



中国航天



安全阀事业部

Safety Valve Division

北京航天动力研究所 (北京航天十一所)
Beijing Aerospace Propulsion Institute [No.11 Institute of CASC(Beijing)]
北京航天石化技术装备工程有限公司
Beijing Aerospace Petrochemical Technology and Equipment Engineering Corporation Limited (BAPC)



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简介

北京航天动力研究所（中国航天科技集团公司六院十一所（京））创建于1958年，是我国液体火箭动力事业的发源地，有着深厚的科研基础与企业文化积淀，以精湛的技术，强劲的动力，支撑了国防现代化建设和中国航天事业的发展，研制了多种液体火箭发动机，助推了“两弹一星”、“载人航天”、“嫦娥探月”等国家重点任务。

北京航天动力研究所致力于推动液体火箭发动机技术在航天及更广泛领域的应用，形成了宇航推进及航天技术应用产业两大主营业务，把航天高科技带到了国民经济和社会生活的广泛领域，成为航天系统内军民融合的领跑者。

1991年成立的北京航天石化技术装备工程公司是北京航天动力研究所的全资子公司。公司以“国家特种泵阀工程技术研究中心”为创新平台，以液体火箭发动机专业技术为依托，着力推动热能工程、特种泵阀的技术创新和产业化发展，形成了热能工程、流体旋转机械、特种阀门三大专业领域，开发了适合高效节能环保要求、具有核心竞争力的先进热能工程解决方案，研制了一大批技术性能先进的装备和产品，造就出一个个实力雄厚的国产化示范工程。

“航天石化”服务于能源化工、石油化工、煤化工等国民经济主导行业，是中石化、中石油、中海油、神华集团等重点石化、煤化工企业的优秀供应商，并与众多国际工程公司形成战略合作伙伴关系，“航天石化”已成为航天高科技应用于国民经济重点领域的知名品牌和旗帜。

北京航天动力研究所（北京航天石化技术装备工程公司）是“国家高技术重大专项重大贡献单位”，“国防科技重大突破专项奖单位”，“探月工程突出贡献奖单位”，以航天科技助力国家经济发展，以航天品牌为国家赢得荣光，开创了“专业化、产业化、工程化、国际化”的发展道路，为实现构建军民融合、国际知名的高新技术企业的目标而不断进取。承载中国梦，铸就航天情，“航天石化”将继承与弘扬中国航天50多年来自主创新的奋斗精神，续写新的传奇！



INTRODUCTION

Founded in 1958, Beijing Aerospace Propulsion Institute (also known as Beijing No. 11 Institute of the 6th Academy of China Aerospace Science and Technology Corporation) is the cradle of China's Liquid Propellant Rocket Engines (LPREs). With sophisticated research and development (R&D) foundation and profound enterprise culture, the Institute has developed various kinds of LPREs with state-of-art technology and strong power to boost major national aerospace projects in China's aerospace history, such as "Atomic and Hydrogen Bombs and Man-made Satellite Project", "Manned Spaceflight Project" and "Lunar Exploration Project". It has supported the modernization of China's national defense and promoted the development of China's aerospace industry.

The Institute is devoted to the application of LPRE technologies in aerospace and other fields and has formed two main businesses, that is, aerospace propulsion industry and aerospace technology application industry. It brings the aerospace high-tech to common industries and daily lives, and has become the pioneer of using military technology to benefit social economy in aerospace arena.

Established in 1991, Beijing Aerospace Petrochemical Technology and Equipment Engineering Corporation (BAPC) is the institute's wholly-owned subsidiary. With "National Engineering Research Center for Special Pump and Valve" as its innovation platform, based on aerospace technologies, BAPC has cultivated many proprietary technologies and competitive products in the fields of thermal engineering, fluid rotating machinery, special pumps and valves, boosted the technology innovation and industrialization of those fields. It has developed cutting-edge products, provided efficient and environment-friendly system solutions and built national demonstration projects.

BAPC serves energy, petrochemical, coal chemical and other key industrial areas of national economy. It is a strategic cooperation partner and excellent supplier of many famous domestic and overseas enterprises, such as CNPC, Sinopec, CNOOC and Shenhua Group. "BAPC" is well-known for applying advanced aerospace technology to key industrial areas in the national economy, thus becomes a model in this field.

Beijing Aerospace Propulsion Institute (Beijing Aerospace Petrochemical Technology and Equipment Engineering Corporation) boosts the development of national economy by aerospace science and technology and adds national honors with self-developed brands. It has gained many national prizes and awards, such as "Great Contributor to the National Major Special High-Tech Projects", "Science and Technology Prize for a Major Breakthrough in the Special National Defense Field" and "Outstanding Contributor to Lunar Exploration Project".

It has created a development mode of "specialization, engineering, industrialization and internationalization" and keeps on advancing in order to realize the goal of building a civil-military integration and international well-known high-tech enterprise. Trying to fulfill the Chinese Dream by contributing to the aerospace industry, BAPC will inherit and carry forward the aerospace merits of independent innovation and persistent hard working which have a history over 50 years and continue to create new milestones.



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科研实力

Technical Strength

企业文化

航天传统精神：自力更生、艰苦奋斗、大力协同、无私奉献、严谨务实、勇于攀登

两弹一星精神：热爱祖国、无私奉献、自力更生、艰苦奋斗、大力协同、勇于攀登

载人航天精神：特别能吃苦、特别能战斗、特别能攻关、特别能奉献

Enterprise Culture

Traditional Aerospace Spirit: self-reliance, hard working, united cooperation, selfless contribution, scientific truth-seeking, brave dream pursuing

Two Bombs and One Satellite Spirit: loyal patriotism, self reliance, hard working, united cooperation, brave dream pursuing

Manned Spaceflight Spirit: especially can bear hardships, especially can combat difficulties, especially can bear hardships, especially can combat difficulties, especially can accomplish scientific breakthroughs, and especially can make contributions

科研成果及知识产权

拥有专利 197 件，其中美国国家专利局授权的“Disc Valve with Diversion Hole”发明专利 1 件，国防专利 49 件；国家知识产权局授权的发明专利 42 件，实用新型专利 105 件。先后获得省部级以上奖项 308 项。其中“特大型超深高含硫气田安全高效开发技术及工业化应用”等 9 项成果，获得国家科学技术进步奖。其中安全阀专业的部级科技成果奖励三项，授权发明和实用新型专利十七项。

Scientific Research Achievements and Intellectual Property Rights

We have obtained 197 patents, among which 49 national defense patents, 42 inventive patents, 105 utility models and 1 US patent named “Disc Valve with Diversion Hole”. We have won 308 awards above ministerial level, among which 9 are national Scientific and Technologic Progress Awards, including “Safe and Efficient Exploitation and Industrialization Technology for Super Large and Deep Gas Field with High Sulfur Concentration”.





Beijing Aerospace Propulsion Institute
[No.11 Institute of CASC(Beijing)]

Beijing Aerospace Petrochemical Technology and
Equipment Engineering Corporation Limited (BAPC)

优秀团队

组织强化，机构唯精。我们拥有一支实战、善战的高效队伍，围绕着“质量、效率、效益”，用团结和睿智营造着企业核心竞争力，并建立了完善的质量保证体系。一流的水准，高效的管理，求精的信念，优秀的团队是实现企业价值的有力保障，是打造成功的坚实基础。安全阀事业部现有职工 126 人，专业技术人员 70 余人，硕士及以上学历 39 人。研究员 4 人、高级工程师 15 人、工程师 30 人和技师各 1 人。

Excellent Team

With schemed and disciplined organization, we have formed a practical, efficient and skilled team. Focusing on “quality, efficiency, effectiveness”, we are building core competitiveness by unity and wisdom and have formed a sound quality assurance system. We have strong support for realizing our values and have laid solid foundation of success through first-class standard, high efficient management, persistent perfection and talented team. Now the relief valve group has 126 staff, including more than 70 technical personnel. 39 of the staff have obtained master's degree. Among staffs there are 4 Researcher, 15 senior engineer, 30 engineer and 1 technician.



团队风采
Team's Mien

技术保障

依托国家特种泵阀工程技术研究中心、材料工艺研究所、综合理化试验中心、国家级无损检测中心及工装设计中心，在技术研发及创新条件上拥有得天独厚的优势，是航天技术应用产业发展的有力保障。

Technical Support

We have unique advantages in technology development and innovation and help the development of aerospace technology application industry with the strong support of National Engineering Research Center for Special Pump and Valve, Aerospace Research Institute of Materials and Processing Technology, comprehensive physical and chemical testing center and national-level non-destructive test center and tooling design center.



安全阀性能(包括排量)检测装置(气体)

Pressure Relief Valve Performance (Including Discharge) Detection Device (Gas)



安全阀性能(包括排量)检测装置(液体)

Pressure Relief Valve Performance (Including Discharge) Detection Device(Liquid)



质量保障

航天人视质量为生命，技术、管理双归零的质量管理方法是航天人独有的质量管理实践，也是世界上最苛刻的质量管理方法。这是以追求“零缺陷”为理念，以系统工程管理为主要特征的质量管理方法。

我们实施“以人为本”、“全员参与”的质量方略，建立了面向市场、运行高效的 ISO9001 质量体系，以人为本、以质取胜、系统管理、持之以恒；以顾客为焦点，以质量创信誉，追求卓越，力求完美。

航天质量座右铭—严肃认真，周到细致，稳妥可靠，万无一失

航天质量行为准则—严、慎、细、实

Quality Assurance

We treat quality as important as our lives since the aerospace industry puts great emphasis on product quality. We have the special closed-loop quality control system of aerospace industry, which is called “Technology and Management Double Returning to Zero” quality control method. With the strict and systematic quality control method, we try to achieve “zero faults” by taking effective precautions measures.

Sticking to the quality ideology of “people oriented and wide participation”, we have established efficient and market oriented ISO 9001 quality control system. We put people first and focus on customers’ satisfaction. We try to win the competition and gain reputation by producing high quality products. We continuously improve product quality and try to make them perfect.

Our Maxims: developing products carefully, taking all facts into account, ensuring reliability, minimizing faults.



三坐标检测仪

Trilinear Coordinates Measuring Instrument



弹簧性能试验机

Spring Testing Machine



北京航天石化技术装备工程有限公司作为中国最大，国际知名的专业安全阀制造商，一直致力于为客户提供全套超压保护及流体控制解决方案，专业从事工业阀门的生产、研发、销售和服务。作为航天石化的主打产品，HT 系列安全阀现已通过多个国际认证，如美国机械工程师协会认证 (ASME)、欧洲共同体安全认证 (CE) 以及海关联盟认证 (EAC) 等。尤其在美国机械工程师协会认证 (ASME) 方面，HT 系列安全阀是国内第一家全系列产品取得 ASME 认证产品，目前已有多个型号、全系列产品取得这一认证，并且认证的综合性能位列国际前茅。

Beijing Aerospace Petrochemical Technology and Equipment Engineering Co., LTD., as China's largest, internationally renowned professional valve manufacturer, has been committed to providing customers with a full range of the overpressure protection and flow control solutions, specializing in industrial production, research and development, sales and services of the PRV. As BAPC's flagship product, HT series PRV has now been certified by many international associations, such as the American Society of Mechanical Engineers (ASME), the European Community Safety certification (CE), and the Customs Union certification (EAC). Especially in the ASME certification, HT series PRV is the first domestic whole series product has been certified by ASME in China. Now there are multiple models, whole series of product obtained comprehensive performance in certification ranked top internationally.





生产制造能力

Manufacturing Facilities

拥有很强的制造加工能力，安全阀产品年产量超过 2 万台，可承接国内外各类大型项目。

Strong manufacturing ability with annual output of more than 20000 units PRV, can undertake all kinds of large- projects at home and abroad.



机加工车间
Machining Workshop



装配车间
Fitting Shop



零件库房
Parts Warehouse



装配工位
Assembly Work Unit

拥有门类齐全的先进制造加工设备, 重要零件自行制造, 铸件及标准件外协制造, 所有重要零部件均以军用产品的标准严格制造及控制。

With all kinds of advanced manufacturing equipment, we can manufacture important parts and outsource cast parts and standard parts, all important parts are manufactured and controlled strictly in accordance to military standard.



数控制造机床
Numerical Control Machine Tool



数控制造车间
CNC Machining Center



安全阀零件脱脂设备
Degreasing Equipment



弹簧直接载荷式 *Spring Loaded*

HTO、HTB、HTOA、HTBA系列弹簧直接载荷式安全阀

HTO, HTB, HTOA, HTBA Series Pressure Relief Valve

特点

- 具有 ASME UV 认证，排量系数通过美国 NBBI 认证；
- 广泛应用于石化、化工等领域的装置、压力容器及管路中，提供高性能、高可靠性的超压保护；
- 特殊的内部结构设计可保证在较小超压的情况下迅速开启；
- 可调式调节圈可使阀获得满意的启闭压差；
- 精良的加工工艺保证阀门具有高度密封性和超长的使用寿命。

Features

- ASME UV certified ,and capacities are certified by the National Board Boiler and Pressure Vessel Inspector.
- Widely used on the pressure pipes and vessels of the chemical and petrochemical plants and system, and provide high quality overpressure protection.
- Special design make the disc to achieve full opening at small overpressure.
- Blowdown control is provided with adjustable nozzle ring only.
- Strict manufacture technology assure pressure relief valve have high degree of seat tightness and long using life.

尺寸规格 Size

- 1" D 2"~8" T 10"

压力范围 Class

- 150~2500

温度范围 Temperature

- -268°C ~+538°C



弹簧直接载荷式 *Spring Loaded*

HTDO、HTDB系列大口径安全阀

HTDO, HTDB Large Orifice Pressure Relief Valves

特点

- 具有 ASME UV 认证, 排量系数通过美国 NBBI 认证;
- 专门为大型设备所需求的大排量设计;
- 成本低, 结构紧凑, 重量轻;
- 排量大, 1 台 20BB24 的排量相当于 6 台 8T10 的排量。

Features

- ASME UV certified ,and capacities are certified by the National Board Boiler and Pressure Vessel Inspector.
- Originally developed in response to the lager plants and resultant increased generating capacities.
- Lower cost and weight, and more compact.
- One 20BB24 valve with a relief capacity nearly six times that of a T-orifice valve.

尺寸规格 Size

- 10" V 14"~20" BB 24"

压力范围 Class

- 150~300

温度范围 Temperature

- -196°C ~+538°C





弹簧直接载荷式 *Spring Loaded*

HTXY系列安全阀

HTXY, HTXYL Series Pressure Relief Valve

特点

- 适用于管道或容器因受热膨胀引起的超压；
- 结构小巧，价格实惠；
- 阀座阀瓣采用 Stellite 合金堆焊，并进行高精度研磨；
- 连接形式多样（法兰连接、管螺纹连接等）。

Features

- Used to against overpressure of pipe and vessel which is caused by thermal expansion in the pipe and vessel.
- Compact and affordable.
- The disc and the nozzle seat is hardened with stellite, and lapped precisely.
- Several kinds of connection forms, such as, flange and NPT.

尺寸规格 Size

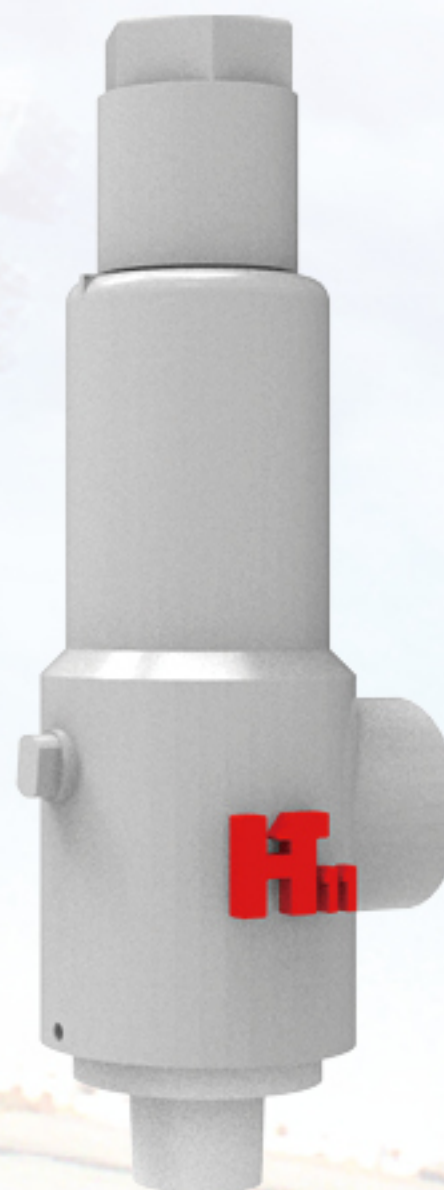
- 1/2" C 1/2"~1" D 1"

压力范围 Class

- 150~900

温度范围 Temperature

- -196°C ~+427°C



弹簧直接载荷式 *Spring Loaded*

HTXB系列安全阀

HTXB Series Pressure Relief Valve

特点

- 平衡波纹管结构，变动背压不影响安全阀的整定压力，且波纹管对弹簧等阀盖内的零件起到防腐蚀的作用；
- 适用于管道或容器因受热膨胀引起的超压；
- 结构小巧；
- 阀座阀瓣采用 Stellite 合金堆焊，并进行高精度研磨。

Features

- Balanced bellows construction protects set pressure from being affected by variable back pressure, and balance bellows isolated the and the parts in bonnet, such as spring, from being corroded from the corrosive.
- Used to against overpressure of pipe and vessel which is caused by thermal expansion in the pipe and vessel.
- Compact construction.
- The disc and the nozzle seat is hardened with stellite, and lapped precisely.

尺寸规格 Size

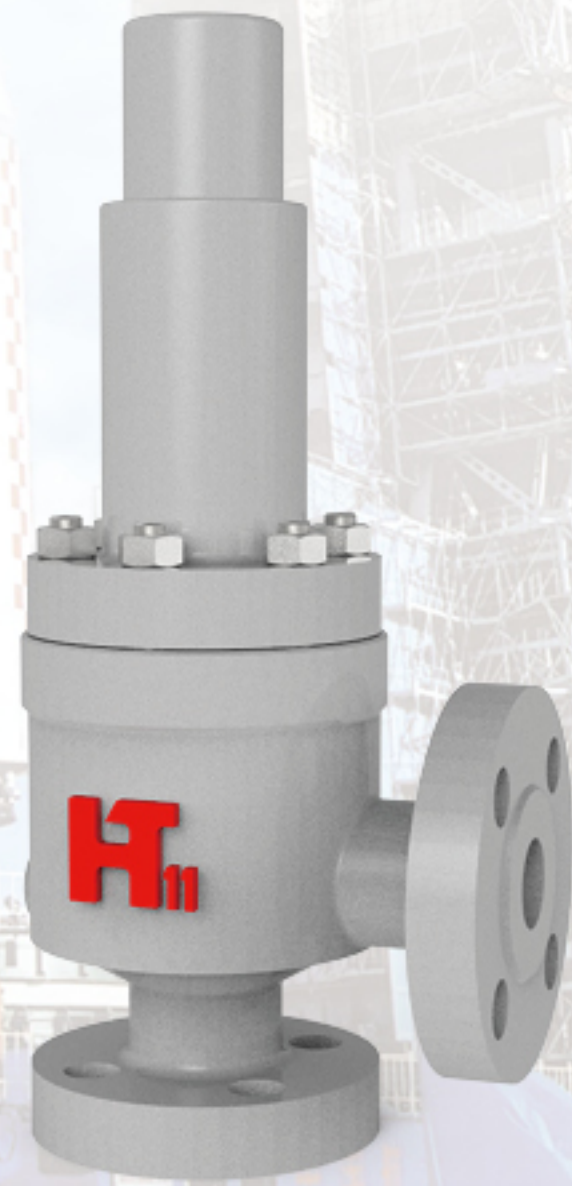
- 1/2" C 1/2"~ 1" D 1"

压力范围 Class

- 150~600

温度范围 Temperature

- -196°C ~+427°C





弹簧直接载荷式 *Spring Loaded* HTXO系列小口径安全阀

HTXO Series Small Orifice Pressure Relief Valve

特点

- 适用于石化、化工行业各种承压装置以及储罐、管路等需要热膨胀泄放场合；
- 金属密封采用 Stellite 合金堆焊，表面经过高精度研磨后保证良好的密封性和长久的使用寿命；
- 非金属密封材料耐蠕变性能突出，保证在常温、超低温等工况下的密封；
- 结构紧凑，尺寸小，重量轻；
- 设计、制造、动作性能符合 ASME 规范第 VIII 卷要求，排量经过美国 NBBI 认证。

Features

- Applies to the safety protection of all different kinds of pressure-bearing devices in petro-chemical chemical industry where thermal expansion relief of tanks and pipelines are needed.
- For metal sealing, the sealing surfaces are deposited with Stellite. Excellent flatness and surface finish of sealing surfaces by precision machining and lapping assures seat tightness and long life.
- For non-metal sealing, the anti-creeping non-metal sealing materials with outstanding performances are used to guarantee tight sealing under ambient and cryogenic conditions.
- Compact structure, small size and light weight.
- The design, manufacture and performance all meet requirements of ASME Section VIII and capacity has been authenticated by American National Board of Boiler and Pressure Vessel Inspectors(NBBI).

尺寸规格 Size

- 1/2" D 3/4"~1 1/2" F 1 1/2"

压力范围 Class

- 150~600

温度范围 Temperature

- -196°C ~+427°C



弹簧直接载荷式 *Spring Loaded* HTWG系列高压安全阀 HTWG Series High Pressure Relief Valve

特点

- 广泛应用于液化天然气、空气分离、液化石油等行业设备及管道，特别是在高压液化天然气领域；
- 适用温度范围和压力范围广；
- 在较小超过压力下即可完全开启；
- 根据用户需要，可提供金属密封或软密封型式。

Features

- Provides high quality overpressure protection for vessel and pipe of the liquefied natural gas, air separation and liquefied petroleum industry, especially in high-pressure conditions.
- Used in wide temperature and pressure range.
- Fully opened at small overpressure.
- Available with flat metal to metal seats or soft seats.

尺寸规格 Size

- 1/2" C 1/2"~1" D 1"

压力范围 Class

- 900~2500

温度范围 Temperature

- -196°C ~+200°C





Beijing Aerospace Propulsion Institute
[No.11 Institute of CASC(Beijing)]

中国航天

Beijing Aerospace Petrochemical Technology and
Equipment Engineering Corporation Limited (BAPC)

弹簧直接载荷式 *Spring Loaded*

HTCL系列衬里安全阀

HTCL Series Lined Pressure Relief Valve

特点

- 阀内接触介质的主要零件表面衬氟塑料，有效避免强腐蚀介质对阀门结构的破坏；
- 适用于介质腐蚀性很强的工况条件，如饱和盐水、湿氯气、烧碱、盐酸、硝酸及硫酸等。

Features

- Surface of the main parts in the relief valve be covered by fluoroplastics, which can protect the trim components from strong corrosive medium.
- Used on the strong corrosive condition, such as saturated brine, wet chlorine, caustic soda, strong acid and so on.

尺寸规格 Size

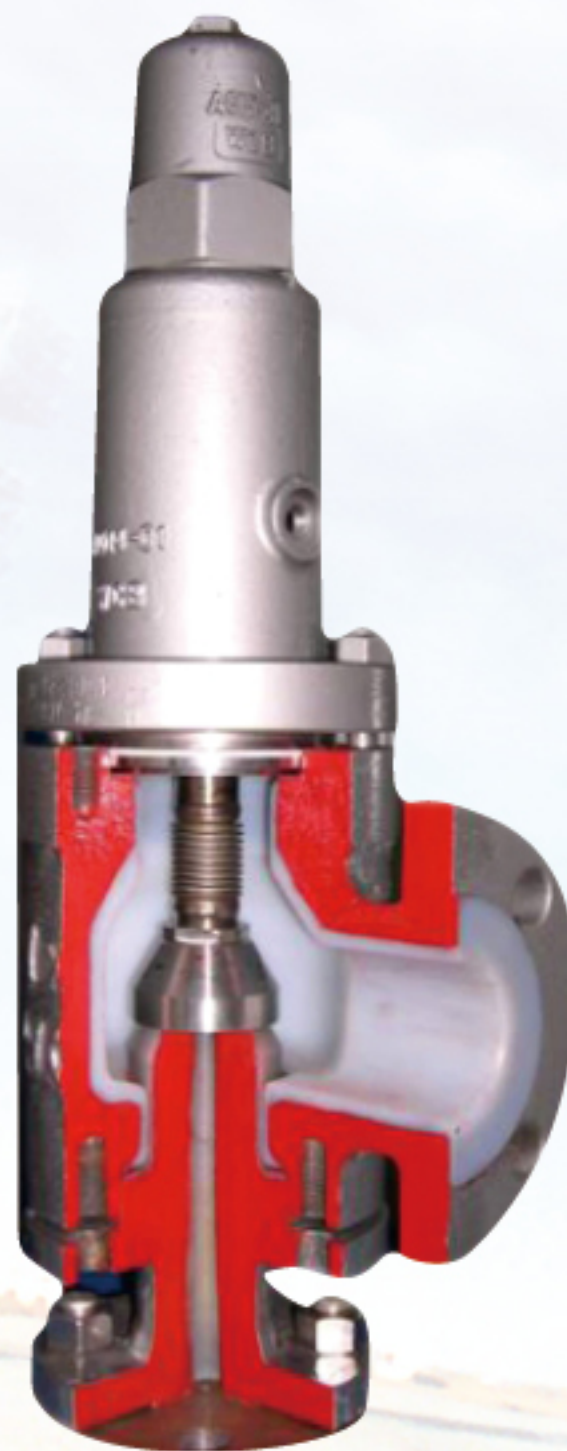
- 1" D 2"~8" T 10"

压力范围 Class

- 150~300

温度范围 Temperature

- -60°C ~+200°C



弹簧直接载荷式 *Spring Loaded* HTNB系列环管反应器用安全阀 HTNB Series Loop Reactor Relief Valve

特点

- 根据环管反应器的特殊要求专门设计开发;
- 采用软密封结构, 保证阀门优良的密封性, 能适应含有固体微粒的介质环境;
- 多层波纹管设计, 保证安全阀在较大的变动背压情况下正常工作;
- 保护套及波纹管结构消除了固体颗粒介质对阀门动作性能的影响。

Features

- Specially design for the tubular loop reactor.
- Soft seal make the valve have perfect sealing performance, even when it work in the condition with particle.
- Using multi-layer bellow, valve can normally run when the back pressure change is large.
- Bellow and protective sleeve ensure the valve have great performance.

尺寸规格 Size

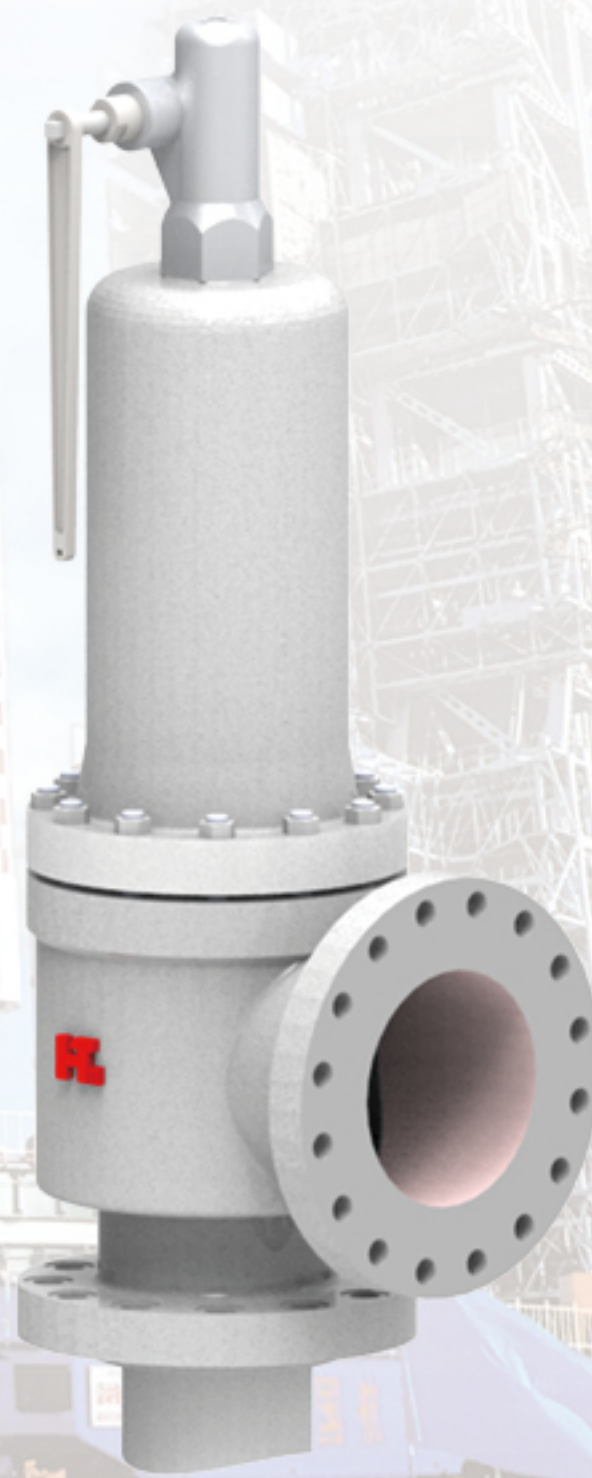
- 1.5" X 2"~8" X 10"

压力范围 Class

- 300~600

温度范围 Temperature

- -40°C ~+235°C



弹簧直接载荷式 *Spring Loaded*

HTNJ系列保温夹套安全阀

HTNJ Series Pressure Relief Valve with Jacket

特点

- 具有 ASME UV 认证，排量系数通过美国 NBBI 认证；
- 用作聚酯、乙烯及尿素化肥装置中介质需要保温的压力安全附件；
- 对进出口法兰在内的阀体进行保温，保温效果好，按需求可增加蒸气冲洗功能；
- 平衡波纹管结构，变动背压不影响安全阀的整定压力，且波纹管对弹簧等阀盖内的零件起到防护介质腐蚀的作用。

Features

- ASME UV certified ,and capacities are certified by the National Board Boiler and Pressure Vessel Inspector.
- It' s serviced in the circumstance where the heat preservation of fluid is needed, such as the equipment of polyester, ethylene, urea, etc.
- All body including inlet and outlet flanges is preserved. The steam flushing function can be added.
- Balanced bellows construction protects set pressure from being affected by variable back pressure, and the parts in bonnet, such as spring, from being corroded.

尺寸规格 Size

- 1" D 2 (2.5) " ~10" V 14 (16) "

压力范围 Class

- 150~2500

温度范围 Temperature

- -268~+816℃



弹簧直接载荷式 *Spring Loaded*

HTS系列蒸汽安全阀

HTS Series Steam Pressure Relief Valve

特点

- 适用于中压蒸汽系统;
- 采用弹性热阀瓣技术,使阀在高压工况下密封性能进一步提高;
- 价格及维护成本低;
- 超压低、启闭压差小、动作性能稳定可靠;
- 允许工作压力接近安全阀的整定压力。

Features

- Widely used in middle pressure steam system.
- The thermo-disc offer improved seat tightness in high pressure situation.
- Low cost on buying and maintenance.
- Low overpressure & high blowdown, the operation of valve is agile and stable.
- The system can be operated nearer set pressure without leakage.

尺寸规格 Size

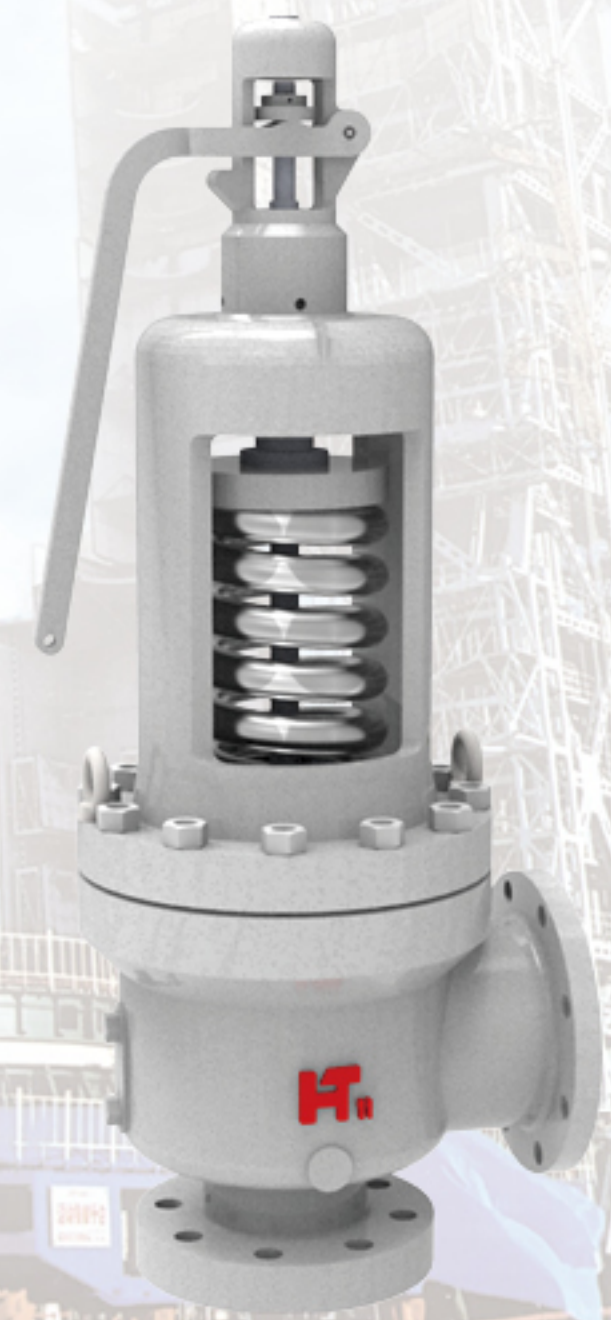
- 1" D 2"~6" Q 8"

压力范围 Class

- 150~900

温度范围 Temperature

- ~+538°C





弹簧直接载荷式 *Spring Loaded*

HTGS系列高性能蒸汽安全阀

HTGS Series High-Performance Steam Pressure Relief Valve

特点

- 适用于高温蒸汽系统；
- 产品符合 ASME 《锅炉与压力容器规范》第 I 卷“动力锅炉建造规则”规范要求；
- 超压低、启闭压差小、动作性能可靠；
- 采用弹性热阀瓣技术，使阀在高压工况下密封性能进一步提高；
- 采用背压调节系统结构设计，利用安全阀进口蒸气提供背压辅助回座并可调节；
- 阀座阀体整体焊接，确保高温高压下的可靠连接。

Features

- Provides high quality overpressure protection for industrial steam system
- Meet the requirements of ASME Boiler and Pressure Vessel Code, Section I, Power Boilers.
- Low overpressure & high blowdown, the operation of valve is agile and stable.
- The thermo-disc improved seat tightness in high pressure situation.
- The special design form a unique back pressure chamber help valve close ,and the blowdown also can be adjust.
- Nozzle is welded with body, to make connecting stable when it is serviced in the condition of high temperature and high pressure.

尺寸规格 Size

- 1 $\frac{1}{2}$ " F 2"~8" T 10"

压力范围 Class

- 300~2500

温度范围 Temperature

- ~+650°C



受控安全泄压系统 *Controlled Pressure-relief Systems*

HTDS系列受控安全泄压装置

HTDS Series Controlled Pressure-relief Systems(CSPRS)

特点

- 由安全阀、气动执行机构、气路控制器组成;
- 气动辅助装置能保证安全阀精确开启、关闭,并提供辅助密封力;
- 在工作压力非常接近整定压力时仍能保持良好密封;
- 控制系统采用冗余设计,当电磁气动控制装置失效时,受控安全阀本体仍能正常工作;
- 具有远程操作,强制排放及回座功能;
- 满足多种防爆等级要求。

Features

- Composed of relief valve, pneumatic actuator and control device.
- Pneumatic device ensure that the relief valve be accurate open and close, at same time, provide auxilliary sealing force.
- The system can operated nearer set pressure without leakage.
- Redundant design ensure the relief valve can normally opened when the control device is fail.
- Remote operate system can force disc open and reseal.
- Meet the explosion-proof requirement.

尺寸规格 Size

- 1" X 2"~12" X 16"

压力范围 Class

- 150~1500

温度范围 Temperature

- ~+538°C



先导式 *Pilot Operated Type*

HTXDP系列突开型先导式安全阀

HTXDP Series Pop Action Pilot Operated Pressure Relief Valve

特点

- 适用于高背压、大流量、高压力、密封要求高和安装位置紧凑的工况；
- 允许工作压力接近整定压力；
- 阀座软密封保证安全阀起跳前后的良好密封性；
- 安全阀动作性能和开启高度不受背压的影响；
- 较小超压就能使主阀迅速达到全启状态；
- 导阀非流动型结构设计减少了有害介质的排放，避免环境污染；
- 启闭压差可调；
- 可安装在线检测装置、过滤器、回流保护器、远程压力接头等附件，满足用户不同需求。

Features

- Suit for the circumstance which has high back pressure, large flow capacity, high pressure, or compact installing space.
- The system can be operated nearer set pressure without valve leakage.
- The soft seat design provides good seat tightness before and after each relief cycle.
- Proper valve operation and lift are unaffected by back pressure.
- Little overpressure required for full lift of main valve.
- Non-flowing pilot reduces product loss and environmental pollution.
- Externally adjustable blowdown.
- Field test connection, filter, backflow preventer and remote pressure sense connection can be installed if needed.

尺寸规格 Size

- 1" D 2"~12" W 16"

压力范围 Class

- 150~2500

温度范围 Temperature

- -40°C ~+327°C



先导式 *Pilot Operated Type*

HTXDM系列调制型先导式安全阀

HTXDM Series Modulating Pilot Operated Pressure Relief Valve

特点

- 随系统超压值的增加(减少)而比例开启(关闭),从而减少产品的损失和噪音;
- 减少了阀门动作时对被保护装置的冲击载荷;
- 允许工作压力接近安全阀的整定压力;
- 阀座软密封保证安全阀起跳前后的良好密封性;
- 安全阀动作性能和开启高度不受背压的影响;
- 导阀非流动型结构设计减少了有害介质的排放和环境污染;
- 导阀出口可直接与排放管路相连而不受背压影响;
- 可安装在线检测装置、过滤器、回流保护器、远程压力接头等附件,满足用户不同需求。

Features

- Opening in proportion to the overpressure to minimize product loss and reduce noise.
- Reduces shock loads on vessels and piping cause by the valve actuation.
- The system can be operated nearer set pressure without leakage.
- The soft seat provides good seat tightness before and after each relief cycle.
- Valve operation are not affected by back pressure.
- Non-flowing pilot reduces product loss and environmental pollution.
- The pilot exhaust is piped to the vent pipe line without being influenced by the back pressure.
- Field test connection, filter, backflow preventer and remote pressure sense connection can be installed if needed.

尺寸规格 Size

- 1" D 2"~12" W 16"

压力范围 Class

- 150~2500

温度范围 Temperature

- -40°C ~+327°C





先导式 *Pilot Operated Type*

HTXDL系列低温先导式安全阀

HTXDL Series Cryogenic Pilot Operated Pressure Relief Valve

特点

- 适用于超低温工况；
- 允许工作压力接近安全阀的整定压力；
- 阀座软密封保证在低温工况下安全阀起跳前后的良好密封性；
- 可选择突开型或调制型导阀，适应不同的工况需求；
- 可安装在线检测装置、过滤器、回流保护器、远程压力接头等附件，满足用户不同需求。

Features

- Apply to low temperature condition.
- The system can be operated nearer set pressure without valve leakage with low temperature medium.
- The soft seat design provides good seat tightness before and after each relief cycle.
- Pop action pilot or modulating pilot can be selected to meet the different requirement.
- Field test connection, filter, backflow preventer and remote pressure sense connection can be installed if needed.

尺寸规格 Size

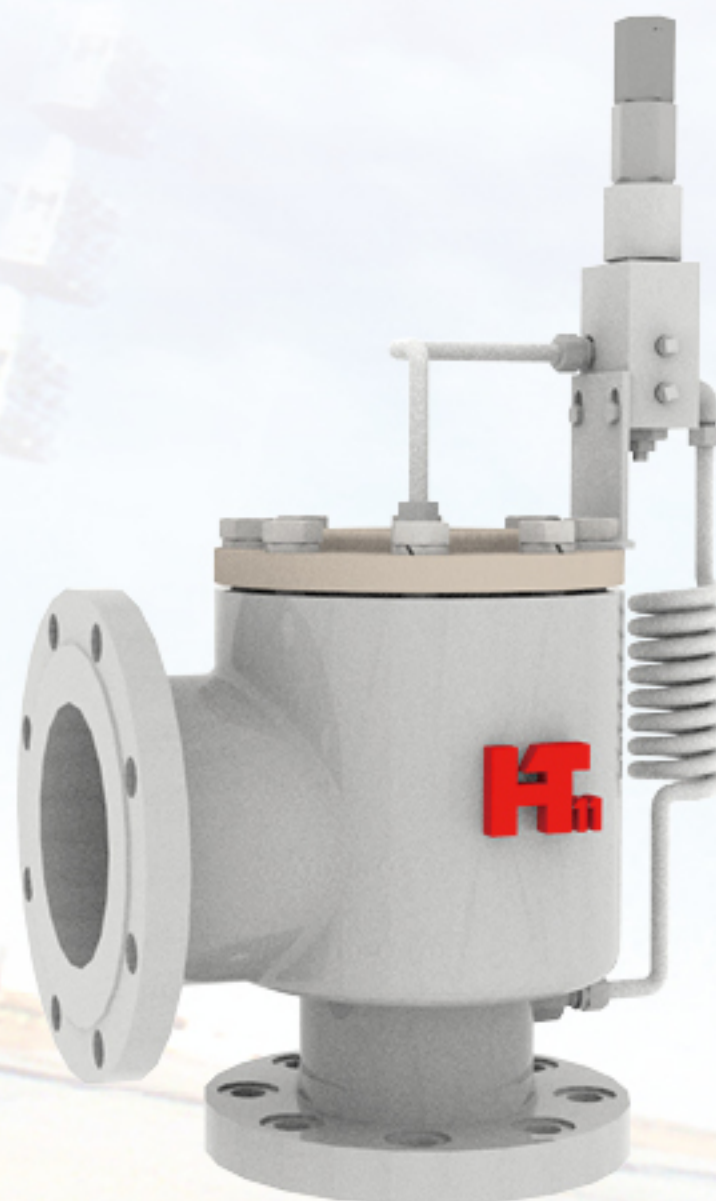
- 1" D 2"~12" W 16"

压力范围 Class

- 150~2500

温度范围 Temperature

- -196°C ~+200°C



先导式 *Pilot Operated Type*

HTXDS系列全塑料密封先导式安全阀

HTXDS Series Plastic Sealing Pilot Operated Pressure Relief Valve

特点

- 适用于含 H₂S、芳烃、苯等工况；
- 阀座软密封采用塑料密封，保证安全阀起跳前良好的密封性，且耐受腐蚀性介质；
- 压力感应更敏感，调节性强；
- 动作性能可调，既可以调出突跳先导的特性，也可以调出调制先导的特性；
- 可安装在线检测装置、过滤器、回流保护器、远程压力接头等附件，满足用户不同需求。

Features

- Suitable for H₂S, aromatics, benzene conditions.
- Plastic sealing, corrosive medium tolerant.
- More sensitive to pressure, strong regulatory.
- Adjustable action performance, can be adjusted to either pop or modulating pilot operated relief valve.
- Field test connection, filter, backflow preventer and remote pressure sense connection can be installed if needed.

尺寸规格 Size

- 1" X 2"~8" X 10"

压力范围 Class

- 150~300

温度范围 Temperature

- -40°C ~+268°C



先导式 *Pilot Operated Type*

HTXDG系列全金属密封先导式安全阀

HTXDG Series Metallic Sealing Pilot Operated Pressure Relief Valve

特点

- 适用于石化、化工、煤化工、火电等行业领域的高温工况；
- 较小超压能使主阀迅速达到全开；
- 主阀密封采用活塞环型式，弹性阀瓣结构；
- 启闭压差可调；
- 4" 以上主阀采用辅助排放机构切换器，保证动作性能；
- 可安装在线检测装置、过滤器、回流保护器、远程压力接头等附件，满足用户不同需求。

Features

- Applicable to high temperature condition of petrochemical, chemical industry, coal chemical, thermal power and other industries.
- Working process close to pop or modulating pilot operated relief valve, quick opening and pressure relieving.
- Piston ring type, elastic disc structure used on main valve sealing.
- Externally adjustable blowdown.
- Auxiliary discharge switcher applied on 4"above main valve, guaranteed movement performance.
- Field test connection, filter, backflow preventer and remote pressure sense connection can be installed if needed.

尺寸规格 Size

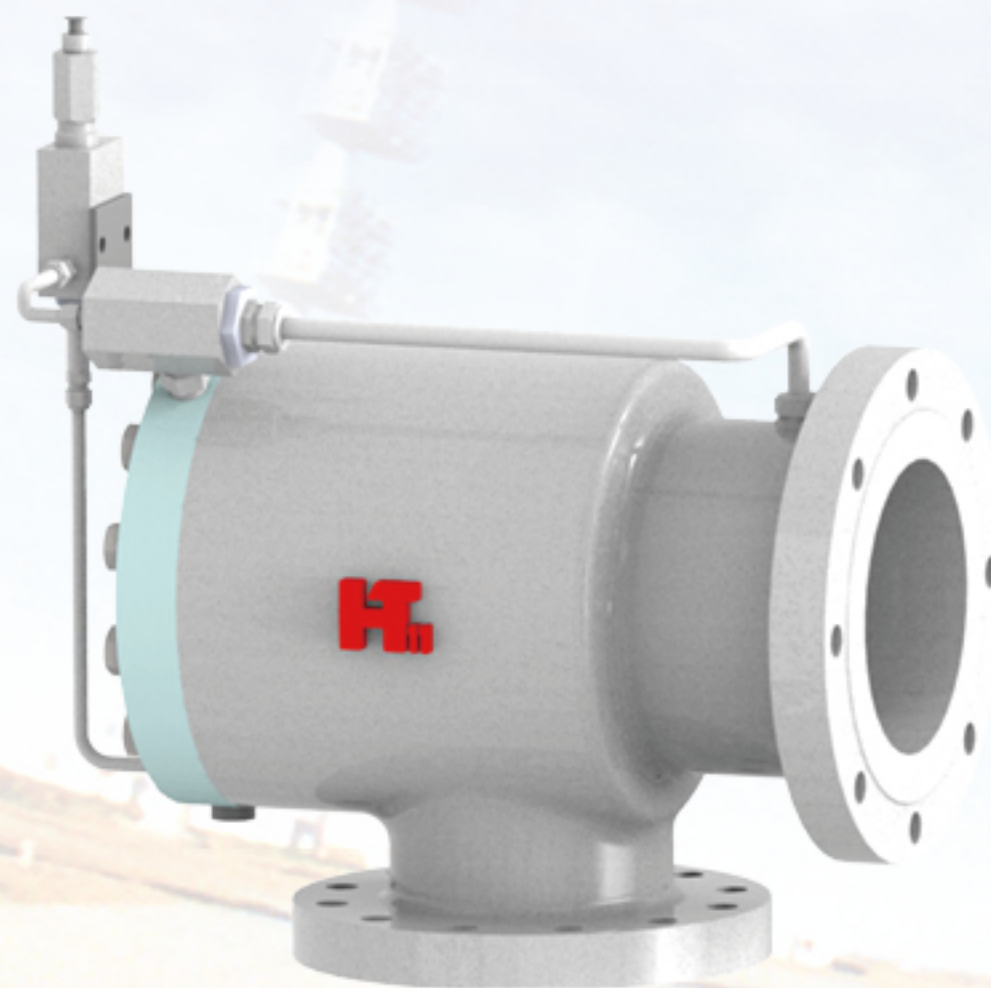
- 2" X 3"~8" X 10"

压力范围 Class

- 150~600

温度范围 Temperature

- ~+538°C



先导式 *Pilot Operated Type*

HTXDQM系列独立气源控制先导式安全阀

HTXDQM Series Independent Air Control Pilot Operated Relief Valve

特点

- 适用于粉尘颗粒及粘性较大的介质工况;
- 外接独立的气源保证导阀内流道不受介质影响;
- 具有调制型导阀的性能;
- 可安装在线检测装置、过滤器、远程压力接头等附件, 满足用户不同需求。

Features

- Suitable for larger dust particles and large viscosity medium condition.
- External independent gas source guarantees medium does not affect flow pass of pilot valve.
- With performance of modulating pilot operated relief valve.
- Field test connection, filter and remote pressure sense connection can be installed if needed.

尺寸规格 Size

- 1" D 2"~12" W 16"

压力范围 Class

- 150~2500

温度范围 Temperature

- -40°C ~+327°C



水击保护式 *Surge Protection Type*

HTSJ系列先导式水击泄压阀

HTSJ Series Pilot Operated Surge Relief Valve

特点

- 流通能力强，可以有效的避免突发原因造成的水击现象的发生，确保管线在输油过程中的安全；
- 感应灵敏，泄压阀可跟踪阀前端水击压力的变化，当阀前压力达到水击压力设定值时，阀门迅速开启，直到水击压力波衰减至设定值以下自动关闭；
- 无需外部动力操作，靠自身感应系统压力实现水击保护；
- 适用于成品油管道中。

Features

- High flow capacity avoids sudden surge and ensures safety of the system.
- Sensitive reaction allows the valve open rapidly when reaches the set pressure and close as the surge pressure goes down.
- No external power or operation needed. System protection can be achieved by pressure sensing system.
- Mainly used in refined oil pipeline.

尺寸规格 Size

- 2"~12"

压力范围 Class

- 150~900

温度范围 Temperature

- -40°C ~+320°C



水击保护式 *Surge Protection Type*

HTSJ系列氮气式水击泄压阀

HTSJ Series Nitrogen-Control Surge Relief Valve

特点

- 流通能力强, 可以有效的避免突发原因造成的水击现象的发生, 确保管线在输油过程中的安全;
- 反映灵敏, 当阀前压力达到水击压力设定值时, 阀门迅速开启, 直到水击压力波衰减至设定值以下自动关闭;
- 适用于原油, 重润滑油等粘稠介质。

Features

- High flow capacity avoids sudden surge and ensures safety of the system.
- Sensitive reaction allows the valve open rapidly when reaches the set pressure and close as the surge pressure goes down.
- Applies to crude oil, heavy lubricants and other thick medium.

尺寸规格 Size

- 2"~12"

压力范围 Class

- 150~900

温度范围 Temperature

- -40°C ~+320°C



非重新闭合式 *The Reclosing Type*

HTBP系列爆破针型泄压装置

HTBP Series Buckling Pin Pressure Relief Devive

特点

- 主要应用于地面火炬，海上平台等场合；
- 爆破针不受管道内压力循环变化影响，无需定期校验；
- 在压力系统内的压力接近设定点时，爆破针阀始终可以保证紧密密封， 可达到 95%；
- 在工作压力很低或者很高时，爆破针型泄压阀依然可以保证较高的泄压精度。

Features

- Mainly used in ground flare, offshore platform condition.
- Blasting needle is not affected by the pipe pressure cycle changes, without having to check on a regular basis.
- Blasting needle relief valve can ensure 95% tight seal under the condition of pressure close to set pressure.
- Inblasting needle pressure relief valve can ensure the accuracy of pressure relief under the condition of very low or high working pressure.

尺寸规格 Size

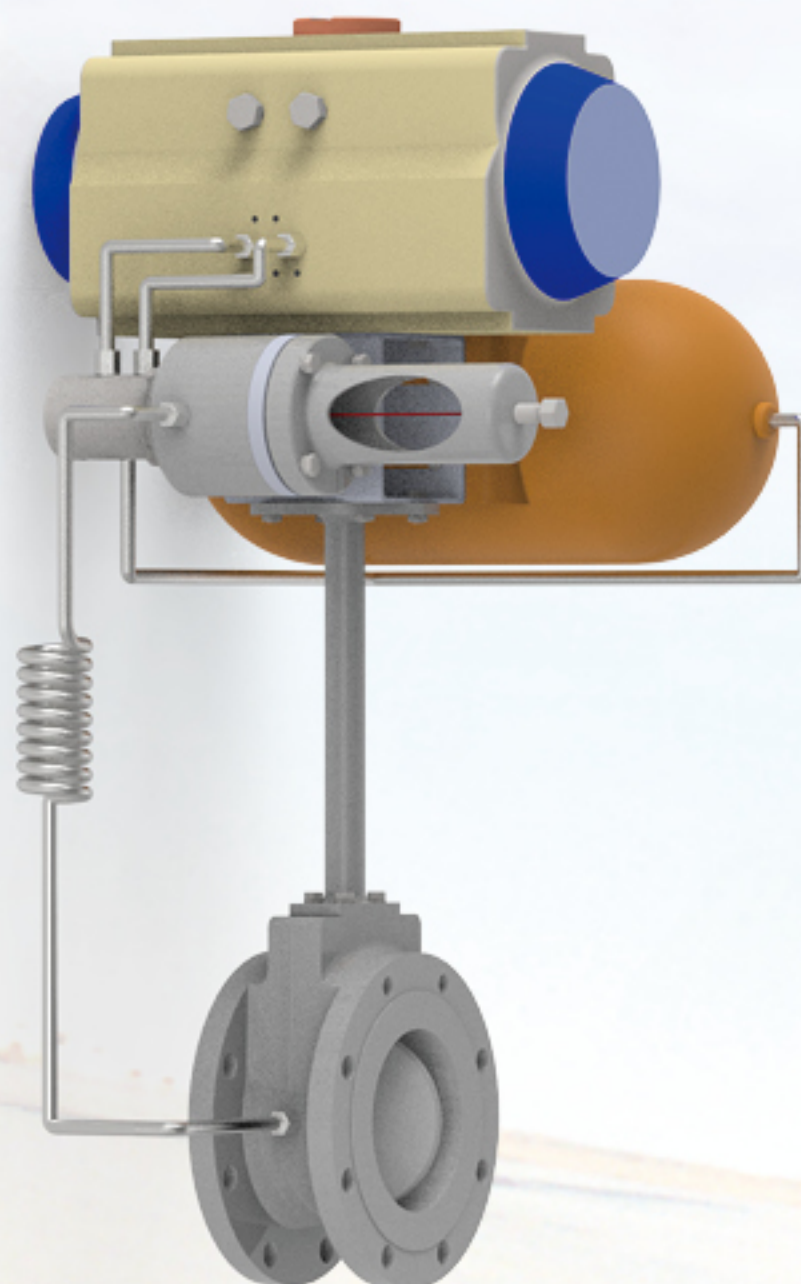
- 1"~72"

压力范围 Class

- 150~600

温度范围 Temperature

- -196℃ ~+538℃



快速切换式 *Changeover Type*

HTKH-A系列三通球型快速切换阀

HTKH-A Series Changeover Valves-Ball Type

特点

- 主要应用于石化、化工、空气化工、煤化工、有机硅、多晶硅、天然气、氧化铝、医药、冶金、海洋石油、火电等行业领域；
- 结构紧凑、设计合理、流阻小；
- 实现 1 个工位安装 2 台安全阀的功能，切换可靠，满足在线备份泄放能力；
减少受保护装置停车次数，延长运行周期，解决安全阀校验维修和装置生产之间的矛盾。

Features

- Mainly used in petrochemical, chemical industry, chemical industry, coal chemical industry, organic silicon, polycrystalline silicon, air gas, alumina, medicine, metallurgy, Marine oil, coal and other industries.
- Compact structure, reasonable design, small flow resistance.
- Implement 2 safety valve on 1 workstation, reliable switch, online backup discharge capacity.
- Decrease times of plant going offline, longer operation cycle, solves contradiction between safety valve calibration, maintenance and equipment production.

尺寸规格 Size

- 1"~8"

压力范围 Class

- 150~600

温度范围 Temperature

- -40°C ~+268°C



快速切换式 *Changeover Type* HTKH-B系列切换阀 HTKH-B Series Changeover Valves

特点

- 无需停车可连续提供超压保护，可避免应急停车、维修所带来的损失；
- 流阻小，保证安全阀具备足够的排放能力；
- 换向系统操作安全、简便、快捷；
- 每个安全阀下方安装有一个泄放阀，用于安全、有效的泄出待拆卸安全阀前的介质；
- 高磅级 ($\geq 600\text{lb}$) 时，快速切换装置中设置平衡阀，方便操作；
- 使用温度范围宽，密封可靠，多次动作后仍可保持良好密封性。

Features

- High cost cause by unscheduled shutdown can be avoided, since crossover can be done without shutdown the process.
- Pressure loss is small, guaranteed the combined pressure relief valve has designed discharged coefficient.
- The operation is safe, convenient and fast.
- A vent valve is installed at the bottom of each pressure relief valve to discharge medium before dismantling the pressure relief valve.
- At high pressure class ($\geq 600\text{lb}$), balance valve will be setup in the quick crossover combination, to make change over conveniently.
- Temperature arranges from cryogenic to high. Excellent seat ensure good tightness during times of changeover.

尺寸规格 Size

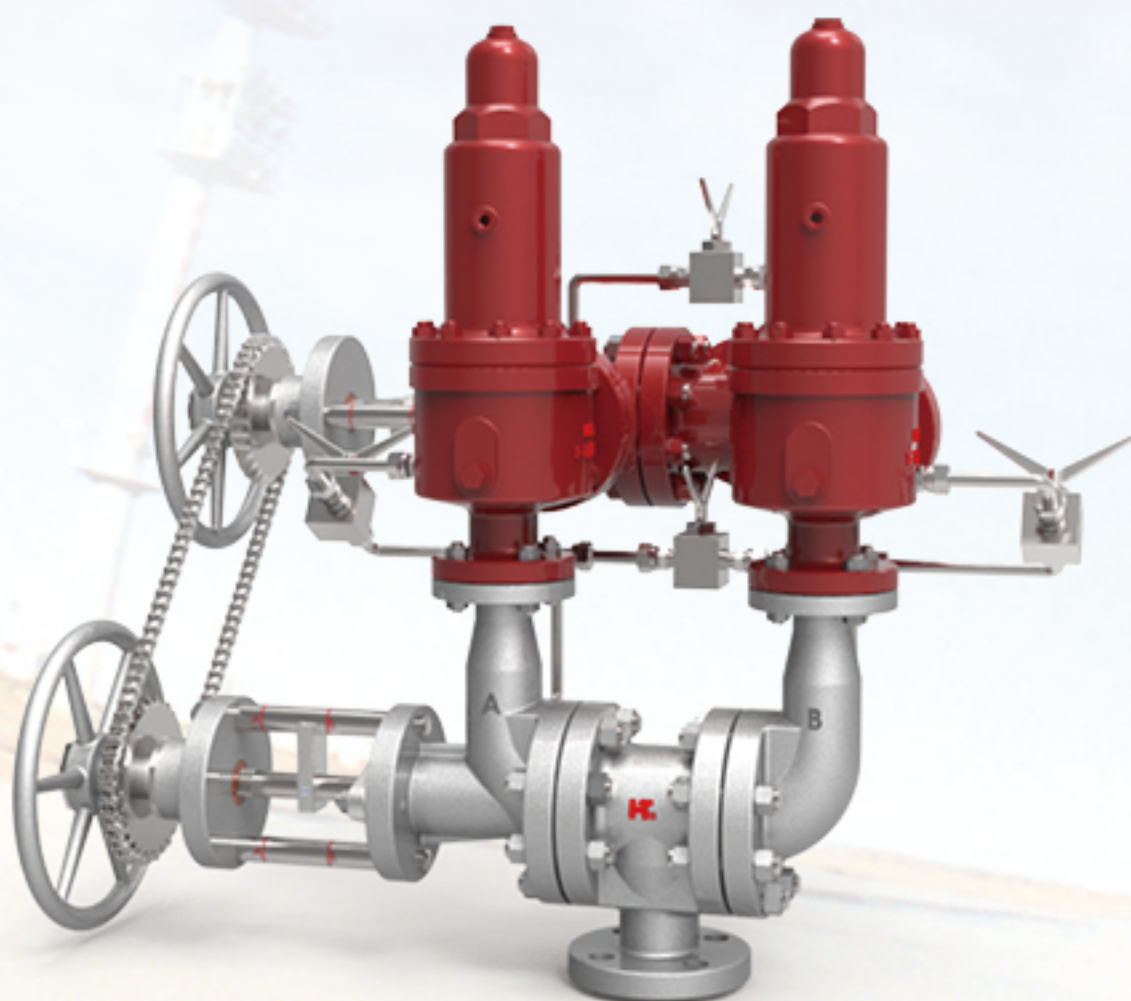
- 1"~8"

压力范围 Class

- 150~600

温度范围 Temperature

- ~+538°C



快速切换式 *Changeover Type*

HTKH-C系列旋转型快速切换阀

HTKH-C Series Changeover Valves-Rotary Type

特点

- 三通流路设计，一个工位安装两个相同的安全阀，其中一个在线进行超压保护，而另一个则作为维修备用；
- 无需停车可连续提供超压保护，可避免应急停车、维修所带来的损失；
- 流阻小，符合 API RP520 Part II 标准要求，具备足够的泄放能力；
- 重量轻、结构紧凑、便于安装；
- 换向系统操作安全、简便、快捷；
- 密封可靠，多次动作后仍可保持良好密封性。

Features

- Tee flow design, two identical pressure relief valve on one workstation, one for online overpressure protection, the other as a standby for maintenance.
- High cost cause by unscheduled shutdown can be avoided, since crossover can be done without shutdown the process.
- Pressure loss is small, in accordance to API RP520 Part II, guaranteed the combined pressure relief valve has designed discharged coefficient
- Light weight, compact structure, esay to install.
- The operation is safe, convenient and fast.
- Excellent seat ensure good tightness during times of changeover.

尺寸规格 Size

- 1"~6"

压力范围 Class

- 150~600

温度范围 Temperature

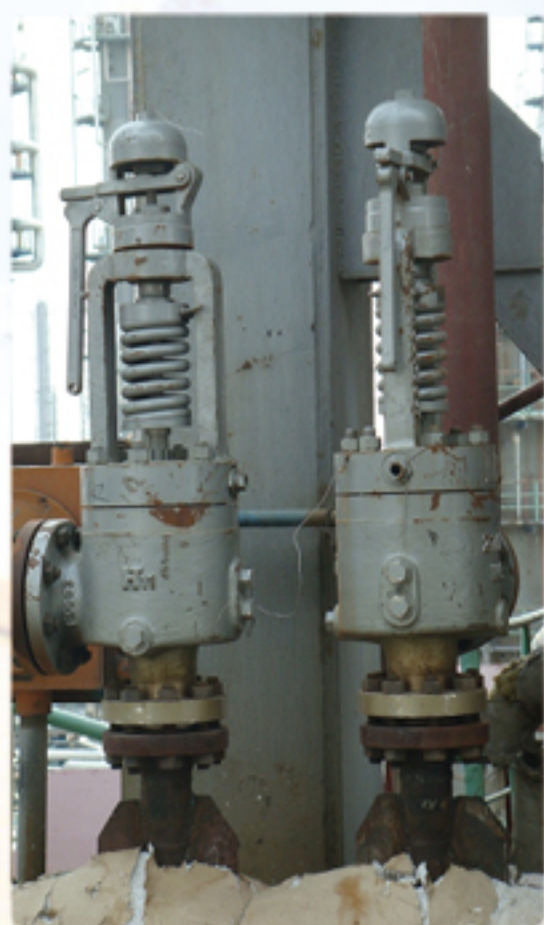
- -40°C ~+268°C





项目业绩

| | |
|-------------------------|------------------------|
| 1、神华宁夏煤业集团有限责任公司 | 22、中石化金陵石化分公司 |
| 2、中海油气(泰州)石化 | 23、沈阳远大压缩机股份有限公司 |
| 3、哈萨克斯坦阿特劳炼油厂有限责任公司 | 24、空气产品(昆山)气体有限公司 |
| 4、中化蓝天霍尼韦尔新材料有限公司 | 25、约克(无锡)空调冷冻设备有限公司 |
| 5、中海石油炼化有限责任公司 | 26、中化弘润石油化工有限公司 |
| 6、伊泰杭锦旗120万吨/年精细化学品示范项目 | 27、河北盛腾化工有限公司 |
| 7、中天合创鄂尔多斯煤炭深加工示范项目 | 28、山东泓达生物科技有限公司 |
| 8、南京金陵亨斯迈新材料有限责任公司 | 29、中国石油化工股份有限公司北京燕山分公司 |
| 9、巴斯夫化工有限公司 | 30、易高生物化工科技(张家港)有限公司 |
| 10、陕西有色天宏瑞科硅材料有限责任公司 | 31、液化空气(杭州)有限公司 |
| 11、南京普莱克斯工业气体有限公司 | 32、大庆中蓝石化有限公司 |
| 12、云南云天化石化有限公司 | 33、万华化学集团股份有限公司 |
| 13、哈萨克斯坦巴浦洛达尔石化厂 | 34、浙江卫星能源有限公司 |
| 14、基伊埃冷冻技术(苏州)有限公司 | 35、新疆圣雄能源股份有限公司 |
| 15、山西晋煤华昱煤化工有限责任公司 | 36、中石油云南石化有限公司 |
| 16、山东阳煤恒通化工股份有限公司 | 37、中国神华煤制油化工有限公司 |
| 17、中国石油化工股份有限公司九江分公司 | 38、久泰能源(准格尔)有限公司 |
| 18、陕西延长石油(集团)有限责任公司炼化公司 | 39、林德工程(杭州)有限公司 |
| 19、中国石油化工股份有限公司镇海炼化分公司 | 40、安阳九久化学科技有限公司 |
| 20、江苏中能硅业科技发展有限公司 | 41、山西潞安矿业(集团)有限责任公司 |
| 21、福建申远新材料有限公司 | 42、陕西液化天然气投资发展有限公司 |



Project Achievement

| | |
|-----------------------|---------------------------|
| 43、空气化工产品(中国)投资有限公司 | 64、中国石化青岛炼油化工有限责任公司 |
| 44、中海石油宁波大榭石化有限公司 | 65、考伯斯(江苏)炭素化工有限公司 |
| 45、中国天辰工程有限公司 | 66、中石化武汉石化分公司 |
| 46、亚洲硅业(青海)有限公司 | 67、中国石化上海石油化工股份有限公司 |
| 47、中国石油化工股份有限公司齐鲁分公司 | 68、大同煤矿集团有限责任公司 |
| 48、江苏斯尔邦石化有限公司 | 69、恒力石化(大连)有限公司 |
| 49、中国石油化工股份有限公司天津分公司 | 70、东营金茂铝业高科技有限公司 |
| 50、青岛丽东化工有限公司 | 71、中国石化仪征化纤股份有限公司 |
| 51、安徽天辰化工股份有限公司 | 72、广西广维化工有限责任公司 |
| 52、宁夏宝丰能源集团有限公司 | 73、天津渤化石化有限公司 |
| 53、福建联合石油化工有限公司 | 74、中国石油化工股份有限公司洛阳分公司 |
| 54、张家港扬子江石化有限公司 | 75、特变电工新疆硅业科技发展有限公司 |
| 55、山东京博石油化工有限公司 | 76、中石化安庆石化分公司 |
| 56、河南煤业化工集团洛阳永龙能化有限公司 | 77、内蒙古大唐国际克什克腾煤制天然气有限责任公司 |
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| 58、宁夏宏兴新能源开发有限公司 | 79、中国石油乌鲁木齐石化分公司 |
| 59、唐山唐钢气体有限公司 | 80、宁波华星轮胎有限公司 |
| 60、嘉兴石化有限公司 | 81、徐州矿务集团有限公司 |
| 61、上海熠智流体控制设备有限公司 | 82、陕西延长中煤榆林能源化工有限公司 |
| 62、中石化股份有限公司茂名分公司 | 83、中化泉州石化有限公司 |
| 63、四川晟达化学新材料有限责任公司 | 84、福建东南电化股份有限公司 |





Beijing Aerospace Propulsion Institute
 [No.11 Institute of CASC(Beijing)]
 Beijing Aerospace Petrochemical Technology and
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合作单位



Cooperation Partners



以航天科技 引领超压保护技术

LEAD CHINA'S OVERPRESSURE PROTECTION TECHNIQUE
WITH THE ADVANTAGE OF AEROSPACE TECHNOLOGY



HTKH-B 系列安全阀快速切换装置
HTKH-B Series Pressure Relief Valves
Quick Crossover Combination

HTSJ 系列水击泄压阀
HTSJ Series Surge Relief Valve



HTO/B 系列弹簧直接载荷式安全阀
HTO/B Series Pressure Relief Valve

HTXD 系列先导式安全阀
HTXD Series Pilot Operated
Pressure Relief Valve



HTGS 系列高性能蒸汽安全阀
HTGS Series High Performance
Safety Valve for Steam Service

HTBP 系列爆破型泄压装置
HTBP Series Bucking Pin Pressure
Relief Device



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Beijing Aerospace Propulsion Institute [No.11 Institute of CASC(Beijing)]

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