

## Explosion Protection Device for Industrial Dust

**Applicable industry:**

Plastics, Food and Dairy Industry, Pigments and Fuels, Wood Processing, Grain Processing, Coal Processing, Pharmaceuticals, Pellet Ethanol, Chemical Products, Metals, Agricultural Chemicals

**Applicable equipment:**

Cyclone, bag dust collector, sleeve filter, pneumatic conveying, grinding hoist, desiccant and oven, roller mill, grinding, building



**PRODUCT MANUALS**

1956

The Chinese People's Liberation Army Bayi Machinery Repair Factory was established

## Development History



## Company Introduction



Jiangsu Bafang Safety Device Co., Ltd. (hereinafter referred to as BasCo) has been specialized in research and manufacturing of safety pressure relief devices since the year 2002. As a high-tech enterprise with independent intellectual property rights, it is committed to research and develop the world's leading safety relief solutions.

After years of development, Basco has been recognized as the leader of safety relief technology, with advanced domestic and international patent and technology, it is the only company in China that can produce full range safety relief devices. Its main products include: safety valve, bursting disc, explosion-proof plate, flameless relief device, explosion-proof valve, explosion reversing valve, explosion needle valve, breathing valve and flame arrester, emergency relief valve, nitrogen sealing valve, etc. It has been served more than 1000 customers in the industries of chemical, petrochemical, powder, pharmaceutical, metallurgical, low temperature, nuclear power and other fields.

BasCo has successively obtained a series of qualification certificates, including Special Equipment Manufacturing License of the People's Republic of China (TS), American Society of Mechanical Engineers (ASME), American National Boiler Certification (NB), European Union CE Certification (ATEX), Det Norske Veritas (DNV) and German Lloyd's Register (GL) certification, National explosion-proof certification (EX), ISO9001 Quality management system certification, occupational health and safety management system certification, etc.

## 2020

It continues to input great investment in research development and production improvement

## 2019

Research institute established  
 Jointly established Xuzhou Shengan Industrial Safety Testing and Research Institute Co., Ltd. with China University of Mining and Technology



The explosion-proof plate, flameless relief device, explosion proof valve and explosion reversing valve of BasCo Company have passed the product type test of Northeastern University and Shenyang Special Equipment Testing Institute, and participated in the standards preparation of SH/T3413-2017 " Selection, Inspection and Acceptance of Flame Arresters for Petrochemical Petroleum Gas Pipelines", " Safety relief device- Bursting needle valve " etc.

BasCo company is the standing director company of China building materials association powder technology branch. In January 2013, it established "Powder Business Division", mainly served customers in powder industries, such as cement, feed processing, food processing, tobacco, coal, brewing, wood processing, metal processing industry, providing a complete dust explosion overpressure relief and the isolation solution.



Flameless venting device



Explosion proof valve



Explosion reversing valve



Explosion venting panel



Two-ways explosion proof valve



Safety relief valve



Buckling pin valve



Flame arrestor



Nitrogen Blanketing valve



Breather valve



Breather valve c/w flame arrestor



Emergency relief valve



## Company qualification





01	Overview of Dust Explosion
02	Selection of explosion relief device
03	EP Bursting plate
05	EPS Bursting plate
07	EL Bursting plate
09	ELS Bursting plate
11	Flameless relief device
14	Explosion proof valve
16	Two-way explosion proof valve
18	Bursting sensor
19	Spark detection extinguishing device
20	Explosion suppression system
21	Dust explosion pressure relief area calculation specification
23	A corner of experimental equipment for dust safety device
24	Some customer cases
25	Some cases on the spot

# C O N T E N T S

## Dust explosion



**Dust explosion requires five elements, and when those five elements exist at same time, it will have possibility of an explosion.**

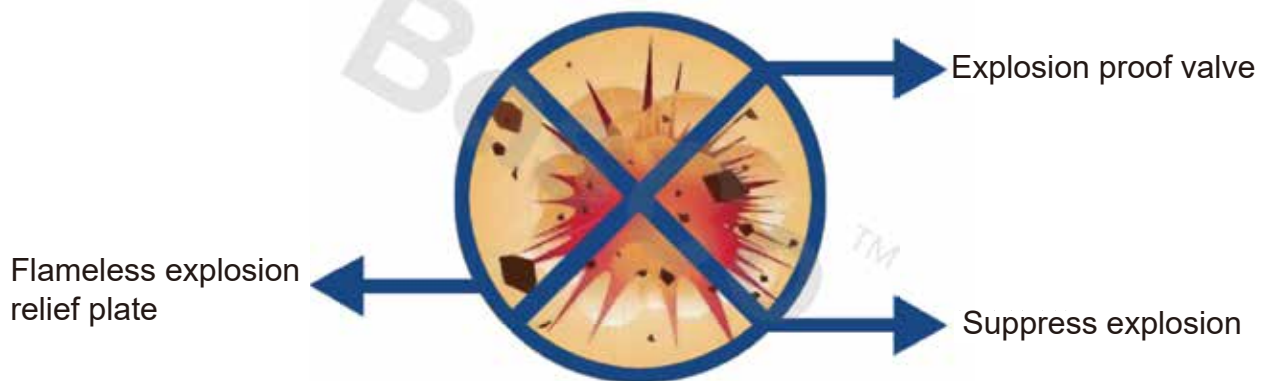
Dust explosions are usually accompanied by powerful shock waves and flames, since most equipment will not have such a large pressure resistance, it will be damaged during explosion, which may cause hazards of secondary explosion or multiple explosions. Therefore, we have to pay attention on dust explosion protection.

### Three main methods of dust explosion protection: explosion relief, explosion proof and explosion suppression

Explosion relief: release the explosion in advance through a pressure relief device to protect the equipment from damage.

Explosion proof: the explosion is blocked by a flameproof valve to prevent the flame from spreading.

Explosion suppression: when device detects initial spark, it will turn on the fire extinguishing device to extinguish the fire instantly to prevent it from explosion.





## Selection of explosion relief device:

From the five elements required for dust explosion, we know that dust can only explode in a limited space, so we should focus on protective measures for powder-related equipment on site in a closed environment. For example: dust collector, elevator, silo, dryer, etc.

Equipment outdoor:

It is allowed to discharge directly through explosion relief plate, by flameless relief method, to provide better protection for the surrounding environment.

Note: The vent should keep off personnel passages, electrical equipment and other equipment that may be affected.

Equipment indoor:

In principle, it should use flameless relief device indoor.

If the equipment is close to the outdoor, the pressure relief pipe can be added to lead the discharge port to the outdoor area, and the length of the pressure relief pipe should not exceed 3M.

Selection of relief area: in addition to the accident test, the explosion relief area of the equipment can also be calculated according to the following factors:

- Equipment volume  $V$
- The maximum controlled explosion pressure  $P_{redmax}$ , that is, the maximum explosion relief pressure
- Explosion characteristic parameters of dust: maximum explosion pressure  $P_{max}$ , explosion index:  $K_{st}$
- Length diameter ratio of equipment  $L / D$
- Static opening pressure of pressure relief device:  $P_{stat}$
- Pressure relief efficiency of pressure relief device:  $EF$



## EP bursting plate

EP bursting plate adopts plane composite design, suitable for low vacuum, zero pressure and overpressure process, such as hoist, conveyor, silo, etc.

Standard static opening pressure: 0.01MPa@22 °C

### Technical characteristics

Standard material: 304ss / Teflon / 304

Temperature setting range: - 40 ~ + 260 ° C

Static opening pressure setting range: 0.005 ~ 0.1MPa

The maximum working pressure can reach 50% of the static opening pressure.

The maximum vacuum can withstand 50KPa. If target to bear more vacuum, you should use vacuum protection brackets in forms of: rectangle, circle, customized trapezoid, ellipse, etc. If other pressure, temperature and size are needed, please consult the company.

### Optional

Material: 316L

Non asbestos rubber gasket

Bursting sensors: NBI, BIX



### Optional configuration:

Bursting sensor; Flameless relief; Insulation layer; All kinds of gaskets; Mounting flange;

	Pressure relief	Tolerance
Bursting tolerance	0.005-0.01 MPag	± 50%
	0.01-0.1 MPag	± 25%

Rectangle & Square			Circular		
Specification	Dimensions (mm)	Relief area (cm <sup>2</sup> )	Specification	Dimensions (mm)	Relief area (cm <sup>2</sup> )
230×305	330×405	591	200	280	237
305×457	405×557	1238	250	330	389
457×457	557×557	1887	300	380	582
457×610	557×710	2563	350	430	794
457×762	557×862	3235	400	500	1160
457×915	557×1015	3911	450	550	1476
610×610	710×710	3451	500	600	1831
610×762	710×862	4355	550	650	2224
610×915	710×1015	5265	600	730	2655
610×1118	710×1218	6473	650	750	3124
762×915	862×1015	6610	700	800	3579
762×1016	862×1116	7327	750	850	4120
762×1118	862×1218	8127	800	900	4700
915×915	1015×1015	7965	900	1000	5974
1118×1118	1218×1218	12000	1000	1100	7400
			1100	1200	8979
			1200	1300	10710

For other sizes, please contact us

## EPS bursting plate

EPS bursting plate adopts planar single-layer structure design, suitable for low vacuum, zero pressure, and overpressure process, such as hoist, conveyor, silo, etc. The export side of EPS bursting plate is equipped with standard flange, enhance its mechanical properties. Standard static opening pressure: 0.01MPa@22°C

### Technical characteristics

Standard material: 304ss

Standard black EPDM gasket, applicable temperature range: -40~ + 80°C

Static opening pressure setting range: 0.005 ~ 0.1

The maximum working pressure of MPA can reach 50% of the static opening pressure

The maximum vacuum can withstand 50KPa, if need to withstand more vacuum, vacuum protection brackets should be chosen, products in forms of: rectangular, circular

For other pressure, temperature and dimension, please consult with our company

### Optional

Material: 316L

Food grade white silicone gasket (- 60 ~ + 200 ° C)

Bursting sensor: BIX、 HE



### Optional configuration:

	Relief pressure	Tolerance
Bursting tolerance	0.005-0.01 MPag	± 50%
	0.01-0.1 MPag	± 25%



Rectangle & Square			Circular		
Specification	Dimensions (mm)	Relief area (cm <sup>2</sup> )	Specification	Dimensions (mm)	Relief area (cm <sup>2</sup> )
230×305	330×405	701	200	280	237
305×457	405×557	1393	250	330	389
457×457	557×557	2088	300	380	582
457×610	557×710	2787	350	430	794
457×762	557×862	3482	400	500	1160
457×915	557×1015	4181	450	550	1476
610×610	710×710	3721	500	600	1831
610×762	710×862	4648	550	650	2224
610×915	710×1015	5581	600	730	2655
610×1118	710×1218	6819	650	750	3124
762×915	862×1015	6972	700	800	3579
762×1016	862×1116	7741	750	850	4120
762×1118	862×1218	8519	800	900	4700
915×915	1015×1015	8372	900	1000	5974
1118×1118	1218×1218	12499	1000	1100	7400
			1100	1200	8979
			1200	1300	10710

For other sizes, please contact us

## EL bursting plate

EL bursting plate adopts positive arch composite design, which is suitable for vacuum and pulse process, such as dust collector, cyclone separator, screening machine and container with pneumatic device.

Standard static opening pressure: 0.01MPa@22 °C

Technical characteristics

Standard material: 304SS/ TEFLON /304ss

Temperature setting range: -40~ +260°C

Static opening pressure setting range: 0.005 ~ 0.1MPa

Maximum working pressure can reach 70% of the static opening pressure

Maximum vacuum withstand 300kPa

Products with standard non-asbestos rubber gasket, with good sealing performance.

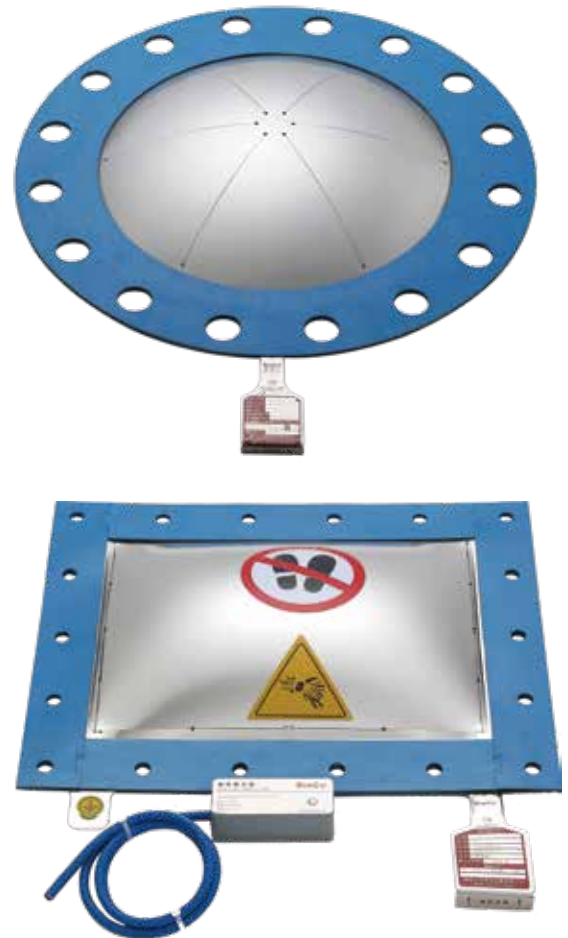
Product in forms of: rectangular, circular

For other pressure, temperature and dimension, please consult with our company

Optional

Material: 316L

Bursting sensor: NBI、 BIX



Rectangle & Square			Circular		
Specification	Dimensions (mm)	Relief area (cm <sup>2</sup> )	Specification	Dimensions (mm)	Relief area (cm <sup>2</sup> )
230×305	330×405	591	200	280	237
305×457	405×557	1238	250	330	389
457×457	557×557	1887	300	380	582
457×610	557×710	2563	350	430	794
457×762	557×862	3235	400	500	1160
457×915	557×1015	3911	450	550	1476
610×610	710×710	3451	500	600	1831
610×762	710×862	4355	550	650	2224
610×915	710×1015	5265	600	730	2655
610×1118	710×1218	6473	650	750	3124
762×915	862×1015	6610	700	800	3579
762×1016	862×1116	7327	750	850	4120
762×1118	862×1218	8127	800	900	4700
915×915	1015×1015	7965	900	1000	5974
1118×1118	1218×1218	12000	1000	1100	7400
			1100	1200	8979
			1200	1300	10710

For other sizes, please contact us



## ELS bursting plate

ELS bursting plate is positive arch single-layer structure, suitable for vacuum and pulse process flow, such as dust collector, cyclone separator, screening machine and container with pneumatic device.

At the outlet side of ELS type bursting plate equip standard flange, which enhance its mechanical properties.

Standard static opening pressure: 0.01MPa@22 °C

Technical characteristics

Standard material: 304ss

Standard black EPDM gasket, applicable temperature range: -40~ +80°C

Static opening pressure setting range: 0.005 ~ 0.1

The maximum working pressure can reach up to 70% of the min.static opening pressure.

Maximum vacuum withstand 100 KPa

Product in forms of: rectangular, circular

For other pressure, temperature and dimension, please consult with our company

Optional

Material: 316L

FDA approved gasket black EPDM, black VITON

Bursting sensor: BIX、HE



Rectangle & Square			Circular		
Specification	Dimensions (mm)	Relief area (cm <sup>2</sup> )	Specification	Dimensions (mm)	Relief area (cm <sup>2</sup> )
230×305	330×405	701	200	280	237
305×457	405×557	1393	250	330	389
457×457	557×557	2088	300	380	582
457×610	557×710	2787	350	430	794
457×762	557×862	3482	400	500	1160
457×915	557×1015	4181	450	550	1476
610×610	710×710	3721	500	600	1831
610×762	710×862	4648	550	650	2224
610×915	710×1015	5581	600	730	2655
610×1118	710×1218	6819	650	750	3124
762×915	862×1015	6972	700	800	3579
762×1016	862×1116	7741	750	850	4120
762×1118	862×1218	8519	800	900	4700
915×915	1015×1015	8372	900	1000	5974
1118×1118	1218×1218	12499	1000	1100	7400
			1100	1200	8979
			1200	1300	10710

For other sizes, please contact us

## Flameless relief device

### FEV

Flameless relief device can be used for the protection of indoor or outdoor dust explosion, without other operating costs, easy installation, and no pressure relief pipe is needed. It shall at least consist of a bursting plate and fire resisting components.

#### Working Principle

When an explosion occurs, the bursting plate opens and the flame passes through the mesh flame-blocking components, the flame-blocking components and the flame exchange heat, quickly cooling the high-temperature flame, releasing pressure and fumes to ensure that the flame is not spread, stop it from secondary explosion or multiple explosions, at the same time, the pressure waves or noise generated by the explosion will be minimized.

#### Technical characteristics

Material: carbon steel shell + stainless steel mesh

Model of bursting plate: EP, EPS, EL, ELS

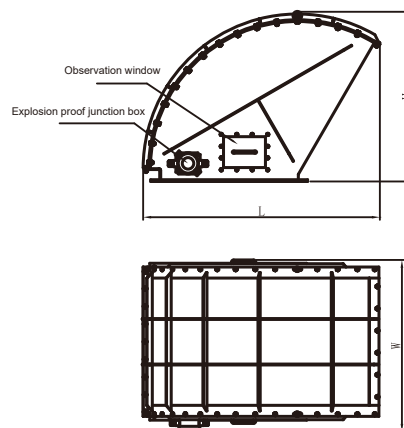
Flameless relief device does not require special maintenance

Flanged interface can be customized

The bursting plate has optional bursting sensor device, which can monitor the working status of the product in real time. Various flameless relief structures are provided to meet the requirements of different working conditions, such as: round, rectangular and square.



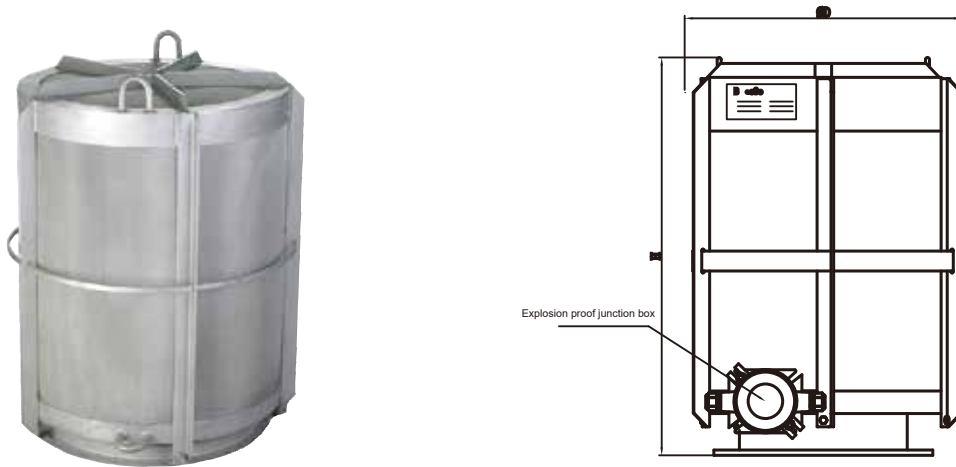




## Rectangle & Square

Specification	Dimensions (mm)	Relief area (cm <sup>2</sup> )	
		EPS/ELS	EP/EL
230×305	499×466×365	701	591
305×457	619×626×423	1393	1238
457×457	802×626×581	2088	1887
457×610	802×771×581	2787	2563
457×762	802×928×581	3482	3235
457×915	802×1078×581	4181	3911
610×610	1029×771×728	3721	3451
610×762	1029×928×728	4648	4355
610×915	1029×1078×728	5581	5265
610×1118	1029×1281×728	6819	6473
762×915	1257×1078×880	6972	6610
762×1016	1257×1176×880	7741	7327
762×1118	1257×1281×880	8519	8127
915×915	1488×1078×1062	8372	7965
1118×1118	1792×1281×1250	12499	12000

For other sizes, please contact us



## Circular

Specification	Dimensions $\Phi$ ДxH (mm)	Relief area of auxiliary bursting plate (cm <sup>2</sup> )
200	415×550	237
250	465×600	389
300	495×660	582
350	565×710	794
400	650×835	1160
450	700×935	1476
500	762×1100	1831
550	812×1250	2224
600	862×1400	2655
650	930×1580	3124
700	970×1730	3579
750	1030×1900	4120
800	1070×2050	4700

## Explosion proof valve

In reality, many containers are connected with each other, such as dust collector and pipe, silo and pipe. Once a device explodes, the flame and air pressure will spread to other equipment along with the pipe, thus causing the secondary explosion or multiple explosions of the equipment. Equipped with flameproof valve, can effectively prevent the spread of explosion, protect adjacent equipment or workshop, avoid causing secondary explosions or multiple explosions.

### Working Principle

In the event of a dust explosion, the shock wave is at the front of the flame. The explosion proof valve will be quickly closed by the shock wave, and self-locked, to avoid the valve disc opening, and prevent the spread of flame and pressure waves. After the explosion, it can be used by manual reset, simple maintenance and evaluation. During normal operation, the disc is opened by the auxiliary opening device.

### Technical characteristics

Material: carbon steel housing + stainless steel disc

Reasonable mechanism design, smaller pressure loss

On-site maintenance without needing to remove the pipeline

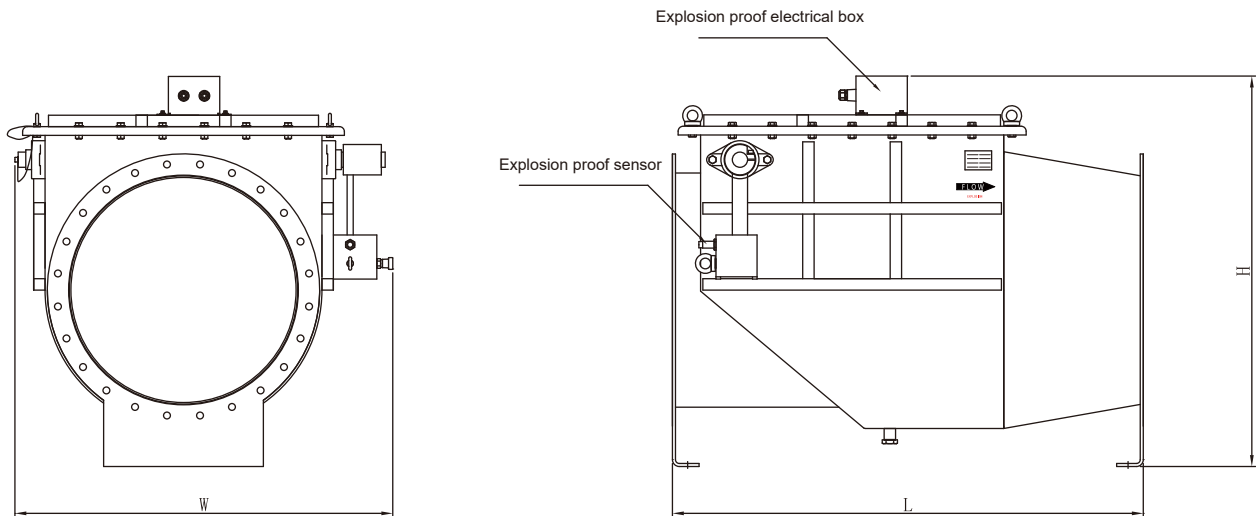
Horizontal installation

Disc normally open construction

Bursting sensor device is optional, to detect whether the disc is closed

### Attachment





Specifications	L×W×H(mm)	Explosion level
DN100	410×320×414	ST1,ST2
DN140	493×368×392	ST1,ST2
DN200	565×439×466	ST1,ST2
DN250	630×478×590	ST1,ST2
DN300	780×600×618	ST1,ST2
DN360	870×660×703	ST1,ST2
DN400	945×694×771	ST1,ST2
DN450	1000×768×821	ST1,ST2
DN500	1095×859×877	ST1,ST2
DN560	1180×919×962	ST1,ST2
DN600	1240×995×1027	ST1,ST2
DN630	1270×974×1041	ST1
DN650	1296×1053×1078	ST1
DN700	1390×1152×1156	ST1
DN750	1450×1155×1219	ST1
DN800	1525×1205×1269	ST1
DN850	1594×1368×1318	ST1
DN900	1662×1418×1379	ST1
DN1000	1955×1472×1503	ST1



## Two-way explosion proof valve

Two-way explosion proof valve is to use the shock waves generated by the explosion to push the float, then block the explosion flame and shock waves. It is often used for explosion isolation on the outlet side of clean air where there are both explosion sources, trace dust transport and dust remover. In normal working conditions, the float is in the middle position of the valve. When the explosion occurs, the explosion shock wave pushes the float and the sealing strip of the valve body closed. Then the explosion proof valve is locked by the locking mechanism, effectively stop the spread of flame and shock waves generated by the explosion.

Technical characteristics:

Used for conveying dust, gas or mixture;

With good internal aerodynamic structure and smooth internal surface, low pressure loss;

Maximum detonation pressure: 1.3Mpa@20°C;

Applicable dust: dust of ST1 and ST2 with Kst less than or equal to 300barg\*m/s;

Applicable dust Kst can reach 450 barg.m/s

Minimum explosion pressure required: DN100-DN500:

0.005Mpa; DN600: 0.02Mpa;

The maximum medium wind speed is 25m/s.

Install in horizontal or vertical position.

Mode of action: one-way or two-way.

No toxic or harmful substances will be produced when triggered.

With one-way flameproof type and two-way flameproof type;

Simple maintenance, quick reset;

There are test reports from authoritative organizations;

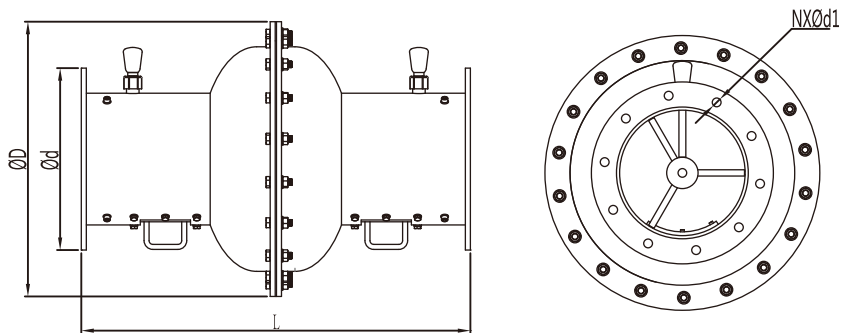
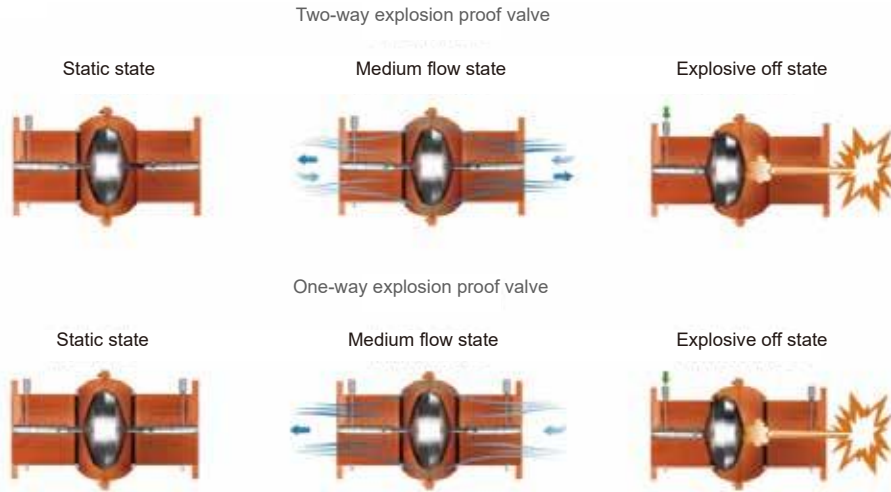
The valve has been certified by ATEX 2014/34/EU and EN 15089.



Working process

In static conditions without medium flow, the float is in the middle position of the valve. During normal operation, the medium flows around the float. When the explosion occurs, the explosion shock wave pushes the float move to the sealing strip of the valve body, which will close the valve. In this closed status, the door is locked thus preventing the propagation of flame and pressure waves.





Model	Specification	L(mm)	ΦD(mm)	φd(mm)	NXφd1	P(min) (Mpa)	Pressure drop 20m/s (Pa)
PIV-X-S-100	DN100	400	301	190	8Xφ12	0.005	350
PIV-X-S-200	DN200	620	438	290	10Xφ14	0.005	300
PIV-X-S-250	DN250	780	540	340	10Xφ14	0.005	270
PIV-X-S-300	DN300	887	590	388	18Xφ14	0.005	270
PIV-X-S-350	DN350	1010	692	448	18Xφ14	0.005	300
PIV-X-S-400	DN400	1150	792	496	20Xφ14	0.005	350
PIV-X-S-450	DN450	1260	892	546	20Xφ14	0.005	400
PIV-X-S-500	DN500	1350	994	616	24Xφ18	0.005	420
PIV-X-S-550	DN550	1400	1094	676	24Xφ18	0.005	430
PIV-X-S-600	DN600	1480	1194	716	24Xφ18	0.02	420

## Bursting sensor

Once there is an explosion, the safety device will work, and the explosion sensor can inform you in time, effectively improving the safety.



NBI

Ex ibD 21

**Built-in bursting sensor**

$U_i \leq 24V$  DC

$I_i \leq 100mA$

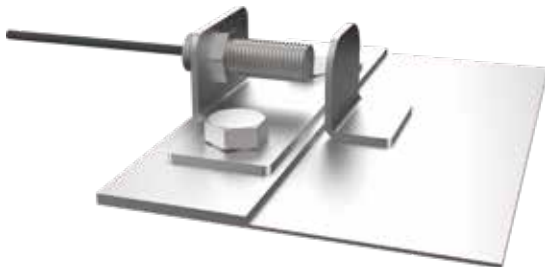


BIX

**Integrated bursting sensor**

$U_i \leq 24V$  DC

$I_i \leq 100mA$



HE

**Proximity switch type bursting sensor**

**Voltage: 6-36V DC**



**Junction box**

ExtD A21

**Connect bursting sensor and monitoring system**

## Spark detection extinguishing device

Spark detection extinguishing device can prevent dust fire and explosion. Before the spark reaches the downstream of the production section or the equipment such as dust collector and silo, the spark probe can detect the spark or superheated particles and feed back to the extinguishing device to extinguish the spark, thus ensuring safety. Spark detection extinguishing device consists of spark probe, controller and extinguishing device, which is an active device to prevent dust explosion.

### Technical characteristics

- Reliable system self-check function
- Modular design
- American JICEO probe, fast resolution and identification
- Explosion-proof control box, full touch screen display, convenient operation
- Different control systems can be provided according to customers' requirements
- Patent high pressure nozzle, faster extinguishing effect
- Available with different extinguishing devices



### Single pipe general configuration

Series No.	Equipment name	Equipment model	Quantity
1	Controller	JC series	1 set
2	Spark detector	Normal temperature probe	2 pieces
3	Spray extinguishing device	CD high pressure extinguishing water spray assembly	1 set
4	Pressurized and stabilized water supply system	Jieke, water pressure is maintained at 6~.. kg	1 set
5	Install the cable	Four core 0.5 or 1. 2 square shielded cables	Several meters
6	Install water pipes	2 inches	Several meters

**We not only provide products, but also focus on services:  
product selection calculation, installation guidance, system scheme.**

**Explosion relief area calculation:**

**Different equipment and dust would have different discharge area, the discharge area and release efficiency should be considered. We should evaluate the release safety by considering the different equipment in different locations.**

**Comply standard:**

**GB/T 15605--2008 VDI 3673**

## Explosion suppression system


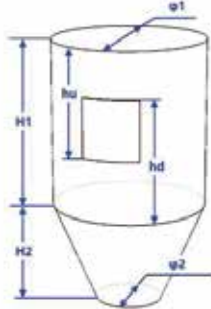
The flame shall be extinguished at the initial stage of explosion, to prevent the internal pressure from rising beyond the warning value. This suppression system is an ideal choice for toxic and harmful substances to prevent escaping from the explosion. It is widely used in explosive protection of dust, gas and mixture, in industries such as: chemical, petrochemical, pharmaceutical, tobacco processing, food processing, etc.


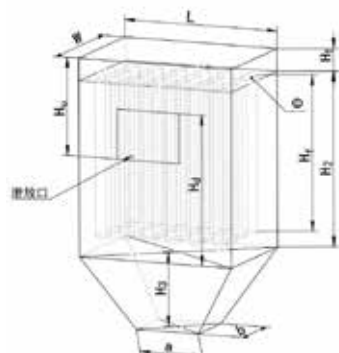
Technical characteristics

- Reliable system self-check function.
- Modular design.
- Fast response time in milliseconds.
- Explosion-proof control box, full touch screen display, convenient operation.
- Record traceable, record system state change information, provide large capacity storage.
- Different control systems can be provided according to customer requirements.
- Multiple options of explosion suppressor s specifications
- Short installation distance, can be used in a variety of occasions.
- Protection is also work in case of power failure. The self-supplied power can maintained for 4 hours.
- Health grade is optional.





 Xuzhou Bafang Safety Device Co., Ltd.		Specification for dust discharge area		Design:	
		Vent area calculation		Verify:	
				Approve:	
<b>Project overview</b>					
Serial number	Date				
1	Customer name				
2	Project name				
3	Tag number				
4	Based standard	GB/T 15605 "Guide to Dust Explosion Relief"			
<b>Reference data</b>					
Characteristic parameters of dust explosion					
5	Dust name				
6	Median diameter $\mu\text{m}$	/			
7	Maximum explosion pressure $\text{MPa}$	7.5			
8	Explosion index $\text{MPa} \cdot \text{m}^3/\text{s}$	0.91			
9	Explosion level	ST1			
Parameters of pressure relief equipment					
10	Bursting temperature $^{\circ}\text{C}$	22			
11	Static opening pressure $\text{MPa}$	0.01			
Characteristic parameters related to the protected device					
12	Maximum explosion relief pressure $\text{MPa}$	0.02	Equipment dimension	Cylinder diameter (m)	1.36
13	Filter bag specifications	/		Cylinder height (m)	2.425
14	Single filter bag volume $\text{m}^3$	0.031020099		Cone height (m)	1.975
15	Total volume of filter bag $\text{m}^3$	1.209783871		Cone diameter (m)	0.3
16	Dust collector specifications	/		Installation position of bursting disc (m)	1
17	Total volume of dust collector $\text{m}^3$	<b>4.73</b>		Quantity of filter bags (PCS)	39
18	Effective volume of dust collector $\text{m}^3$	3.52		Height of filter bag (m)	2.45
19	Effective flame propagation distance $\text{m}$	1.66		Diameter of filter bag (m)	0.127
20	Effective flame volume $\text{m}^3$	1.86		1/3 cone volume (m)	0.404406706
21	Effective cross-sectional area $\text{m}^2$	<b>1.12</b>		Cylinder volume (m)	3.5209448
22	Effective diameter $\text{m}$	<b>1.19</b>			
23	Effective length diameter ratio	1.39			
<b>Calculated results</b>					
24	B	0.148451914	$A = B(1 + C \cdot \lg(\frac{L_{eff}}{D_{eff}}))$ $B = [8.805 \times 10^{-4} \cdot P_{max} \cdot K_{max} \cdot P_{rel,max}^{-0.569} + 0.854(P_{stf} - 0.01) \cdot P_{rel,max}^{-0.5}] \cdot V^{0.753}$ $C = (-4.305 \cdot \lg P_{rel,max} - 3.547)$ $D_{eff} = 2 \cdot \sqrt{\frac{A_{eff}}{\pi}}$		
25	C	3.767			
26	Calculated relief area $\text{m}^2$	0.30			
27	Name of explosion relief equipment	Explosion relief disc			
28	Model of explosion relief equipment	PFTAG10*915			
All rights reserved by Basco and shall not be copied or transferred to any third party without Basco's written permission.					

 Xuzhou Bafang Safety Device Co., Ltd.		Specification for dust explosion pressure relief area calculation		Design:	
		Vent area calculation		Verify:	
				Approve:	
<b>Project overview</b>					
Serial number	Date	2021-01-11			
1	Customer name	Sample catalogue			
2	Project name	Sample catalogue			
3	Tag number				
4	Based standard	GB/T 15605-2008			
<b>Reference data</b>					
Characteristic parameters of dust explosion					
5	Dust name				
6	Median diameter	/	um		
7	Maximum explosion pressure		MPa		
8	Explosion index		MPa.m/s		
9	Explosion level				
Parameters of pressure relief equipment					
10	Pressure relief efficiency				
11	Static opening pressure		MPa(g)		
12	Maximum explosion relief pressure		MPa(g)		
13	Filter bag specifications	/			
14	Single filter bag volume		m <sup>3</sup>	Dust collector body length L	m
15	Total volume of filter bag		m <sup>3</sup>	Dust collector body width W	m
16	Container specification	/		Height of dust collector clean room H1	m
17	1/3 cone volume		m <sup>3</sup>	Height of dust chamber of dust collector H2	m
18	Volume of cylinder / box		m <sup>3</sup>	Cone height H3	m
19	Total volume of container		m <sup>3</sup>	Cone length a	m
20	Effective volume of container		m <sup>3</sup>	Cone width b	m
21	Effective flame propagation distance		m	Installation position of explosion relief device Hd	m
22	Effective flame volume		m <sup>3</sup>	Installation position of explosion relief device Hu	m
23	Effective cross-sectional area		m <sup>2</sup>	Quantity of filter bags n	↑
24	Effective diameter		m	Height of filter bags Hf	m
25	Effective length diameter ratio			Diameter of filter bags phi	m
<b>Calculated results</b>					
26	B				
27	C				
28	Calculated relief area A		m <sup>2</sup>		
29	Name of explosion relief device	Bursting plate			
30	Model of explosion relief device				
31	Quantity of explosion relief devices				
<b>Note</b>					
TSF210055-2021 Special Equipment License			ATEX 2014/34/EU Explosion Protection Directive		

All rights reserved by Basco and shall not be copied or transferred to any third party without Basco's written permission.



## Some customer cases





## Some cases of installation on spot





ООО «ТИ-СИСТЕМС» ИНЖИНИРИНГ И ПОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ

Интернет: [www.tisys.ru](http://www.tisys.ru) [www.tisys.kz](http://www.tisys.kz) [www.tisys.by](http://www.tisys.by) [www.tesec.ru](http://www.tesec.ru) [www.ти-системс.рф](http://www.ти-системс.рф)

Телефоны: +7 (495) 7774788, 7489626, (925) 5007155, 54, 65 Эл. почта: [info@tisys.ru](mailto:info@tisys.ru) [info@tisys.kz](mailto:info@tisys.kz) [info@tisys.by](mailto:info@tisys.by)



TSF210055-2017  
Special equipment  
manufacturing license



ISO9001



National explosion  
proof qualification  
CNEx14.2428X