



# Standard Reverse Osmosis Systems

Producing from 50 to 400 gpm of high-purity water

Pre-engineered for general and industrial applications. Skid mounted, pre-piped and pre-wired for quick installation. Membrane elements factory loaded for immediate start-up.

Robust and practical designs incorporating years of diverse industrial experience. Options available to meet customer needs and budget.

ISS can custom engineer and manufacture any size RO system to meet the varied and specific requirements of municipal, industrial, commercial and agricultural application.



## System Features

### Skid and Frame Assembly

Welded structural carbon steel tubing  
Finished with epoxy coating

### Cartridge Pre-Filtration

Filter housings of 304 stainless steel 5-micron polypropylene cartridges

### System Pressure Pumps

Vertical, multi-stage centrifugal pumps 304/316 stainless steel housings/impellers  
Equipped with TEFC motors

### Membrane Pressure Vessels

8" FRP with 316 stainless steel side-entry ports  
Rated for 450 psig operating pressure  
Special polyurethane finish

### Membrane Elements

High rejection, thin-film composite (TFC)  
Spiral-wound configuration  
Tested at 99.5% average salt rejection  
Three-year warranty against defects of quality and workmanship

### System Piping and Valves

Low pressure - schedule 80 PVC  
High pressure - 304 stainless steel automatic inlet; pump discharge throttle; inlet, product, and reject sampling; reject flow control; automatic shut-off with reject flush; victaulic connections for use with cleaning systems

### Instrumentation Package

Features convenient performance monitoring  
Low inlet pressure switch for pump protection  
Product and reject electronic flow monitors  
Pressure gauges at critical locations  
Product conductivity monitor

### System Control

Allen Bradley Micrologix 1200 series PLC  
Maple System model 3165 Display provides the standard operator interface terminal  
Mounted in a NEMA 4/12 rated enclosure  
Audible alarm system is provided  
Operation and maintenance manual/CD

## Standard Options

ASME Vessels  
 Product flush or diversion  
 Nema 4X enclosure  
 Hardness, turbidity, chlorine analyzers  
 pH or ORP monitors/transmitters  
 CIP clean-up skids w/wo heaters

Corrosion Resistance upgrade:  
 304 to 316 stainless steel

Motor Controllers:  
 AC magnetic starter, soft starter or VFD

Premium Controls:  
 A/B SLC controllers with Panelview Displays

## System Specifications

Model Number	M-50	M-100	M-165	M-200	M-250	M-300	M-400
Product (GPM)	50	100	165	200	250	300	400
Feed (GPM)	67	133	220	267	333	400	533
Reject (GPM)	17	33	55	67	83	100	133
Nominal Recovery	75%	75%	75%	75%	75%	75%	75%
<b>Membranes</b>							
Membranes/Vessel	3	4	4	6	6	6	6
Membrane Quantity	12	24	40	48	60	72	96
<b>Vessels</b>							
Vessel Array	2:1:1	3:2:1	5:3:2	5:3	6:4	8:4	10:6
Vessel Quantity	4	6	10	8	10	12	16
<b>Dimensions (approx)</b>							
Length (inch)	150	190	190	275	275	275	275
Width (inch)	45	55	55	60	72	72	90
Height (inch)	85	80	85	90	90	90	90
Ship Weight (lbs)	2700	3600	4400	7000	8000	9000	11500

## Design Parameters

Configuration: multi-stage, single pass  
 Feed water temperature: 60°F  
 Inlet pressure: 25-60 psig  
 Well or softened feed water: <1500 ppm TDS  
 Free chlorine: < 0.1 ppm  
 Maximum langelier saturation index: < 0  
 Maximum silt density index (SDI): 3.0  
 Pre-filtration requirement: 5 micron nominal  
 System recovery: 75% nominal  
 System rejection: 97-99% nominal

## Electrical Requirements

Control Power: 120 VAC, 1 phase, 60 Hz  
 Main Power: 480 VAC, 3 phase, 60 Hz

## Pre-Treatment Systems

Chemical addition for anti-scalant, dechlorination, or pH adjustment; Ultrafiltration units; Multi-media & Carbon filters; Water softening systems

## Post-treatment Systems

Mixed-Bed deionizers, Electrodeionizers, UV sterilizers, Polishing cartridge filters

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