

北京航天动力研究所
国家特种泵阀工程技术研究中心
北京航天石化技术装备工程公司

北京航天动力研究所是我国运载火箭液体火箭发动机的研制单位，多次获得“国家科技进步特等奖”、“大贡献单位”荣誉。1984年开始将航天技术应用于国民经济建设，在北京海淀高新技术开发区成立了“北京航天石化技术装备工程公司”，利用液体火箭发动机先进成熟的燃烧与热能、特种泵、特种阀、自动控制等技术和配置完善的加工、检测、试验设备，为石油化工、煤化工、电力等行业提供优质服务。我所现有职工 1000 多人，技术力量雄厚，工程技术人员 700 多人。

经国家科委批准，以我所为技术依托组建了“国家特种泵阀工程技术研究中心”。目前已形成裂解气/清焦阀、自控回流阀、呼吸阀、黑水调节阀、圆盘阀、旋塞阀、柱塞阀、迷宫阀、S-zorb 滑阀等主导 HT 系列特种阀产品，在国内外用户中享有较高的声誉。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”。

本册介绍的是乙烯裂解装置专用阀门：裂解气阀与清焦阀。裂解气阀用以传送和切断裂解气，清焦阀在裂解炉清焦时用以放空清焦气。我所生产的这种阀门有金属硬密封和非金属软密封两种形式，前者包括平行式双闸板闸阀、楔式双闸板闸阀；后者为平板闸阀。最大口径为 48"，最高使用温度为 550℃。此外，我们还为用户提供上述阀门的零备件及阀门的修理工作。

北京航天石化技术装备工程公司将进一步发挥航天技术的优势，热忱希望与国内外各界朋友开展广泛的合作。我们愿以先进的技术、优质的产品为用户服务。

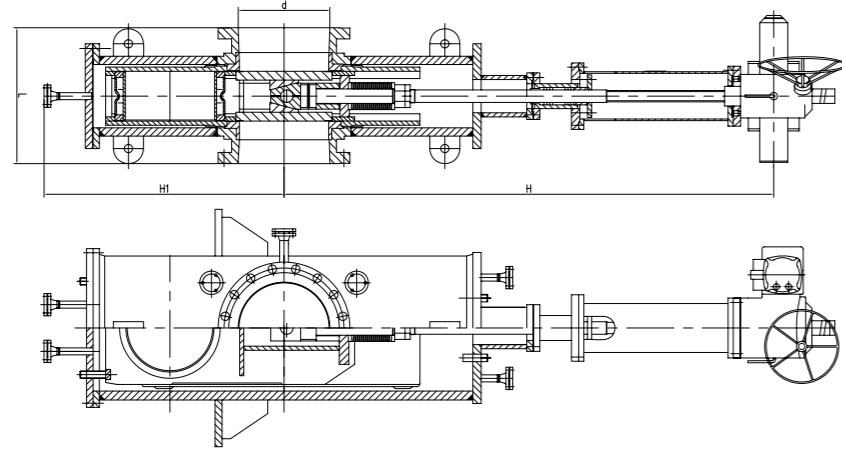
Beijing Aerospace Propulsion Institute
National Engineering Research Center for Special Pumps and Valves
Beijing Aerospace Petrochemical Technology and Equipment Engineering Corporation (BAPC)

Beijing Aerospace Propulsion Institute is the research institute specializing in developing liquid rocket engines in our country, which has won several national science and technology progress prizes, and "national big contribution organization" award. In 1984 it began to transfer the space technology applications into the national civil construction, and established Beijing Aerospace Petrochemical Technology and Equipment Engineering Corporation (BAPC) in Beijing Haidian high-tech industrial development zone. Based on advanced and mature technology on liquid rocket engine combustion and thermal energy, special pump, special valve and automatic control, with mature accurate machining and testing equipment, BAPC has provided products and service with good performance for clients of petrochemical, coal chemical, and power industry, etc. There are more than 1000 employees, and more than 700 are engineering and technical staff with strong technical background.

Approved by the national science and technology commission, National Engineering Research Center for Special Pumps and Valves was founded in our institute. BAPC supplies HT series special valves, such as decoking/ethylene gas valves, automatic recirculation control valves, breathers, survivor control valves, rotating disc valves, plug valves, piston valves, labyrinth control valves and S-zorb slide valves to various industries, and they gain domestic and foreign customers' trust and praise. The company 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. The company also gained many national honors and certifications, such as "Promise Keeping Enterprise" and "AAA Credit Grade Certificate".

This brochure is to introduce the Transfer Line Valve (TLV)/Decoking Valve (DV) in ethylene pyrolysis process. TLV is used to transfer and cut off the pyrolysis gas, DV is used to empty the decoking gas. HT transfer line valve (TLV)/decoking valve (DV) has two groups, the metal sealed valves and the soft sealed valves, the former includes Double Disc Through Conduit Gate Valve and Double Disc Wedge Gate Valve, and the latter includes Single Disc Through Conduit Gate Valve. The maximum size of supply scope is 48" and the highest application temperature is 550 °C. In addition, we also provide users with the spare parts and repair work of the valve.

BAPC will further take the advantages of space technology, and warmly hope to collaborate with industrial companies at home and abroad. We would like to provide service for our clients with high-tech and good-quality products.



硬密封平行式双闸板闸阀结构示意图

阀门特点:

- 整体采用焊接结构；
- 闸板与闸座的密封面堆焊硬质合金，具有高强度的防腐蚀及耐磨损性能，使用寿命长；
- 闸板的运动完全由两块定向板控制；
- 阀门在全开和全关时，闸座密封面处于完全受保护状态；
- 阀门所有内部零部件是可以拆卸的，并且可以从阀门的顶端和底端装卸；
- 在阀体的顶部和底端都设有蒸汽清洗口；
- 双通道，在全开位置相当于直通管线，固体颗粒通过阀门时不会进入阀体。

动作方式:

- 手轮 伞齿轮 电动 气动

主要零件材质:

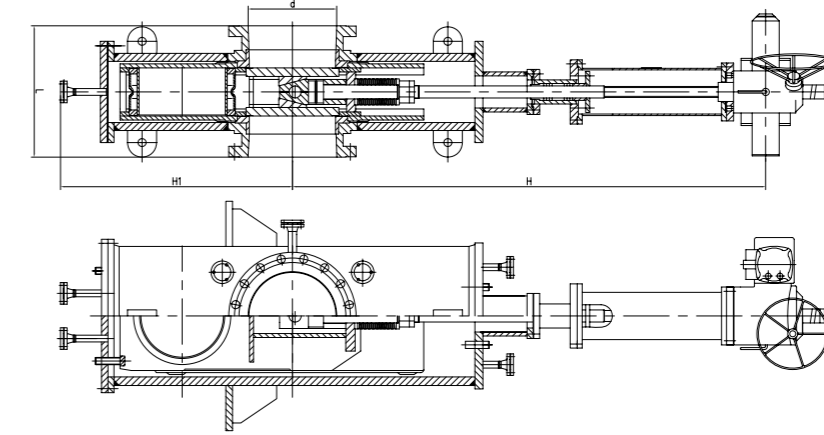
■ 壳体：	16MnR	15CrMoR	GB6654
■ 闸板、闸座：	15CrMo+ 司太立		
■ 闸杆：	2Cr13	OCr18Ni9	GB1220
■ 垫片：	V#1755		
■ 螺栓：	35CrMoA		GB3077
■ 导板：	HT250		GB1226
■ 楔型块：	15CrMo		GB3077

应用规范:

■ 设计制造	ANSI B16.34
■ 法兰	ANSI B16.5 150Lb 300Lb
■ 试验和检验	DIN 3230 第三部分
■ 结构长度	ANSI B16.10

主要外型尺寸 (mm):

d	200	250	300	350	400	450	500	600	700	750	800	900	1050
L	400	450	500	550	600	700	700	800	900	950	950	1100	1200
H	1652	1865	2080	2150	2250	2310	2420	2890	3150	3520	3898	4195	5075
H1	578	935	990	1060	1105	1110	1225	1410	1620	1660	1740	1930	1970



Double Disc Through Conduit Gate Valve

The valve features:

- Overall welded structure.
- Cemented carbide is welded on the sealing surface between valve disc and valve seat, which have high performance of corrosion resistance, wear resistance and a long service life.
- The movement of valve disc is completely controlled by two guide plates.
- In the full open situation and full close situation, valve seat sealing surface is in a totally protected status.
- All internal parts of valve can be removed, and it is replaceable from the top and bottom of valve.
- Purge steam supply is equipped on the top and bottom of the valve body.
- Dual channel. In full open position the passage is equal to direct line. Solid particles through the valve will not enter the body cavity.

Mode of action:

- Handwheel, bevel, gear, electric, pneumatic

The major parts material:

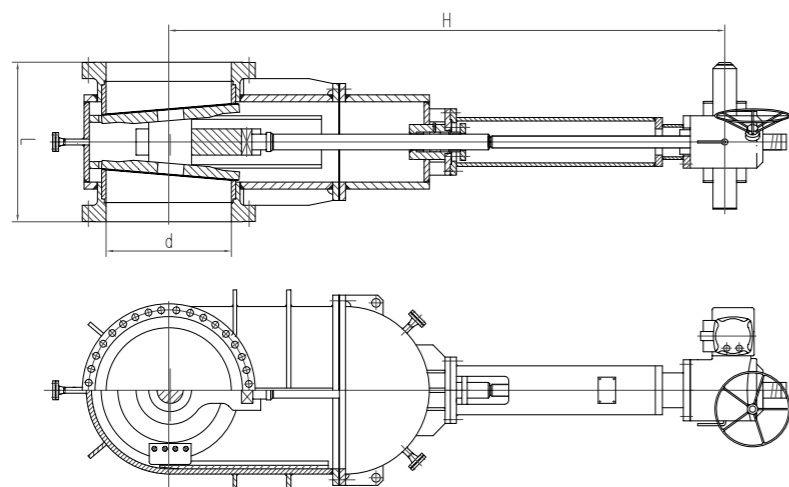
■ Body:	16MnR	15CrMoR	GB6654
■ Disc, seat:	15CrMo+ Stellite		
■ Stem:	2Cr13	OCr18Ni9	GB1220
■ Gasket:	V#1755		
■ Bolt:	35CrMoA		GB3077
■ Guide plate:	HT250		GB1226
■ Wedge block:	15CrMo		GB3077

Application specification:

■ Design and manufacture	ANSI B16.34
■ Flange	ANSI B16.5 150Lb, 300b
■ Test and inspection	DIN 3230 part 3
■ Structure length	ANSI B16.10

Main outside dimensions (mm) :

d	200	250	300	350	400	450	500	600	700	750	800	900	1050
L	400	450	500	550	600	700	700	800	900	950	950	1100	1200
H	1652	1865	2080	2150	2250	2310	2420	2890	3150	3520	3898	4195	5075
H1	578	935	990	1060	1105	1110	1225	1410	1620	1660	1740	1930	1970



硬密封楔式双闸板闸阀结构示意图

阀门特点:

- 整体采用焊接结构；
- 闸板与闸座的密封面堆焊硬质合金，具有高强度的防腐及耐磨损性能，使用寿命长；
- 闸板的运动完全是由两块定向板控制；
- 阀门所有内部零部件是可以拆卸的，并且可以从阀门的顶端和底端装卸；
- 在阀体的顶部和底端都设有蒸汽清洗口；
- 双通道，在全开位置相当于直通管线；
- 与硬密封平行式双闸板闸阀相比，结构简单、重量轻。

动作方式:

- 手轮 伞齿轮 电动 气动

主要零件材质:

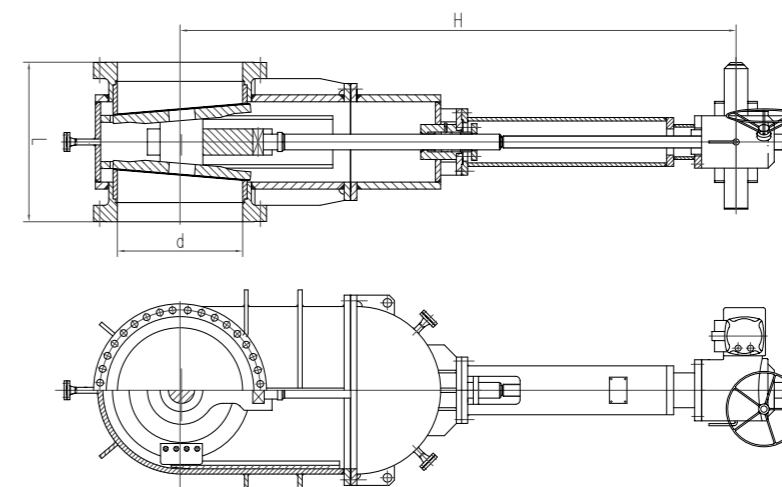
■ 壳体:	16MnR	15CrMoR	GB6654
■ 闸板、闸座:	15CrMo+ 司太立		
■ 闸杆:	2Cr13	0Cr18Ni9	GB1220
■ 垫片:	V#1755		
■ 螺栓:	35CrMoA		GB3077
■ 导板:	HT250		GB1226
■ 楔型块:	15CrMo		GB3077

应用规范:

■ 设计制造	ANSI B16.34
■ 法兰	ANSI B16.5 150Lb 300Lb
■ 试验和检验	API 598
■ 结构长度	ANSI B16.10

主要外型尺寸 (mm):

d	450	600	750	800	900	1050
L	711	800	914	965	1000	1200
H	2812	3600	4115	4350	4595	5075
H1	430	530	648	730	850	970



Double Disc Wedge Gate Valve

The valve features:

- Overall welded structure.
- Cemented carbide is welded on the sealing surface between valve disc and valve seat, which have high performance of corrosion resistance, wear resistance and a long service life.
- The movement of valve disc is completely controlled by two guide plates.
- All internal parts of valve can be removed, and it is replaceable from the top and bottom of valve.
- Purge steam supply is equipped on the top and bottom of the valve body.
- Dual channel. In full open position the passage is equal to direct line.
- Compared with the double disc through conduit type gate valve, the double disc wedge type gate valve has a simpler structure and lighter weight.

Mode of action:

- Handwheel, bevel, gear, electric, pneumatic

The major parts material:

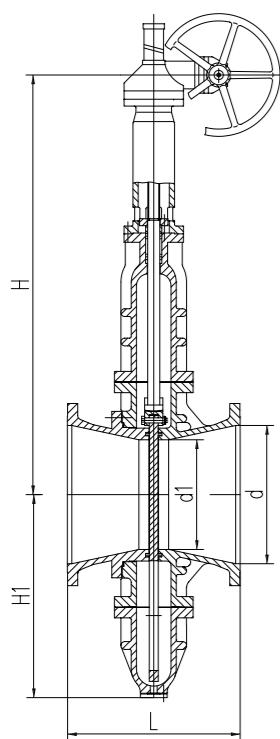
■ Body:	16MnR	15CrMoR	GB6654
■ Disc, seat:	15CrMo + Stellite		
■ Stem:	2Cr13	0Cr18Ni9	GB1220
■ Gasket:	V# 1755		
■ Bolt:	35CrMoA		GB3077
■ Guide plate:	HT250		GB1226
■ Wedge block:	15CrMo		GB3077

Application specification:

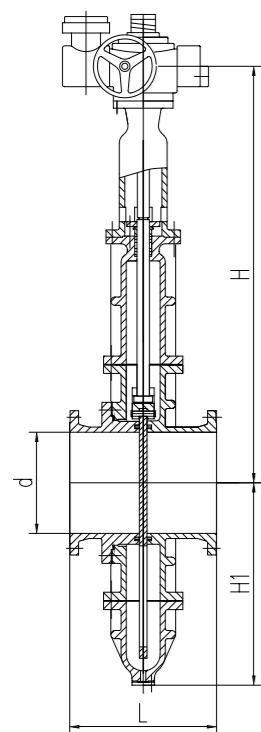
■ Design and manufacture	ANSI B16.34
■ Flange	ANSI B16.5 150Lb, 300Lb
■ Test and inspection	API 598
■ Structure length	ANSI B16.10

Main outside dimensions (mm) :

d	450	600	750	800	900	1050
L	711	800	914	965	1000	1200
H	2812	3600	4115	4350	4595	5075
H1	430	530	648	730	850	970



文丘里型结构示意图



标准型结构示意图

阀门特点:

- 非金属密封，采用专用密封圈，使用寿命长；
- 阀体为铸造结构；
- 阀门在全开和全关时，阀座密封面处于完全受保护状态；
- 阀板导流孔位于流道的上方，可防止在开关过程中阀体的底部结焦；
- 阀座和阀板始终接触，特别适合含固体颗粒的介质。

主要零件材质:

- 壳体: WCB WC6 GB12229
- 阀板: 1Cr18Ni9Ti+ 硬化处理
- 阀杆: 2Cr13 0Cr18Ni9 GB1220
- 填料: 专用
- 阀座: 专用
- 垫片: V#1755
- 螺栓: 35CrMoA GB3077

应用规范:

- 设计制造: ANSI B16.34
- 法兰尺寸: ANSI B16.5
- 试验和检验: API 598
- 结构长度: ANSI B16.10

动作方式:

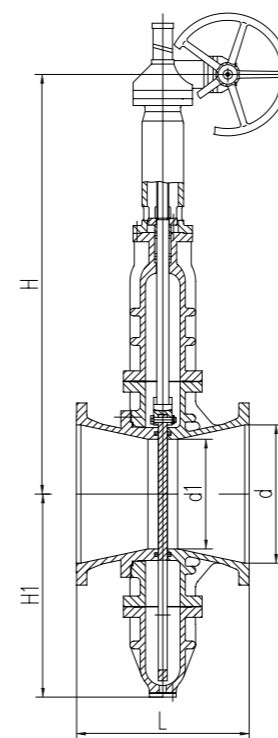
- 手轮 伞齿轮 电动 气动

主要外型尺寸 (文丘里型)(mm)

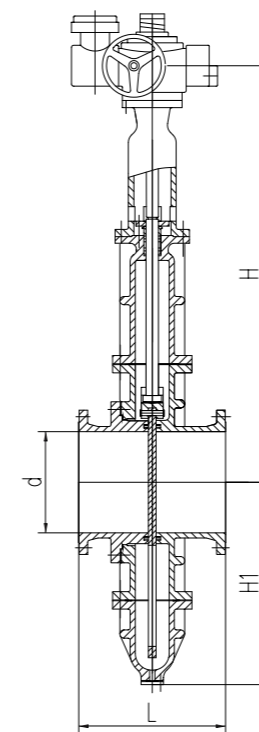
d	250	300	350	400	450	750	800
d1	190	190	240	240	340	440	635
L	450	500	550	600	650	950	1000
H	980	980	1190	1680	1320	1611	2430
H1	420	420	508	510	660	845	1150

主要外型尺寸 (标准型)(mm)

d	250	300	350	400	450	500	750
L	330	500	380	406	432	711	660
H	1511	1743	1930	2105	2286	2826	3460
H1	495	578	640	720	797	954	1270



Venturi Type Single Disc Through Conduit Gate Valve



Standard Type Single Disc Through Conduit Gate Valve

The valve features:

- Non metal seal with special gasket. Long service life.
- Valve body is cast.
- In the full open situation and full close situation, valve seat sealing surface is in a totally protected status.
- The flow guide hole for valve disc is located on the top of the flow channel, to prevent coking in the bottom of valve cavity during the operation of opening or closing.
- Seat and disc contact all the time, especially suitable for medium containing solid particles.

The major parts material:

- Body: WCB WC6 GB12229
- Valve disc: 1Cr18Ni9Ti + hardening treatment
- Stem: 2Cr13 0Cr18Ni9 GB1220
- Packing: Specially designed
- Seat: Specially designed
- Gasket: V# 1755
- Bolt: 35CrMoA GB3077

Application specification:

- Design and manufacture: ANSI B16.34
- Flange dimensions: ANSI B16.5
- Test and inspection: the API 598
- Structure length: ANSI B16.10

Mode of action:

- Handwheel, bevel, gear, electric, pneumatic

Main outside dimensions (Venturi type) (mm)

d	250	300	350	400	450	750	800
d1	190	190	240	240	340	440	635
L	450	500	550	600	650	950	1000
H	980	980	1190	1680	1320	1611	2430
H1	420	420	508	510	660	845	1150

Main outside dimensions (standard type) (mm)

d	250	300	350	400	450	500	750
L	330	500	380	406	432	711	660
H	1511	1743	1930	2105	2286	2826	3460
H1	495	578	640	720	797	954	1270



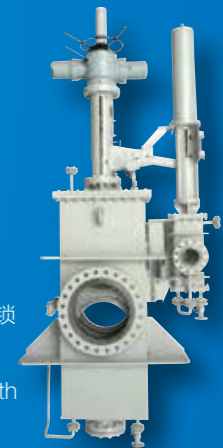
DV10000 系列硬密封平行式双闸板闸阀
DV10000 Metal Seal Double Disc Through Conduit Gate Valve



DV20000 系列硬密封楔式双闸板闸阀
DV20000 Metal Seal Double Disc Wedge Gate Valve



DV30000 系列软密封平板闸阀
DV30000 Soft Seal Single Disc Through Conduit Gate Valve



平行式双闸板闸阀机械连锁
Double Disc Through Conduit Gate Valves with Mechanical Linkage



裂解气阀 / 清焦阀在线使用
TLV/DV in operation

