

FOGMAKER

INTERNATIONAL AB

Fire Suppression for Mining and Tunneling



**Life-Saving Protection for
Heavy-Duty Vehicles and
Enclosed Spaces**

Pure Performance with Triple Action

Safety shouldn't be a Compromise

THE CHALLENGE...

Mining and tunneling operations present unique fire safety challenges due to the confined spaces, flammable materials, and harsh working conditions. A thermal event above or below ground can be devastating.

Most fires in machines with combustion engines start in the engine compartment - a place where a fire may not be discovered until it is a blaze and almost impossible to suppress with a hand-held fire extinguisher.

In battery-electric machines, both thermal runaway and components can be fire initiators. Research presented at the 2023 FIVE conference shows 50-60% of fires originate outside the battery itself. Fogmaker works through preventing a fire from reaching the battery. Machines with fuel cells have similar risks, and a fire can lead to a devastating gas explosion. Here too, proactive fire suppression is needed.

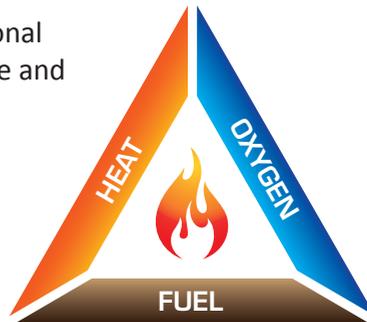
...AND SOLUTION

Fogmaker has decades of experience in detecting and suppressing fires in engine rooms and other enclosed spaces, and the system will provide the best possible fire protection performance if there is an emergency. The system is tailored to each type of mining and tunneling equipment.

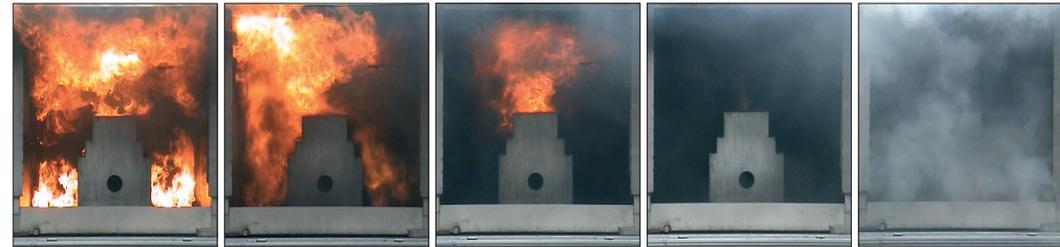
The specially formulated water-based mist protects engines, hydraulic components, and similar at-risk areas. The system is always active, fully automatic, and independent of electricity.

The Fogmaker system has a large number of international certifications and our new Eco1 Fluid is 100% PFAS free and Greenscreen Certified™ at the silver level.

Find a distributor near you, or read more about the system and what we can do to help protect your equipment on our website: www.fogmaker.com



"From 870 °C to 136 °C in 10 seconds!"



+870 °C
0 sec

5 sec

+136 °C
10 sec

Unique cooling effect; temperature reduction of 734 °C in 10 seconds!

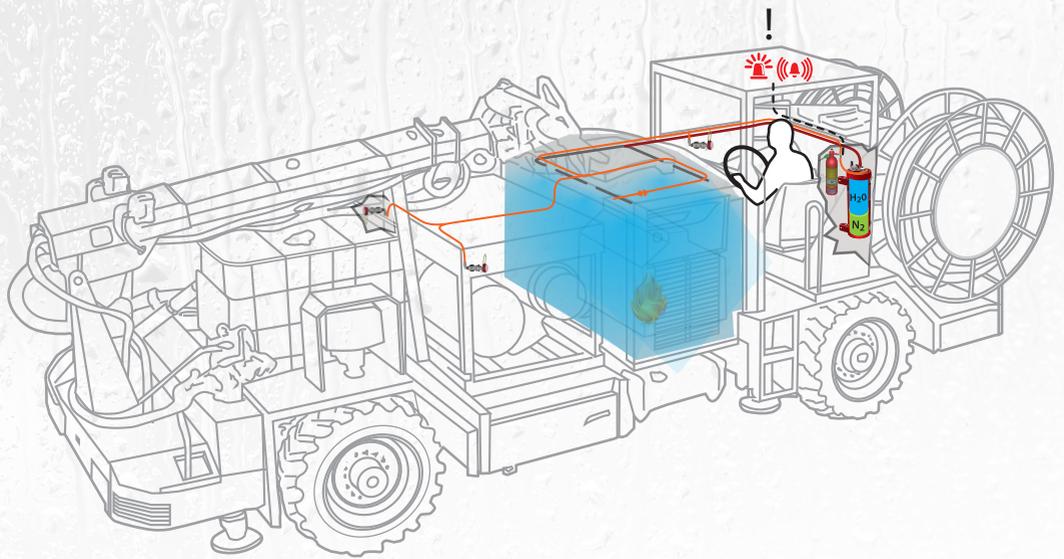
Fire suppression test in a simulated engine compartment with a volume of 2,5 m³. The fire source consists of four 20 x 40 cm trays filled with diesel. Diesel spray is also applied at a rate of 2 liters per minute at a pressure of 5 bar. The heat effect reaches approximately 1,600kW. The pictures are taken with 2 second intervals. During the whole interval, 10 seconds, approximately 7 dl suppressant is used.



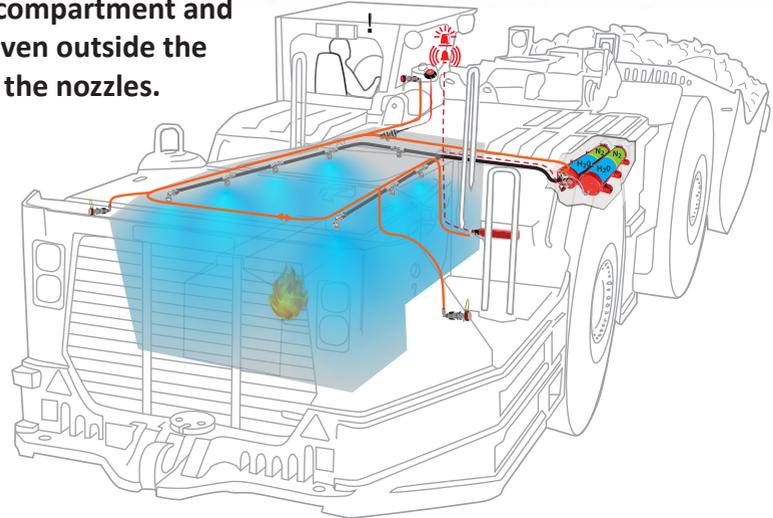
Fully automated, always active, and independent of electricity.

Fogmaker Benefits

-  Choice between several piston accumulator sizes for greater flexibility.
-  System monitoring – activity, low pressure, and fire alarm.
-  Easy installation.
-  Low Life Cycle Cost – annual inspection, 5 year service, 10 year service.
-  Simplicity – no power supply, position independent, and requires minimal space.
-  Quality and environmental certifications. IATF-16949.
-  Triple Action³ – attacks all three sides of the fire triangle.
-  Certified Partner and OEM training courses via Fogmaker Academy.
-  Automatic engine shutdown (optional).
-  Global network via Certified partners.
-  Great cooling effect and long emptying time, which prevent re-ignition and down-time.
-  Free technical support.



The water mist gives an immediate choking and cooling effect. It fills the entire fire-protected compartment and accesses fire beds even outside the direct spread of the nozzles.



ACTIVE 24/7

The system is always ready. No power supply needed for activation or system monitoring.



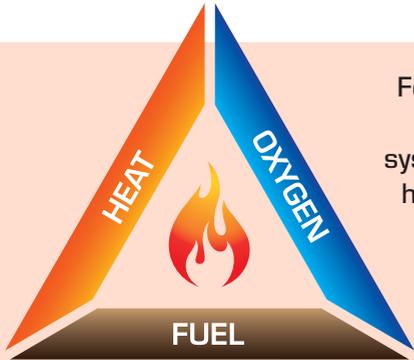
MINIMAL DOWNTIME

Quick recharging for minimal downtime



CONSCIOUS DESIGN

Small-sized pipes and space-conscious design.



Fogmaker's fire suppression system handles all three sides of the fire triangle: heat, oxygen, and fuel. The system deploys when the protected area becomes too hot, and sprays a water-based mist that expands and chokes the fire. The mist also cools the area for a long time - at least double compared to other certified systems* - which prevents reignition.

*Result of the SP4912 testing method

THE IMPORTANCE OF SERVICE

The Fogmaker Fire Suppression System is designed to save lives and protect property. The system is sturdy and reliable, but requires regular service to ensure it will be deployed when needed. Service can only be done by accredited technicians.

Service intervals can vary depending on type of machinery, but most systems require an annual service, a five-year service, and a more extensive ten-year service. Some systems installed in heavy-duty environments may need to be serviced more often.

It is important to adhere to these intervals. If there is a fire, many insurance companies will not pay if the fire suppressing system hasn't been maintained. Also, Fogmaker gives a two-year warranty from the manufacturing date, but the warranty is void if the system hasn't been serviced.

Accredited technicians have gone through a course at Fogmaker Training Academy, and will be able to show an ID card or a certificate. If you need help finding a technician, visit www.fogmaker.com to find our partner in your country. They can help you locate a technician near you.

The Fogmaker system has a low Total Cost of Ownership, and following the service guidelines will ensure that your system will last and be reliable for many years to come.

You can budget for service, but not for a fire!

SERVICE SCHEDULE

1

The Annual Service

Must be performed the first time within a year ± 2 months after installation date.

5

Five Year Service

Five years after the manufacturing date. The service includes replacement of fluids and pressure gauge.

10

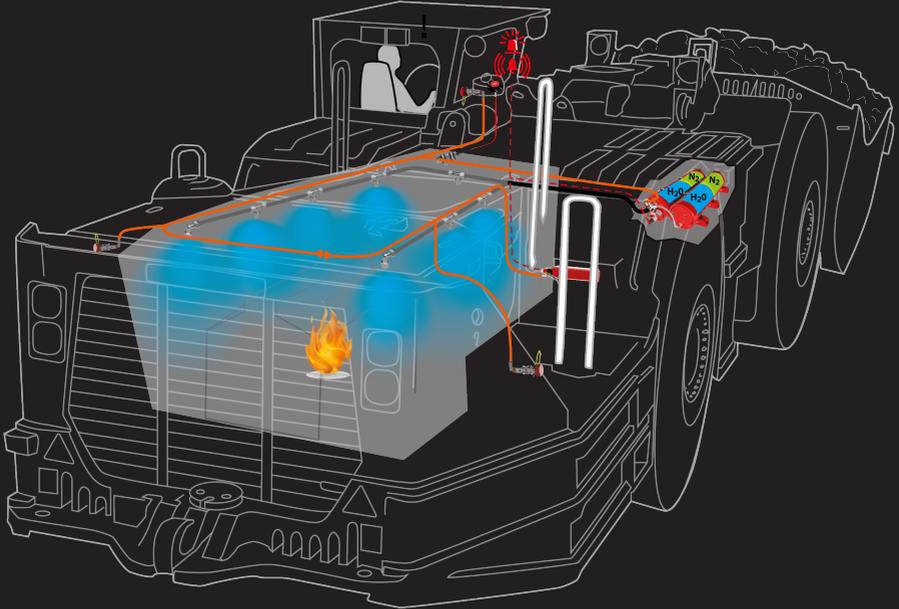
Ten Year Service

Ten years after the manufacturing date. During this service, items like detector bottles and gaskets are replaced.



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ACTIVE 24/7

The system is always ready. No power supply needed.



MINIMAL DOWNTIME

Quick recharging for minimal downtime.



ROBUST SYSTEM

Designed for tough environments.

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