters 2

温度：600° C
Temperature:600° C
压力：2.5MPa
Pressure:2.5MPa
口径：8″
Nominal Diameter:8″
阀体材料：316
Valve Body: 316
阀盘材质：硬质合金
Disc Material: Tungsten Carbide
阀座材质：硬质合金
Seat Material: Tungsten Carbide
结构型式：双盘
Structure: Double Disc
动作频率：3次/天
Operation Frequency: 3 Times/Day
动作压差：0.3MPa
Operation Diff. Pressure: 0.3MPa
关闭压差：2.5MPa
Shut-Off Diff. Pressure: 2.5MPa
动作方式：气动
Actuator: Pneumatic
安装时间：2009.3
Installation Time:2009.3

产品展示
PRODUCTS SHOW

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