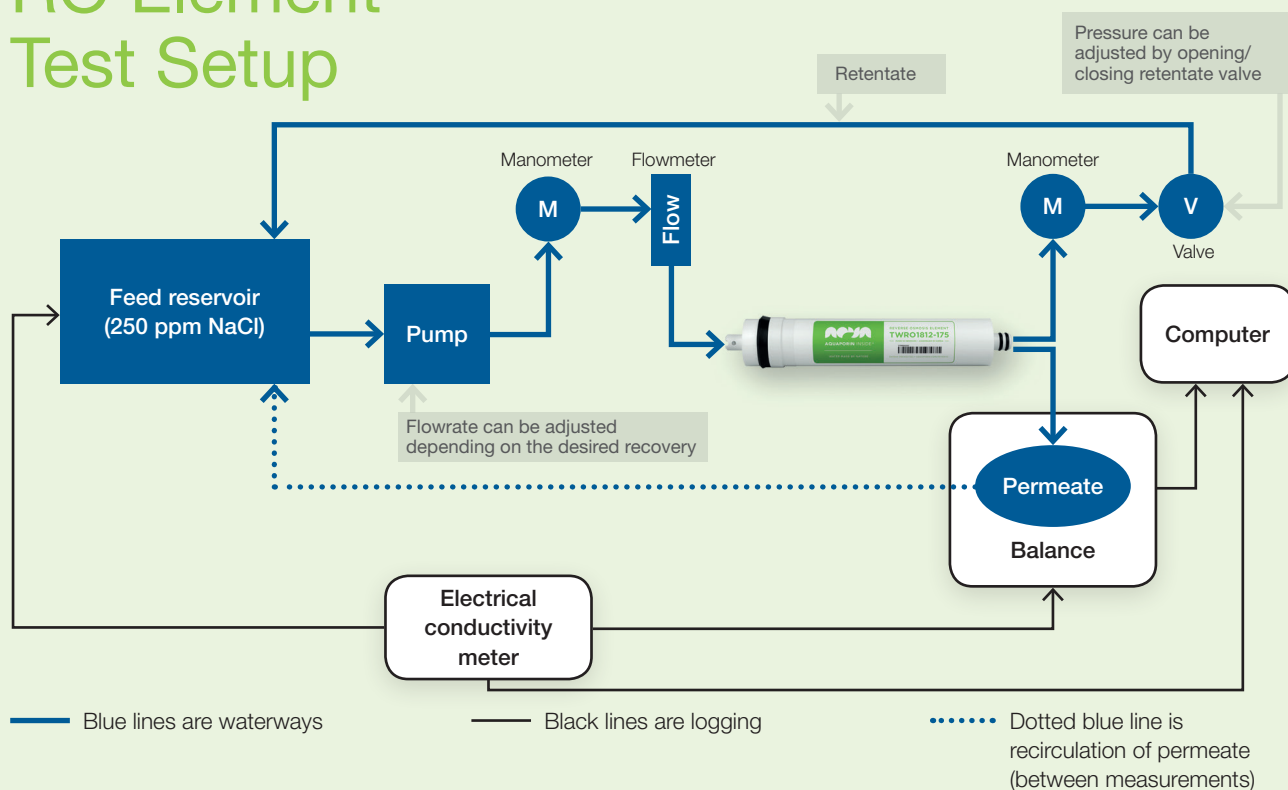


RO Element Test Setup



Testing preparation

- Flush membrane element with deionized water for 1 h at 60 psi (4.1 bar). Permeate and retentate flows should be directed to a waste collection drain during flushing.
- Prepare feed water reservoir (20 L / 5 gal) with 250 ppm NaCl.
- Feed water temperature must be 25 °C (77 °F) during testing.
- Feed water pH must be 8 during testing. Adjust pH with NaOH or HCl.

During test

Permeate and retentate flows are recycled to the feed reservoir (according to scheme above).

Pressure

1812 elements are tested at an applied pressure of 60 psi (4.1 bar).

Recovery

- 1812 elements are tested at 15% recovery.

Recovery (%) is calculated as $(Q_p/Q_f) \cdot 100\%$ with Q_p : permeate flowrate (L/h) and Q_f : feed flowrate (L/h).

Flowrates

- Feed flowrate is set according to the desired recovery.
- Permeate flowrate (L/h or gal/d) is assessed by the weight increase over time detected by the balance. Alternatively, the time required to produce a predefined permeate volume (e.g. 1 L / 30 fl. oz.) can be measured.

Rejection

- Salt rejection (%) is calculated from electrical conductivity measurements in both feed and permeate according to the following formula: $R = [1 - (EC_p/EC_f)] \cdot 100\%$ with EC_p : electrical conductivity of the permeate ($\mu\text{S}/\text{cm}$) and EC_f : electrical conductivity of the feed ($\mu\text{S}/\text{cm}$).

Stabilization time

- Suggested operating time should be at least 4 h (preferably 24 h) before permeate flowrate and salt rejection are assessed.

Return produced permeate to the feed reservoir after flowrate and rejection measurements.

Disclaimer:

This document is intended as a guideline only for quality control testing of Aquaporin Inside® TWRO 1812 elements. For more information, please contact your Aquaporin representative or aquaporin@aquaporin.com

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