



# Fire fighting excellence

*HI-FOG<sup>®</sup> water mist fire protection*





# Protecting people, property and business continuity

Marioff is the world's largest supplier of water mist fire protection technology, with unrivalled experience supplying system solutions worldwide under the brand HI-FOG®.

HI-FOG® is suitable for most types of fires on land and at sea. It safely controls and suppresses fire by discharging a fine water mist at high velocity, using significantly less water than conventional sprinkler systems.

## **Intensive fire testing**

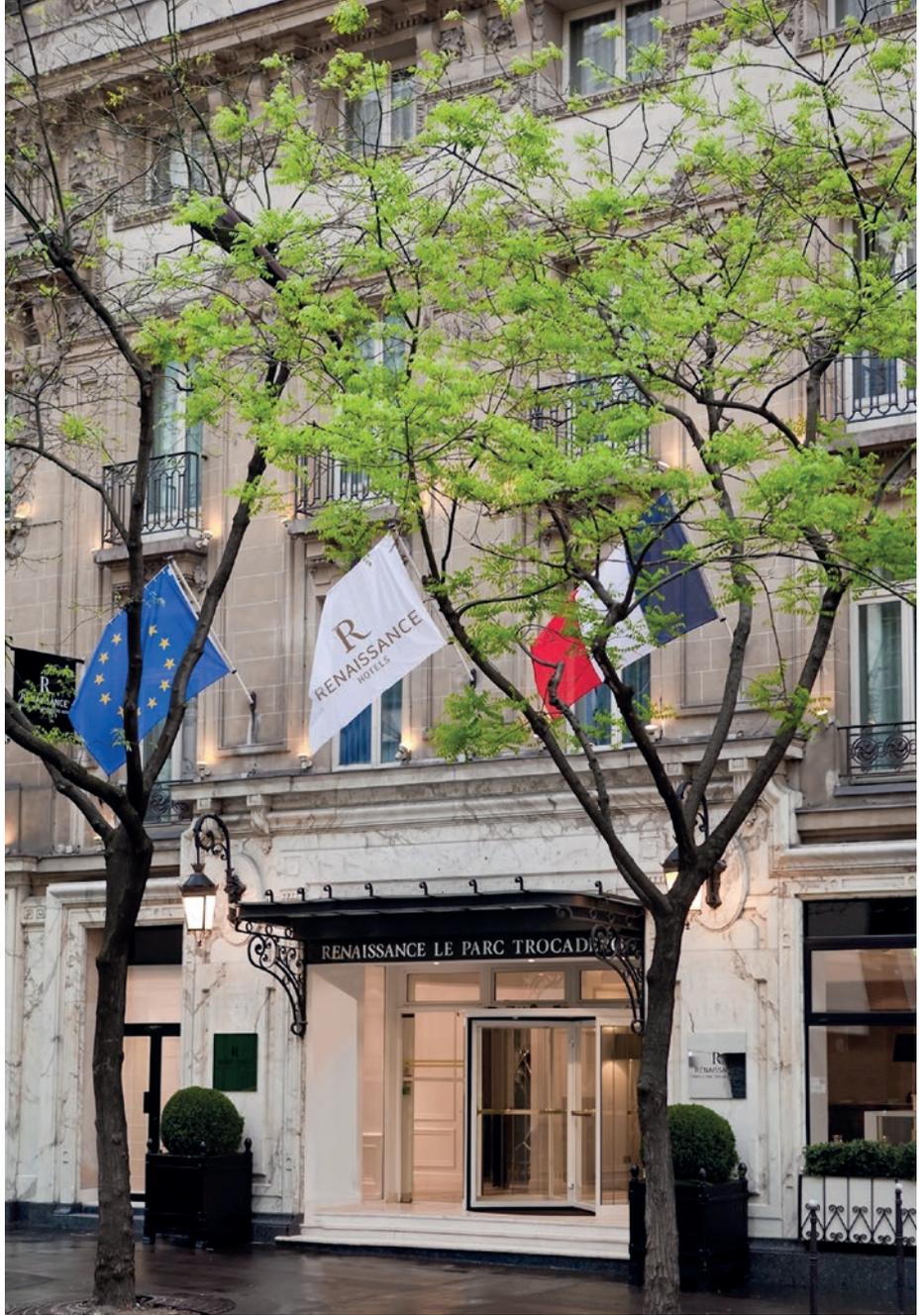
Marioff is renowned for its unyielding commitments to innovation. As the pioneer of the water mist fire suppression technology, Marioff helped establish the industry standards and continues to develop leading solutions in close cooperation with local and international regulatory authorities.

Since its launch in 1991, HI-FOG® has received over 100 type approvals as a result of thousands of full-scale fire tests conducted. Each installation benefits from Marioff's deep understanding of how fire behaves, providing customers peace of mind the world over.



#### HI-FOG® fire protection for:

- Buildings
- Industry & Energy
- Marine & Offshore



#### Case - sleep easy

Marriott International, Inc., is known for its strict life safety requirements and rigorous inspection program. Marriott's Fire Protection and Life Safety Design Standards recognize HI-FOG® as a practical alternative to traditional sprinkler systems. The flexibility and performance of HI-FOG® enable it to be used in a range of applications, both in new structures and retrofits.

#### Experience you can rely on

Marriott has unrivalled experience in protecting people, property and business continuity on land and at sea.

Today, HI-FOG® safeguards many of the world's most well-known buildings, machinery spaces and cruise ships. The greatest reward is the growing list of fires successfully suppressed or extinguished by HI-FOG®.





# High performance fire protection

HI-FOG® delivers the performance and reliability needed to ensure operational continuity on land and at sea. Using small amounts of pure water, HI-FOG® effectively fights fire while remaining harmless to people and the environment. HI-FOG® helps ensure downtime after a fire is kept to a minimum.

#### **HI-FOG® water mist in action**

HI-FOG® uses significantly less water than traditional sprinkler systems for the same application with equivalent or better performance.

The system discharges a very fine water mist as a high-pressure fog, which as such blocks radiant heat and absorbs heat efficiently through evaporation, cooling the surroundings and minimizing the collateral damage fire can cause.

#### **Safe for people and the environment**

HI-FOG® uses pure water mist as a suppression agent which is harmless to people and the environment. Spaces do not need to be evacuated or closed off for the system to be activated, and they can also be entered while the system is discharging as it does not affect the fire fighting efficiency or pose risk to human life.

#### **Easy implementation**

Designers, consultants, architects and installers find HI-FOG® remarkably easy to work with. Narrow tubing that can be bent into position on-site, compact pumps and discrete spray or sprinkler heads fit into retrofits as easily as new structures.

#### **Save with HI-FOG®**

HI-FOG® leads to real savings on the bottom line. Costs can be cut by including HI-FOG® in the early design phases of a project.

HI-FOG® even brings with it a freedom to design without the restrictions of more conventional approaches. For example, HI-FOG® allows architects to create bigger open spaces and can even eliminate the need for passive fire protection measures like fire rated windows, special coatings, and fire curtains.

# ection



## Case – industrial protection

swb AG operates power generation facilities at four sites in the Bremen metropolitan area, with a total installed capacity of over 1,000 megawatts.

The main cause of fire in this coal-fired power plant is the conveyor belt system. If the moving belt gets stuck, significant heat is generated which can cause the belt to set fire. A conveyor belt that has caught fire continues to move down the corridor, putting the entire space at risk.

HI-FOG® protects 460m of elevated corridors with a single MSPU13 pump unit, 370 spray heads and 15 section valves. HI-FOG® spray heads were installed in two positions along each corridor to discharge water mist at high pressure from both the ceiling and walls to assure complete coverage of the conveyor belts as well as power cables that run along the ceiling of the corridors. Thanks to HI-FOG®, fire-caused disruption to business and customer power supply is minimized.

### HI-FOG® key benefits:

- **Fast:** immediate activation and rapid cooling
- **Safe:** harmless to people and the environment
- **Proven:** success in countless tests and real fires
- **Low water usage:** minimized damage

## Water savings



In a controlled demonstration, one HI-FOG® nozzle discharged around 380 liters (100 gallons) of water in 30 minutes using a gas-driven pump unit.



A traditional sprinkler system, in turn, discharged some 3,600 liters (951 gallons) from a single nozzle within the same time period.



# Operational reliability through HI-FOG® Services

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Just as any system needs care, so does HI-FOG®. Our services extend from the optimized maintenance and original spare parts to turnkey system upgrades and modernizations.

## **Corrective maintenance**

Thanks to global partner network, Marioff is able to provide local field service engineers on-site to repair the system in timely manner to ensure minimal downtime. Original spare parts are used to secure reliable functioning of the HI-FOG® system.

## **Preventive maintenance**

Timely and well-planned maintenance procedures result in increased system reliability. HI-FOG® service contracts provide long-term maintenance budget predictability and cost efficiencies through optimized maintenance procedures.



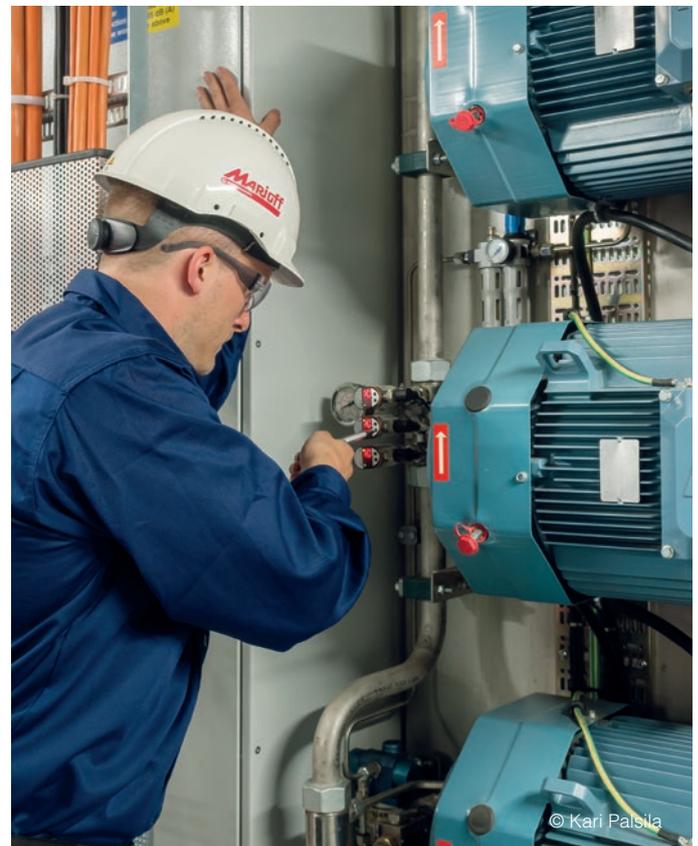
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Good example of multiple machinery installation. All machinery valves are easily accessible for operation and maintenance.



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Valve signal testing is part of the Marriff's annual service. Installation inside the cabinet protects the valves and offers clean-cut interior.



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Part of the annual maintenance is to check pressure switch settings.

### Upgrades

The performance and capability of the HI-FOG® system can be improved by upgrading the existing system. System upgrade is a sustainable way to respond to new fire safety regulations or extended protection requirements.

### Modernization

The new technological developments can be implemented to ensure new features and functionalities. Modernization also extends system life time by replacing obsolete technology with new optimal solutions and ensuring the availability of spare parts.

### Training

All HI-FOG® operators are trained to monitor the system, perform regular checks and basic troubleshooting, reset the system after activation and operate it in case of an emergency.



HI-FOG® 2000 Sprinkler



HI-FOG® 3000 Sprinkler for Marine



HI-FOG® Spray Head



The HI-FOG® system uses small diameter stainless steel pipes



HI-FOG® Pendent Mounting Adapter



HI-FOG® Machinery Valve



HI-FOG® Gas-driven Pump Unit (GPU)



HI-FOG® Electric Pump Unit (EPU)



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