

A stylized graphic of a flame, composed of two overlapping shapes. The left shape is a dark red, teardrop-like form. The right shape is a teal, teardrop-like form with a small hook at the bottom. The background is a dark red gradient with a light red dot pattern.

**Electric pumps
for fire-fighting
systems:
reliability comes first**

caprari

Electric pumps for fire-fighting systems: reliability comes first

Reliability is one of the most important requirements that is expected of a technological product, i.e., the ability to best perform its function at any time it might be required. This applies to all applications, but becomes a priority when the safety of people is involved. It is the case of fire-fighting systems in which electric pumps are essential. This very awareness has inspired us to lend our experience to create the best fire-fighting pressure boosters, by supplying components which are compliant with current regulations and capable of responding to the needs of different types of systems.

The importance of fire protection

In places such as industrial facilities and craft workshops, commercial premises, cafés and restaurants, offices, medical premises, service stations, schools or retirement homes, safety also involves the installation of systems and devices that can prevent and control accidents of any kind or that can promptly identify the onset of any issues, ensuring optimal management.

We will therefore present here an overview of the different solutions available and delve into our proposals for the sector from a technical point of view.



Fire-fighting systems

The field of fire protection is very complex and has made significant progress over time, also thanks to the synergy among all parties involved. On the one hand there is the legislator with increasingly precise technical standards, while on the other there are the fire-fighting professionals who adapt to the requirements and at the same time foster the development of the sector thanks to the new opportunities that the technology offers.

Fire protection includes both **active** and **passive protection**. Active protection involves all preventive measures aimed at identifying and extinguishing fire whereas passive protection is aimed at containing the fire to prevent its further spread.

Passive fire-fighting devices include for example fire doors and firewalls, dedicated ventilation systems and adequate class segregation.

The main **active fire-fighting devices** are alarm systems, irrigation systems and foam, dust or gas suppression systems, as well as fire extinguishers and hydrants. Their job is to detect the presence of fire and extinguish it.





The EN 12845 Standard

The fire-fighting unit is the heart of the system and is designed to supply the hydrant network or sprinkler. “Sprinkler” refers to an automatic flood extinguishing system that engages when a fire is detected with the aim of extinguishing it in its early stage or controlling it so as to allow the completion of the intervention.

Automatic sprinklers first appeared about a century ago but of course these devices have undergone a significant transformation up to the current applicable standards. The legislation establishes the rules on mandatory fire prevention measures in different contexts but also specifies the characteristics that fire-fighting systems must respect to be compliant.

The **EN 12845 Standard**, in particular, specifies **the requirements for the design, installation and maintenance of fixed fire-extinguishing and automatic sprinkler systems**.

Its aim is to standardise at the European level the installation of fire-fighting systems. Specifically, it establishes how pumping systems must be constructed in order to be used throughout Europe, by examining the characteristics of electric pumps and their related components.

In this respect, the standard lays down the types of pumps that can be used in fire-fighting units such as **standardised centrifugal pumps, vertical lineshaft pumps and submersible pumps**. These units are composed of one or more pumps controlled by an electric motor or diesel engine whose power is chosen according to the pump characteristic curve. It is also recommended to install a compensation pump called “**jockey pump**”. This small pump is used to maintain pressure in the sprinkler pipes in case of small water leaks so as to avoid unnecessary start-ups of the supply pumps (according to EN 12845:2015 point 3.49).

Caprari solutions

We operate in the System Integrator field, ensuring fire-fighting professionals reliable solutions that comply with the functionality and controls laid down by the rules governing their implementation.

Our experience in fire protection assures a timely response to our customers’ needs both through a wide range of products and with technical support for the identification of the most suitable systems, their installation and commissioning.

Caprari’s productive philosophy is based on constant research aimed at developing products characterised by maximum operational safety, energy saving and low environmental impact.

Below are the main strengths of our solutions:

- ▶ The high performance of pumps allows the construction of extremely compact fire-fighting units, characterised by high energy saving and reduced dimensions.
- ▶ Maintenance is simple and fast, which is especially relevant considering the importance of assuring the systems’ proper functioning when needed with constant checks. For this reason, this aspect has been specifically addressed by the standard, precisely establishing the type and frequency of checks.
- ▶ Thanks to the advanced fluid dynamic design together with our know-how acquired in 75 years of experience, our pumps for fire-fighting systems ensure optimal and continuous performance. The pump characteristic curve is stable as required by this type of installation.
- ▶ Innovative construction solutions and a wide range of products available contribute to the construction of extremely reliable electric pumps, making them the ideal solution for fire-fighting systems. For example, the components’ high thicknesses and the bearings’ generous sizing ensure great robustness and long service life.



Thanks to its wide range of products available, Caprari can offer the best solution for any type of fire-fighting system you need



NC – Normalized pumps

Horizontal centrifugal pumps according to DIN2455 and EN733.

Machines compliant with Directive 2009/125/EC (Ecodesign-Erp), which integrates environmental performance and functional qualities.

High reliability guaranteed by a centrifugal impeller that has a balancing of the axial thrust, widely dimensioned bearings lubricated with permanent grease

Product life: stainless steel shaft fully protected from the contact with pumped water.

Simple and fast maintenance thanks to the **Easy Fit device** that allows the replacement of the seal.

The **Back Pull Out system** allows the rear disassembly of the wet end without disconnecting the motor and the pump casing from the pipes. Pumps are also built with maximum interchangeability, with the advantage of having few spare parts in stock.

CVX - Vertical inline multistage electric pumps

Stainless steel vertical multi-stage pumps.

They are characterised by in-line aspiration and discharge and by high energy efficient motors. All parts in contact with the liquid are made of stainless steel, thus guaranteeing **long service life** and **wear resistance**.

The wide product choice combined with quality, reliability and compact dimensions are the main features of this range. Pumps are also very **easy to install** and **connect**. All of this makes CVX series pumps perfectly suitable for delicate installation as in fire-fighting systems.



Vertical lineshaft pumps



Range of 6" ÷ 22" vertical lineshaft pumps.

The configuration with submerged pump casing, shaft line and control unit represents an **extremely reliable solution** with **high performance**.

These pumps are available in a variety of metallurgies and can be controlled by both electric motor and endothermic engine, guaranteeing **wide flexibility** for use in wells and tanks. Constructive solutions ensure reliable operation even in harsh conditions. In case of installation in tanks with all impellers submerged in the liquid, P series vertical pumps do not require priming. This makes them suitable for **automatic operation even from a distance**, an advantage for the fire service.

Our customers' creations

With the supply of the pumps described above, but also of HV series vertical multi-stage centrifugal pumps or of SCC series horizontal split case pumps, we have contributed to the construction of many fire-fighting units in different parts of the world. Our commitment is to offer customers the possibility to find the ideal solution in terms of product robustness and reliability, reduced dimensions and flexibility of installation. Our main priority is to understand all different needs and offer innovative solutions that allow them to be satisfied.



Angola

In order to produce this fire-fighting unit for a service station, we have supplied our customer with two NC series standard pumps and a CVX series vertical multi-stage electric pump. The result is this extremely compact and highly efficient fire-fighting unit.



Australia-Pacific Islands

In this case we have worked alongside our partner to create a fire-fighting system that works with the use of sea water. The pressure booster includes two pumps resistant to the type of liquid and controlled by a diesel engine, capable of ensuring maximum operational reliability.

Sources

www.vigilfuoco.it | www.inail.it | www.assopompe.it |



caprari



www.caprari.com