



**Fire Extinguishing Devices:
Epoch-making Products of New Technology**

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New Technology**

BEIJING WORLD JOY TECHNOLOGY CO., LTD.

Address: Room 1716, Unit 3, Phase I Guanghua Road SOHO, 22 Guanghua Road,
100020, Chaoyang District, Beijing, China

Website: www.wzfed.com

Tel: +86 4000682119

Drill Add: 23 Zhang Zhen, 101307, Shunyi District, Beijing

New fire extinguishing optimization solutions

BEIJING WORLD JOY TECHNOLOGY CO., LTD.



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A new era for fire extinguishing technology launched by World Joy

For the past 10 years Beijing World Joy Fire Extinguishing Technology Co., Ltd. (World Joy) has been committed to scientific and technological R&D and also created innovation in the fire rescue area. As a comprehensive scientific and technological entity it has been handling R&D, production, sales, training and relevant service.

Gunpowder is one of the 4 great inventions of ancient China which has assisted human beings to greatly enhance the ability to transform nature. Indeed, fireworks is a traditional Chinese folk culture: bright feelings are conveyed with fireworks as are good wishes on celebration days. World Joy treasures new connotation and is therefore carrying forward the traditional culture. World Joy is located in Liuyang city of Hunan province which is the historic world-famous fireworks town. Led by Mr. Zeng Shaowen (founder and chairman), World Joy's R&D team has for over 10 years worked tirelessly to resolve key problems relating to its technology. The team has successfully transformed World Joy from a traditional fireworks manufacturing enterprise into a modern scientific and technological innovative fire-fighting innovation enterprise.

Fire is the symbol of human civilization but it has also always threatened the safety of property and people's lives. The World Joy fire extinguishing devices are applicable to all sectors including industries, agriculture, transportation, military and construction. The devices can be widely used for fire extinguishing in forests, grassland, oil fields, ports, mines, factories, warehouses, buildings as well as various transportation tools. World Joy's products are easy to carry and also have the advantages of high fire extinguishing efficiency, safety, harmless, green and environmental protection.

World Joy has been continuously exploring and innovating anti-fire products and has also invested millions to improve production facilities and processes. Through thousands of tests it has developed a solid foundation of fire extinguishing technology in various fields and also built a modern, sophisticated and digital production base. To date, World Joy's production base covers a total area of more than 666,667 sq.m. and rolls out daily more than 100,000 fire extinguishing devices. With safety, efficiency, green and recycling as its production goal World Joy has satisfied the mission of "safety and life first". By 2021 it had obtained numerous national and Hunan provincial science and technology awards as well as several EU CE and ISO certifications. Most importantly in 2022 it successfully passed China's national technical inspection for fire protection products and obtained the technical appraisal certificate for the same.

Raised by traditional Chinese wisdom, World Joy adapts the independent, professional, scientific and innovative development path and is committed to serve all kinds of fire scenes in the world. Led by Jesse Chang and Cissy Sheung World Joy will strive to become a leading solution provider in the fire rescue field. It has contributed to the protection of human life and property assets as well as the reduction of greenhouse gas emissions for bio-diversity and the earth. World Joy is determined to move further ahead with the ambitious goal of creating a safe community starting in China and soon thereafter globally.

SUPPLY CHAIN



Fire Extinguisher Device and R&D Base

Our production base in Hunan covers a total area of more than 666,667 sq.m. which includes R&D buildings and the 20+ research, large scale experimental fields and meeting rooms of our team members.



Fire Drill Base

The site is a large-scale exercise area with a variety of fire scenes. It can also accommodate thousands of people to watch the drill for purposes of sharing the experience of the fire extinguishing effect with visitors and verifying actual combat effect of the product.



Production Marketing Center

With the improvement of the universal national fire protection awareness at home and abroad, the fire protection industry is gradually maturing and the demand for efficient fire extinguishing products is increasing. World Joy's fire devices will be exported on the premise of it being based on the China market and will soon establish its international marketing centers for purposes of undertaking proper foreign trade expansion.

SAFETY · EFFICIENCY · GREEN · RECYCLING

MILESTONES

Since 2012 under the leadership of Zeng Shaowen the company has continued to develop and test fire-fighting extinguisher devices.

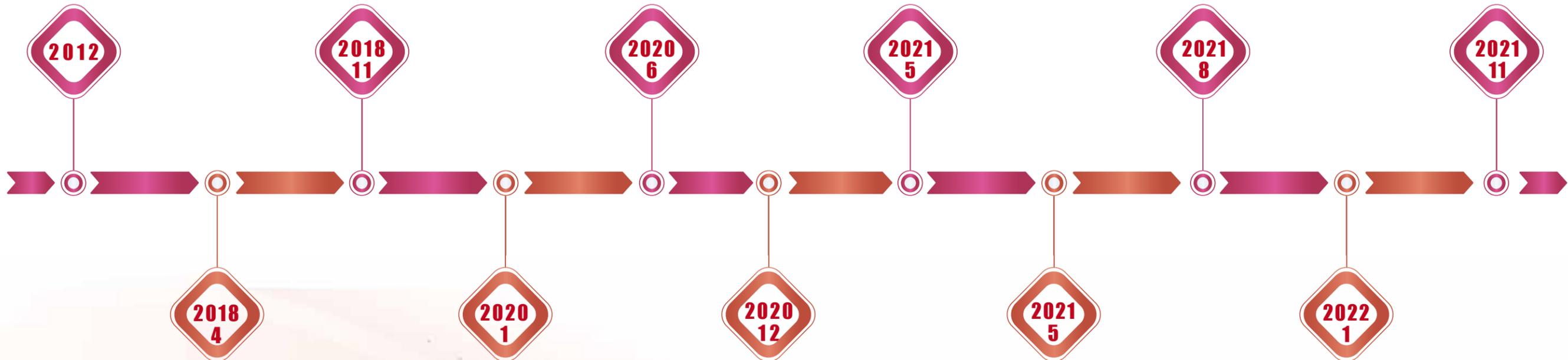
In November 2018 the fire extinguisher device was rated as “the leading domestic product” by the scientific and technological achievements of the Hunan Provincial Science and Technology Department.

In June 2020, China’s Ministry of Industry and Information Technology recommended as an emergency rescue product the new type of environmental protection fire extinguisher device.

In May 2021, it obtained the ISO9001 international standard system certificates.

In August 2021 World Joy passed the national product technical appraisal.

In November 2022, World Joy donated fire extinguisher devices to the China Council for the Promotion of National Trade.



2012

2018
11

2020
6

2021
5

2021
8

2021
11

2018
4

2020
1

2020
12

2021
5

2022
1

World Joy Security & Safety Technology was officially registered and established in April 2018 with a registered capital of RMB 21.68 million and a sophisticated 30+ R&D team members.

In January 2020 World Joy cooperated with China’s National Fire Protection Product Inspection Department to complete the secondary injury test of the product.

In December 2020 it passed the EU CE test, obtained the Madrid International Trademark Certification and passed the inspection of the National Fire Products Quality Supervision and Inspection Center (Guangdong).

In May 2021, it participated at the 13th National Disaster Prevention & Mitigation Day Activities and demonstrated a highly efficient forest firefighting emergency drill.

In January 2022, it obtained China’s national technical appraisal certificates as “fire extinguishing products”.

FOREST AND RESIDENCE FIRE

CURRENT STATUS



- Every year more than 200,000 fires take place worldwide, burning down 1‰ of the world's total forest areas.
- In China, 10,000+ fires are reported every year which destroy tens of millions of hectares or 5-8‰ of the total forest areas.
- Wildfires in China are 5-8 times as destructive as the world's average.
- The 2019 Australian bushfire resulted in the burning of nearly 1 billion wild animals including 20,000+ koalas, the emission of more than 500 million tons of carbon dioxide and the destruction of nearly 5.9 million hectares of land. As a result, this resource rich tourist resort immediately resulted in shocking ruins with immeasurable loss.



- In 2019, there were 233,000 fire cases reported in China which caused 1,335 deaths, 837 injuries and direct property loss of RMB 3.6 billion. The Chinese Fire and Rescue Bureau announced that urban and rural household fires accounted for 44.8% of the total cases, causing 1,045 deaths, constituting 78.3% of the total, which far exceed the total number of deaths in other countries.

■ CURRENT MAIN FIREFIGHTING METHODS



Fire trucks



Aerial firefighting



Chemical agents



Create isolated areas

■ ANALYSIS OF CURRENT FIREFIGHTING SITUATION

● Poor Efficiency

Water is the leading force for firefighting worldwide to be supplemented only by chemical agents. Uneven dousing hardly helps to put out fire, particularly in frigid zones where water is frozen and hence useless.

● Poor Mobility

Topography makes water bombers and fire engines dysfunctional for some bushfires.

● Poor Control

Large-scale bushfires in China are hard to contain and destroy million hectares of forests every year.

● Pollutant Ingredients

Chemical extinguishing agents could increase efficiency but the damage caused to the environment cannot be ignored. In 1987 a huge amount of foam extinguishers wiped out all fishes in the affected rivers in Switzerland.

● Poor Safety

All existing firefighting solutions require firefighters to approach the blaze which could easily cause casualties.

**WORLD JOY'S NEW ENVIRONMENTAL PROTECTION
FIRE EXTINGUISHER DEVICE:FIRE PROTECTION REQUIREMENTS AND
CURRENT FIRE PROTECTION STATUS**

**New Environmental Protection
Shock Wave Fire Device**



World Joy is the first and only certified company to enter the procurement directory of China's National Forest Professional Committee



Researched and developed 3 types of fire extinguishing methods for the current forest fire protection



All complied with the national fire extinguisher standards



Recommended by the National Forest Professional Committee

Traditional Method



**World Joy's New
Environmental Protection
Fire Extinguisher Device**



WORLD JOY'S FIRE DEVICE



World Joy's fire extinguisher device is ignited by the pull ring ignition line. The fire extinguishing agent instantly generates a huge shock wave composed of high-pressure and high-temperature air, forming a negative pressure, isolating the flame of surrounding combustibles and damaging the combustion chain. At the same time, the high-pressure is covered with ultra-fine fire extinguishing dry powder, which is quickly and evenly scattered and diffused to the fire extinguishing area. It can extinguish the fire instantly when it is in full contact with combustibles. At the same time, the ultra-fine fire extinguishing dry powder decomposes at high temperature and forms a layer of glass fire-proof film on the combustibles to ensure that there is no rekindling after fire extinguishing. Attached by the action of shock wave, the dry powder covers the combustibles, reduces the ambient temperature, and the fire-proof film isolates oxygen to achieve the effect of rapid fire extinguishing and no rekindling.



Cavity

The shell of the product is made by recycled paper. The cavity of the product is filled with ultrafine dry powder fire extinguishing agent. The paper can be degraded after explored.

Ultrafine ABC dry powder

The product has no ozone depletion potential, no greenhouse effect potential, no irritation to the human skin and respiratory tract as well as no corrosion to protective substances (i.e. toxic and hazard free). Residues are easily cleanable after the fire has been extinguished and can thus be widely used in various production and living scenarios to extinguish classes A, B and C fires and those fires caused by live electrical equipment. Our fire extinguisher device has been accredited by China's science and technology authorities to be the first of its kind in the nation and also a global leader.



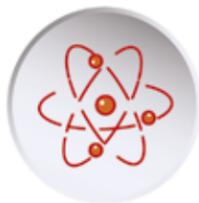
Inventory Technology



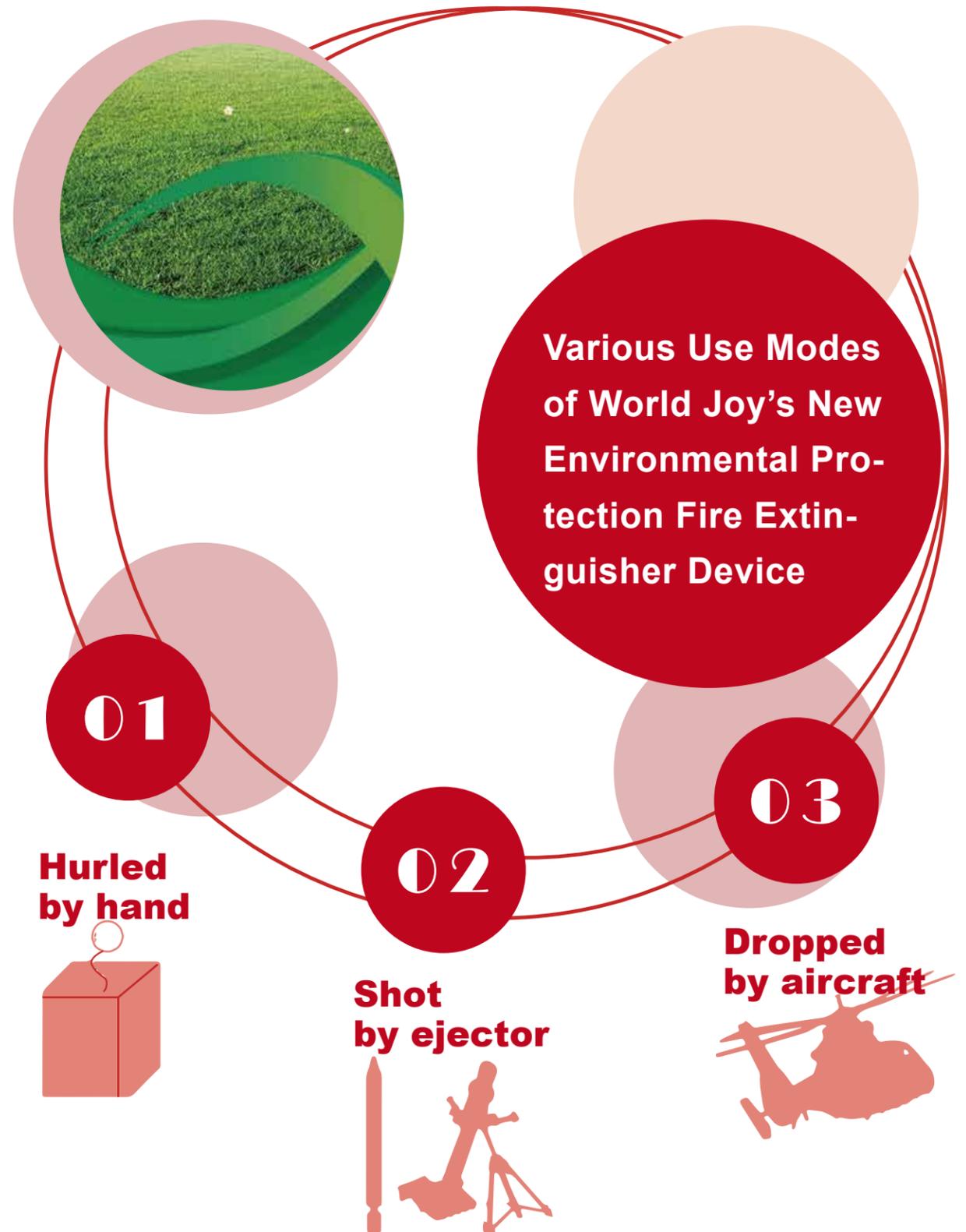
Pull-ring design



Eco-friendly materials



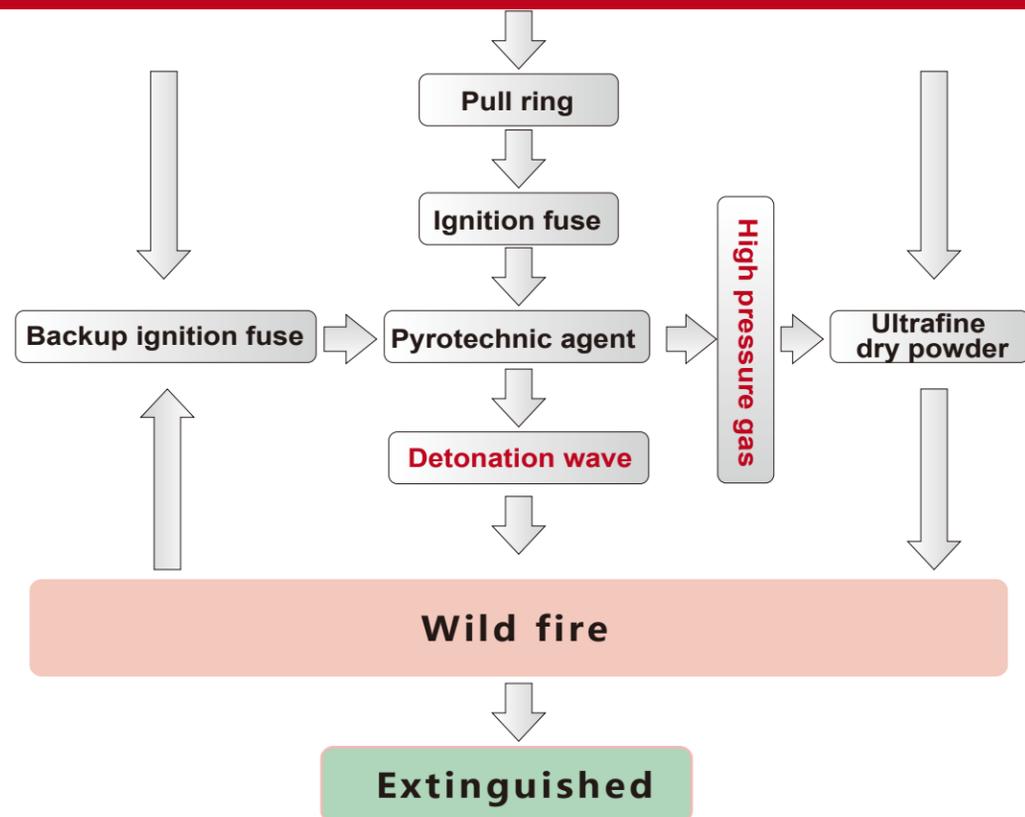
Innovative firefighting principle



PROPRIETARY TECHNOLOGY AND TECHNICAL INNOVATION

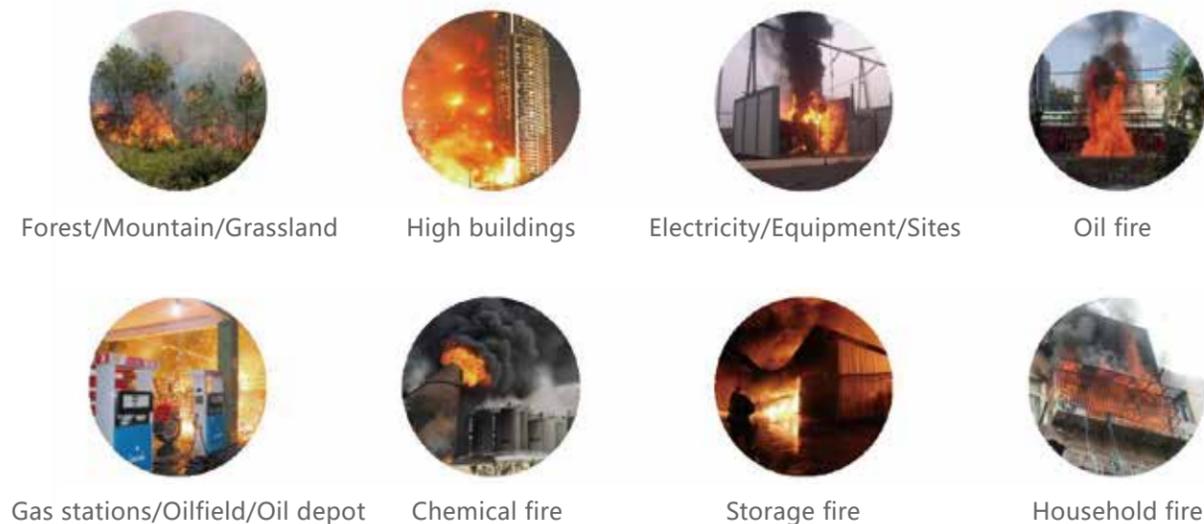
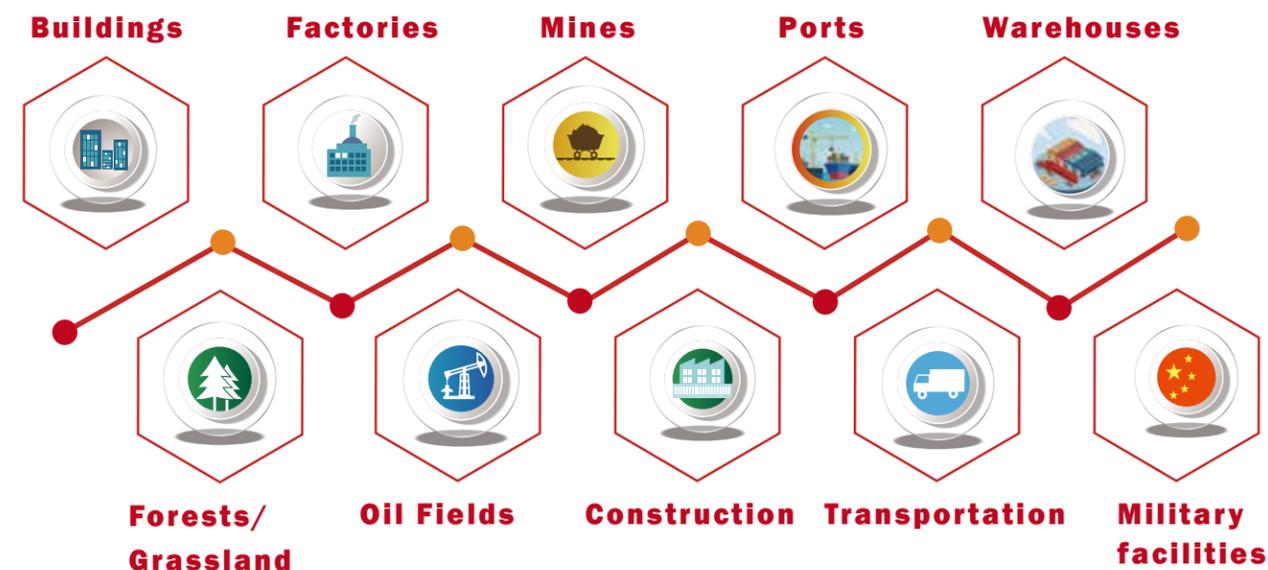
APPLICABLE FIRE SCENES

Fire Extinguisher Device



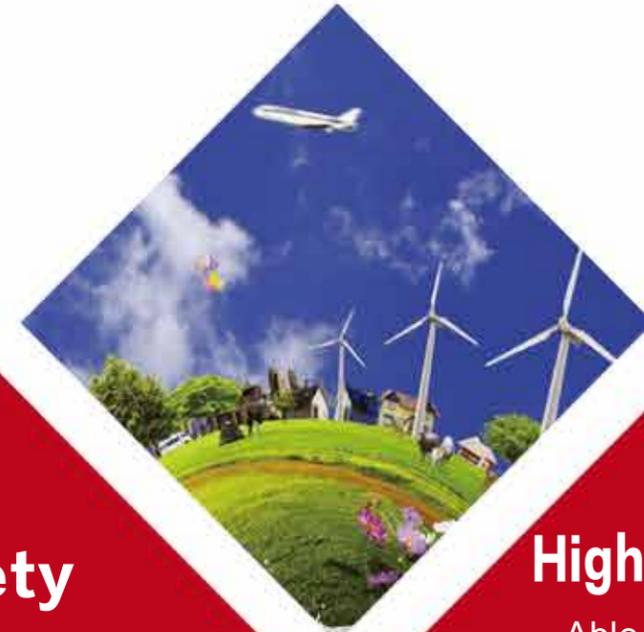
Description of the principle

1. The pull-ring triggered projectable extinguisher device is activated by pulling the ring so that the percussion cap ignites the safe ignition fuse. The ignition fuse propels the fire into the device to ignite the inner pyrotechnic agent component in a time-delay manner.
2. The pyrotechnic agent instantly deflagrates to generate high-pressure and high-temperature gas to form columnar detonation waves which in turn exert negative pressure to cut off flames of the surrounding combustibles and destroy their combustion chain links.
3. In parallel the ultrafine fire-extinguishing dry powder is also covered at a high speed so that the fire is instantly extinguished. In parallel, the ultrafine fire extinguishing dry powder decomposes at high temperature to form a glass-like isolation film barrier on the combustibles and which thereby would no longer re-ignite.



WORLD JOY'S FIRE DEVICE

7 ADVANTAGES



Authority

Obtained among others EU CE certificates, ISO9001 international standard system certificates, and successfully passed the national technical inspection of fire protection products and also obtained the technical appraisal certificate for fire protection products.

Innovation

Produced innovative double insurance design, environmental protection materials and fire extinguishing principle.

Safety

No secondary harm to human body and other objects with a shelf life of 3 years.

High Efficiency

Able to prevent fire automatically and also quickly extinguish fire within a short time without re-ignition.

Environmental Protection

The potential value of atmospheric ozone depletion and potential value of greenhouse effect are both zero. No pollution for air, soil or water.

Convenience

Convenient to carry and easy to use as one pull and one throw by both young and older men and women so as to extinguish the fire.

Universality

The fire extinguishing range is wide which is ideal for the prevention, control and rescue of various fires in different scenes.



PRODUCTS LIST



Ignition / Hurl pull-ring devices

Specifications: WZMHD-ML/M1000 Size: 88*88*168 (mm)
 Shape: Square Ignition model: Pull-ring / Self-ignite
 Fire extinguishing area: 3-5 m² Executive standard: Q/B WZKJ001-2019
 Packaging scale: 6 pieces/box Fire extinguishing category: A and B



Ignition / Hurl pull-ring devices

Specifications: WZMHD-ML/M2000 Size: 110*110*180 (mm)
 Shape: Square Ignition model: Pull-ring / Self-ignite
 Fire extinguishing area: 6-9 m² Executive standard: Q/B WZKJ001-2019
 Packaging scale: 4 pieces/box Fire extinguishing category: A and B



Insulation / Air-drop devices

Specifications: WZXFD-S30 Size: 440*440*420 (mm)
 Shape: Square Ignition model: Remote / Self-ignite / Air-drop
 Fire extinguishing area: 70-100 m²
 Packaging scale: 1 pieces/box
 Appropriate sites: bushfire, ports, chemical plants, oil fields etc.



Insulation / Air-drop devices

Specifications: WZXFD-S50 Size: 490*490*470 (mm)
 Shape: Square Ignition model: Remote / Self-ignite / Air-drop
 Fire extinguishing area: 100-200 m²
 Packaging scale: 1 pieces/box
 Appropriate sites: bushfire, ports, chemical plants, oil fields etc.



Insulation / Air-drop devices

Specifications: WZXFD-S5 Size: 310*310*250 (mm)
 Shape: Square Ignition model: Remote / Self-ignite / Air-drop
 Fire extinguishing area: 15-20 m²
 Packaging scale: 2 pieces/box
 Appropriate sites: bushfire, ports, chemical plants, oil fields etc.



Insulation / Air-drop devices

Specifications: WZXFD-S10 Size: 350*350*310 (mm)
 Shape: Square Ignition model: Remote / Self-ignite / Air-drop
 Fire extinguishing area: 30-40 m²
 Packaging scale: 1 pieces/box
 Appropriate sites: bushfire, ports, chemical plants, oil fields etc.



Insulation / Air-drop devices

Specifications: WZXFD-S70 Size: 530*530*510 (mm)
 Shape: Square Ignition model: Remote / Self-ignite / Air-drop
 Fire extinguishing area: 200-300 m²
 Packaging scale: 1 pieces/box
 Appropriate sites: bushfire, ports, chemical plants, oil fields etc.



Insulation / Air-drop devices

Specifications: WZXFD-S100 Size: 580*580*560 (mm)
 Shape: Square Ignition model: Remote / Self-ignite / Air-drop
 Fire extinguishing area: 300-500 m²
 Packaging scale: 1 pieces/box
 Appropriate sites: bushfire, ports, chemical plants, oil fields etc.

FIRE EXTINGUISHING AREA PARAMETERS

No.	Model	Mode	Fire Extinguishing Area (m ²)	Packaging Box (Pieces)	Weight (kg)±5%	Appropriate Sites
1	WZMHD-ML/M1000	Ignition / Hurl pull-ring	3-5	6	1.1	Families, office buildings, schools, shopping malls, high buildings, etc.
2	WZMHD-ML/M2000	Ignition / Hurl pull-ring	6-8	4	2.2	Families, office buildings, schools, shopping malls, high buildings, etc.
3	WZXFD-S5	Insulation / Air-drop	15-20	2	7	Forests, mountains, grasslands, ports, power plants, oil fields, chemical plants, etc.
4	WZXFD-S10	Insulation / Air-drop	30-40	1	12	Forests, mountains, grasslands, ports, power plants, oil fields, chemical plants, etc.
5	WZXFD-S30	Insulation / Air-drop	70-100	1	35	Forests, mountains, grasslands, ports, power plants, oil fields, chemical plants, etc.
6	WZXFD-S50	Insulation / Air-drop	100-200	1	56	Forests, mountains, grasslands, ports, power plants, oil fields, chemical plants, etc.
7	WZXFD-S70	Insulation / Air-drop	200-300	1	75	Forests, mountains, grasslands, ports, power plants, oil fields, chemical plants, etc.
8	WZXFD-S100	Insulation / Air-drop	300-500	1	110	Forests, mountains, grasslands, ports, power plants, oil fields, chemical plants, etc.

CASES

World Joy's fire extinguisher devices are used to extinguish bushfire with UAVs



The fire extinguisher device is totally harmless to human body and objects



The fire extinguisher devices can extinguish efficiently and quickly fire in oil fields



World Joy's fire extinguisher devices can extinguish quickly and safely fires in electric wells



World Joy's fire extinguisher devices can diminish bushfire easily



World Joy's extinguisher devices can easily put out fire chemical inflammables



World Joy's fire extinguisher devices put out the fire in confined space quickly and safely



The fire extinguisher device would not damage the 0.5cm glass



Firefighters can wear World Joy's fire harness and carry several fire extinguisher devices into the fire site to open the life passage



NATIONAL PATENTS



一种消防弹发射装置



一种消防弹结构



一种消防弹套缸



一种消防弹活塞杆组件



一种新型拉环式投掷式消防弹



一种便于运输的车载式消防弹



一种可同步引爆的消防弹群

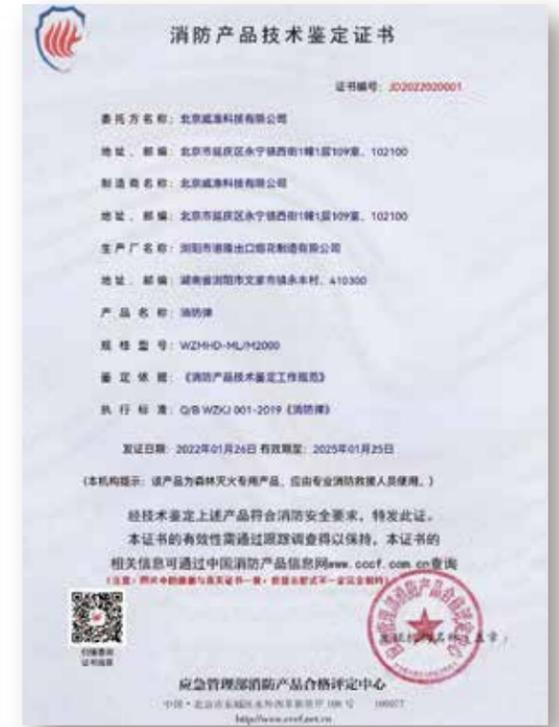
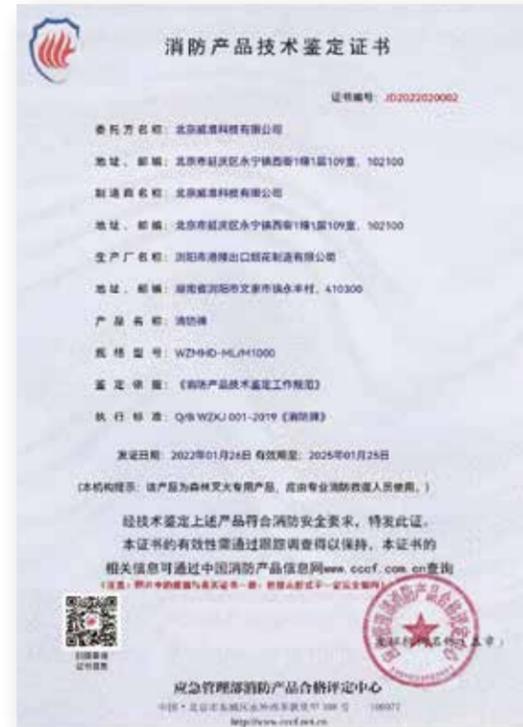


一种新型握柄式自动控制击发消防弹



一种新型握柄式手投拉环击发消防弹

NATIONAL QUALIFIED FIRE PROTECTION PRODUCTS



*** Awards ***

- ★ In 2018 our product won the Outstanding Achievement Award of China's Scientific and Technological Innovation and Invention
- ★ In 2022 we obtained the technical appraisal certificates for fire protection products

EU CE CERTIFICATION

EU CE certification The EU CE certification is a product quality safety and manufacturing system assurance and is regarded as a pass for manufacturers to enter the European market.



NATIONAL FIRECRACKERS PRODUCTS QUALITY SUPERVISION AND INSPECTION REPORT



NATIONAL SCIENCE AND TECHNOLOGY NOVELTY SEARCH REPORT



NATIONAL FIRE PRODUCTS QUALITY SUPERVISION AND INSPECTION REPORT



CERTIFICATES OF NATIONAL CREDIT ENTERPRISE

