

FOGMAKER
INTERNATIONAL AB

Life-saving protection for vehicles and enclosed spaces

Fire suppression systems with high-pressure water mist.





FOGMAKER
INTERNATIONAL AB

**We serve to save lives
and valuable vehicles.**

Fogmaker International AB is a Swedish company which develops and manufactures fire suppression systems with high pressure water mist for engine compartments and other enclosed areas.

Fogmaker has more than 25 years of experience and 200,000 installations in over 50 countries. We have certified partners around the world.

OUR HISTORY IN SHORT

1995

Fogmaker International AB was founded. Offering fire suppression systems to the racing world.

2001

Fogmaker entered the bus segment and this was the global breakthrough.

2003

Delivery to the first OEM Bus manufacturer.

2004

Further developments of our product was made and the bus segment grew rapidly.

2009

We extended the collaboration with partners around the world.

2012

ISO 9001:2015 certified.

2013

ISO 14001:2015 certified.

2015

UL listed.

2016

We were the first fire suppression system to pass the official tests and receive the certificate for UNECE Regulation 107.

2018

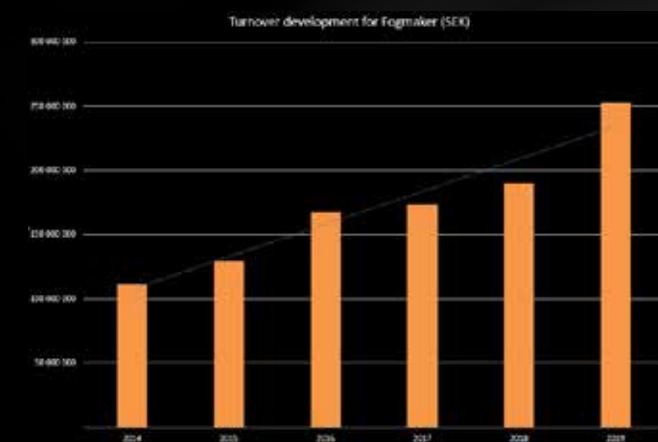
IATF 16949 certified. Fogmaker Training Academy and R&D was established.

2019

Investment in an automated production.

2020

Fogmaker celebrates 25 years. Over 200,000 systems have now been installed in over 50 countries around the world.



THIS IS FOGMAKER

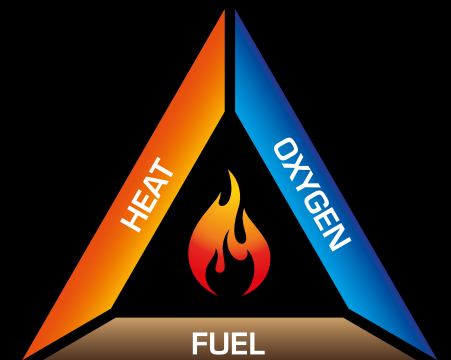
Fogmaker is a value-driven company. By this we mean that our values determine how we work and help us to make decisions. These values provide a common vision and create a sense of community. Our shared values make Fogmaker unique! The following words embody the values within the Fogmaker: Expertise, Commitment and Integrity



OUR SYSTEM

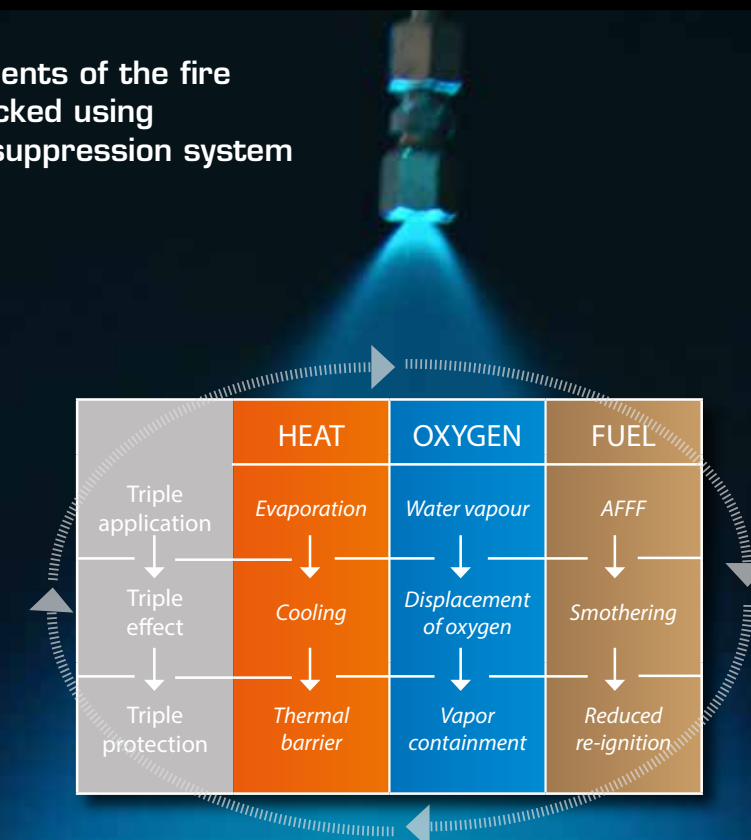
Fogmaker fire suppression with high-pressure water mist for engine compartments or other enclosed areas is a professional and reliable system. High-pressure water mist has excellent cooling performance and provides oxygen replacement.

Fogmakers fire suppression system spreads a fine high-pressure water mist over the fire. This efficiently cools the fire whilst displacing air when it vaporizes so that the oxygen volume reduces in the protected area. The extinguishant is water with antifreeze additive (optional) and a film-forming chemical which covers the fuel of the fire and prevents re-ignition. Fogmakers fire suppression system functions in enclosed spaces that are difficult to reach with powder and plain water. The system can be activated manually or automatically



Fogmaker's Triple action effect.

All three components of the fire triangle are attacked using Fogmaker's fire suppression system



BUSINESS SEGMENTS



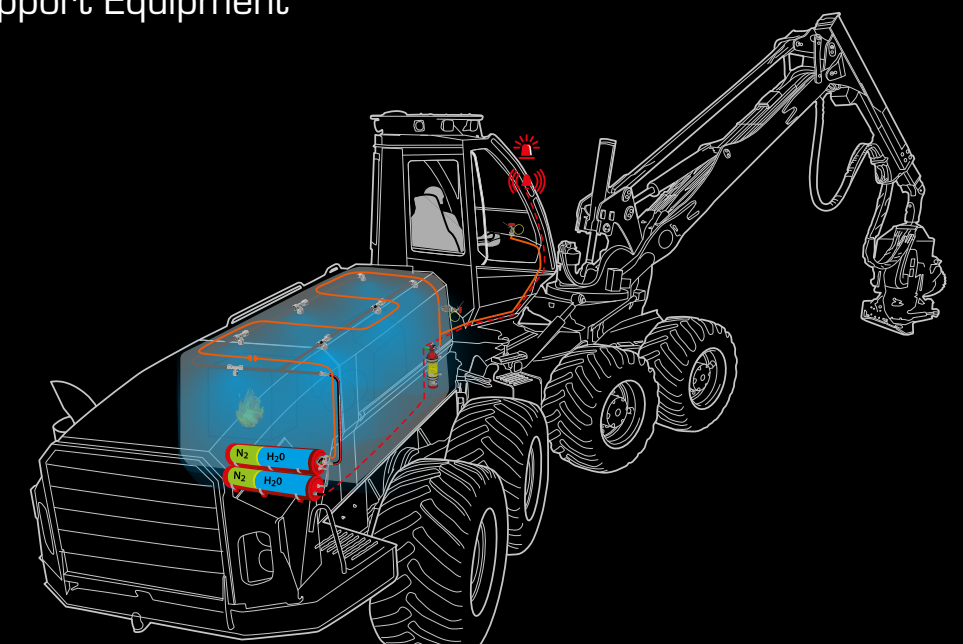
Fogmaker high-pressure water mist is very efficient for suppressing fires in multiple areas. This makes our product interesting for a wide customer base.

The water mist gives an immediate choking and quick cooling effect. Unique for the water mist is the fact that it fills the entire fire-protected area and accesses fire beds outside the direct spreading area of the nozzles. The total life span cost of Fogmaker suppression systems is low compared with competing systems. Our system is very reliable and adapted for demanding environments. A large service network guarantees fast actions. For many years safety requirements for automatic fire suppression system in vehicles have existed around the world. In more and more countries insurance companies

and operators are being added to the list of candidates. We are the market leaders for fire suppression systems for buses with over 140,000 installations since 1995. In 2016 we were the first fire suppression system who was approved according to R107. In total, we have carried out more than 200,000 installations worldwide.

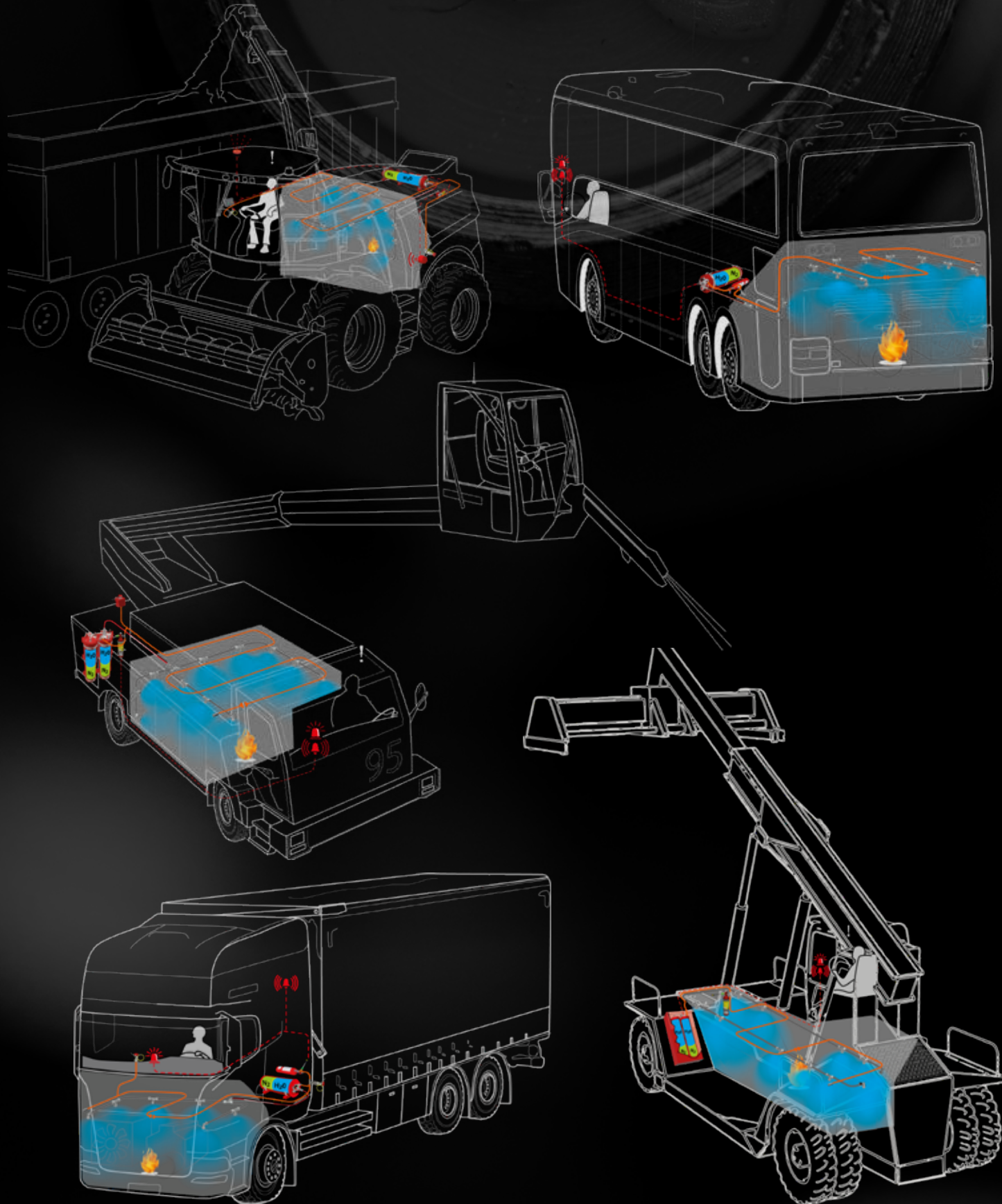
Today our main business segments are:

- Bus and coaches
- Mining and tunneling
- Material Handling
- Airport Ground Support Equipment
- Forestry
- Construction
- Trucks
- Agriculture
- Electric vehicles
- Motor racing



An illustration of an installed Fogmaker system.

FOGMAKER BENEFITS



Highly reliable and efficient system.



Product development in-house.



Choice between several cylinders for greater flexibility.



Low Life Cycle Cost – annual inspection, 5 year service.



Easy installation.



Quality and environmental certified. IATF-16949.



Simplicity – no power supply, position independent and minimal obstruction.



Certified Partner and OEM training courses via Fogmaker training Academy.



Triple Action³ – attacks all three sides of the fire triangle.



Global network via Certified partners.



Automatic engine shutdown (optional).



Free technical support.



Great cooling effect and long emptying time which prevent re-ignition and down-time.



System monitoring – activity, low pressure and fire alarm.



RISK ASSESSMENT

Fire suppression systems are a life-saving device and must always operate. As a buyer you should always consider the following:

- Assess your risks
- Consider your total operators including passengers and sufficient time for evacuation
- Select the right product for the risk
- Train your operators on the system and safe evacuation of passengers
- And do the risk assessment below together with Fogmaker

Risk assessment

The risk assessment is completed by one of our Technical Support Managers usually with a customer project manager assigned by the customer. The goal of the assessment is to examine the surroundings where the vehicle operates.

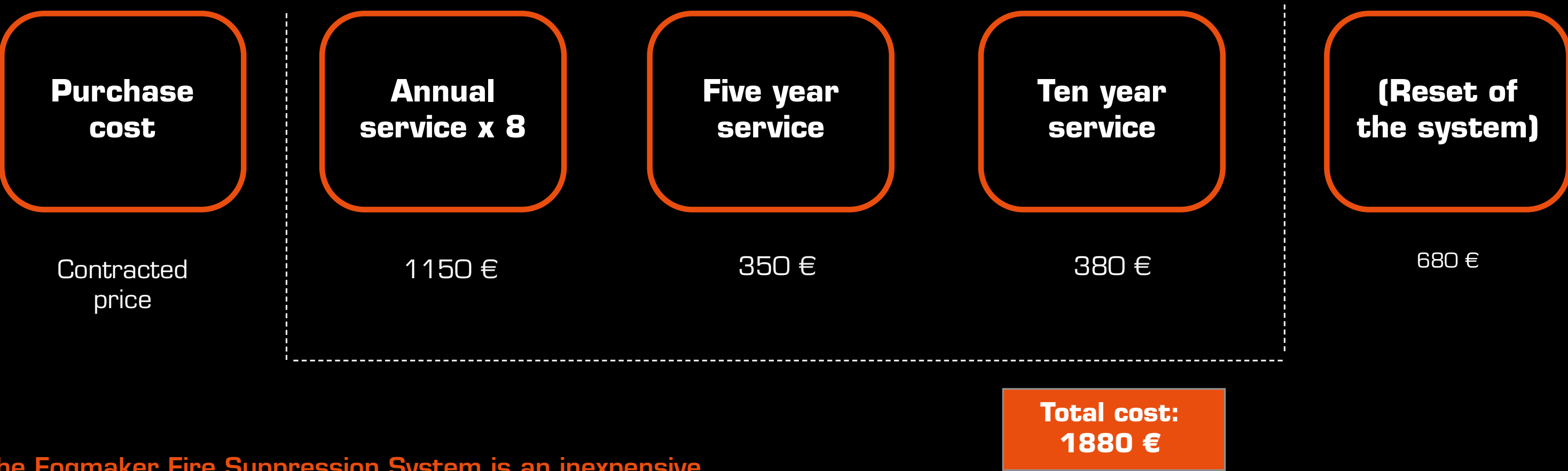
- Are there any combustible material in the area where the vehicle works?
- What is the gross volume of the motor compartment?
- Is there and risks for the operator's health or life?

All these questions to pinpoint the hot spots in an engine compartment, thus giving us an understanding of where to aim the nozzles to achieve an effective suppression time. This is vital to slow down the emergence of fire. All the positions of the nozzles are documented and a form is signed between both parts agreeing that the marked areas are the hot spots of interest. To be analytic in our way of working we can use temperature stickers or heat radiation cameras. This is to avoid false deployment and get the correct configuration for the specific vehicle. Always save and document installation images, protocol and risk assessment. In case of a fire, this documentation is necessary.



10 YEARS LIFE CYCLE COST*

This example is calculated for a bus according to a R107 standard and with a 6.5 liter fire suppression system.



The Fogmaker Fire Suppression System is an inexpensive life insurance. Yet, the system must be maintained to guarantee its function.

* Prices based on estimated annual costs and a Western European price level. Excluding spare parts, travel and accomodation costs.



OUR PROCESS



In order to proceed we we need the following information:

- Engine compartment size
- Place of installation of the Fogmaker fire suppression system
- Type and model of machine
- Risk areas
- Machine usage per day
- 3D of the engine compartment

CROSS-FUNCTIONAL TEAMS

From Request for quotation to start of production. We work in a team-based cross-functional way, which benefits us and you as a customer greatly.

Cross-functional collaboration means bringing our employees together with different knowledge, expertise and experience. This way of working increases creativity, problem-solving, coordination and speed due to the teams composition. When we receive a new business project we set up a team with people from different functional areas; sales, engineering, quality, production planning, logistics, etc. and with one main contact person in close collaboration with you as a customer.



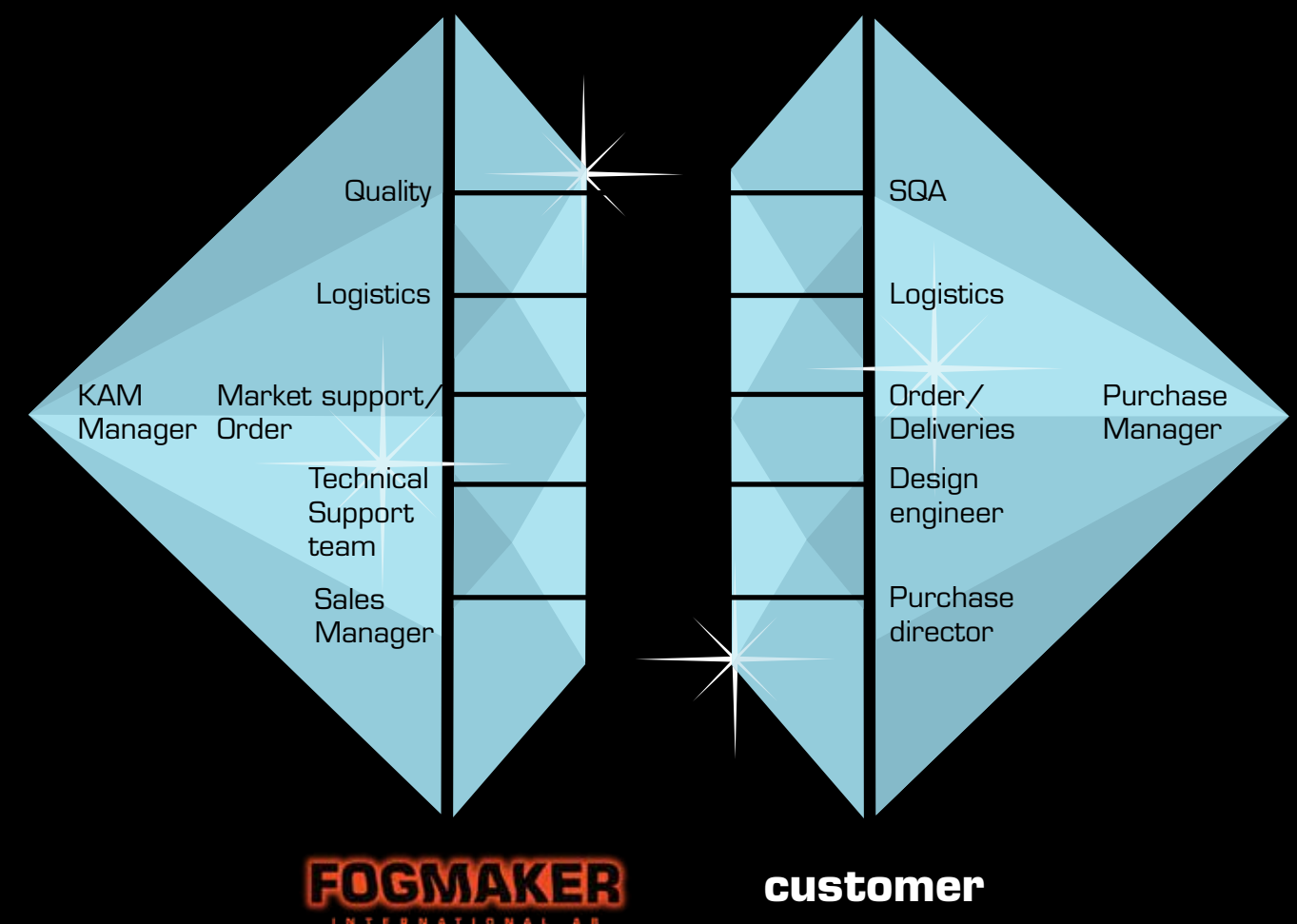
KEY ACCOUNT MANAGEMENT

Our goal is to make our customers succeed using our products and services. To succeed with this goal we use Key account management (KAM) that focuses on long-term collaboration.

We aim at collaborating with customers on mutually beneficial projects, helping our customers to meet their objectives, and making sure the customer is getting the necessary support. By segmenting our key accounts we build on a foundation for close partnership and trust-building.

We will have a stronger relationship, work jointly on planning for future improved sales targeting and forecasting, feedback for organizational improvements etc.

We choose to organize a KAM-team for quick response in all important functions. See KAM-team set-up below.



FOGMAKER TRAINING ACADEMY

At Fogmaker Training Academy we offer training to become a certified Fogmaker Partner to perform service and installations on our system. This training is mandatory for all our partners.

Fogmaker Training Academy offers four levels of training courses, which contain both theoretical and practical training.

Step 1: Annual control

Step 2: Complete service

The difference between the courses is that after completed step two you are authorized to fill including emptying the detector bottle and piston accumulator. This means to perform a 5-years service (exchange of the extinguishant) and reset the activated system.

Step 3: Installation certificate

Authorized to install a complete system on a vehicle

Step 4/5: Trainer for service/installation

This is the level to become a trainer for service or both service and installation. Prerequisites are completed steps 1,2 and 3 including a good experience from installing and performing service on the Fogmaker system.





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CERTIFICATIONS

Fogmaker is the holder of the following certifications and approvals.

- IATF 16949
- UNECE-R107
- SPCR 183
- SPCR 197
- ISO 9001:2015
- ISO 14001
- AIS-135
- AS 5062-2006
- AS 5062:2016
- ISO 9094-2:2002
- ISO 9094-1:2003
- ACI 2000/054/001
- SBF 127:16
- SBF 128:3
- SBF 127
- FIA: EX.047.18, EX.048.18