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## AQUALTRA USF-AR-600

# AQUALTRA USF-AR-600 Under-Sink Tankless Reverse Osmosis System User Manual

Model: USF-AR-600 | Brand: AQUALTRA

## 1. Introduction

The AQUALTRA USF-AR-600 is an advanced under-sink tankless reverse osmosis (RO) water filtration system designed to provide high-quality, purified drinking water directly from your tap. This system features a 10-stage filtration process, a 0.0001 µm RO membrane, and alkaline mineralization to enhance water taste and health benefits. With a 600 GPD (Gallons Per Day) capacity and an efficient 3:1 pure water to drain water ratio, it delivers purified water quickly and sustainably. Its compact, tankless design saves up to 70% of under-sink space compared to traditional RO systems. This manual provides essential information for the safe installation, operation, and maintenance of your AQUALTRA USF-AR-600 system.




Figure 1: AQUALTRA USF-AR-600 Under-Sink Tankless Reverse Osmosis System with smart LED faucet.

## 2. Safety Information

- This system is designed for use with municipal tap water sources only.
- Only use with cold water sources. Do not connect to hot water lines.
- Not suitable for well water unless the source is pre-filtered.
- The system requires an electrical power supply (220V) under the sink. Ensure a safe and accessible power outlet is available.
- Ensure all connections are secure to prevent leaks.
- Do not attempt to modify the system or use non-AQUALTRA replacement parts.
- Keep the system away from direct sunlight and heat sources.
- Children should be supervised to ensure they do not play with the appliance.

## 3. Package Contents

Carefully unpack the box and ensure all items are present and undamaged. If any parts are missing or damaged, please contact customer support.

- AQUALTRA USF-AR-600 Main Unit
- Separate Power Adapter
- CFC-RO Filter Cartridge
- ACB-ALKA Filter Cartridge
- Smart LED Faucet with Digital Display
- PE Tubing (various lengths)
- Water Inlet Adapter (T-valve)
- Drain Saddle Clamp
- Pressure Reducer
- Faucet Mounting Hardware
- User Manual (this document)

## 4. Product Features

### 4.1 Authoritative Certifications

The AQUALTRA USF-AR-600 system is constructed with premium BPA-free and lead-free materials. It is CSA certified according to NSF/ANSI 372 standards, ensuring reliable and safe operation. Third-party laboratory tests (SGS) confirm its effectiveness in reducing a wide range of contaminants.




Figure 2: NSF/ANSI/CAN 372 Certification and SGS Test Report. For detailed report, visit: SGS Report

### 4.2 10-Stage Deep Filtration

This system employs a comprehensive 10-stage filtration process to effectively reduce over 97% of TDS and over 99% of various contaminants including PFOA, PFOS, chlorine, lead, arsenic, nitrates, cadmium, chromium, copper, fluorides, mercury, barium, selenium, and coliforms. The filtration stages include non-woven fabric, carbon fiber, PP cotton, a 0.0001 µm RO membrane, and alkaline carbon.




Figure 3: 10-Stage Deep Filtration System Diagram.

### 4.3 RO Membrane with Alkaline Mineralization

The core of the system is a precise 0.0001 µm RO membrane, capable of removing particles larger than 0.0001 µm. Following RO filtration, the system enriches the water with beneficial minerals such as $Ca^{2+}$, $Mg^{2+}$, $Na^{+}$, and $K^{+}$, improving taste and supporting overall well-being, including bone strength and digestion.




Figure 4: Benefits of RO and Alkaline Mineralized Water.

### 4.4 Smart LED Faucet

The included smart faucet features an LED display that provides real-time information on Total Dissolved Solids (TDS) levels and water quality. It also includes a filter life indicator, notifying you when it's time to replace the filters.




Figure 5: Smart LED Faucet Displaying Water Quality Information.

### 4.5 High Flow Rate and Water Efficiency

With a 600 GPD flow rate, the system delivers purified water rapidly, approximately 1.5 liters per minute. It boasts an excellent pure water to drain water ratio of 3:1, significantly reducing water waste and promoting environmental sustainability.




Figure 6: Water Saving Ratio of 3:1.

### 4.6 Tankless and Compact Design

The tankless design saves up to 70% of under-sink space compared to conventional RO systems, making it ideal for modern kitchens. Its sleek and compact structure integrates seamlessly into any kitchen style.




Figure 7: Tankless Design for Space Saving.

## 5. Installation Guide

The AQUALTRA USF-AR-600 system is designed for easy installation with push-to-connect fittings and quick-twist filter replacement. Installation typically takes 30-60 minutes. A clear manual and step-by-step examples are provided with the product.

### 5.1 Pre-Installation Checks

- Measure the space under your sink to ensure adequate clearance for the main unit (42.4L x 15W x 34.3H cm).
- Confirm availability of a 220V electrical outlet under the sink.
- Ensure you have basic plumbing tools, including a drill for the faucet hole if one is not already present. The smart faucet may require a larger hole (1 inch / 2.54 cm) than standard faucets due to its integrated cable.
- Verify that your water supply is municipal tap water and cold.

### 5.2 General Installation Steps (Summary)

1. **Prepare the Sink Area:** Turn off the main water supply. Clear the under-sink cabinet.
2. **Install the Faucet:** Drill a hole (if necessary) in the sink or countertop for the smart LED faucet. Secure the faucet.
3. **Connect Water Inlet:** Install the T-valve to your cold water line. Connect the PE tubing from the T-valve to the system's 'Inlet' port. Install the pressure reducer in line with the inlet tubing.
4. **Connect Purified Water Line:** Connect PE tubing from the system's 'Purified' port to the smart faucet.
5. **Connect Drain Line:** Attach the drain saddle clamp to the drain pipe. Connect PE tubing from the system's 'Drain' port to the drain saddle.
6. **Connect Electrical Power:** Plug the power adapter into the main unit and then into the 220V electrical outlet. Connect the faucet's proprietary cable to the main unit's 'Faucet' port.
7. **Initial Flush:** Once all connections are secure and water supply is restored, open the smart faucet and let the water run for at least 30 minutes. The initial water may appear black due to carbon particles from the new filters; this is normal. Continue flushing until the water runs clear and the white indicator light on the unit is steady (not blinking).

## 6. Operating Instructions

Once installed and flushed, your AQUALTRA USF-AR-600 system is ready for use. Simply open the smart LED faucet to dispense purified water. The faucet's display will show the current TDS level of the purified water and the remaining lifespan of your filters.




Figure 8: Multiple Usage Scenarios for Purified Water.

## 7. Maintenance

### 7.1 Filter Replacement Schedule

Regular filter replacement is crucial for maintaining optimal water quality and system performance. The smart faucet's indicator will alert you when a filter needs replacement.

- **CFC-RO Filter:** Replace every 24-36 months (or approximately 11,356 liters), depending on water quality and usage.
- **ACB-ALKA Filter:** Replace every 24 months (or approximately 9,842 liters), depending on water quality and usage.




Figure 9: Filter Lifespan Overview.

### 7.2 How to Replace Filters

The system features a quick-twist design, allowing filter replacement in approximately 3 seconds. The system automatically shuts off water during filter changes.

1. Twist the old filter cartridge counter-clockwise to remove it.
2. Insert the new filter cartridge and twist clockwise until it clicks into place.
3. After replacing, flush the new filter by running water for a few minutes.




Figure 10: Quick Filter Replacement.

### 7.3 Resetting the Filter Life Indicator

After replacing a filter, you must reset its indicator on the main unit:

1. Press and hold the 'RESET' button for 5 seconds until you hear a beep.
2. Press 'SELECT' to choose the corresponding filter whose indicator is blinking.
3. Press and hold 'RESET' again until the indicator turns solid white.
4. Repeat for any other filters that need resetting.

## 8. Troubleshooting

This section addresses common issues you might encounter with your AQUALTRA USF-AR-600 system.

| Problem | Possible Cause | Solution |
|---|---|---|
| Water appears black or discolored during initial use. | Carbon particles from new filters. | This is normal. Continue flushing the system for at least 30 minutes until water runs clear. |
| Low water flow from the faucet. | Low incoming water pressure, clogged filters, or kinked tubing. | Check water supply pressure. Inspect tubing for kinks. Check filter life indicator and replace filters if necessary. |
| System is leaking. | Loose connections or damaged O-rings. | Turn off water supply. Inspect all connections and tighten them. Ensure O-rings are properly seated. If leak persists, contact customer support. |
| Filter life indicator is blinking after replacement. | Indicator not reset. | Follow the 'Resetting the Filter Life Indicator' steps in Section 7.3. |
| No power to the unit. | Power adapter unplugged or power outlet issue. | Ensure the power adapter is securely plugged into the unit and a working electrical outlet. Check the circuit breaker. |

If you encounter any issues not listed here or require further assistance, please contact AQUALTRA customer support.

## 9. Specifications

| Feature | Specification |
|---|---|
| Brand | AQUALTRA |
| Model Name | USF-AR-600 |
| Special Feature | Tankless Design |
| Product Dimensions (L x W x H) | 42.4L x 15W x 34.3H cm |
| Capacity | 600 Gallons Per Day (GPD) |
| Installation Type | Under Sink |
| Purification Method | Reverse Osmosis |
| Power Source | Corded Electric |
| Minimum Rated Temperature | 4 Degrees Celsius |
| Maximum Rated Temperature | 40 Degrees Celsius |
| Filter Lifespan (RO) | 24-36 Months |
| Filter Lifespan (ACB-ALKA) | 24 Months |
| Certifications | NSF/ANSI/CAN 372, CSA |

| Feature | Specification |
| --- | --- |
| Water Pure/Drain Ratio | 3:1 |

## 10. Warranty and Customer Support

AQUALTRA is committed to customer satisfaction. While specific warranty details are not provided in this document, the product is designed for excellent sealing and long durability, with filter lifespans of 24-36 months for the RO filter and 24 months for the ACB-ALKA filter.

If you encounter any problems with your AQUALTRA USF-AR-600 alkaline RO filtration system, please do not hesitate to contact AQUALTRA customer service. We aim to resolve any issues within 24 hours.

For support, please refer to the contact information provided with your purchase or visit the official AQUALTRA website.


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