



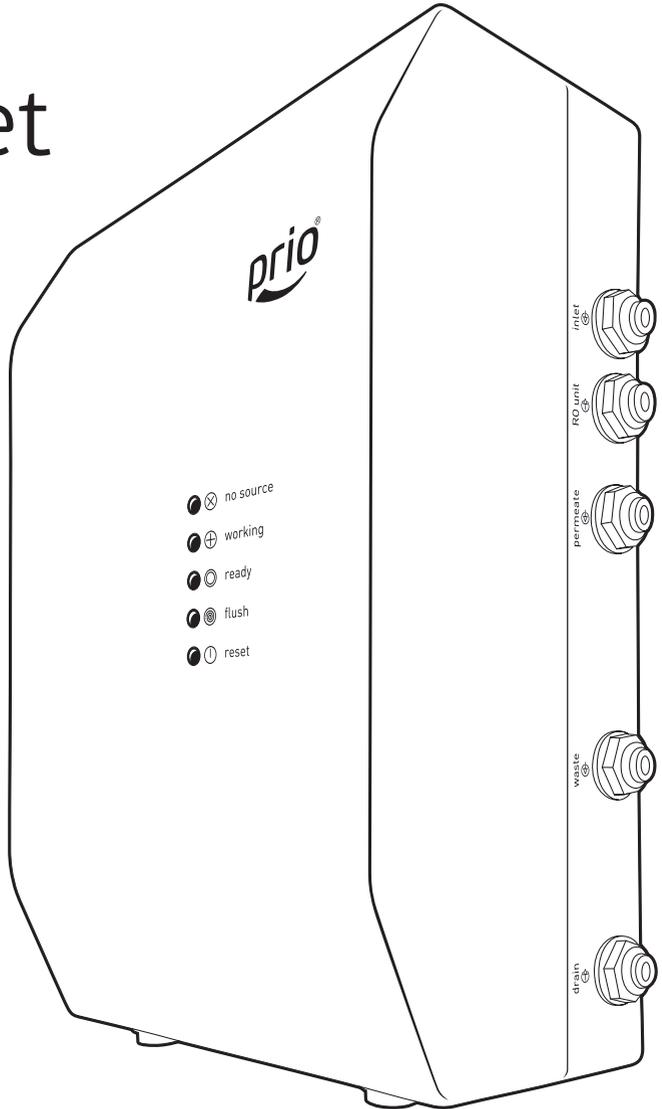
Prio[®] Jet

Model X845

External Booster
Pump Box
with Auto Flush for
50-100GPD
Reverse Osmosis
Filtration Systems

Model X855

External Booster
Pump Box
with Auto Flush for
Direct Flow
(Tankless)
Reverse Osmosis
Filtration Systems



User's Guide

Before operating this unit, please read the instructions carefully. You may want to save this guide for your future reference.

Safety Warning



- Plug the unit into an electrical outlet only after you finished the installation.
- Check if the voltage indicated on the unit corresponds to the local mains voltage before you connect the appliance.
- Do not use the unit if it is damaged in any way. Take it to an authorized service center for repair.
- Do not open the unit. There are no serviceable parts inside.
- When unplugging the unit from the mains, do not pull on the power cord. Avoid touching the plug with wet hands.
- Do not block air vents of the unit or place any items on it. Do not place the unit near the sources of heat, radiators, etc. Do not place it in a tightly closed space where it may overheat.
- Keep the unit out of reach of pets or other animals.
- In case of leakage malfunction or water presence around the unit shut off the electrical power to the circuit first, then pull the plug out of the electrical outlet.
- Remove the plug from the electrical outlet during your vacations or other extended periods of time when the appliance is not in use.
- Unplug the unit from the electrical outlet while servicing your water filter system, and changing the membrane or filters.
- Do not use the appliance if operating requirements such as water temperature/water pressure/electrical supply, etc. are not met. Follow other applicable regulations such as operating requirements for your R.O. system. Note that the appliance contains the booster pump that increases the line water pressure prior to the R.O. unit. Check if that pressure is acceptable for your device.
- Do not use the appliance with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.
- This appliance was not designed to be used with power cord extenders, power filters, external transformers, outlet splitters, etc.
- Never store or operate the appliance in direct sunlight.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the unit.
- At the end of its life, the appliance should be disposed of in an appropriate manner.

Disposal

Old appliances still contain many recyclable materials. Therefore, please take used unit to your retailer or recycling center so that it can be recycled.



Description

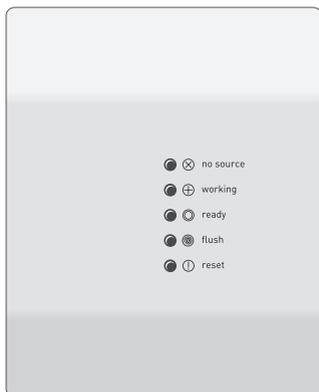
Congratulations on your purchase of the Prio® Jet booster pump box! Please familiarize yourself with the general concept behind the product and main modes of operation.

Booster pump box models X845 and X855 were designed for 50-500 GPD rated Reverse Osmosis water filtration systems for use in areas with low water pressure, or for users that want maximum performance and the best quality filtered water from their R.O. systems. Both models include the microcontroller and LED indicators for the hassle-free, fully automatic operation and easy reading. They may be purchased separately to upgrade existing compatible systems or be included in the high-end R.O. water filtration sets.

Model X845 is designed for 50-100 GPD rated R.O. units usually equipped with the water collection container such as water pressure tank. Model X855 is designed for 150-500 GPD rated R.O. machines, both direct flow ("tankless") or with water tank.

Key Features:

- Automatic flush valve: for peak performance and healthier membrane. 18 seconds of powerful flush at the end of each water filtration cycle prevent the scale and debris build-up on the membrane outer surface.
- Powerful booster pump increases pressure to radically improve the performance and effectiveness of the R.O. unit in all three key areas: increases filtered water flow (production rate), increases rejection rate (improves water purification quality), increases recovery rate (decreases amount of waste water).
- Prolongs the membrane and pre-filter(s) service life due to increased recovery rate.
- Fully automatic operation, no service necessary: plug and forget.
- LED indicators: easily understand what the state of your R.O. unit is. Ever wondered whether your tank is full or empty? No more guess!
- Split, flexible installation possible where needed: install the pump box up to 50 feet away from the R.O. unit itself. Useful for the situations like lack of space or lack of electrical outlet under the sink, or moving the unit to more appropriate place.
- Idling protection: if you forget to close the filtered water faucet for a long time the pump will shut down automatically for you.
- Full separation of electrical components from the membrane and filters of the main R.O. unit makes the regular servicing of your R.O. machine both easy and safe: no need to worry about electrical valves and wires while changing your water filters or membrane.
- Quick fittings for easy tube connections.



How It Works:

After the install use your R.O. unit as you normally would.

If your tank is not full the pump box will turn on automatically and quickly fill it up with filtered water. Then it will flush the membrane and shut off automatically. If you open the faucet and take some filtered water from the tank the pump will turn on automatically to refill the tank again.

For direct flow systems, just open the filtered water faucet. The pump will turn on automatically and will produce filtered water in real time until you close the faucet. At the end of each water production cycle the membrane will be flushed for 18 seconds, and then the system will shut off automatically.

LED Indicators:

- **No Source:** there is no water in the inlet line or it's pressure is less than 7.25 psi (0.05 MPa). Make sure the inlet tube is connected and not kinked, and the water inlet valve is open.
- **Working:** the pump is working and connected R.O. machine is producing the filtered water for you. Either tank is not full yet or filtered water faucet is open. No action is required.
- **Ready:** filtered water faucet is closed and tank (if installed) is full. The pump is off. No action is required.
- **Flush:** 18 s membrane flush is going. No action is required.
- **Reset:** idling protection was triggered. The pump is off. To restore normal operation power cycle the unit.

Pressure Switches:

The unit is equipped with low and high pressure switches. The low pressure switch shuts off the pump when there is no inlet water or its pressure is too low. The high pressure switch shuts off the pump when the filtered water faucet is turned off and tank is full (if installed) and high back pressure of the filtered water line is built.

Pump:

The unit is equipped with the low voltage booster pump powered by the included transformer for safe operation.

Precaution:

Please do not use the model X855 with R.O. units equipped with low-production membranes of flow rating less than 150 GPD. Also, your membrane should be "true" thin film composite R.O. membrane, **not** nano-membrane. The latter is usually identified by word 'Nano' or 'LP' or 'ULP' in the membrane model description. ULP/Nano membranes may be damaged overtime by powerful pump of X855. Consult your service provider for proper type of R.O. membrane. Upgrade your membrane if necessary.

Model X845 can be used with both R.O. and ULP/Nano membranes of 50-100 GPD rating. Neither model is suitable for ultra-filtration (UF) systems.

Direct Flow R.O. Systems Benefits:

Model X855 makes it possible to build high-end direct flow R.O. machines that offer best in class performance and water quality.

- Freshness of water filtered in real time. No more stale water from a tank.
- Virtually unlimited filtered water production. While conventional systems with tanks are limited by the tank and require prolonged timeouts to refill the tank, a direct flow system is limited by the membrane filtration rate only. It is also easily scalable by upgrading the membrane.
- Instant and sustained filtered water flow. It doesn't depend on how full the tank is. This is particularly important for commercial applications too. No more waits for tank refill either.
- Space-saving, compact installation since tank is not needed.
- Better water purification quality due to improved contaminant rejection rate.
- Typically, up to three times less water is wasted per gallon of filtered water due to high recovery rate as compared to classical tank systems. Saves you money and Planet Earth's water resources!
- Lower cost of ownership due to prolonged service life of pre-filters and membrane, which is in turn a result of higher efficiency rate: less water is treated overall by pre-filters and the membrane for each gallon of permeate produced. This saves the capacity of pre-filters and ensures either less frequent change necessity or better purification.
- Less number of components leads to better reliability.

Specification

Operating Requirements:

- Minimum inlet water pressure: 7.25 psi (0.05 MPa)
- Maximum inlet water pressure: 61 psi (0.42 MPa) / 80 psi (0.55 MPa) when used together with select Prio® R.O. units
- Minimum water temperature: 41 °F (5 °C)
- Optimal water temperature: 59–77 °F (15–25 °C)
- Maximum water temperature: 95 °F (35 °C) / up to 105 °F (40.5 °C) short-term
- Ambient air temperature: 41–105 °F (5–40.5 °C). Indoor use only.
- Water source: tap water supply, chlorinated or non-chlorinated, bacteriologically safe
- Supply water pH range: 4.0-11.0
- Supply water turbidity: < 1 NTU
- Supply water components: Hardness (CaCO₃) <180 mg/L (<10.5 gpg), Iron <0.1 mg/L, Manganese <0.05 mg/L, Hydrogen Sulfide 0.00 mg/L
- Maximum supply water TDS: 1000 ppm
- Electrical input: AC 100-240V 50/60 Hz
- Maximum length of the line between the unit and the membrane ("split installation"): 50 ft (15 m) (purchase of extra tubing may be required)
- Tubing: ¼"

Weight and Size:

Size (WDH), body only, excluding protrusions: 8.74 x 4.80 x 12.44" (222 x 122 x 316 mm)

Weight, without water and tubing:

- 8.2 lbs (3.7 kg) for X845;
- 8.6 lbs (3.9 kg) for X855

Performance Guidelines:

Performance of the appliance such as pressure boost or flow rate of the connected R.O. unit is highly dependent on local conditions (inlet water pressure, temperature and TDS, R.O. membrane type and flow rating, R.O. unit type and its design specifics) and R.O. system use pattern.

- Typical pressure boost (ΔP , extra pressure built upon the inlet pressure) is up to 50 psi (0.34 MPa) for 50-100 GPD R.O. membrane for X845, and up to 100 psi (0.69 MPa) for 150-500 GPD membrane for X855. For example, the higher the GPD rate of the membrane attached or the higher the water temperature the lower is an actual pressure boost for a given setup but the higher the output flow rate in working mode. Typically, in working mode outlet water pressure reaches 80-110 psi for X845 and 110-160 psi for X855 depending on local conditions and membrane used.
- Drain water flow restrictor: 300 cc (mL/min) nominal, up to 450 cc in working mode, open flow in flush mode.
- Auto-flush duration: $18 \pm 10\%$ s
- Idling protection: 120 minutes (the unit will shut-off the pump and goes into 'reset required' mode if working mode continuous duration reaches 2 hours without interruption)

Warranty:

1 year limited warranty

Package Contents:

- (1) The auto-flush booster pump box unit
- (20 ft / 6 m) Water tubing $\frac{1}{4}$ "
- (1) $\frac{1}{4}$ " x $\frac{1}{4}$ " x $\frac{1}{4}$ " union tee quick fitting
- (1) $\frac{1}{4}$ " x $\frac{1}{4}$ " union check valve
- User's guide

Installation

Notes:

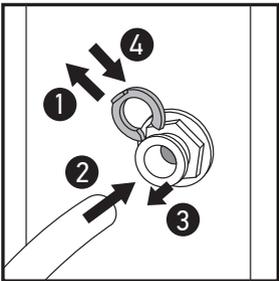
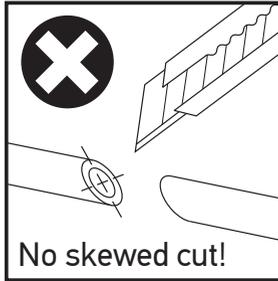
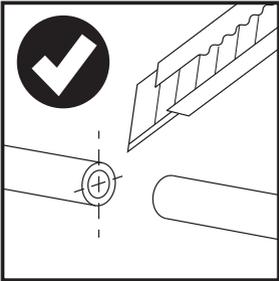
1. Install your R.O. machine first. Usually, steps include: inlet valve installation, drain saddle installation, filtered water faucet installation, tank and tank valve installation, etc. See your R.O. machine manual for the detailed instructions. Do not open inlet valve until you finish the unit setup. If you used your R.O. machine before close the inlet valve and drain the water tank (by opening the filtered water faucet).
2. If your R.O. machine includes flow restrictor, 4-way shut off valve, manual flush valve remove them on the R.O. unit itself. Built-in components of the pump box will be used instead. See the following charts for proper connection scheme.
3. Use of air gap faucet is not recommended in R.O. systems with powerful auto flush feature due to high flow of waste water during the flush. If you have air gap faucet you may simply not use its waste line and insert waste water tubing directly into the drain saddle (bypassing the air gap). You may want to use a check valve (optional) on the drain line then to obtain same protection from a drain water backset as air gap provides.
4. During installation you will need to cut the supplied $\frac{1}{4}$ " tubing into segments as needed. Use your utility knife for that or similar tool. See the following charts to determine the

connection scheme and length of hoses necessary. You may need to purchase extra tubing for far-reaching split or other corner case installations.

5. It is recommended to connect the unit between the final pre-filter and the membrane if your R.O. machine design permits such connection. It protects the pump and helps avoiding the unneeded pressure on pre-filter(s). Otherwise connect the unit prior to your first pre-filter (5 micron PP sediment in-line filter or equivalent is still recommended prior to the unit; point-of-entry sediment filter works just fine for this purpose).

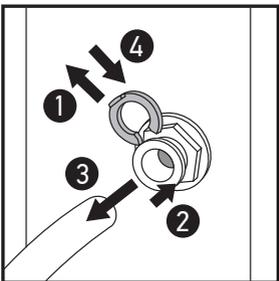
6. Do not connect the unit to the electrical supply until the Setup is completed.

IMPORTANT: Cut tubing at 90 degrees to ensure a watertight seal:



To Connect the Tubing to a Fitting:

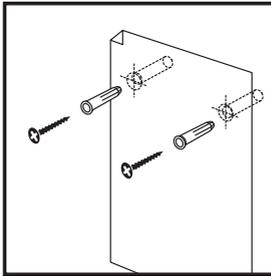
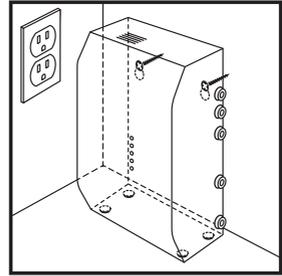
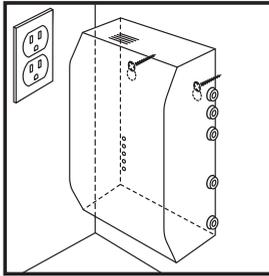
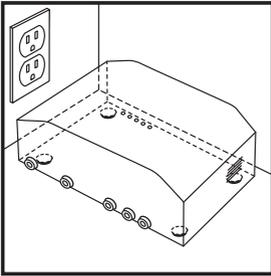
1. Remove the lock if present (not present in self-locking fittings).
2. Push. Insert the tube firmly until full stop.
3. Pull the collet back slightly.
4. Replace the lock (if present).



To Disconnect the Tubing:

1. Remove the lock if present (not present in self-locking fittings).
2. Push the collet **and hold**.
3. Pull the tubing out.
4. Replace the lock (if present).

Unit Placement Guide:



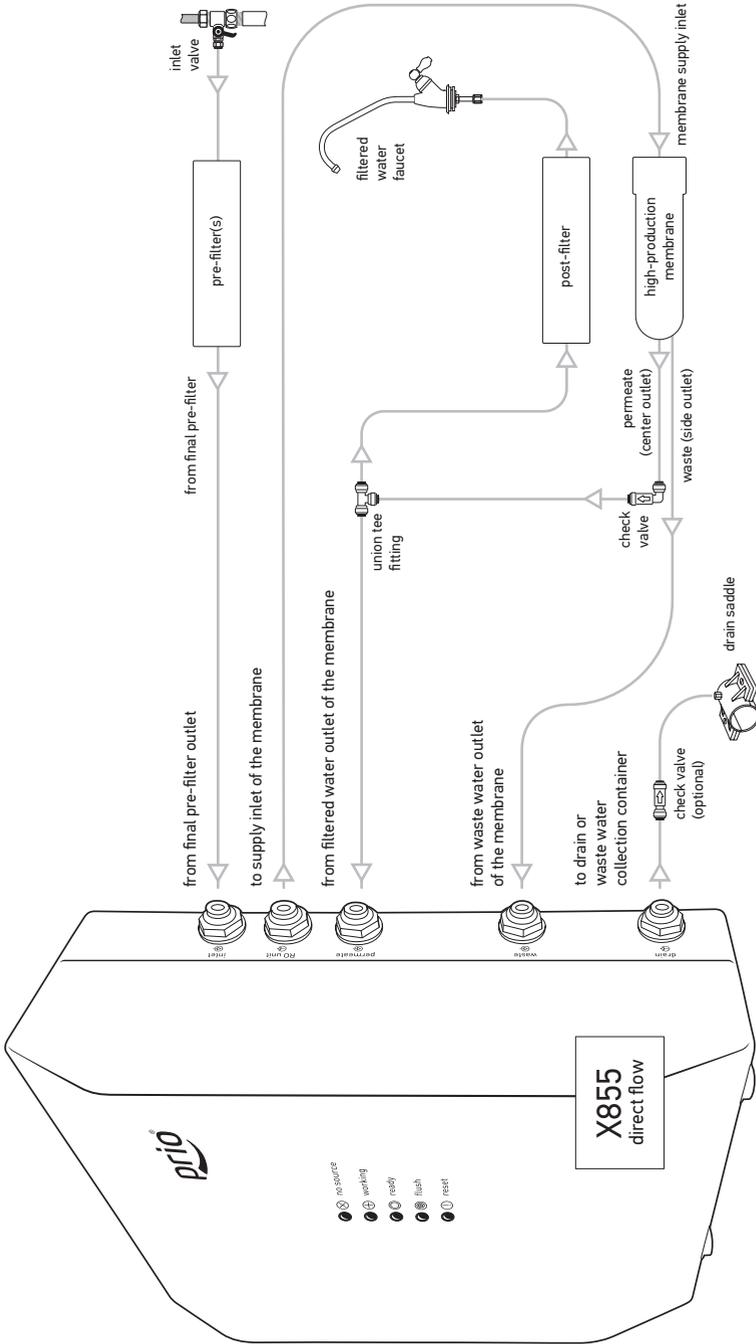
Hose Connections:

Important: if your R.O. machine includes 4-way shut off valve (control valve), flow restrictor, manual flush valve remove them on the R.O. system itself. The unit's internal components will be used to provide the same or enhanced functionality. The unit is not compatible with R.O. systems with built-in (non-removable/non-bypassable) control valve or flow restrictor.

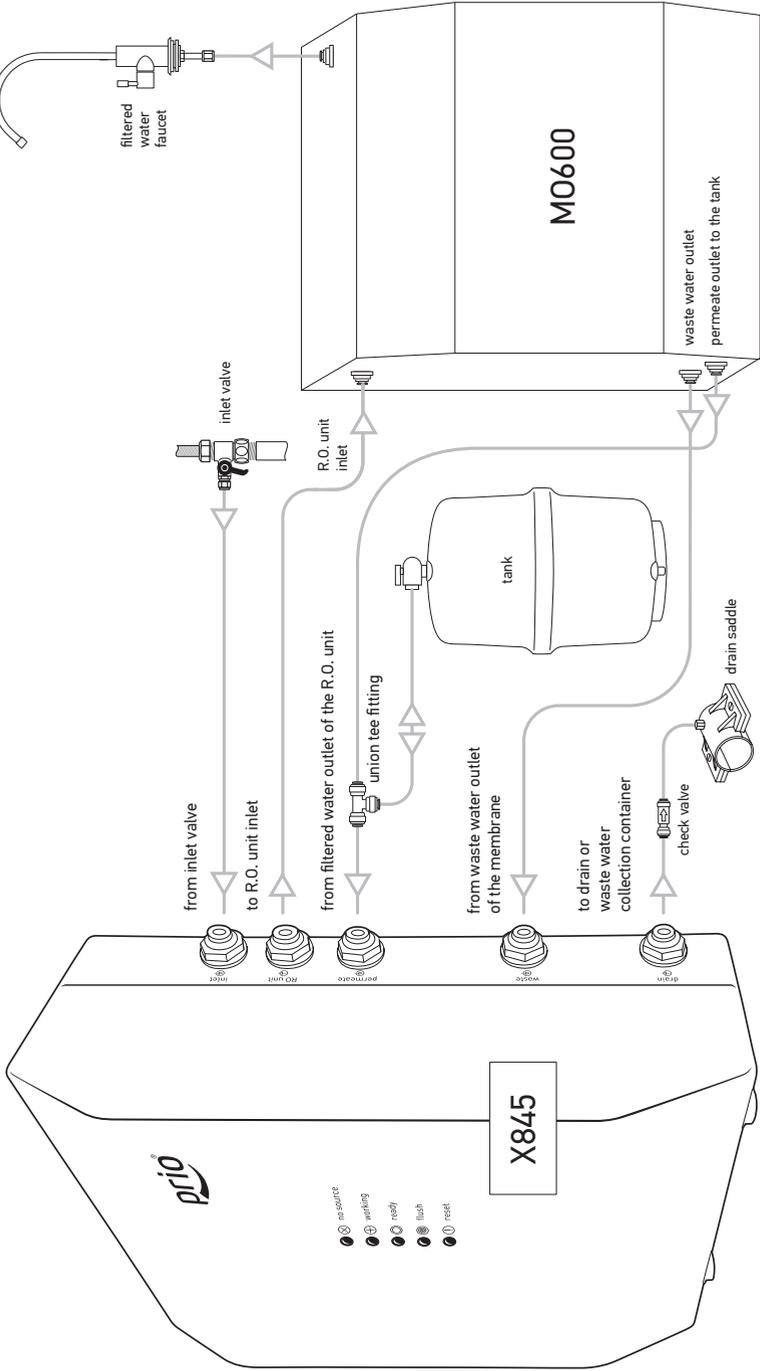
1. Insert water supply tubing from final pre-filter into the "inlet" fitting of the unit.
2. Insert the supply tubing from the "RO unit" fitting of the unit into the supply inlet of the membrane housing.
3. Insert the filtered water tubing from the filtered water outlet of the membrane housing into the "permeate" fitting of the unit. Use included extra union tee fitting if needed.
4. Insert the waste tubing from the waste water outlet of the membrane into the "waste" fitting of the unit.
5. Insert the waste tubing from the "drain" fitting of the unit into the drain saddle (optionally through the union check valve or through the air gap faucet on the way) or to a waste water collection container.

See the following charts for details.

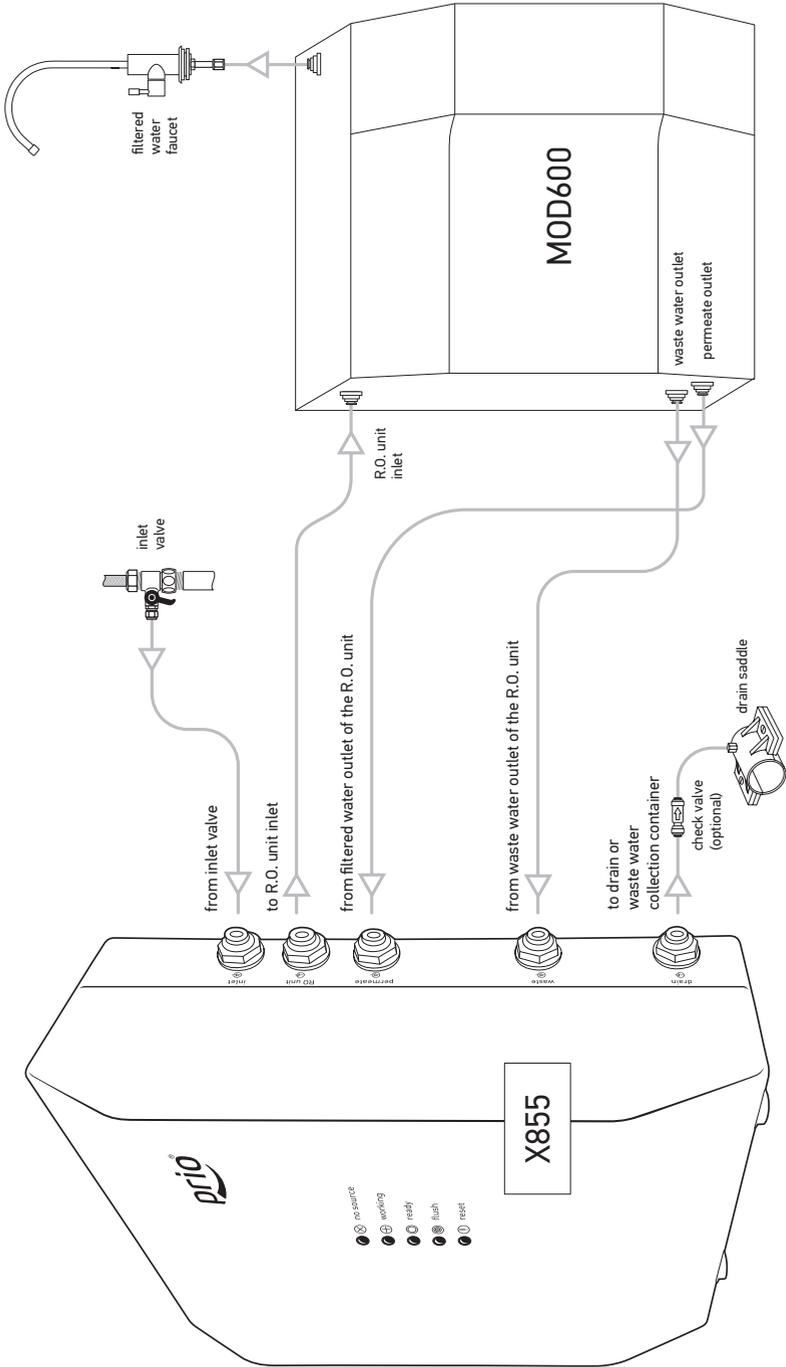
General Direct Flow R.O. System Connections



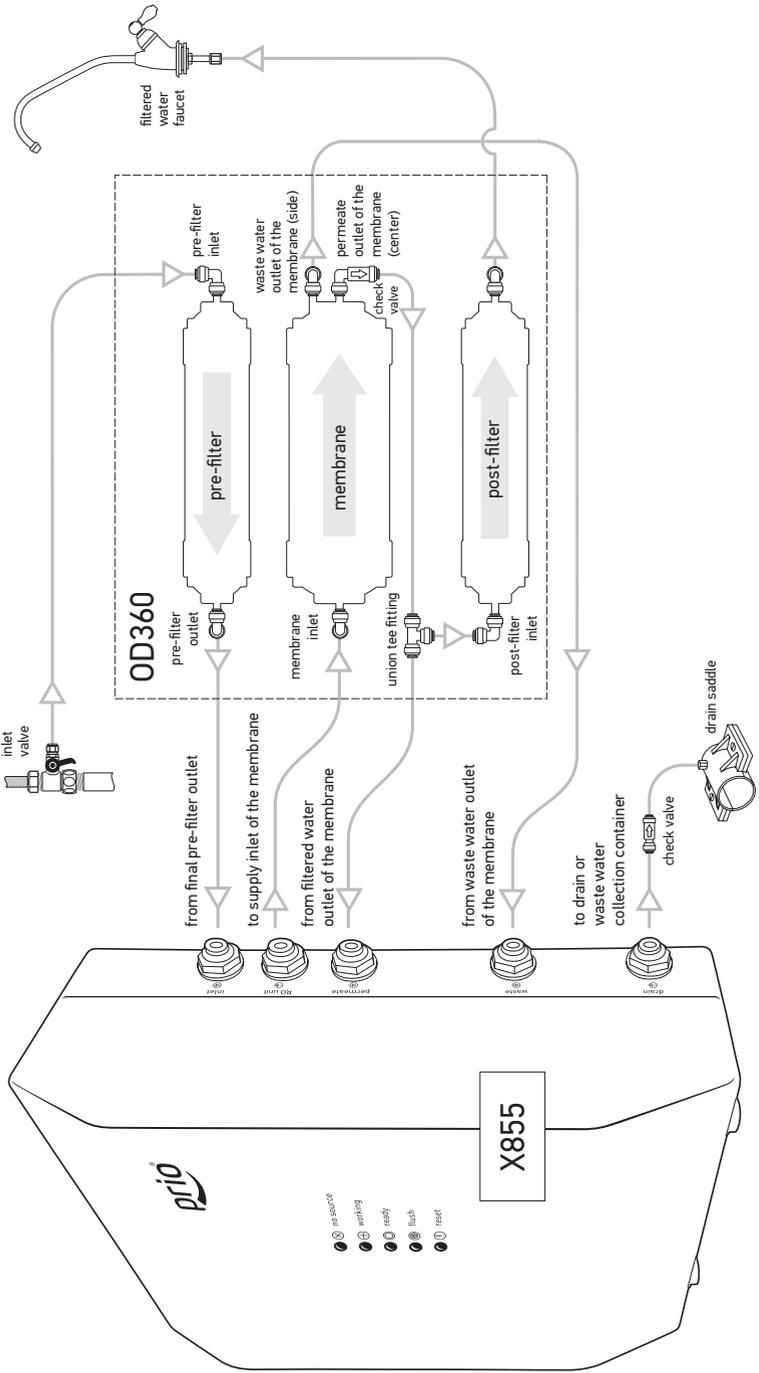
Prio® Expert M0600 R.O. System Connections



Prio® Expert MOD600 Direct Flow R.O. System Connections



Prio® Expert OD360 Direct Flow R.O. System Connections



Initial Washing:

After installation it is recommended to perform the initial washing of the unit and connected R.O. system.

For this, for R.O. systems with tank:

- close the tank valve;
- open the inlet valve;
- open the filtered water faucet;
- plug the unit's power cord into the electrical outlet;
- wait for water to arrive at the faucet (it may take a while, water flow usually is not high, water foam and air may be going out of the system);
- wait 1-2 minutes for more or less steady (yet usually low) water flow from the faucet and close the faucet;
- wait for auto flush to complete (18 s);
- repeat steps "open faucet – wait 1-2 minutes – close the faucet – wait for auto flush to complete" at least 5 times;
- after you finished with previous step close the faucet and open the tank valve;
- wait for the tank to fill to full (until "ready" LED indicator lights up) then drain the tank completely by opening the faucet;
- you may repeat the tank full refill – tank drain once again;
- after you close your faucet the tank will refill again, and your system is ready for use.

For direct flow R.O. system:

- open the inlet valve;
- open the filtered water faucet;
- plug the unit's power cord into the electrical outlet;
- wait for water to arrive at the faucet (it may take a while, water foam and air may be going out of the system);
- wait 2 minutes for more or less steady water flow from the faucet and close the faucet;
- wait for auto flush to complete (18 s);
- repeat steps "open faucet – wait 2 minutes – close the faucet – wait for auto flush to complete" 5-10 times;
- after you finished with previous step close the faucet, and your system is ready for use.

Please note that after initial installation of the unit and/or R.O. machine or changing the filters or membrane, air contained in the new dry system or filter may come out sometimes producing foamy, white filtered water. Water may look white due to tiny air bubbles in it. If you leave the water to stand for few minutes all bubbles will surface and eliminate. Such aerated water is clean and safe. Gradually over the coming days all air inside your system will find its way out. To make this process faster you may repeat the initial washing procedure until you're pleased with the result. Also note that if for some reason the water supply contains a lot of dispersed air, your R.O. machine may start producing aerated water again. The unit's internal pipes and components never take air from outside as they are completely air and water sealed and leak-free.

Regular Use

After the installation use your R.O. unit as you normally would.

If your tank is not full the unit will turn on automatically and fill it up with filtered water. Then it will flush the membrane and shut off automatically. If you open the faucet and take some filtered water from the tank the pump will turn on automatically to refill the tank again.

For direct flow systems, just open the filtered water faucet. The pump will turn on automatically and will produce the filtered water flow in real time until you close the faucet. At the end of each water production cycle the membrane will be flushed, and then the system will shut off automatically.

Please note that R.O. membranes (especially dry ones) need up to 50 hours of active operation before they reach peak performance in terms of water flow, recovery and rejection rates.

For your safety and peace of mind please unplug the unit from the electrical outlet and close the inlet valve before servicing your R.O. system such as changing the filters or membrane, or during vacations.

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