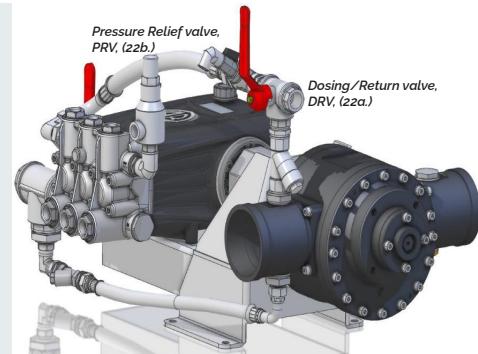


QUICK INSTRUCTION

Dosing Rate Test System according to EN 13565-1, NFPA 11, FM 5130

FOR WATER DRIVEN VOLUMETRIC PROPORTIONER FIREMIKS - IN FIXED INSTALLATIONS

To be able to simply test and verify the correct proportioning the FIREMIKS unit needs to be equipped with the optional **Dosing/Return valve, DRV, (22a.)** that allows for testing the system without mixing the concentrate into the water flow. A **Pressure Relief valve PRV, (22b.)** is included to eliminate the risk for over-pressure if return line is closed/blocked by mistake.



The FIREMIKS complete Dosing Rate Test System consist of **two Electromagnetic Flow meters**;

One Water flow meter (22c.) and one Concentrate flow meter (22e.)
 The Concentrate flow meter is complete with flanges and accessories:
Concentrate testing line (22d.) a Damped pressure gauge (22f.), a Pressure regulating valve (22g.) to simulate the water system pressure and a Discharge hose for concentrate (22h.)



22c.) Water flow meter



22e.) Concentrate flow meter



22f.) Damped pressure gauge



22g.) Pressure regulating valve

Above items incl Concentrate testing line (22d.) and Discharge hose for concentrate (22h.) are partially assembled.

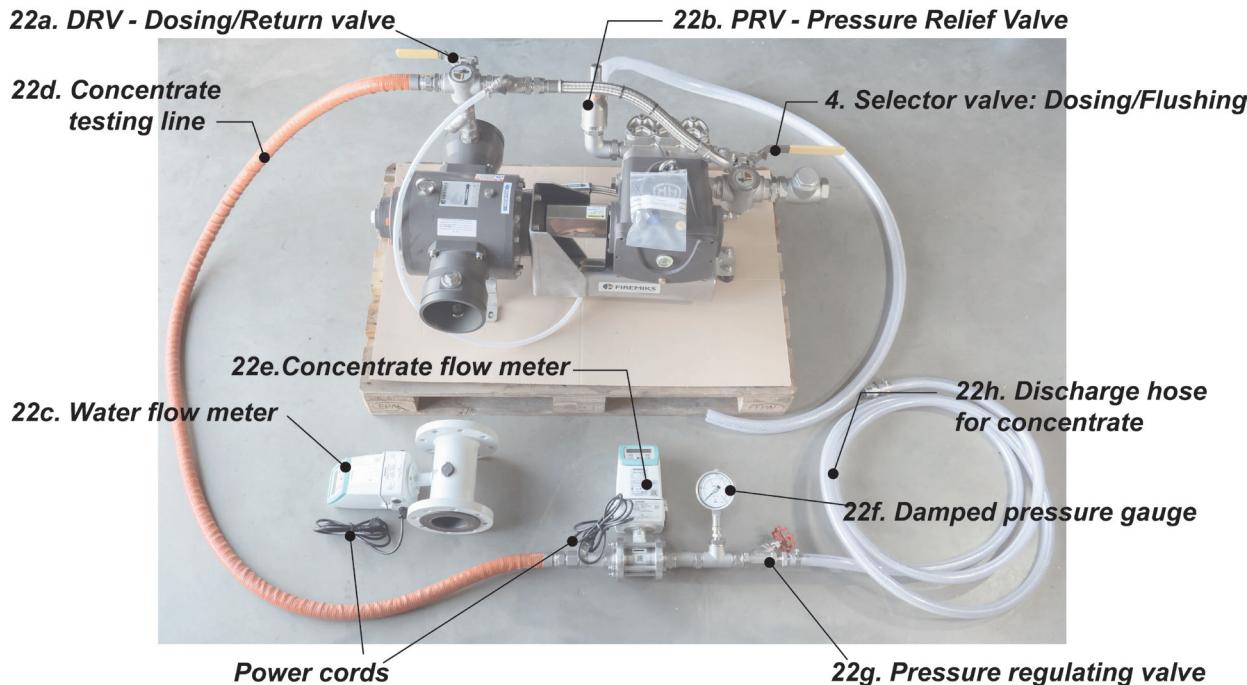
THE ACCURATE WAY OF VERIFYING DOSING RATE

Verifying dosing rate equals to verifying the correct volumetric function **of both the water motor and dosing pump with two independent flow meters** and calculate to this formula, in accordance with EN 13565-1, NFPA 11, FM 5130:

Add flow (Concentrate)

$x 100 = \text{Dosing rate \%}$

Water flow + Add flow (Concentrate)



Starting from an installed FIREMIKS already equipped with DRV – i.e. Dosing/Return valve (22a.) and PRV – Pressure Relief valve (22b.) and connected to a concentrate tank with gravity feed of the concentrate to the pump inlet, via the **Selector valve Dosing/Flushing (4), set in Dosing position**.

Assembly

1. Assemble the larger **Water flow meter (22c.)** into the piping upstream* of the FIREMIKS, make sure the flow meter is completely filled (no air pockets) and there are no bends immediately before or after the flow meter**.
2. Attach the **Concentrate testing line (22d.)** to the DRV (22a.) and to the **Concentrate flow meter (22e.)** - use a lubricant to prevent thread galling.
3. Connect the **Discharge hose for concentrate (22h.)** from the **Pressure regulating valve (22g.)** to the concentrate tank, secure it if necessary.
4. Put the Relief hose of the **PRV (22b.)** in a suitable location, this will discharge the test concentrate in case the pump discharge, for example **Pressure regulating valve (22g.)** is (mistakenly) blocked or closed.
5. Plug in both flow meter **Power cords** to a 220V outlet (using extensions if necessary).
6. **Important!** Check that the **Dosing/Flushing valve (4.)** is in the **Dosing position** (as shown).
7. **Important!** Make sure the **DRV (22a.)** is in the **Return position** (as shown). During this testing, the FIREMIKS will discharge only water in the main piping, all concentrate will be returned via the **DRV (22a.)** to the concentrate tank.
8. Check that the **Pressure regulating valve (22g.)**, used to simulate the injection pressure, is completely open (stem extended, dial rotated counterclockwise all the way).

Dosing rate testing

9. Start main water flow to run the FIREMIKS. Once water flow is stabilized, turn the **Pressure regulating valve (22g.)** clockwise until the injection pressure shown on **Damped pressure gauge (22f.)** is as desired (either as per hydraulic calculations or same as on a pressure gauge just downstream of the FIREMIKS). Injection pressure = FIREMIKS Inlet pressure ./ the FIREMIKS pressure drop.
10. Read out **Water flow** from the **Water flow meter (22c.)** and the **Add flow** on **Concentrate flow meter (22e.)**. Put in the values in the below simple formula:

Add flow (Concentrate)

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

11. After test: Ensure that **DRV (22a.)** is put back in **Dosing position**.



* Downstream is also possible, then it is necessary that the piping is flushed from concentrate premix in case the flow meter is left installed.

**(5x Di before and 3x Di after straight pipe)

PRINCIPLE FLOW CHART for FIREMIKS units equipped with DRV, PRV, Water flow meter, Concentrate testing line, Concentrate flow meter, Damped pressure gauge, Pressure regulating valve for simulating system pressure and Discharge hose for concentrate.

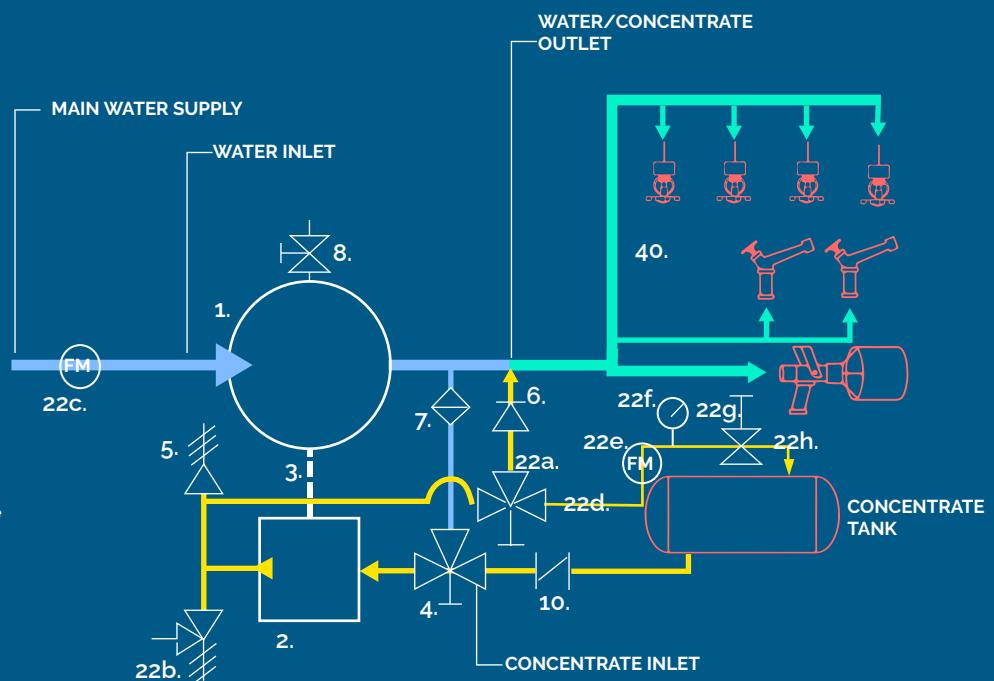
 NOT INCLUDED WITH FIREMIKS

- WATER
- CONCENTRATE
- WATER/CONCENTRATE SOLUTION

1. Water motor
2. Dosing pump
3. Drive gear (Not incl. on smaller models)
4. Selector valve: Dosing/Flushing
5. Air relief valve (Manual or Automatic)
6. Check valve
7. Filter flushing line
8. Drain valve (Not incl. on smaller models)
10. Flap check valve

- 22a. DRV - Dosing/Return valve
- 22b. PRV - Pressure Relief valve with relief hose
- 22c. Water flow meter
- 22d. Concentrate testing line
- 22e. Concentrate flow meter
- 22f. Damped pressure gauge
- 22g. Pressure regulating valve
- 22h. Discharge hose for concentrate

40. For example: Nozzles/Monitors/Deluge systems



N.B. Reverse water flow direction is optional.

FIREMIKS® is a registered trademark owned by Firemiks AB in Sweden.

Firemiks AB is SS-EN ISO 9001:2015 certified by Bureau Veritas. Scope of supply:
Development, production and sales of water motor driven dosing systems for firefighting.



 FIREMIKS® is CE-marked and production is made according to European Directive 2006/42/EC.

Conforms to applicable parts of NFPA 11 and NFPA 1901. 

We reserve the right to make changes in the specifications without prior notice.