



# CAFS

Compressed Air Foam System

Innovative foam extinguishing technology

 rosenbauer

# CAFS

## The efficient foam extinguishing technology

Long throw ranges with best foam quality, ultra-light hoses filled only with foam as well as largest foam quantity outputs for monitor use – the Rosenbauer CAFS offers you all this at one go!

Contrary to conventional air-foam procedures, the air required for foaming is not supplied through induction to the nozzle (=passive expansion) in the CAFS systems, but is supplied as compressed air (=active expansion). This gives an edge to these systems over the conventional air-foam methods in practical use:

### Impressive throw range

Compressed air energy is added to the extinguishing agent stream in the CAFS mixing chamber. The lightning-like expansion of the compressed foam drastically increases the outgoing speed at the nozzle, thus increasing the throw range.

### Light hose

Easy handling of the hoses due to around 25 to 90% air in the CAF.

### Multiplying extinguishing agent quantity

The extinguishing quantity multiplies at CAFS through active foaming. For instance, 12,000 litres of CAF can be made are of 1,500 litres water-foam mixture at expansion rate 8.

### Strong adhesion

The characteristic homogenous foam structure of CAF enables very adhesive foam with excellent extinguishing effect at ‚dry‘ setting for endangered objects exposed to fire (=insulating against radiant heat).

### Sustainable cooling

The extremely compact foam structure (many small homogenous foam bubbles of the same size) gives an ideal, sustainable cooling effect.

### Pumping output

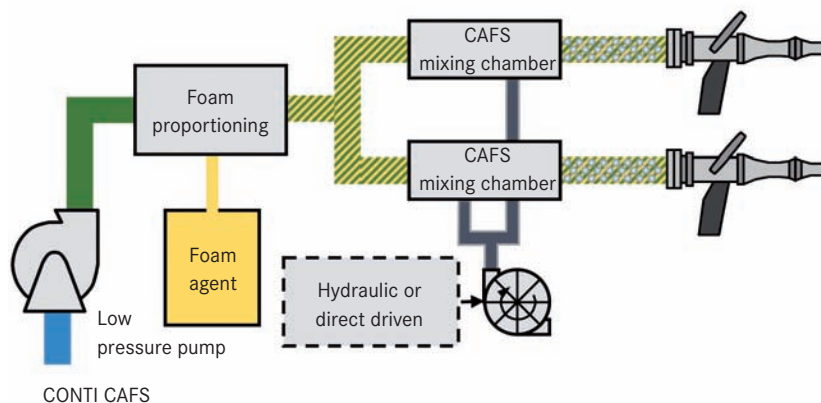
Because of its low weight, CAF can be pumped to great heights.



## ■ CAFS systems

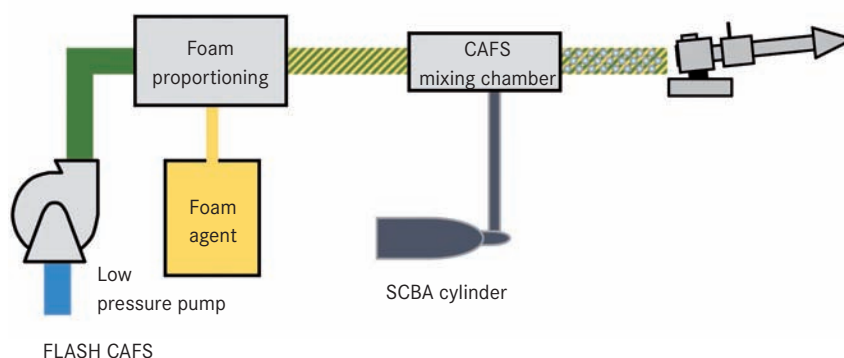
### CONTI CAFS

In this system, the air necessary for expansion is generated through a compressor. The foam can be discharged out (CONTI CAFS 30 and higher models) simultaneously with different expansion ratios through several hoses!



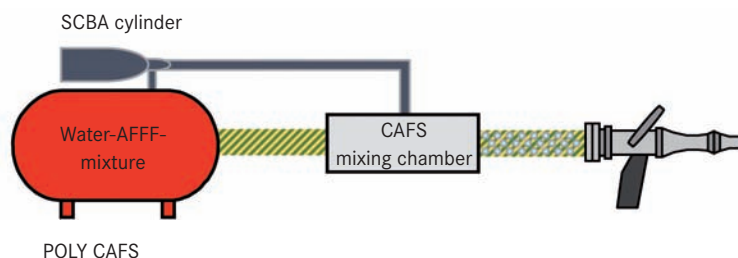
### FLASH CAFS

The air necessary for expansion is prepared via SCBA cylinders. This guarantees an amount of discharge!



### POLY CAFS

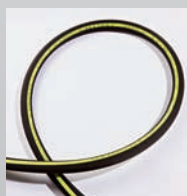
These systems are characterized by their superlative flexibility and efficiency, since they are independent of external energy sources and foam proportioning systems. Ideal for the necessary punch during the first decisive moments!



**Different systems are available to suit the requirements.**

### FORMTEX

The non-collapsible, super-light special textile hose FORMTEX approved according to EN1947 is suitable as easy-access hose in combination with the Rosenbauer CAFS systems. Its practical use (change in position etc.) is considerably simplified due to its excellent product features.



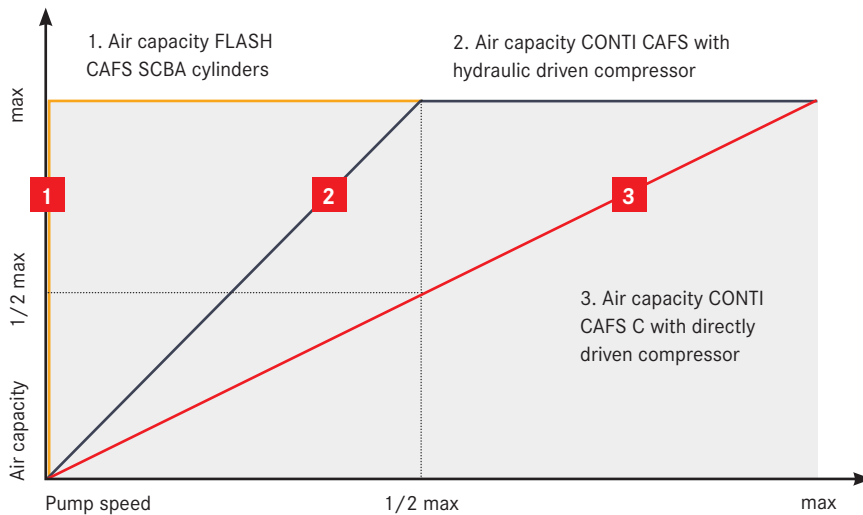
### Rosenbauer CAFS nozzle

It is recommended to use the CAFS o-stream nozzle for the CAFS, which is designed especially for this system. The especially developed nozzle dimensions ensure best throw ranges and foam quality.



# CAFS 15/30/60

Regardless of whether it is CAFS 15, 30 or 60, generating air via compressors (hydraulic or direct drive through a belt from power take off), or SCBA cylinder, the modular concept offers a simple, optimum solution for every situation.



## Comfort at the highest level

The optional electric wet/dry setting makes the operation comfortable, reduces the effort to get started and prevents possible erroneous operations. The operation of all CAFS functions is completely integrated in the pump operation of this model. On request, the desired expansion ratio can be selected as a continuous setting, or defined values can be specified (e.g. one value for wet, and one value for dry operation).

### CONTI CAFS Air generation via hydraulically driven compressor

CONTI CAFS has impressive compressor output in every operation; be it tank suction, external suction or direct pump feed operation the compressor never fails to give a top performance. The maximum air output is available in half pump speed. Its modular design enables you to flexibly mount it on the vehicle.

### CONTI CAFS C Air generation via directly driven compressor

In CONTI CAFS C systems, the compressor is directly actuated through a belt from the water pump auxiliary drive. The air output depends on the pump speed. The maximum air output is available with maximum pump speed.

### FLASH CAFS Providing air through SCBA cylinders

Besides the above mentioned models, the air necessary for expansion is provided through SCBA cylinders. The air output is completely independent of pump speed and is immediately available with maximum output. No additional activation energy (no need for compressor drive) from the vehicle is required for generating air.

# SKY CAFS

The fire fighters face complicated challenges with the ever-increasing heights of the spectacular buildings. In particular, the question of taking water for extinguishing hundreds of meters high up has been keeping fire fighters busy around the world. SKY CAFS by Rosenbauer has a solution to this problem.

## Up to 400 meters

Fires in multi-story buildings are always a problem especially if they are, for instance on the 89th floor, meaning out of reach of aerial rescue devices or water turrets. The only way left to rescue is through the staircase - internal extinguishing tactic.

However, water can only be pumped to about 30th floor. The special features (low weight due to high air content) of commercial CAFS systems help them reach heights greater than conventional extinguishing systems can. But SKY CAFS reaches heights which have given fire fighters absolutely unsolvable problems until now. SKY CAFS is a special CAFS system developed for these extraordinary conditions. It pumps extinguishing agent to heights of up to 400 meters.



In June 2009 in an attempt at the Carinthian ReiBeck to test the pumping ability of the Rosenbauer SKY CAFS, it was proven that it can pump up to 400 m (approx. 140 floors). Foam could be pumped to a total length of 860 m in hoses.



# FLASH CAFS 30/50/100/250

## Monitor operation

FLASH CAFS (providing air necessary for expansion through SCBA cylinders) is the answer to the need for a simple CAFS technology that offers never-before throw ranges with large outputs (air crash rescue vehicles) and significantly increases cost efficiency and extinguishing effect of fire fighting vehicles of various types.



### Adequate air supply

FLASH CAFS systems are used especially if large foam outputs and hence large quantities of air are required, since compressors with corresponding air quantities are not suitable with respect to assembly dimensions, weight and drive outputs.

With a 50 litres/300 bar SCBA cylinder in turret operation, approx. 3,000 litres of water-foam mixture can be foamed. The required number of SCBA cylinders normally depends on the size of the foam tank, guaranteeing that the air supply is sufficient to expand twice the amount of water in the vehicle.

### Maximale Effizienz

The high energy content of CAF enables the system to attain around 20 % higher maximum throw ranges/ heights even at angles of approach as low as 10° (around 30° in conventional air-foam procedure). This in turn gives FLASH CAFS systems very little driftage, hence substantially increasing the accuracy! Perfect, when every second counts.

### FLASH CAFS can be retrofitted

The simple (mechanical system without complex electric connection) and compact design (low weight and space requirement) are just the outstanding features the system needs for retrofitting. All that is needed is the FLASH CAFS central unit and the required SCBA cylinders (can be mounted vertically or horizontally, depending on the space available). Even vehicles with less space can enjoy the benefits of the ultra-modern foam extinguishing technology CAFS.



# CAFS MOBILE

The CAFS MOBILE concept captivates by more extinguishing effect and more flexibility. As a welcome add-on, you also bring the existing fire fighting vehicles up to the last level of fire extinguishing technology!

## Completely independent system

CAFS MOBILE is completely self-sufficient. Complex connections between the CAFS system and the vehicle are completely dispensable, making CAFS MOBILE ideal for retrofitting, since the energy/air required to generate foam is provided exclusively by SCBA cylinders.



## Ready for use in a view seconds

The operation is simple: remove CAFS MOBILE from the vehicle – connect hose – cylinder, air and stop valve – engage nozzle. And all this just takes seven seconds! Different settings for expansion ratios.

The sequential 90° wet/dry setting provides additional facilities:

- Preventive use with dry foam
- Direct fire fighting with wet foam

## Storage no problem

CAFS MOBILE can be fitted in normal existing locker compartments due to its low weight and compact design.

## Logic Control System LCS

Special attention was paid to simplicity and ergonomics (operability with gloves etc.) while developing the operation. The function of each operating element is engraved, shown in colour and backlit to ensure precise operation even in bad visibility conditions (dark surroundings).

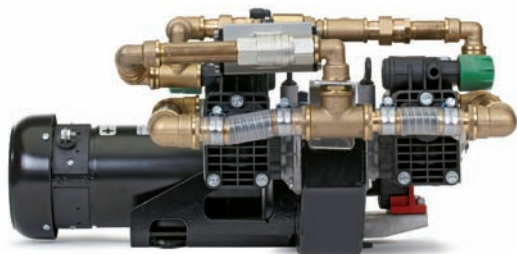
The main operating panel is high-lighted in colour and goes in a logical sequence from top to bottom. It allows for an easy operation of various pump functions, foam proportioning systems, CAFS systems and generators.



# Direct injection foam proportioning systems

In direct injection foam proportioning systems, the foam is added to water through a foam pump driven by a hydraulic or electric drive or through the pressure of the extinguishing water.

Rosenbauer direct injection foam proportioning systems have covetable features such as precise control and superlative flexibility. External feed and parallel supply of foam and water to different outlets are managed with inimitable dexterity.



## DIGIMATIC

The direct injection foam proportioning system with electric operation is for lowest possible proportioning rates even in lowest flow rates. Two membrane pumps are used for maximum stability. The proportioning rate setting is continuous between 0.1 and 6 %. The minimum foam quantity is 0.1 litres/min, the maximum quantity 22 litres/min.



## DIGIDOS

The minimum foam quantity pump has an electric drive. The electronic control of foam quantity takes place continuously from 0.1 to 6 %. The minimum foam quantity is 0.5 litres/min, maximum quantity 16/litres/min (at 12 V chassis) or 22 litres/min (at 24 V chassis). A version for 380 V with up to 36 litres/min foam quantity is also available.

## Advantages of the direct injection foam proportioning systems

- Easy to operate through Rosenbauer LCS system
- Proportioning of foam directly at the outlet, enabling foam-free pump
- Possible to simultaneously extinguish with water-foam mixture and to cool with water
- Foam proportioning in the water pump possible along with pressure feed
- Smallest proportions for spray application to break surface tension





# POLY CAFS

## POLY CAFS – completely self-sufficient

Rosenbauer POLY CAFS systems are not dependent on sources of energy. You do not need to start a motor or an electrical device. This decreases start-up efforts considerably and guarantees highest system reliability.

## POLY CAFS – the ideal initial attack extinguishing system

POLY CAFS extinguishing systems are already in use, while pump-drive extinguishing systems are required to start the motor, carry out suction and reach pumping capacity. Furthermore, only compressed air in the hose lines has to be used to compress the extinguishing agent in the container. And all this just takes 7 seconds!

## POLY CAFS – the multi-functional do-it-all

The broad range of products clearly indicates the multifarious application of POLY CAFS systems. POLY extinguishing systems for conventional fire trucks, flexible vehicle assembly/mounting (pick-up etc.), for an Enduro motor-cycle, Quad, Trailer and much more - no problem at all!



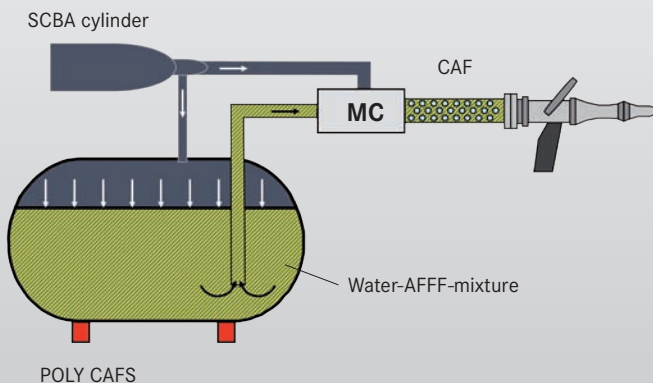
POLY BIKE SL 50 CAFS



POLY TRAILER SL 1000 CAFS

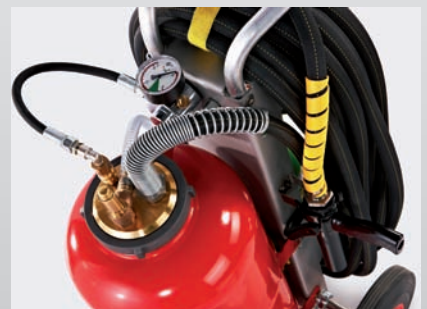


POLY SKID MODUL SL 45/50/75/100 CAFS



## POLY CAFS – Functional principle

In POLY CAFS extinguishing systems, the necessary activation energy is provided through SCBA cylinders. The core of the Rosenbauer POLY CAFS system is its CAFS mixing chamber. The premix (water-foam mixture) is 'driven' by the compressed air into the mixing chamber and expanded (= active expansion) – it couldn't be simpler!



POLY TROLLEY SL 35/50 CAFS

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