

Why Dafo



About Dafo

Dafo has been in business for over 100 years and has always been in the front line of technology engineering and part of regulatory development on a worldwide basis. Our Head office which has a size of 4 500 m² is located in Tyresö, Sweden.

Dafo was one of the first companies in the world which started to develop integrated firefighting solutions for vehicles. Since the startup of this business back in 1976, Dafo has used many different solutions such as Halon, dry powder, pressurized liquid containers, pressurized tube detection etc. The overall objective of Dafo has always been to work with continuous improvements, research and developments to make our systems more reliable, sustainable and innovative. Over the years Dafo has obtained vast experience and knowledge from our end user installations which have been used as a basis for eliminating false alarms and false releases. As a result of the development Dafo can today proudly present two different state of the art reliable solutions both without vulnerable and pressurized agent containers.

In 2018 Dafo Brand AB decided to separate its vehicle fire detection and suppression operations from its core fire safety equipment business. The name of the new company was Dafo Vehicle Fire Protection. Dafo Vehicle Fire Protection has today 88 employees.

The Dafo group today consist of several subsidiaries and Dafo dealers – Dafo Oy (Finland), Dafo US, Dafo Deutschland, Dafo Russia, Dafo Asia, Dafo Spain, Dafo UK & Ireland, Dafo Brazil, Dafo Middle East & Dafo Chile.

In November 2019 Dafo Asia, with HQ in Kuala Lumpur/Malaysia started their official operation. More Dafo companies are under development.

Today we install the Dafo Fire Suppression system in the product line of many OEMs for example Volvo, Hyster, Kalmar, Terex, Atlas Copco, Kone Crane, Epiroc, Komatsu, John Deere, MAN, Scania, VDL, Wright Bus, Higer, BYD, Hyundai, Solaris, Gemilang, MCV, Otokar, etc. In addition, we also conduct retrofit installations at many operators through our international partner network.

Dafo has vast experience in doing retrofit installations. Currently we carry out 3 200 retrofit installations on KMB buses in Hong Kong.



Often customers only look at the price tag when acquiring Fire Suppression systems which is quite understandable. However, there is a need to review the details of the system even further. If a firefighting system start having failures and the vehicle ends up at the work shop, it will generate more cost, especially down time. Therefore, it is important to review the technical qualities, advantages as well as the reliability of the system.

Choice of right agent

Since 1976 Dafo has tried different extinguishing agents in order to reach the most reliable extinguishment.

We have explored that agents as gas, aerosols and water mist are too sensitive for ventilation effects and have not enough ability to cool down the overheated engine parts. Extinguishing the fire is one task but preventing against re-ignition is more difficult with the above-mentioned extinguishing agents.

We have even used powder for a long period, but we stopped using it in the 90's, because powder is too corrosive, expensive to maintain and not efficient to prevent re-ignition.

Because there was no efficient extinguishing agent on the market, Dafo developed the wet chem extinguishing agent called Forrex.

Forrex is:

- Effective extinguishing liquid (wet chem) with a lightly foaming character
- Combines the good qualities of water mist, direct spray (sprinkler) and foam and in addition Forrex supplies very good protection against re-ignition
- Unique cooling effect, even on overheated engine parts
- Impregnating effect (get into the burning material to avoid re-ignition)
- Film forming effect to prevent re-ignition
- Freeze protection down to -50° C
- Environmentally friendly
- Non-hazardous, no risk for personnel during discharge
- Resistant to ageing
- Non-corrosive
- Easy clean-up after discharge – rinse with water



Dafo – Vehicle Fire Protection Product development



Extinguishment

The Dafo system is designed in a way to knock out the fire and protect against re-ignition.

The suppression time is usually approx. 1 (one) second!!

The discharge time of the agent is approx. 15-20 seconds.

Once the fire is extinguished, the system will efficiently cool down the overheated engine parts and prevent a re-ignition.

Ventilation

Dafo installs the Dafo system in different kinds of machines in various environments and geographical areas.

The system is designed to meet different requirements as it is for example not always possible to shut of the fan-function.

The Dafo extinguishing agent is a Wet Chem (foam liquid) which combines the positive effects of a direct spray, water mist and foam. The agent Forrex will deplete the oxygen in the protection zone and at the same time reach the overheated engine parts. Because the drops of the Forrex agent are bigger than water mist, they get enough kinetic energy to reach the overheated engine parts, even if the system is installed in an open space or exposed to strong ventilation.

Our system is capable to extinguish fires even if the ventilation is running.

Proper design

The secret behind the knockout technique of the Dafo system is the combination of installation design, component function and extinguishing agent.

The system is always designed to cover the whole protection zone considering both the sources of fire and combustible material.

We leave nothing to chance!

Low TCO

The Dafo system is designed to meet the demands of the final user.

According to our strategy, the final user should not suffer of high service & maintenance costs or trouble because of false releases or malfunctions.

A low total cost of ownership (TCO) is an important key factor for every operator. Dafo's fire suppression system, with its superior low maintenance frequency and reliability contributes to increased profitability through less downtime for the operator.

The first five years, only the back-up battery will be changed.

The annually service check takes approx. 30-45 minutes for each vehicle.

Easy and low-price Service

To exchange	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
9V battery	x	x	x	x	x	x	x	x	x	x
actuator					x					x
Agent Forrex										x
Nitrogen propellant cartridge										X
Piston of the agent tank										x

Certifications

A tested and certified Vehicle Fire Suppression System in combination with a reliable fire detection system is the best first line of response in case of an emergency such as at a thermal incident. Dafo Vehicle's fire suppression systems are thoroughly tested for fire performance ability and environmental durability such as Electromagnetic Compatibility (EMC), vibration, corrosion and temperature extremes according to international vehicle standards to ensure the highest performance.

Dafo Vehicle's fire suppression systems has the following approvals:

Fire suppression system approved as a component with regard to UNECE Regulation No. 107 – Swedish Transport Agency (E5)

P-marked in accordance with SPCR 183 – RSIE Research Institutes of Sweden.

Certificate of Approval of AS 5062 - Global-Mark.

I.S 6278 approved – The standards institution of Israel

AIS-135 approved – ARAI India

Total risk management service provider:

- Dafo Vehicle Fire Protection has a well proven implementation process in which we work closely with our customers throughout the whole process.
- Dafo Vehicle Fire Protection takes full responsibility for:
 - the risk assessment phase
 - adaptation
 - prototype installation
 - documentation/optimization
 - documentation/validation
 - pre-serial installation/training

- supply chain management

- serial deliveries

- service & maintenance

- Prior to any installation of fire suppression systems, Dafo Vehicle Fire Protection conducts a fire risk analysis in order to identify potential fire hazards.
- Dafo Vehicle Fire Protection always optimize the fire protection solution for the vehicle. Much effort is spent on reducing material consumption but also reducing installation time at serial production. This process also includes ways to establish flawless solutions for the installation e.g. Poka-yoke as well as establishing smarter solutions i.e. in order not to block access to critical components which are part of the vehicle's powertrain.
- The risk management process includes smooth system integration. Dafo Vehicle Fire Protection offers on-site technical support both for mechanical and electrical integration in order to support OEMs.

Local presence:

- Dafo Vehicle Fire Protection is continuously increasing our geographical proximity by following our OEM customers in their global expansion by supporting their distributors around the globe. Through our local partners Dafo Vehicle Fire Protection is close to our customers in order to assist them with installation, easy access to spare parts and refilling of extinguishing cylinders.
- Dafo Vehicle Fire Protection is continuously setting up hubs/distribution centers in strategic geographical areas to be closer to market and to reduce the delivery time as this is important to our customers.
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In the front line of technology engineering

- Dafo Vehicle Fire Protection is in the forefront of the development by participating in several research projects.
- Dafo Vehicle Fire Protection is in the frontline of technology engineering by continuously developing new products and services in order to meet the challenges on the market.
- Dafo Vehicle Fire Protection is currently working with our OEM customers by integrating our systems into their communication protocols.
- Dafo Vehicle Fire Protection is working focused on sustainability, meaning environmental sensitivity without compromising safety. Measuring and mitigating impacts from manufacture to end-of-life is of great importance.
- Dafo Vehicle Fire Protection is in the process of becoming certified in accordance with IATF 16 949.

Please make sure to follow Dafo Vehicle Fire Protection in Social Media. Please also guide your customers to our social media channels for the latest news.

Twitter – @dafovehicle (<https://twitter.com/Dafovehicle>)

Facebook – <https://www.facebook.com/dafovehicle>

YouTube – dafovehicle (<https://www.youtube.com/channel/UCnnPIIXaWwE-wY3X-13nTXw>)

LinkedIn – <https://www.linkedin.com/company/dafovehicle>

My news desk - <https://www.mynewsdesk.com/dafo-vehicle>

Dafo - Think smart, think safe!

By choosing Dafo Extinguishing System you decide to protect your vehicle, people, your customer's interests and the environment with a reliable fire suppression system that works in all geographic areas and in all different segments.



Dafo - Nothing is left to chance!

