

工业

因我们而更安全

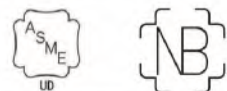
华理安全，专注爆破片装置、阻火器、无焰泄放装置、隔爆阀等工业安全产品的设计与制造。

公司产品经多个国内外权威机构测试认证：沈阳特种设备检测研究院、上海化工研究院、美国ASME和NB实验室、德国IBExU、IEC等。

公司坚持“为顾客提供满意的产品与服务，持续改进”的质量方针，秉承“合法合规，节能降耗，持续改进，共建绿色家园”和“以人为本，全员参与，预防为先，关爱健康安全”的发展理念。



爆破片装置符合TSG ZF003
阻火器符合TSG D7002和
GB/T 13347



爆破片装置符合ASME VIII-1和
ASME XIII



爆破片装置符合欧盟PED
2014/68/EU



电讯号装置符合
IEC 60079-0、IEC 60079-11
ATEX 2014/34/EU



阻火器持有ATEX认证，符合
ATEX2014/34/EU和ISO16852



无焰泄放装置符合EN14797和
EN16009



通过质量、环境、健康体系认证，
符合ISO9001、ISO14001和
ISO45001



上海华理安全装备有限公司

Shanghai Huali Safety Devices Co., Ltd.

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工业爆炸防护

INDUSTRIAL EXPLOSION PROTECTION



上海华理安全装备有限公司

Shanghai Huali Safety Devices Co., Ltd.



DIRECTORY

目录

公司简介(COMPANY PROFILE)	01
荣誉证书(CERTIFICATES OF HONOR)	04
阻火器介绍(FLAME ARRESTER INTRODUCTION)	06
Z11系列管道阻爆燃型阻火器(IN-LINE DEFLAGRATION FA)	08
Z12系列管道阻爆轰型阻火器(IN-LINE DETONATION FA)	11
呼吸阀介绍(PV INTRODUCTION)	17
呼吸阀概述(PV OVERVIEW)	18
管端呼吸阀(END-OF-LINE PV)	19
管道呼吸阀(IN-LINE PV)	21
单呼阀(PRESSURE RELIEF VALVE)	24
单吸阀(VACUUM RELIEF VALVE)	27
紧急泄放阀(EMERGENCY PV)	30
无焰泄放装置(FLAMELESS EXPLOSION VENTING DEVICE)	34
粉尘爆破片(VENTING PANEL)	36
换向泄压阀(EXPLOSION DIVERTER)	38
单向隔爆阀(EXPLOSION ISOLATION FLAP VALVE)	39
爆炸抑制系统(EXPLOSION SUPPRESSION SYSTEM)	41
火花探测及熄灭系统(SPARK DETECTION AND EXTINGUISHING SYSTEM)	43

COMPANY PROFILE

公司简介



公司主要产品是爆破片装置。近十年，公司成功研制了无焰泄放装置、隔爆阀、管道阻火器等工业防爆设备，产品从最初单一的爆破片装置扩展延伸到了工业安全系统多领域，并获得专利授权50余项，成果转化12项。

公司1995年取得爆破片装置产品制造许可证，1998年被认定为上海市高新技术企业，2009年被认定为徐汇区科技小巨人

培育企业，2018年被认定为闵行区科技小巨人培育企业，2021年成立闵行区企业技术中心，2021年被认定为上海市科技小巨人培育企业，2023年成为第五批工信部专精特新“小巨人”企业。

公司注重质量管理和体系认证。已通过ISO9001质量管理体系认证，两化融合体系、ISO14001环境管理体系、ISO45001职业健康安全管理体系和安全生产标准化体系。爆破片装置取得了中国TS证书、美国ASME UD证书、欧洲CE证书，电讯号装置拥有TÜV认证的ATEX及IECEX证书，无焰泄放装置和管道阻火器分别通过了上海化工研究院、沈阳特种设备检测研究院和德国国家防爆研究院（IBExU）的型式或产品认证试验。

公司积极参与爆破片装置标准的编制工作，主编三项、参编二十余项相关的国家、行业标准和安全技术规范。公司是上海市气体工业协会理事单位，中国工业气体工业协会压力设备专业委员会会员单位，工业防爆新技术联盟理事会员单位，全国机械安全标准化技术委员会防爆工作组成员单位，ISO/TC220 WG3工作组副

上海华理安全装备有限公司是以华东理工大学科技人员二十多年研究成果为基础创建的科技型企业。公司前身为上海华理安全装备厂，成立于1994年11月，经过三十年如一日的深耕，拥有员工近150名，研发人员超过50名，已成为国内爆破片装置设计与制造的领先者。

组长单位。公司总经理吴全龙是国家行业标准主要制定者，现为全国安全泄压装置标准化技术委员会委员、移动式压力容器标准化技术委员会委员、固定式压力容器标准化技术委员会委员，并担任中国技术监督情报协会危化品储运装备技术与信息化工作委员会专家、ISO/TC185 WG17工作组成员、ISO/TC220 WG3工作组成员、ISO/TC11专家。

严谨的管理、优异的产品和诚信的服务为公司赢得了稳定的市场。公司目前用户已超过5000家，产品在化工、石油石化、核电、医药、消防、制冷、粉尘、高压气体运输、电力、低温气体等行业得到了广泛的应用。

公司坚持以服务市场、服务顾客为宗旨，提供技术咨询、技术培训、现场安装指导等全方位的服务。

上海华理安全装备有限公司的发展离不开广大顾客、各界朋友及各级质量监督机构的支持和监督。面向未来，我们将一如既往、开拓进取，始终坚持我们的质量目标。真诚欢迎各界新老朋友与我们合作，共创和谐美好的明天。

工业，因我们而更安全。



Shanghai Huali Safety Devices Co., Ltd. is a technology-based company established on the foundation of over 20 years of research by scientists from East China University of Science and Technology. Our company, formerly known as Shanghai Huali Safety Devices Factory, was founded in November 1994. After nearly three decades of dedicated work, it now boasts nearly 150 employees, with over 50 R&D technicians, and has emerged as a leading manufacturer of Bursting Disc Devices in China.

The main product of our company is Bursting Disc Devices. In the past decade, our company has successfully developed Flameless Explosion Venting Devices, Explosion Isolation Flap Valves, Flame Arresters, and other industrial explosion-proof equipments. Our product range has expanded from the initial Bursting Disc Safety Devices into various areas of industrial safety systems, with over 50 patents and 12 transformation projects of high-tech achievements..

In 1995, our company obtained the Production License of Special Equipment of People's Republic of China for Bursting Disc Devices. In 1998, our company was recognized as a high-tech enterprise in Shanghai. In 2009, our company was designated as a technology "Little Giant" incubation enterprise in Xuhui District,

and in 2018, it received the same recognition in Minhang District. In 2021, our company established the Enterprise Technology Center in Minhang District, and was recognized as a technology “Little Giant” incubation enterprise in Shanghai. In 2023, our company became the fifth batch of a specialized and sophisticated “Little Giant” enterprise of the Ministry of Industry and Information Technology that produce new and unique products.

Our company places a strong emphasis on quality management and system certification. It has obtained ISO 9001 quality management system certification, two-integration system certification, ISO 14001 environmental management system certification, ISO 45001 occupational health and safety management system certification, and Work safety standardization. The Bursting Disc Devices have received TS certification in China, ASME UD certification in American, and CE certification in Europe. The burst indicators have received ATEX and IECEx certifications certificated by TÜV. The Flameless Explosion Venting Devices and Flame Arresters have passed type or product certification tests from the Shanghai Research Institute of Chemical Industry CO.,LTD,Shenyang Institute of Special Equipment Inspection &Research, and The IBExU Institut für Sicherheitstechnik GmbH.

Our company actively participates in the development of pressure-relief device standards, with three chief editor roles and involvement in over 20 national and industry standards and safety technical specifications. Our company is a director unit of the Shanghai Gas Industry Association, a member unit of the Pressure Equipment Professional Committee of the China Industrial Gas Industry Association, a council member of the Industrial Explosion Protection Innovation Technology Alliance, a member unit of the National Machinery Safety Standardization Technical Committee Explosion Protection Working Group, and a deputy group leader of ISO TC220 WG3. Quanlong Wu, the general manager of our company, is a main editor of the national industry standards. He is a member of the National Safety Pressure Relief Device Standardization Technical Committee, a member of the Transportable Pressure Vessel Standardization Technical Committee, and a member of the Stationary Pressure Vessel Standardization Technical Committee. He also served as an expert of the Technical and Information Working Committee of Hazardous Chemical Storage and Transportation Equipment of China Technical Supervision and Information Association, a member of the ISO/TC185 WG17 working group, a member of the ISO/TC220 WG3 working group, and an expert of ISO TC11.

Our company has won a stable market with stringent management, exceptional products, and honest service. Our company currently serves over 5,000 customers, with products widely used in industries such as chemical, petroleum and petrochemical, nuclear power, pharmaceuticals, firefighting, refrigeration, dust control, high-pressure gas transportation, electricity, and cryogenic fluid.

Our company is committed to serving the market and customers, offering comprehensive services such as technical consultation, training, and on-site installation guidance.

The development of Shanghai Huali Safety Devices Co., Ltd. is indebted to the support and supervision of its numerous customers, friends from all walks of life, and quality supervision agencies at all levels. Looking to the future, our company will continue to forge ahead, adhering to its quality goals. It warmly welcomes old and new friends from all walks of life to cooperate with us in creating a harmonious and better tomorrow.

Industry will be safer with us.

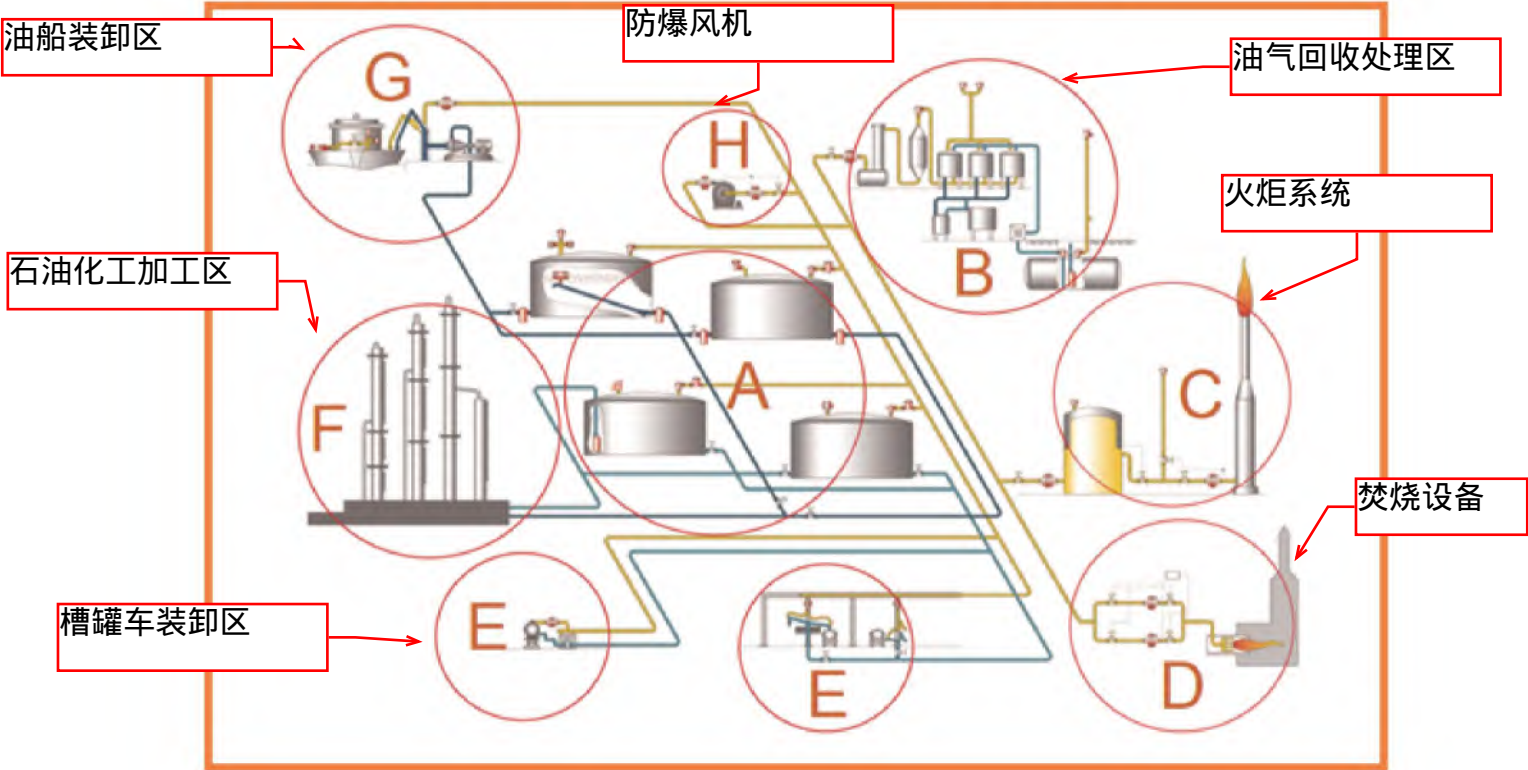
CERTIFICATES OF HONOR 荣誉证书





FLAME ARRESTER INTRODUCTION 阻火器介绍

阻火器典型应用Application examples of the flame arresters



代号code	名称description
A	罐区Tank farm
B	油气回收VOC处理区Oil and gas recovery VOC treatment zone
C	火炬系统Flare system
D	焚烧设备 Incineration equipment
E	槽罐车装卸区Tank truck loading and unloading area
F	石油化工加工区Petrochemical processing area
G	油船装卸区Oil tanker loading and unloading area
H	防爆风机Explosion proof fan

阻火器是一种适用于设置在封闭空间开口侧或管道中的安全设备。阻火芯作为阻火器的阻火元件，其内部有小的孔隙，允许气体或蒸汽通过。由于孔隙足够小，使得火焰燃烧不能持续，随之火焰被抑制并熄灭。

阻火器的使用工况多种多样，每种阻火器都有其使用限制，选用阻火器时，须先了解各类阻火器的工作原理及其性能限制。

阻火器按安装位置，可分为管端式阻火器和管道式阻火器。管端式阻火器一般安装在封闭空间开口处或管道末端处，防止火焰进入封闭空间或管道内部。管道式阻火器安装在管道中间，防止火焰从未保护侧，通往保护侧，尤其双向阻火器，能有效防止火焰从任意一侧传向另一侧。

阻火器按火焰燃烧类型，可分为阻爆燃型阻火器、阻爆轰型阻火器和耐烧型阻火器。火焰爆燃和爆轰的定义与火焰的传播速度有关，而管道内火焰的传播速度沿管线变化。因此，管道阻火器的选择需先确定阻火器的安装位置。燃烧时间分短时燃烧和长时燃烧，因此，需根据实际工况选用耐短时燃烧阻火器和耐长时燃烧阻火器。

本公司可以根据用户的实际工艺要求进行设计和制造阻火器，既能满足实际工况要求，也符合阻火器相关标准的制造和测试要求。

A flame arrester is a safety device suitable for installation on the open side of a closed space or in a pipeline. The flame retardant core, as the flame retardant component of a flame arrester, has small pores inside, allowing gas or steam to pass through. Due to the small enough pores, the flame combustion cannot be sustained, and the flame is suppressed and extinguished.

The operating conditions of flame arresters are diverse, and each type of flame arrester has its own usage limitations. When selecting flame arresters, it is necessary to first understand the working principles and performance limitations of each type of flame arrester.

Flame arresters can be divided into pipe end flame arresters and pipeline type flame arresters according to their installation positions. Pipe end flame arresters are generally installed at the opening of an enclosed space or at the end of a pipeline to prevent flames from entering the enclosed space or inside the pipeline. The pipeline type flame arrester is installed in the middle of the pipeline to prevent flames from flowing from the unprotected side to the protected side, especially the bidirectional flame arrester, which can effectively prevent flames from spreading from either side to the other side.

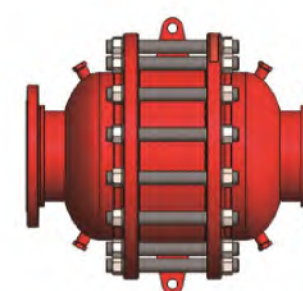
According to the type of flame combustion, flame arresters can be divided into flame retardants, flame retardants, and flame retardants. The definitions of flame deflagration and detonation are related to the propagation speed of the flame, which varies along the pipeline. Therefore, the selection of pipeline flame arresters requires determining the installation position of the flame arresters first. The combustion time can be divided into short-term combustion and long-term combustion. Therefore, according to the actual working conditions, short-term and long-term combustion flame arresters are selected.

Our company can design and manufacture flame arresters according to the actual process requirements of users, which can meet the actual working conditions and also meet the manufacturing and testing requirements of flame arrester related standards.

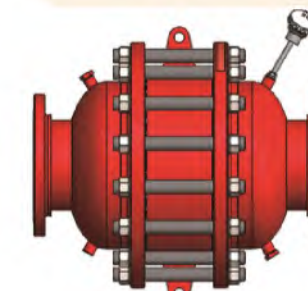
Z11系列管道阻爆燃型阻火器 IN-LINE DEFLAGRATION FLAME ARRESTER

华理安全Z11系列管道阻爆燃型阻火器旨在防止火焰在管道中传播。通过将阻火器安装在靠近潜在火源的位置，火焰或爆炸仅限于阻火器邻近区域。Z11系列阻火器型号包括标准型和短时耐烧型。短时耐烧型阻火器至少在潜在点火源侧安装温度传感器，所有阻火器可更换阻火元件。

The Shanghai Huali Z11 series pipeline flame arrester is designed to prevent flame propagation in pipelines. By installing flame arresters near potential ignition sources, flames or explosions are limited to the area adjacent to the flame arresters. The Z11 series flame arrester models include standard and short-term flame resistant models. Short term flame arresters should be equipped with temperature sensors at least on the potential ignition source side, and all flame arresters can have replaceable flame arresters.



标准型 standard type



带传感器 with sensor

特点 Features and Benefits:

将钢带褶皱缠绕技术融入阻火器元件，其波纹间隙经过优化，以确保行业领先的流量与压力下降特性。

The manufacturing of flame arrester element adopts steel strip folding winding technology, the ripple gap has been optimized to ensure industry-leading flow and pressure drop characteristics.

◆阻爆燃及具有短时耐烧能力

Preventing the propagation of deflagration flames and short-term resistance to burning

◆卓越的流量，压降最小

Excellent flow rate with minimal pressure drop

◆同心设计，双向阻火

Concentric design, bidirectional fire resistance

◆易于清洁、可换阻火元件

Easy to clean and replaceable fire retardant components

◆独特的元件设计不易受到污染/堵塞

Unique component design that is not easily contaminated/blocked

◆端部连接包括法兰连接或螺纹连接

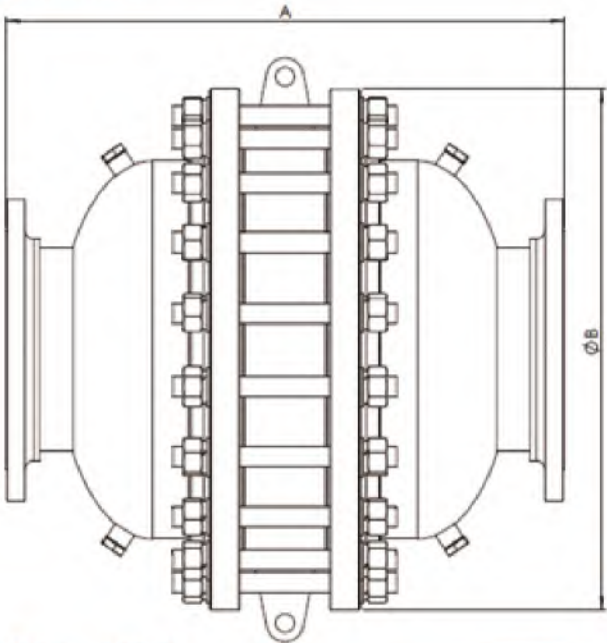
End connections include flange or threaded connections

适用工况 Operating Conditions

型号 Model	最大工作压力 Max Operating Pressure (bara)	最大工作温度 Max Operating Temperature (°C)
Z11	1.2	60

其它工况请咨询厂家。Consult factory for other condition.

总图 General Arrangement:



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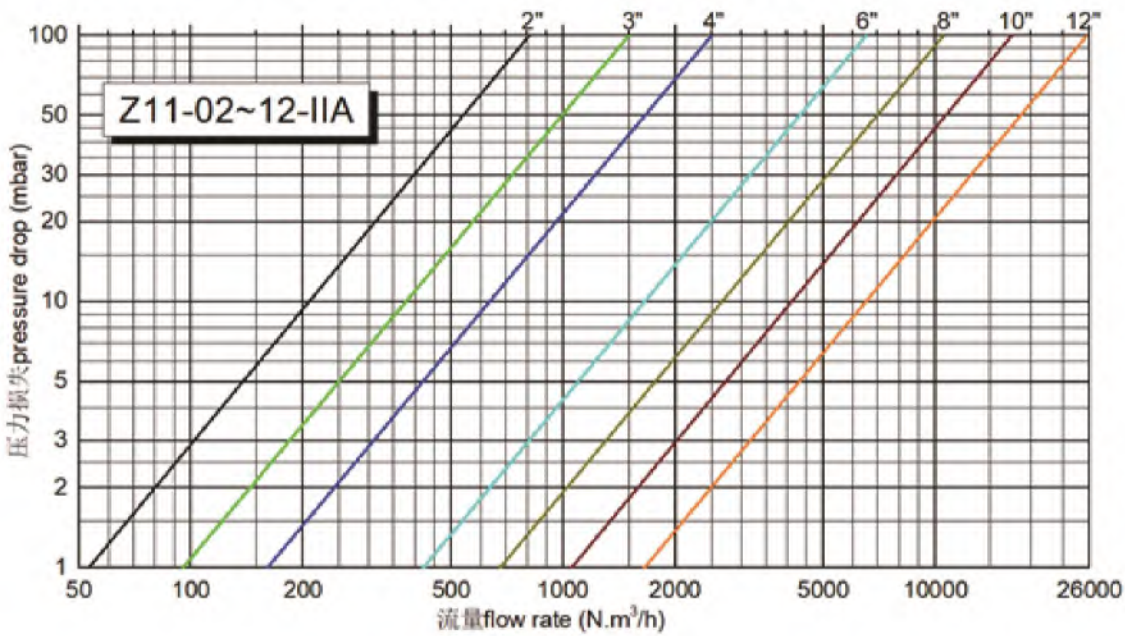
外形尺寸 Dimensions(IIA、IIB3)

DN (NPS)	50 (2)	80 (3)	100 (4)	150 (6)	200 (8)	250 (10)	300 (12)
A mm	395	440	475	540	640	750	870
B mm	230	345	345	485	595	700	815
N.W. (kg)	24	71	74	149	241	327	530

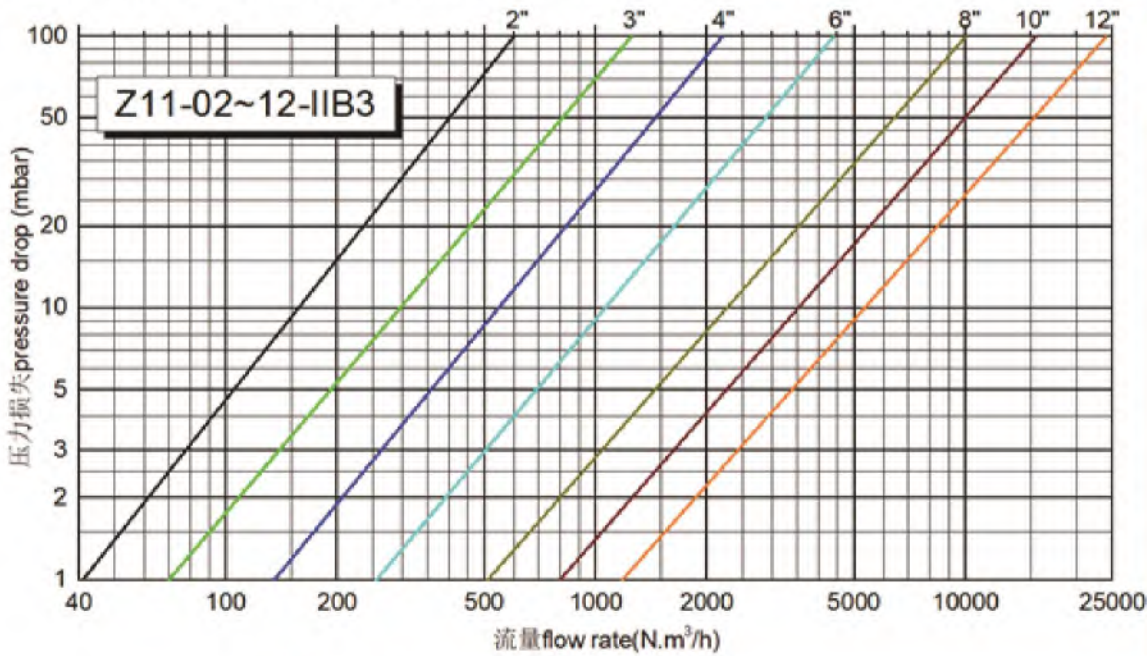
其它规格请咨询厂家。Consult factory for other size.

流量-压降曲线flow-pressure drop curve

IIA爆炸等级流量—压降曲线 flow-pressure drop curve of explosion groups IIA



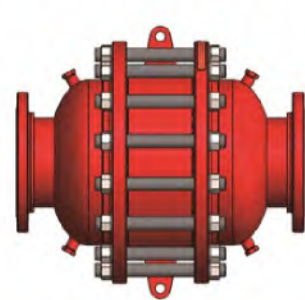
IIB3爆炸等级流量—压降曲线 flow-pressure drop curve of explosion groups IIB3



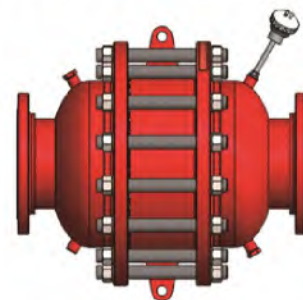
Z12系列管道阻爆轰型阻火器 IN-LINE DETONATION FLAME ARRESTER

华理安全Z12系列管道阻爆轰型阻火器旨在防止火焰在管道中传播。将阻火器安装在长距离管路系统，Z12系列阻爆轰型阻火器可阻止稳定爆轰的火焰传播,阻火器可以双向安装。Z12系列阻火器型号包括标准型和短时耐烧型。短时耐烧型阻火器至少在潜在点火源侧安装温度传感器，阻火器可更换阻火元件。

The Shanghai Huali Z12 series pipeline explosion-proof flame arrester is designed to prevent flame propagation in pipelines. Install the flame arrester in a long-distance pipeline system, and the Z12 series explosion-proof flame arrester can prevent the spread of stable detonation flames. The flame arrester can be installed in both directions. The Z12 series flame arrester models include standard and short-term flame resistant models. Short term flame arresters should be equipped with temperature sensors at least on the potential ignition source side, and the flame arresters can be replaced with flame arresting components.



标准型 standard type



带传感器 with sensor

特点 Features and Benefits:

将钢带褶皱缠绕技术融入阻火器元件，其波纹间隙经过优化，以确保行业领先的流量与压力下降特性。
The manufacturing of flame arrester element adopts steel strip folding winding technology, the ripple gap has been optimized to ensure industry-leading flow and pressure drop characteristics.

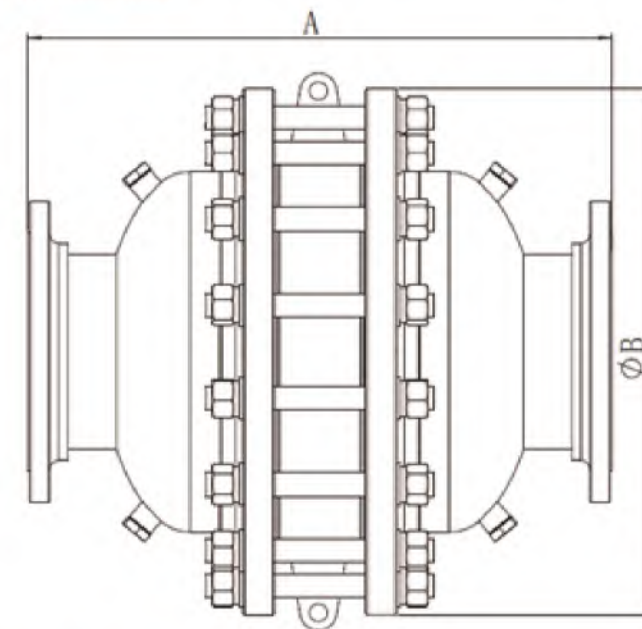
- ◆阻爆轰及具有短时耐烧能力
Preventing the propagation of detonation flames and short-term resistance to burning
- ◆卓越的流量，压降最小
Excellent flow rate with minimal pressure drop
- ◆同心设计，双向阻火
Concentric design, bidirectional fire resistance
- ◆易于清洁、可换阻火元件
Easy to clean and replaceable fire retardant components
- ◆独特的元件设计不易受到污染/堵塞
Unique component design that is not easily contaminated/blocked
- ◆端部连接包括法兰连接或螺纹连接
End connections include flange or threaded connections

适用工况 Operating Conditions

型号 Model	最大工作压力 Max Operating Pressure (bara)	最大工作温度 Max Operating Temperature (°C)
Z12	1.1	60

其它工况请咨询厂家。Consult factory for other condition.

总图 General Arrangement:



外形尺寸 Dimensions (II A)

DN (NPS)	50 (2)	80 (3)	100 (4)	150 (6)	200 (8)	250 (10)	300 (12)
A mm	415	460	495	590	690	790	950
B mm	230	345	345	485	595	700	815
N.W. (kg)	25	72	75	150	250	340	550

其它规格请咨询厂家。Consult factory for other size.

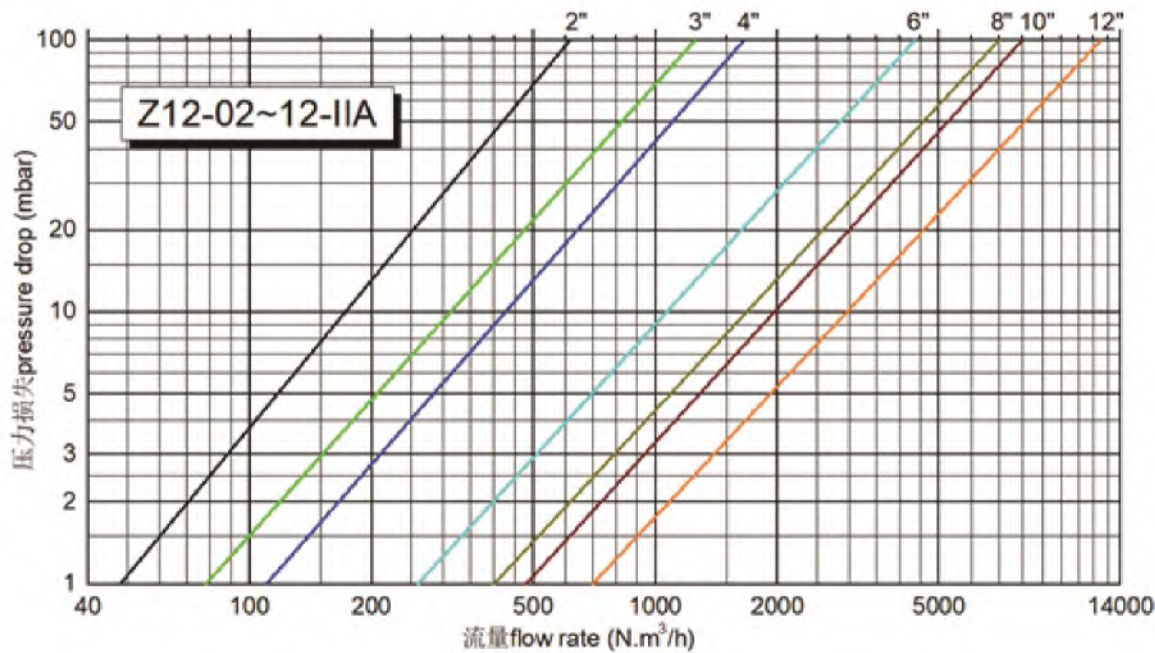
外形尺寸 Dimensions (IIB3)

DN (NPS)	50 (2)	80 (3)	100 (4)	150 (6)	200 (8)	250 (10)	300 (12)
A mm	415	460	495	590	690	790	950
B mm	230	345	345	485	595	700	815
N.W. (kg)	28	75	78	155	260	360	570

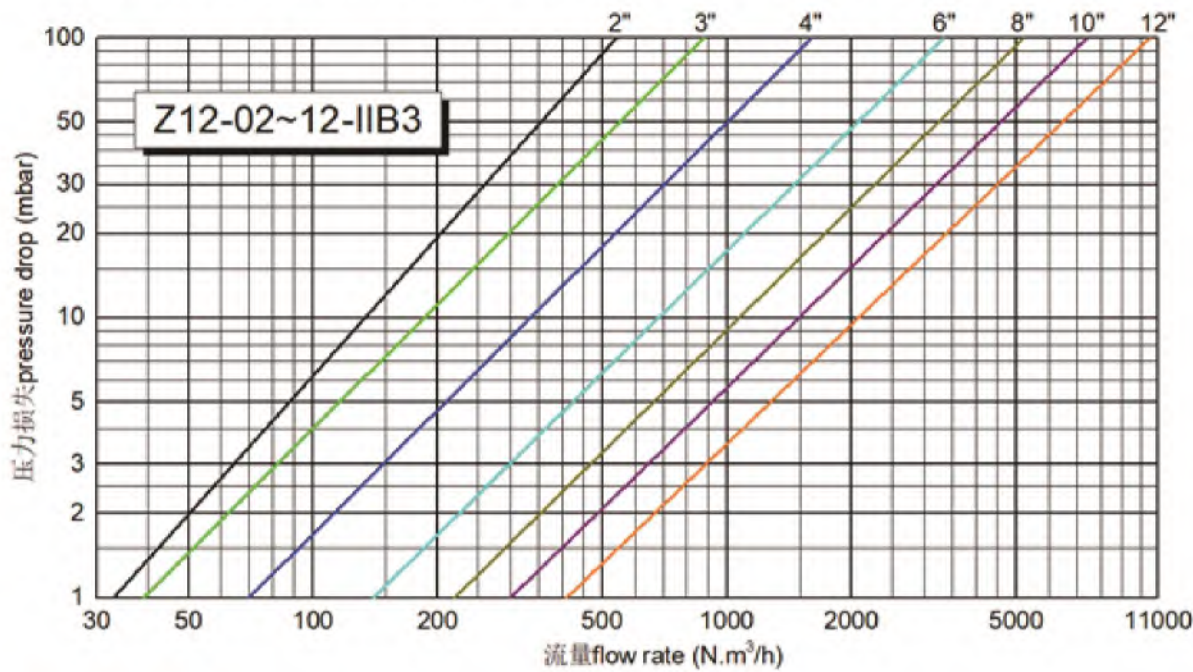
其它规格请咨询厂家。Consult factory for other size.

流量-压降曲线 flow-pressure drop curve

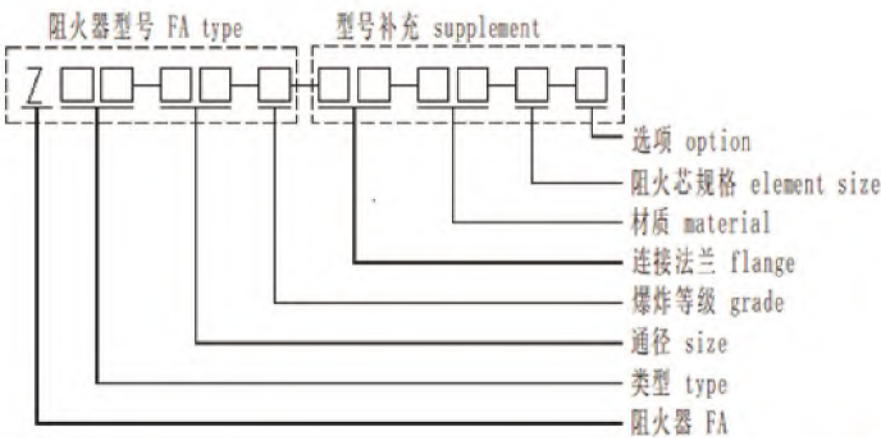
IIA爆炸等级流量—压降曲线 flow-pressure drop curve of explosion groups IIA



IIB3爆炸等级流量—压降曲线 flow-pressure drop curve of explosion groups IIB3



阻火器型号说明



类型Type:

管道阻爆燃型 in-line deflagration flame arrester	11	管道阻爆轰型 in-line detonation flame arrester	12
管端阻爆燃型 end-line deflagration flame arrester	21	/	/

通径Size: 英寸inch
 爆炸等级Group: A—IIA、B3—IIB3、B—IIB、C—IIC
 连接法兰Connection flange:

11	ASME B 16.5 SO-150RF	12	ASME B 16.5 WN-150RF
21	HG/T 20592 SO-10 RF	22	HG/T 20592 SO-16 RF
23	HG/T 20592 WN-10 RF	24	HG/T 20592 WN-16 RF
0	其余else		

材质Material:

11	CS+304	12	CS+316L
21	304+304	22	304+316L
32	316L+316L	24	/
注note	壳体材质body material + 阻火元件材质element material		

阻火芯规格 Element size:

省略 omit	阻火芯规格为2倍连接法兰规格 The size of element is twice that of the connection flange
按实际规格 Reality size	阻火芯规格不是2倍连接法兰规格时，在材质后面按实际标记阻火芯规格 If the size of element is' t twice that of the connection flange, mark the actual specification of the element behind the material.

选项Option:

T	选配温度传感器 Temp Sensor	P	选配压力传感器 Pressure Sensor	C	防腐蚀涂层 Anticorrosive Coating
省略 Omit	排污孔Screw hole G1/2"				

型号Model: Z12-08-A-22-21
 表示: Z12系列管道阻爆轰型阻火器，通径8”，爆炸等级为IIA，连接法兰标准为HG/T20592-2009 SO200-16 RF,阻火器壳体和阻火元件材质为304，排污孔为G1/2” 。
 Indication: Z12 series in-line detonation flame arrester, explosion group IIA, diameter 8” , connection flange standard HG/T 20592-2009 SO200-16 RF. Flame arrester body and element material are 304. Element size is 16” . Drain hole is G1/2” .

样本所载述的技术资料以实际为准，若有变更恕不另行通知。
 The technical information stated in the sample is subject to actual conditions and is subject to change without prior notice.

如需订购本公司阻火器产品，请详细提供下表所列数据。
 Please provide the detail data listed in the below table, if order the flame arrester
 客户Customer: _____
 项目Project: _____

数据表

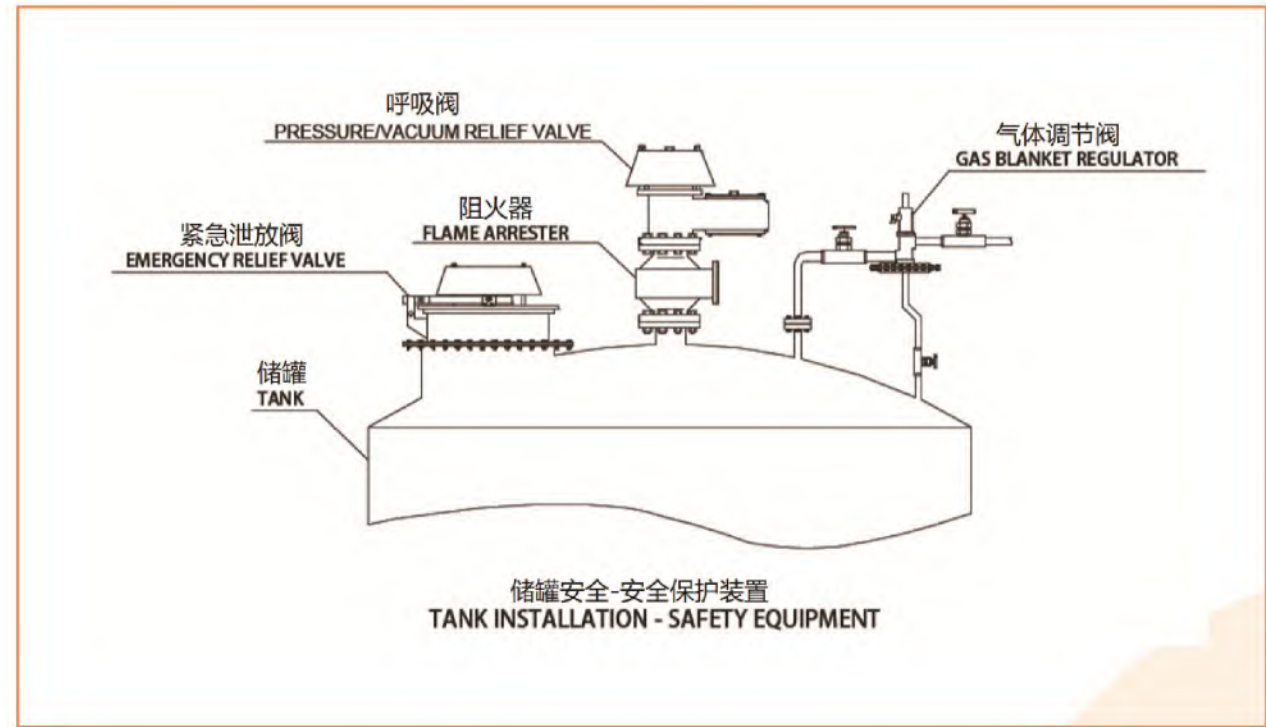
阻火器类型 Type	☐ Z11: 管道阻爆燃 In-line deflagration ☐ Z12: 管道阻爆轰 In-line detonation ☐ Z21: 管端阻爆燃 End-of-line deflagration		
规格Size	☐ 2”、 ☐ 3”、 ☐ 4”、 ☐ 6”、 ☐ 8”、 ☐ 10”、 ☐ 12”、		
爆炸等级 Group	☐ IIA ☐ IIB3 ☐ IIB ☐ IIC		
工作参数 Operation Data	最大工作压力 Max. operating pressure		bar
	最大工作温度 Max. operating temperature		℃
工艺参数 Technological Parameter	流量 Max. Flow Rate		Am³/h
	介质/状态/摩尔质量 Fluid/State/Mol.		M
	最大允许压损 Max. Allowed Pressure Drop		kPa
材料 Material	阀体材料 Body Material		
	阻火元件 Element Material		
法兰 Flange	法兰标准 Flange Standard		
	法兰等级 Flange Rating		
	法兰连接形式 Connection Type		
其它 Options	特殊涂层 Special coating		
	衬里 Lining		
	传感器接口 Sensor Joint		

其它规格或爆炸等级请咨询厂家。Consult factory for other size or group.

PV INTRODUCTION
呼吸阀介绍

下图是典型的储罐安全保护装置的示意图。储罐在使用过程中经常会由于液面的改变或者外界温度的变化等原因，使得储罐内气相的压力也随之波动，导致储罐出现超压或真空的情况，为避免造成储罐超压鼓罐或低压瘪罐，通常采用在罐顶安装呼吸阀的方式来维持储罐气压内、外平衡。另外，当储罐发生紧急状况时，必须具备一定的紧急泄放量，以确保储罐内压力保持在一定范围之内，保护储罐的安全，因此在储罐的顶部一般还装有紧急泄放阀。另在呼吸阀上还串联阻火器，以防止外部火焰进入储罐。

The below diagram is a schematic diagram of a typical tank safety protection device. During the use of storage tanks, the pressure of the gas phase inside the tank often fluctuates due to changes in liquid level or external temperature, leading to overpressure or vacuum in the tank. To avoid causing overpressure or low-pressure collapse of the storage tank, a breathing valve is usually installed on the top of the tank to maintain the internal and external balance of the tank pressure. In addition, when an emergency occurs in a storage tank, it is necessary to have a certain emergency relief capacity to ensure that the pressure inside the tank is maintained within a certain range and protect the safety of the tank. Therefore, an emergency relief valve is generally installed on the top of the storage tank. Additionally, a flame arrester is connected in series to the breathing valve to prevent external flames from entering the storage tank.



PV OVERVIEW
呼吸阀概述

本公司生产的呼吸阀（压力真空泄放阀），具有结构紧凑，通气量大，泄漏量小，耐腐蚀，密封性能好等特点。呼吸阀可以按下表根据安装位置、泄放方式、加载方式和结构形式进行分类。

The pressure vacuum relief valve produced by our company has the characteristics of compact structure, large ventilation capacity, small leakage, corrosion resistance and good sealing performance. The valves can be classified according to Installation position, discharge method, loading method, and structural form according to the table below.

序号 NO.	安装位置 Installation position	泄放方式 Discharge Method	加载方式 Loading Method	结构形式 Structural form
1	管端式 End-Of-Line	压力泄放 Pressure Relief	重力加载 Gravity Loaded	一体式 Integrated
2	管道式 In-Line	真空泄放 Vacuum Relief	弹簧加载 Spring Loaded	分体式 Split Type
3		压力/真空泄放 Pressure/Vacuum Relief		

执行标准Executive Standards

制造、检测标准: SY/T 0511.1-2010、 API Std 2000-2014。
Manufacturing and testing standards: SY/T 0511.1-2010、 API Std 2000-2014.

维护保养方法Maintenance methods:

- 1、存放deposit:
若暂时不安装，应存放在有防雨设施的仓库中。
If not installed temporarily, it should be stored in a warehouse with rainproof facilities
- 2、维护maintenance:
操作人员应每月上罐顶检查一次呼吸阀，检查阀盘、阀座、阀杆、阀套等部位是否有灰尘、污垢，若有，应清理干净；每半年，给阀套、阀杆擦拭一遍变压器油。

The operator should conduct a monthly inspection on the top of the tank to check PV whether there is dust or dirt on the valve disc, valve seat, valve stem, valve sleeve, and other parts. If there is any, it should be cleaned dry and static; Every six months, wipe the valve sleeve and valve stem with transformer oil.

END-OF-LINE PV
PV系列——管端呼吸阀

管端呼吸阀是华理安全呼吸阀PV系列产品的一种，由于热效应和物料输送引起储罐内部气相空间的压力变化，呼吸阀为维持储罐内、外压力平衡而设置，是常压、低压储罐的一种必不可少安全装置。

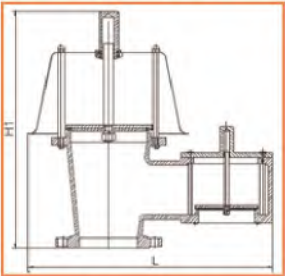
The End-of-Line PV is a type of PV series product of Shanghai Huali Safety Devices Co., LTD (SHSD). Due to the pressure changes in the gas phase space inside the storage tank caused by thermal effects and material transportation, the PV is set to maintain the balance of pressure inside and outside the storage tank, and PV is an essential safety device for atmospheric and low-pressure storage tanks.

特点与优点features and benefits:

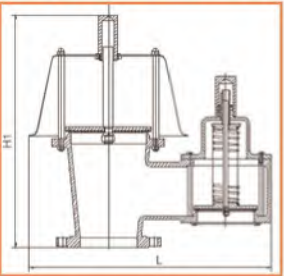
- 呼吸阀呼气时，蒸汽排向大气；
- 启闭压差小，开启高度至少能达呼吸阀公称直径的1/3以上；
- 泄放效率高，泄放系数不小于0.7；
- 选用优质弹簧，抗疲劳性能优良；
- 可现场拆装防雨罩，方便检查维护；
- 进气口设置有滤网，可阻止杂物进入储罐内部；
- 根据用户需要，可以增加阻火器、衬里、夹套等附件。
- When exhaling through the PV, steam is discharged into the atmosphere;
- The opening and closing pressure difference is small, and the opening height can reach at least 1/3 of the nominal diameter of the PV;
- High discharge efficiency, with a discharge coefficient not less than 0.7;
- Using high-quality springs with excellent fatigue resistance;
- The rain cover can be disassembled on site for easy inspection and maintenance;
- The air inlet is equipped with a filter screen to prevent debris from entering the interior of the storage tank;
- According to user needs, accessories such as flame arresters, linings, and jackets can be added.



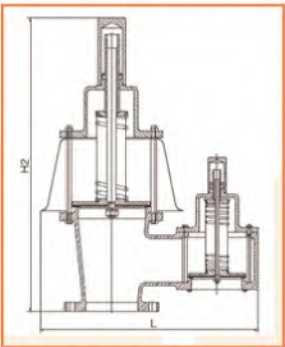
管端呼吸阀加载方式loading method of end-line pressure/vacuum relief valve:



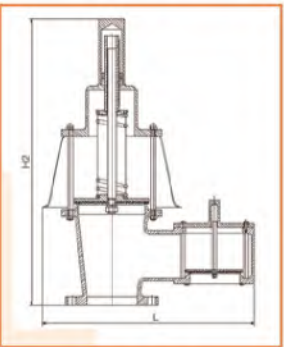
压力/真空重力加载
Pressure/vacuum gravity loaded



真空弹簧加载
vacuum spring loaded



压力/真空弹簧加载
pressure/vacuum spring loaded



压力弹簧加载
pressure spring loaded

主要技术参数Main technical parameters:

1. 规格Size: 2" —12" ；
2. 法兰标准: Flange standard: ANSI、DIN、HG/T20592~20635、JS等etc;
3. 制造、检测标准Manufacturing and testing standards: SY/T 0511.1-2010、API Std 2000-2014;
4. 材质Material: 金属材质可选碳钢、不锈钢、铝合金等，膜片可选FEP、NBR等材质。

The metal material can be carbon steel, stainless steel, aluminum alloy, etc., and the diaphragm can be made of materials such as FEP and NBR.

设定压力范围Set pressure range (单位: mbar)

加载方式 loading method	压力重力加载 Pressure gravity loaded	压力弹簧加载 Pressure spring loaded	真空重力加载 vacuum gravity loaded	真空弹簧加载 vacuum spring loaded
压力范围pressure range	2.0~69	69~1034	-2.0~-43	-43~-820

结构尺寸structure size (单位: mm)

通 径Size	2"	3"	4"	6"	8"	10"	12"
L	300	340	400	525	650	765	965
H1	275	310	375	500	585	675	820
H2	340	390	430	600	680	760	900

IN-LINE PV

PV系列——管道呼吸阀

管道呼吸阀是华理安全呼吸阀PV系列产品的的一种，由于热效应和物料输送引起储罐内部气相空间的压力变化，呼吸阀为维持储罐内、外压力平衡而设置，是常压、低压储罐的一种必不可少安全装置。

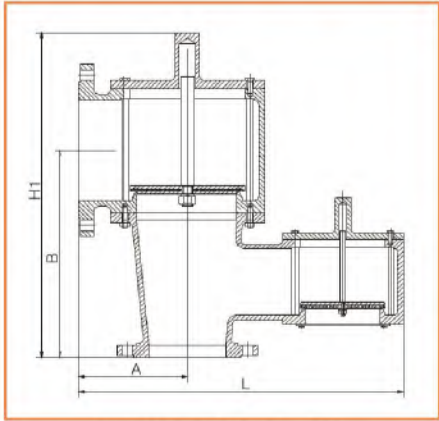
The In-line PV is a type of PV series product of Shanghai Huali Safety Devices Co., LTD (SHSD) . Due to the pressure changes in the gas phase space inside the storage tank caused by thermal effects and material transportation, the PV is set to maintain the balance of pressure inside and outside the storage tank, and PV is an essential safety device for atmospheric and low-pressure storage tanks.

特点与优点features and benefits:

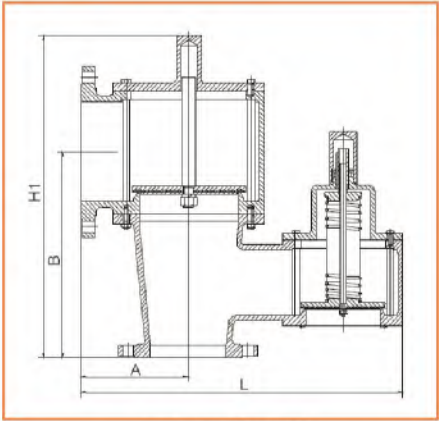
- 呼吸阀呼气时，蒸汽被管道收集；
- 启闭压差小，开启高度至少能达呼吸阀公称直径的1/3以上；
- 泄放效率高，泄放系数不小于0.7；
- 选用优质弹簧，抗疲劳性能优良；
- 不设置防雨罩，封闭结构；
- 进气口设置有滤网，可阻止杂物进入储罐内部；
- 根据用户需要，可以增加阻火器、衬里、夹套等附件。
- When exhaling through the PV, steam is collected by pipeline;
- The opening and closing pressure difference is small, and the opening height can reach at least 1/3 of the nominal diameter of the PV;
- High discharge efficiency, with a discharge coefficient not less than 0.7;
- Using high-quality springs with excellent fatigue resistance;
- No rain cover and enclosed structure;
- The air inlet is equipped with a filter screen to prevent debris from entering the interior of the storage tank;
- According to user needs, accessories such as flame arresters, linings, and jackets can be added.



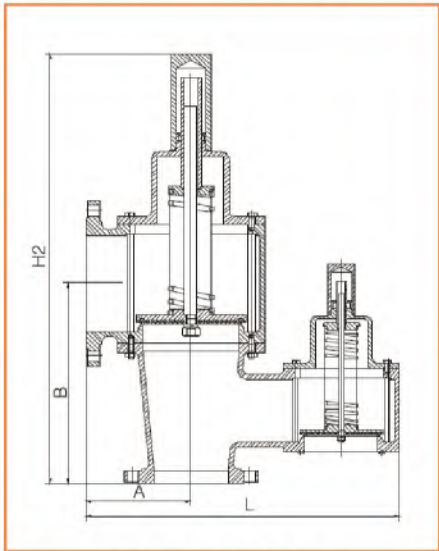
管道呼吸阀加载方式loading method of in-line pressure/vacuum relief valve



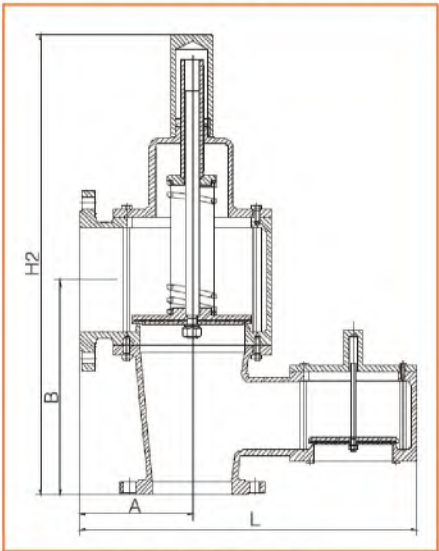
压力/真空重力加载
Pressure/vacuum gravity loaded



真空弹簧加载
vacuum spring loaded



压力/真空弹簧加载
pressure/vacuum spring loaded



压力弹簧加载
pressure spring loaded

主要技术参数Main technical parameters:

- 1.规格size: 入口尺寸inlet size 2" —12" ， 出口尺寸outlet size 3" —14" ；
- 2.法兰标准: Flange standard: ANSI、DIN、HG/T20592~20635、JS等etc;
- 3.制造、检测标准Manufacturing and testing standards: SY/T 0511.1-2010、API Std 2000-2014;
- 4.材质Material: 金属材质可选碳钢、不锈钢、铝合金等，膜片可选FEP、NBR等材质。
The metal material can be carbon steel, stainless steel, aluminum alloy, etc., and the diaphragm can be made of materials such as FEP and NBR.

设定压力范围Set pressure range (单位: mbar)

加载方式 loading method	压力重力加载 Pressure gravity loaded	压力弹簧加载 Pressure spring loaded	真空重力加载 vacuum gravity loaded	真空弹簧加载 vacuum spring loaded
压力范围 pressure range	2.0~69	69~1034	-2.0~-43	-43~-820

结构尺寸structure size (单位: mm)

入口口径 Inlet size	出口口径 outlet size	L	H1	H2	A	B
2"	2"	302	270	335	105	190
2"	3"	350	305	385	120	210
3"	3"	350	305	385	120	210
3"	4"	410	360	425	140	240
4"	4"	410	370	435	140	250
4"	6"	520	470	570	170	320
6"	6"	520	505	605	170	340
6"	8"	640	570	670	200	380
8"	8"	640	585	680	200	390
8"	10"	740	675	760	225	440
10"	10"	740	680	770	225	445
10"	12"	940	800	900	280	515
12"	12"	940	800	900	280	515
12"	14"	1020	910	1100	310	695

PRESSURE RELIEF VALVE
PV系列——单呼阀

单呼阀是华理安全呼吸阀PV系列产品的一种，由于热效应和物料输送引起储罐内部气相空间的压力上升，为防止储罐超压鼓罐而设置，是呼吸阀中的一类产品。根据排气方式分为管道式和管端式结构。

The pressure relief valve is a type of PV series product of Shanghai Huali Safety Devices Co., LTD (SHSD). Due to the thermal effect and material transportation, the pressure in the gas phase space inside the storage tank increases. It is set to prevent overpressure and bulging of the storage tank, and it is a type of breathing valve product. According to the exhaust method, it is divided into pipeline type and pipe end type structures.

特点与优点features and benefits:

- 单呼阀正压超压时动作，负压时不起作用；
- 具有结构紧凑、体积小、重量轻等优点；
- 启闭压差小，开启高度至少能达呼吸阀公称直径的1/3以上；
- 泄放效率高，泄放系数不小于0.7；
- 选用优质弹簧，抗疲劳性能优良；
- 可现场拆装防雨罩，方便检查维护；
- 根据用户需要，可以增加阻火器、衬里、夹套等附件。
- Overpressure works, vacuum doesn't open;
- the advantages of compact structure, small volume, light weight, etc;
- The opening and closing pressure difference is small, and the opening height can reach at least 1/3 of the nominal diameter of the PV;
- High discharge efficiency, with a discharge coefficient not less than 0.7;
- Using high-quality springs with excellent fatigue resistance;
- The rain cover can be disassembled on site for easy inspection and maintenance;
- According to user needs, accessories such as flame arresters, linings, and jackets can be added.



主要技术参数Main technical parameters:

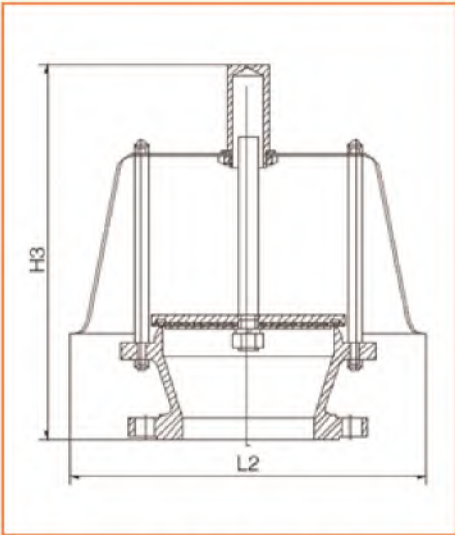
1. 规格size: 2" —12" ；
2. 法兰标准flange standard: ANSI、DIN、HG/T20592~20635、JS等etc;
3. 制造、检测标准Manufacturing and testing standards: SY/T 0511.1-2010、API Std 2000-2014;
4. 材质Material: 金属材质可选碳钢、不锈钢、铝合金等，膜片可选FEP、NBR等材质。

The metal material can be carbon steel, stainless steel, aluminum alloy, etc., and the diaphragm can be made of materials such as FEP and NBR.

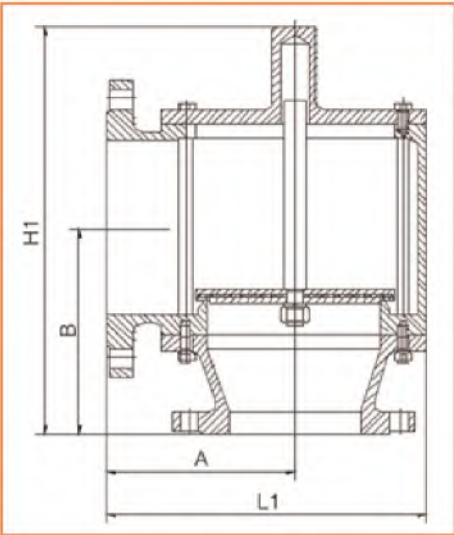
设定压力范围Set pressure range (单位: mbar)

加载方式 loading method	压力重力加载 Pressure gravity loaded	压力弹簧加载 Pressure spring loaded
压力范围	2.0~69	69~1034

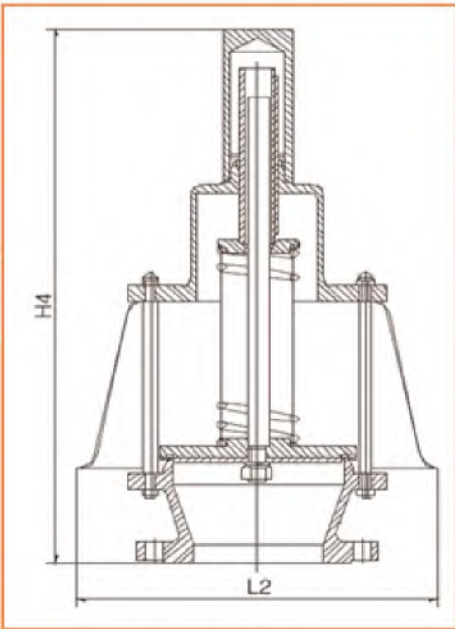
单呼阀加载方式loading method of pressure relief valve:



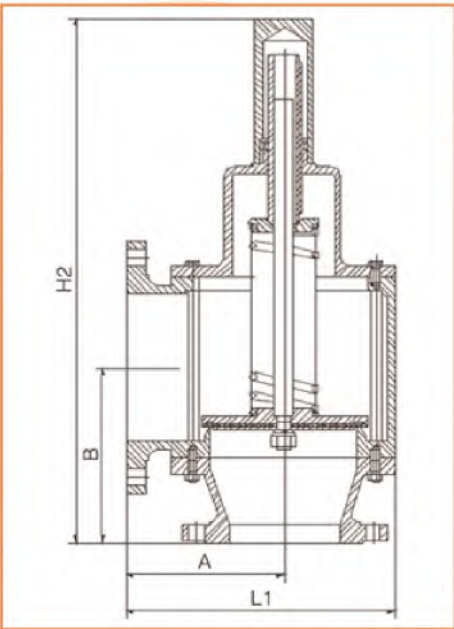
管端式重力加载
gravity loaded of end-of-line



管道式重力加载
gravity loaded of in-line type



管端式弹簧加载
spring loaded of end-of-line



管道式弹簧加载
spring loaded of in-line type

管端式结构尺寸end-line type dimensions (单位: mm)

通 径size	2"	3"	4"	6"	8"	10"	12"
L2	175	210	250	340	410	485	580
H3	135	160	200	265	320	400	460
H4	200	245	265	365	415	485	560

管道式结构尺寸in-line type dimensions (单位: mm)

入口口径 Inlet size	出口口径 outlet size	L1	H1	H2	A	B
2"	2"	170	200	265	105	120
2"	3"	195	235	315	120	140
3"	3"	195	235	315	120	140
3"	4"	235	285	350	140	165
4"	4"	235	285	350	140	165
4"	6"	285	370	470	170	220
6"	6"	285	370	470	170	220
6"	8"	340	440	535	200	250
8"	8"	340	440	535	200	250
8"	10"	400	515	600	225	280
10"	10"	400	515	600	225	280
10"	12"	495	600	700	280	320
12"	12"	495	600	700	280	320
12"	14"	550	665	765	310	350

VACUUM RELIEF VALVE
PV系列——单吸阀

单吸阀是华理安全呼吸阀PV系列产品的的一种，由于热效应和物料输送引起储罐内部气相空间的压力下降，为防止储罐低压瘪罐而设置，是呼吸阀中的一类产品。

The vacuum relief valve is a type of PV series product of Shanghai Huali Safety Devices Co., LTD (SHS D). Due to the thermal effect and material transportation, the pressure in the gas phase space inside the stor age tank drop. It is set to prevent vacuum and concavity of the storage tank, and it is a type of PV product.

特点与优点features and benefits:

- 单吸阀负压时动作，正压时不起作用；
- 具有结构紧凑、体积小、重量轻等优点；
- 启闭压差小，开启高度至少能达呼吸阀公称直径的1/3以上；
- 泄放效率高，泄放系数不小于0.7；
- 选用优质弹簧，抗疲劳性能优良；
- 根据用户需要，可以增加阻火器、衬里、夹套等附件。
- Vacuum works, overpressure doesn't open;
- the advantages of compact structure, small volume, light weight, etc;
- The opening and closing pressure difference is small, and the opening height can reach at least 1/3 of the nominal diameter of the PV;
- High discharge efficiency, with a discharge coefficient not less than 0.7;
- Using high-quality springs with excellent fatigue resistance;
- The rain cover can be disassembled on site for easy inspection and maintenance;
- According to user needs, accessories such as flame arresters, linings, and jackets can be added.

主要技术参数Main technical parameters:

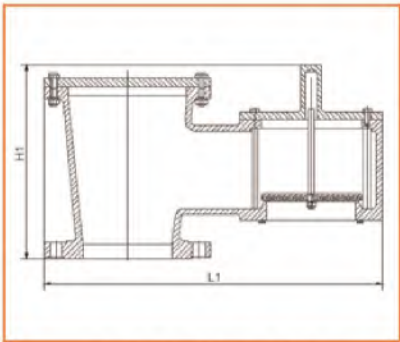
1. 规格size: 2" —12" ；
2. 法兰标准flange standard: ANSI、DIN、HG/T20592~20635、JS等etc;
3. 制造、检测标准Manufacturing and testing standards: SY/T 0511.1–2010、API Std 2000–2014;
4. 材质Material: 金属材料可选碳钢、不锈钢、铝合金等，膜片可选FEP、NBR等材质。

The metal material can be carbon steel, stainless steel, aluminum alloy, etc., and the diaphragm can be made of materials such as FEP and NBR.

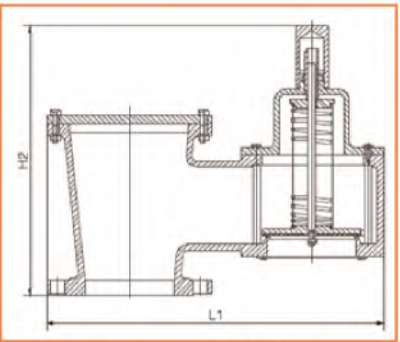


设定压力范围Set pressure range (单位: mbar)

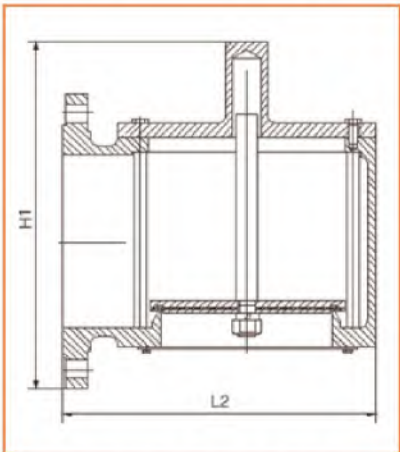
加载方式 loading method	重力加载 gravity loaded	弹簧加载 spring loaded
真空范围 vacuum range	-2.0~-43	-43~-82



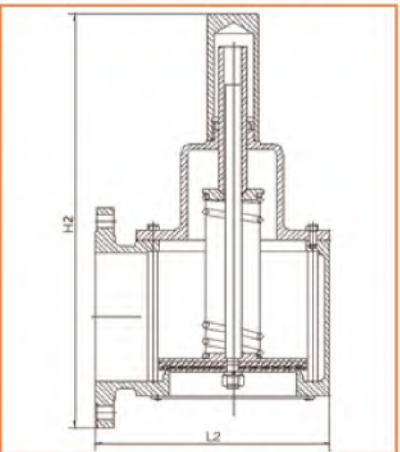
水平安装结构重力加载
horizontal installation gravity loading



水平安装结构弹簧加载
horizontal installation spring loading



垂直安装结构重力加载
Vertical installation gravity loading



垂直安装结构弹簧加载
Vertical installation spring loading

结构尺寸dimensions (单位: mm)

通 径size	2"	3"	4"	6"	8"	10"	12"
L1	300	400	445	575	705	825	970
L2	185	215	240	280	365	455	525
H1	180	220	255	310	370	440	520
H2	290	300	360	450	645	740	910

如需订购本公司呼吸阀产品，请详细提供下表所列数据。
Please provide the detail data listed in the below table, if order the PV valve.

客户Customer: _____

项目Project: _____

型号Type	☐ 压力泄放Pressure Relief; ☐ 管道式In-line; ☐ 罐顶安装Top installation; (可多选Multiple Choice)		
	☐ 真空泄放Vacuum Relief; ☐ 管端式End-of-line; ☐ 罐侧安装Lateral installation.		
储罐参数Tank Data	最大工作压力 Max. operating pressure		kPa
	工作温度Operating temperature		℃
工艺参数 Technological parameter	介质/状态/摩尔质量Fluid/State/Mol.		M
	绝热指数Heat capacity ratio		k
	压缩系数Compressibility factor		Z
	大气压力Atmospheric pressure		kPa
呼出操作条件 Pressure operation conditions	设定压力Set pressure		kPa
	最大背压Max. back pressure		kPa
	允许超压Allowable Overpressure		kPa
	泄放温度Relieving temperature		℃
吸入操作条件 Vacuum operation conditions	最大流量Max. capacity		Am³/h
	设定压力Set pressure		kPa
	允许超压Allowable Overpressure		kPa
	泄放温度Relieving temperature		℃
材料及法兰 Material & flange	阀体/阀瓣/密封材料Body/Clack/Seal Material		
	入口法兰标准Inlet flange standard		
	出口法兰标准Outlet flange standard		
其它 Options	阻火器Flame arrester	Y/N	
	带夹套Jacket	Y(G1/2")/N	
	特殊涂层Special coating	Y/N	
	衬里Lining	Y/N	

其它要求请咨询厂家。Consult factory for other requirements.

EMERGENCY PV EPV系列——紧急泄放阀

紧急泄放阀是常压、低压罐槽的安全附件产品之一，在紧急状况下(罐槽内因作业失误或外部火情以及降雨等问题导致罐内压力积聚失衡)，普通排气装置可能排放量过小而无法防止罐槽因突发状况超压或真空。华理安全生产的EPV系列产品具有必要的压力泄放与真空泄放的能力，可有效防止罐槽由于超压或真空的破坏。

Emergency relief valve is one of the safety accessory products for atmospheric and low-pressure tank tanks. In emergency situations (such as operation errors, external fires, and rainfall in the tank), ordinary relief devices may discharge too small to prevent tank tanks from overpressure or vacuum due to sudden conditions. The EPV series products produced by Shanghai Huali have the necessary pressure relief and vacuum relief capabilities, which can effectively prevent tank damage due to overpressure or vacuum.

紧急泄放阀安装场合：

在下列任一条件下均应选用紧急泄放阀（不限于）：

- 盛装闪点低于37.8℃的石油或石油产品的常、低压储罐；
- 储罐内介质蒸汽的排放量大，呼吸阀排量不足；
- 储罐操作过程中有可能产生非正常内压。

Installation situation of emergency relief valve:

Emergency relief valves should be selected under any of the following conditions (not limited to):

- Atmospheric and low-pressure storage tanks containing petroleum or petroleum products with a flash point below 37.8 ℃;
- The discharge of medium vapor in the storage tank is large, and the displacement of the breathing valve is insufficient;
- Abnormal internal pressure may occur during tank operation.

EPV系列特点与优点：

- ◆ 超压低于10%即可达到全排量；
- ◆ 整定压力偏差不大于±3%；
- ◆ 回座压力不低于整定压力的90%；
- ◆ 启闭压差小，开启高度至少能达紧急泄放阀公称直径的1/3以上；
- ◆ 泄放效率高，泄放系数大于0.7；
- ◆ 阀芯和阀座可现场更换，无须使用特殊工具，方便，简单；
- ◆ 根据用户需要，可以增加阻火器、衬里、夹套等附件。

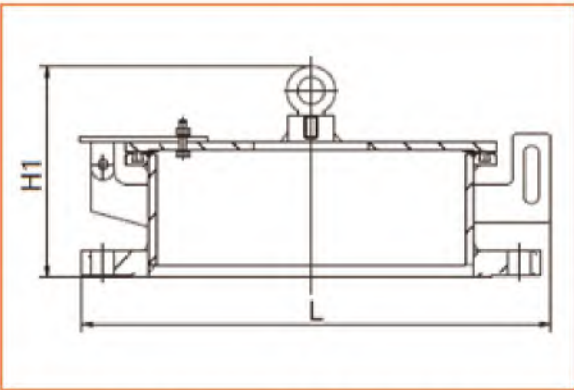
EPV series features and benefits:

- ◆ overpressure is less than 10%, the full displacement can be achieved;
- ◆ The deviation of phase setting pressure shall not exceed ± 3%;
- ◆ The reseating pressure shall not be less than 90% of the set pressure;

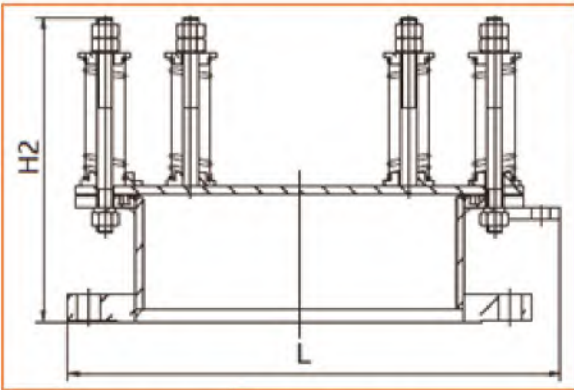
- ◆The opening and closing pressure difference is small, and the opening height can reach at least 1/3 of the nominal diameter of the emergency relief valve;
- ◆High discharge efficiency, with a discharge coefficient greater than 0.7;
- ◆The valve core and valve seat can be replaced on site without the need for special tools, which is convenient and simple;
- ◆According to user needs, accessories such as flame arresters, linings, and jackets can be added.

主要技术参数Main technical parameters:

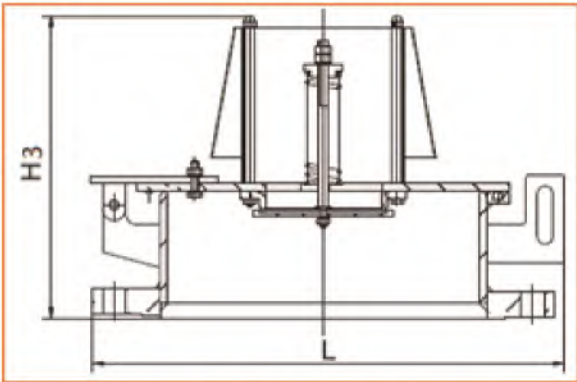
- ◆1. 规格size: 16" 、 20" 、 24" ;
- ◆2. 法兰标准flange standard: ANSI、DIN、HG/T20592~20635、JS、等etc;
- ◆3. 制造、检测标准Manufacturing and testing standards: API Std 2000~2014;
- ◆4. 材质Material: 金属材质可选碳钢、不锈钢、铝合金等, 膜片可选FEP、NBR等材质。
- ◆The metal material can be carbon steel, stainless steel, aluminum alloy, etc., and the diaphragm can be made of materials such as FEP and NBR.



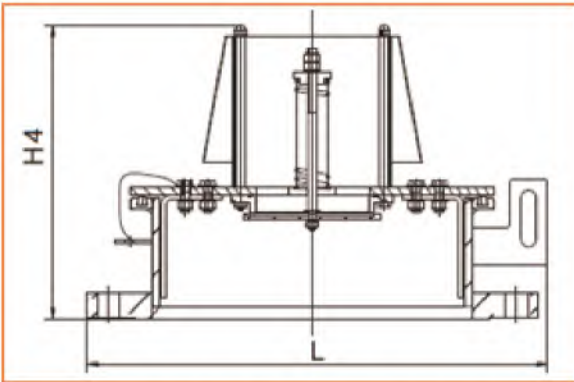
重力加载铰链式紧急压力泄放阀
gravity loaded of hinge type EPV



弹簧加载式紧急压力泄放阀
spring loaded of EPV



重力加载铰链式紧急压力/真空泄放阀
gravity loaded of hinge type EPV



重力加载式紧急压力/真空泄放阀
spring loaded of EPV

设定压力范围Set pressure range (单位: mbar)

加载方式 loading method	压力范围 pressure range
压力重力加载 Pressure gravity loaded	4.0~69
压力弹簧加载 Pressure spring loaded	69~1034
真空重力加载 vacuum gravity loaded	2.0~17

结构尺寸dimensions (单位: mm)

通 径size	H1	H2	H3	H4	L
16"	270	475	350	350	595
20"	270	585	350	350	765
24"	270	685	350	350	845

如需订购本公司紧急泄放阀产品，请详细提供下表所列数据。
Please provide the detail data listed in the below table, if order the emergency relief valve.

客户Customer: _____

项目Project: _____

型号 Type	☐ 压力泄放Pressure Relief; (可多选Multiple Choice) ☐ 真空泄放Vacuum Relief;		
储罐参数 Tank Dada	最大工作压力 Max. operating pressure		kPa
	工作温度Operating temperature		℃
工艺参数 Technological parameter	介质/状态/摩尔质量Fluid/State/Mol.		M
	绝热指数Heat capacity ratio		k
	压缩系数Compressibility factor		Z
	大气压力Atmospheric pressure		kPa
呼出操作条件 Pressure operation conditions	设定压力Set pressure		kPa
	允许超压Allowable Overpressure		kPa
	泄放温度Relieving temperature		℃
	最大流量Max. capacity		Am³/h
吸入操作条件 Vacuum operation conditions	设定压力Set pressure		kPa
	允许超压Allowable overpressure		kPa
	泄放温度Relieving temperature		℃
	最大流量Max. capacity		Am³/h
材料及法兰 Material & flange	阀体/阀瓣/密封材料Body/Clack/Seal Material		
	入口法兰标准Inlet flange standard		
其它 Options	带夹套Jacket	Y(G1/2")/N	
	特殊涂层Special coating	Y/N	
	衬里Lining	Y/N	

其它要求请咨询厂家。Consult factory for other requirements.

FLAMELESS EXPLOSION VENTING DEVICE 无焰泄放装置

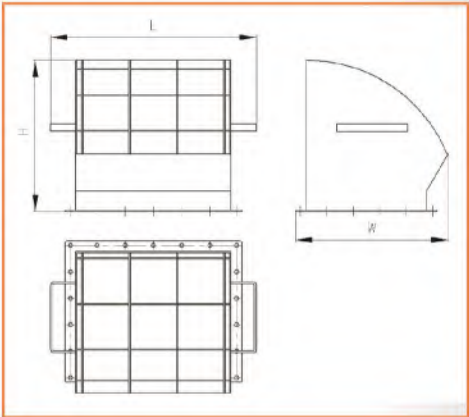
无焰泄放装置广泛应用在粮食、冶金、化工、电力、轻工、制药、烟草、机械加工、固体废弃物处理等行业领域。应用的设备有旋风分离器、布袋除尘器、粉尘收集器、滤筒过滤器、气力输送、棒式或球磨机、斗式提升机、干燥和烘箱、辊轧研磨、建筑物等。该装置主要由爆破片和无焰泄放灭焰单元组成，装置安装在被保护的设备上。正常运行时，爆破片处于密闭状态，一旦装置内发生粉尘爆炸，爆炸超压作用在爆破片上的作用力超过爆破片的开启压力，爆破片会沿着缝口破裂并开启，爆炸压力会从阻火网的缝隙中泄出，而火焰由灭焰单元的“猝息”作用猝灭，以防止爆炸压力及火焰产生的高温对周围人员或设备造成危害。

Flameless explosion venting with non-reusable devices are widely used in food-stuffs, metallurgy, chemical industry, electric power, light industry, pharmaceuticals, tobacco, machinery processing, solid waste treatment and so on. The main equipment such as Cyclones, Bag Houses, Dust Collectors, Cartridge Filters, Pneumatic Conveying, Milling: Pin, Ball, Bucket Elevators, Dryers and Ovens, Roller Mills, Grinding, Buildings and so on. The device is mainly composed of venting panel and flameless venting device. It is installed on the equipment which should be protected. When it is in normal operation, the venting panel is closed. Once the dust explosion occurs in the equipment, the venting panel will open by the overpressure. And the explosion pressure will escape from the venting panel and the fire arrester. But the flame will be quenched by the quenching and cooling action of the flame extinguishing layer to prevent the explosion pressure and the high temperature generated by the flame from harming the operator or equipment around it. This kind of structure is usually made by venting panel and fire arrester.



- 有效阻止火焰和热量，为设备、建筑物和流动人员提供安全的场所；
- 适用于室内设备的粉尘爆炸无火焰泄放；
- 有效收集粉尘，对环境没有污染；

- 泄爆效率高，经济实用；
- 框架材质：碳钢或不锈钢；
- 阻燃材质：304SS
- 适用粉尘：St1和St2的粉尘；
- 有效泄爆面积满足泄爆要求；
- 安装方式：紧贴设备或管道，采用法兰连接；
- 爆炸泄放后需更换爆破片；
- 可提供国内权威机构的检测报告。
- Effectively stopping fire and heat, providing safe places for equipment, buildings and mobile personnel
- Dust explosion for indoor equipment
- Effective collection of dust, without pollution to the environment
- High efficiency of explosion venting, economical and practical
- Frame material: Carbon steel or stainless steel
- Flameless Materials: 304SS
- Reduced rate of pressure rise: Kst is suitable for St1 or St2 dust grade.
- Effective venting area to satisfy the requirement of explosion
- Installation: close to the equipment or pipe with flange connection
- After dust explosion need to replace venting panel
- Availability of testing reports from domestic authorities



型号	L	W	H
	(mm)	(mm)	(mm)
ZHQ-02-310x240-S90	440	362	364
ZHQ-02-860x190-S90	907	214	234
ZHQ-02-860x220-S90	907	247	264
ZHQ-02-410x240-S90	540	362	364
ZHQ-02-410x310-S90	540	434	434
ZHQ-02-410x410-S90	540	538	534
ZHQ-02-490x490-S90	620	641	614
ZHQ-02-580x410-S90	710	538	536
ZHQ-02-690x690-S90	820	836	816
ZHQ-02-840x840-S90	970	988	968
ZHQ-02-910x410-S90	1040	538	538
ZHQ-02-910x580-S90	1040	713	708
ZHQ-02-910x910-S90	1040	1049	1038

VENTING PANEL 粉尘爆破片

粉尘用爆破片广泛的应用在粮食、冶金、化工、电力、轻工、制药、烟草、机械加工、固体废弃物处理等行业领域。应用的设备有旋风分离器、布袋除尘器、粉尘收集器、滤筒过滤器、气力输送、棒式或球磨机、斗式提升机、干燥和烘箱、辊轧研磨、建筑物等。当爆炸超压达到爆破片的静开启压力，爆破片将按照预先设定的开启方式打开，将爆炸产生的压力泄放掉，以保护工艺设备及装置不被爆炸冲击波损坏。

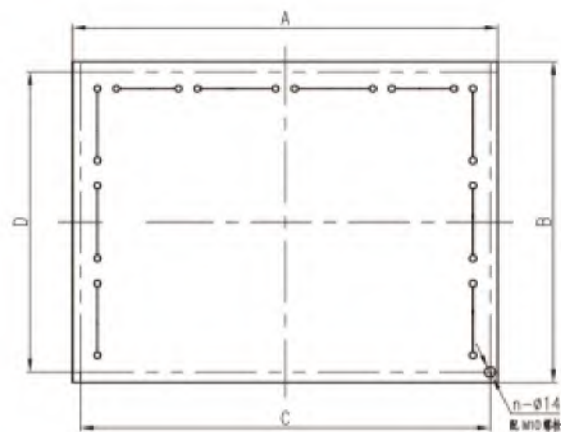
The venting panel devices are widely used in food-stuffs, metallurgy, chemical industry, electric power, light industry, pharmaceuticals, tobacco, machinery processing, solid waste treatment and so on. The main equipment such as Cyclones, Bag Houses, Dust Collectors, Cartridge Filters, Pneumatic Conveying, Milling: Pin, Ball, Bucket Elevators, Dryers and Ovens, Roller Mills, Grinding, Buildings and so on. Once the dust explosion occurs in the equipment, the explosion overpressure reaches to the static opening pressure, the venting panel will open by the overpressure. And the explosion pressure will be released to protect the equipment and device from being damaged by the explosion shock valve.

- 平板形或拱形设计，多种尺寸可选；
- 泄爆效率高，经济实用；
- 适用温度高达200℃
- 材质：304 SS /PTFE/304SS；
- 静开启压力：0.1 barg+/-25%@20℃（其它静开启压力和温度可选）；
- 适用于负压和正压工况；
- Kst适用于St1、St2及St3级粉尘；
- 安装方式：紧贴设备或管道安装，采用法兰连接；
- 可选配泄爆传感器；
- 泄爆时几乎无碎片产生，避免额外伤害；
- 可提供国内权威机构的检测报告。
- Plate or arch design, Wide variety of sizes
- High efficiency of explosion venting, economical and practical
- Applicable temperature up to 200 °C
- Materials: 304 SS /PTFE/304SS
- Static activation overpressure Pstat: 0.1 barg+/-25%@20℃（Other static open pressure and temperature optional）
- Suitable for negative and positive pressure conditions
- Reduced rate of pressure rise: Kst is suitable for St1, St2 and St3 dust grade.



- Installation: close to the equipment or pipe with flange connection
- Optional explosion venting sensor
- Venting few fragmentation, avoid additional damage
- Availability of testing reports from domestic authorities

RECTANGLE BURSTING DISC SERIES
矩形爆破片系列



序号 No.	公称尺寸 Nominal size (mm)	泄放面积 Vent area (m ²)	外周边长 Outer peripheral length (mm) A × B	螺栓中心线 Centerline of bolts (mm) C × D	螺栓孔 Bolt hole	
					数量 Quantity n	直径 Diameter (mm)
1	310 × 240	0.074	400 × 333	375 × 300	18	Φ14
2	410 × 240	0.098	500 × 333	470 × 300	20	Φ14
3	410 × 310	0.127	500 × 400	470 × 375	22	Φ14
4	410 × 410	0.168	500 × 500	470 × 470	24	Φ14
5	580 × 410	0.238	667 × 500	640 × 470	28	Φ14
6	910 × 410	0.373	1000 × 500	970 × 470	36	Φ14
7	690 × 690	0.476	800 × 800	750 × 750	20	Φ14
8	910 × 580	0.528	1000 × 667	970 × 640	40	Φ14
9	840 × 840	0.706	950 × 950	900 × 900	36	Φ14
10	1090 × 690	0.752	1200 × 800	1150 × 750	26	Φ14
11	910 × 910	0.828	1000 × 1000	970 × 970	48	Φ14
12	1245 × 910	1.133	1333 × 1000	1300 × 970	56	Φ14

备注：其他规格或圆形爆破片, 请向厂家咨询。
Note: If you need any other size or round bursting disc, please contact with our company.

EXPLOSION DIVERTER
换向泄压阀

换向泄压阀可以有效的控制爆燃在管道中传播的影响, 并能够达到一个可以接受的安全水平, 但是换向泄压阀无法完全隔断/隔离火焰和压力。换向泄压阀是通过控制管道中燃烧爆炸所产生的压力和改变火焰传播方向的方法, 以达到控制管道中燃烧爆炸所产生的能量, 使其降低到可以使用其它保护方案的允许水平。当设备中发生爆燃时, 燃烧爆炸传播到换向泄压阀处, 首先是火焰前端的压力瞬间开启安装在换向泄压阀顶部的粉尘专用爆破片, 将管道内压力自由泄放至大气中, 火焰将沿着已经存在的流畅通道传播, 以便于火焰释放和减弱。换向泄压阀通常安装在两个设备之间的管道上, 或者一端连接可能产生爆炸源设备的管道上。换向泄压阀可提供双向保护。

Explosion diverter can effectively control the propagation of deflagration in the pipeline and can achieve an acceptable level of safety. But it can't completely separate the flame and the pressure. Explosion diverter can control the energy generated by the combustion explosion in the pipeline by controlling the pressure generated by the combustion explosion in the pipeline and changing the direction of the flame propagation so that it can be reduced to the allowable level of other protection schemes. When deflagration occurs in the equipment, the combustion explosion propagates to the reverse venting valve. First, the pressure at the front end of the flame is instantly opened and installed on the top of the dust special venting panel, and the pressure in the pipeline is released freely to the atmosphere. The flame will travel along the existing smooth passage to facilitate the release and weakening of the flame. Explosion diverter is usually installed on a pipe between two devices, or one end is connected to a pipe that may produce a source of explosion. Explosion diverter provides two-way protection.

- 高效的双向爆炸隔离;
- 特殊型式的换向隔离和泄压;
- 结合爆破片一起使用;
- 最大可承受爆炸压力: 1.0barg@20℃;
- 适用粉尘: St1和St2的粉尘;
- 口径: 多种可选
- 适用于有机粉尘和金属粉尘;
- 可提供权威机构的检测报告。



- Efficient bidirectional explosion isolation;
- Special type of reversing isolation and pressure venting;
- Use in combination with vent panel;
- Max reduced explosion overpressure, Pred,max 1.0barg@20℃;
- Reduced rate of pressure rise: Kst is suitable for st1 and st2 dust grade;
- Availadle size: wide variety of sizes;
- Suitable for organic dust and metal dust;
- Availability of testing reports from domestic authorities.

EXPLOSION ISOLATION FLAP VALVE

单向隔爆阀

单向隔爆阀正常用于除尘器或旋风分离的入口管道上，是一种简单、经济可靠的隔爆产品，主要用来隔断设备内部爆炸后产生的火焰和冲击波传到上游的管道和设备。在操作过程中，单向隔爆阀的阀瓣由管道内正常工作的气流打开或者处于常开状态。在被受保护的设内部发生爆炸的情况下，隔爆阀的阀瓣受冲击波的冲击而关闭。

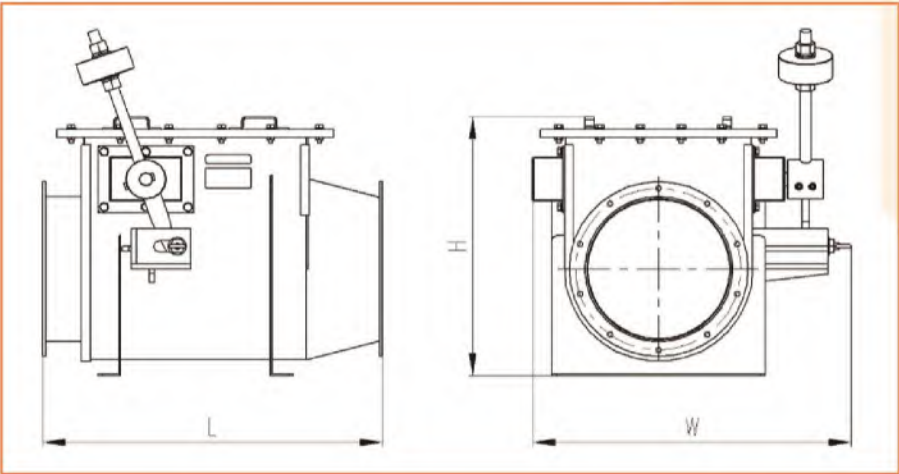
The explosion isolation flap valve is normally used on the inlet pipe of the dust collector or cyclone. It is a simple, economical and reliable isolation product. It is mainly used to separate the flame and shock wave from the inner part of the equipment from explosion to the upstream pipeline and equipment. In operation, The flap of a explosion isolation flap valve is opened or normally open by the normal flow of air in the pipeline. Once explosion occurs inside of the protected equipment, the disc of the flap of a non return isolation valve is closed by the shock wave.

- 被动式粉尘隔爆阀，重力式设计，无需传感器触发；
- 适用：单向隔爆，水平安装；
- 口径：多种可选；
- 材质：碳钢，涂层颜色RAL3000或不锈钢；
- 适用风速：15-30m/s；
- 压力损失：200pa左右；
- 最大可承受爆炸压力：2.0barg@20℃；
- 适用粉尘：St1和St2的粉尘；
- 安装方式：水平安装，采用法兰连接；
- 安装位置：除尘设备入口管道3-7m；
- 可以通过集成传感器检测操作条件，允许更长的维护时间；
- 坚固，耐用的设计，允许最低限度的维护；
- 自带检查盖，方便检查；
- 可选配信号传感器和闭合位置指示开关等附件；
- 可提供国内权威机构的检测报告。



- Dust explosion passive isolation valve , gravity and passive design with no triggering sensors, optional normal open and normal close type
- Applicable: non return isolation, horizontal installation
- Available size: wide variety of sizes
- Material: Q235 with RAL 3000 or stainless steel
- Applicable wind speed: 15-30m/s
- Pressure loss: about 200 Pa,

- Max reduced explosion overpressure, Pred,max 2.0barg@20℃
- Reduced rate of pressure rise: Kst is suitable for St1 , St2 dust grade.
- Installation: horizontal installation with flange connection
- Installation Position: dust collector inlet line 3-7m
- Operational conditions monitored via integrated sensors, thus allowing longer maintenance intervals
- Rugged, durable design requires minimal maintenance
- Easy access for inspection via inspection cover
- Optional signal sensors and closed position indicator switches and other accessories
- Availability of testing reports from domestic authorities



型号	L (mm)	W (mm)	H (mm)
DN150	650	580	460
DN250	710	650	525
DN300	750	705	585
DN350	805	750	660
DN400	790	790	690
DN450	870	850	750
DN500	940	890	790
DN550	1000	980	860
DN600	1060	864	905
DN650	1085	895	1030
DN700	1185	1100	1030
DN750	1230	1220	1120
DN800	1370	1290	1200
DN900	2090	1720	1480

EXPLOSION SUPPRESSION SYSTEM

爆炸抑制系统

粉尘爆炸抑制系统广泛的应用在粮食、冶金、化工、电力、轻工、制药、烟草、机械加工、固体废弃物处理等行业领域。应用的设备有旋风分离器、布袋除尘器、粉尘收集器、滤筒过滤器、气力输送、棒式或球磨机、斗式提升机、干燥和烘箱、辊轧研磨、建筑物等。抑爆系统从探测初始爆炸到熄灭的高速反应速度为毫秒级，多种规格的探测系统、控制系统和抑爆系统可供选择，可以为客户的需求进行定制，并且可以适用于室内及室外区域，系统安全可靠。高。

Explosion suppression system is widely used in food-stuffs, metallurgy, chemical industry, electric power, light industry, pharmaceuticals, tobacco, machinery processing, solid waste treatment and so on. The main equipment such as Cyclones, Bag Houses, Dust Collectors, Cartridge Filters, Pneumatic Conveying, Milling: Pin, Ball, Bucket Elevators, Dryers and Ovens, Roller Mills, Grinding, Buildings and so on. The high speed reaction speed of explosion suppression system from initial explosion to extinguishment is millisecond. A variety of detection systems, control systems and explosion suppression systems are available for selection, and can be customized for customers' needs. And it can be used in indoor and outdoor areas, high safety and reliability of the system.

控制系统

- 单个或多个控制单元用于分析和接受探测单元传输的信号，并激活抑爆系统；
- 与各类传感器、抑爆器兼容；
- 安装距离短，能应用于各类场所；
- 控制线路双重化，并有断线状态监控；
- 两个测量线路之一动作时可设置成预报警，以警示有爆炸危险；
- 自诊断功能很容易进行差错评估；
- 后备电池接入可编程。

探测系统

- 用于探测早期的爆炸，并非常快速的将信号传输给控制单元；
- 静态或动态压力探头以及火焰探头可选；
- 反应时间短（毫秒级），应用灵活；
- 电容式压力测量单元，可以安全、精确的测量；
- 双重化信号评测机制；
- 抗机械损坏和化学侵蚀；
- 通过现场接线盒可以连接各种控制器。

抑制系统

- 可以安装在高温环境中；
- 启动时间小于1.5毫秒；
- 抑爆剂释放时间4~7毫秒；
- 抑爆剂高速释放，有效的向设备或管道内喷射抑制剂，瞬间熄灭爆炸产生的火焰；
- 坚固的结构设计，抗腐蚀。

Control System

- Single or multiple control units are used to analyze and receive signals transmitted by detection units and to activate explosive suppression systems;
- Compatible with sensors, suppressors;
- Short installation distance, can be used in all kinds of places;
- Explosion vent status (break wire) monitoring;
- One of the two detection lines can be programmed as pre-alarm in order to notify potential explosion hazards;
- Easy fault evaluation by integrated self diagnostics and detailed fault indication;
- Programmable battery disconnect function allows use for system that are only needed periodically.

Detection system

- Used to detect early explosions and transmit signals very quickly to the control unit;
- Static pressure sensor, dynamic pressure sensor and flame detection are optional;
- Short reaction time (millisecond), flexible application;
- Capacitance type pressure measuring unit, safe, accurate measurement;
- Internal diagnostics and dual pressure sensors for increased reliability;
- Stainless steel detector body resists harsh process environments;
- It can be connect various controller through the field wiring box.

Suppression System

- It can be installed in high temperature environment;
- Start time less than 1.5ms;
- Suppressors start release time at 4~7ms;
- Suppressant rapid release effective injection of inhibitor into equipment or pipeline, instantly extinguishing the flame produced by explosion;
- Strong structural design and best corrosion resistance.

SPARK DETECTION AND EXTINGUISHING SYSTEM

火花探测与熄灭系统

火花探测和熄灭系统探测到火花并自动熄灭，从而消除粉尘火灾和爆炸的危险。粉尘的火灾和爆炸常常在除尘器、料仓和干燥设备中发生，危及人的生命安全，造成财产的巨大损失以及中断工厂生产。这些均由在干燥易燃物料生产加工过程中，在气力或机械输送系统输送物料到以上区域时，产生的火花或余燃未尽的燃屑所造成的。华理安全具有专业的模块化设计，系统将在火花或余燃未尽的燃屑到达除尘器和料仓之前，在气力吸尘系统中加以探测和熄灭火花，避免在以上区域中发生火灾和爆炸。

在用气力或机械方式运输易燃、易爆物(例如木材、稻谷、咖啡豆、棉花、橡胶、皮革、煤炭、木炭、铝粉、碳粉、木材和纸张等材料的粉尘)的地方，均会产生火花或灼热颗粒。如不及时熄灭火花或灼热颗粒，极易造成火灾或粉尘爆炸，给企业造成停工、停产等损失，给操作人员带来人身安全的危害。火花探头平滑的安装在气力输送管道的管壁上，检测在气力输送过程中吸尘管道、卸料槽或机械传输设备中的火花发出的红外线。一旦检测到火花，一个喷射出雾状水雾的喷水装置将立刻被启动，雾状的水雾喷射到管道或设备中，火花随之而被熄灭。喷水熄灭装置由一个快速启动的电磁阀和一个或多个喷射嘴组成。根据物料的输送速度，喷水熄灭装置平滑的安装在距离火花探头大约4~6米的管壁上。高压水在瞬间完成熄灭火花，特制的喷水熄灭喷嘴喷射出的水雾覆盖整个管道截面，正确的喷水熄灭装置布置，可使火花整个被笼罩在水雾中间，从而在瞬间被熄灭。按照预先设定和调整的时间，一般在5秒之后，喷水熄灭装置的电磁阀会自动关闭。从而有效保护除尘系统、料仓、干燥等设备。

Spark detection and extinguishing systems detect sparks and extinguish them automatically, thereby eliminating the risk of dust fires and explosions. Dust fires and explosions often occur in precipitators, bunkers and drying equipment, endangering human life, causing great damage to property and disrupting factory production. These are caused by sparks or leftover combustions produced during the production, processing, or drying of flammable materials, when the pneumatic or mechanical conveying system conveys the material to the above area. SHSD a professional modular design, the system will detect and extinguish sparks in the pneumatic dust collection system before sparks or leftover flakes reach the dust catcher and silo to avoid fire and explosion in the above areas

Where flammable, explosive materials (such as wood, rice, coffee beans, cotton, rubber, leather, coal, charcoal, aluminium powder, carbon powder, carbon powder, wood and paper, etc.) are transported by pneumatic or mechanical means, Sparks or scorching particles are produced. If sparks or hot particles are not extinguished in time, it is easy to cause fire or dust explosion, which will cause losses to enterprises, such as shut-down and production, and bring harm to operators' personal safety. The spark detection is installed on the pipe wall of the pneumatic conveying pipeline smoothly, and it detects the infrared radiation emitted from the spark during the pneumatic conveying process, or the spark in the suction pipe, the unloading slot, or the mechanical transmission device. Once a spark is detected, a water spray device that ejects a fog of water will be immediately activated, and the mist spray into the pipe or device, and the spark is extinguished, The spray extinguish-

ing device consists of a quick-start solenoid valve and one or more jet nozzles. According to the conveying speed of the material, the water jet extinguishing device is smoothly mounted on the pipe wall about 4-6m from the spark detection. High-pressure water extinguishes sparks in an instant, and the water mist from a specially designed spray extinguishing nozzle covers the entire section of the pipeline. The correct arrangement of the sprinkler extinguishes the sparks in the middle of the water mist and is extinguished in an instant. In accordance with the preset and adjusted time, the solenoid valve of the spray extinguishing device will be automatically closed after 5 seconds, thus effectively protecting the dust removal system, silo, drying and other equipment.

技术参数

- 火花探头/温度探头适用工艺温度: <80℃/350℃
- 反应时间: 低于0.3s
- 火花探头至熄灭喷嘴间距=反应时间*风速

Technical Data

- Suitable process temperature for spark / temperature detection: <80℃/350℃(max.600℃)
- Reaction time: less than 0.3s
- Distance between spark probe and extinguishing nozzle=reaction time * wind speed

