LOXXER

LITHIUM BATTERY STORAGE

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WE ARE LOXXER

YOUR EXPERTS IN LITHIUM-ION BATTERY SAFETY

LOXXER consists of a team of specialized professionals with expertise in fire safety related to lithium-ion batteries and the challenges this issue presents.

Our strength lies in our accessibility and the fact that every member of our team is dedicated to and specialized in lithium-ion battery safety. This ensures that our customers receive expert advice and support whenever they need it.



Johan Pillen
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Co-founder/sales



Alexander Deceuninck
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Benoit Muylle
Co-founder



Pedro Demets
CEO



Heleen Favorel
Administration



Alexander Smets
Operational manager



LOXXER AS PIONEER

MAIN OFFICE BELGIUM

FOUNDED 4 YEARS FAMILY BUSINESS

PIONEER IN LI-ION FIRE SOLUTIONS

EXPERTISE IN LI-ION BATTERY SAFETY

COMMITTED TO SUSTAINABILITY

INTERNATIONAL NETWORK WORLDWIDE

FROM A SINGLE IDEA TO A EUROPEAN PRESENCE

Johan on LOXXER's growth and a chaging market

“ When we started LOXXER three years ago, there was hardly any legislation concerning lithium-ion batteries. Yet, we already felt something had to change. The risks were clear, but the right solutions were missing. Since then, the growing number of incidents, fires, and business damages has accelerated awareness. Across Europe, new standards and regulations are being introduced to improve battery safety.

It's great to see that fire safety now has a permanent place in every sector. And honestly? We're proud to have been part of that evolution from the very beginning. ”

JOHAN PILLEN - FOUNDER

MODERN DAY PHENOMENON

THE RISE OF LITHIUM BATTERY USE

Lithium-ion batteries have seen widespread adoption due to their adaptability and efficiency. Their surge can be attributed to:

- **WIRELESS TECHNOLOGIES**
  From wireless headphones to cordless tools, lithium batteries power our wireless world, offering mobility and convenience.

- **PORTABLE ELECTRONICS**
  Lithium batteries enable smaller, more powerful devices like smartphones and laptops, meeting our demand for longer battery life.

- **ELECTRIC VEHICLES**
  With their energy storage capacity, lithium-ion batteries drive the rise of electric vehicles, reducing carbon emissions.

- **RENEWABLE ENERGY**
  These batteries play a key role in storing energy from solar and wind sources for sustainable power.

- **TECHNOLOGICAL ADVANCEMENTS**
  Continuous innovation enhances performance, safety, and cost-effectiveness, ensuring lithium batteries remain central to our connected, sustainable future.



BATTERY SAFETY

THERMAL RUNAWAY

Thermal runaway is a critical concern in lithium-ion batteries. It occurs when a battery cell's temperature rises uncontrollably, often leading to a chain reaction within the battery pack. This self-sustaining increase in temperature can result from various factors, such as overcharging, physical damage, or manufacturing defects. The heat generated can cause a catastrophic failure, potentially resulting in fires or explosions. It's one of the key challenges in lithium-ion battery safety that Loxxer is committed to addressing.

THE LEADING CAUSES OF BATTERY FIRES

In today's world, batteries are an integral part of our daily lives, powering everything from our smartphones to electric vehicles and renewable energy solutions. While these compact energy sources offer convenience, their incredible power also brings a potential safety hazards, particularly in the form of battery fires.

These following factors can lead to battery fires and thermal runaway:

- Overcharging
- Physical Damage
- Manufacturing Defects
- External Heating
- Overdischarging
- Short Circuits
- Low-Quality Chargers
- Poor Battery Handling


HIGH OUTPUT
M12
RAPIDCHARGER

KNOW YOUR RISK

> “LI ION BATTERIES ARE EVERYWHERE, WHERE TO BEGIN?”

THE IMPORTANCE OF A RISK-ANALYSES
Li-ion batteries power our daily tools, phones, phones, laptops, powertools, ...
Before taking preventive action, it’s essential to analyse where the fire risk and potential damage are highest!

What to take into consideration?

- **BATTERY LOCATIONS:** Where are batteries stored and charged?
- **CHARGING PRACTICES**: Are batteries left charging unattended or overnight?
- **QUANTITIES**: How many batteries are stored per location?
- **BATTERY CONDITIONS**: Are batteries exposed to extreme cold or heat?
- **SURROUNDINGS:** Are there flammable materials or liquids nearby?
- **PROTECTION MEASURES**: Is there smokedetection in the area?
- **EMERGENCY READINESS:** Is there a procedure available in case of thermal runaway?



> “ Our tools get roughly handled during the day and we need them fully charged and ready to go the next morning. Hearing about a colleague’s workshop fire, we realised our own tools could pose the same risk. During the day they fall, get overheated, and are treated roughly and at night, they’re left charging unsupervised to be ready for the next day.
> Thinking about the total value of our tools, vehicles, and building that could be lost in a single night made us look for a safe solution. ”
>
> **NICK CASTELEYN, GROUNDWORK SPECIALIST**

OVERNIGHT CHARGING: THE CHALLENGE FOR CONSTRUCTION AND GREEN SERVICES

During the day, tools in construction and landscaping go through a lot: they fall, overheat, and face harsh outdoor conditions. At night, those same batteries are often charged without protection or supervision, to make sure everything’s ready for the next workday. A batteryfire at night does not only effect the equipment, but puts it’s entire company’s capital and the building that holds it at risk.

REGULATIONS AND NORMS



WHAT IS THE PGS37-2?

PGS37-2 is a guideline for the storage and handeling of hazardous substances in the Netherlands, including lithium-ion batteries. The standard sets specific requirements for storage in cabinets and containers, depending on the weight of the batteries. The goal is to ensure safe charging and storage conditions and prevent fire or explosions.



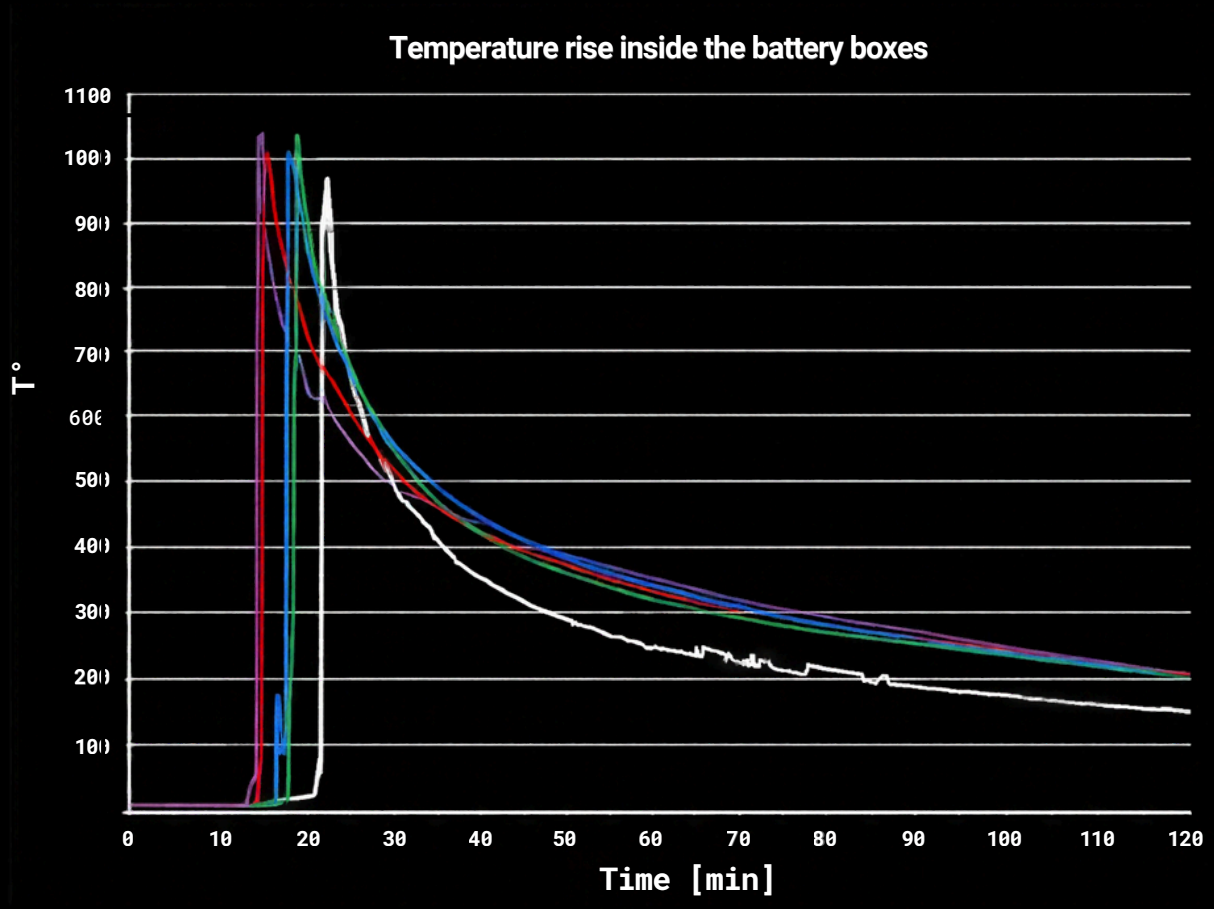
THE VDMA, A IMPORTANT NEW NORM

VDMA (Verband Deutscher Maschinen- und Anlagenbau) is the German association for mechanical and plant engineering. This organization sets standards and guidelines for industrial products, including fire-protected storage solutions for lithium-ion batteries. The VDMA 24994:2024-08 standard outlines test requirements to assess the safety of battery-cabinets in case of thermal runaway and external fire.

WHY IS THE VDMA SO IMPORTANT?

Lithium-ion batteries can enter a dangerous state of thermal runaway, potentially causing fires, explosions, and the release of toxic gases. The VDMA test verifies whether cabinets can withstand such situations, providing an extra layer of safety for businesses working with lithium-ion batteries. The VDMA standard is also expected to form the basis for an upcoming European standard.

VDMA 24994 TEST



THE LOXXER CABINET TEST IN ACTION

The LOXXER cabinet is placed in the fire-resistant and explosion-proof room of the test lab. Sensors are installed on the cabinet to measure the external temperature. Batteries are then placed inside the cabinet, both at the level wære: the battery will be triggered into thermal runaway and at the levels above and below. This setup ensures an accurate evaluation of heat development and potential fire spread.

THE VDMA AND LOXXER

The test was conducted by GRYFILAB, one of the few testing institutes in Europe accredited by ECB-S to perform VDMA 24994 tests. Thanks to their exærtise and independent certification, the reliability and quality of the test results are further embäsized.



The following criteria are assessed:

- The doors must remain closed during and after the test.
- No visible flames or projectiles may escape from the cabinet.
- The temperature increase outside the cabinet must not exceed the specified limit.
- There must be no fire spread between the different levels.

Visual inspections are conducted to document any deformations or damage. If propagation occurs, the test is repeated with an optimized cabinet configuration.
The LOXXER cabinet successfully met the VDMA requirements on the first test, confirming the exceptional quality and safety of our cabinet.

Ask for more information about our VDMA-cabinet at a LOXXER-office or dealer in your area.

CONNECTION FOR AIR EXTRACTION SYSTEM

SMOKE- & TEMPERATURE-DETECTION

OVERPRESSURE SYSTEM

CHARGING STRIPS

FIRE-RESISTANT ADJUSTABLE SHELVES

MULTI-POINT LOCKING SYSTEM





AUDIOVISUAL ALARM

CONNECTABLE TO FIRE-ALARM

ACTIVE VENTILATION

AEROSOL SUPPRESSION SYSTEM (OPTION)

SELF-CLOSING DOORS

ADJUSTABLE FEET

VDMA 24994 APPROVED

STORAGE SOLUTIONS

- CABINETS
- LOCKERS
- CONTAINERS

LOXXER's mission is simple yet vital: to provide you with secure and efficient solutions for charging and storing batteries. Our range of products is designed to meet the needs of various industries, from electric bikes and e-scooters to drones, power tools, and garden equipment. With LOXXER, you can charge and store your lithium-ion batteries with confidence, knowing that safety and innovation are at the core of all our solutions.


LOXXER
LOXXER

LITHIUM CABINETS

MAXIMIZE EFFICIENCY AND SAFETY WITH LOXXER CABINETS

LOXXER cabinets provide the ultimate solution for organized and secure storage for your lithium batteries. Say goodbye to lost time and money due to misplaced or discharged batteries. With LOXXER, you'll always have your fully charged batteries available in one convenient location when you need them most.

Key Benefits of LOXXER Cabinets:

- **ANTI-THEFT PROTECTION**
  Keep your valuable batteries safe and secure at all times.
- **ORGANIZED STORAGE**
  No more clutter of wires or batteries lying around, each one has its designated place.
- **INCREASED EFFICIENCY**
  Eliminate delays caused by waiting for batteries to charge. With LOXXER, your charged batteries are always ready to go.
- **COST SAVINGS**
  Avoid losing money on misplaced or damaged batteries by ensuring they are properly stored.
- **PEACE OF MIND**
  Safely charge your batteries in a controlled environment, reducing fire risks and ensuring a secure workplace.


LOXXER
LOXXER
Milwaukee
FORGE
Milwaukee



LOXK2000

• Cabinets



THE LOXXER CABINET AT WORK

The LOXXER cabinet is equipped with smoke and temperature detection to ensure swift detection and immediate action. Upon detection, the ventilation and electricity will automatically shut off. Simultaneously, the cabinet triggers notifications and activates an alarm. Pressure valves ensure the safe release of built-up pressure during the process. You can also connect the cabinet to your existing building fire alarm system or a M2M-module.

AEROSOL EXTINGUISHING SYSTEM

The cabinet can be equipped with an aerosol system. The aerosol will be activated in case of detection. The aerosol will control and cool down the battery, So the other batteries inside the cabinet will be free from damage.



LOXK1100

• Cabinets



IDEAL FOR SMALLER-SCALE CHARGING NEEDS

Our small cabinet is the perfect solution for users who require safe charging and storage of a smaller quantity of batteries. It's an ideal fit for spaces with limited room or can be conveniently placed on a workbench. Despite its compact design, this cabinet offers ample space with two shelves and a power outlet system, providing convenient charging capability. Its practical size makes it easy to integrate into various workspaces without compromising on functionality.

ENHANCED SAFETY FEATURES

This compact cabinet doesn't compromise on safety. It includes smoke and temperature detection, automatic power shutdown, and optional integration with your building's fire alarm system. An aerosol extinguishing system can also be added to prevent battery incidents from escalating.

This compact solution is designed to meet the charging and safety needs of small-scale battery users, offering peace of mind in confined spaces.



SAFE & PRACTICAL





SLIDING SHELVES
Sliding shelves provide fast and ergonomic access to every battery position – including the rear of the cabinet. This makes daily handling easier and safer, especially for applications using scanners, handheld devices or frequently rotated equipment. Maintenance, inspection and cable management can all be performed without removing the entire shelf content.

MULTIMEDIA DIVIDER
Laptops and tablets should never be stacked during charging or storage. Besides reducing airflow, stacking increases the risk of damage and inefficient use of space. Our multimedia divider keeps every device separated, organised and easily accessible, while maximising storage capacity inside the cabinet.

LITHIUM LOCKERS

At Loxxer, we know the importance of safe battery charging, especially in the context of electric bikes and scooters. Our lockers offer a secure and convenient solution for employees at various workplaces. Whether you need to recharge your e-bike or electric scooter, our lockers provide a dedicated and enclosed space for this purpose. Lock up, Charge up and ride on with confidence.


01
CHARGING LOCKERS
02
03
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08



INDOOR
LOX12

• Lockers



SECURE CHARGING, ORGANIZED STORAGE: OUR COMPARTMENT LOCKER CABINET.

We proudly present our firerated locker solution. What makes our locker cabinet so special? We've tailored it to meet the specific needs of employees who want to charge their batteries safely and separately.

The locker-cabinet can be equipped with all safety functionalities as smokedetection, aerosol, connection to the fire-alarm, ...

SECURE AND PERSONALIZED ACCES

Each locker comes equipped with a combination lock, guaranteeing secure and personalized access to the batteries. Furthermore, each compartment features a charging possibility to make battery charging easy and convenient.

The cabinet embodies safety, organization, and user-friendliness.



OUTDOOR LOCKER

• Lockers



KEEP THE WORKFLOOR ORGANIZED AND THE BATTERIES OUTSIDE

Our OUTDOOR LOCKER is the ultimate weatherproof solution for safely charging and storing lithium-ion batteries for e-bikes and e-scooters outdoors. This robust charging cabinet is designed for easy placement directly next to a bicycle shed or parking area.

SMART COMPARTMENT DESIGN

The centralized station features 4 separate charging compartments with dual power outlets, allowing employees to charge their batteries separately and efficiently. Thanks to its compact width, the locker integrates effortlessly into any business site.

LITHIUM CONTAINERS

“

EMPOWERING SAFETY,
ENERGIZING INNOVATION.
THE LOXXER WAY

”

UNLOCKING THE SUPERIORITY OF CONTAINERS FOR LITHIUM BATTERY STORAGE

When it comes to storing and charging a big quantity of lithium batteries, safety and efficiency are paramount. In this high-stakes realm, containers emerge as the ideal solution.

One notable advantage is the ability to safely store lithium batteries outdoors, a flexibility that enhances your options and peace of mind. From flexibility and scalability to security and specialized features, containers ensure that your lithium batteries are stored and protected in the best possible way.



WALK-IN UNIT

Each unit is carefully designed to meet a wide range of applications. Do you need to safely store lithium-ion batteries of various sizes, all under one roof? Whatever your needs may be, the versatile Walk-In Unit is well-equipped to meet your requirements.

SAFE STORAGE
Walk-In Units offer optimal safety for storing lithium batteries. They are designed to meet stringent safety standards and prevent fire hazards through advanced systems such as aerosol fire suppression systems and smoke detection.

CUSTOMIZATION
These containers can be tailored to specific requirements and are available in various sizes. This means that both small lithium-ion batteries and larger equipment and vehicles can be safely stored.

FIRE RESISTANCE
Walk-In Units typically offer high fire resistance, with fire compartments providing up to 120 minutes of protection. This provides valuable time to respond to a potential fire and limit damage.

VERSATILITY

VERSATILE CONTAINERS: TAILORED SOLUTIONS FOR YOUR NEEDS

At Loxxer, we understand that every project is unique, just like the needs and requirements of our valued clients. That's why we view our containers as dynamic projects, adaptable to specific demands and situations. We're not just here to provide a one-size-fits-all solution; we're here to collaborate with you and develop the best-fit answer.

- **OVERPRESSURE VALVE**
  Designed to activate on the container's roof, the explosion relief
- **FROST PROTECTION**
  Ensuring your container remains functional even in cold conditions.
- **SPRINKLERS**
  Added safety against fire incidents with automatic water-based fire suppression.
- **GROUNDING BOLT**
  Prevent electrostatic discharges, safeguarding sensitive electronic equipment.
- **AEROSOL FIRE SUPPRESSION SYSTEM**
  Providing automated fire protection with advanced aerosol extinguishing technology.
- **SMOKE DETECTOR**
  Activating the alarm system when smoke is detected inside the unit.
- **GAS DETECTION**
  Designed to activate an alarm in case of gas buildup inside the unit.
- **ALARM SYSTEM INDICATOR/BEACON**
  The alarm system flashes and sounds when any alarm system is activated.
- **TEMPERATURE CONTROL**
  Offering heating, cooling, or air conditioning to maintain specific temperature ranges.
- **LIGHTING**
  Enhanced illumination to facilitate working conditions or ensure visibility.
- **OPTIONAL OR ADDITIONAL SHELVES**
  Maximizing storage capacity.
- **OPEN-HOLD AND SELF-CLOSING DOOR SYSTEM**
  Offering versatility and safety.
- **FIRE BRIGADE CONNECTION**
  Helping to coordinate fire protection efforts.

Your needs lead the way, and our containers adapt to meet them.

“

YOUR NEEDS
LEAD THE WAY

”



AEROSOL FIRE SUPPRESSION



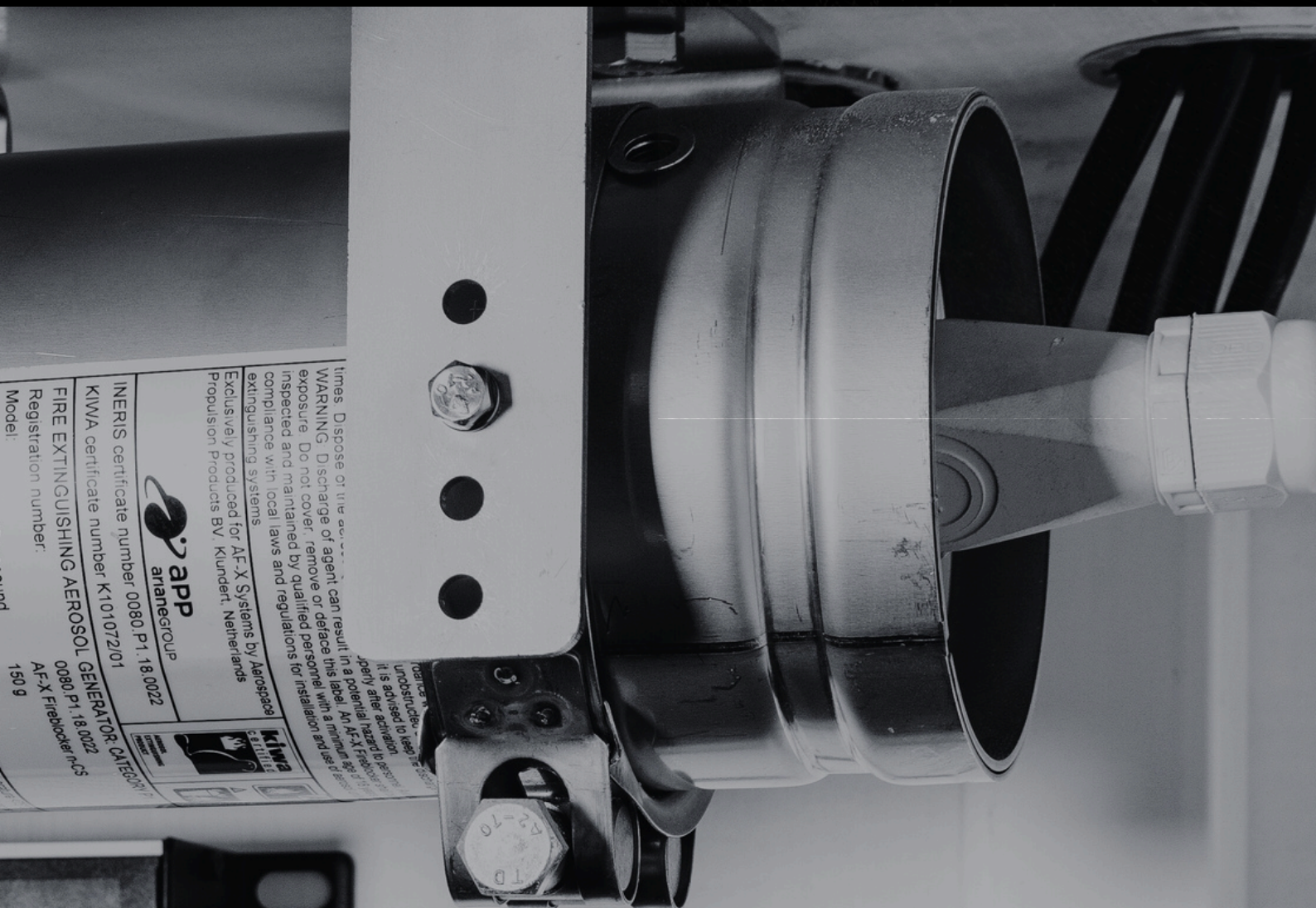
HOW DOES AN AEROSOL FIRE SUPPRESSION SYSTEM WORK IN A LITHIUM FIRE?

An aerosol fire suppression system is an effective and advanced method for combating fires, including those caused by lithium batteries. When a lithium fire occurs, an aerosol fire suppression system operates according to a specific procedure to prevent (spreading) of fire.

- **DISPERSAL AND STABILITY**
  The aerosol fire suppressant evenly disperses throughout the space, forming a stable aerosol cloud. This ensures that all fire sources are reached and effectively extinguished. Additionally, the aerosol suppressant remains in the space for a certain period, continuously combatting the fire and preventing re-ignition.

- **NO COLLATERAL DAMAGE**
  One of the advantages of an aerosol fire suppression system is that it leaves no residue and doesn't corrode equipment or electronic components.

- **AUTOMATIC OPERATION AND RAPID RESPONSE**
  An aerosol fire suppression system automatically responds to the detection of a lithium fire. This ensures a swift response, which is essential in extinguishing rapidly spreading lithium fires. The automatic operation also minimizes human intervention, ensuring the safety of individuals.





EXCELLENT SERVICE



THE LOXXER EXCELLENT SERVICE OFFERS:

- Annual inspection and maintenance
- Conducted by trained service technicians
- Minor repairs
- Maintenance booklet
- Visibility of inspection approval with a seal


BECOME
A PARTNER
BECOME
A PARTNER
LOXXER
BATTERY STORAGE SOLUTIONS

BECOME A LOXXER PARTNER

LOXXER has built an extensive international network, collaborating with trusted partners across Europe and beyond. Our strong relationships with distributors, dealers, and industry leaders allow us to offer innovative solutions and provide exceptional service worldwide. Whether you are looking to enhance your product offerings or expand your market reach, Li-Ion batteries are the future and with LOXXER you have a great partner!

Would you like to become a partner too? Get in touch with us to explore how we can work together to provide safe, reliable lithium-ion battery storage solutions to customers globally.

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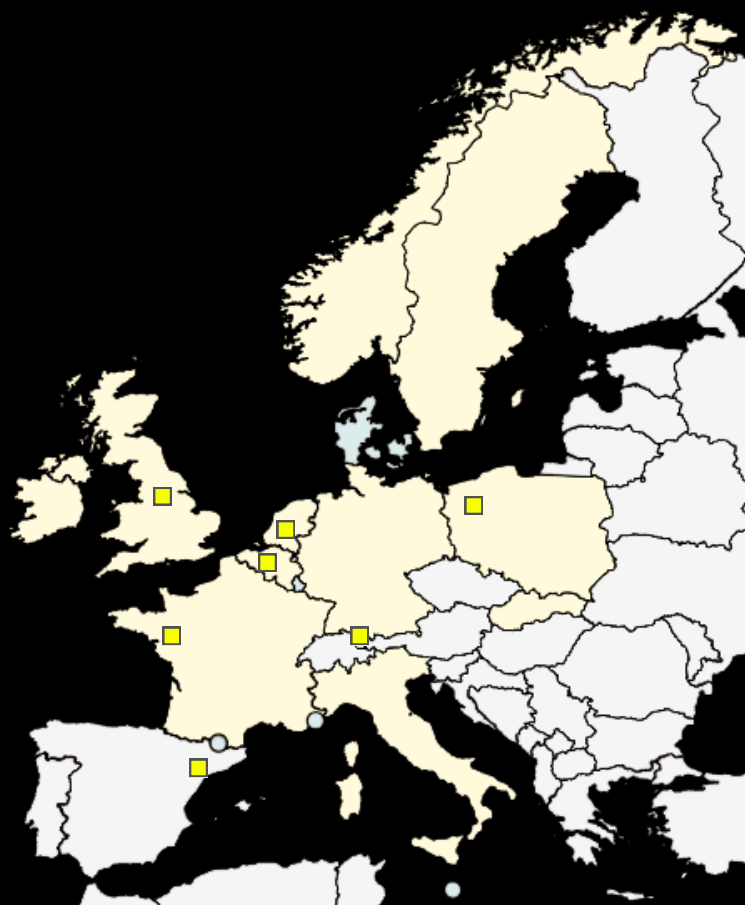
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