Foam-/additive proportioning systems

Around the pump foam proportioning systems
Direct injection foam proportioning systems
Foam-/additive proportioning systems

**Around the Pump Foam Proportioning Systems**

Around the pump foam proportioning systems induce foam to the suction side of the pump. The feed water is diverted from the pressure outlet and led back to the suction inlet. The feed water line has a Venturi kit, which feeds the foam into the suction inlet.

This enables very large foam discharge rates, specifically on the turret operation.

When the foam system is activated, foam will be drawn into the system and will have water/foam mixture in the pump housing. This will allow water/foam to be discharged at all outlets. After use the pump must be flushed and drained.

It is not possible to use these kinds of systems in relay or hydrant operations. Due to the pressure in the suction side, the venturi principle will not work and so no foam will be admixed to the suction side of the pump.

Around the pump systems do not require a separate foam pump, which will reduce the maintenance over the life of the vehicle.

**Benefits of around the pump foam proportioning systems**

- Suitable to supply large amounts of foam
- Easy-to-use and economical systems
- Simple operation
- Durable system
- Reduced maintenance
- No additional drive system necessary
Direct injection foam proportioning systems add the foam concentrate/additive only downstream to the water pump in the corresponding outlet.

In this system, the water pump is only fed with water and flushing is not necessary. It is possible to supply water (e.g. for cooling) to one outlet and water-foam mixture (e.g. for extinguishing) to another.

Since the foam is injected after the pump, it is possible to feed the pump with pressurized water and simultaneously generate foam.

These systems have a separate drive, which can also be used to fill the foam tank.

**Benefits of direct injection foam proportioning systems**

- Foam-free water pump
- Simultaneous water and water-foam mixture on different outlets
- Works also in relay or hydrant operation
- Possibility to fill the foam tank via foam pump
Around the pump foam proportioning systems

**FIXMIX**

A mechanical around the pump foam proportioning system completely integrated into the pump is available for the N/NH series pumps. The system adjusts automatically to the pump output and pressure.

The system is absolutely maintenance free. Up to 3 different, fixed proportioning rates (free combination of 0.5, 1, 3 and 6 %) can be selected at the normal pressure side.

A water measuring cone is pushed, which also pushes the corresponding foam measuring cone. Foam is fed through the opening between the cone and cone base and mixed with water on the suction side with the induction water line, which leads back to the suction side of the pump.

The system is available with mechanical as well as pneumatic actuation.

System is available for: N25, N35, N45, N55 and NH25, NH35, NH45, NH55

**High pressure FIXMIX**

This system enables the proportioning of foam concentrate at the high pressure side. This system also works on the same principle as the standard FIXMIX, and has an entirely mechanical operation as well.

Therefore, it is also possible to operate the normal pressure side with water and to generate foam in the high pressure side. One proportioning rate (0.5, 1, 3 or 6 %) can be chosen from the customer.

System is available for: NH25, NH35, NH45, NH55

**Benefits of FIXMIX and HP FIXMIX**

- Easy to operate
- Fully mechanical system
- Rosenbauer around the pump foam proportioning systems automatically adjust to the water flow rate and pressure
- Systems in use all over the world
- Systems are integrated into the pump and are ideally adapted to the water pump
- External foam concentrate suction is possible
- Compact system for easy install
- Cost-efficient system
- Water on the normal pressure side and water-foam mixture on the high pressure side (with HP-FIXMIX)
Direct injection foam proportioning systems

**DIGIMATIC42**

The DIGIMATIC is an electric driven, electronically controlled direct injection foam/ additive proportioning system. This system is especially designed for application of wetting agent due to lowest possible proportioning amounts (starts from 0.1 lpm / 0.03 USgpm). Extremely low foam quantities are used to break the surface tension of the water and therefore to ensure that the water can penetrate the burning material better, thus minimising the effects on the environment.

A membrane pump is used for this foam pump system and supply up to 42 lpm (11 USgpm). Thus for example a turret can also be supplied with foam. The proportioning rate setting is continuous between 0.1 and 6 %. On the operation panel the consumptions and operating time can be shown.

The DIGIMATIC can either be supplied by an external foam suction line or via up to two foam concentrate tanks. Alternatively foam concentrate can be injected into two injection points (optionally a third is possible, if only one foam tank filling line is built in).

The DIGIMATIC can also be used the fill up the foam tank via the external foam suction line after the foam operation.

An emergency operation is also optional available for the DIGIMATIC42, to override the electronics.

**Benefits of DIGIMATIC42**

- Foam-free water pump
- Simultaneous release of water and water-foam mixture on different outlets
- System works also with pressurized water sources
- External foam suction is possible
- Foam filling of tank via foam pump is possible
- Smallest proportioning quantities for wetting agent mode (0.1 lpm in DIGIMATIC)
- Foam concentrate supply up to 42 lpm (11 gpm) e.g. for turret operation
Direct injection foam proportioning systems

AQUAMATIC24/96

The AQUAMATIC is a water driven double-piston pump with venturi proportioners on the outlets. The proportioning rate for normal pressure can be adjusted from 0.5 to 3 %. The water driven foam pump regulates itself - the right amount of foam concentrate is supplied all the time.

The AQUAMATIC24 can supply up to 24 lpm (6.34 USgpm) foam concentrate and can be used for normal- as well as for high-pressure (proportioning rates: 1, 3 and 6 %). The maximum foam proportioning rate of the AQUAMATIC96, which can be used for normal pressure, is 96 lpm (25.3 USgpm).

The system has a simple layout and is in the basic design without electronics.

Benefits of the AQUAMATIC24/96

- Foam-free water pump
- Simultaneous release of water and water-foam mixture on different outlets
- System works also with pressurized water sources
- External foam suction is possible
- Foam filling of tank via foam pump is possible
- No electronic necessary, simple mechanical system
- Operates with the pump discharge water
- Easy to operate
- Several outlets can be supplied – setting of the proportioning rate for each outlet
- Direct foam injection possible in normal and high pressure (HP only at AQUAMATIC24)
- Low maintenance system
- Higher amounts of foam for turret operation or additional outputs with AQUAMATIC96
Foam-/additive proportioning systems

from Rosenbauer

Thus Rosenbauer offers around the pump foam proportioning systems and direct injection foam proportioning systems for the Rosenbauer truck-mounted fire pumps. Models are available for normal pressure as well as high pressure applications.

All proportioning systems automatically adjust according to the water pressure and the water flow rate.

The around the pump foam proportioning systems are integrated directly into the pump. The direct injection foam proportioning systems have also been optimally connected to the piping.

The proportioning systems are integrated into the control system of the pump. With the Rosenbauer LCS 2.0, the fire-fighter gets a simple, logical control interface for operating the water pump and also the foam proportioning system.

The proportioning systems and the water pumps are tested and adjusted at the Rosenbauer test facility.

Foam-/additive proportioning systems are available for the following pumps:

Foam proportioning systems:
- FIXMIX – for N/NH 25, 35, 45, 55
- HP-FIXMIX – for NH 25, 35, 45, 55
- FIXMIX 2.0 – for N65, N80
- FOAMATIC E – for N100

Direct injection foam proportioning:
- DIGIMATIC, Aquamatic – for all Rosenbauer pump

Also offers the following foam proportioning systems for industrial application:
- HYDROMATIC – for N/NH 45, 55, N65, N80 and N100
- MIXMATIC – for N/NH 45, 55, N65, N80 and N100
### Foam-/additive proportioning systems

<table>
<thead>
<tr>
<th>Proportioning system</th>
<th>FIXMIX</th>
<th>HP-FIXMIX</th>
<th>FIXMIX 2.0</th>
<th>FIXMIX 2.0 E</th>
<th>FOAMATIC E</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Around the pump foam proportioning systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Water/Foam in outlets</strong></td>
<td>Either in all outlets water or water/foam mixture (at HP FIXMIX possibility of water on NP and foam on HP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Proportioning</strong></td>
<td>on suction inlet of the pump</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pumps</strong></td>
<td>N/NH 25, 35, 45, 55</td>
<td>NH 25, 35, 45, 55</td>
<td>N65, N80</td>
<td>N100</td>
<td></td>
</tr>
<tr>
<td><strong>Proportioning rates</strong></td>
<td>Up to 3 rates, selection of: 0.5 %; 1 %; 3 %; 6 %</td>
<td>1 rate, selection of: 0.5 %; 1 %; 3 %; 6 %</td>
<td>3 rates, selection of: 1 %; 3 %; 6 %; 8 %</td>
<td>Either 3 rates, or continuous</td>
<td>Either 3 rates, or continuous</td>
</tr>
<tr>
<td><strong>Proportioning amounts</strong></td>
<td>Up to 280 lpm (74 USgpm)</td>
<td>Up to 24 lpm (6.3 USgpm)</td>
<td>Up to 500 lpm (132 USgpm)</td>
<td>Up to 500 lpm (132 USgpm)</td>
<td>Up to 600 lpm (158 USgpm)</td>
</tr>
<tr>
<td><strong>Kind of the control system</strong></td>
<td>mechanically controlled</td>
<td>mechanically pre-controlled, electronically regulated</td>
<td>electronically regulated</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Foam concentrate pump</strong></td>
<td>No foam concentrate pump required</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Allowed foam concentrates</strong></td>
<td>Up to a viscosity of 60 cSt *</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Drive</strong></td>
<td>No additional drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### DIGIMATIC22

<table>
<thead>
<tr>
<th>Proportioning system</th>
<th>DIGIMATIC22</th>
<th>DIGIMATIC42</th>
<th>AQUAMATIC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Direct injection foam proportioning systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Water/Foam in outlets</strong></td>
<td>Water/foam mixture at some outlets and water at other outlets</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Proportioning</strong></td>
<td>Directly in the outlet</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pumps</strong></td>
<td>All Rosenbauer pumps</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Proportioning rates</strong></td>
<td>Continuous, 0.1 - 6 %</td>
<td>0.1 - 42 lpm (0.03 - 11 USgpm)</td>
<td>NP: 0.5 to 3 % (3 rates, or continuous) HP: 1 %; 3 %; 6 %</td>
</tr>
<tr>
<td><strong>Proportioning amounts</strong></td>
<td>0.1 - 22 lpm (0.03 - 5.8 USgpm)</td>
<td>1 - 96 lpm (0.26 - 25.3 USgpm)</td>
<td>1 - 24 lpm (0.26 - 6.34 USgpm) or 1 - 24 lpm (0.26 - 6.34 USgpm)</td>
</tr>
<tr>
<td><strong>Regulation of the system</strong></td>
<td>electronically controlled</td>
<td>flow-proportional controlled</td>
<td></td>
</tr>
<tr>
<td><strong>Foam concentrate pump</strong></td>
<td>Membrane pump</td>
<td>Double piston pump</td>
<td></td>
</tr>
<tr>
<td><strong>Allowed foam concentrates</strong></td>
<td>Up to a viscosity of 150 cSt *</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Drive</strong></td>
<td>Electric motor</td>
<td></td>
<td>Water drive</td>
</tr>
</tbody>
</table>

NP: Normal pressure, HP: High pressure
* higher viscose foam concentrates on request