

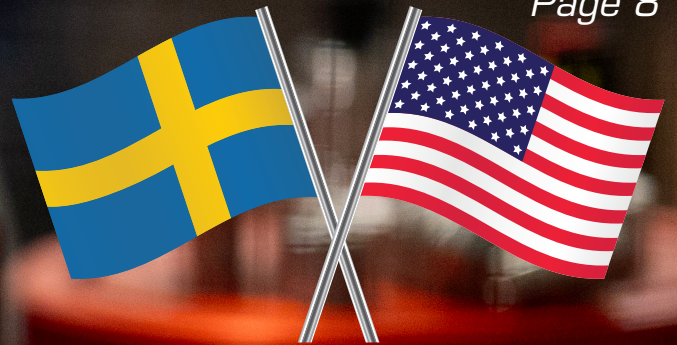
June 2026

Fogmaker News

Technical and market-related information for our partners

Fogmaker USA, Inc

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Partner Day Recap

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FOGMAKER
INTERNATIONAL AB

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Lars Alrutz, CEO
Fogmaker International AB.

A word from the CEO

Dear Partners,

Fogmaker continues to grow and increase the global network of partners, and at the same time our brand is strengthened by the activities you can read about in this newsletter.

I hope we will all benefit from this, and that we can continue to grow and create safer environments in regards to machines and vehicles worldwide.

This time, I am writing my words from JFK Airport as I spent the past week travelling to meet customers and partners in the USA. The meetings held here definitely underline the importance of having a Fogmaker presence on all continents. All companies we meet that have been working with the product are welcoming us, give us important feedback on improvements, and at the same time give us a lot of credit for the functionality of the system.

These kind of meetings also give perspective on how much business is global, and I think our presence in the US can help all of you who work with exporting machines to and from the US to channel all your questions through Fogmaker International or directly to Fogmaker USA Inc.

I hope all of you get some summer holidays to re-charge the batteries. I will work another week and then it will be family and golf (probably a little work as well).

Looking forward to meeting autumn when it comes.

Best Regards,
/Lasse

2026 Partner Days

The 2026 Partner Days took place late May, and visitors from all around the world visited Växjö, Sweden, to enjoy days filled with information and evenings packed with fun.

As always, the event was about more than presentations and product updates. It was a chance for partners to meet, share experiences, discuss challenges and opportunities, and strengthen the relationships that make us strong together.

A huge Thank You to everyone who participated and made the event special, and a special Thank You to J&J for their eye-opening presentation on suppressing battery fires with the Fogmaker system.



A special Thank You to Antoni Luczynski

Antoni has worked with Fogmaker for many years and we appreciate his steady support and hard work. Word reached us that he is planning to retire next year, which would make 2026 his last Partner Days.

We wish him all the best when the time comes for him to start the next chapter in life.



Congratulations to the Winners!

Lars Alrutz presented the Fogmaker Partner Awards. Congratulations to:

Partner of the Year: Desautel Protection Incendie

Desautel has worked hard with implementing a special organization for Fogmaker and has built a solid sales and service team. They surpassed their 2025 sales budget with flying colors, develop new segments, and are devoted to continuous improvements.



Loyal Supporter: Integrated Fire Technology

Integrated Fire Technology have proven themselves to be loyal supporters who work hard with promoting the Fogmaker system. They cooperate with other partners and are always willing to help. They also have a steadily increasing turnover.



Up and Coming: Suzhou Eagle Will

Suzhou Eagle Will has shown an eagerness to develop their business together with Fogmaker. They have made business plans, traveled to Sweden for trainings, welcomed representatives from Fogmaker International AB, are open in their communications, and honest in their business dealings.



This year, Fogmaker International AB were also honored!

Thank You Ofira - we have spent 20 years together and look forward to 20 more.

Ofira gifted us the "Winged Victory of Brescia" - a special symbol that represents both the city of Brescia and the area's ethic of work. The original statue is from the 1st century and shows the Goddess Victoria. We are honored to have her in the building and convinced she will bring good fortune.



Fogmaker Discovers North America

Establishing Fogmaker USA Inc. is now in its final stages, and in June we took the first steps toward supporting our valued partners directly in the United States. While the decision to establish local operations was initially driven by a strategic change at our previous importer, we can already see significant benefits for both our partners and their customers.



First and foremost, Fogmaker USA Inc. is fully committed to growing the business together with its selected partners. Our ambition extends beyond simply responding to product inquiries. We want to work closely with our partners to understand customer needs and help them reduce fire-related risks while minimizing the associated costs. By collaborating more closely, we believe we can respond more effectively to changing market demands and create greater value for end users.

These partnerships will be strengthened through long-term agreements that provide stability and allow both parties to focus on sustainable business growth, despite the

challenges of day-to-day operations.

Another key advantage is that Fogmaker is now directly supporting the brand and reputation behind our frontline partners. In this industry, success depends not only on having a proven fire suppression solution, but also on reliable product availability, responsive technical support, and access to spare parts when they are needed.

By establishing our own presence in the United States, we can provide even stronger support and ensure a seamless experience for both partners and customers. As always, the Fogmaker team is ready to go the extra mile to make things happen.

Fogmaker USA will initially maintain product inventory in Houston, Texas, and spare parts inventory in southeastern Pennsylvania. Technical support is available locally in the United States, while our team in Sweden continues to provide extensive support and expertise as we grow the business together.

/Mikko Vuojolainen
General Manager Fogmaker USA

Welcome to Fogmaker, Mikko Vuojolainen

Mikko, you are the General Manager of the brand new Fogmaker USA. Tell us about yourself.

I am delighted to join this company in such an interesting time – I truly hope that years from now we can call this a historic moment for the company.

I was born and raised in Finland but moved to Asia soon after graduation and then onwards to the US, where I have been a citizen for years. I worked for a long time in the heavy materials handling equipment industry, most of it with container handling equipment. I have also worked for a company making drilling consumables, especially for mining operators.

What are the main target segments in the USA?

The USA is a very large market with opportunities in all of the recognized customer segments. There are very few regulations that demand installation of fire suppression systems and the biggest drive is the real risk of fire together with potential consequences. I have learned that we already have good existing customer base in material handling, for example container and

waste handling, as well as in forestry equipment. Going forward we will initially be exploiting additional opportunities in buses, mining and construction equipment.



How do you intend to grow the business?

We will be working with distributors and initially, adding good, committed distributors will be an important task. Our intention is to have good geographical coverage, but also covering the various segments as it is often challenging to cover everything with just one distributor in the area.

Long-term, strong brand reputation will be the cornerstone for good demand in the marketplace. Creating a strong brand reputation is no simple trick, but rather staying consistently better than competitor's efforts all through the value chain – the factory, Fogmaker USA, and our partners.

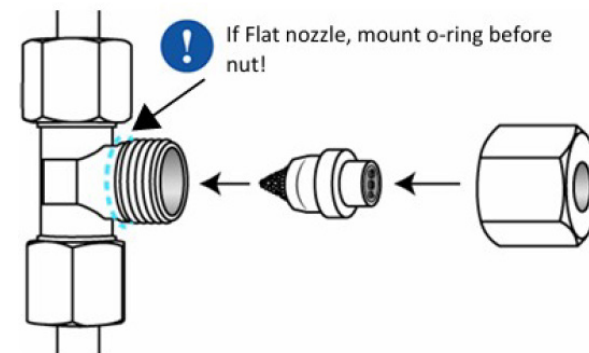
Important Notes and Product News

Stainless Steel Nozzles for Eco 1

There is now a stainless steel version of the Eco 1 Flat Nozzle (1507-012) and the Hollow Cone 45° (1508-012). These are intended for use in demanding environments and where temperatures exceed 150°C.

Fogmaker recommends installing standard nozzles in standard fittings, and stainless steel nozzles in stainless steel fittings.

Lubricate the conical part and nut collar of the stainless steel nozzle with Molykote P40 or equivalent before installation to avoid leakage. Always follow the installation manual, section 2.2.2.9 - Installation of Nozzles.



Gas/Liquid Filling Valves

Due to leakage issues, we are improving the sealant on valves 3140 and 3150. The new part numbers will be 3141 and 3151.

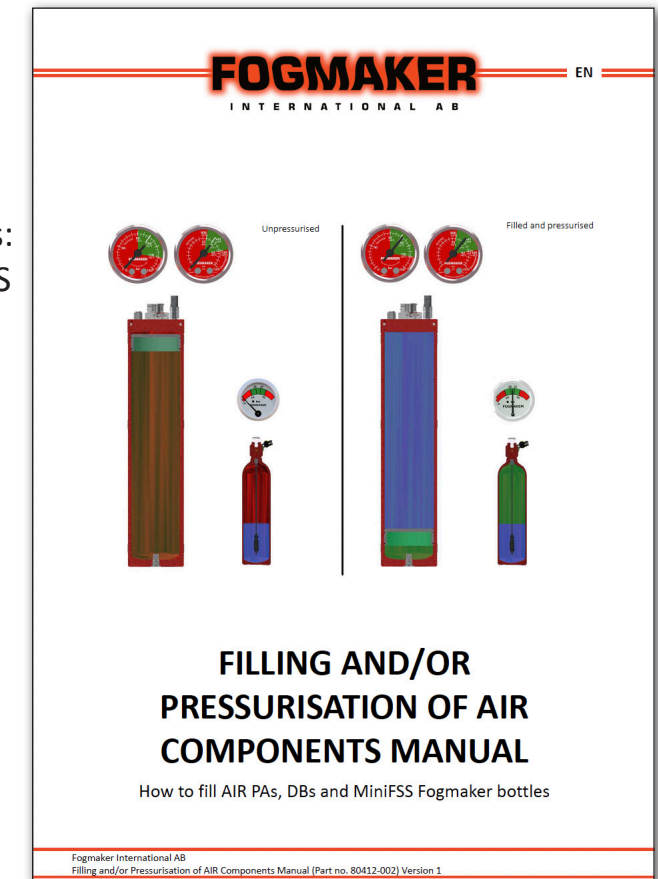
If service is to be performed and the gas filling valve 3141 needs to be loosened, it must be heated with a heat gun for a few minutes (or to about 70 °C) until it can be easily turned with an Allen key in order to remove it. It is important that the valve is discarded once the sealing has been broken, as the seal integrity is compromised and the temperature fuse may have been damaged during the heating of the valve.



Manual for Filling and/or Pressurization

The manual (part number 80412-002) is focused on filling and pressurizing the Fogmaker AIR parts: Piston Accumulator, Detector Bottle, and Mini-FSS Bottle.

Please note, only Fogmaker-certified personnel may perform filling and pressurizing of Fogmaker components. Safety precautions and instructions must be followed - Fogmaker cannot be held liable for any non-functioning fire suppression system or injury caused by improper handling.



New Price List for Quarter 3, 2026

The new price list that is valid from July 1, 2026 was distributed in June. This time, the new list contains price increases and it is very important that you have downloaded the latest version.

If you have questions on the price list, please contact your Key Account Manager.



Coming Update of Revision Kits

The Revision Kits will be split into one kit for 5-year service and one for 10-year service. The update is scheduled to begin in Quarter 3, 2026, and the names will be changed to Service Kit at the same time.

Fire Statistics for Fogmaker – 2025

The fire statistics for Fogmaker in 2025 are now available. A total of 99 fires have been reported this year, compared to only 2 reported fires in 2024, representing a significant increase. However, the actual number of fires is expected to be higher, as not all incidents are necessarily reported.

No fires involving electric vehicles have been reported. Buses account for the majority of the reported incidents, which is expected as they represent Fogmaker's largest vehicle segment.

Of the 99 reported fires, 92 were successfully extinguished, either with or without the assistance of handheld extinguishers. This corresponds to a success rate of 93%.

We encourage you to continue reporting fire incidents in the partner portal. These reports provide valuable insights into system performance and enable us to further improve both our products and installation manuals.

//Gustav Stigsohn

93%
success
rate



Warm Welcome to New Fogmaker Partner

Huỳnh Thy, Vietnam

Founded in 2010 with the motto, "We sell more than just products; we deliver total productivity solutions," Huỳnh Thy has grown into one of Vietnam's leading providers of industrial technologies, equipment, and integrated solutions.

Huỳnh Thy serves a wide range of sectors, including port equipment, logistics, air compression, transportation vehicles, construction equipment, and clean energy. With more than 16 years of experience, Huỳnh Thy has established a strong presence in the Vietnamese industrial market by combining high-quality products with professional consulting, technical expertise, and dedicated after-sales support.

Beyond supplying equipment, Huỳnh Thy works closely with customers to understand their operational challenges, recommend the most suitable technology solutions, and provide comprehensive support throughout the implementation process.

Guided by a customer-centric approach, Huỳnh Thy helps businesses optimize operational performance, improve productivity, reduce costs, enhance workplace safety, and achieve sustainable long-term growth.

With the Fogmaker partnership, Huỳnh Thy will focus on expanding fire suppression solutions for high-risk industrial applications, particularly in sectors involving heavy machinery and mobile equipment. Our target segments include ports and terminals, construction, transportation, and other industries where equipment reliability and fire safety are critical.

Vietnam is experiencing significant growth in logistics infrastructure and industrial development, resulting in a growing need for effective fire prevention solutions. We believe Fogmaker's high-pressure water mist technology is a valuable addition to our portfolio, allowing us to provide customers with safer and more sustainable solutions for protecting their valuable assets and operations.



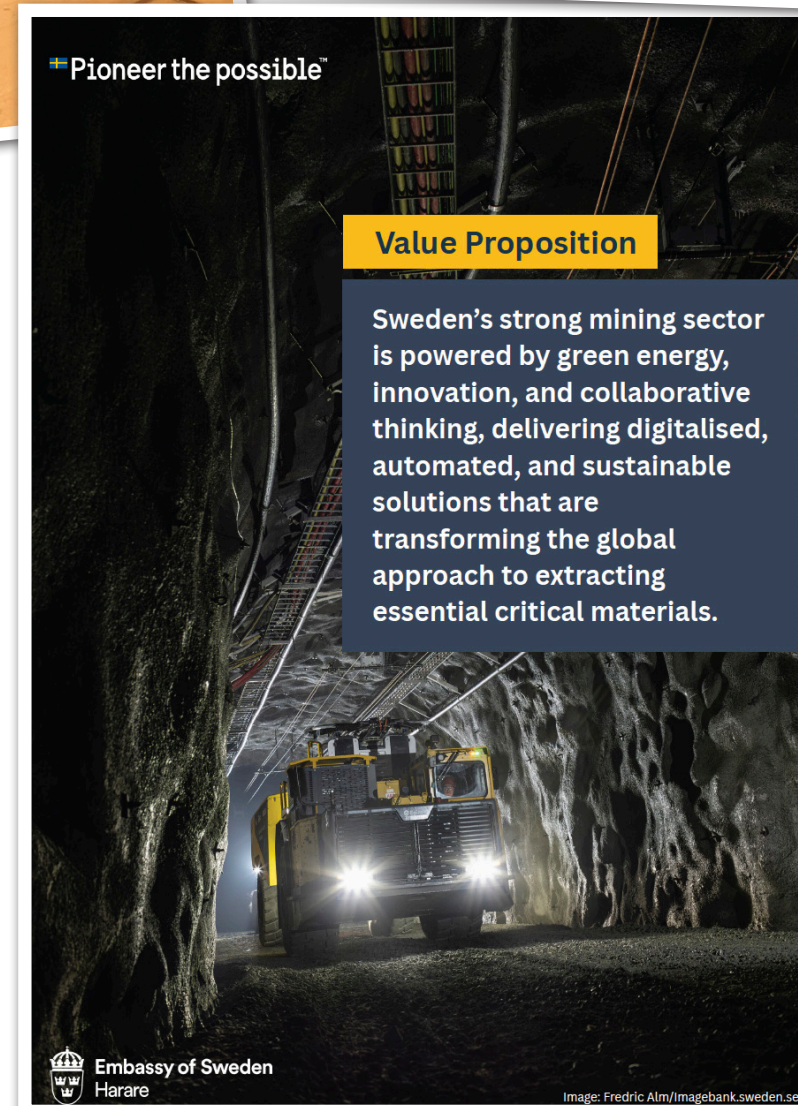
Zimbabwean Mining Delegation to Sweden

On May 21st this year, myself, Gustav Stigsohn, and our friend John Russell from IFT participated in an event at Epiroc headquarters in Sickla. 12 high-level delegates from the mining industry in Zimbabwe participated in the event that was arranged by the Swedish Embassy in Harare. We met ministers, mining managers, and the Swedish Ambassador.

We were delighted to take this opportunity to deepen our relations with leading mining influencers from Zimbabwe and Fogmaker and IFT shared a presentation. It was well-received with many questions and fruitful discussions.

The venue was Epiroc's test-mine and exhibition situated just below the Epiroc HQ in Stockholm.

//Mathias Karlsson



Engine fire escalation

Robert Tengvall, Key Account Manager at Fogmaker International AB, explains how water mist systems address enclosed vehicle fire risks

Fires in engine compartments can develop before operators can see or reach the affected area. In vehicles and heavy machinery, ignition sources are often positioned near fuel lines and hydraulic systems, with hot surfaces creating conditions where a small fault can escalate inside an enclosed compartment.

Manual access can be limited by body panels or machinery, so fixed suppression systems are used to detect heat and discharge directly into the protected space. Fogmaker International AB develops high-pressure water mist systems for vehicles and machinery, using pressurised cylinders and heat-sensitive detection tubing to activate without external electrical control.

Ahead of INTERSCHUTZ, the company is focusing on how its systems are designed around specific risk areas, from buses to heavy equipment operating in harsh environments.

IFSJ Editor Iain Hoey sat down with Robert Tengvall, Key Account Manager at Fogmaker International AB, to discuss water mist technology and vehicle fire risks, as well as the company's plans for INTERSCHUTZ.

What fire risks are most common in engine compartments across buses and heavy machinery?

Electrical-related fires are the most common fire cause. Mechanical malfunctions, broken fuel or hydraulic hoses and exhaust leaks are also not uncommon, with turbo failures another possible cause. In an engine compartment, you often have electrical components and hot surfaces very close to fuel lines, hydraulic systems and moving mechanical parts.

That combination is what makes these fires difficult. A small fault can become serious quickly if it reaches a hot component or if pressurised

fuel or hydraulic oil is involved. The compartment is also enclosed, so the operator may not see what is happening until the fire has already started to develop.

Why are enclosed vehicle and machinery compartments challenging fire environments?

A vehicle typically has pressurised fuel and hot components. That combination can create a large fire within seconds. In engine compartments and other enclosed spaces, the fire can also be difficult to access manually, because the risk area is often surrounded by panels, machinery and other components.

There can be very little time before the fire grows. That is why it is important to have suppression installed directly in the protected area, so the system can react where the fire starts.

How is Fogmaker's high-pressure water mist system structured and operated?

It is a simple construction: a piston accumulator filled with suppression agent, pressurised to 105 bar using patented high-pressure technology. The piston accumulator is the base of the system, and from there we have the distribution system with hoses, pipes, fittings and nozzles. The detection part includes the detector bottle and the pressurised detection tube, which is routed through the area that needs protection.

A loss-of-pressure detection tube is connected to the piston accumulator. When there is a fire, the detection tube melts and loses pressure. The pressure drop activates the valve on the piston accumulator, and the suppression agent is distributed through the nozzles in a fine mist to suppress the fire. One litre of mist becomes 1,700 litres of

fog. One drop of water becomes 8,000 droplets in the mist.

Practically, this means that Fogmaker's mist displaces oxygen, which chokes the fire. It also cools the affected area. Although it is simple, it is reliable. No electricity is needed to detect and activate. If something breaks or malfunctions, it typically gives an alarm or activates the system.

How does the system activate during a fire and what conditions trigger deployment?

The system is activated by heat. The detector tube bursts due to the heat, and the pressure drop triggers the suppression part of the system. The pressure drop also sets off the alarm and, optionally, engine shutdown or other functions. That can be installed with our system.

"The Fogmaker fire suppression system extinguishes or suppresses the fire so that the firefighters' work becomes easier."

Suppression

The important thing is that the activation does not depend on electrical control. The system is pressurised and ready, and when the tube reacts to the heat, the pressure loss starts the suppression. The alarm can also give information about the system status, so the operator or service team can see if there has been a fire activation or if there is a fault condition that needs attention.

“Fires in engine compartments can develop before operators can see or reach the affected area.”

What will Fogmaker focus on at INTERSCHUTZ for visitors?

Fogmaker is a safety product designed to protect vehicles and people. The product fits in enclosed spaces that need to be protected and is designed for each purpose. Fogmaker is completely independent of electronic control for monitoring or activation, and the system does not need an external power supply to detect or activate.

For us at INTERSCHUTZ, the focus is to show how the system works in practice and how it can be adapted to different types of vehicles and

machines. We work with buses, trucks, construction equipment, material handling, mining and tunnelling, agriculture, airport machines, forestry machines and electric vehicles, so the important thing is that the system is not just installed in one standard way. It has to be designed around the specific risk area.

Fogmaker systems are designed to be straightforward to install and have a global network of certified partners available for installation and service. That is also important for visitors to understand, because correct installation and inspection are what keep the system reliable over time, alongside regular service.

Where are Fogmaker systems most commonly installed and how are they integrated?

For Fogmaker, buses are our most common application, but the system is suitable for any enclosed space, including electric vehicles. Other common vehicles and machines are trucks, construction equipment, material handling, mining and tunnelling, agriculture, airport machines and forestry machines.

The system is tailored for each machine and model. It is important to make a risk analysis with the customer prior to installation. That risk analysis helps us decide where the detection tube should be routed, where the nozzles should be placed and which parts of the machine need protection. The layout has to follow the risk, because every machine model is a little different.

With electric vehicles, the risks are different from vehicles with internal combustion engines, but there are still components that can start or spread a fire. There can be heaters and air conditioning compressors, with hydraulic fluids, electrical systems, insulation and interior textiles also present. In those applications, the system can help knock down flames, cool exposed areas and give more time for evacuation and response.

What testing or certification validates system performance under fire conditions?

Fogmaker has many third-party approvals. A few examples are FM Approval, SPCR I83, I97 and I99, often called P-marks, as well as UNECE

RI07. All these approvals include fire testing. Many of them also include environmental testing, such as vibration and shock testing, as well as temperature and corrosion testing.

“A small fault can become serious quickly if it reaches a hot component or if pressurised fuel or hydraulic oil is involved.”

That is important because the system is not installed in a clean and simple environment. A bus, a mining machine or construction equipment is exposed to vibration and dirt, as well as moisture, heat, cold and mechanical stress. The system has to work in those conditions, so testing is not only about whether the mist can

suppress a fire. It is also about whether the system can remain ready for use in the environment where it is installed.

For buses, UNECE RI07 is one of the important approvals. It is connected to fire suppression systems for buses, and it includes fire testing under defined conditions. These approval processes help customers and operators understand that the system has been tested against recognised requirements, as well as supporting authorities in their assessments.

What affects reliability, maintenance and inspection when operators assess installed suppression systems?

The Fogmaker fire suppression system should be inspected once a year and serviced every five years as standard. There is also a 10-year service. However, tough environments could require shorter intervals. This is something that is typically discussed and decided on with the end customer.

For reliability, correct installation and service are very important. The system should be installed and serviced by certified Fogmaker distributors or authorised service technicians, because they know how the system should be fitted, checked and maintained for each application.

During inspection, the service technician checks that the system is still in the right condition. That includes pressure and detection components, as well as nozzles, pipework, hoses, connections and alarm function. The system can be reliable, but it still needs to be inspected because vehicles and machines operate in tough environments, and the installation has to remain correct over time.

How does installed suppression affect firefighter tactics at vehicle or machinery fires?

The Fogmaker fire suppression system has a typical activation time of 40-60 seconds, but a longer activation time can be designed

depending on where and what the system should protect. This is a long activation time for an engine fire suppression system, but the time for firefighters to arrive at the scene is typically a bit longer.

Because our system attacks the fire triangle by cooling the area and displacing oxygen, the Fogmaker fire suppression system extinguishes or suppresses the fire so that the firefighters' work becomes easier. When the Fogmaker fire suppression system is active, it is recommended to keep any hatches closed. This reduces access to oxygen and keeps more of the water mist in the compartment, and therefore keeps the fire suppressed for a longer time or suppresses it completely.

The system does not replace the fire service, but it can affect the situation they arrive to. If the system has activated, the fire may already be suppressed or controlled inside the compartment. Opening hatches too early can allow oxygen in and let mist escape, so keeping the compartment closed where possible helps the mist continue working and helps keep the fire under control.



Robert Tengvall
Key Account Manager at
Fogmaker International AB

<<< Fogmaker in the news - Port Gear >>>

Interview with Fredrik Rönqvist and Gustav Stigsohn, Fogmaker (Material Handling/Development)

MIST, POWER, ACTION! COOLING MODERN LOGISTICS

by Andrzej Urbaś

In the world of modern logistics and port handling, where machinery operates under immense pressure and downtime is measured in significant financial loss, the margin for error is nearly non-existent. As the industry shifts toward low-emission engines and electrification, new and complex fire safety challenges are emerging.

Recently, we had the chance to have a chat with Fredrik Rönqvist and Gustav Stigsohn of the Fogmaker fame, discussing the strategic and technical pillars of their technology. How can a company effectively protect multi-million-dollar equipment and, most importantly, human lives in such demanding environments? Let's find out!

■ **Port Gear:** To provide a baseline for our readers, could you briefly introduce Fogmaker International and define the core mission that drives your development of fire suppression technology for the material handling sector?

Fredrik Rönqvist: Fogmaker International, founded over 30 years ago, supplies high-pressure water mist fire suppression for vehicles and other enclosed spaces (such as gensets). We have approximately 350,000 systems installed in 70 countries

in applications ranging from race cars to mobile harbour cranes. Our core mission, not just for material handling, but for all the segments we work in, is that "everyone gets home alive after work".

■ **PG:** How does Fogmaker's water-based mist system address the specific fire risks created by higher engine temperatures and fuel pressures in modern, low-emission machinery?

FR: We do this by supplying a state-of-the-art, field-proven, fully mechanical, automatic fire suppression system that has high pressure and long activation time.

Gustav Stigsohn: High pressure breaks down the suppression liquid into tiny droplets. Smaller droplets will give more contact area per volume and subsequently cool hot components better. A mechanical system removes the risk of electrical failures causing the FSS not to function. The loss-of-pressure system

is always active and a major failure on a component usually means that the system deploys. 350,000 systems in the market tells the story that our customers are happy with our product. We, as all, of course have our flaws but we are constantly working to improve our product and our offer.

■ **PG:** Material handling equipment often contains large volumes of diesel and hydraulic oil that act as intense fuel sources. Could you elaborate on the "Triple Action" technology and why achieving a cooling effect is more critical for preventing re-ignition than simply choking the oxygen supply?

FR: For a fire to start you need three things: Fuel, heat and oxygen. Remove one and the pre-requisites aren't there. The Fogmaker system attacks all three at the same time. A long activation time allows for extensive cooling thus



PHOTO: ADOBESTOCK:THOMASLERCHPHOTO

effectively reducing the heat. Then, as the water mist is sprayed out into the engine bay, the mist expands into water vapor (1L of water mist turns into 1700L of water vapor) thus displacing the oxygen.

GS: Furthermore, a small percentage of fluorine-free foam is added to the suppression liquid to act as a chemical "fire blanket" on fuels. The foam prevents fumes from mixing with air and ignite.

■ **PG:** With the industry shifting toward electrification and fuel cells, how has Fogmaker adapted its detection and suppression strategies to protect these new energy sources from external fire initiators?

GS: A fire is a fire despite the source. While this is a simplification, it is also fundamentally true. The Fogmaker system works on several different types of fires including A, B and C-class fires. The major difference is not in the product, it is in the application; new fire risks need new methods when installing the fire suppression system - for example placement of nozzles and detection.

■ **PG:** The Fogmaker system is fully automatic and independent of electricity. In remote environments like railyards or port terminals, why is this mechanical independence a vital safety factor during a thermal event?

GS: A mechanical system removes the risk of electrical failures causing the FSS not to function. A dead starter battery will for example not have any impact on the FSS.

■ **PG:** For global logistics companies operating across different jurisdictions, how does Fogmaker ensure that a system installed in one region meets the rigorous service and insurance requirements of another?

FR: Fogmaker is the most tested and certified vehicle fire suppression system in the world, and we test and certify on a continuous base to ensure that we meet local, regional and global standards and requirements. Apart from testing at the authorities and certification bodies we also have our own in-house fire test cell where we conduct testing daily. This is done, not only to meet requirements but also to improve the system as much as possible and find the optimal configuration for different applications and standards. Just lately we have added two more standards/certifications: UAE and FM Standard.

■ **PG:** While the system requires annual, five-year, and ten-year services, Fogmaker emphasizes a low Total Cost of Ownership (TCO). How do these structured service intervals translate into long-term financial stability for port and logistics operators?

FR: In a ten-year period, there are only two extended service intervals, namely

the five- and the ten-year service intervals. The other eight annual services are a validation of the system and making sure that the system is functioning. These eight annual services are done in a very short time thus ensuring minimal downtime and minimum disruptions in an industry where up-time is key.

■ **PG:** Looking ahead at the evolving landscape of material handling and port safety, what upcoming developments or future plans at Fogmaker are you most excited about in terms of advancing fire safety technology?

FR: Right now, we are doing a couple of things. For one thing we are expanding our market presence and global reach through an increased partner network but have also opened three regional offices in the last years. Without revealing too much or going into too much detail, I can say that this journey is in its infancy and in the years to come you will see a lot of development here.

GS: On the technology side we are finishing the transition to PFAS-free liquid, we have also launched a new section valve that can direct suppression liquid to different compartments depending on where there is a fire, a cost-effective solution for example electric vehicles where the fire risks are spread over the machine.

■ **PG:** Thank you both for your time! ■

BEYOND EXTINGUISHMENT IN MINING

Mario Flores Dahlström, Fogmaker’s Segment Manager for Construction Equipment, Mining and Tunneling, discusses how to achieve cleaner, certified fire suppression for mining equipment

Fire protection in mining has always been a high-consequence discipline. A fire on a heavy-duty mobile machine is rarely an isolated technical event. It can place operators at risk, damage critical assets, interrupt production, create environmental exposure, and trigger costly downtime in operations where availability is measured with discipline.

For decades, the central question was simple: can the fire be extinguished? Today, that question is no longer enough.

Mining operators, OEMs, insurers, and fire safety professionals are increasingly looking at the full chain of consequences. How quickly can the system act? Has its performance been verified under relevant conditions? What happens after discharge? How difficult is the clean up? What is the environmental profile of the suppression agent? Can the machine return to service without creating a second operational problem?

In heavy-duty mining applications, the right fire suppression system must do more than attack flames. It must support safety, uptime, compliance, and responsible environmental management.

A SEVERE FIRE ENVIRONMENT

Heavy-duty mobile equipment operates in one of the most demanding environments for fire protection. Engine compartments and adjacent risk zones may contain hot surfaces, turbochargers, exhaust components, hydraulic lines, fuel lines, filters, pumps, electrical components, and combustible residues. These hazards are exposed to vibration, contamination, dust, high thermal loads, and limited accessibility.

The challenge is not only the presence of fuel and ignition sources. It is the machine's geometry. Fires may develop behind

"Fire suppression should be treated as a lifecycle system, not a one time installation"



obstructions, around hot surfaces, under covers, near hydraulic components, or in areas that are difficult to access manually. Ventilation, airflow, and machine layout can also affect fire behaviour.

This is why mining fire suppression cannot rely only on theoretical agent capability. It requires a system approach: detection, activation, pressure, liquid formulation, distribution design, nozzle placement, installation quality, and application-specific risk assessment.

BEYOND “WATER MIST”

Fogmaker’s technology is sometimes described through the language of water mist, but that only tells part of the story. The system uses high-pressure atomisation of Fogmaker Eco 1, a proprietary water-based suppression liquid, delivered through a certified distribution and nozzle architecture designed for demanding mobile equipment environments.

Performance is not created by one element alone. It comes from the combination of liquid formulation, pressure, droplet behavior, nozzle design, detection, installation practice, and risk-based application engineering.

The fine mist generated by the system supports rapid cooling and effective distribution in protected risk zones. Fogmaker Eco 1 combines the performance characteristics of a purpose-developed suppression liquid with a high-pressure platform, enabling a compact system architecture for mobile equipment applications.

In mining, this distinction matters. A fire suppression system should not be evaluated as “agent only” or “hardware only.” It must be assessed as a complete technical platform.

THE OVERLOOKED ISSUE: POST DISCHARGE

Traditional dry chemical and foam-based systems have played an important role in mobile equipment fire protection. They remain familiar to many operators and safety teams. However, modern mining operations are increasingly evaluating what happens after the fire is suppressed.

After discharge, the machine may require clean up, inspection, component replacement, electrical checks, and environmental handling before it can safely resume operation. Residues may affect visibility, contaminate machine compartments, complicate maintenance, and increase downtime. In some cases, the secondary consequences of discharge become a significant part of the total incident cost.

A cleaner suppression concept can therefore have operational value beyond the fire event itself.

Fogmaker’s high-pressure Eco1 system is designed to support effective suppression while reducing the post-discharge burden associated with residue-heavy alternatives. For mining operators, this is not only a housekeeping advantage. It is an uptime and

maintenance consideration. When a machine is working in a remote pit, underground environment, or production-critical site, every hour matters. A suppression system that is easier to clean after activation can help reduce disruption and simplify the recovery process. However, this is subject to proper inspection, service, and safety procedures before returning to operation.

ENVIRONMENTAL DIRECTION: PFAS-FREE MATTERS

Environmental responsibility is now a central part of fire protection decision-making. Across industries, firefighting foams containing PFAS have come under increasing scrutiny due to their persistence, mobility, and contamination concerns. Mining operators with strong ESG commitments are therefore looking closely at the chemistry of fire suppression systems, not only their extinguishing performance.

Fogmaker Eco 1 is GreenScreen Certified™ at the silver level. The GreenScreen Certified™ standard is designed to identify products that do not use PFAS and avoid chemicals of great concern. Eco 1’s certification provides a clear and independent reference point for buyers who need to align fire protection

decisions with environmental expectations.

This does not mean that fire suppression chemistry should be reduced to a single label. The correct question is broader: does the solution provide verified fire performance while also supporting the transition away from legacy fluorinated chemistries?

For mining, that combination is increasingly important. Sites are under pressure to improve safety, reduce environmental impact, and maintain operational continuity. Fire suppression has to fit all three.

CERTIFICATION AS A FOUNDATION, NOT A SLOGAN

In mining, claims are not enough. Fire suppression systems must be supported by testing, certification, and documented application rules.

Fogmaker’s platform has been tested and certified across several demanding mobile equipment and engine compartment frameworks. These include applications related to heavy vehicles, engine compartments, mobile equipment, and heavy-duty environments. The relevance for mining is clear: heavy-duty mobile equipment needs systems

that have been evaluated against realistic fire scenarios, not only idealised laboratory assumptions. Test methods for engine compartments and mobile equipment typically consider factors such as fuel fires, spray fires, airflow, obstruction, re-ignition, and operation at low temperatures.

For example, SP Method 4912 testing includes different fire sources such as pool fires, diesel spray fires, dripping oil fires, and Class A fires, with scenarios involving ventilation and obstructions. Fogmaker Eco 1 testing using this method demonstrated the ability to extinguish large and small fires, with and without forced ventilation, and Class A fires.

Fogmaker FSS Eco 1 is also certified under SPCR 199 for engine compartments with combustion engines, with classification C 3 A and operation down to -30 °C.

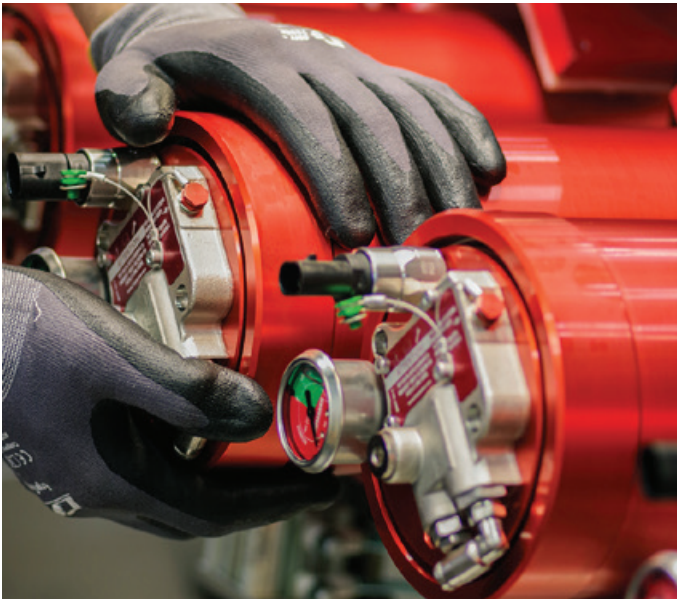
For Australian mobile and transportable equipment requirements, AS5062:2022 testing of Fogmaker Eco 1 showed the ability to extinguish the specified tests, with no re-ignition occurring for the tested configurations.

In the heavy-duty mobile equipment space, FM 5970 is especially relevant to mining. Fogmaker has carried out certification work for 65-bar and 105-bar Eco 1 systems for HDME applications, including single-nozzle tests, mock-up testing, and flow testing in accordance with FM 5970-related procedures.

The point is not certification for its own sake. The point is confidence. Mining buyers need to know that a fire suppression system has undergone a structured performance evaluation before it is installed on a production-critical asset.

RISK-BASED PROTECTION FOR LARGE MACHINES

Mining equipment varies significantly in size, configuration, and fire risk. A compact machine, a haul truck, a loader, a drill rig, and a large material handling machine may all require different protection strategies.



For large machines, it is often misleading to think only in terms of total machine volume. The more relevant question is where fires are likely to start and how they can propagate. Critical risk zones may include hot surfaces, hydraulic areas, engine compartments, fuel systems, electrical cabinets, and areas where combustible material can accumulate.

A strong fire suppression strategy, therefore, begins with risk assessment. It identifies ignition points, fuel sources, airflow, obstructions, access limitations, and operational consequences. The system is then configured to protect the relevant zones, rather than treating the entire machine as a simple empty volume.

This risk-based approach is especially important in mining, where machines are complex, customised, and often operated in severe duty cycles.

INSTALLATION AND SERVICE DISCIPLINE

A certified product is only part of the safety chain. Installation and service discipline are equally important.

Mobile equipment fire suppression systems must be installed by trained and certified personnel, using approved components, correct documentation, and proper inspection intervals. The condition of the machine also affects system performance. A poorly maintained vehicle or machine can increase the risk of fire and reduce the effectiveness of any protection system.

For this reason, Fogmaker’s system philosophy includes not only suppression hardware and liquid, but also installation procedures, service intervals, documentation, and trained personnel. This is essential in mining, where equipment may be located far from central service infrastructure and where uncontrolled downtime can become extremely expensive.

Fire suppression should be treated as a lifecycle system, not a one-time installation.

A NEW DECISION STANDARD FOR MINING FIRE PROTECTION

Mining operators are moving toward a broader decision standard. The best solution is no longer defined only by whether it can suppress a flame in principle. It must show credible performance, environmental responsibility, practical recovery, and serviceability in harsh environments.

That is where high-pressure Eco 1-based fire suppression plays a strong role.

By combining a proprietary water-based suppression liquid, high-pressure atomisation, certified system architecture, and risk-based application design, Fogmaker offers a solution aligned with the realities of modern mining equipment.

The future of fire suppression in mining will not be shaped by a single factor. It will be shaped by systems that simultaneously protect people, machines, production, and the environment.

For mining, that is the real benchmark: not only extinguishment, but responsible protection with operational continuity in mind. **FB**

<<< Fogmaker in the news - TOC Recap in Port Gear >>>



- **How do you like this year edition of TOC Europe?**
We had many visitors, partners and customers, new and old. For us, the exhibition was a great success and the new location in Hamburg worked very well.
- **How from your perspective look the current situation on the market??**
The Market is getting tougher and there are more low-cost solutions (where the quality corresponds with the price) entering the market. We do our best to navigate this landscape, and our quality, dependability, and outstanding global network for service and support make Fogmaker the obvious choice for the customers.
- **What new solution/product you presented to your customers?**
We continue to highlight our section valve as well as a holistic approach to port equipment, and we presented our increased presence in Americas with the establishment of Fogmaker USA Inc. ■



New Face at Fogmaker

Lars Nordgren

Hello Fogmaker Partners,

My name is Lars Nordgren, and I have recently joined Fogmaker as Interim Sales and Marketing Manager. I will be working with the company on a part-time basis during the coming period, supporting the team while Fogmaker searches for a permanent successor to Johan.

I bring extensive experience from senior leadership positions in business management, sales, and business development, both in Sweden and internationally. In my role at Fogmaker, I will be responsible for supporting our sales and marketing activities, while contributing with experience, structure, and an external perspective. My focus will be on ensuring continuity and working together with the team to further strengthen Fogmaker's business and market position.

About me personally, I live in Eksjö, in the Småland region of Sweden, and I enjoy staying busy. Outside of work, I am actively involved in orienteering, where I serve as a leader and organizer and spend much of my time planning and coordinating various activities. I value teamwork, clear communications, and finding practical solutions that help move things forward.

I am looking forward to getting to know both the Fogmaker organization and our partners around the world. Please do not hesitate to reach out if you have any questions, ideas, or simply would like to introduce yourself. I look forward to many rewarding conversations and collaborations during my time with Fogmaker.

Best regards,

Lars Nordgren
Interim Sales and Marketing Manager



Trade Shows

Since the last issue of Fogmaker News, Fogmaker International has participated in Logimat in Stuttgart, BUS2BUS in Berlin, TOC Europe in Hamburg, Interschutz in Hannover, and Svenska Maskinmässan in Stockholm, Sweden.

At **Logimat**, a Material Handling show in Germany, we shared a stand with PMC Attachments - one of Fogmaker's sister companies in the Dacke Group.

The Fogmaker team were delighted to join forces with German partners Scharr Tec and Fischer.



German partners joined us at **BUS2BUS** in Berlin as well and helped make the event a success.



Fogmaker Nordic with partners exhibited at Svenska Maskinmässan - and celebrated Sweden's national holiday on June 6th.



TOC Europe has been in Rotterdam for quite a few years, but moved to Hamburg this year. This is usually a good show for Fogmaker and 2026 was not an exception. We were delighted to have several partners join us.

Fogmaker CEO Lars Alrutz took part in two panel discussions in the Safety Village, and did a video interview with the TOC team.



Interschutz is a long show where two Fogmaker teams took turns, and had much appreciated support from our German partners.

Lars Alrutz was interviewed by International Fire and Safety Journal



During fall, Fogmaker International AB are scheduled to exhibit at:

- IAA in Hannover
- Persontrafikmässan in Stockholm
- TOC Americas in Colombia
- TOC Asia in Singapore

As always, partners are welcome to join us in the stands!

Tradeshhow Reminder

As stated in the partner contracts, Fogmaker International AB can support partners' trade shows through sending someone to help in the stand, advising on graphics and branding, or even give financial support for exhibitions.

All these things are subject to approval ahead of time. Staffing and funding are decided by your Key Account Manager or FMI's Sales Manager. **If you intend to request funds you must do so well in advance of a show.** For assistance with graphics and the brand, contact us through e-mail: marketing@fogmaker.com.

Partners are encouraged to use their own logo together with the "Certified Partner" logo or the one that just says "FOGMAKER"



Partners are NOT allowed to exhibit under the name Fogmaker International AB.

The image to the right is a wonderful example from Busworld Türkiye this year where Defender is exhibiting Fogmaker products with support from Fogmaker International AB. It turned out to be a great cooperation.

On the photo is Fredrik Rönqvist from Fogmaker, Serhan Dilbaz from Defender, Blanka Nagy from Fogmaker, and Serden Dilbaz from Defender.



A decorative border made of watercolor-style flowers and greenery. It includes pink and purple daisy-like flowers, smaller yellow and orange blossoms, and green leaves and stems, all arranged in a circular pattern around the central text.

Summer Hours

Fogmaker will be open all summer, but we have limited capacity from July 20 through August 7.

Please plan accordingly.

FOGMAKER

INTERNATIONAL AB