



WATER DRIVEN PUMP PROPORTIONERS FOR FIRE FIGHTING

HOW TO CORRECTLY VERIFY THE DOSING RATE BY MEASURING WATER FLOW AND DOSING PUMP FLOW

FIREMIKS is a reliable and easy-to-use foam proportioner,
driven by the water flow only.

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VERIFYING DOSING RATE



Verify dosing rate = Verify the correct volumetric function of both the water motor and dosing pump by measuring:

- 1) the water flow through the water motor with an *independent* flow meter
- 2) the concentrate flow pumped by the dosing pump with an *independent* flow meter

And calculate to this formula, in accordance with EN 13565-1, NFPA 11, FM 5130

$$\frac{\text{Concentrate flow}}{\text{Water flow} + \text{Concentrate flow}} \times 100 = \text{Dosing rate \%}$$

MEASURING WATER FLOW



The accurate method to check the water flow at different pressures is to use a separate and calibrated water flow meter, that independently measure the water flow.

This is also the only correct method to validate the performance of the water motor, i.e. that it is keeping its designed volumetric function.

REVOLUTION COUNTER WITH FLOW RATE DISPLAY



A revolution counter with flow rate display, as an add-on package, can be used as a convenient way of *estimating* the water flow through the water motor. This can help e.g. to get an indication of overflow in a system.

As described by FM Approval guide:
"*...may be used to provide a general estimate of the extinguish water flow...*"

REVOLUTION COUNTING WITH HANDHELD TACHOMETER



An alternative way to measure the rpm is to use a digital hand-held tachometer (contact or non-contact) to check rpm and then compare the value with the max flow rpm as shown on our Data sheets.

We recommend this to ensure that the unit is not over-speeding, i.e working within the upper flow limit specified in our Data sheets.



THE LIMITS OF REVOLUTION COUNTER METHOD

~~RPM~~

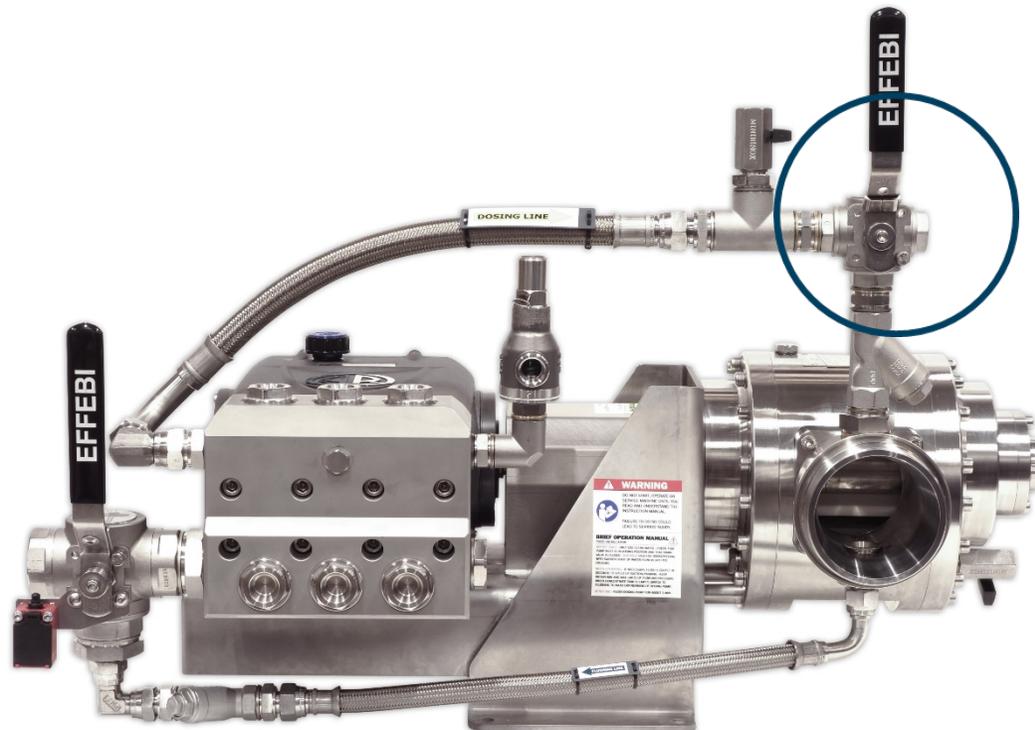
The revolution counter method **assumes** the correct working of the **water motor** to give an **estimate of water flow**.

= **It cannot be used to correctly verify the dosing rate**
as the dosing rate is directly dependent on
the performance of the **water motor**

Likewise, it would be possible to *estimate* the concentrate flow of the concentrate pump by using the rpm method, and similarly this would **not** be a valid method to verify the dosing rate.

The revolution counter method is **not** an approved method to verify dosing rate as described by EN 13565-1, NFPA 11, FM 5130.

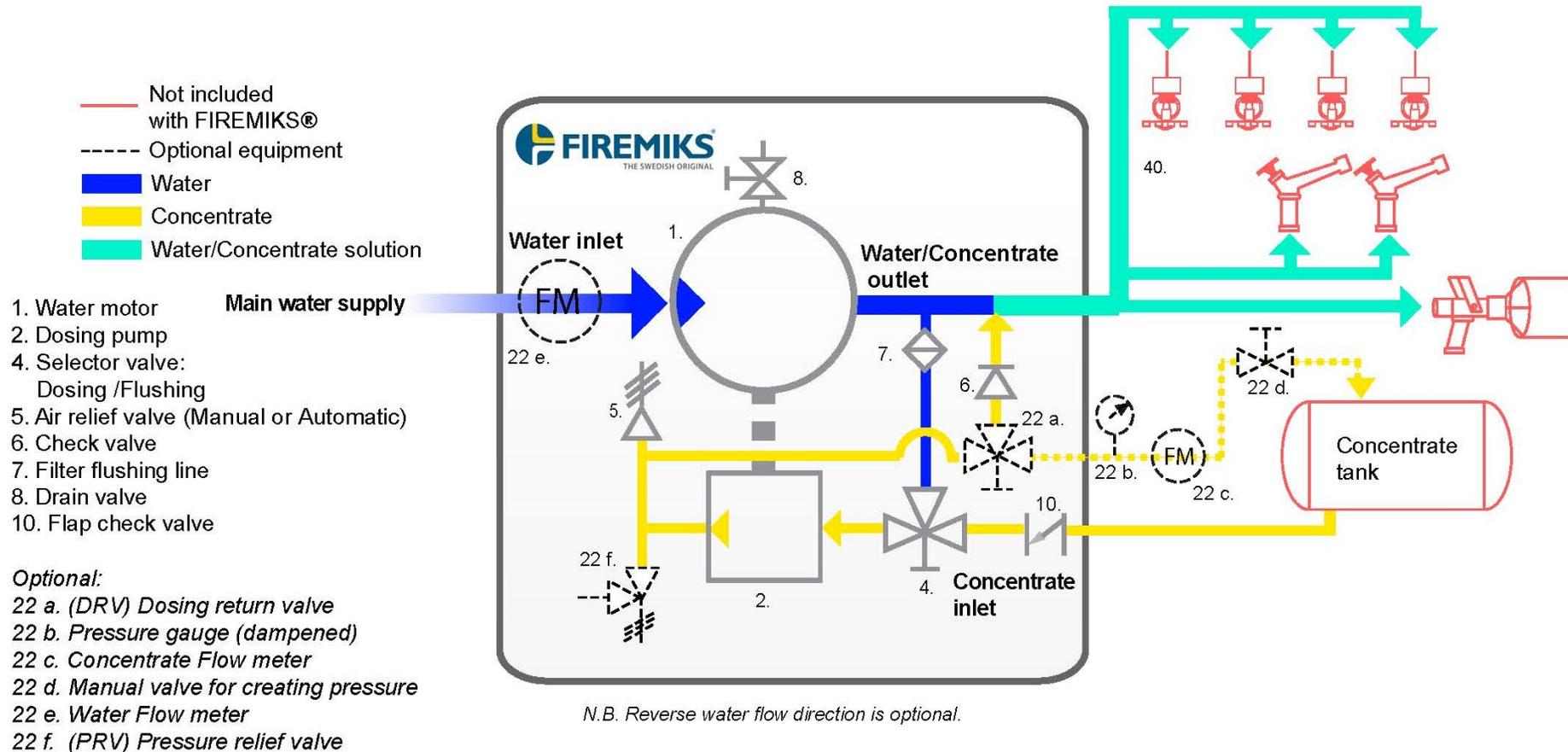
DOSING RETURN VALVE OPTION



To be able to measure the pumped concentrate one needs to have a unit with the option *Dosing return valve* to pump the concentrate back to the foam tank, instead of injecting it into the water flow.

Use a partly closed valve in the return line to simulate the water discharge back pressure, or a pressure regulating valve which we can provide also.

DOSING RETURN VALVE OPTION – FLOW CHART



40. For example:
 Nozzles/Monitors/Deluge systems /Sprinkler heads/Foam generators

MEASURING PUMPED CONCENTRATE



The method to check the pumped concentrate flow at different pressures is to use a separate calibrated flow meter, that independently measure the concentrate pumped back to the concentrate tank.

An alternative method to measure the pumped concentrate that do not require a flow meter, is to pass it into a separate container and weight the amount during a defined time (Nordtest method NT Fire 042).



**Thank you for your
attention!**

**For more info
on the presented
options
- contact us at
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