

## STANDARD FEATURES

“Our smart design integrates many upgrades that combine sustainable operation and ergonomic sampling and maintenance in order to enhance the ownership experience of your Aqua-Chem system.”

- Modular “plug-and-play” design
- Operator-focused sampling and maintenance
- Stainless steel frame and enclosures
- 316L tubing with  $\leq 20 \mu\text{-in Ra}$  after RO
- Catalytic carbon with spare exchange vessel
- Active feedwater disinfection and  $\text{Cl}_2$  monitor
- Insulated SST break tank with CIP functionality
- All-electric Hot Water Sanitization (HWS)
- Robust triple-membrane barrier protection
- 6.0 kDa ultrafilter for global WFI release
- Title 21 CFR Part 11 ready control system
- GAMP 5 documentation package
- Complete Factory Acceptance Test (wet FAT)
- Remote diagnostics & 24/7 post-sales support
- Made in and serviced from the USA

## FLEXIBLE OPTIONS & UPGRADES

- Hot or ambient storage and distribution
- 1 or 2 Pass reverse osmosis in FRP or SST
- Chemical dechlorination and pH adjust
- Steam sanitization and chiller exchangers
- Loop disinfection and 6.0 kDa ultrafiltration
- Upgraded sensors, TOC, and Bioburden
- Engineer-led Commissioning and Validation
- IQ/OQ Protocols and Execution
- Extended warranty, service, and spare parts



## AMBIENT WATER FOR INJECTION (WFI) GENERATION SYSTEMS

The TORRENT® WFI Packaged Membrane WFI System generates compendial water that exceeds current USP, PhEur, and JP requirements for parenteral solutions and other critical applications. A triple-membrane barrier is used to deliver purified water at ambient temperatures and ensures maximum quality with minimal risk. The innovative form factor improves ease of use, includes fully-automated operation and hot water sanitization, and is fully factory tested for fast installation, start-up, and qualification. All TORRENT® water systems are engineered for performance and reliability using only non-proprietary, premium components including Mettler-Toledo instrumentation, Bürkert valves, and IonPure® CDI-LX™ modules.

### Aqua-Chem's TORRENT® Pharmaceutical Water Solutions Deliver:

- Uncompromised Design
- Effortless Integration
- Intuitive Functionality
- Bulletproof Documentation

MODEL <sup>1</sup>	TNTWFI03	TNTWFI05	TNTWFI10	TNTWFI30	TNTWFI45
<b>Loop Supply Rate<sup>2</sup></b>	2.7-3.3 gpm	4.5-6.0 gpm	9.0-11.0 gpm	27.0-33.0 gpm	40.5-49.5 gpm
	0.6-0.75 m <sup>3</sup> /h	1.0-1.36 m <sup>3</sup> /h	2.0-2.5 m <sup>3</sup> /h	6.1-7.5 m <sup>3</sup> /h	9.2-11.2 m <sup>3</sup> /h
<b>Minimum Return Flow<sup>2</sup> (Recommended)</b>	1.0 gpm	1.0 gpm	5.5 gpm	14.0 gpm	14.0 gpm
	0.2 m <sup>3</sup> /h	0.2 m <sup>3</sup> /h	1.2 m <sup>3</sup> /h	3.2 m <sup>3</sup> /h	3.2 m <sup>3</sup> /h
<b>Direct Feed Mode (Optional)</b>	2.7-3.3 gpm	4.5-6.0 gpm	9.0-11.0 gpm	27.0-33.0 gpm	40.5-49.5 gpm
	0.6-0.75 m <sup>3</sup> /h	1.0-1.36 m <sup>3</sup> /h	2.0-2.5 m <sup>3</sup> /h	6.1-7.5 m <sup>3</sup> /h	9.2-11.2 m <sup>3</sup> /h
<b>Designed to Exceed</b>	FDA cGMP Guidelines and USP, PhEur (EP), and JP Requirements for Purified Water				
<b>Triple Membrane WFI Base Configuration</b>	Catalytic Activated Carbon, Fines Filter, 254nm Disinfection UV, Break Tank + Electric HWS, Two-Pass Reverse Osmosis, Continuous Electrodeionization				
<b>Nominal Recovery</b>	75.0-85.0% (Up to 100.0% in Conservation Mode)				
<b>Feedwater Source</b>	Filtered and Softened EPA Potable Water				
<b>Feedwater Temperature</b>	55.0 °F - 95.0 °F (12.8 °C - 35.0 °C)				
<b>Frame Construction</b>	Bead Blasted 304 Stainless Steel				
<b>Piping Materials</b>	304 SST Sanitary Tubing, < 20 Ra after RO and Electropolished Post-UF Product Contact				
<b>Enclosures</b>	Stainless Steel NEMA 12 with Oversized HMI (Allen Bradley PanelView™ Plus 7 15" Standard)				
<b>Electronic Records</b>	Title 21 CFR Part 11 Ready with Options for Audit Trail and Active Directory User Administration				

<sup>1</sup> Alternate configurations, including higher flows, are available via our dedicated project engineering and management team.

<sup>2</sup> Feedwater conditions may affect system performance. Given ranges assume specified water source and operation at 77.0 °F (25.0 °C)

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## SERVICE

We provide service and support for our equipment, even decades after installation. We continue to support units that were installed in the 1970s and 1980s. We maintain inventories of key components and consumables - and ensure that our service advisors are readily available for technical support via phone or e-mail.