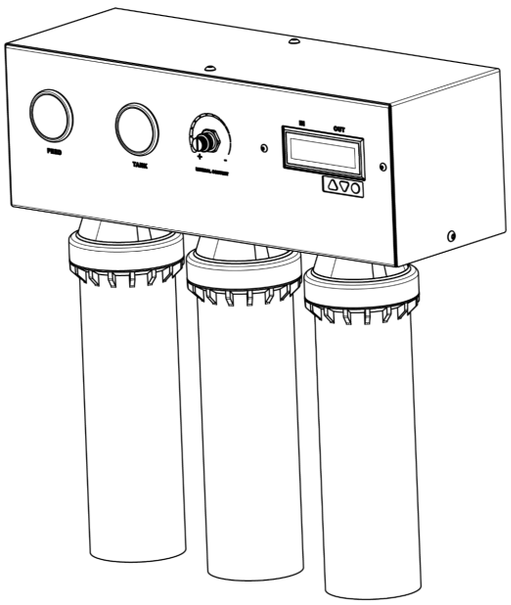
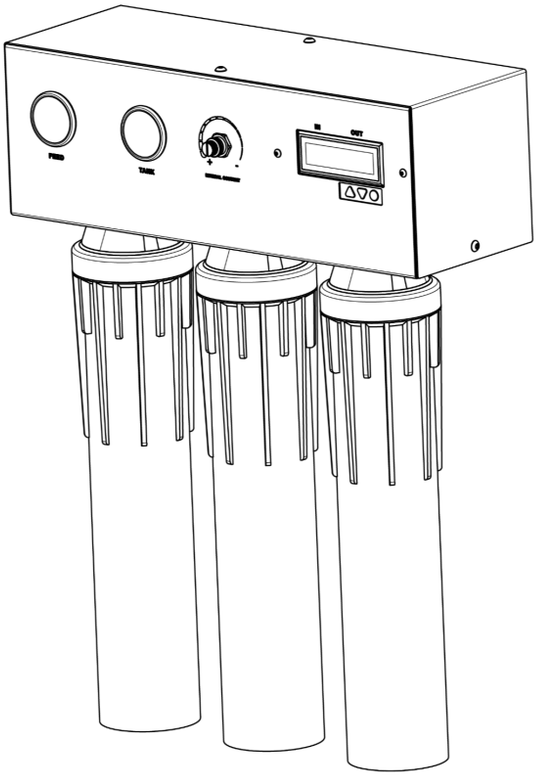
BRO 300/600 SYSTEM MANUAL



BRO-300



BRO-600

Contact Us
A: 42 Allen Martin Dr. Essex Junction, VT 05452
P: 802-658-6600
E: custserv@blodgett.com |
service@blodgett.com

1.1 Introduction

Purpose-built for equipment protection, the **BRO 300/600** delivers compact, wall-mounted reverse osmosis with a simple three-stage flow path— **1. Sediment 2. Carbon 3. RO** — plus adjustable blending (post sediment & carbon) when a touch of minerals is desired. An integrated TDS monitor makes it easy to verify water quality on the spot. Ideal for ice machines, steam/combi ovens, and food & beverage applications where full mineral cartridge and post-carbon polishing aren't required. Both models share the same sleek stainless steel enclosure with simple service access via top panel, ensuring quick maintenance.

- **BRO-300:** Compact & efficient — The 10" filters keep the footprint small but still provides premium system features including an internal permeate pump and blending control to help you hit your target TDS.
- **BRO-600:** Higher throughput and extended service life between filter changes. The 15" housings support larger equipment or higher daily demand — still with the same simple 3-stage path, adjustable blending, wall-mount convenience, and on-board TDS monitoring.

This manual serves as a comprehensive guide for installation, operation, and maintenance. Please read thoroughly and keep for future reference.

2.1 Proper Usage

As mentioned above, the BRO 300/600 is intended for purifying source water to meet target product water quality in various applications. Although its applications are extensive, it is the end-users responsibility to evaluate and use their best judgment of proper use of the product to ensure safety and not void system warranty.

Caution: This system is suitable for user installation, but incorrect setup may cause leaks, water damage, or operational failure. While designed for straightforward installation, we strongly recommend hiring a licensed installer or certified plumber to ensure reliable operation.

If self-installing, users should be experienced in general plumbing and familiar with standard tools. If in doubt, seek help from a licensed professional.

2.2 Safety Information

Always:

1. **Read the Manual:** Before starting, thoroughly read the manufacturer's installation manual and follow all instructions provided.
2. **Turn Off Water Supply:** Always shut off the main water supply before beginning the installation to prevent leaks and water damage.

BLODGETT - ALL RIGHTS RESERVED

3. **Use Proper Tools:** Ensure you have the correct tools for the job, including wrenches, screwdrivers, and pipe cutters, to avoid damaging the components.
4. **Inspect Components:** Check all parts of the filter system for damage or defects before installation to prevent issues later.
5. **Use Plumber's Tape:** Apply plumber's tape to threaded connections to ensure a tight seal and prevent leaks.
6. **Follow Plumbing Codes:** Adhere to local plumbing codes and regulations to ensure the installation meets safety and performance standards.
7. **Review Maintenance Requirements:** Familiarize yourself with the filter's maintenance schedule and requirements to keep the system operating safely and efficiently.
8. **Seek Professional Help if Needed:** If you're unsure about any part of the installation process, consult a professional plumber to ensure a safe and correct installation.

NEVER:

1. **Use the system with microbiologically unsafe and/or unknown water quality.**
2. **Remove tubing from the system when in use and/or under pressure.**
3. **Use filters or components not approved by manufacturer**

Following these practices will help ensure a safe and effective installation of your water filter system.

2.3 Warranty

This Limited Warranty is only available to the original purchaser of the system. It covers de-fects in materials, workmanship, or factory preparation for all items supplied by Blodgett. However, it only applies to parts and does not include any labor costs. This means that services such as removing, replacing, installing, adjusting, maintaining, or repairing the unit or its components are not covered. Additionally, any non-Manufacturer labor required for these services is excluded. This warranty is valid only for the first full calendar year following the purchase date. Items not covered by this warranty include membranes, filters, and other parts or components that may need regular replacement due to normal use.

2.4 Feed / Source Water Requirements:

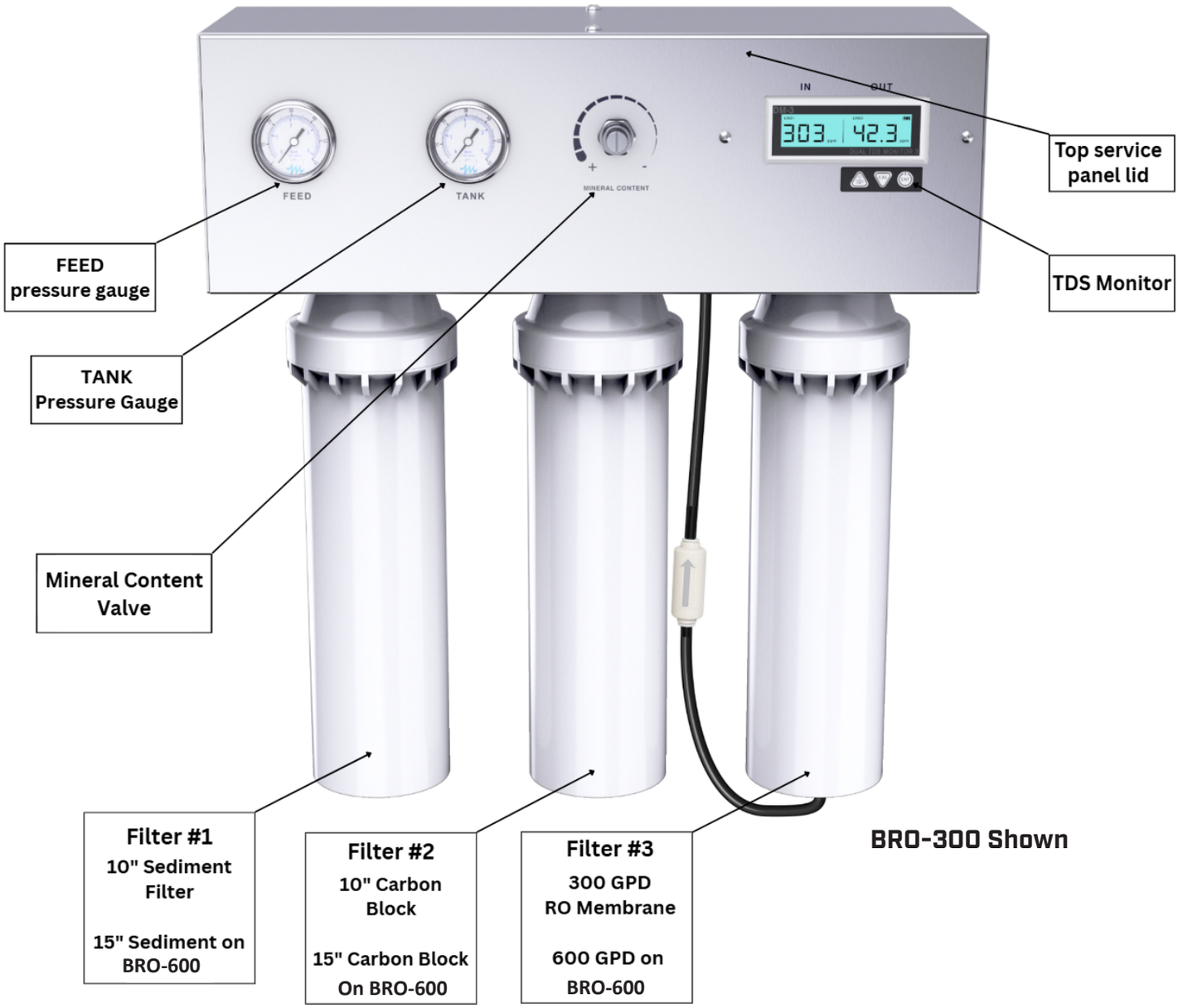
Feed / Source Water Type	Potable or Municipal
Pressure (PSI)	40 PSI (Minimum) - 100 PSI (Maximum)
Temperature	40°F to 100°F
Total Dissolved Solids (TDS) (mg/L)	1,000 mg/L Maximum
pH	4.0 - 8.0
Free Chlorine (mg/L)	<1.0 mg/L Maximum
Turbidity (NTU)	< 1.0 NTU
Iron, Manganese, Hydrogen Sulfide (mg/L)	0.0 mg/L

BLODGETT - ALL RIGHTS RESERVED

3.1 System Overview

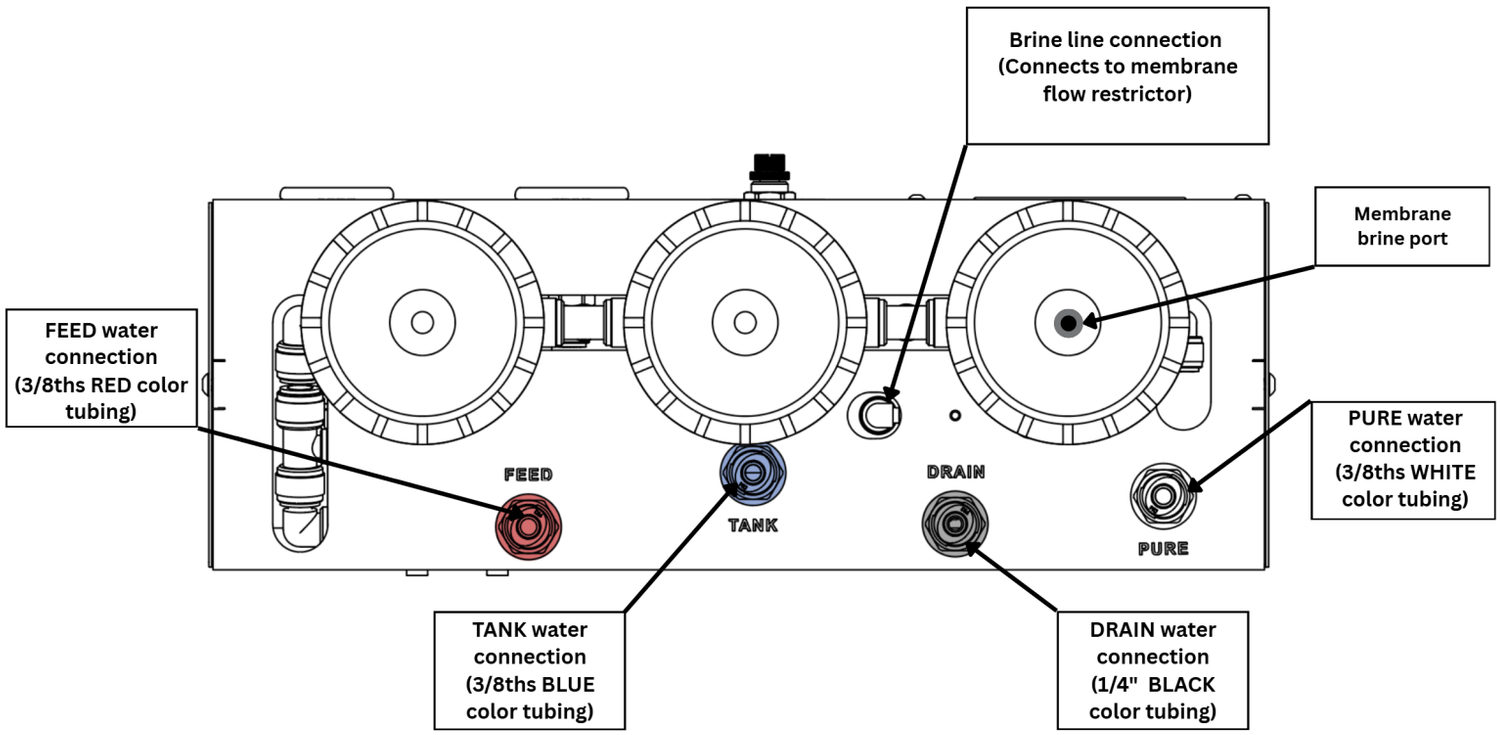
The following diagram is to familiarize the end-user and/ or installer of the working components of the system to ensure proper installation, operation, maintenance, and general understanding of how the system functions.

Front View of System:



BLODGETT - ALL RIGHTS RESERVED

Underside View of System:



BLODGETT - ALL RIGHTS
RESERVED

3.2 System & Tank Sizing Guidance

Proper system and tank sizing ensures consistent performance in food-service applications such as ice machines, combi ovens, and steamers. The RO system supports continuous production, while the storage tank offers dependable stored capacity for periods of high demand

System Sizing: BRO-300 vs. BRO-600

BRO-300 (300 GPD) - Recommended for lower-to-moderate use applications where total daily water demand is modest.

- Ideal for single appliances or locations with predictable usage
- Provides full treatment performance at a lower operating cost
- Commonly selected when the site simply needs the RO water quality but does not have high-volume demand

BRO-600 (600 GPD) - Recommended for higher-use or multi-appliance applications.

- Faster production helps maintain supply during extended or repeated peak demand
- Reduces filter loading and can extend time between filter changes in high-usage environments
- Typically chosen for larger ice machines, busy kitchens, or systems feeding multiple points of use high-volume demand

Simple system guideline:
Choose BRO-600 when usage is high or multiple appliances share the system. Choose BRO-300 when usage is low but RO treatment is still required.

Tank Sizing

Storage tanks supply ready-to-use RO water. Larger tanks provide a larger buffer, improving performance during short bursts of demand or when several appliances draw from the same system.

5–14 Gallon Tanks

- Suitable for a single point of use
- Works well for moderate, steady draw equipment (e.g., a single combi oven or smaller ice machine)

20 Gallon and/or Larger Tanks

- Recommended for multiple points of use or equipment with high or intermittent peak demand
- Offers a larger buffer to maintain steady flow and minimize downtime during system recovery
- Ideal for medium to large ice machines, busy kitchens, or shared installations

Simple tank guideline:
If you are feeding more than one appliance or equipment with high peak demand, select a larger tank (20–40 gallons).

BLODGETT - ALL RIGHTS RESERVED

4.1 Installation Checklist

Before starting the installation of your new system, ensure proper tools and necessary safety equipment is available, as well as all required installation components are provided if purchased.

The BRO 300/600 system & water storage tank will ship in two separate boxes:

Master shipping box:

1. BRO-300 or 600 **(Head assembly/ processor only)**
2. Filters for system (Sediment, Carbon, and RO membrane (w/ external flow restrictor))
3. Installation Supplies
    a. (1) Feed water adapter - ⅜" QC x ⅜ compression
    b. (1) Shutoff valve - ⅜" QC
    c. (1) Tube cutter
    d. (1) Poly tubing
        i. (Red color) for feed water connection - ⅜" OD
        ii. (Blue color) for water storage tank connection - ⅜"OD
        iii. (White color) for pure water connection - ⅜" OD
        iv. (Black color) for drain water connection - ¼" OD

Water storage tank box (5 gallon, 14 gallon, or 20 gallon options):

1. **5 Gallon Tank**
    a. (1) Tank shutoff adapter - 3/8ths QC x ¼" NPT
2. **14 Gallon Tank**
    a. (1) Tank shutoff adapter - 3/8ths QC x ¼" NPT
3. **20 Gallon Tank**
    a. (1) Tank connection assembly - ¾" Schedule 80 PVC assembly
    b. (1) 3/8ths QC shutoff
4. **Other Tanks (for specialty installation)**
    a. May require other tank connection fittings. Consult with installer or dealer

4.2 Recommended Tools and Parts List (Not Supplied):

Typically, only common hand tools are needed for installation. The following list includes some recommended tools, but it is not exhaustive. Each installation may vary and could require additional or specialized tools.

1. **Wrenches (x2) (Adjustable and/ or Pipe):** For tightening and loosening fittings.
2. **Screwdrivers & Drill:** For securing screws in place and mounting unit.
3. **Utility Knife:** For cutting materials such as tape.
4. **Plumbers Tape**
5. **Bucket:** To catch any water during installation.
6. **Rags or Towels:** For cleaning up spills.
7. **Gloves**

BLODGETT - ALL RIGHTS RESERVED

5.1 Mounting the System

Now that you have familiarized yourself with the system, safety notices, and the proper tools and installation components have been gathered, we can now proceed to mounting and installation of the system.

1. **Location and Wall Preparation**
   - **a.** Mount the processor unit on a wall where it will be well-supported.
   - **b.** Never mount directly to drywall (sheet-rock) alone.
   - **c.** For concrete or block walls: use appropriate masonry anchors.
   - **d.** For stud walls: mount a ¾" plywood backer board securely across at least two wall studs, then mount the system to the plywood.
   - **e.** Ensure the system is installed in an accessible location with adequate clearance for cartridge removal and service access.

2. **Mounting Hole Layout**
   - **a.** The system includes two mounting eyelets on the back of the unit, spaced 16 inches on center horizontally.
   - **b.** This spacing allows secure mounting directly into standard wall studs.
   - **c.** Use a level to ensure the mounting marks are horizontal before drilling.

3. **Hardware Requirements**
   - **a.** Use two user-supplied lag bolts or screws suitable for the wall type:
     - **i.** Wood studs: use wood screw size **#11 × 2½"**
     - **ii.** Concrete/block: use equivalent size anchors and screws.
   - **b.** The screw heads should be approximately a **#11** screw size to fit securely in the system's keyhole slots.
   - **c.** Leave about ¼" clearance between the bottom of each screw head and the wall surface to allow the unit to hang.

4. **Mounting Procedure**
   - **a.** Measure and mark two points 16 inches apart horizontally, at the desired mounting height.
   - **b.** Use a level to ensure the marks are even.
   - **c.** If mounting to studs, drill pilot holes directly into the center of each stud.
   - **d.** If mounting to masonry or other wall types, install the appropriate anchors at these marks.
   - **e.** Drive the mounting screws into the studs or anchors, leaving approximately ¼" clearance between the bottom of the screw heads and the wall surface.
   - **f.** Hang the OMNI RO 300/600 system by aligning the keyhole eyelets over the screw heads and sliding the unit downward until seated securely.

5. **Clearance Requirements**
   - **a.** Maintain at least 3 inches of clearance below the cartridges to allow for easy removal and service access.
   - **b.** Ensure there is unobstructed space above and around the system for ventilation and tubing connections.

6. **Final Check**
   - **a.** Verify that the system is level and securely fastened.
   - **b.** Confirm that both eyelets are fully engaged and there is no rocking or movement.
   - **c.** Proceed with cartridge installation and plumbing/electrical connections in the next section.

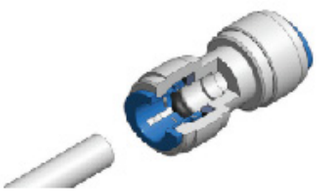
BLODGETT - ALL RIGHTS RESERVED

The ideal system placement should be within the following parameters:

1. **No farther than 20 feet of feed water valve.**
2. **No farther than 10 feet from the drain. The drain line should be unobstructed and as little to no bends as possible.**
3. **No farther than 10 feet of water storage tank.**
4. **Points of use (water dispenser, espresso equipment, combi ovens, etc..) should be within 20 feet of the system. If pressure to equipment is inadequate, additional pressure tanks can be added downstream or closer to points of use to maintain pressure.**

The installation section is broken into four parts: feed water connection **(FEED)**, drain connection **(DRAIN)**, water storage tank connection **(TANK)** , and pure water connections **(PURE)**. The startup and operation section will follow.

Quick Connect (QC) Fittings:



1. Ensure straight cut on tubing with tube cutter.



2. Insert the tube into the fitting fully up to the tube stop.



3. Pull the tube to check its security.



4. To remove the tube press in the collet, hold the collet while pulling out the tube.

BLODGETT - ALL RIGHTS RESERVED

5.2 Feed Water Connection (3/8ths RED color tubing)

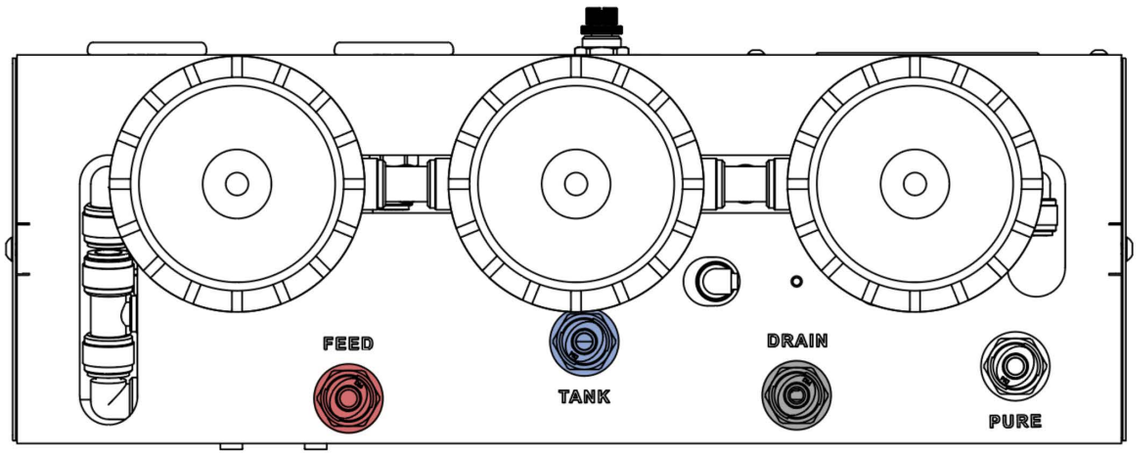
The system installation parts bag comes with a 3/8ths QC x 3/8ths compression adapter fitting for the feed water connection. If the plumbing uses a different size connection, it is up to the end user to make the appropriate connections. Note: Using a smaller feed line size may restrict flow to the system and affect system performance.

1. Locate the cold water supply shut off valve that will supply water to the system. Turn it completely OFF. Connect the 3/8ths QC x 3/8ths compression adapter and HAND TIGHTEN it down.
   *If another feed water adapter is used, plumbers tape may be required.



Feed water adapter

2. Find RED color 3/8ths tubing from the installation parts bag, and ensure the tube end is cut as straight as possible.
3. Insert RED color tubing firmly into the feed water adapter fitting.
4. Connect the other end of tubing into the FEED bulkhead fitting located on the underside of the system (highlighted red for clarity).



Underside View of System

5.3 Drain Connection (¼" BLACK color tubing)

The drain line connection should remain unobstructed and allow for continuous flow. The system's internal permeate pump will send drain water in short bursts and can "kick" if not properly secured. **Note:** drain lines should be connected to comply with local code, and requirements may vary. Airgaps may or may not be required for drain connection.

1. Locate the ¼" BLACK color tubing from the installation parts bag.
2. Insert the tubing into the DRAIN bulkhead fitting on the underside of the system.
3. Run the other end of tubing to appropriate drain connection or floor drain.

5.4 Water storage tank connection (3/8ths BLUE color tubing)

The water storage tank should be as close to the system as possible, and no more than 10 feet from the system.

For 5 & 14 gallon water storage tanks:

The water storage tank should be as close to the system as possible, and no more than 10 feet from the system.

1. Locate the tank shutoff adapter - 3/8ths QC x ¼" NPT from the inside tank box. Locate the 3/8ths BLUE color tubing from the installation parts bag.
2. Remove the water storage tank from the box.
3. Wrap the ¼" NPT male tank connection with 2-3 wraps of plumbers tape.





BLODGETT - ALL RIGHTS RESERVED

4. Carefully thread the tank shutoff valve onto the male thread on the tank.



5. Firmly press the blue tubing into the tank shutoff valve.
6. The tank shutoff valve should be in the CLOSED position (blue valve perpendicular to tubing as shown).
7. Connect the other end of the blue tubing into the TANK bulkhead fitting on the underside of the system.

20 gallon water storage tanks:

1. Locate the tank connection assembly from inside the tank box. Locate the 3/8ths BLUE color tubing from the installation parts bag.
2. Remove the water storage tank from the box.
3. Wrap the threads of the tank connection with 2-3 wraps of plumbers tape.
4. Carefully thread the tank connection assembly onto the male thread on the tank.
5. Firmly press the blue tubing into the QC tank connection assembly.
6. The tank shutoff valve should be in the CLOSED position (blue valve perpendicular to tubing).
7. Connect the other end of the blue tubing into the TANK bulkhead fitting on the underside of the system.

5.5 Pure water connections (3/8ths WHITE color tubing)

The pure water line should ideally be as close to the points of use as possible, and no more than 20 feet from the system. If pressure to equipment is inadequate, additional pressure tanks can be added downstream or closer to points of use to maintain pressure and or flow.

1. Locate the 3/8ths WHITE color tubing from the installation parts bag. Locate the 3/8ths QC shutoff valve from the installation parts bag.
2. Insert the white tubing into the PURE bulkhead fitting on the underside of the system.
3. Insert the other end of the white tubing into the 3/8ths QC shutoff valve. The valve should be in the CLOSED position (blue valve perpendicular to the white tubing).
4. If tubing is needed to connect to point(s) of use, cut the desired amount of tubing required and insert the 3/8ths QC shutoff valve in between the two lengths. Do NOT connect the tubing to equipment until the system has been thoroughly flushed (next section).

BLODGETT - ALL RIGHTS RESERVED

6.1 Filter Installation and Initial System Flush

Now that all the system bulkhead connections have been made, we can move onto inserting system filters. This section will go through the startup and flushing procedures, and the operation of the system.

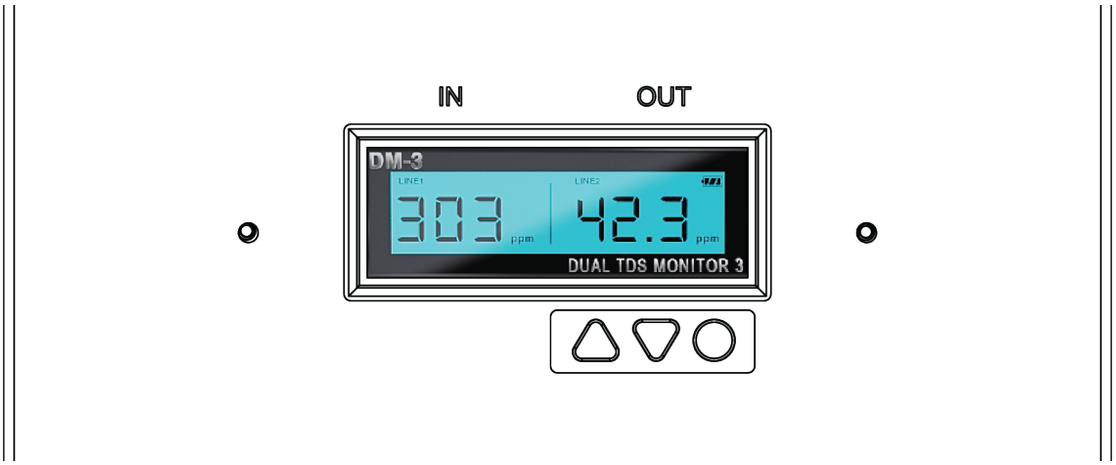
1. **Unpack the Filters**
   Locate the filter box inside the master carton and remove all three filters.
2. **Install Filter #1 – Sediment Filter**
   Align the filter's key notches with the matching tabs inside the filter head. Push the filter firmly upward into the head, then rotate clockwise until it clicks and locks into place.
3. **Install Filter #2 – Carbon Block Filter**
   Repeat the same process for filter #2, ensuring it is fully seated and locked in place.
4. **Connect Flow Restrictor Assembly**
   Locate the black 1/4" brine line hanging from the underside of the unit. Connect this line to open end of the flow restrictor assembly (flow restrictor + tubing + quick-connect elbow). Note: arrow on flow restrictor should be pointing towards head unit.
5. **Install Filter #3 - RO Membrane**
   Install the RO membrane by aligning the key notches, pushing upward, and rotating clockwise until it locks. Do NOT connect the quick connect elbow to membrane port yet.
   a. Place bucket underneath membranes bottom brine port. This is where the flush water will discharge.
6. **Open the Feed Water Supply**
   Go to the feed water supply valve and slowly open it. Monitor the system's pressure gauge —feed pressure should read above 40 PSI and below 100 PSI.
7. **Flush Filters #1 & #2 and the RO Membrane**
   With the membrane installed and the brine port open:
   a. Allow water to run for 2–3 minutes.
   b. Water will exit directly from the open membrane brine port into your bucket.
   c. This process simultaneously flushes carbon fines from the pre-filters and removes the membrane's preservative solution.
8. **Shut Off Water & Connect the Flow Restrictor to the Membrane**
   Turn off the feed water supply. Connect the quick-connect elbow from the external flow-restrictor assembly into the membrane's brine port.
9. **Final System Flush**
   Slowly reopen the feed water valve. Open the white pure-water tubing shut-off valve and divert the flow to drain. Allow water to run for at least 1 hour to fully flush the RO membrane before connecting to any point of use.
10. **Pressurize and Connect the Tank**
    After the final flush, open the blue valve on the water storage tank (parallel to the blue tubing) to allow the tank to fill.
11. **Connect to Points of Use**
    Once the system is flushed and the tank is connected, attach the white pure-water tubing to your intended point(s) of use. Continue to monitor gauges and TDS monitor.

The system can take anywhere from 1-3 hours to fill the water storage tank and water lines depending on feed water conditions.

BLODGETT - ALL RIGHTS RESERVED

6.2 TDS monitor

On the front of the system is the BRO 300/600 dual TDS display monitor, which shows two real-time TDS (Total Dissolved Solids) readings as water flows through the system:



- **IN / Line 1**: Displays the TDS (expressed in PPM) value of the feed water coming into the system.
- **OUT / Line 2**: Displays the TDS value of the product water after the purification process through the system.

BLODGETT - ALL RIGHTS RESERVED

6.3 Precision Mineral Content Valve

The BRO 300/600 features a precision mineral content valve on the front of the unit, allowing you to fine-tune the quality of the product water. This valve mixes a small amount of treated inlet water with the reverse osmosis (RO) product water, creating a customized water profile to meet your application's needs.

How to Use the Mineral Content Valve

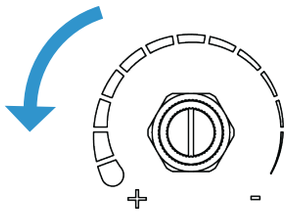
Once the system has been fully flushed and the water storage tank has reached at least one-third capacity, allow the OUT / Line 2 reading on the TDS monitor to stabilize. When the reading is stable, you may adjust the mineral blending valve if desired.

The blending valve only affects the TDS value shown on the OUT / Line 2 channel of the TDS monitor.

Important: For accurate and consistent blending control, adjust the mineral blending valve only when the storage tank is at least one-third full and downstream equipment is actively drawing water.

To Increase Mineral Content:

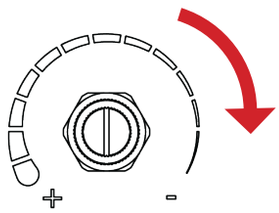
- Turn the knob counterclockwise by hand to open the valve, allowing more flow through.



MINERAL CONTENT

To Decrease Mineral Content:

- Turn the knob clockwise by hand to close the valve, allowing less flow through.



MINERAL CONTENT

Adjustment Guidelines:

- Adjust the valve in quarter-turn increments.
- Wait 10 seconds between adjustments to allow the system to stabilize.

BLODGETT - ALL RIGHTS RESERVED

6.5 Filter service & replacement

As a general rule, filters should be replaced every **6–12 months** or annually, depending on their stage:

Filter #1 (Sediment): Replace every 6 months to maintain optimal pre-filtration and protect downstream carbon filters.

Filters #2 (5µm Carbon Block): Replace every 6–9 months, depending on chlorine levels and total water usage. Low-usage systems may lean toward the longer end of this range.

Filter #3 (RO Membrane): Under low hardness, moderate-TDS feed water, the membrane typically lasts **12–18** months. In harsher conditions (feed water above ~450 ppm or high hardness), replacement every 12 months is recommended. Membrane lifespan is highly dependent on feed water chemistry and usage.

When performing filter service the following steps should be taken:

Step 1: Depressurize the System

1. Locate your feed water supply valve, and turn it to the OFF position.
2. Locate the tank valve on the water storage tank and turn it to the OFF position.
3. Open a point of use valve or equipment from the pure water line empty water (and pressure) from the system.
4. Verify system pressure gauges read 0 PSI.

Step 2: Remove Filters

1. With both hands, starting from filter 1 and working up to the final filter, turn the filter counter-clockwise until the filter is removed from the filter head. Note: the used reverse osmosis membrane filter should be removed along with the flow restrictor (connected to the brine line). New membranes are supplied with new flow restrictors, and should be replaced together.
2. Discard old filters in the appropriate waste receptacle.

Step3: Install New Filters

1. Install new filters by matching the correct filter stage on the filter cartridge, and matching with numbers on the system.
2. Perform steps 1-10 of section 6.1 System Startup & Filter Flushing.
3. Continue to monitor system and performance with TDS monitor as well.

BLODGETT - ALL RIGHTS RESERVED

6.6 Plumbing Flow Diagram

