

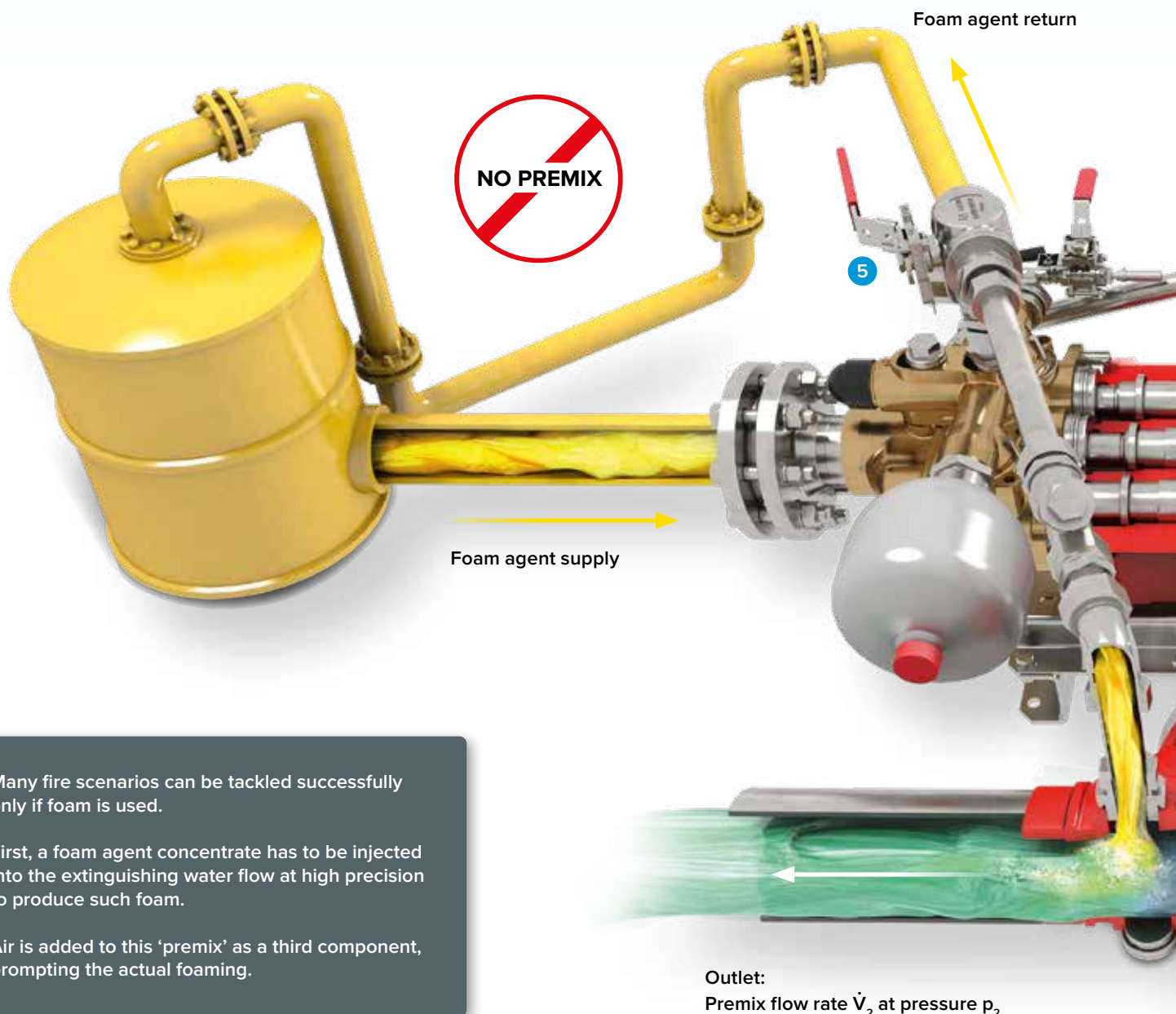
■ **PROPORTIONERS**
FOR STATIONARY EXTINGUISHING SYSTEMS.

■ WE ENSURE SAFETY – IN FIREFIGHTING WITH FOAM.

More than 20 years ago, *FireDos* developed a proportioner for fire extinguishing systems, setting a global standard:

The purely mechanical system is characterized by a constant proportioning rate across a wide extinguishing

water flow rate and pressure range, guaranteeing maximum reliability. Beyond this, testing the proportioning rate can be done without producing premix: an environmentally friendly and cost-saving solution.



Many fire scenarios can be tackled successfully only if foam is used.

First, a foam agent concentrate has to be injected into the extinguishing water flow at high precision to produce such foam.

Air is added to this 'premix' as a third component, prompting the actual foaming.

■ THE FIREDOS PRODUCT CONCEPT: PURELY MECHANICAL, AT A CONSTANT PROPORTIONING RATE.

Reliable and made-to-last

The *FireDos* proportioner is driven solely by the extinguishing water flow. No further energy source is required. The purely mechanical construction means *FireDos* proportioners are reliable and provide a long service life.

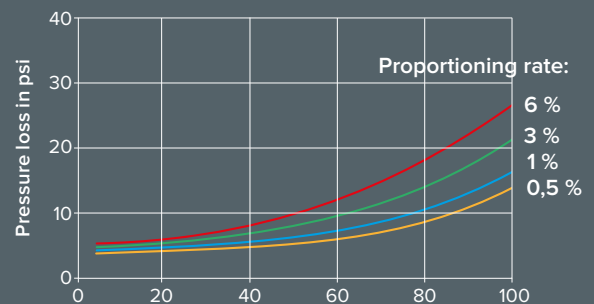
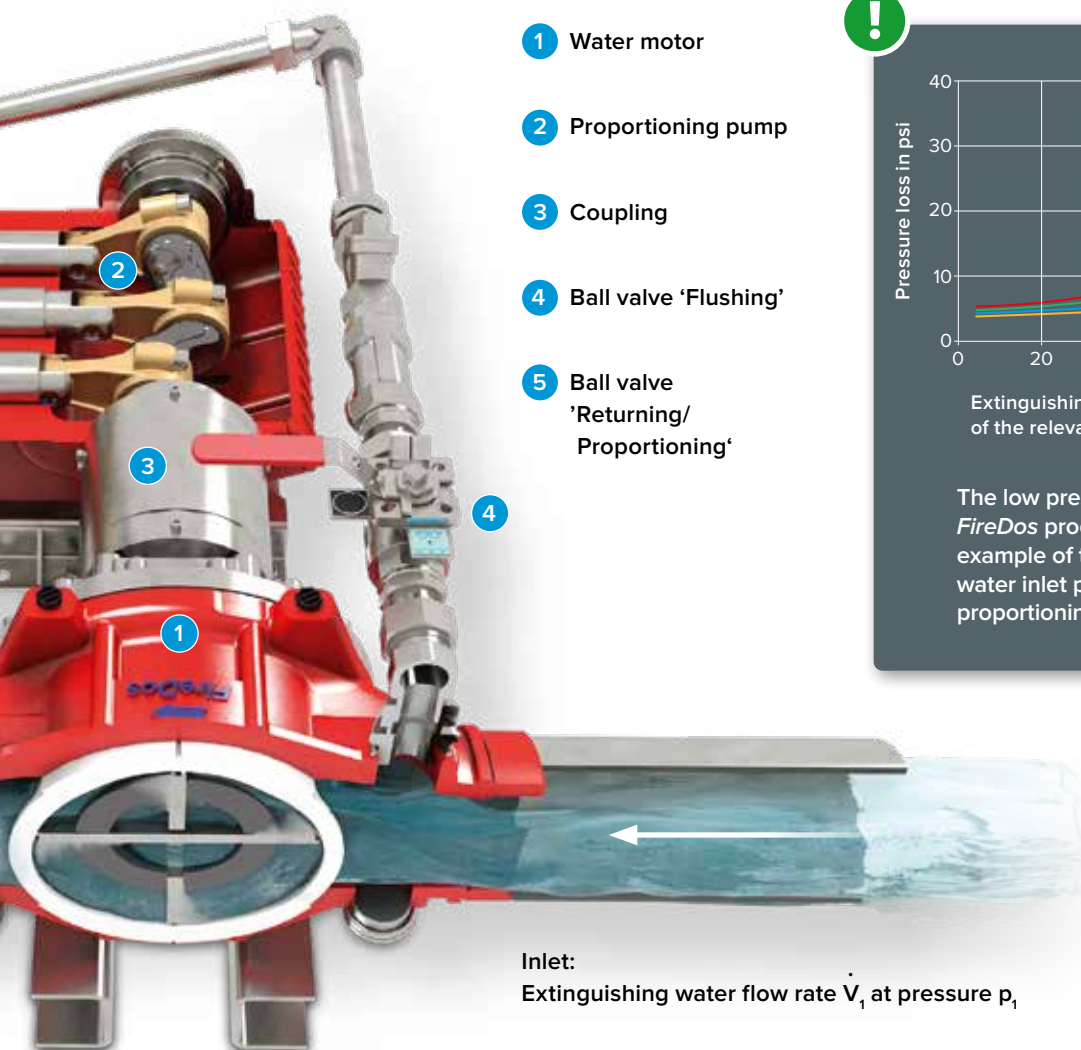
Optimum extinguishing performance due to constant proportioning rate

The water motor drives a specially developed proportioning pump which injects the foam agent into the extinguishing water. A direct linear correlation exists between the water flow rate and the water motor's number of revolutions.

The proportioning pump is directly connected to the water motor via a coupling.

As extinguishing water flows increase through the water motor, the more foam agent is injected. This way, the volume ratio which is referred to as the 'proportioning rate' always stays constant, allowing optimum proportioning as water flow rates change.

Low Pressure loss: Only a small portion of the pressure in the extinguishing water line is consumed as an energy source to drive the water motor and the proportioning pump.



Extinguishing water flow rate in % at full capacity of the relevant *FireDos* proportioner

The low pressure loss is an advantage of the *FireDos* product concept. The graph shows an example of the pressure loss at an extinguishing water inlet pressure of 14.5 psi and different proportioning rates.

Inlet:
Extinguishing water flow rate \dot{V}_1 at pressure p_1

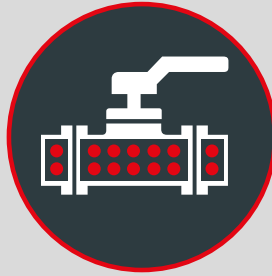
■ BENEFIT FROM RELIABILITY AND EFFICIENCY.

Purely mechanical, maximum reliability and efficiency: *FireDos* proportioners feature numerous advantages and are very easy to operate.



Purely mechanical – high reliability

Driven just by the water flow, operation is independent of electricity and emergency power supplies, resulting in no disposal costs.



Consistent proportioning rate over a wide operating range

The required proportioning rate is available already at very low water flow rates and stays constant across a wide flow rate and pressure range. Automatic adaptation to varying fire scenarios is guaranteed.



Testing the proportioning rate: cost-saving and eco-friendly

Precise proportioning rate testing is possible without having to produce premix or foam. An eco-friendly solution, as no foam agent is consumed, means no disposal costs.



FireDos proportioners are designed to handle all foam agent types.

■ SOPHISTICATED DESIGN, FOR ALL FOAM AGENT TYPES.

FireDos proportioners are compact, with the latest generation characterized by lower weight and reduced dimensions. Only high-quality components and materials were involved in the development of this technology.

- *FireDos* proportioners are designed to handle an operating pressure of up to 232 psi as a standard.
- The pipework is made of seawater-resistant stainless steel as standard.
- Depending on the type of extinguishing water, the water motor is available in different materials.
- In addition, the proportioners are suitable for all types of foam agents. The proportioning pump is self-priming and reliably mixes highly-viscous, fluorine-free and alcohol-resistant foam agents.

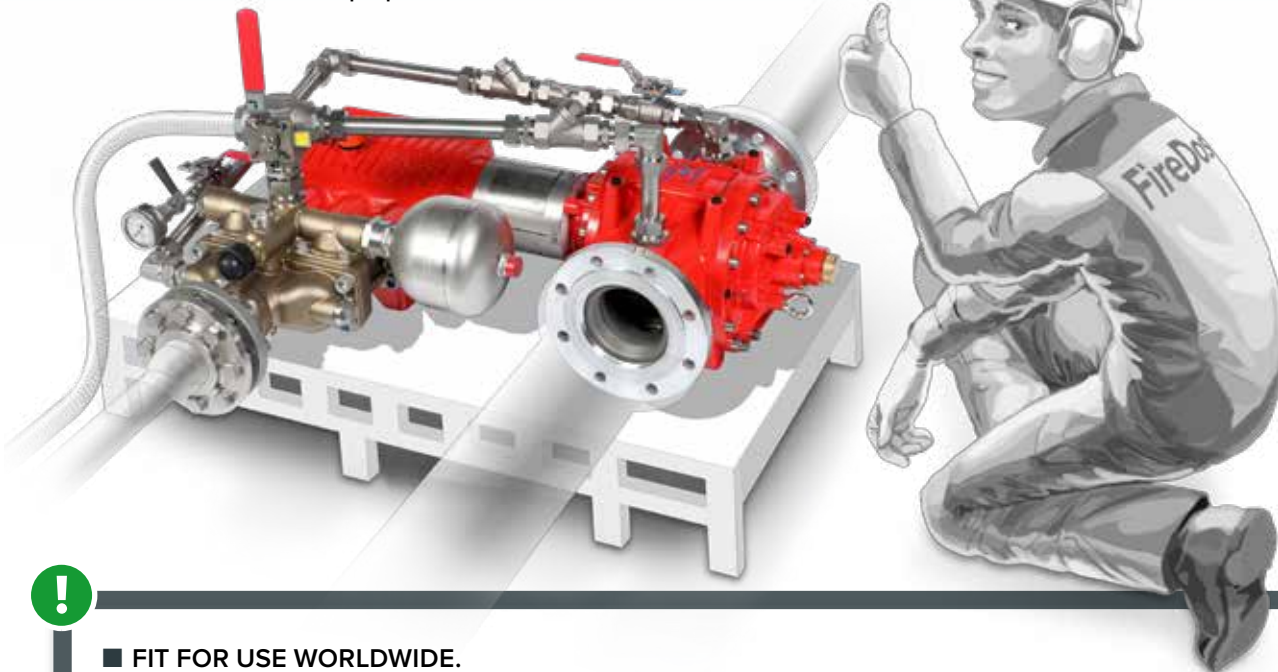
■ QUICK TO INSTALL, EASY TO OPERATE.

FireDos proportioners are installed rapidly and are easy to commission. All components are supplied as compact units. After installation on-site, the piping for water, premix and foam is connected, followed by commissioning.

The foam agent tank can be refilled whenever needed, enabling firefighting with no time limits due to foam agent capacity.

Switching to a different foam agent at the same proportioning rate is possible at any time since the proportioner is suitable for all foam agent types. Due to the positive displacement construction, the extinguishing water flow directly drives the proportioner. No valves need to be opened first. As it is a closed system, no water is lost, removing the requirement to drain into the sewer system or water tank. Another advantage: The proportioning pump delivers only what is required.

Compact unit supply
enables quick installation
of our proportioners.



■ FIT FOR USE WORLDWIDE.

FireDos meets the requirements of international standards by legislative bodies and insurance companies, allowing use in all types of fire extinguishing systems.

No other proportioning system worldwide holds as many approvals. In addition, we work together with international industry associations closely, diligently implementing their recommendations for achieving consistent standards and process optimizations.



■ ECO-FRIENDLY AND COST-EFFECTIVE: TESTING THE PROPORTIONING RATE COMPLETELY WITHOUT PREMIX AND FOAM.

Fire extinguishing systems must be tested regularly to ensure their functionality in case of a fire. The same applies to the proportioner. The return line connection enables return of the foam agent back into the foam agent tank under live operating conditions while its volumetric flow rate is measured. The results of this and the measured quantity of water which passes through the unit at the same time are used to calculate the proportioning rate. While doing so, no premix or foam is produced.



Cost-effective

No foam agent consumption,
no disposal of premix or foam.



No contamination, no violation of law

Both liquids stay separate. As testing takes place in a closed cycle, the foam agent remains separated from the extinguishing water.



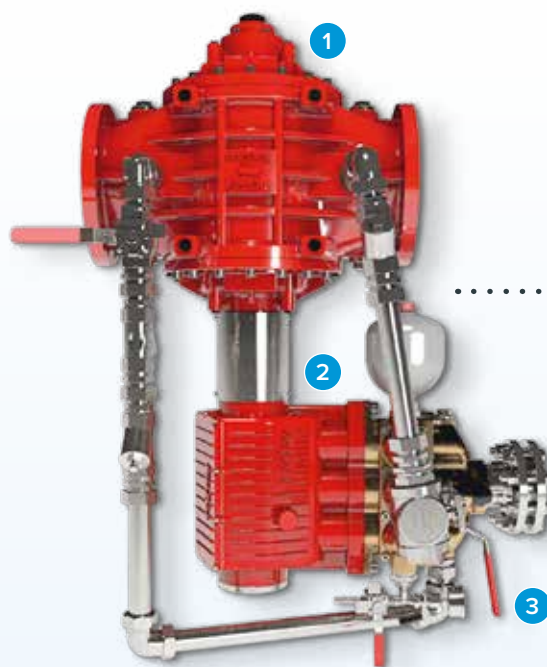
Eco-friendly

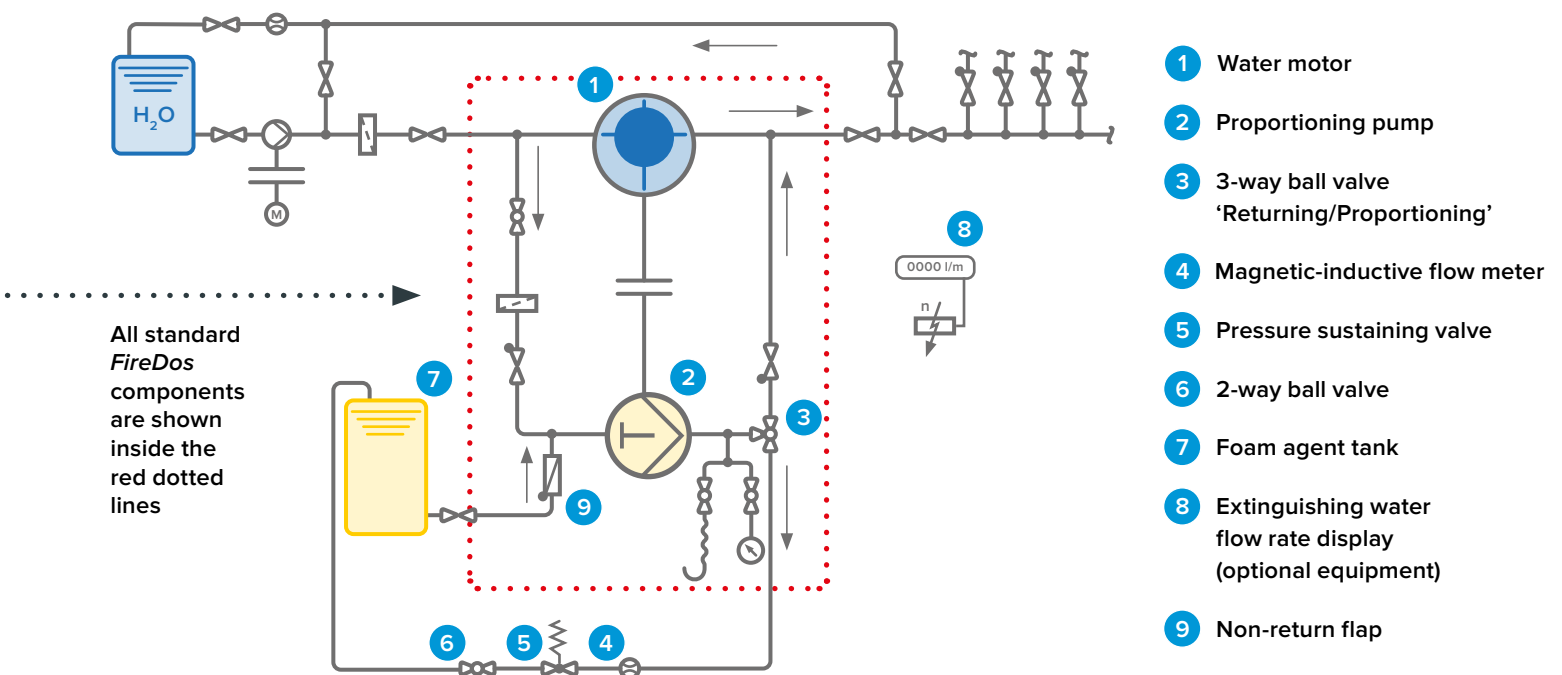
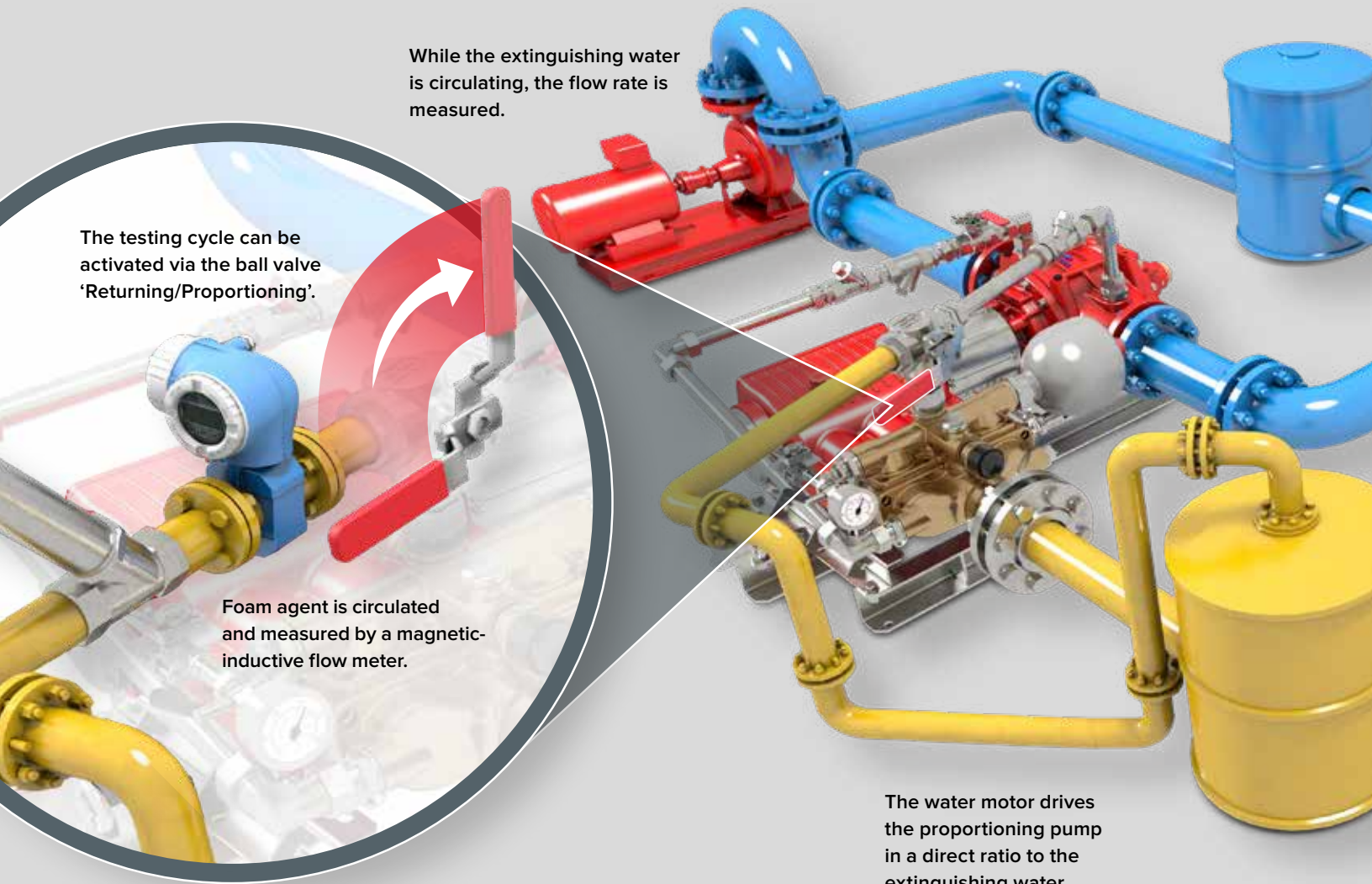
No premix or foam is released into the sewer system or the environment, eliminating contamination during testing.



■ TESTING OPERATION.

- 3-way ball valve 'Returning/Proportioning' in position 'Returning'.
- Put the proportioner into operation by opening the extinguishing water flow.
- Set the backpressure at the pressure sustaining valve in the return line, which corresponds to the pressure in the water line.
- Read the foam agent flow rate in l/min on the flow meter in the return line.
- Determine the water flow rate in l/min.
- Determine the proportioning rate from the flow rates of foam agent and extinguishing water.

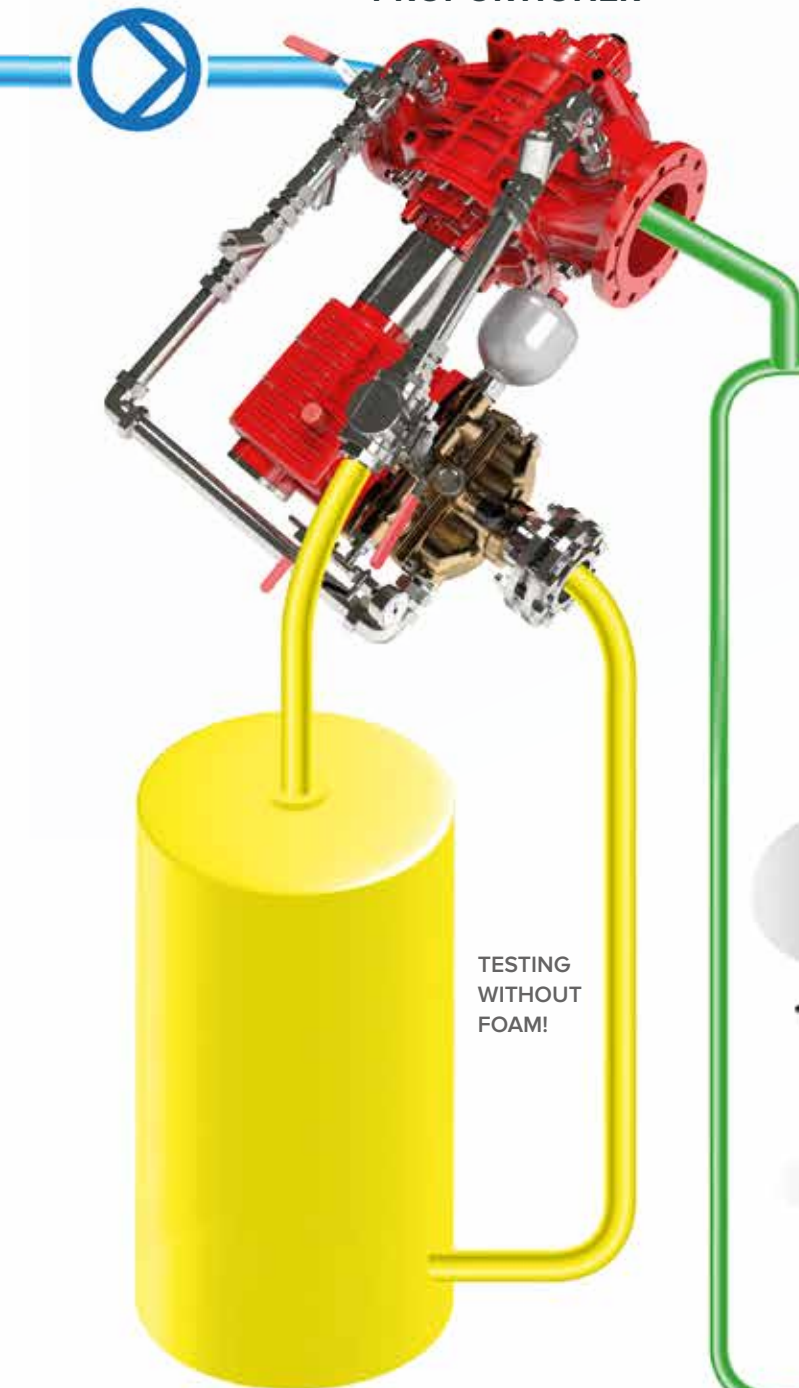




■ OUR PRODUCTS IN ACTION.

More than 13 000 *FireDos* proportioners are successfully in use worldwide, in various industries like logistics, chemical and oil & gas. Typical fields of application are where flammable liquids or solids are produced, transported or stored. This includes the automotive, aviation and marine industries. Additionally, the beneficial use of foam is increasingly adopted for firefighting in waste incineration and sorting plants.

FireDos[®] PROPORTIONER



TESTING
WITHOUT
FOAM!

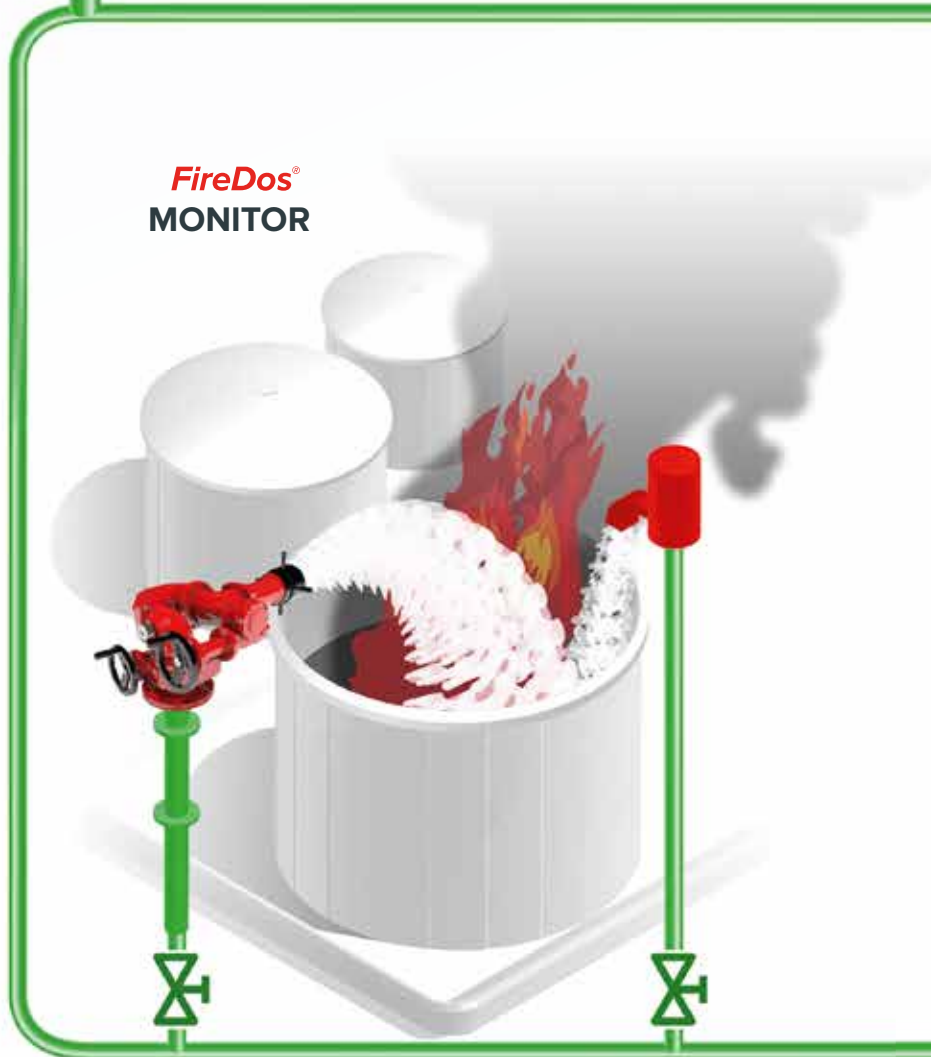
FOAM AGENT TANK



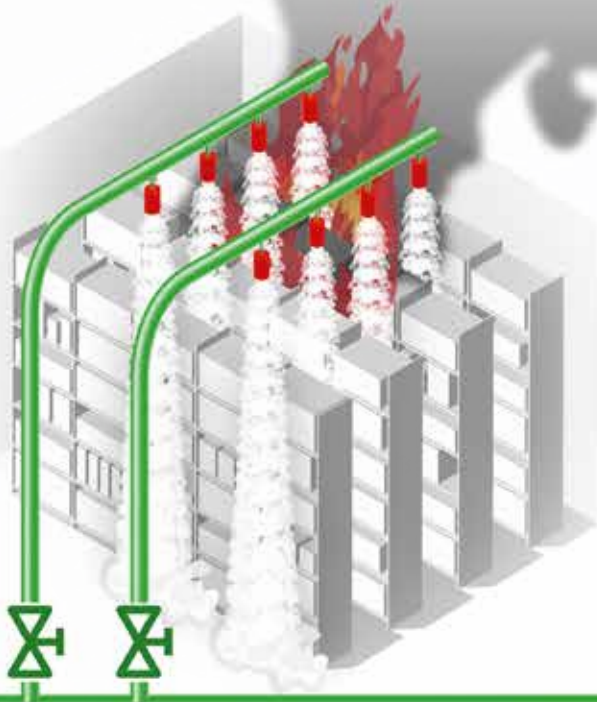
FIREDOS SERVICE: ALWAYS THERE FOR YOU!

We provide a full service: from planning through commissioning and maintenance. No matter which project phase you are, we won't let you down. Our service technicians will be there quickly, worldwide.

FireDos[®] MONITOR



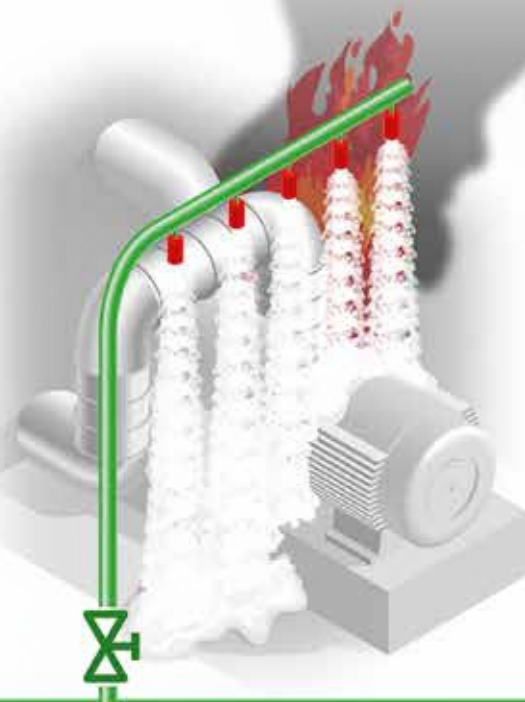
TANK FARM



HIGH-RACK WAREHOUSE



WASTE INCINERATION PLANT












PUMP ROOM



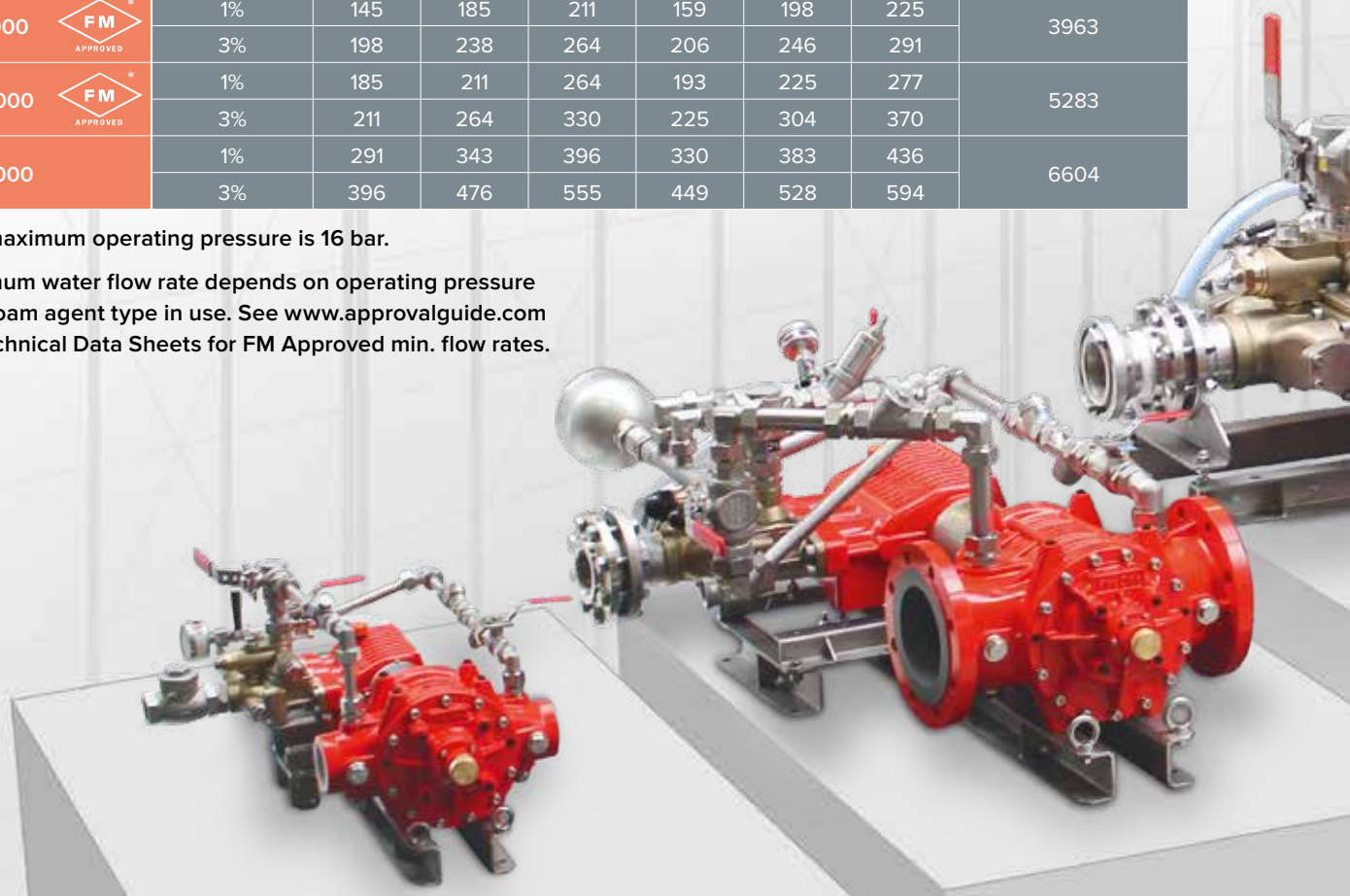
JETTY

NUMEROUS SIZES

		Low-viscosity, Newtonian foam agent			High-viscosity, pseudoplastic foam agent			
		Operating pressure (psi)						
		73	145	232	73	145	232	
Unit type	Proportioning rate	Minimum extinguishing water flow rate (GPM)						Maximum extinguishing water flow rate (GPM)
FD500	1%	16	21	24	18	24	29	132
	3%	21	26	29	24	29	34	
FD1000 	1%	26	34	40	29	40	48	264
	3%	32	40	48	34	42	48	
FD2000 	1%	48	53	66	50	61	74	528
	3%	53	66	74	58	69	79	
FD3000 	1%	53	66	71	55	69	77	793
	3%	61	79	100	63	85	106	
FD4000 	1%	63	92	100	71	98	106	1057
	3%	71	106	114	79	111	119	
FD6000 	1%	79	106	114	85	111	116	1585
	3%	87	119	129	92	127	132	
FD8000 	1%	90	119	145	95	127	153	2113
	3%	92	127	153	100	132	159	
FD10000 	1%	106	132	145	119	140	153	2642
	3%	119	159	190	127	172	198	
FD15000 	1%	145	185	211	159	198	225	3963
	3%	198	238	264	206	246	291	
FD20000 	1%	185	211	264	193	225	277	5283
	3%	211	264	330	225	304	370	
FD25000	1%	291	343	396	330	383	436	6604
	3%	396	476	555	449	528	594	

The maximum operating pressure is 16 bar.

* Minimum water flow rate depends on operating pressure and foam agent type in use. See www.approvalguide.com or Technical Data Sheets for FM Approved min. flow rates.



■ THE PERFECT SYSTEM FOR YOUR APPLICATION.

The intended use is most important for selecting the suitable proportioner. We offer various sizes with different minimum and maximum water flow rates. The required proportioning rate is achieved at a low minimum flow rate, and remains constant across wide extinguishing water flow rates and pressure ranges. This guarantees the optimum automatic response to varied fire scenarios, e.g., when sprinklers open or discharge devices (like foam pourers, monitors or branches) are used. All sizes are available at proportioning rates of 0.5%, 1%, 3%, 3+3% and 6%.

The optional addition of cylinder cut-offs enables multiple proportioning rates within a single proportioner, which can be activated by a ball valve if required. Particular cylinders at the proportioning pump will then merely circulate the foam agent instead of injecting it into the extinguishing water flow.



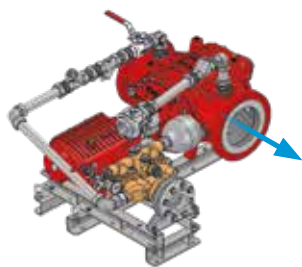
■ FITTING INTO YOUR FIRE PROTECTION SYSTEM PERFECTLY.

We offer various optional equipment and versions to make the proportioner fit into your system perfectly.

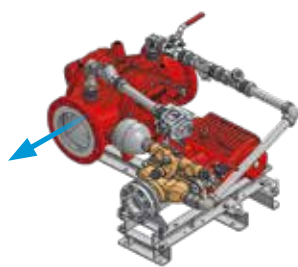
■ FLOW DIRECTIONS OF THE WATER MOTOR



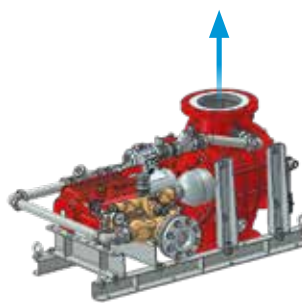
FireDos proportioners are available with four different flow directions to suit a wide variety of installation conditions.



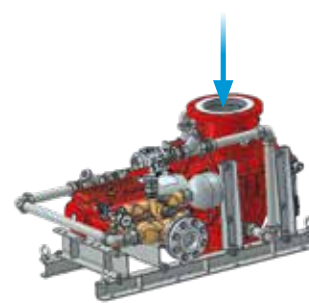
1 horizontal, from left to right



2 horizontal, from right to left



3 vertical, from bottom to top



4 vertical, from top to bottom



■ REVOLUTION COUNTER WITH FLOW RATE DISPLAY FOR THE EXTINGUISHING WATER



The water motor's number of revolutions is counted with the help of an optional proximity switch. The current extinguishing water flow rate is calculated from the number of revolutions and shown on an LED display in GPM.

■ CYLINDER CUT-OFF



To reduce the proportioning rate, an optional cylinder cut-off can be added to the proportioner. This means a cylinder of the proportioning pump is switched to bypass mode. One or more cylinders will then no longer inject the foam agent into the extinguishing water flow but pass it back to the suction side of the proportioning pump. The proportioning rate is reduced accordingly.

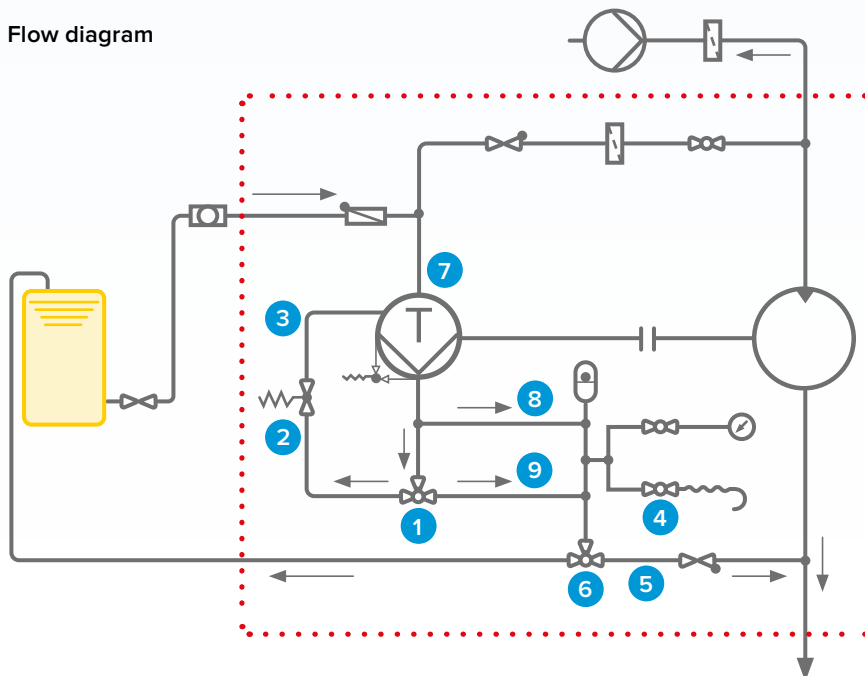
Different variants are possible:

- 3-1: Reduction of the initial proportioning rate from 3% to 1%
- 3-2: Reduction of the initial proportioning rate from 3% to 2%
- 1-0,3: Reduction of the initial proportioning rate from 1% to 0.3%
- 1-0,7: Reduction of the initial proportioning rate from 1% to 0.7%

If you need another combination, please contact us.



Flow diagram



- 1 "Cylinder cut-off" ball valve
- 2 Pressure sustaining valve
- 3 Return line to pump
- 4 Air bleed valve
- 5 Proportioning line
- 6 3-way ball valve „returning/proportioning“
- 7 Proportioning pump connection, suction side
- 8 Proportioning line, cylinder 3
- 9 Proportioning line, cylinders 1 and 2

OPTIMUM ADJUSTMENT

■ SEAWATER VERSION



For use with seawater, a version with correspondingly adapted materials is available.



■ FLANGES



Depending on the type series, the proportioner's flanges are either threaded or cast in the housing. All flanges are available as DIN and ANSI versions.



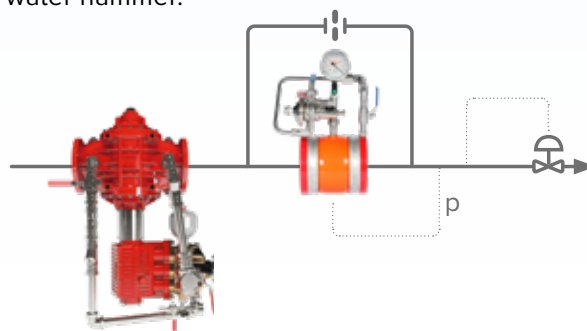
■ VERSION FOR STATIC PRESSURE > 232 PSI

In static mode, if the maximum permissible pressure of 232 psi is exceeded, particular components in the water motor can be adapted. This allows them to handle a static pressure of up to 363 psi.



■ SURGE PROTECTION

When water surges occur, i.e. when empty pipework is filled after an alarm activation, there are multiple possibilities to protect the pipework as well as the *FireDos* proportioners. One option is the use of an automatic surge protection valve. This also prevents the potential damage caused by overspeed and water hammer.



■ ATEX VERSION



With a declaration of conformity according to 2014/34/EU. Marking:
II 2G Ex h IIC T4 Gb / II 2D Ex h IIC T130°C Db



■ VERSION FOR OPERATING TEMPERATURES OVER 122 °F



Use of a special rotor vane variant enables higher temperatures of up to 176 °F.



■ PRESSURE SUSTAINING VALVE WITH OR WITHOUT FLOW METER



When determining the foam agent flow rate in testing mode, it is important to simulate the real pressure conditions in the extinguishing system. The pressure sustaining valve installed in the return line is used to set a defined backpressure. To measure the volumetric foam agent flow rate, it is useful to install an additional magnetic-inductive flow meter, which measures the extinguishing agent flow rate and allows determination of the proportioning rate.



Flow meter for measuring the volumetric flow rate

Pressure sustaining valve for setting a backpressure

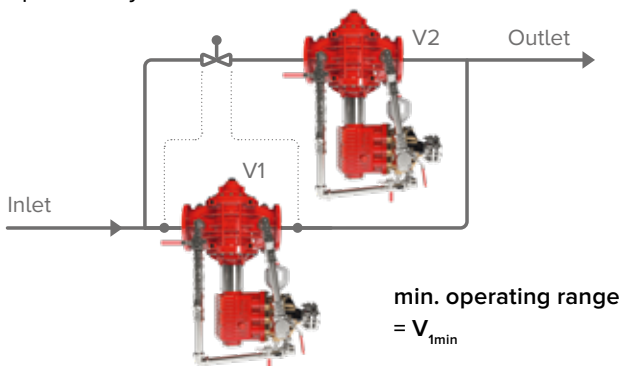


■ PARALLEL INSTALLATION

To extend the operating range of a *FireDos* proportioner, it is possible to install two or more proportioners in parallel.

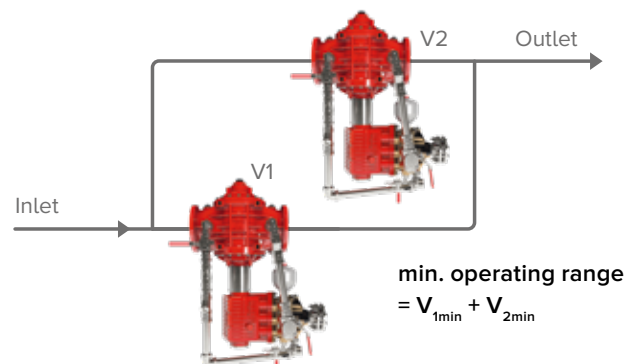
With a proportional control valve:

The proportional control valve is installed upstream of one proportioner. Typical applications include Wet sprinkler systems.



Without a proportional control valve:

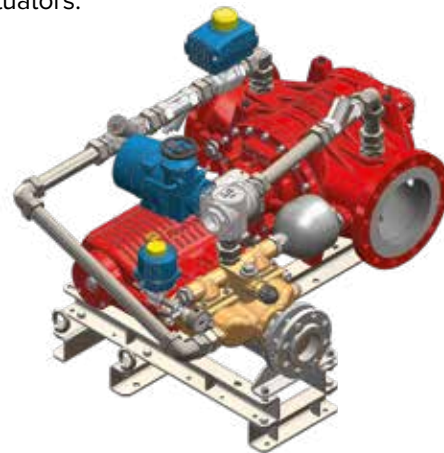
Parallel installations without a proportional control valve have a different operating range. This type of parallel installation is suitable for all fire protection systems with open discharge devices.



■ ELECTRICALLY ACTUATED BALL VALVES



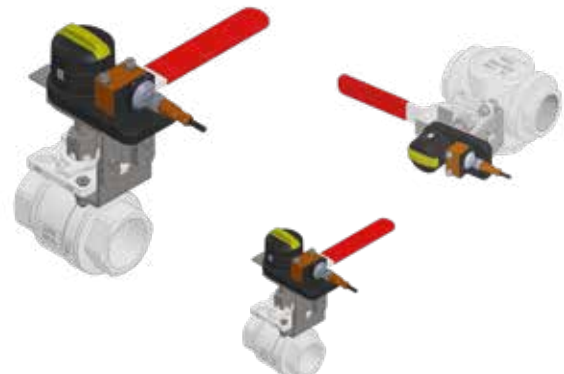
For integration with an on-site control system, the ball valves of the proportioner can be fitted with electric actuators.



■ ELECTRICAL BALL VALVE POSITION MONITORING



A switch can be added for electrical monitoring of the ball valve position, which can be integrated to an on-site control system.





■ PLAY IT SAFE WITH FIREDOS!

■ WELL-PLANNED IS HALF WON.

FireDos support during the planning phase assists in developing the perfect application solution, together with our valued customers. When commissioning on-site, *FireDos* service technicians and factory-trained personnel will be pleased to do the job for you.

■ OUR SERVICE PROMISE.

FireDos won't let you down in case of a breakdown. We guarantee quick service by our teams and rapid availability of spare parts.

■ SAFETY PAYS OFF.

Regular maintenance of proportioners and monitors guarantees fault-free functioning in an emergency. Use our international maintenance service with the peace of mind of manufacturer servicing.

■ KNOW-HOW.

Training to ensure the correct procedure in an emergency. *FireDos* can train your staff - at our headquarters in Woelfersheim or at your facility worldwide.

Further brochures:



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