

Document No.	WUR500-IA-001
Revision	Rev. 1
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Supersedes	Rev. 0 (initial issue)
Applicable Model(s)	WUR500 — all serial numbers unless otherwise specified
Audience	Authorized Navien installers, dealers, and service technicians. Section 10 and Exhibit A must be reviewed with the customer prior to installation.

1. Purpose and Scope

This document establishes mandatory technical protocols and conditional installation guidelines for integrating the Navien WUR500 Reverse Osmosis (RO) system with a Third-Party Faucet and an Auxiliary Branch Line (for example, a refrigerator ice-maker or water dispenser).

This configuration is permissible solely to accommodate customer aesthetic preferences or necessary auxiliary connections. This document does not constitute a blanket approval for all aftermarket hardware. System integration is restricted strictly to dedicated RO drinking-water faucets and Auxiliary Branch Lines that fulfill all technical, certification, leak-prevention, and local code requirements detailed herein.

All installations must adhere to these conditions in order to maintain compliance with applicable plumbing and sanitation codes, to satisfy the installation requirements of this document, and to preserve the warranty coverage applicable to the WUR500 unit.

2. Definitions

The following terms are used consistently throughout this document. Alternate wording should not be substituted in derivative or translated materials.

Term	Definition
Third-Party Faucet	Any dedicated drinking-water or RO faucet not supplied by Navien, installed in place of the Navien Smart Faucet.
Navien Smart Faucet	The dual-mode (RO / Filtered) faucet supplied with the WUR500, providing TDS display and filter life indication.
Auxiliary Branch Line	The tubing run branched from the WUR500 RO outlet line to serve an Auxiliary Device.
Auxiliary Device	A downstream appliance served by the Auxiliary Branch Line, such as a refrigerator, ice-maker, or water dispenser.
Branch Tee	The fitting at which the Auxiliary Branch Line is taken off the RO outlet line.
Demand Pump	A third-party electric pump installed on the Auxiliary Branch Line in accordance with Section 8.
Wetted Component	Any component in contact with potable water in the installed flow path.
Non-Navien Component	Any wetted component, fitting, adapter, tubing, valve, or device not supplied or approved by Navien.

3. Code Compliance and Order of Precedence

Installation must comply with all applicable local plumbing, sanitation, and electrical codes. If local codes differ from this document or the WUR500 Installation and Operation Manual, local codes shall take precedence.

Before installation, the installer must verify all local requirements, including backflow prevention, air gap requirements, RO drain configurations, and Third-Party Faucet or Auxiliary Branch Line restrictions. If local codes restrict the use of a Third-Party Faucet, a given RO drain configuration, or an Auxiliary Branch Line, all applicable local code requirements shall take precedence and must be followed.

4. Pre-Installation Requirements

- The selected faucet must be a dedicated drinking-water or RO faucet and must not be a standard hot/cold mixing kitchen faucet.
- The Third-Party Faucet must be certified to NSF/ANSI/CAN 61 and NSF/ANSI/CAN 372. All other Wetted Components in the installed flow path — including fittings, adapters, tubing, tees, valves, and caps — must likewise be certified to NSF/ANSI/CAN 61 and NSF/ANSI/CAN 372, or must otherwise meet the “lead free” definition of the U.S. Safe Drinking Water Act §1417 (a weighted average lead content not exceeding 0.25 percent of wetted surfaces).
- **Air Gap Requirement:** Where the authority having jurisdiction requires an air gap for RO drain discharge, the selected Third-Party Faucet must be an air-gap type faucet, or a separate listed air gap fitting must be installed in the drain line. The installer must confirm the applicable requirement before selecting the faucet. Substituting a non-air-gap Third-Party Faucet in a jurisdiction that requires an air gap will render the installation non-compliant.
- The faucet connection must be compatible with 1/4 in. OD tubing or connectable through an approved potable-water adapter.
- Unless specifically instructed by Navien, do not bypass, jumper, short, modify, or leave exposed any electrical connector.
- Faucets that require an electrical signal and communication with the main unit in order to dispense water are not compatible. A mechanically operated faucet that opens independently using its own lever or handle is compatible and may be used together with an Auxiliary Branch Line.
- The Auxiliary Branch Line and the Demand Pump described in Section 8 must not be installed in locations subject to freezing (for example, garages, crawl spaces, or exposed piping routes). If installation in such an environment cannot be avoided, insulation and freeze-protection measures must be applied, and the Demand Pump’s rated operating temperature range must not be exceeded.

NOTICE

When multiple points of use draw water simultaneously — for example, the faucet and the Auxiliary Device operating at the same time — water pressure may drop. Size and route the Auxiliary Branch Line appropriately to ensure adequate flow at all points of use.

The system performs an automatic 18-second flush for every 30 minutes of cumulative use. This is a normal maintenance cycle intended to keep internal components clean and does not indicate a malfunction.

5. Functional Changes

The following changes to system behavior and user experience result from the use of a Third-Party Faucet.

- **RO-Only Water Dispensing:** The Third-Party Faucet will dispense RO-treated drinking water only.
- **Filtered Water Mode Unavailable:** The non-RO “Filtered Water” mode available through the Navien Smart Faucet will not be supported.
- **Smart Faucet Features Unavailable:** Faucet-side functions, including TDS display and filter life indication, will not be available when a Third-Party Faucet is used.
- **Potential Increase in RO Membrane Usage:** RO membrane usage may increase compared with the original dual-mode configuration. This increase can result from use of a Third-Party Faucet — because all water dispensed through it is supplied via the RO outlet — and/or from connection of an Auxiliary Device, which draws additional water through the same RO outlet line. Increased RO membrane usage can reduce filter performance and lower water pressure; the standard filter replacement interval should be shortened accordingly.

6. Installation Limitations and Requirements

The following are mandatory limitations and requirements, not descriptive statements. Each must be satisfied for the installation to be considered compliant with this document.

6.1 Auxiliary Branch Line Length

- Where no Demand Pump is installed, the total length of the Auxiliary Branch Line, measured from the Branch Tee, should not exceed 15 ft (4.5 m). Branch runs longer than this may reduce the dynamic pressure and flow rate available at the branch outlet.
- Where the Auxiliary Branch Line exceeds 15 ft (4.5 m), the installation is permitted only if a Demand Pump is installed and all requirements of Section 8 are satisfied in full. An Auxiliary Branch Line exceeding 15 ft without a Demand Pump conforming to Section 8 is outside the scope of this document.
- **Post-Installation Verification:** The 15 ft (4.5 m) guideline above assumes a reasonably direct run. Bends, slope, elevation changes, and routing add friction and head loss beyond what the routed length alone reflects, and can reduce the usable length below 15 ft (4.5 m) even where the tubing itself measures 15 ft (4.5 m) or less. After completing the Auxiliary Branch Line, the installer must verify that the Auxiliary Device operates without issue, that the actual length and routing of the Auxiliary Branch Line is adequate for that operation, and that no leakage is present at any connection (see Section 9).

6.2 Number of Auxiliary Devices

- The RO outlet line must not be branched to serve more than one (1) Auxiliary Device. Branching to serve multiple Auxiliary Devices may reduce the dynamic pressure and flow rate available at each outlet.
- When the faucet and the Auxiliary Device are used simultaneously, pressure and flow rate may be lower than when either outlet is used independently.

6.3 Auxiliary Device Compatibility Verification

Before connecting any Auxiliary Device, the installer must verify appliance inlet requirements, tubing compatibility, check valve requirements, total system demand, and compliance with all applicable local codes.

NOTICE

Tankless Operation and Auxiliary Device Supply

The WUR500 is a tankless system and does not incorporate a pressurized storage tank. Water is produced on demand once the unit detects a draw and its internal pump reaches operating condition, rather than being supplied instantaneously from stored pressure.

Many refrigerators, ice-makers, and water dispensers specify a minimum required inlet pressure and rely on immediate line pressure when their fill valve opens. Ice-maker fill cycles in particular are short and repetitive.

Before connecting an Auxiliary Device, the installer must obtain the appliance manufacturer's specified minimum inlet pressure and confirm that it is satisfied by the WUR500 outlet pressure specified in the WUR500 Installation and Operation Manual, taking into account the additional pressure loss of the Auxiliary Branch Line. If the appliance requirement cannot be satisfied, the Auxiliary Device must not be connected. Symptoms of an unsatisfied pressure requirement may include incomplete ice-maker fill, interrupted dispensing, or frequent cycling of the unit.

Navien does not warrant the performance, operation, or compatibility of any Auxiliary Device unless that device has been specifically tested and approved by Navien.

6.4 Shut-Off Valve and Filter Replacement Procedure

During filter replacement, carbon dust or debris may not be completely flushed out. Where an Auxiliary Device is connected, these unflushed particulates can migrate into the refrigerator or ice-maker lines, causing contamination or clogging of the Auxiliary Device.

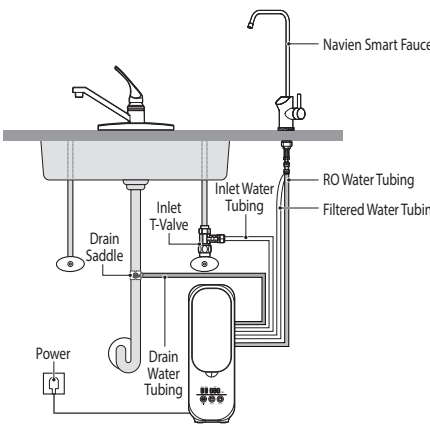
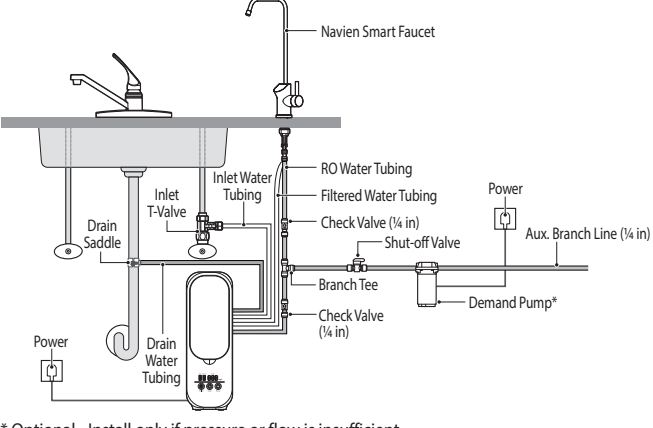
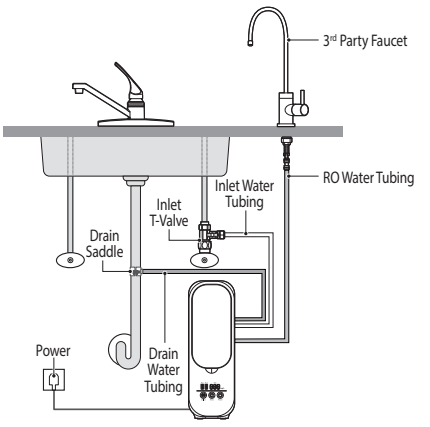
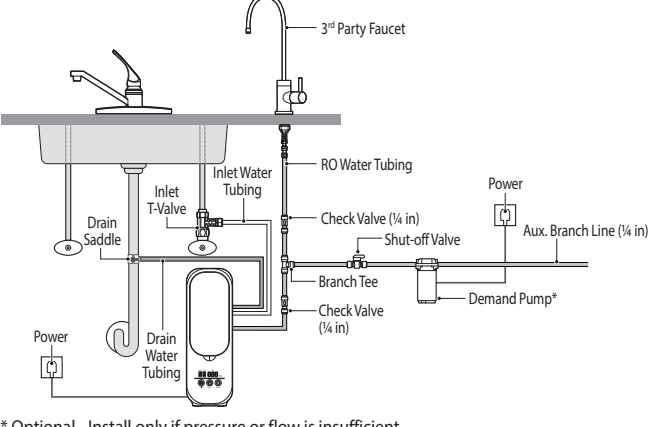
- A dedicated manual shut-off valve must be installed on the Auxiliary Branch Line.
- When replacing the filter, first close the shut-off valve on the Auxiliary Branch Line to prevent carbon dust or debris from entering it.
- Open the faucet and flush for at least 15 minutes.
- Reopen the Auxiliary Branch Line shut-off valve only after visually confirming that no carbon dust or debris is present.

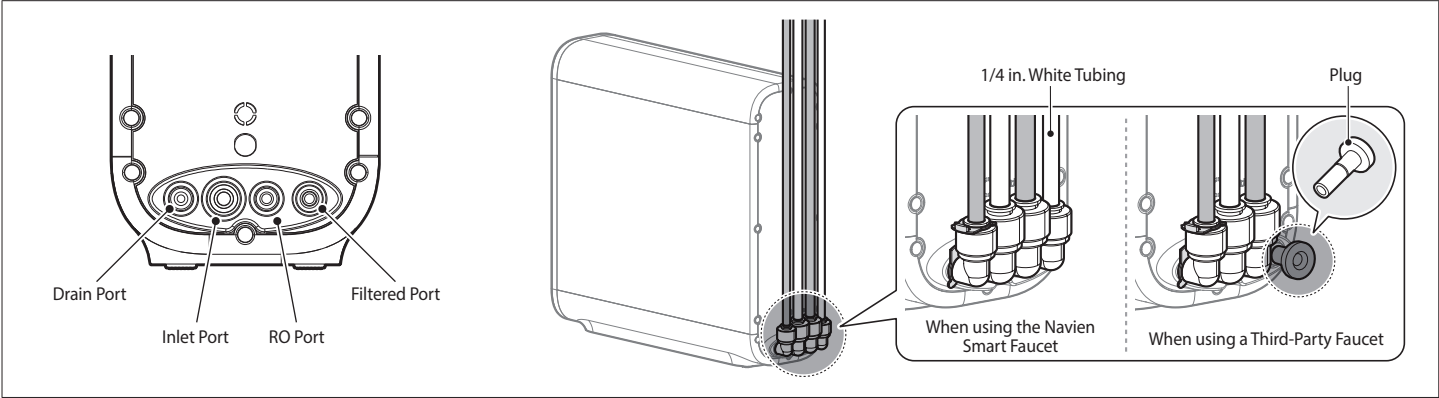
7. Port Configuration

The WUR500 4-port base interface must be configured as outlined below to support the Third-Party Faucet and any approved Auxiliary Branch Line, distinguishing between use of the Navien Smart Faucet and use of a Third-Party Faucet.

Port	Tubing Spec	When Using the Navien Smart Faucet	When Using a Third-Party Faucet
Drain Port	1/4 in. black tubing	Same regardless of faucet type. Route unaltered directly to the under-sink drain saddle clamp, in accordance with the WUR500 Installation and Operation Manual and applicable local plumbing code. Where an air gap is required, refer to Section 4.	Same as at left.
Inlet Port	3/8 in. white tubing	Same regardless of faucet type. Connect unaltered directly to the cold-water supply angle stop. Do not connect the WUR500 to a hot-water supply line.	Same as at left.

Port	Tubing Spec	When Using the Navien Smart Faucet	When Using a Third-Party Faucet
RO Port	1/4 in. blue tubing	Connect directly to the RO-side inlet of the Navien Smart Faucet. TDS display and filter life indication remain fully supported. If an Auxiliary Branch Line is used, it must be taken from the RO outlet line at a Branch Tee using appropriate potable-water fittings, subject to the limitations of Section 6.	Route directly to the Third-Party Faucet's incoming water stem. If an Auxiliary Branch Line is used, it must be taken from the RO outlet line at a Branch Tee using appropriate potable-water fittings, subject to the limitations of Section 6.
Filtered Port	1/4 in. white tubing	Connect directly to the Filtered-side inlet of the Navien Smart Faucet. Dual-mode (RO / Filtered) operation is fully supported.	The Filtered Port cannot be used with a Third-Party Faucet. It must be permanently capped as described in Section 7.1 below.

	Auxiliary Branch Line	
	X	O
Navien Smart Faucet		 * Optional - Install only if pressure or flow is insufficient.
3rd Party Faucet		 * Optional - Install only if pressure or flow is insufficient.



7.1 Plug Selection Considerations

NOTICE

Capping the Filtered Port

The plug included with the WUR500 is intended for temporary use only. Using the included plug to permanently cap the Filtered Port in a Third-Party Faucet configuration can result in leakage. The installer must instead obtain and install a plug that meets the requirements below, and use that plug to permanently cap the Filtered Port. The plug must be fully seated into the fitting, and the fitting must be secured with a locking clip in accordance with Section 9. An unsecured or partially seated plug is a leak point.

When sourcing a replacement plug for the Filtered Port, the installer should consider the following:

- **Certification:** The plug is a Wetted Component and must be certified to NSF/ANSI/CAN 61 and NSF/ANSI/CAN 372, consistent with the requirements of Section 4.
- **Pressure Rating:** The WUR500's maximum installation (line) pressure is 80 psi. The plug's rated working pressure must exceed 80 psi with adequate margin — for example, a plug rated at 100 psi or higher provides margin for normal pressure fluctuations and surges.
- **Material and Construction:** Select a plug with a solid, one-piece plastic body made of polypropylene or acetal (POM) — the same materials commonly used in quick-connect fittings — rather than a flexible or friction-fit type not rated for permanent, pressurized use.
- **Fitting Compatibility:** The plug must match the 1/4 in. OD quick-connect fitting type used at the Filtered Port (or an approved equivalent) to ensure a proper, secure seating.

Note The selected Third-Party Faucet and any Auxiliary Branch Line must use the correct tubing size and compatible potable-water fittings to support proper sealing and flow.

8. Auxiliary Electric Demand Pump Integration

A Demand Pump is optional where the Auxiliary Branch Line is 15 ft (4.5 m) or shorter. A Demand Pump conforming to this section is required where the Auxiliary Branch Line exceeds 15 ft (4.5 m), measured from the Branch Tee (see Section 6.1).

8.1 Component Placement and Check Valve Installation

- **Unit Protection Check Valve:** Install a check valve at the unit RO outlet, upstream of the Branch Tee, so that downstream pressure changes are not transmitted into the unit's internal flow path.
- **Faucet-Side Check Valve:** Install a check valve immediately after the Branch Tee on the RO faucet-side line. Its purpose is to prevent water already standing in the faucet-side line from being drawn back toward the Branch Tee when the Demand Pump activates while the faucet is closed, protecting that line from emptying or drawing in air between uses.
- **Pump Location:** Install the Demand Pump as close to the Branch Tee as possible, not near the remote outlet. This minimizes the length of tubing under suction (negative pressure), reducing the risk of cavitation and micro air-ingress.

NOTICE

Check Valve Orientation

Every check valve has a flow-direction arrow printed on its body. Before installing the Unit Protection Check Valve and the Faucet-Side Check Valve, point this arrow in the same direction the water will flow away from the WUR500 unit. A check valve installed backward will block water flow entirely.

8.2 Pump Sizing and Technical Limits

- **Pump Capacity Sizing:** Select the Demand Pump at the minimum capacity needed to offset the additional friction loss in the Auxiliary Branch Line. Oversizing worsens flow imbalance and pressure transients. In addition, the Demand Pump's rated flow rate must not exceed the WUR500's maximum RO output of 0.4 gpm. A pump rated above this value can draw water faster than the unit's internal pump is able to produce it, increasing the risk of cavitation and dry-run damage described in the Residual Risk Acknowledgment below.
- **Vacuum Rating Check:** Confirm that the pump's maximum dry-run suction (vacuum) rating does not exceed the pressure rating of the check valves and fittings.
- **Residual Risk Acknowledgment:** Minimum pump sizing and correct check valve placement reduce, but do not fully eliminate, the risk that the Demand Pump draws suction before the unit's internal pump begins producing water. This can cause cavitation-related wear at the check valve over time and dry-run damage to the Demand Pump itself.

8.3 Recommended Tubing and Fitting Configuration

- **Tubing Sizing:** Keep the unit-to-faucet run at 1/4 in. tubing and configure only the section from the Branch Tee to the remote point in 1/4 in. tubing.
- **Standard Tee:** At the Branch Tee, use a single standard tee to minimize leak points. Fixing the branch connection at one location reduces installation variability while securing both pressure and cavitation margin. Depending on the Demand Pump's port size, adapters may still be required.

WARNING

Electrical Hazard

The Demand Pump requires a separate power connection near the water supply. All wiring must use waterproof, grounded connections and must not be installed where it may contact water. Failure to observe these requirements may result in electric shock.

NOTICE

Modification outside Standard Installation

The WUR500 is a tankless system designed to operate with genuine Navien components. Adding a third-party electric Demand Pump downstream constitutes a modification outside Navien's standard installation. To the extent that a problem, damage, or performance issue is caused by the installation or use of a Demand Pump, Navien is not responsible for and does not warrant against that problem, damage, or performance issue.

9. Leak Prevention and Installation Control

- Install locking clips on all quick-connect fittings, including the fitting at the capped Filtered Port.
- When applying the Branch Tee, support the Auxiliary Branch Line so that no mechanical load is applied to the WUR500 RO outlet.
- Install a manual shut-off valve on the Auxiliary Branch Line between the Branch Tee and the Auxiliary Device.
- Slowly open the cold-water supply valve and pressurize the system.
- Check all ports, fittings, adapters, capped connections, and the Auxiliary Branch Line for moisture or leakage.
- Recheck after initial flushing, and perform an additional leak check within 24 hours after installation.

NOTICE

Recommended Installation Records

Navien recommends that the installer or dealer record the results of the initial leak check and the 24-hour recheck on the installation checklist, and retain those records together with installation photographs for the duration of the warranty period. These records are maintained as good installation practice and may assist in diagnosing and resolving future service inquiries. Retention of these records is a recommended dealer practice and is not a condition of warranty coverage or a prerequisite to submitting a warranty claim.

10. Customer Notice and Warranty Exclusions

Before installation, the installer must inform the customer that using a Third-Party Faucet changes the original WUR500 user experience. The original dual-mode Navien Smart Faucet functions will not be available, including faucet-side TDS display, faucet-side filter life indication, and non-RO Filtered Water dispensing. These are design characteristics of the Third-Party Faucet configuration, not product defects.

The customer must be informed that when a Third-Party Faucet is used, the faucet itself and all matters relating to its selection, installation, connection, compatibility, operation, and use are not covered under the Navien warranty, even where the installation guidance in this document is followed.

Third-Party Faucets, Non-Navien Components, Auxiliary Branch Lines, Auxiliary Devices, and installation modifications are not components supplied or approved by Navien. Accordingly, to the extent caused by the installation, connection, or use of a Third-Party Faucet, an Auxiliary Branch Line, an Auxiliary Device, or any Non-Navien Component, the following are excluded from Navien product warranty coverage: leakage, pressure drop, flow reduction, performance degradation, malfunction, component damage, Auxiliary Device issues, property damage, and other hardware failures.

Installation should proceed only after the customer has acknowledged and accepted, by signing Exhibit A, that the use of a Third-Party Faucet and/or an Auxiliary Branch Line may limit the original WUR500 functionality, user interface features, performance characteristics, and applicable warranty coverage.

Exhibit A — Customer Acknowledgment Form

To be completed by the installer and signed by the customer before installation begins. Provide one copy to the customer and retain one copy.

Customer Name	
Installation Address	
WUR500 Serial No.	
Installer / Dealer Name	
Installation Date	

Configuration installed (check all that apply)

- Third-Party Faucet (Make / Model: _____)
- Auxiliary Branch Line to Auxiliary Device (Type / Make / Model: _____)
- Demand Pump installed (Make / Model: _____)

Customer acknowledgment

By signing below, I confirm that the installer has explained, and that I understand and accept, each of the following:

1. The Navien Smart Faucet functions — faucet-side TDS display, faucet-side filter life indication, and non-RO Filtered Water dispensing — will not be available in this configuration.
2. Water dispensed from the Third-Party Faucet will be RO-treated water only, and RO membrane usage may increase, which may require more frequent filter replacement.
3. Where an Auxiliary Device is connected, water pressure and flow rate may be reduced when the faucet and the Auxiliary Device are used at the same time.
4. Before replacing a filter, the shut-off valve on the Auxiliary Branch Line must be closed, and it may be reopened only after the flushing procedure described in Section 6.4 has been completed.
5. The WUR500 is a tankless system without a pressurized storage tank, and the performance of any connected Auxiliary Device depends on that appliance's own inlet pressure requirements.
6. The Third-Party Faucet and all Non-Navien Components are not covered by the Navien warranty, and any leakage, damage, or performance issue is excluded from Navien warranty coverage to the extent it is caused by those components or their installation.

Customer Signature	Date
Installer Signature	Date