

# Membrane-Based Water for Injection (WFI) System

Our membrane-based WFI skid provides a simple, reliable solution for producing pyrogen-free water for injection (WFI) that meets all U.S. Pharmacopeia (USP) standards. The system combines state-of-the-art treatments in a modular design for flexibility and efficiency - water softening, carbon filtration, reverse osmosis (RO), continuous electrodeionization (CEDI), ultrafiltration (UF), and ultraviolet (UV). Customizable skids are available upon request.

**PRETREATMENT SKID**



**ULTRA FILTRATION SKID**



**REVERSE OSMOSIS SKID**

# PAUL MUELLER COMPANY

## Sizes

- 5, 10, 20, 30 and 50 GPM WFI systems

## Models

- PT-RO-UF-5 through 50 (full system)
- PT-10 through 100 (pretreatment only)
- RO-5 through 50 (RODI skid only)
- UF-5 through 50 (UF skid only)

## Modularity

- The softener (pre-treatment) skid includes dual pre-filters, dual softeners, a carbon filter, a UV light, and a break tank.
- RO & CEDI skid includes RO pre-filter, dual RO pumps, RO housings and membranes, and CEDI.
- UF skid includes ultrafiltration (UF) and ultraviolet (UV)
- The systems can be purchased separately or as one system
- UF skid designed to fit within RO skid for footprint minimization
- Can oversize portions of the system to branch off the RO or softener system and feed other utilities in the facility if needed.
- One centrally located control system with UL 508A certified control panels
- Distributed I/O capabilities
- Industrial-hardened Ethernet backbone
- Fully supported by factory-certified service technicians
- Supported by our in-house ISO 17025 calibration lab with onsite services

## Designed for Sustainability

- Designed for pharmaceutical applications, including hot water sanitizable RO membranes
- The integrated control system controls the entire system and interfaces with other Mueller® water and steam systems.
- No plant steam or coolant is needed
- Includes recycling of water within the skid to minimize waste

## Standard Features

- Fully operational, skidded, and tested at factory
- Reduces start-up time and site installation
- Full pharmaceutical turnover package (TOP)
- Chemical-free polypropylene butt-fusion welding on the pretreatment skid
- Dual filters and softener tanks for a continuous supply of softened water for carbon & UV treatment in the PT system
- Automated softening, carbon, and UV valving system based on defined water criteria
- Stainless steel tubing 25RA (SF2) for RO system and 20RA EP (SF5) for UF system
- Fully schedulable hot water sanitizable standard for RO system
- UV sanitizable carbon filter
- Full perimeter stainless steel framing for ease of installation and protection
- Backed by manufacturer's warranty
- Common, off-the-shelf control system
- Redundant RO feed pumps
- Adjustable feet are standard

## Customizable Features

- Component manufacturers
- Programming
- Additional or limited instrumentation
- Network interfacing
- Sanitization methods
- Break tank size
- Interface with other Mueller equipment
- Power input capabilities
- UPS capabilities

[contact@paulmueller.com](mailto:contact@paulmueller.com)

**1-800-MUELLER | PAULMUELLER.COM**

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