

# Installation and Service Manual

## EXXFIRE® 750TW/1500TW/2250TW





# Installation and Service Manual

version 3.3 – November 2021

## **EXXFIRE®750TW/1500TW/2250TW**

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## LIST OF REFERENCE DOCUMENTS

If not mentioned differently, the latest revision of a document always applies.

RD	Document name / number	Description	Notes
01	SFE-SP-001_SDS GEN09N2	Material Safety Sheet Generator	

## LIST OF ABBREVIATIONS

In this manual, several abbreviations are used. They are listed in the table below.

CGG	Cool Gas Generator
ft <sup>3</sup>	Cubic feet
m <sup>3</sup>	Cubic meter
MSB	Most significant bit
LSB	Least significant bit
NO	Normally open
NC	Normally closed
MAB	Manual Activation Button
DSW	Door Switch

# 1 INTRODUCTION

The EXXFIRE® 750TW/1500TW/2250TW is an extinguishing unit that detects and extinguishes fires in small, protected spaces, such as server racks and electrical cabinets.

Upon detection of a fire, nitrogen gas is released from the unit. The nitrogen gas dilutes the oxygen level within the enclosure, and consequently suppresses the fire. The TW version of the systems are using a thermal wire to detect fire. The thermal wire will cause a short once a specified temperature has been reached.

## 1.1 About this manual

This document is the installation and service manual for the EXXFIRE® 750TW/1500TW/2250TW.

This manual contains all the information necessary to install, operate and service the EXXFIRE® 750TW/1500TW/2250TW for all phases of its product lifecycle, see Figure 1.

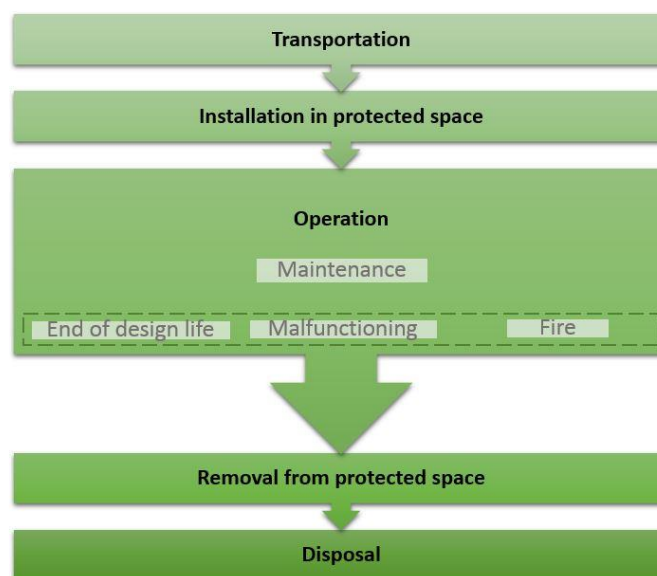


Figure 1: Product lifecycle

This manual concerns the original instructions in UK English. Keep it in a safe location! Ensure access to this manual at all times.

This manual includes notes and warnings on safe installation and operation of the equipment. These notes and warnings are accompanied by the following icons. Read them attentively!

<b>⚠ WARNING</b>	Warning indicates a hazardous situation which, if not avoided, could result in death or serious injury.
<b>⚠ CAUTION</b>	Caution indicates a hazardous situation which, if not avoided, could result in minor or moderate injury or property/product damage.
<b>ℹ NOTICE</b>	Notice indicates information considered important, but not hazard-related.

## 1.2 Intended use

Safe operation of the EXXFIRE® 750TW/1500TW/2250TW is only guaranteed if used as specified in this manual. Other forms of use can put persons at risk as well as the surroundings and the environment.

During all phases of the lifecycle of the EXXFIRE® 750TW/1500TW/2250TW (e.g., transport, deployment, etc.), standard health, safety and environmental (HSE) procedures and regulations as set forth by the product owner or local authorities must be adhered to, in addition to the specific instructions in this document.

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**▲ CAUTION**

Misuse will occur when the EXXFIRE® 750TW/1500TW/2250TW is used beyond its operational boundaries. Operational boundaries are described in chapter 2 and must never be exceeded.

---

Only personnel trained and qualified by the EXXFIRE may install, inspect and maintain the product.

## 1.3 Disclaimer

It is the responsibility of the installer to ensure that the user is aware of the relevant contents of this document and the documents listed herein.

It is the responsibility of the installer to ensure the linear heat cable is installed correctly and adequately.

## 2 PRODUCT DESCRIPTION

### 2.1 EXXFIRE®750TW/1500TW/2250TW

The EXXFIRE® 750TW/1500TW/2250TW is a unit that is used to detect and extinguish fires in small, protected spaces, such as server racks and electrical cabinets. The EXXFIRE® 750TW/1500TW/2250TW is equipped with:

- One, two or three cool gas generators to release nitrogen gas
- Linear heat sensing cable to detect fire
- Software to ensure robust decision making
- Electronics for configuration settings and status outputs
- Inputs for manual activation button (MAB) and door switch (DSW)
- Back-up battery

Upon detection of a fire event, nitrogen gas is released from a cool gas generator (CGG). The nitrogen gas dilutes the oxygen level within the protected space, and consequently suppresses the fire. This is in line with common practice using compressed IG-100, or other clean agents in higher hazard class A fires at 20 °C. If normal class A fires are taken into consideration the systems can protect a larger volume (see NFPA 2001 for the exact calculation). For class B fires a single generator produces 1.16 m<sup>3</sup>.

Gas mass	kg	0,9	1.8	2.7
	L	750	1500	2250
Protection	m <sup>3</sup>	1.5	3	4.5
	ft <sup>3</sup>	53	106	159

Table 1 Gas mass versus protected space (in normal conditions temperature and pressure)



Figure 2: EXXFIRE 750TW exterior

The EXXFIRE 750TW/1500TW/2250TW is housed in a metal casing. The EXXFIRE 750TW is shown here.

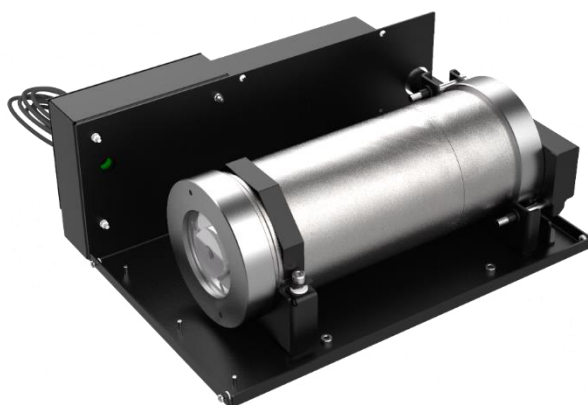


Figure 3: EXXFIRE 750TW interior



Figure 4: Electronics tray interior

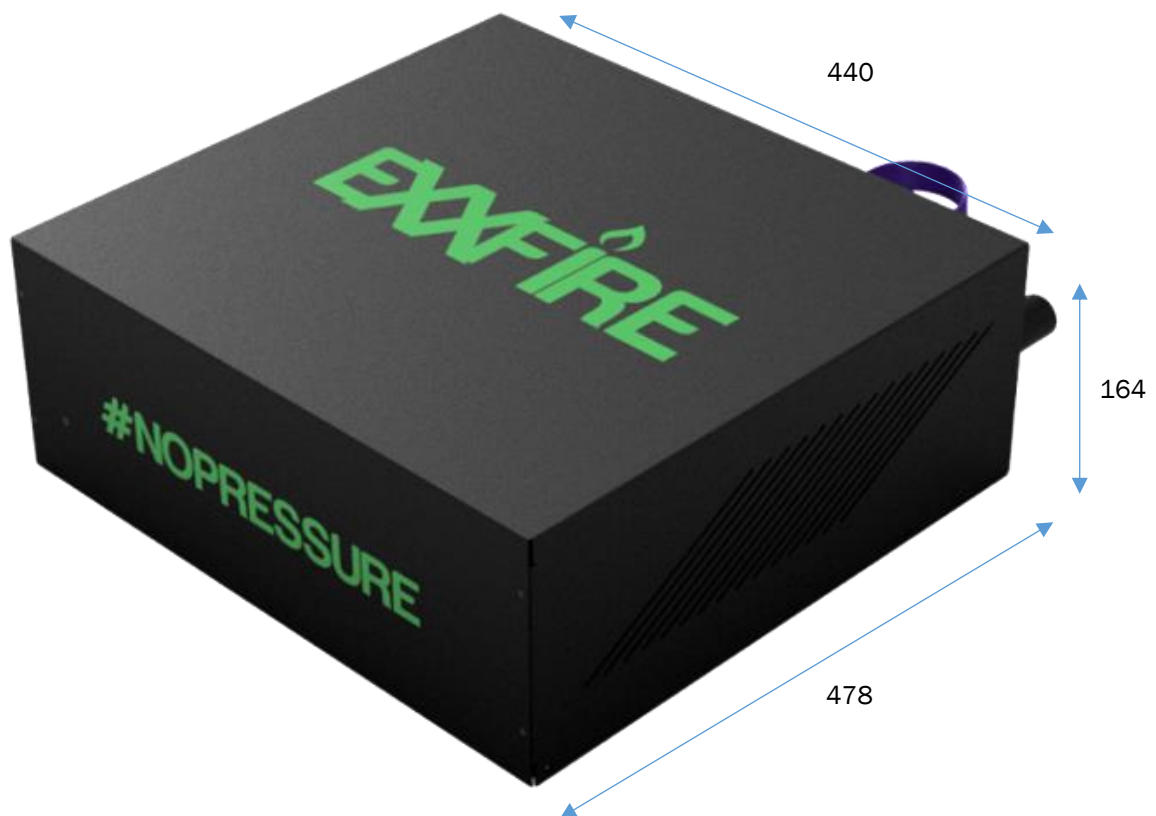


Figure 5 Product dimensions

EXXFIRE® 750TW	Length x Width x Height	329x440x164	13x17x6
EXXFIRE® 750TW	Weight	10kg	22lbs
EXXFIRE® 1500TW	Length x Width x Height	478x440x164	19x17x6
EXXFIRE® 1500TW	Weight	18kg	39lbs
EXXFIRE® 2250TW	Length x Width x Height	630x440x164	25x17x6
EXXFIRE® 2250TW	Weight	25kg	55lbs

**Table 2 Product dimensions and weight**

## 2.2 About cool gas generators

The CGG's supply the nitrogen gas to dilute the oxygen level within the protected space, and consequently suppress the fire.

The CGG stores the gas as a chemical solid. The gas is bound up in a molecule which naturally forms a solid at room temperature and is released when a chain reaction is started within the canister. This controlled decomposition of the solid 'grain' reaches high temperatures as it breaks down, before passing through a cleansing and heat absorbing filter.

Finally, the cooled nitrogen gas is passed through a very fine filter to remove further impurities before being released into the protected space.

The base material for the gas production is sodium azide ( $\text{NaN}_3$ ). This is mixed with a number of other modifying chemicals to make the grain perform with the desired characteristics. The encapsulated product is generally safe to handle.

When the CGG is deployed to protect against a fire, the core grain material (sodium azide) changes state as it is decomposed to produce nitrogen gas, and a sodium 'slack' is formed. As sodium can exhibit energetic reactions in certain conditions, it is imperative that care is taken to follow the basic installation and handling guidelines.

With appropriate handling, the CGG will remain in a safe and stable configuration throughout its lifecycle, allowing it to be transported, stored, used, and recycled in line with local legislation. As with many high-tech chemical products, mistreating the CGG could lead to potentially dangerous exposure of energetic chemicals.

## 2.3 Linear heat sensing cable for fire detection

The linear heat sensing cable needs to be guided through the protected space in such a way that the elements within the protected space which can cause a fire are in the vicinity of the cable. When a fire starts the temperature will rise which causes the cable to short circuit which triggers the gaseous fire suppression of the EXXFIRE® 750TW/1500TW/2250TW.

This provides an exceptionally reliable means to detect a fire, which reduces false alarms, and avoids releasing the gas unnecessarily. The linear heat cable is available in the mounting kit with two heat sensing levels one at 68°C (mounting kit 4) and the other at 104°C (mounting kit 5).

## 2.4 Software for decision making

The robust software is simple and monitors the linear heat sensing cable, mains power, battery back-up and squib connectors. If something is wrong with these elements the system will give a fault signal, triggering a relay and fault LED.

Threshold	Action	Notes
Sub-nominal	Enter fault status	The system has numerous internal self-test functions, all of which will cause a fault status to be entered if an anomaly is detected
Nominal	No action	System is functioning normally
Alarm	Close alarm relay	Positive identification of a fire event, by means of either a shorted heat sensing cable or activation of the MAB – normally connected to a central fire panel
Action	Release gas	Gas is released 15 seconds after the fire event is detected

**Table 3 Threshold and effects**

## 2.5 Electronics

Status outputs from the system are established by relay contacts.

Relays are rated to 2 A at 28 VDC. This supports connection to most alarm panels, building control systems and direct connection to DIN rail mounted relays for supplementary shut-down etc.

Relay	Primary Contacts
Fault	Normally Open (when energized by the functioning system)
Alarm	Normally Open (passive state)

**Table 4 Status outputs by relays**

All relays are dual pole, dual throw, thus providing the installer with a flexible range of options for a wide variety of applications. All outputs are duplicated, and isolated.

For example, the Normally Open alarm output, would typically be connected to the fire panel to indicate a fire status. The changeover contacts may be connected to a separate building management system without any interconnectivity issues.

### Wired inputs

No wired inputs are made available to the installer in this product except for the Power Cable, a manual activation button and a door switch. This will allow the addition of wired inputs to incorporate a door switch (to ensure integrity of the enclosed volume against leakage), and a manual override switch (to inhibit gas release when an operator is present).

### Configuration settings

The EXXFIRE® 750TW/1500TW/2250TW series can be interconnected via a wiring protocol. This means that multiple systems can be used to protect one larger volume.

The settings are described in chapter 5.

## 2.6 Technical data

	EXXFIRE 750TW	EXXFIRE 1500TW	EXXFIRE 2250TW	
L x W x H	334 x 442 x 164	452 x 442 x 164	615 x 442 x 164	mm
Excluding manifold	13.1 x 17.4 x 6.5	17.8 x 17.4 x 6.5	24.2 x 17.4 x 6.5	inch
L x W x H	341 x 442 x 164	459 x 442 x 164	622 x 442 x 164	mm
Including manifold	13.4 x 17.4 x 6.5	18.1 x 17.4 x 6.5	24.5 x 17.4 x 6.5	inch
Weight excluding box	9.4	17.4	24.4	kg
	20.7	38.4	53.8	lbs
Weight including box	10.9	18.9	25.9	kg
	24.0	41.7	57.1	lbs
Gas mass	0.9	1.8	2.7	kg
	750	1500	2250	L
Protection volume*	1.5	3	4.5	m <sup>3</sup>
	53	106	159	ft <sup>3</sup>
Protection volume **	1.16	2.32	3.48	m <sup>3</sup>
	41	82	123	ft <sup>3</sup>
Pressure	0 - 10	0 - 10	0 - 10	bar
ADR***	9/4.3	9/4.3	9/4.3	Class
UN***	3268/3543	3268/3543	3268/3543	
Rating****	IP30/IP67	IP30/IP67	IP30/IP67	Class
Voltage (mains)	110/230	110/230	110/230	Vac
Back-up power	12	12	12	Hours
Battery Lifetime @ 20°C	4	4	4	Years
Lifetime generator @ 20°C	10	10	10	Years
Lifetime system @ 20°C	12	12	12	Years
Temperature	-0 to 50	-0 to 50	-0 to 50	°C
Generators	1	2	3	pcs

\* NFPA2001 Design concentration Class A = 40.3%

\*\* Design concentration class B = 47.6%

\*\*\* Before and after deployment

\*\*\*\* System Enclosure / Generator housing

Table 5: Technical data

## 2.7 Linear heat detection cable

The heat detection cable works using two cables which are fused using an active polymer. When heat above the specified rating is applied to the cable, both cores are fused together which will result in a short circuit. This short circuit is detected by the TW system and is used to activate the cool gas generator. Every linear heat detection cable needs a 1k end resistor to work properly with the TW system (provided in mounting kit)

## 2.8 Identification plate



Figure 6 Location of the identification plate

The identification plate is located above the key-switch, as illustrated in Figure 6.

The following details are displayed on the identification plate:

- Company name
- System type
- Barcode
- Serial number

## 2.9 Design life

The product design life is defined in terms of time only. This can be impacted by external factors like temperature. The design life (or technical life span) of the product is stated below:

- CGG design life (after installation): 10 years
- Linear heat detection cable life: 10 years
- Battery design life: 4 years

## 3 SAFETY

### 3.1 General

The EXXFIRE® 750TW/1500TW/2250TW contains pyrotechnic and chemical components that are hermetically sealed off from the environment. These cannot be released under normal or reasonably foreseeable conditions of use including proper disposal.

EXXFIRE products should only be handled by trained professionals. EXXFIRE provides specialist training to all professional handlers through its distributors. The distributors are responsible for providing the right training and correct information about the installation, handling and removal of the product.

The EXXFIRE products are dependent on chemical technology from the space industry. This technology necessitates special knowledge of the product to ensure a robust, safe, and functional manufacturing.

Handling of the EXXFIRE® 750TW/1500TW/2250TW must only be done by qualified and trained personnel familiar with the product and its documentation (product datasheet, operating manual). Incorrect handling or use of the product can cause serious damage and lead to serious injuries and fatalities.

These guidelines with respect to the constituent materials apply to the EXXFIRE® 750TW/1500TW/2250TW. The material safety data sheet (MSDS) of the generators can be found in Appendix A.

#### **⚠ WARNING**

- Do not handle the unit until all safety precautions have been read and understood.
- Do not expose devices to temperatures above 85 °C,
- Avoid all possible contact with grain inside the generator.
- Make sure that the unit is only handled in well ventilated areas.
- To prevent unnecessary initiation, keep the unit away from heat/sparks/open flames/hot surfaces. Also, do not smoke in the enclosure where the unit is placed.
- Do not open, drill, incinerate, crush, immerse or expose to temperatures above range reported for products.
- Do not bring the unit in contact with water, because of violent reaction and possible flash fire.
- In case of fire: Use dry powder or sand for extinction.
- Avoid release to the environment.
- Do not store together with combustible or oxidizing substances or mixtures.
- Dispose of the contents/ container of the unit at an approved waste disposal plant.






#### **⚠ CAUTION**

- Do not use the product beyond its design life in duration check [www.exxfire.com](http://www.exxfire.com).

### 3.2 Personal protective equipment

The personal protective equipment mentioned in this section must be used in the event of a hazardous situation. In normal circumstances, only safety shoes are required.

**Respiratory protection: In case of contact with grain inside CGG**

Symbol	Prescribed personal protective equipment
	<ul style="list-style-type: none"><li>Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls.</li><li>If the respirator is the only means of protection, use a full-face supplied air respirator.</li><li>Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).</li></ul>
	<ul style="list-style-type: none"><li>Hand protection (latex or nitril), in case of contact with grain inside CGG.</li><li>The selected protective gloves should satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.</li></ul>
	<ul style="list-style-type: none"><li>Eye protection, in case of contact with grain inside CGG:</li><li>Safety glasses with side-shields conforming to EN166.</li></ul>
	<ul style="list-style-type: none"><li>Skin and body protection, in case of contact with grain inside CGG:</li><li>Choose body protection according to the amount and concentration of the dangerous substance at the workplace.</li></ul>
	<ul style="list-style-type: none"><li>Safety boots</li></ul>

### 3.3 Hygiene measures (apply in any case)

- Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.
- Do not inhale released gas.

### 3.4 Installation

#### NOTICE

- ExxFire recommends installing the EXXFIRE® 750TW/1500TW/2250TW with two people.

- Do not install the unit outdoors. The unit can only be used to protect uninhabited small enclosures such as server racks and cabinets.

In normal circumstances, the chemical agents within the CGG are safely contained within the unit. During normal installation and maintenance, it is unlikely that the CGG housing could become damaged, as it is protected by the aluminum casing.

As with any electrical device, care should be taken to avoid exposure to live electrical parts. The device operates from a main power supply and contains a battery. See datasheet in Appendix D.

The connection of the system must be in compliance with general and specific rules defined in the installation place as defined for example in IEC 60364-1 :2005 (breaker)

#### **⚠ WARNING**

- Only a trained installer / engineer should remove any cover from the device.
- The unit should be powered off before any cover is removed from the device to avoid exposure to high-voltage areas.
- The key switch doesn't cut the main power, unplug from the main power.
- Power should not be restored until all covers are safely back in place.

### 3.5 What to do when the unit is activated

The installer must inform the owner on what to do when the unit is activated, and gas is released.

Nitrogen 99% and combustion gases 1% (e.g., H<sub>2</sub>O, CO, CO<sub>2</sub>....) are released, so there is risk of asphyxia due to the lack of oxygen and potential respiratory tract exposure when somebody is inside the protected volume (e.g., inside the cabinet when the EXXFIRE system is activated).

Consequently, **at all times, the following applies when the system is ACTIVATED:**

- Immediately evacuate all people from the room in which the small enclosure is located.
- Always ensure a good ventilation of room in which the small enclosure is located before resuming operational functions.
- If needed wear self-contained breathing apparatus for firefighting when opening the small enclosure.
- Let the CGG (passively) cool down for at least 12 hours and contact the distributor for installing a fresh system.

In case someone accidentally inhales the gas released from the CGG:

1. Bring the victim to a well-ventilated area.
2. In case of difficult breathing, give the victim extra oxygen.
3. Consult a physician.

### 3.6 What to do when someone is exposed to chemical contents

In case the CGG is damaged, and someone is accidentally exposed to the chemical contents from the CGG:

- Inhalation of dust:
  1. Bring the victim to a well-ventilated area.
  2. In case of difficult breathing, give the victim extra oxygen.
  3. Consult a physician.
- Skin contact:
  1. Remove large grain particles.
  2. Remove contaminated clothing and shoes.
  3. Rinse affected skin with water for at least 15 minutes.
  4. Consult a physician.
- Eye contact:
  1. Rinse eyes with water for at least 15 minutes.
  2. Consult a physician.
- Swallowing of grain particles:
  1. In case the victim is conscious immediately rinse mouth with water.
  2. Induce vomiting.
  3. Consult a physician and show MSDS.

### 3.7 How to clean spilt material

In case the CGG was not yet activated (i.e., a new CGG) and spilt:

- The grain material inside is highly toxic.
- The spilt material should be cleaned up according to the safety data sheet by trained personnel following local guidelines and legislation.

In case the CGG was activated and then spilt:

- **The material is a highly flammable solid and in contact with water releases flammable gases which may ignite spontaneously.**
- It is imperative that the spilt material does not come into contact with water. This could lead to local poisoning of the environment, or personnel, and the release of toxic gas.
- The spilt material should be cleaned up according to the safety data sheet by trained personnel following local guidelines and legislation.
- Typically, this may include evacuating the immediate area, and wearing gloves and a dust mask while collecting the spilt material using a dry dustpan and brush.

### 3.8 Fire fighter instructions

- Use dry powder or sand to extinguish fire.

- Do not use water!

Wear self-contained breathing apparatus for firefighting if necessary.

### 3.9 Storage

- Conditions for safe storage: store in a dry, clean area, below 40 °C.

## 4 INSTALLATION

- The installation must respect the local Health, safety, environmental requirements/regulations (work at height, electrical work....)
- Installer must have authorization/training for electrical work and for work at height.

### **⚠ WARNING**

- The device should only be installed by a trained professional, by reference to the latest installation guidelines.
- **Precautions for safe handling:** Do not expose devices to temperatures above 85 °C, make sure area's where devices are handled are well ventilated. Avoid all possible contact with grain inside CGG.
- A damaged CGG (e.g., when dropped) could result in a hazardous situation! Spillage of chemicals, toxic release is possible! See: 3.38 how to handle in a hazardous situation.
- If CGG is accidentally activated, evacuate the room and see 3.2 operational safety.

### 4.1 System contents

The EXXFIRE® 750TW/1500TW/2250TW is normally installed using the following items:

- EXXFIRE® 750TW/1500TW/2250TW unit
- Cool Gas Generators (separate 4G/UN package)
- Mounting kit, see section 4.2.

### 4.2 Mounting kit

A steel docking-plate is provided for mounting the unit on top or on the side of the protected volume. A mounting kit is available with two types of linear heat sensing cables 68°C (MOUNTINGKIT4) and 104°C (MOUNTINGKIT5). These linear detection cables are UL listed.

The docking plate is first affixed to an appropriate mounting facet. The EXXFIRE® 750TW/1500TW/2250TW is then engaged upon the tabs, and easily locked in place.

A silencer is provided for optional connection to the end pipe. Install the silencer in case the protected space houses sound and/or vibration sensitive components, e.g., hard disks.

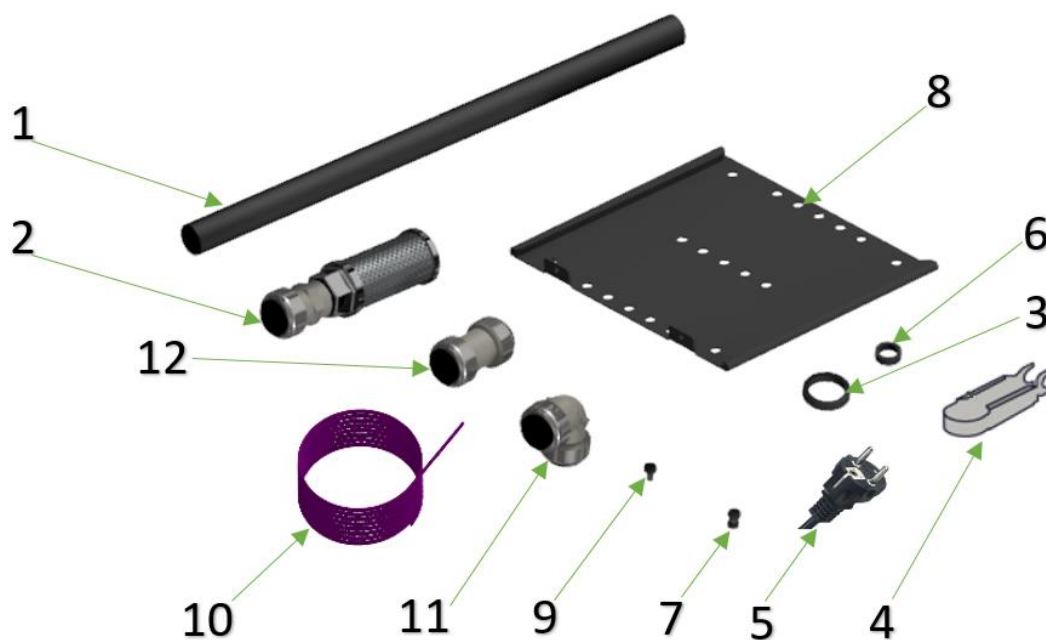


Figure 7: Mounting kit contents

#	Part	Outside mounting 68°C	Outside mounting 104°C
	Article number	MOUNTINGKIT4	MOUNTINGKIT5
1	28 mm gas deployment pipe (length: 495 mm)	2	2
2	Silencer with push-fit fitting	optional	optional
3	Pipe grommet	1	1
4	Pipe fitting disconnecting tool, see Chapter 12	1	1
5	Power cord (EUR)	1	1
6	Cable grommet	4	4
7	M6 mounting plate bolt and nut	6	6
8	Mounting plate	1	1
9	Mounting plate screw	2	2
10	Linear heat cable 10 meter	1	1
11	90° angle 28mm pipe fitting (push-fit)	1	1
12	Straight 28 mm pipe fitting (push-fit)	1	1
13	Drilling template (not in figure)	1	1
14	Door Warning Sticker (not in figure)	1	1
15	End resistor with connector (not in figure)	1	1

Table 6: Mounting kit contents

---

**NOTICE**

Make sure that the air sampling input and gas output and the to-be-installed piping or tubing are not obstructed.

---

## 4.3 Tools

Required tools list and additional fastening material depending on the installation situation.

- Philips Head screwdriver
- Allan Keys
- Torx Keys
- Electrical wire stripper
- Power drill
- 32 mm Hole saw
- 16 mm Hole saw
- Hack saw
- Nuts and bolts.
- Fasteners and spacers

## 4.4 Mounting

The EXXFIRE® 750TW/1500TW/2250TW is suited for:

- Outside mounting - On top or on the side of the protected space, e.g., a cabinet, see Section 4.4.1.

### 4.4.1 Outside mounting

1. Take out the boxed EXXFIRE® 750TW/1500TW/2250TW and the mounting kit from the box.
2. Collect the necessary parts from the mounting kit, see Section 4.2
3. Unpack the needed Cool Gas Generator(s)
4. Collect the necessary tools, see Section 0.
5. Define the mounting position for the EXXFIRE® 750TW/1500TW/2250TW on top of the protected space and place the drilling template.

---

## INSTALLATION OF COOL GAS GENERATOR(S)

Handling of the EXXFIRE® 750TW/1500TW/2250TW must only be done by qualified and trained personnel, familiar with the product and its documentation (product datasheet, operating manual).

1. First check if the Cool Gas Generators are not visibly damaged.
2. Inspect if all the Temper Evident stickers are still in place.
3. **Don't remove the transportation nozzle from Generator!**



4. Remove the adhesive sticker of the gasket before placing the generator.
5. Remove 4 screws of top cover.
6. Remove the top cover.



Figure 8 Top cover removed 750TW.

---

**⚠ CAUTION**

Be aware of the cable for the generator initiator.

---

7. Remove the CGG clamp screws and clamps and other material that was needed for transportation (e.g., PE Foam in between the clamps and manifold puller).
8. Remove the CGG clamps.

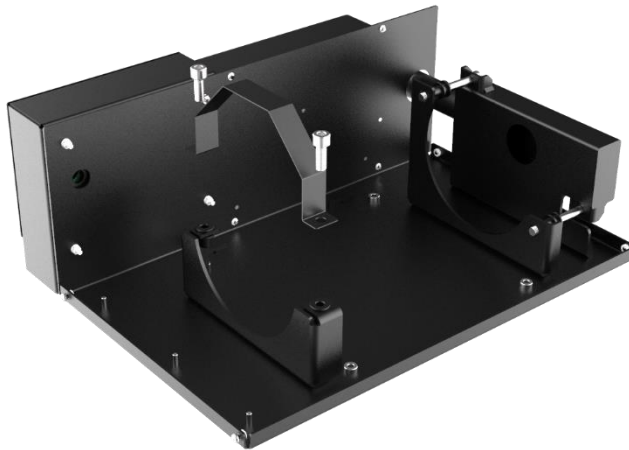


Figure 9 CGG clamps removed 750 TW.

9. Place the CGG's with tight compression of the gasket on to the manifold.
-

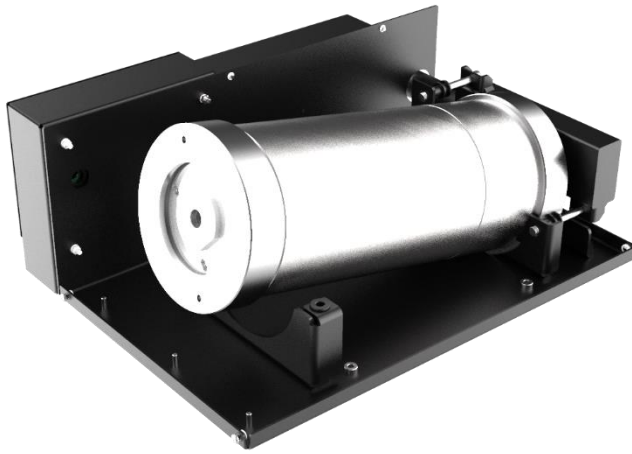


Figure 10 CGG mounting.

10. Place the clamps again with the wide part facing towards the manifold and the edge behind the top flange ring of the CGG to keep them in place during suppression.

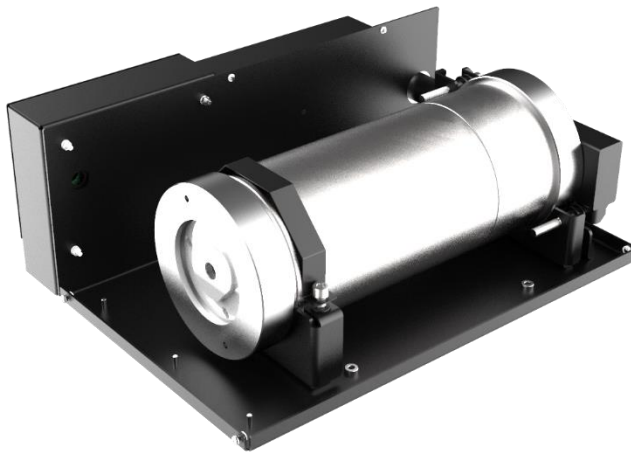


Figure 11 Mounted CGG

---

11. Connect squib cables.

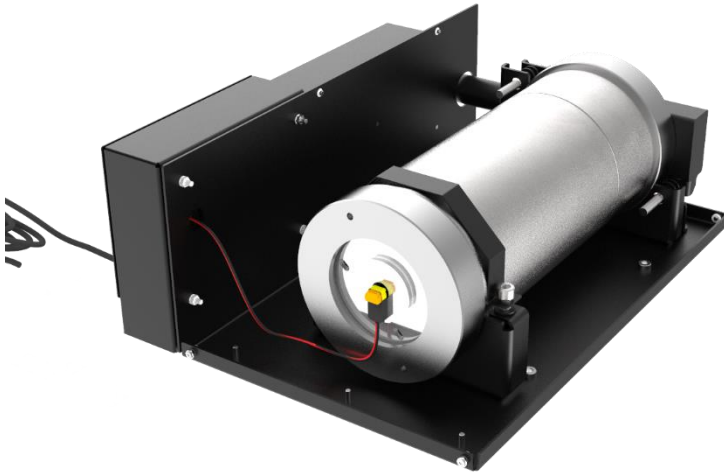


Figure 12 Connected squib cable (note the colours of the cable might be different)

**⚠ WARNING**

- A damaged product (e.g., when dropped) results in a hazardous situation! Leakage of chemicals, toxic release is possible! See: 3.3 how to handle in a hazardous situation.
- In case of activation of the CGG: see 2.2 Operational

12. Install the mounting plate according to the drilling template.



Figure 13 Mounting plate and template.

13. Slide the EXXFIRE unit on the mounting plate.



Figure 14 750 TW on mounting plate

14. Mount the EXXFIRE unit to the mounting plate.

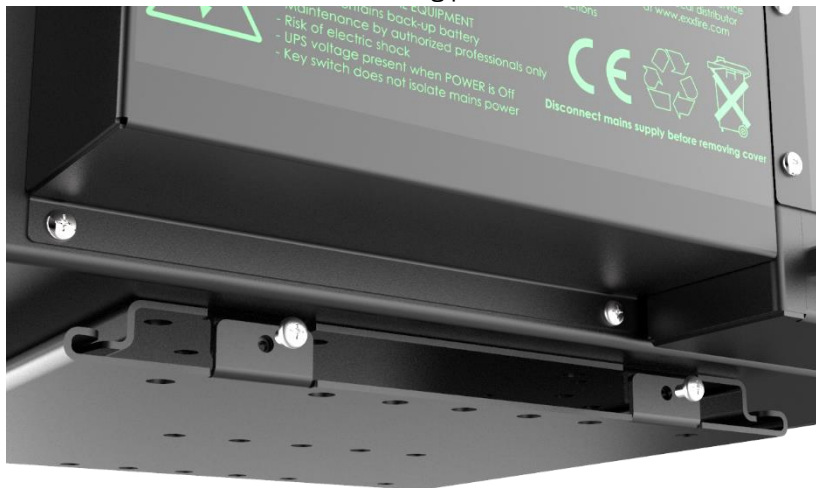


Figure 15 Locking the mounting plate.

15. Drill a 32-mm hole through the top of the protected space in front of the gas outlet of the EXXFIRE unit.

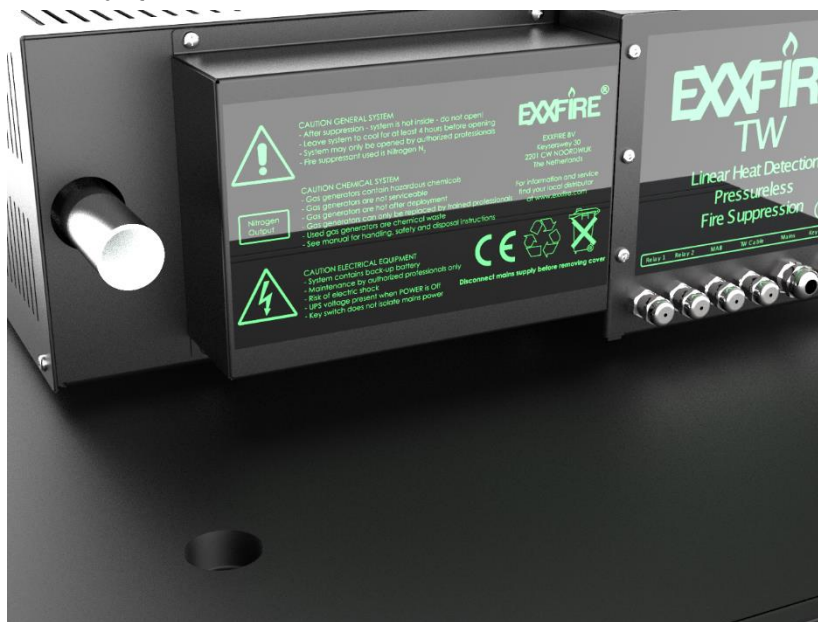


Figure 16 Drill hole for gas pipe

16. Place the pipe grommet in the 32-mm hole.

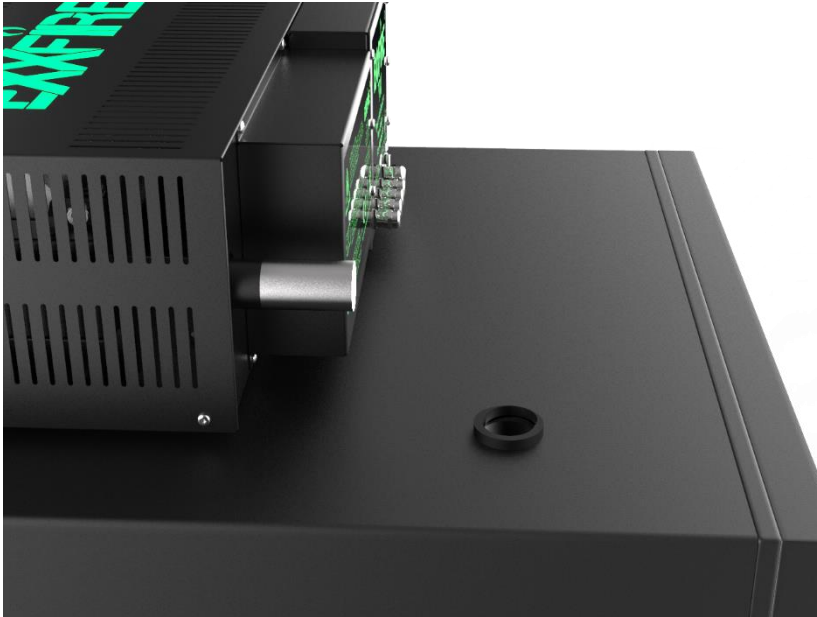


Figure 17 Installing pipe grommet.

17. Install the two pipes.

---

**NOTICE**

Saw the horizontal pipe to length if necessary.

---

**NOTICE**

Firmly push the straight connector onto the outlet pipe of the unit.

---



Figure 18 Example of pipe mounting

18. Connect the silencer (optional) or the anti-thrust nozzle to the pipe end.



Figure 19 Silencer attaching.

19. Drill a 6-mm hole to enter the protected volume with the linear heat detection cable.

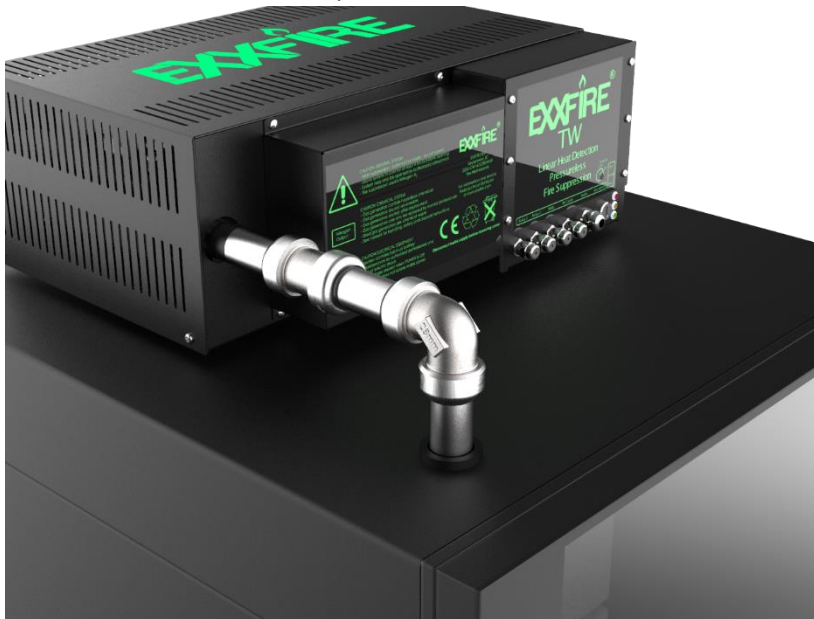


Figure 20 Installed gas pipe.

20. Install the cable access grommet to feed the cable inside the cabinet.



Figure 21 Fully installed 750 TW.

---

**NOTICE**

Always create a throughput for air leakage when the EXXFIRE is applied in hermetically sealed spaces. Otherwise, the smoke sampling system of the EXXFIRE will not be reliable. Make a throughput that exceeds the equivalent of a 20mm diameter hole. Do not compromise the intended integrity of the cabinet (e.g., waterproofness).

---

21. Check if all connections from the unit are tight and secure.
22. Go to Section 0 for electrical connection of the EXXFIRE unit.

## 4.5 Electrical connection

### ⚠ WARNING

- The unit must be powered off before opening the cover.

### NOTICE

- Access to connection terminals is made via the rear access panel, which can be removed by unscrewing the screws, and lifting out the aluminum cover.
- Connection is made through one of four cable glands. Each cable gland can accept a multicore cable up to 8mm in diameter. The cables are terminated at screw contacts. Each contact can accept wires up to 2.5mm<sup>2</sup> in each connection point.

### ⚠ CAUTION

- All cables entering the enclosure must be screened, and the screens appropriately grounded in order to ensure EMC compliance.

1. Remove electronics tray cover



Figure 22: Remove electronics tray cover.



**Figure 23: Main PCB**

2. Install wiring for mains power.

**Figure 24: Mains power wiring**

The device is powered primarily by 110/240VAC mains. The cable gland adjacent to the key-switch is used to bring mains power into the enclosure, typically using a screened, fire-resistant, three core cable, including Earth, Live and Neutral conductors.

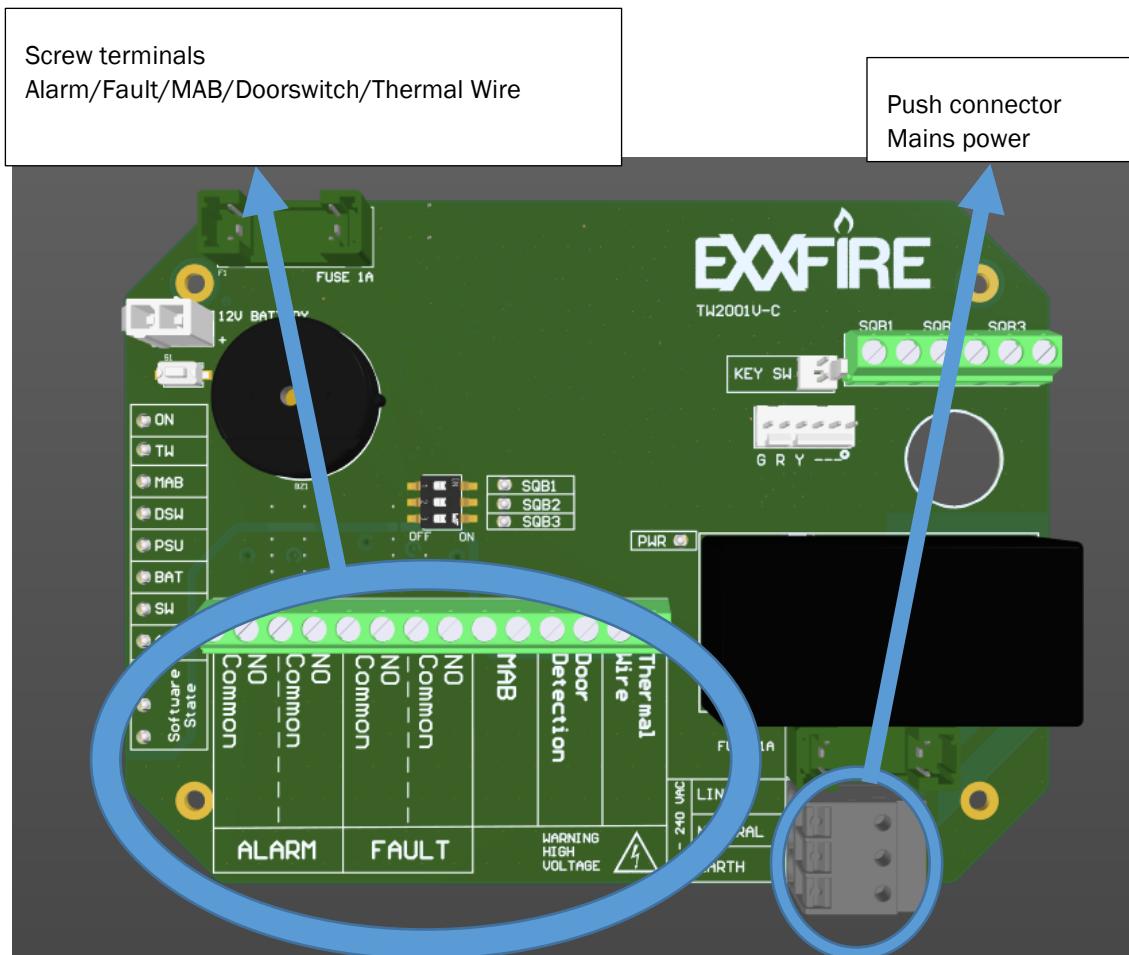
Ensure that the mains cable is isolated at the power source before connecting.

Strip an appropriate amount of the outer sheath away and strip the conductors before inserting into the cable gland.

Keep any excess cable inside the box to a minimum. Excessive looping of “spare” cable will compromise EMC tolerance.

Connect the Earth, Neutral, and Live conductors to the grey fuse terminal block as shown in the diagram. Ensure continuity between the Earth cable and the chassis before fitting the safety cover and fuse.

3. Install the fuse.
4. Install wiring for Fault/ Alarm outputs



**Figure 25: Wiring for Fault/ Alarm/Thermal Wire outputs**

Two pairs of relay contacts are provided for simple connection to a panel, or other apparatus as needed. These may be used to signal a fire or fault, or they may be configured to shut-down power to a cabinet by connection to an auxiliary relay for example, typically using a screened, fire-resistant, two core cable.

Choose the most appropriate cable gland for the relay contact to be used.

Strip an appropriate amount of the outer sheath away and strip the conductors before inserting into the cable gland. Ensure that the gland seals tightly against the outer sheathing, providing both physical support for the cable, and an airtight seal. Failure to do this will result in increased false alarms since the sampled air flow rate will be less stable.

Keep any excess cable inside the box to a minimum. Excessive looping of “spare” cable will compromise EMC tolerance, and could lead to increased false alarms.

Screw the cables into the terminal blocks.

Before powering up the unit, perform a continuity test along the cable to ensure the correct connection has been made. Note – the (Normally Open) Fault relay will be CLOSED while the unit is powered off. This relay will only be activated to the open state once the unit is powered and fully operational. All other relays will remain in their dormant state until activated by a fire event.

If any cable glands remain unused, they must be fitted with the blanking plugs provided.

Once all connections have been made, the rear cover must be refitted, with all screws to provide a good seal against EMC.

5. Lead the linear heat detection cable or Thermal Wire through the protected volume in such a way that the cable is close to the components that could start a fire.
6. Configure the EXXFIRE® 750TW/1500TW/2250TW, see Chapter 5.
7. Switch ON the EXXFIRE® 750TW/1500TW/2250TW.



Figure 26 LHDC mounted in cabinet (purple)

## 5 CONFIGURATION

There are 3 dipswitches available, these configure the number of generators in the system. Please confirm the system has been configured for the right configuration, 1 ON = 750, 1 and 2 ON = 1500, all on = 2250

**Note that changing the DIP switches will only take effect if the system has been power cycled!**

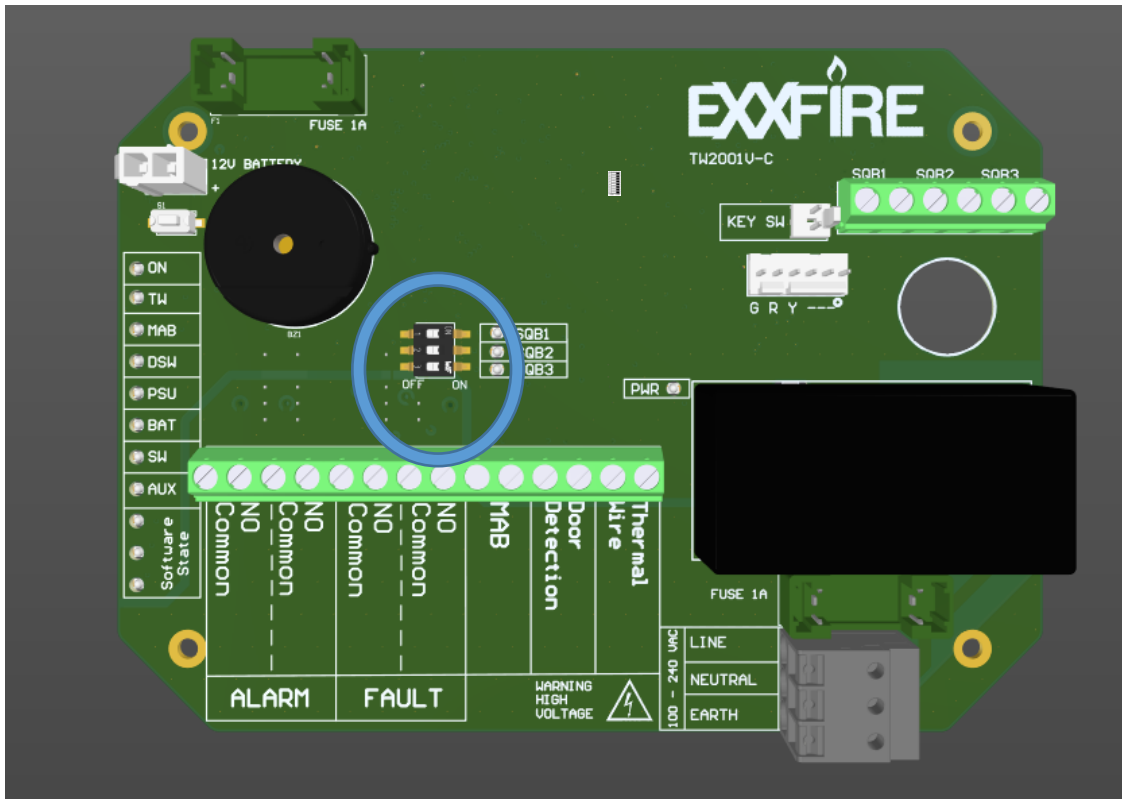


Figure 27 Location of the DIP switches

The functions and settings for each switch are outlined below. The switches can easily be set or reset by sliding them to the desired location using a small, insulated screwdriver.

Table 7 Configuration Functions

Dip Switch	Function
SW1	Generator 1
SW2	Generator 2
SW3	Generator 3

## 5.1 Setup of the amount of Generators

By setting the dip switches you can choose the number of generators that are needed per system type in case of a fire detection event. There is also a Test mode possible to test the linear heat detection cable functionality without deploying the generators.

### Dip switch settings

Switch 1	Switch 2	Switch 3	Function
0	0	0	Test Mode
1	0	0	1 Generator
1	1	0	2 Generators
1	1	1	3 Generators

---

**NOTICE**

Testing of the linear heat cable always on the end of line at the end-of-line resistor! By shorting out the two cores a detection can be simulated to check line integrity.

---

## 5.2 Door switch

The system can be equipped with a Door switch. Any door switch used with the TW system has to have a series resistance of 470 Ohm, and an end resistor of 1k Ohm find a graphical representation in Figure 28. This break-contact will disable the system from deploying the gas when the door is open. Preventing an extinguishing without reaching a proper design concentration with the suppressant.

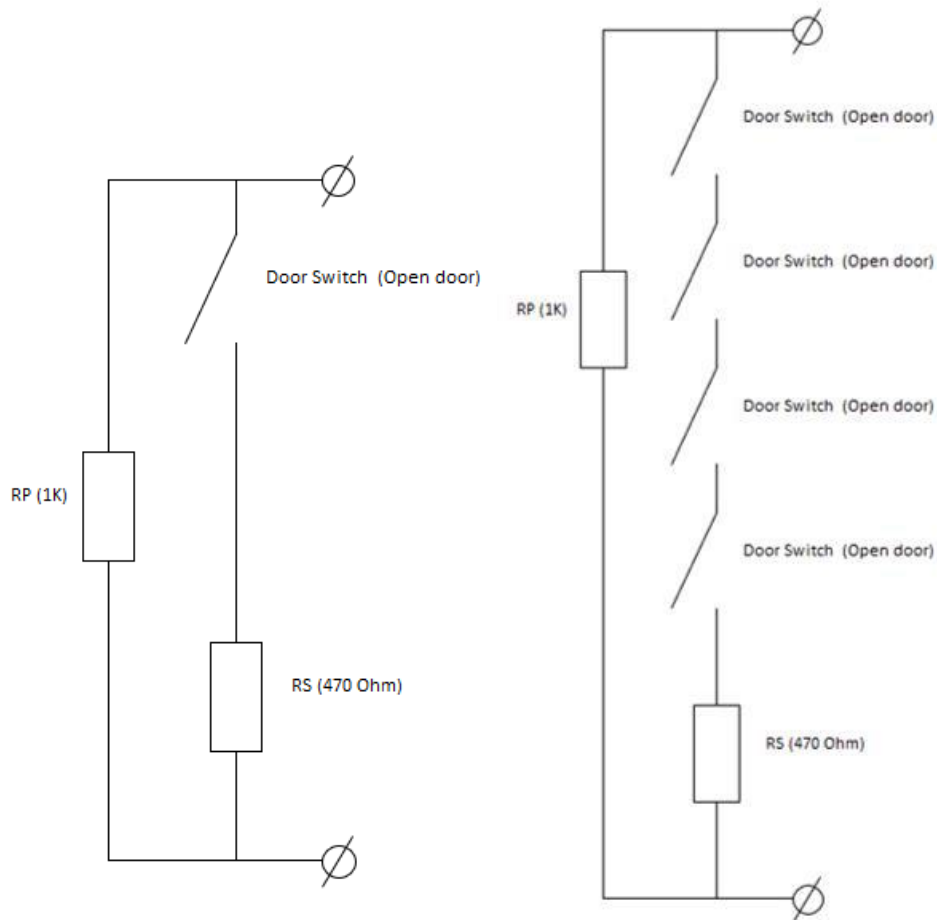


Figure 28 Wiring DSW schematic single (left) and multiple (right) inputs

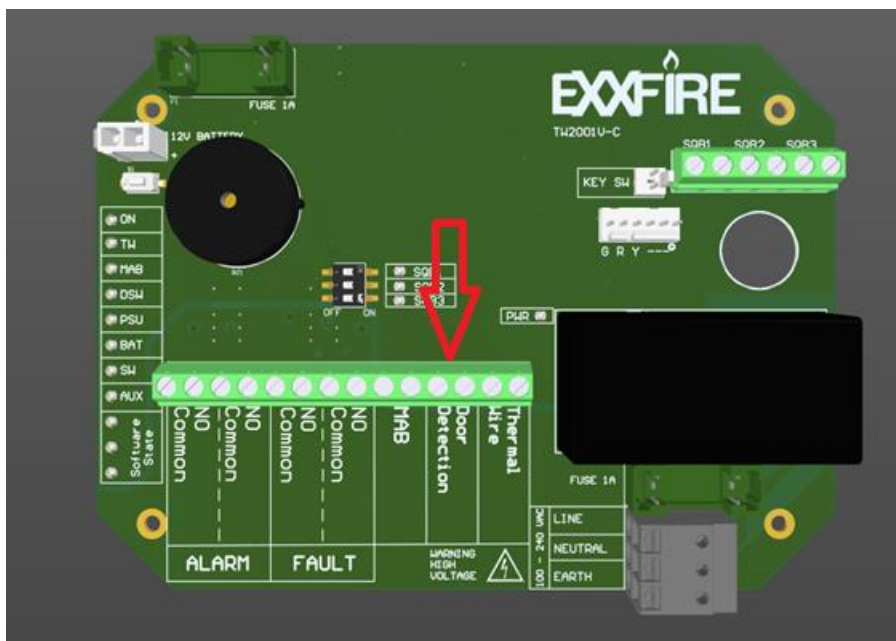


Figure 29 Location of the DSW connections

### 5.3 Manual Activation Button

The system can be equipped with a Manual Activation Button (MAB). Any regular MAB can be connected to the MAB screw terminals using a 470 Ohm series resistor and 1k Ohm end resistor. This process is similar to the Door Switch (DSW).

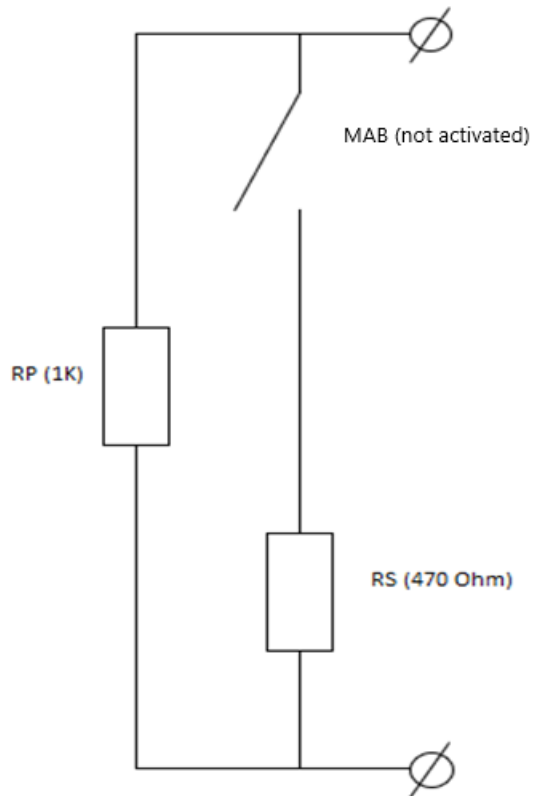


Figure 30 Wiring MAB schematic single

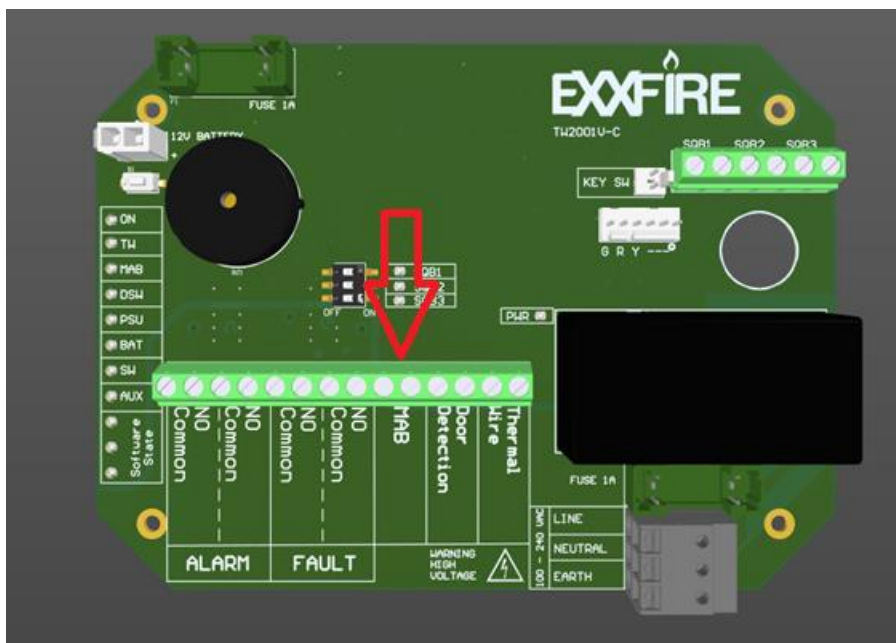


Figure 31 Location of the MAB connections

## 5.4 Master-Slave configuration

Multiple systems can be connected to secure larger volumes the following schematics can be wired together.

Please note that only **one** TW cable can be used for this system. Namely the one at the “end” of the chain. Using one TW cable means this configuration can only be used to protect **one** volume.

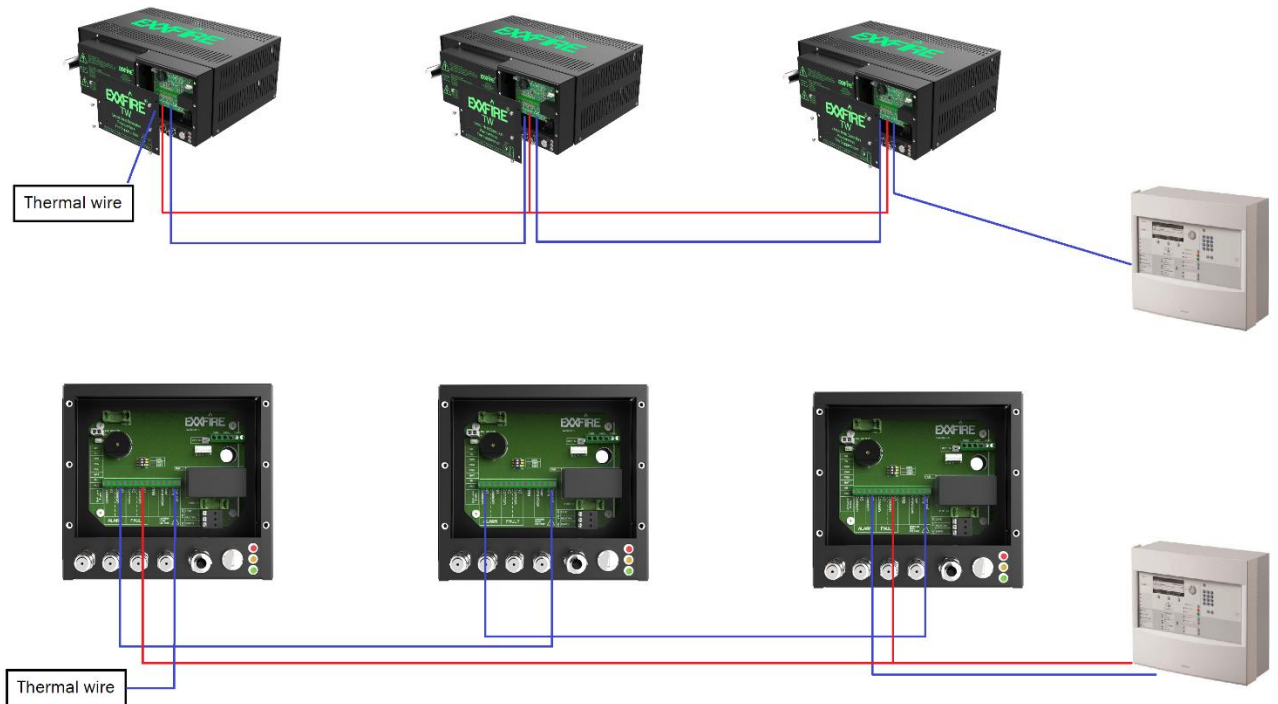


Figure 32 Master slave configuration, Red = fault connections, Blue = Alarm connected to TW input

## 6 REMOVAL OF CGG'S

Handling of the EXXFIRE® 750TW/1500TW/2250TW must only be done by qualified and trained personnel, familiar with the product and its documentation (product datasheet, operating manual).

1. First check if situation is safe and clear. System needs cooling down (> 4hrs.) and the room in which the cabinet is located needs ventilation.
2. Disconnect the mains power cable.
3. Remove four screws. Or only remove the two back screws if you want to hinge the top cover.



4. Remove the top cover.

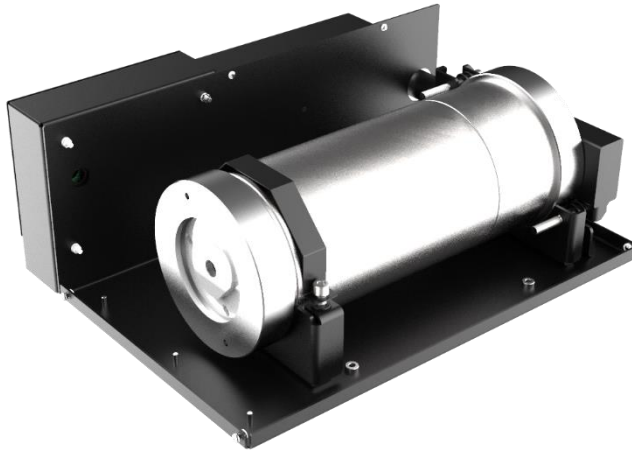
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**⚠ CAUTION**

Be aware of the cable for the ventilation fan. Some types don't have a connector.

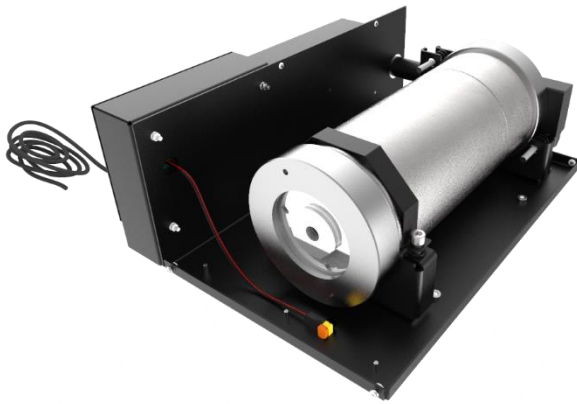
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5. Remove the CGG clamp screws.

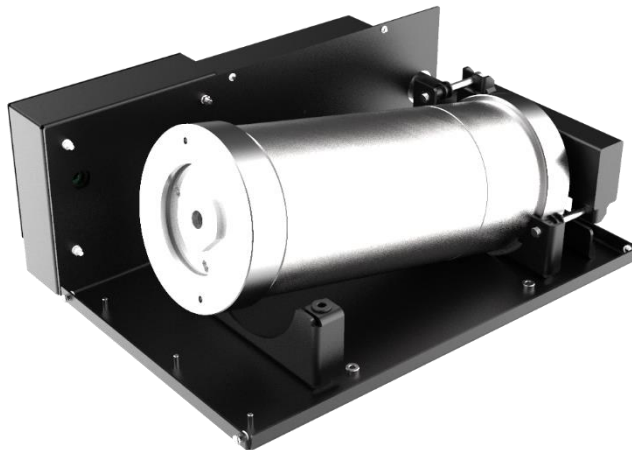


6. Disconnect the squib connectors. Do this by unlocking the orange click connector with a flat head screwdriver.





7. Slide each CGG back from the manifold and lift it out of the cradle.



8. See further instructions on used CGG removal or End of Life procedures.

**⚠ WARNING**

- A damaged product (e.g., when dropped) results in a hazardous situation! Leakage of chemicals, toxic release is possible! See: 3.3 how to handle in a hazardous situation.
- In case of activation of the CGG: see 2.2 Operational

## 6.1 Removal at end-of-life product

### ⚠ WARNING

- Handling of the EXXFIRE® 750TW/1500TW/2250TW must only be done by qualified and trained personnel, familiar with the product and its documentation (product datasheet, operating manual). Incorrect handling or use of the product can cause serious damage and unsafe situations (serious injuries and possible fatalities).
- The system must cool down.
- The product must be removed.
- The used CGG must be put in the box in which it was supplied and returned to the distributor of the applicable country (see a list at [www.exxfire.com](http://www.exxfire.com)).

## 6.2 Removal at end-of-life CGG

### ⚠ WARNING

- Handling of the EXXFIRE® 750TW/1500TW/2250TW must only be done by qualified and trained personnel, familiar with the product and its documentation (product datasheet, operating manual). Incorrect handling or use of the product can cause serious damage and unsafe situations (serious injuries and possible fatalities).
- Where on-site CGG replacement is necessary; a CGG will be provided as a replacement unit. **As this is not protected by an outer enclosure, further care must be taken** to handle it appropriately, especially after it is removed from its transport packaging.
- The qualified installer (distributor) has a decommissioning tool with which he can decommission the system manually.
- The system must cool down.
- The CGG's must be removed from the product,
- The replacement CGG's come with a special 4G UN box and a plastic bag. Put the used CGG's into the plastic bag and then into the 4G UN box.
- Call the distributor of the applicable country (see a list at [www.exxfire.com](http://www.exxfire.com)).
- The distributor will organize the collection of the used generators in the respective catchment area/region/country and takes care of the chemical waste disposal process on behalf of EXXFIRE.

## 6.3 Removal of defective product

### ⚠ WARNING

- Handling of the EXXFIRE® 750TW/1500TW/2250TW must only be done by qualified and trained personnel familiar with the product and its documentation (product datasheet, operating manual). Incorrect handling or use of the product can cause serious damage and unsafe situations (serious injuries and possible fatalities).
- The qualified installer (distributor) has a decommissioning tool with which he can decommission the system manually.

- The defective product must be removed and replaced with a new one.
- The defective product must be put in the box in which it was supplied (a 4G UN box) and returned to the distributor of the applicable country (see a list at [www.exxfire.com](http://www.exxfire.com)).
- The distributor decides whether to repair the product or supply a new product.

## 6.4 Removal CGG after an event of fire

### ⚠ WARNING

- Handling of the EXXFIRE® 750TW/1500TW/2250TW must only be done by qualified and trained personnel familiar with the product and its documentation (product datasheet, operating manual). Incorrect handling or use of the product can cause serious damage and unsafe situations (serious injuries and possible fatalities).
- If it's necessary to enter in the flooding zone, wear self-contained breathing apparatus for firefighting
- Ensure a good ventilation of the cabinet/server rack and the room before entering and resuming operational functions safely
- The system must cool down for at least 3 hours.
- The CGG's must be removed from the product and replaced with new ones.
- The replacement CGG's come with a special 4G UN box and a plastic bag. Put the used CGG's into the plastic bag and then into the 4G UN box.

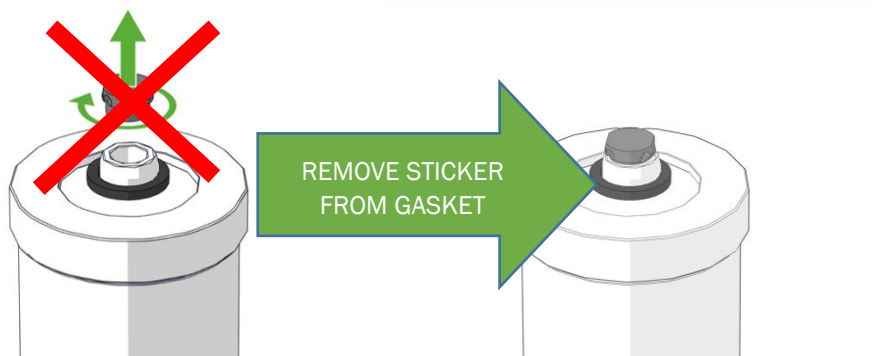


Figure 33 : CGG transport nozzle

- Call the distributor of the applicable country (see a list at [www.exxfire.com](http://www.exxfire.com)).
- The distributor will organize the collection and replacement of the used generators in the respective catchment area/region/country and takes care of the chemical waste disposal process on behalf of EXXFIRE.

## 7 TRANSPORTATION AND STORAGE

### 7.1 Transportation

For transportation the following applies:

#### ⚠ WARNING

- A damaged product (e.g., when dropped) results in a hazardous situation! Leakage of chemicals, toxic release is possible! See: 3.3 how to handle in a hazardous situation.

#### ⚠ WARNING

- Transport must comply to:

##### BEFORE DEPLOYMENT:

##### TRANSPORT INFORMATION

###### ADR/RID

UN-Number: 3268      Class: 9 Packaging group: III  
Proper shipping name: SAFETY DEVICES, electrically initiated

###### IMDG

UN-Number: 3268      Class: 9 Packaging group: III      EMS-No.: F-B, S-X  
Proper shipping name: SAFETY DEVICES, electrically initiated  
Marine pollutant: Yes

###### IATA

UN-Number: 3268      Class: 9 Packaging group: III  
Proper shipping name: SAFETY DEVICES, electrically initiated

##### AFTER DEPLOYMENT:

###### ADR/RID

UN-Number: 3543      Class: 4.3      Packaging group: Packaging group III  
Proper shipping name: ARTICLES CONTAINING A SUBSTANCE WHICH IN CONTACT WITH WATER EMITS FLAMMABLE GASES N.O.S.

###### IMDG

UN-Number: 3543      Class: 4.3      Packaging group: Packaging group III  
Proper shipping name: ARTICLES CONTAINING A SUBSTANCE WHICH IN CONTACT WITH WATER EMITS FLAMMABLE GASES N.O.S.  
Marine pollutant: No

###### IATA

UN-Number: 3543      Class: 4.3      Packaging group: Not shippable by Air  
Proper shipping name: Not shippable by Air

## 7.2 Storage

### CAUTION

Conditions for safe storage of EXXFIRE® 750TW/1500TW/2250TW

- Store in a clean and dry area, below 40 °C.
- Well ventilated
- Keep in own system packaging

Conditions for safe storage of Cool Gas Generators (CGG)

- Store in a clean and dry area, below 40 °C.
- Well ventilated
- Keep in own system packaging
- Keep in anti-static plastic bag to prevent static electricity from initiating gas production

Conditions for safe storage of used/end of life EXXFIRE® 750TW/1500TW/2250TW

- Store in a clean and dry area, below 40 °C.
- Well ventilated
- Keep in own system packaging

Conditions for safe storage of used or damaged Cool Gas Generators (CGG)

- Do not open the CGG at any time!
- Store in a clean and dry area, below 40 °C.
- Well ventilated
- Keep in own system packaging
- Keep in sealed anti-static plastic bag to prevent any water ingress
- Offer it to the waste disposal company as chemical waste (Na inside generator)

## 8 TROUBLESHOOTING

### ⚠ WARNING

- A **damaged product** (e.g., when dropped) results in a hazardous situation! Leakage of chemicals, toxic release is possible! See: 3.3 how to handle in a hazardous situation.

### ⚠ WARNING

- **No fire suppression or incomplete fire suppression:** see 3.8 for fire-fighting measures.

### NOTICE

- **Missing mounting material** during installation: contact the distributor in your country/area see [www.exxfire.com](http://www.exxfire.com) for a complete overview
- And in the case of **all other problems** which may occur contact EXXFIRE

### EXXFIRE

Keyserswey 30  
2201 CW Noordwijk  
The Netherlands  
Chamber of Commerce: 53952464  
VAT: NL.8510.87.425.B.01  
Tel: +31 85 4017970  
Info@exxfire.com

## 9 INSPECTION AND MAINTENANCE

This section gives requirements for inspection and maintenance of the product.

Table 8 shows the maintenance schedule for the product.

**Table 8 Maintenance schedule**

Task	Usage	Frequency
Replace battery	Normal	Once in 4 years
Replace generators	Normal	Once in 10 years
Replace thermal wire	Normal	Once in 10 years

### 9.1 Spare parts

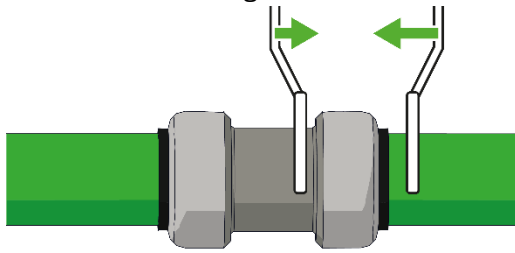
The following spare parts are available through the distributor:

- Cool Gas Generator's
- Battery
- Mounting kit
- Thermal wire

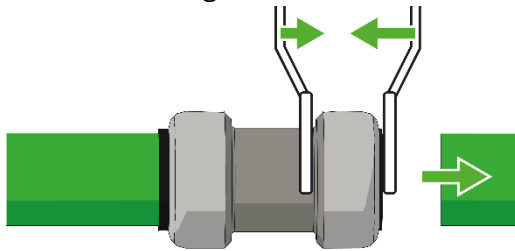
## 10 DECOMMISSIONING

Decommissioning of the system without it being used.

- De install the system and put it in its original packaging and return it to the Distributor of your catchment area/country/region.
- Use the pipe fitting disconnecting tool from the mounting kit to disassemble the pipe connections:
  1. Place the tool arms against the sides of a coupling.



2. Squeeze the tool and disassemble. The arms will move a plastic ring inward that releases the fitting.



- Call the distributor of the applicable country (see a list at [www.exxfire.com](http://www.exxfire.com)).
- The distributor will organize the collection of the used generators in the respective catchment area/region/country and takes care of the chemical waste disposal process on behalf of EXXFIRE.

## 11 DISPOSAL

### ⚠ WARNING

- A damaged product (e.g., when dropped) results in a hazardous situation! Leakage of chemicals, toxic release is possible! See: 3.3 how to handle in a hazardous situation.
- Treat product as chemical waste.
- Observe all federal, state, and local environmental regulations.
- Contact a licensed professional waste disposal service to dispose of this material.
- Contaminated packaging: dispose of as unused product.

The damaged CGG along with the collected spillage should be sealed in a bag and recycled as chemical waste.

In the case where a used CGG is damaged (after gas has been deployed from it), the remaining slack is highly reactive with water. The spilt material should be cleaned up according to the safety data sheet by trained personnel following local guidelines and legislation. Typically, this may include evacuating the immediate area, and wearing gloves and a dust mask while collecting the spilt material using a dry dustpan and brush. It is imperative that the spilt material does not come into contact with water. This could lead to a fire or explosive event.

The damaged CGG along with the collected spillage should be sealed in a bag and recycled as chemical waste.

### 11.1 Disposal at end-of-life product

#### ⚠ WARNING

After removal from the protected space:

- Handling of the EXXFIRE® 750TW/1500TW/2250TW must only be done by qualified and trained personnel, familiar with the product and its documentation (product datasheet, operating manual). Incorrect handling or use of the product can cause serious damage and unsafe situations (serious injuries and possible fatalities).
- The distributor will organize the collection of the used system/generators in the respective catchment area/region/country and takes care of the chemical waste disposal process on behalf of EXXFIRE.

### 11.2 Disposal at end-of-life CGG

#### ⚠ WARNING

- Handling of the EXXFIRE® 750TW/1500TW/2250TW must only be done by qualified and trained personnel, familiar with the product and its documentation (product datasheet,

operating manual). Incorrect handling or use of the product can cause serious damage and unsafe situations (serious injuries and possible fatalities).

- Where on-site CGG replacement is necessary; a CGG will be provided as a replacement unit. **As this is not protected by an outer enclosure, further care must be taken** to handle it appropriately, especially after it is removed from its transport packaging.
- The CGG's must be removed from the product,
- The replacement CGG's come with a special 4G UN box. Put the used CGG's into the plastic bag and then into the 4G UN box.
- Call the distributor of the applicable country (see a list at [www.exxfire.com](http://www.exxfire.com)).
- The distributor will organize the collection of the used generators in the respective catchment area/region/country and takes care of the chemical waste disposal process on behalf of EXXFIRE.

### 11.3 Disposal of defective product

#### ▲WARNING

- Handling of the EXXFIRE® 750TW/1500TW/2250TW must only be done by qualified and trained personnel familiar with the product and its documentation (product datasheet, operating manual). Incorrect handling or use of the product can cause serious damage and unsafe situations (serious injuries and possible fatalities).
- After removal, put the defective product in the box in which it was supplied (a 4G UN box) and return it to the distributor of the applicable country (see a list at [www.exxfire.com](http://www.exxfire.com)).

### 11.4 Disposal after an event of fire

#### ▲WARNING

- Handling of the EXXFIRE® 750TW/1500TW/2250TW must only be done by qualified and trained personnel, familiar with the product and its documentation (product datasheet, operating manual). Incorrect handling or use of the product can cause serious damage and unsafe situations (serious injuries and possible fatalities).
- Where on-site CGG replacement is necessary; a CGG will be provided as a replacement unit. **As this is not protected by an outer enclosure, further care must be taken** to handle it appropriately, especially after it is removed from its transport packaging.
- The system must cool down. Refer to the SDS (Appendix A)
- The CGG's must be removed from the product,
- The replacement CGG's come with a special 4G UN box and a plastic bag. Put the used CGG's into the plastic bag and then into the 4G UN box.
- Call the distributor of the applicable country (see a list at [www.exxfire.com](http://www.exxfire.com)).
- The distributor will organize the collection of the used generators in the respective catchment area/region/country and takes care of the chemical waste disposal process on behalf of EXXFIRE.

# 12 ENVIRONMENT

**NOTICE**

- See material data sheet, Appendix A.

**⚠ WARNING**

- Toxicity to
  - Fish: LC50 fish 96h = 3.92mg/kg
  - Daphnia/ other aquatic invertebrates: No data available
  - Persistence and degradability No data available
  - Bio accumulative potential No data available
  - Mobility in soil No data available
  - PBT and vPvB assessment No data available
  - Other adverse effects No data available

# A1 - SDS PRODUCT

## Safety Data Sheet

Product: Exxfire GEN1N2  
Issue: 05/11/2021  
Status: approved



Only prototypes of this article are available which are not for commercial use.

### 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

#### 1.1 Product identifiers

Product name : Exxfire GEN1N2

*This safety data sheet refers to the unused ExxFire GEN1N2 cool gas generator. Information concerning the device after it was deployed is given in a separate SDS.*

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Fire extinguishing device releasing nitrogen when activated

#### 1.3 Details of the supplier of the datasheet

Company: Exxfire B.V.  
Keyserwey 30  
2201 CW Noordwijk  
The Netherlands  
Telephone: +31 85 4017970  
E-mail address: info@exxfire.com

#### 1.4 Emergency telephone number

Emergency phone #: +31 30 274 88 88  
National Poisonings Information Centre  
(The Netherlands)

### 2 HAZARDS IDENTIFICATION

This article contains pyrotechnic components and chemical components that are hermetically sealed off from the environment. These cannot be released under normal or reasonably foreseeable conditions of use including proper disposal.

#### 2.1 Classification of the article

Safety device which is electrically initiated.

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2 Classification of the content

In normal use, the content of the device cannot be released.

## 2.3 Label elements

### 2.3.1 Article

Pictograms



GHS09

Signal word

Warning

### 2.3.2 Content

Pictograms



GHS06 GHS08 GHS09

Signal word

Toxic and harmful for human and environment

#### Precautionary statement(s)

P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces – No smoking
P273	Avoid release to the environment.
P370 + P380	In case of fire: Evacuate area.
P374	Fight fire with normal precautions from a reasonable distance.
P501	Dispose of contents/ container to an approved waste disposal plant.

#### Other Hazards

Risk of burn injuries in case of direct contact with the surface of the generator when heated by activation.

Unconsciousness due to inhaling nitrogen when generator has been activated.

Do not handle device shortly after ignition because of liquid sodium in device. Allow at least 4 hours to cool down.

---

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Article

The chemical part of the device contains the in this chapter mentioned components. Devices shall only be opened by destroying the whole entity. There is no risk to be exposed to the contents of the generator, except in cases of loss of tightness due to mechanical stress.

### 3.2 Content

Grain and top layer

Ingredient	CAS-number	Concentration (wt. %)	Symbols	H-phrases**
Sodium Azide	26628-22-8	70 – 80	GHS06, GHS08, GHS09	300-310- 373- 400-410
Cooling agent	XXXX-24-4 *	10 – 15	GHS06	301-315- 319- 335  EUH032
Metal	XXXX-37-1*	0 – 5	GHS07	315-319-335
Binder	XXXX-76-1*	5 – 10	GHS07	302-315-319- 335

\* Full CAS-numbers available upon request for enforcement purposes

Booster

Ingredient	CAS-number	Concentration (wt. %)	Symbols	H-phrases**
BKNO3	7440-42-8	100	GHS01, GHS07	203-302-318

\*\* For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4 FIRST AID MEASURES

### 4.1 Description of first aid measures

In general, in case of doubt or if symptoms persist, always call a physician. Never give anything by mouth to an unconscious person. In case of breaking or opening of a generator, evacuate people from the contaminated area and provide maximum ventilation.

### 4.2 Article

If inhaled Inhalation of gas after ignition:

- Bring victim to well ventilated area
- Ventilate area
- Consult a physician

### 4.3 Content

If inhaled Inhalation of dust:

- Bring victim to well ventilated area
- In case of difficult breathing, apply extra oxygen. Do **not** apply mouth to mouth or mouth to nose resuscitation. The poisoned person can eliminate highly toxic hydrazoic acid.
- Consult a physician

In case of skin contact

- Remove large grain particles
- Rinse with water for a minimum of 15 minutes
- Remove contaminated clothes and shoes
- Consult a physician

In case of eye contact

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- Rinse eyes with water for a minimum of 15 minutes
- Consult a physician

**If swallowed**

- Rinse mouth immediately with water in case the victim is conscious
- Induce vomiting
- In case of difficult breathing, apply extra oxygen. Do **not** apply mouth to mouth or mouth to nose resuscitation. The poisoned person can eliminate highly toxic hydrazoic acid.
- Consult a physician, and show this safety sheet

---

## **5 FIRE-FIGHTING MEASURES**

### **5.1 Extinguishing media**

Use dry powder or sand to extinguish fire. Do not use water!

### **5.2 Special hazards arising from the substance or mixture**

Nitrogen gas is released when device is ignited.

### **5.3 Special protective equipment for fire-fighters**

Wear self-contained breathing apparatus for firefighting if necessary (see 5.2).

---

## **6 ACCIDENTAL RELEASE MEASURES**

In case of breaking or opening of a generator, evacuate people from the contaminated area and provide maximum ventilation.

### **6.1 Personnel precautions, protective equipment and emergency procedure**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personnel protection see section 7 and 8

### **6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### **6.3 Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep and shovel. Do not flush with water. Keep in suitable, closed containers for disposal.

### **6.4 Reference to other sections**

For disposal see section 13.

---

## **7 HANDLING AND STORAGE**

The generators are hermetically sealed off from the environment. The content cannot be released under normal or reasonably foreseeable conditions of use including proper disposal if they are used in accordance with the manufacturer's recommendations – see Operating manual.

### **7.1 Precautions for safe handling**

The chemical agents within the generator are safely contained in normal condition of use. Do not open, drill, incinerate, crush, immerse, or expose to temperatures above the operating temperature range reported for products.

Avoid all possible contact with the grain inside the device.

## **7.2 Conditions for safe storage**

Store in a clean area, between -35oC and 85oC.

## **7.3 Incompatibility**

Do not store together with combustible or oxidizing substances or mixtures.  
Store away from water.

---

# **8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

## **8.1 Control parameters**

Not applicable.

## **8.2 Exposure control**

### **8.2.1 Article Appropriate engineering controls**

Wash hands before breaks and immediately after handling the product.

### **Personal protective equipment**

Wear safety shoes.



### **Respiratory protection**

When device has been activated use adequate respiratory protection.

### **Hand protection**

When activating CGG, strictly avoid contact with activated hot device. Use heat protective gloves when handling after activation.

### **Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice

---

# **9 PHYSICAL AND CHEMICAL PROPERTIES**

## **9.1 Article Appearance**

Form	Metal casing containing a solid, porous block
Color	Metal

## **9.2 Content**

### **Safety data**

Flammability	Content is flammable solid
Incompatibility	see 7.3
Decomposition gasses	When device ignites it releases nitrogen gas and traces of NOx, CO and CO2.

---

## 10 STABILITY AND REACTIVITY

### 10.1 Chemical stability

Stable under recommended storage conditions.

### 10.2 Conditions to avoid

Do not allow water to enter container

### 10.3 Materials to avoid

When activated device, avoid any contact with water. Avoid contact with combustible or oxidizing materials.

### 10.4 Hazardous decomposition products

Sodium slag

---

## 11 TOXICOLOGICAL INFORMATION

### 11.1 Toxicity of the content

Component	Acute toxicity (LD50, oral) (mg/kg)	Effects of exposure
Sodium azide	10 (20 at dermal absorption)	Nausea, headache, vomiting. Possible effects on the central nervous system.
Lithium fluoride	143	Shortness of breath, headache, nausea, vomiting, large doses of lithium ion have caused dizziness and prostration, and can cause kidney damage if sodium intake is limited. Dehydration, weight loss, dermatological effects, and thyroid disturbances.
Catalyst	-	Long term inhalation exposure to iron (oxide fume or dust) can cause siderosis.
Binder	For similar binders it ranges from 1500-3200	Prolonged or repeated inhalation of crystalline silica causes lung diseases.

### 11.2 Article

Nitrogen released gas is non-toxic, but it may cause asphyxiation hazard in an enclosed space.

#### Skin corrosion / irritation

Not applicable

#### Serious eye damage / eye irritation

Not applicable

#### Respiratory or skin sensitization

Not applicable

#### Germ cell mutagenicity

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Not applicable

**Carcinogenity**

Not applicable

**Reproductive toxicity**

Not applicable

**Specific target organ toxicity – single exposure**

Not applicable

**Specific target organ toxicity – repeated exposure**

Not applicable

**Aspiration hazard**

Not applicable

**Potential health effects**

Not applicable

**Signs and symptoms of exposure**

Not applicable

---

**12 ECOLOGICAL INFORMATION**

**12.1 Toxicity**

The content is toxic to the environment.

**12.2 Persistence and degradability**

No data available.

**12.3 Bioaccumulative potential**

No data available.

**12.4 Mobility in soil**

No data available.

**12.5 PBT and vPvB assessment**

No data available.

**12.6 Other adverse effects**

No data available.

---

**13 DISPOSAL CONSIDERATIONS**

**13.1 Product**

Treat product as chemical waste. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Used product contains Sodium.

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### 13.2 Contaminated packaging

Dispose of as unused product.

---

## 14 TRANSPORT INFORMATION

### ADR/RID

UN-Number: 3268 Class: 9 Packaging group: III  
Proper shipping name: SAFETY DEVICES, electrically initiated

### IMDG

UN-Number 3268 Class: 9 Packaging group: III EMS-No.: F-B, S-X  
Proper shipping name: SAFETY DEVICES, electrically initiated  
Marine pollutant: Yes

### IATA

UN-Number: 3268 Class: 9 Packaging group: III  
Proper shipping name: SAFETY DEVICES, electrically initiated

---

## 15 REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations/legislation specific for the article

No data available

### 15.2 Chemical safety assessment

No data available

---

## 16 OTHER INFORMATION

### 16.1 H and P sentences

P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces – No smoking
P273	Avoid release to the environment.
P370 + P380	In case of fire: Evacuate area.
P374	Fight fire with normal precautions from a reasonable distance.
P501	Dispose of contents/ container to an approved waste disposal plant.

H203	Explosive; fire, blast or projection hazard.
H300	Fatal if swallowed.
H301	Toxic if swallowed.
H302	Harmful if swallowed
H310	Fatal in contact with skin.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects
EUH032:	In contact with acids highly toxic gases are released

## **16.2 Further information**

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. ExxFire bv, shall not be liable for any damage resulting from handling or from contact with the above product.

---

## A2 - SDS ACTIVATED PRODUCT

### Safety Data Sheet

Product: Exxfire GEN1N2 Activated  
Issue: 08/11/2022  
Status: Approved



This material data sheet is under revision. Only prototypes of the article are available which are not for commercial use.

## 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

### 1.1 Product identifiers

Product name : Exxfire GEN1N2 Activated

*This safety data sheet refers to the Exxfire GEN1N2 cool gas generator after the device was deployed. Information concerning the unused device is given in a separate SDS.*

An activated Cool Gas Generator contains inside dry material consisting of sand, sodium, iron oxide and various lithium and fluoride containing compounds.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses      Product is a residual/conversion product after activation of a fire extinguishing device releasing nitrogen. Product contains residual substances and a polluted sand filter inside.

### 1.3 Details of the supplier of the datasheet

Company	Exxfire B.V. Keyserwey 30 2201 CW Noordwijk The Netherlands
Telephone	+31 85 4017970
E-mail address	info@exxfire.com

### 1.4 Emergency telephone number

Emergency phone #      +31 30 274 88 88  
National Poisonings Information Centre  
(The Netherlands)

## 2 HAZARDS IDENTIFICATION

The activated article contains sand, sodium slag and various other toxic and non-toxic components. Through normal or reasonably foreseeable conditions of use and handling – including proper disposal – these components cannot be released.

### 2.1 Classification of the article

Wastes are exempt from registration in accordance with REACH regulation. There is no registration number available

Article containing dangerous goods.

### 2.2 Classification of the content

In normal use, the content of the device cannot be released

## 2.3 Label elements

### 2.3.1 Article

Pictograms



GHS09

Signal word

Warning

### 2.3.2 Content

Pictograms



GHS02



GHS05



GHS06

Signal word

Danger

#### Precautionary statement(s)

P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces – No smoking
P222	Do not allow contact with air
P223	Keep away from any contact with water, because of violent reaction and possible flash fire.
P232	Protect from moisture.
P234	Keep only in original container.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338	IF IN EYES: Remove contact lenses, if present and easy to do. Rinse cautiously with water for several minutes.
P374	Fight fire with normal precautions from a reasonable distance.
P501	Dispose of contents/ container to an approved waste disposal plant.

#### Other Hazards

Risk of burn injuries in case of direct contact with the surface of the generator when heated by activation.

Let the device cool down for at least 4 hours after activation.

Do not handle device shortly after ignition because of liquid sodium in device

---

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Article

The chemical part of the device contains the in this chapter mentioned components. Devices shall only

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be opened during proper disposal.

There is no risk to be exposed to the contents of the generator, except in cases of loss of tightness due to mechanical stress.

### 3.2 Content

Grain and top layer

Ingredient	CAS-number	Concentration (wt %)	Symbols	H-phrases**
Sodium	7440-23-5		GHS02 GHS05	260 – 314
Cooling agent	XXXX-24-4 *		GHS06	301–315– 319-335
Iron compounds	XXXX-37-1*		GHS07	315-319-335
Potassium compounds			GHS05	302-314-332
Silica compounds				319 – 335 – 373

\* Full CAS-numbers available upon request for enforcement purposes

\*\*For the full text of the H-Statements mentioned in this Section, see Section 16.

---

## 4 FIRST AID MEASURES

### 4.1 Description of first aid measures

In general, in case of doubt or if symptoms persist, always call a physician. Never give anything by mouth to an unconscious person. In case of breaking or opening of a generator, evacuate people from the contaminated area and provide maximum ventilation.

#### If inhaled

- Bring victim to well ventilated area.
- Let victim rest in a half-seated position.
- Immediately consult a physician.

#### In case of skin contact

- Remove contaminated clothes.
- Remove metal particles with a dry forceps.
- Rinse with water for a minimum of 15 minutes.
- Immediately consult a physician.

#### In case of eye contact

- Rinse immediately with plenty of water for at least 15 minutes.
- Remove metal particles with a dry forceps, if possible.
- Immediately consult a physician.

#### If swallowed

- Rinse mouth immediately with water, in case the victim is conscious
- Let victim rest.
- DO NOT induce vomiting.
- DO NOT let victim drink.
- Immediately consult a physician.

---

## 5 FIRE-FIGHTING MEASURES

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### **5.1 Extinguishing media**

When content is not exposed, no risks or injuries are expected. Fire-fighting measures are based on contact with the content after breaking or opening of an activated device.

Use dry powder or sand to extinguish fire. **Do not use water!**

### **5.2 Special hazards arising from the substance or mixture**

Highly flammable in presence of moisture. Hydrogen gas may be formed.

Flammable in presence of open flames and sparks, and in the presence of heat. In case of fire toxic gases will be emitted.

### **5.3 Special protective equipment for fire-fighters**

Wear self-contained breathing apparatus for firefighting if necessary (see 5.2).

---

## **6 ACCIDENTAL RELEASE MEASURES**

In case of breaking or opening of a generator, evacuate people from the contaminated area and provide maximum ventilation. Eliminate all sources of ignition.

### **6.1 Personnel precautions, protective equipment and emergency procedure**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personnel protection see section 7 and 8.

### **6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### **6.3 Methods and materials for containment and cleaning up**

Stop further leakage or spillage if safe to do so. Do not touch spilled material. Cover with mineral oil, dry earth, sand or other non-combustible material. Eliminate all ignition sources.

Call for assistance on disposal. Pick up and arrange disposal without creating dust. Sweep and shovel. Do not flush with water. Keep under mineral oil in suitable closed container for disposal. Store container in a well-ventilated area away from water or moisture and other chemicals.

### **6.4 Reference to other sections**

For disposal see section 13.

---

## **7 HANDLING AND STORAGE**

The generators are hermetically sealed off from the environment. The content cannot be released under normal or reasonably foreseeable conditions of use including proper disposal if they are used in accordance with the manufacturer's recommendations – see Operating manual.

### **7.1 Precautions for safe handling**

The chemical agents within the generator are safely contained in normal condition of use. Do not open, drill, incinerate, crush, immerse, or expose to temperatures above the operating temperature range reported for products.

Avoid all possible contact with the content inside the device.

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## 7.2 Conditions for safe storage

Store in a clean area, between 15 oC and 40oC.

## 7.3 Incompatibility

Do not store together with combustible or oxidizing substances or mixtures.  
Store away from water and sources of heat

---

# 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

## 8.1 Control parameters

Not applicable.

## 8.2 Exposure control

### 8.2.1 Article Appropriate engineering controls

Wash hands before breaks and immediately after handling the product.

### Personal protective equipment

Wear safety shoes.



### Eye/face protection

Wear appropriate protective eyeglasses or chemical safety glasses.

### Respiratory protection

When exposure limits are exceeding or if irritation or other symptoms are experienced, use an adequate respiratory protection (combination filter B-P3, color code grey-white). Use insulating device independent breathing apparatus for concentrations above the usage limits for filter devices, for oxygen concentrations below 17% volume, or in circumstances which are unclear.

### Hand protection

Within 4 hours after activating CGG, strictly avoid contact with activated hot device. Use heat protective gloves when handling after activation.

### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice

---

# 9 PHYSICAL AND CHEMICAL PROPERTIES

## 9.1 Article Appearance

Form	Metal casing containing a solid, porous block
Color	Metal

## 9.2 Content

### Safety data

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Flammability	Content is flammable solid, contains sodium slag
Incompatibility	see 7.3
Decomposition gasses	Small traces of combustion gasses (e.g. CO, CO <sub>2</sub> , NO <sub>x</sub> , SO <sub>2</sub> traces < 1%).

## 10 STABILITY AND REACTIVITY

### 10.1 Chemical stability

Stable under recommended storage conditions.

### 10.2 Conditions to avoid

Do not allow water to enter container

### 10.3 Materials to avoid

Avoid any contact with water.  
Avoid contact with combustible or oxidizing materials.

### 10.4 Hazardous decomposition products

Content contains sodium slag.

Highly reactive with oxidizing agents, acids, moisture. Content reacts violently with water to emit flammable (hydrogen) and toxic gases.

See section 9.2.

## 11 TOXICOLOGICAL INFORMATION

### 11.1 Toxicity of the content

Component	Acute toxicity (LD50, oral) (mg/kg)	Effects of exposure
Sodium	No information available	Product is a corrosive material. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.
Lithium fluoride	143	Shortness of breath, headache, nausea, vomiting, large doses of lithium ion have caused dizziness and prostration, and can cause kidney damage if sodium intake is limited. Dehydration, weight loss, dermatological effects, and thyroid disturbances.
Silica compounds	No information available	Prolonged or repeated inhalation of crystalline silica causes lung diseases.
Potassium compounds	No information available	

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## **11.2 Article**

When used properly, no health effects are expected.

---

## **12 ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

The content is toxic to the environment.  
Sodium slag is highly reactive to water.

### **12.2 Persistence and degradability**

No data available.

### **12.3 Bioaccumulative potential**

No data available.

### **12.4 Mobility in soil**

No data available.

### **12.5 PBT and vPvB assessment**

No data available.

### **12.6 Other adverse effects**

No data available.

---

## **13 DISPOSAL CONSIDERATIONS**

### **13.1 Product**

Treat product as chemical waste. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Used product contains Sodium.

### **13.2 Contaminated packaging**

Dispose of as unused product.

---

## **14 TRANSPORT INFORMATION**

### **ADR/RID**

UN-Number: 3543      Class: 4.3      Packaging group: III  
Proper shipping name: ARTICLES CONTAINING A SUBSTANCE WHICH IN CONTACT WITH WATER EMITS  
FLAMMABLE GASES N.O.S

### **IMDG**

UN-Number 3543      Class: 4.3      Packaging group: III  
Proper shipping name: ARTICLES CONTAINING A SUBSTANCE WHICH IN CONTACT WITH WATER EMITS  
FLAMMABLE GASES N.O.S

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**IATA**

Transport by air is forbidden in both passenger and cargo aircraft.

---

**15 REGULATORY INFORMATION**

**15.1 Safety, health and environmental regulations/legislation specific for the article**

No data available

**15.2 Chemical safety assessment**

No data available

---

**16 OTHER INFORMATION**

**16.1 H and P sentences**

P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces – No smoking
P222	Do not allow contact with air
P223	Keep away from any contact with water, because of violent reaction and possible flash fire.
P232	Protect from moisture.
P234	Keep only in original container.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338	IF IN EYES: Remove contact lenses, if present and easy to do. Rinse cautiously with water for several minutes.
P374	Fight fire with normal precautions from a reasonable distance.
P501	Dispose of contents/ container to an approved waste disposal plant.
EUH014	Reacts violently with water
EUH032:	In contact with acids highly toxic gases are released
H260	In contact with water releases flammable gases which may ignite spontaneously.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure

**16.2 Further information**

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. ExxFire shall not be liable for any damage resulting from handling or from contact with the above product.

---

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## B –ADR CERTIFICATION

DSC-16-161181-07987A  
PNEO-AgA 353/13

**INERIS**

Verneuil-en-Halatte September 01, 2016

### CERTIFICATE

- 1- This certificate, issued by INERIS, an official laboratory in charge of testing explosive products, approves the classification of items listed hereafter, according to the recommendations of the United Nations Committee of Experts on the Transport of Dangerous Goods as published in UN Documents ST/SG/AC.10/1/Rev.19 and ST/SG/AC.10/11/Rev.6.
- 2- This certificate is based on the request of the Company APP - AEROSPACE PROPULSION PRODUCTS B.V., Westelijke Randweg 25, 4791 RT KLUNDERT - The Netherlands, dated March 17, 2016.
- 3- Item(s): nitrogen pyrotechnic generator for fire extinguishment reference CGG 750
- 4- Proper shipping name and UN number:  
SAFETY DEVICES, electrically initiated - UN 3268
- 5- UN classification: Class 9  
The classification is based on a technical file describing the products and their packaging, and on tests performed on representatively packed items.
- 6- Packing method:  
The generators, provided with a diffuser cap, are placed and chocked in a fibreboard box (outer packaging) - UN code 4G - of external dimensions 460 x 360 x 330 mm<sup>3</sup>.
- 7- This certificate enables to implement the provisions in the regulations on the transport of dangerous goods: ADR, RID, IMDG, ICAO, ADN.
- 8- Expiration date:  
This certificate cancels and replaces the certificate reference DSC-16-161181-07329A, PNEO-AgA 353/10 dated July 29, 2016. It remains valid until withdrawn or superseded by a revised certificate.



Certified by:

C. MICHOT  
Chief Certification Officer

Parc Technologique Alata BP 2 F-60550 Verneuil-en-Halatte  
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Institut national de l'environnement industriel et des risques  
Établissement public à caractère industriel et commercial - RCS Senlis B 381 984 921 - Siret 381 984 921 00019 - APE 7120B

Return address: P.O. Box 480, 2501 CL Den Haag, The Netherlands

Exxfire B.V.  
Attn. Mr. E. Verver  
Keyserswey 30  
2201 CW NOORDWIJK  
THE NETHERLANDS



**Subject**  
ADR classification spent gas generators

Dear Mr. Verver,

This document supersedes document 17EM/0246 dated April 17<sup>th</sup> 2017 as a consequence of changes in regulations.

This document is to declare that your products, gas generators, after use contain dangerous goods if division 4.3 and therefore should be classified as Division 4.3; UN3543; "ARTICLES CONTAINING A SUBSTANCE WHICH IN CONTACT WITH WATER EMITS FLAMMABLE GASES, N.O.S.".

In ADR marginal 1.1.3.6.3 this UN number is assigned to Transport Category 4 with an unlimited maximum total quantity per transport unit.

The spent gas generators can be transported in any (private) vehicle provided:

- they are packed in UN approved packagings;
- a transport document accompanies the shipment; and
- at least one portable fire extinguisher for the inflammability classes A, B and C, with a minimum capacity of 2 kg dry powder (or an equivalent capacity for any other suitable extinguishing agent) is present in the vehicle.

For sea transport (according to IMDG code) it is stated that this UN number "shall be transported under conditions approved by the competent authority".

Transport by air is forbidden in both passenger and cargo aircraft.

Yours faithfully,

Valid Signed by Ed de Jong  
on 2022-04-14 15:19:48

E.G. de Jong  
classification expert

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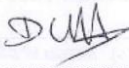
T +31 88 866 80 00

**Date**  
14 April 2022

**Our reference**  
22EM/0201

The General Terms and Conditions for commissions to TNO, as filed with the Registry of the District Court in the Hague and with the Chamber of Commerce and Industry in The Hague, shall apply to all commissions to TNO. Our General Terms and Conditions are also available on our website [www.tno.nl](http://www.tno.nl). A copy will be sent upon request.

## C – EC DECLARATION

		<b>INSTITUT NATIONAL DE L'ENVIRONNEMENT INDUSTRIEL ET DES RISQUES</b> <i>NATIONAL INSTITUTE FOR INDUSTRIAL ENVIRONMENT AND RISK</i> <small>- arrêté du Ministère de l'écologie, du développement durable et de l'énergie du 13 juillet 2015, paru au JORF du 25 juillet 2015 -</small>	
<b>ATTESTATION D'EXAMEN UE DE TYPE - MODULE B</b> <i>EU-TYPE EXAMINATION CERTIFICATE - MODULE B</i>			
NUMERO D'ENREGISTREMENT : <i>REGISTRATION NUMBER:</i>	<b>0080.P1.16.0106</b>	INDICE : <i>ISSUE:</i>	<b>0</b>
NOM DU (DES) PRODUIT(S) : <i>NAME OF THE PRODUCT(S)</i>	<b>Nitrogen pyrotechnic generator for fire extinguishment reference CGG 750</b>		
TYPE GÉNÉRIQUE (ET CATÉGORIE) : <i>GENERIC TYPE (AND CATEGORY):</i>	<b>Générateur de gaz, catégorie P1</b> <i>Gas generator, category P1</i>		
SOUS-TYPE : <i>SUB-TYPE:</i>	<b>Produit pyrotechnique de lutte contre le feu</b> <i>Pyrotechnic fire-fighting device</i>		
TITULAIRE DE L'ATTESTATION : <i>HOLDER OF THE CERTIFICATE</i>	<b>AEROSPACE PROPULSION PRODUCTS B.V.</b> Westelijke Randweg 25 4791 RT KLUNDERT - The Netherlands		
<p>L'Institut National de l'Environnement Industriel et des Risques (INERIS), notifié sous le numéro d'identification 0080 conformément à l'article 21 de la directive 2013/29/UE du Parlement Européen et du Conseil du 12 juin 2013, et accrédité par le COFRAC sous le numéro 5-0045 dans le cadre de l'activité de certification de produits et services (portée disponible sur <a href="http://www.cofrac.fr">www.cofrac.fr</a>), atteste que le produit désigné ci-avant est reconnu conforme aux exigences essentielles de sécurité telles que définies en annexe I de la directive 2013/29/UE. Les procédures de certification sont disponibles sur <a href="http://www.ineris.fr">www.ineris.fr</a>.</p> <p><i>The National Institute for Industrial Environment and Risk (INERIS), notified with the identification number 0080 in accordance with the article 21 of the directive 2013/29/EU of the European Parliament and of the Council of 12 June 2013, and accredited by COFRAC under number 5-0045 for certification of products and services (scope available on <a href="http://www.cofrac.fr">www.cofrac.fr</a>), testifies that the above named product is recognized to conform to the essential safety requirements as defined in annex I of the directive 2013/29/EU. The certification procedures are available on <a href="http://www.ineris.fr">www.ineris.fr</a>.</i></p> <p>Toute modification de la composition et/ou de la conception du produit doit être communiquée à l'INERIS. <i>Any change of the composition and/or the design of the product have to be communicated to INERIS.</i></p>			
		<p style="text-align: right;">Verneuil-en-Halatte, 11 octobre 2016  Le Directeur Général de l'INERIS  <i>The Chief Executive Officer of INERIS</i>  Par délégation, le Responsable Pôle Certification  <i>By delegation, the Certification Division Manager</i></p>	
 <p>Parc Technologique ALATA - B.P. N° 2  F-60550 Verneuil-en-Halatte  Tél : +33 (0)3 44 55 66 77 - Fax : +33 (0)3 44 55 66 99  SIRET 381 984 921 00019 - APE 7120B  Institut national de l'environnement industriel et des risques</p>		 D. CHARPENTIER	

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tél +33(0)3 44 55 66 77 fax +33(0)3 44 55 66 99 internet [www.ineris.fr](http://www.ineris.fr)

Institut national de l'environnement industriel et des risques

Établissement public à caractère industriel et commercial - RCS Siretis B 381 984 921 - Siret 381 984 921 00019 - APE 7120B

**INSTITUT NATIONAL DE L'ENVIRONNEMENT INDUSTRIEL ET DES RISQUES**

NATIONAL INSTITUTE FOR INDUSTRIAL ENVIRONMENT AND RISK

- arrêté du Ministère de l'écologie, du développement durable et de l'énergie du 13 juillet 2015, paru au JORF du 25 juillet 2015 -

**ANNEXE A L'ATTESTATION D'EXAMEN UE DE TYPE - MODULE B**

APPENDIX TO THE EU-TYPE EXAMINATION CERTIFICATE - MODULE B

NUMERO D'ENREGISTREMENT : **0080.P1.16.0106**  
REGISTRATION NUMBER:INDICE : **0**  
ISSUE:**A1 - LISTE DES VARIANTES / LIST OF VARIANTS:****Nitrogen pyrotechnic generator for fire extinguishment reference CGG 750****A2 - DESCRIPTION DU PRODUIT / PRODUCT DESCRIPTION:**

Identification générale / General identification:

	CGG 750
Dimensions extérieures / external dimensions	Forme générale cylindrique de diamètre 145 mm et de longueur 379 mm environ General cylindrical shape of diameter 145 mm and of length 379 mm approximately
Enveloppe principale / main case	Alliage d'aluminium / aluminium alloy
Allumeur / igniter	Ref. PTMS V100 from TRW
Charge relais / booster charge	15 g de BKNO <sub>3</sub> / 15 g of BKNO <sub>3</sub>
Charge principale / main charge	1,85 kg de composition à base de Fe <sub>2</sub> O <sub>3</sub> and NaN <sub>3</sub> 1.85 kg of composition based on Fe <sub>2</sub> O <sub>3</sub> and NaN <sub>3</sub>
Masse brute / gross weight	~ 7,5 kg

Caractéristiques de l'allumeur / Characteristics of igniter:

- résistance électrique / electrical resistance : 1,7 to 2,3 Ω
- courant de non feu / no fire current : 0,4 A / 1W / 10 s

**A3 - CONDITIONS PARTICULIÈRES POUR LA MANIPULATION, L'ASSEMBLAGE ET L'UTILISATION /**

PARTICULAR CONDITIONS FOR HANDLING, ASSEMBLING AND USE:

Comme spécifié par le fabricant / As specified by the manufacturer

- durée de vie / shelf life : 7 ans / years
- température d'utilisation / temperature for use : - 25°C / + 65°C
- température de stockage / temperature for storage : conformément à la réglementation locale (voir le manuel de l'utilisateur) / in accordance with local regulations (see user's manual)
- autre / other : le générateur doit toujours être fourni avec son bouchon diffuseur monté / the generator must always be provided with its diffuser cap mounted

**A4 - SITE(S) DE FABRICATION / MANUFACTURING SITE(S):****AEROSPACE PROPULSION PRODUCTS B.V.**  
Westelijke Randweg 25  
4791 RT KLUNDERT - The Netherlands**A5 - DOCUMENT(S) D'ÉVALUATION ASSOCIÉ(S) / ASSOCIATED ASSESSMENT DOCUMENT(S):**Référence / Reference  
**DSC-16-161181-09463A, PNEO-AgCE 85/6**Date  
**2016-10-11****A6 - RÉFÉRENTIEL(S) / REFERENCE SCHEME(S):**

Un échantillon des produits ci-avant a été évalué et testé avec succès conformément aux normes suivantes / A sample of the products above was assessed and tested according to the following standards:

- Directive 2013/29/EU
- EN 16263 series or equivalent.

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tél +33(0)3 44 55 66 77 fax +33(0)3 44 55 66 99 internet www.ineris.fr

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## D – DATASHEET BATTERY



## E – DECLARATION OF CONFORMITY



### EU DECLARATION OF CONFORMITY

1. **PRODUCT MODEL:** EXXFIRE Thermal Wire® 750/1500/2250

2. **Name and address of the manufacturer**

EXXFIRE B.V.  
Keyserswey 30  
2201 CW Noordwijk  
The Netherlands  
Tel: +31 85 4017970  
info@exxfire.com

3. **This declaration of conformity is issued under the sole responsibility of the manufacturer.**

4. **Object of the declaration:**

Equipment: INTEGRATED FIRE DETECTION AND SUPPRESSION SYSTEM  
Brand name: EXXFIRE®  
Model/type: EXX-750TW, EXX-1500TW, EXX-2250TW

5. **The object of the declaration described above is in conformity with the relevant Union harmonization legislation:**

Pyrotechnic Directive 2013/29/EU;  
Low Voltage Directive (LVD) 2014/35/EU;  
Electromagnetic Compatibility Directive (EMC) 2014/30/EU;  
Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU.

6. **References to the relevant harmonized standards used or references to the other technical specifications in relation to which conformity is declared:**

Pyrotechnic Directive: EN 16236 series or equivalent.  
EU-type examination -Module B – registration number: 0080.P1.16.0106 (Notified body: KIWA).

LVD: EN/IEC 62368-1:2014/A11:2017

EMC: EN 50130-4:2011/A1:2014  
EN 61000-6-3/A1:2011

7. **Signed for and on behalf of:**

At Noordwijk 2<sup>nd</sup> September, 2020 .

Manufacturer: EXXFIRE B.V.

Mr. Harm J. C. Botter, CEO

## F – UL LISTING LHDC



ONLINE CERTIFICATIONS DIRECTORY

### UTHV.S24081 Heat-actuated Devices for Special Application

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#### Heat-actuated Devices for Special Application

[See General Information for Heat-actuated Devices for Special Application](#)

**PATOL LTD**  
RECTORY RD  
PADWORTH COMMON, BERKSHIRE RG7 4JD UNITED KINGDOM

S24081

**fixed temperature line type heat detector cable for indoor/outdoor use**, Models 700-090 and 700-070. Intended to be connected to a UL Listed control unit. Model 700-090 temperature ratings are: 90° C (194° F) maximum - 80° C (176° F) minimum alarm temperature. Model 700-070 temperature ratings are: 70° C (158° F) maximum - 60° C (140° F) minimum alarm temperature.

Last Updated on 2006-03-21

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