

‘MRO-8H’ Reverse Osmosis Systems



Overview

The Marlo MRO-8H Series Industrial Reverse Osmosis Systems are engineered to economically produce high purity water by removal of dissolved minerals, bacteria, particles, and organic impurities. Each MRO machine is constructed using the highest quality components and materials for reliable operation and exceptional performance. Our standard machines are available with product water outputs from 25-450 GPM (36,000-648,000 GPD).

Marlo also offers a wide variety of machine options, pre/post treatment equipment, distribution pumps, and integrated controls for a complete water treatment system. Our specialty is skid mounted, pre-piped, and pre-wired equipment allowing for quick installation and start-up time. Other types of membrane technology are also available including two-pass, two-train, and nanofiltration (NF) for custom applications. Marlo engineers are ready to work with you to design a system meeting your water treatment requirements.

The following are just a few of the industrial applications that benefit from the use of reverse osmosis water:

- Boiler Feedwater
- Chemical Manufacturing
- Industrial Process Water
- Pulp/Paper Mills
- Ice Plants
- Small Municipalities
- Electronics Manufacturing
- Ink / Dye Production
- Food / Beverage Production
- Deionizer Pre-treatment

Operating Parameters

- Operating Pressure: 200-250 psig
- Nominal Recovery: 75-80%
- Nominal Salt Rejection: 98-99%
- Operating Temperature: 45-85° F
- Design Temperature: 50° F
- Minimum Inlet Pressure: 30 psig
- Control Circuit: 120 VAC, 1-phase, 60 Hz.

Materials of Construction

- Skid Frame: Epoxy-coated carbon steel
- Membrane Elements: Thin-film Composite (TFC)
- Membrane Housings: FRP (300 psig rated)
- Low pressure piping: Sch 80 PVC
- High pressure piping: Sch 10 304SS

Pump and Motor

- Pump: 304/316SS vertical multi-stage centrifugal
- Motor: TEFC, 460 VAC, 3-phase, 60 Hz.

Standard Features

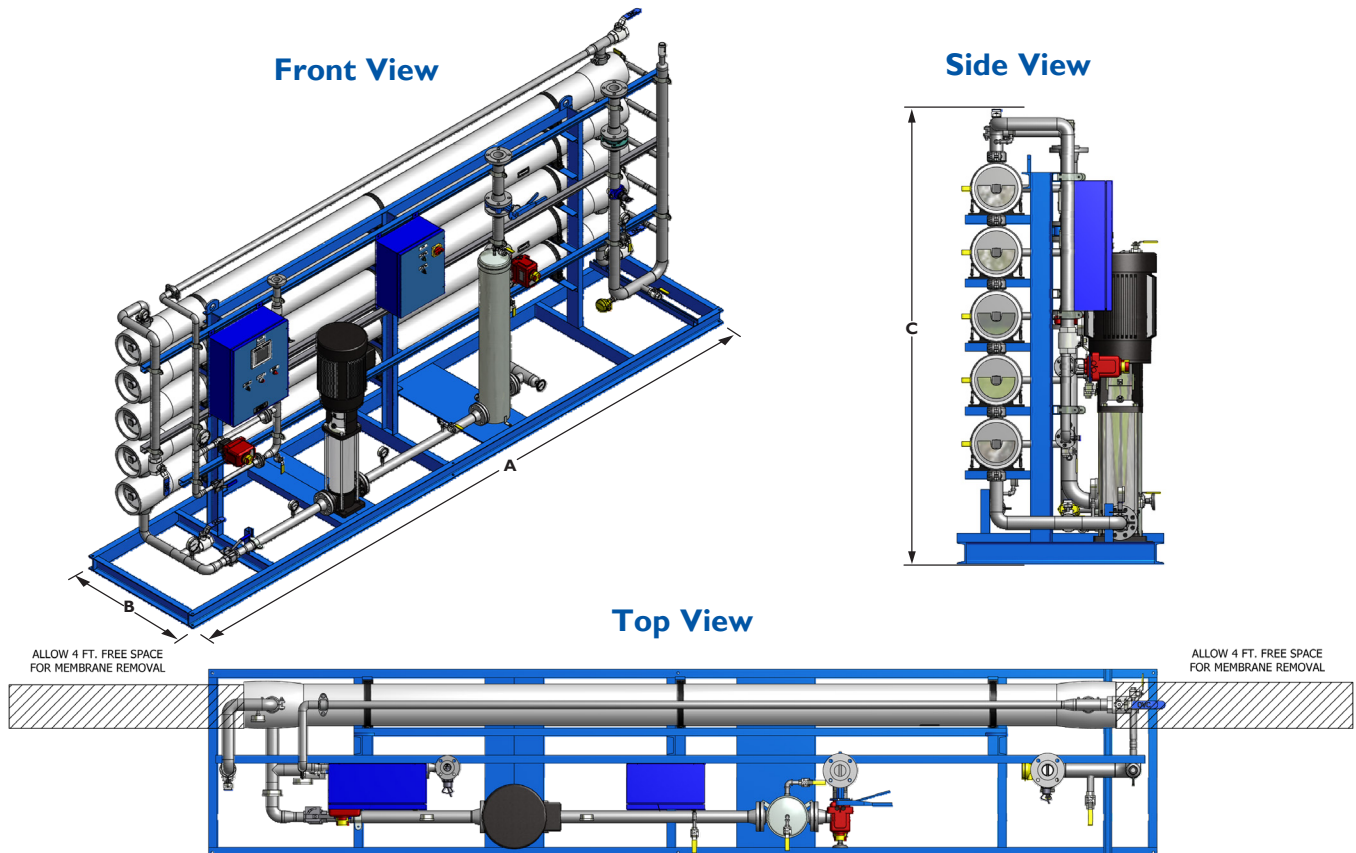
- 8" x 40" High rejection membrane elements
- 5-micron sediment pre-filter housing (304SS)
- Allen Bradley MicroLogix 1400 PLC System with PanelView 800-7 operator interface
- Prewired motor starter with fused disconnect switch
- NEMA-4 electrical enclosures
- UL-508A Listed electrical panels
- Product water conductivity transmitters
- Product and reject flow transmitters
- 316SS pressure gauges / Inlet pressure switch

Optional Equipment Available

- Variable Frequency Drives (VFD)
(Standard for units over 100-GPM)
- pH/ORP monitors
- Low energy membrane elements
- Permeate Flush / Permeate Divert
- All stainless steel piping and/or skid
- Ethernet/Modbus PLC communications
- Atmospheric storage tanks with level control and repressurization pump systems
- Membrane clean-in-place (CIP) systems
- Pretreatment chemical injection systems

SPECIFICATIONS

| MODEL NUMBER | CAPACITY | | ELEMENT QUANTITY | VESSEL STAGING | RO FEED | RO REJECT | SYSTEM PIPING CONNECTIONS (INCHES) | | | PUMP HP | OVERALL DIMENSIONS (INCHES) | | | SHIPPING WEIGHT |
|--------------|----------|---------|------------------|----------------|---------|-----------|------------------------------------|----------|-----------|---------|-----------------------------|---------|----------|-----------------|
| | GPM | GPD | | | GPM | GPM | INLET FEED | PERMEATE | RO REJECT | | A LENGTH | B WIDTH | C HEIGHT | |
| MRO-36K-8H | 25 | 36,000 | 6 | 1/1 | 33 | 8 | 1 1/2 | 1 1/2 | 1 | 10 | 146 | 40 | 82 | 3150 |
| MRO-50K-8H | 35 | 50,400 | 9 | 1/1/1 | 47 | 12 | 2 | 1 1/2 | 1 | 15 | 146 | 40 | 82 | 3550 |
| MRO-72K-8H | 50 | 72,000 | 12 | 2/1/1 | 67 | 17 | 2 | 2 | 1 | 20 | 146 | 40 | 82 | 3800 |
| MRO-94K-8H | 65 | 93,600 | 16 | 2/1/1 | 87 | 22 | 2 1/2 | 2 | 1 1/2 | 25 | 194 | 46 | 82 | 4300 |
| MRO-115K-8H | 80 | 115,000 | 20 | 2/2/1 | 107 | 27 | 2 1/2 | 2 1/2 | 1 1/2 | 25 | 194 | 46 | 82 | 4600 |
| MRO-144K-8H | 100 | 144,000 | 24 | 3/2/1 | 132 | 32 | 2 1/2 | 2 1/2 | 1 1/2 | 30 | 194 | 46 | 94 | 5100 |
| MRO-180K-8H | 125 | 180,000 | 30 | 3/2 | 167 | 42 | 3 | 3 | 2 | 40 | 274 | 50 | 86 | 5700 |
| MRO-216K-8H | 150 | 216,000 | 36 | 4/2 | 197 | 47 | 3 | 3 | 2 | 50 | 274 | 50 | 94 | 6100 |
| MRO-288K-8H | 200 | 288,000 | 48 | 5/3 | 267 | 67 | 4 | 4 | 2 | 60 | 274 | 70 | 86 | 7100 |
| MRO-360K-8H | 250 | 360,000 | 60 | 6/4 | 333 | 83 | 6 | 6 | 3 | 75 | 274 | 76 | 86 | 8000 |
| MRO-432K-8H | 300 | 432,000 | 72 | 8/4 | 400 | 100 | 6 | 6 | 3 | 100 | 274 | 76 | 97 | 10,600 |
| MRO-648K-8H | 450 | 648,000 | 108 | 10/8 | 600 | 150 | 6 | 6 | 3 | 125 | 288 | 96 | 106 | 13,000 |



Notes

- 1 Feed flow based on 75% recovery.
- 2 Motor horsepower based on 50°F feedwater and high rejection membranes. Lower horsepower models are available for warmer feedwater and/or higher flow membranes. Consult factory.
- 3 Requires minimum of 48" additional length on each side of the skid for membrane removal.
- 4 Feedwater to RO system must be free of chlorine and pre-conditioned by water softening or polymer injection to prevent membrane scaling.