

Table 1: Symptoms, Causes and Corrective Measures

Permeate Flow	Salt Passage	Different. Pressure	Direct Cause	Indirect Cause	Corrective Measure
↑	↑↑	→	Oxidation Damage	Free Chlorine, Ozone, KMnO_4	Replace Element
↑	↑↑	→	Membrane Leak	Permeate Backpressure; Abrasion	Replace Element; Improve Cartridge Filtration
↑	↑↑	→	O-Ring Leak	Improper Installation	Replace O-Ring
↑	↑↑	→	Leaking Product Tube	Damaged During Element Loading	Replace Element
↓	↑	↑	Scaling	Insufficient Scale Control	Cleaning; Scale Control
↓	↑	↑	Colloidal Fouling	Insufficient Pretreatment	Cleaning, Improve Pretreatment
↓	→	↑↑	Biofouling	Contaminated Raw Water, Insufficient Pretreatment	Cleaning, Disinfection Improve Pretreatment
↓	→	→	Organic Fouling	Oil, Cationic Polyelectrolytes	Cleaning, Improve Pretreatment
↓	↓	→	Compaction	Water Hammer	Replace Element or Add Elements

↑ increasing ↓ decreasing → not changing ↑↑ main symptom