GROWONIX

TUNED FOR GROWING

BP-6010
Bp-6010-CH
ESOK
Booster Pump
Owners Manual

WWW.GROWONIX.COM

1:1

INTRODUCTION

OUR MISSION

Durability, Reliability, Efficiency, Purity, and Conservation form the foundation on which we design and build all of our products. Consistent and superior quality sets us apart from other manufacturers and increases our value to you - our customer. Whether you are a hydroponics hobbyist, serious enthusiast, or large-scale gardener, GrowoniX is committed to bringing you the best solution for water purification systems.

WHAT IS REVERSE OSMOSIS?

Reverse osmosis (RO) is a filtration method that removes many types of large molecules and ions from solutions by applying pressure to the solution when it is on one side of a selective membrane. This filtering process ensures that the solute (waste water) is contained within the pressurized chamber while the pure solvent (RO water) is allowed to pass freely through the membrane.

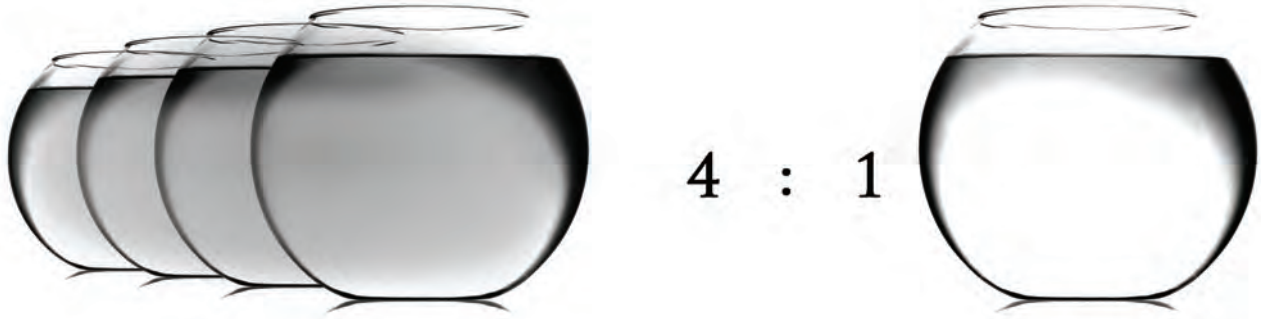
TUNED FOR GROWING - IN TUNE WITH OUR CUSTOMERS

Traditional RO systems have waste ratios of approximately 4:1, which means there are 4 gallons of waste water produced for every 1 gallon of purified water. GrowoniX line of water filters achieve waste ratios of 2:1 with the EX100 through GX400 and an astounding 1:1 ratio with the GX600 and GX1000.

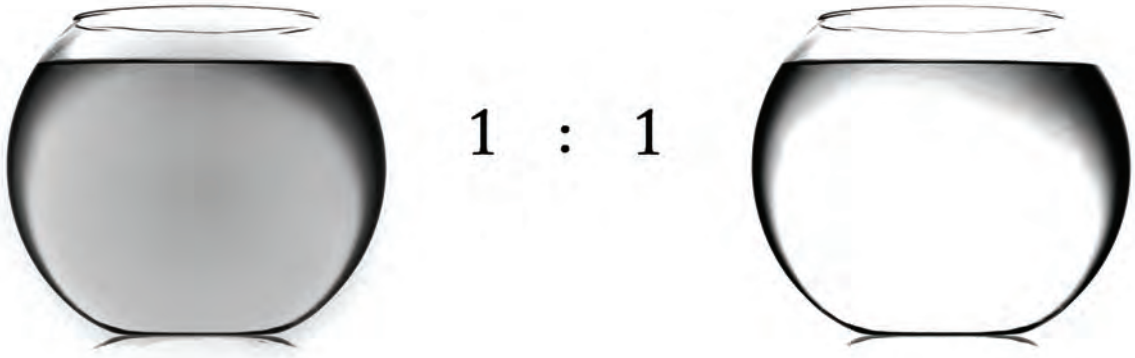
GrowoniX has created a complete product line that will address the needs of hydroponic operations of all sizes. Our filters will significantly reduce your water use while dramatically increasing your yields.

THE TRADITIONAL WAY

takes 4 gallons of waste water to produce 1 gallon of pure water

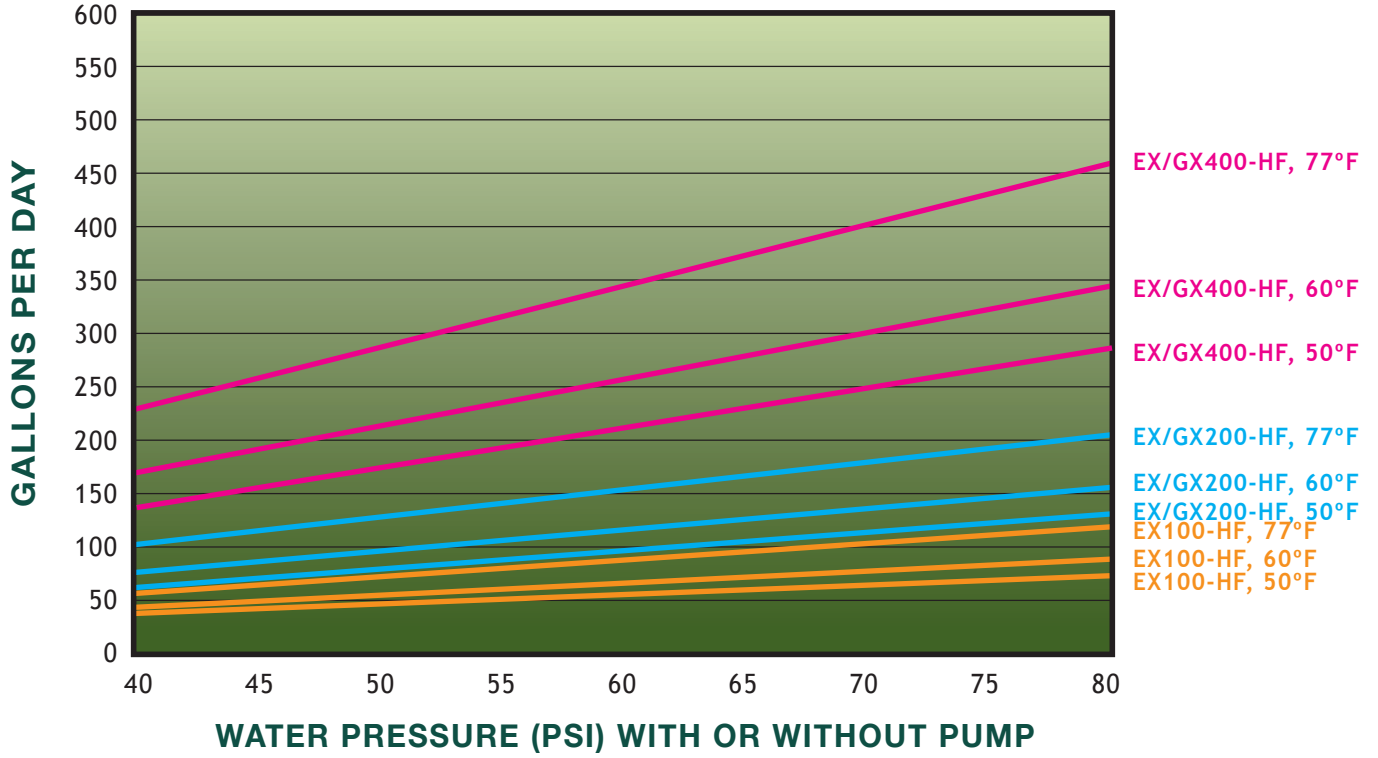


THE GROWONIX WAY

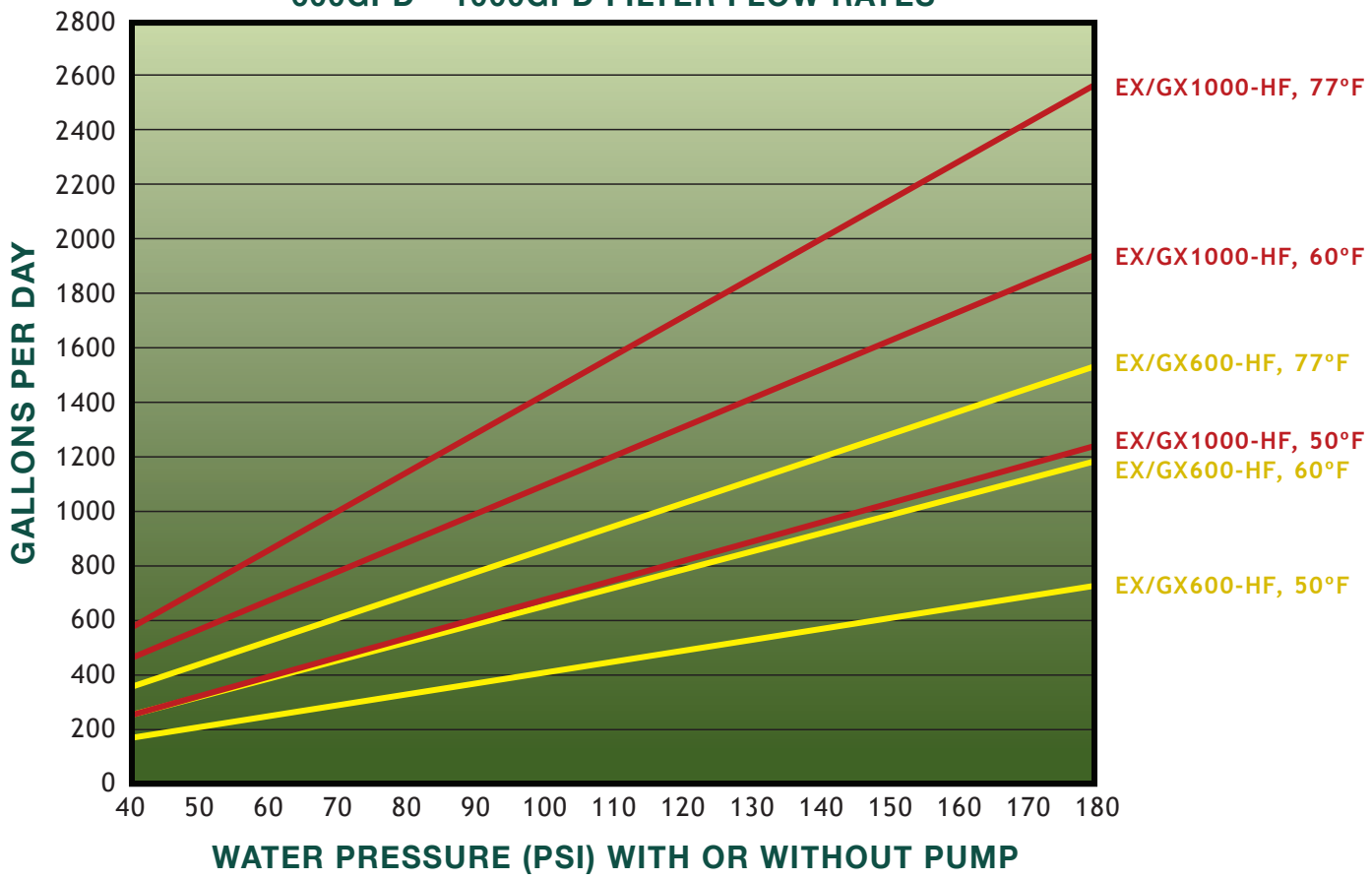


FLOW RATES

100GPD — 400GPD FILTER FLOW RATES



600GPD — 1000GPD FILTER FLOW RATES



SAFETY

READ ENTIRE MANUAL THOROUGHLY
BEFORE INSTALLING THIS HIGH PRESSURE-BOOSTING PUMP.

The Safety section of this User's Manual outlines the carious safety headings used throughout and this manual's text and are enhanced and defined below:

NOTE:
INDICATES STATEMENTS THAT PROVIDE FURTHER INFORMATION & CLARIFICATION

CAUTION:
INDICATES STATEMENTS THAT ARE USED TO IDENTIFY CONDITIONS OR PRACTICES THAT COULD RESULT IN EQUIPMENT OR OTHER PROPERTY DAMAGE.

WARNING:
INDICATES STATEMENTS THAT ARE USED TO IDENTIFY CONDITIONS OR PRACTICES THAT COULD RESULT IN INJURY OR LOSS OF LIFE. FAILURE TO FOLLOW WARNINGS COULD RESULT IN SERIOUS INJURY OR EVEN DEATH.

PLUMBING

The membranes and high pressure pumps used on all GrowoniX water filters 600GPD and greater (EX600, EX1000, GX600, GX1000) require a continuous flow of water with a minimum feed pressure of 35psi, and which does not exceed 105°F.

The plumbing for the feed line for the RO is 3/4" MHT for quick setup and convenience. If the water filter is to be installed in a permanent place, it is recomended to remove the garden hose fittings and plumb with 3/4" SCH80 piping certified for drinking water.

The tubing for the waste line is 3/8" and and should be run to an open drain in a free and unrestricted manner (no back pressure)

The tubing used for the permeate line is 3/8" and can be run to the holding tank or directly to the point-of-use application with PVS fittings, or other FDA approved materials. This is so the material being used does not dissolve into the permeate water. Be certain that all of the components of the feed water are soluble at the concentrations attained in the system.

CAUTION:
ANY RESTRICTIONS OR BLOCKAGE IN THE DRAIN LINE CAN CAUSE BACK PRESSURE, WHICH WILL INCREASE THE SYSTEMS OPERATING PRESSURE. THIS CAN RESULT IN DAMAGE TO THE SYSTEM'S MEMBRANES AND COMPONENTS.

ELECTRICAL

The motor is a carbonator motor. It is available in 110/220 and 50/60 hertz 1 phase. Please ensure that the electrical circuit supplying the system is compatible with the requirements of the BP-6010 Series Delivery Pump. Each BP-6010 Series Delivery Pump is equipped with an 8" electrical cord.

NOTE:
WE RECOMMEND THAT A LICENSED ELECTRICIAN WIRE YOUR SYSTEM IN ACCORDANCE WITH LOCAL AND NATIONAL ELECTRICAL CODES (NEC).

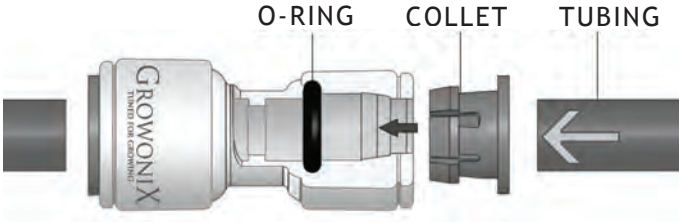
WARNING:
TO REDUCE THE RISK OF ELECTRICAL SHOCK, THE INCOMING POWER SUPPLY MUST INCLUDE A PROTECTIVE EARTH GROUND.

INFORMATION ON QUICK CONNECT FITTINGS

GROWONIX WATER FILTERS USE QUICK CONNECT FITTINGS THAT ALLOW FOR EASY MAINTENANCE.

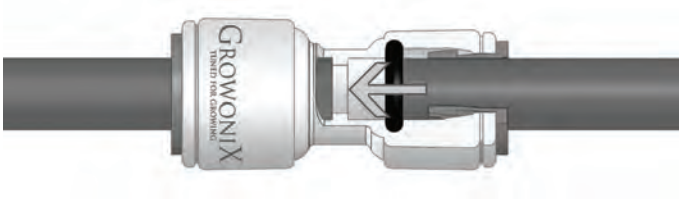
MAKE A CLEAN TUBE CUT

Cut the tube squarely and if using plastic tubing, ensure that the cut has not made the tube out of round. Also ensure that the tube has a smooth outside diameter without any burrs or score marks prior to inserting it into the fitting.



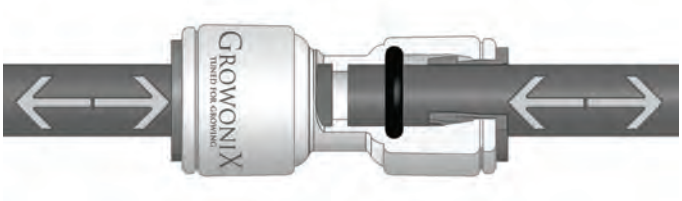
INSERT TUBE INTO FITTING

Push the tubing through the collet and dual o-rings until it bottoms out against the tube stop. The collet holds the tube in place and the dual o-rings provide a leak resistant seal.



TEST AND INSPECT

Push and pull the tubing toward and away from the fitting to ensure that it has been installed properly. Test and inspect the installation for any leaks.



TUBE REMOVAL

Relieve pressure from the tubing and fitting. Push uniformly around the collet flange against the fitting body while pulling the tubing away from the fitting to release it.

WHY USE A GROWONIX BP6010 ?

Membranes love pressure! In general, more pressure allows for better emembrane rejection, longer membrane life, and increased membrane flow rate. GrowoniX BP-6010 Series Booster Pumps allow for the full potential performance of the RO membrane to be acheived—with only 35 PSI of incoming water pressure. The perfect solution for those with low feed water pressures, and those who want to receive the maximum performance from their GrowoniX water filter.

BP-6010 SYSTEMS FEATURES

- Continuous duty cycle
- Adjustable output pressure
- Controllable manually or with ESOK (electric shutoff kit)
- Patented electrogalvanized bracket on BP-6010-CH

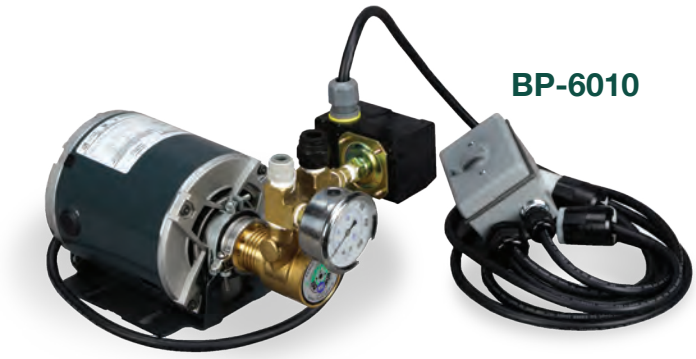
BP-6010-CH

DOUBLES pure water production for the GX600 and GX1000 water filters. Splash Guard™ chassis connects directly to the GX600/GX1000. The pump only needs 30psi of incoming water pressure to produce the full flow rate! Low pressure cutoff to safeguard the pump against a loss of incoming water pressure. Stainless steel liquid filled 300 psi system pressure gauge. Can be controlled manually or with our electric shutoff kit.

BP-6010-CH

BP-6010

DOUBLES pure water production for the GX600,GX1000, EX600, EX1000 water filters. The pump only needs 30psi of incoming water pressure to produce the full flow rate! Low pressure cutoff to safeguard the pump against a loss of incoming water pressure. Stainless steel liquid filled 300 psi system pressure gauge. Can be controlled manually or with our electric shutoff kit.



BP-6010

ELECTRIC SHUT OFF KIT

An essential add-on to almost any water filter! Shuts down feed water before the water filter. Controls on/off cycling of high pressure booster pumps. The electric shutoff kit consists of a float switch and solenoid valve.

ELECTRIC SHUT OFF KIT

PUMP

The pump is a low-lead brass rotary vane pump.
This pump is also available in stainless steel.
Follow these guidelines to ensure proper operation of the pump:

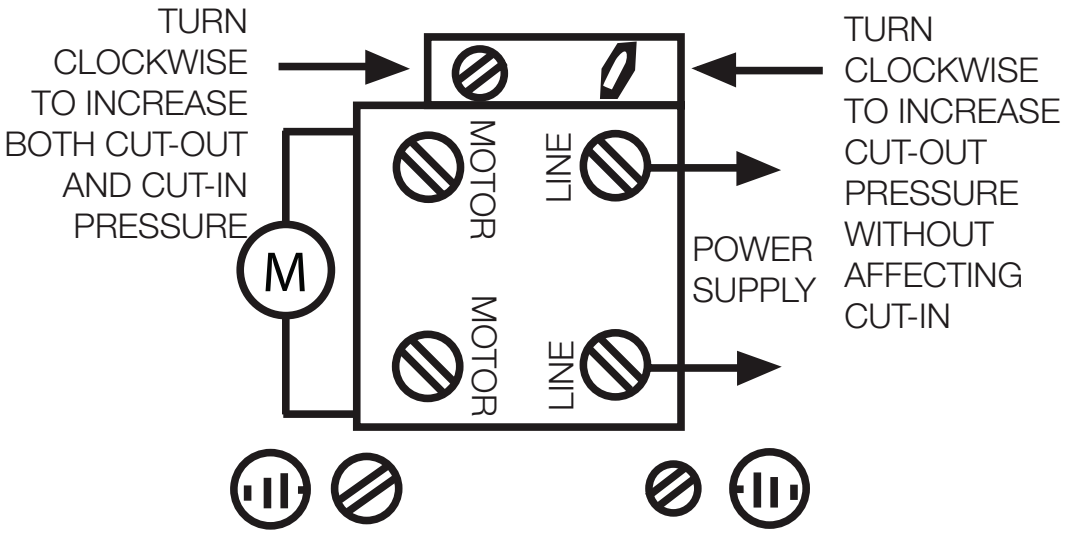
- The pump must NEVER be run dry. Operating the pump without sufficient feed water will damage the pump.
- ALWAYS feed the pump filtered water. The pump is susceptible to damage from sediment and debris.
- If any damage occurs to your system's pump, a re-build kit may be available. Contact your local dealer or distributor and inform them of your system's model and pump size.

WATER PUMP PRESSURE SWITCH

The low pressure switch shuts off the system when the feed water pressure drops too low for the system to function properly. This prevents damage to the pump. The system restarts automatically when the pressure is restored. If you notice the pressure fluctuating, and the system cycling off and on repeatedly, turn the system off and ensure that proper feed flow and pressure are available to the system.

WATER PUMP PRESSURE SWITCH ADJUSTMENT

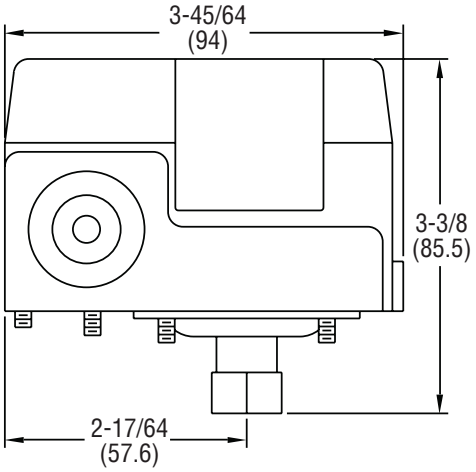
The water pump pressure switch is adjusted at the factory to cut out when incoming pressure falls below 10 psi, and cut in when incoming pressure reaches 25 psi. Pressure switch should not need adjustment.
If for some reason pressure switch should fall out of adjustment, follow instructions below.

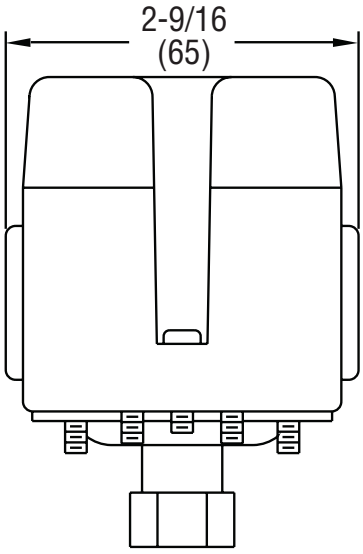


WIRING DIAGRAM

SPECIFICATIONS

WATER PUMP PRESSURE SWITCH





CAUTION: No lubrication or periodic servicing is required. Mount the control securely. Never exceed the electrical rating for the switch. Use the control only with compatible medias.

SPECIFICATIONS

Service: Compatible liquids and gases.
Wetted Materials: Silicone, steel, and SS.
Temperature Limits: 140°F (60°C).
Pressure Limits: See model chart.
Enclosure Rating: General purpose.
Repeatability: ±5 psig (±0.3 bar).
Switch Type: SPST snap action (see model chart).
Electrical Ratings: 20A @ 120 VAC, 12A @ 240 VAC, 9.6A @ 240 VAC (3 phase), 8.6A @ 32 VDC, 3.1A @ 120 VDC, 1.6A @ 240 VDC.
Electrical Connections: Screw terminal.
Conduit Connection: 7/8˝ hole for 1/2˝ conduit hub (2 places).
Process Connection: 1/4˝ female NPT.
Mounting Orientation: Switch can be installed in any position.
Setpoint Adjustment: Internal screws.
Weight: 0.75 lb (0.34 kg).
Deadband: See model chart.
Agency Approvals: CE, UL pending

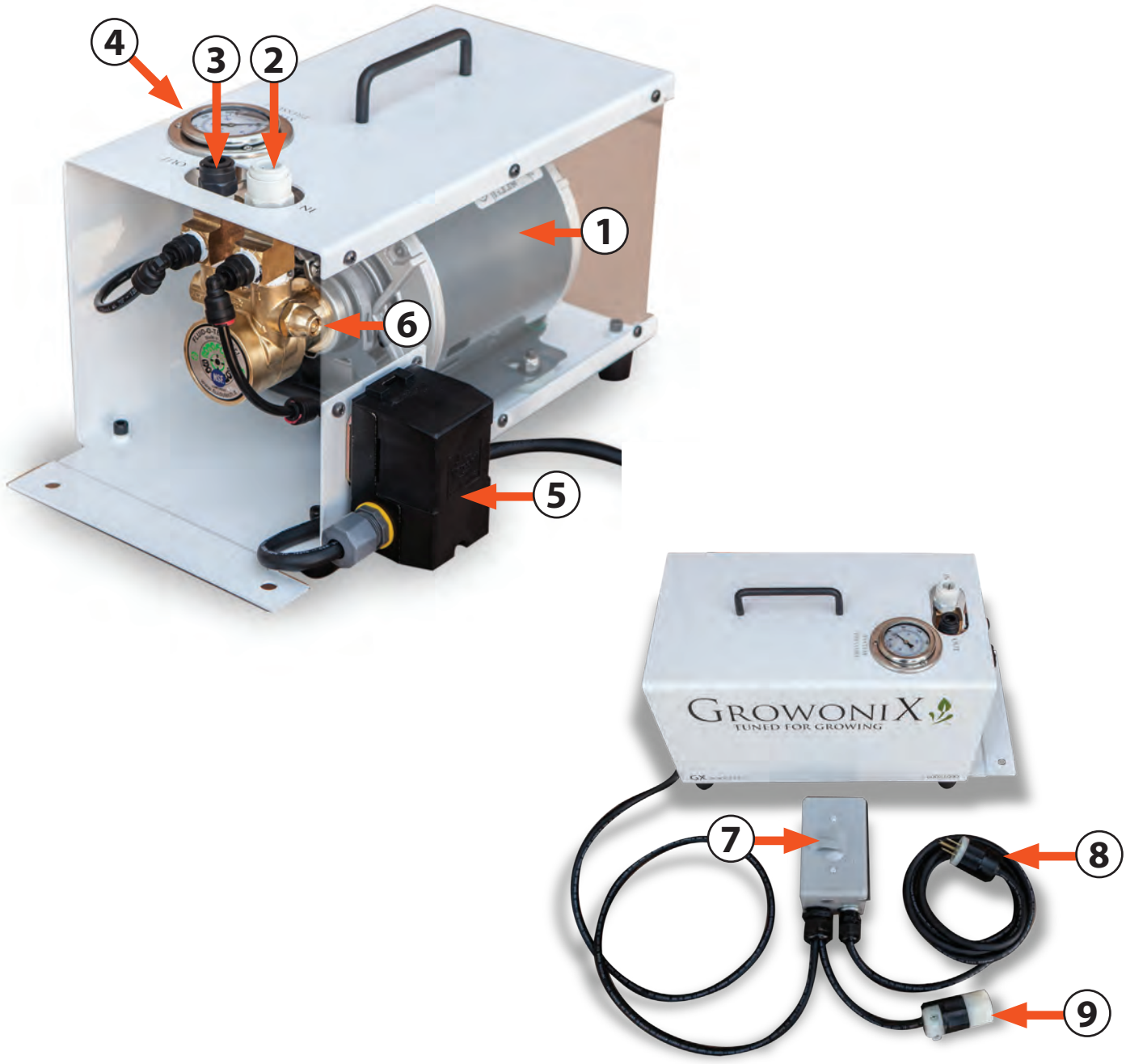
MAINTENANCE

Upon final installation of the water pump pressure switch, no routine maintenance is required.
A periodic check of the system calibration is recommended. The pressure switchis not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty).
Be sure to include a brief description of the problem plus any relevant application notes.
Contact customer service to receive a return good authorization number before shipping.

BP6010 DELIVERY PUMP COMPONENT DIAGRAM

1. MOTOR
2. PUMP INLET (CONNECT TO PRE FILTER HOUSING OUTPUT)
3. PUMP OUTLET (CONNECT TO MEMBRANE INPUT)
4. OUTLET PRESSURE GAUGE
5. LOW PRESSURE SWITCH
6. PUMP ADJUSTMENT
7. PUMP POWER ON/OFF SWITCH
8. AC IN CORD
9. PIGGYBACK CORD FOR SOLENOID VALVE (OPTIONAL)

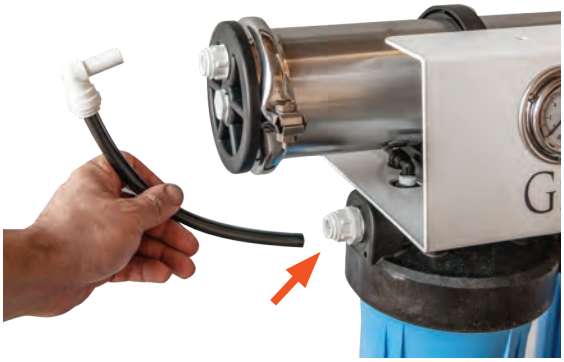
BP6010 CH DELIVERY PUMP COMPONENT DIAGRAM



1. **MOTOR**
2. **PUMP INLET (CONNECT TO PRE FILTER HOUSING OUTPUT)**
3. **PUMP OUTLET (CONNECT TO MEMBRANE INPUT)**
4. **OUTLET PRESSURE GAUGE**
5. **LOW PRESSURE SWITCH**
6. **PUMP ADJUSTMENT**
7. **PUMP POWER ON/OFF SWITCH**
8. **AC IN CORD**
9. **PIGGYBACK CORD FOR SOLENOID VALVE (OPTIONAL)**

SETUP INSTRUCTIONS FOR EX

1



Slide locking clip off of carbon filter output fitting and remove the short length of 1/2” tubing feeding the membrane input.

2

Insert supplied 1/2” tubing into carbon filter output. Install locking cip.

3

Cut tubing to appropriate length (ensure no kinks or flow restrictions) and insert into the 1/2” pump input. Install locking clip.

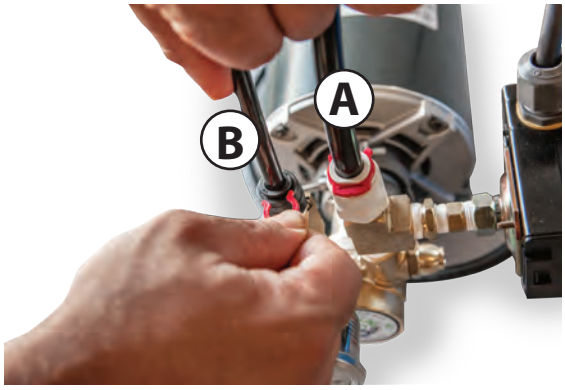
4

Insert supplied 3/8” tubing into pump high pressure output. Install locking cip.

5

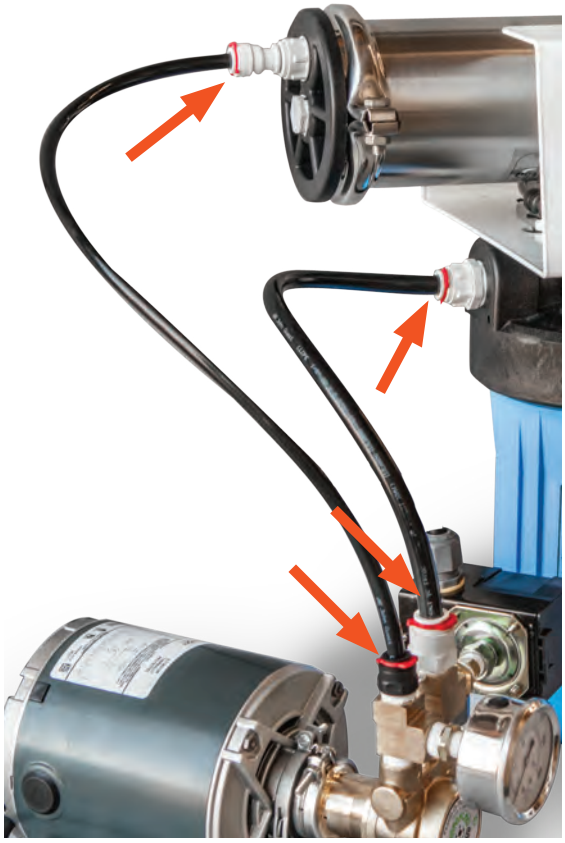
Cut tubing to appropriate length (ensure no kinks or flow restrictions) and install the 1/2” x 3/8” stem reducer onto tubing. Insert the stem reducer into the 1/2” membrane input fitting. Install locking clip.

6



A) From output of carbon filter housing to pump input.
B) From high pressur pump output to input side of membrane housing.

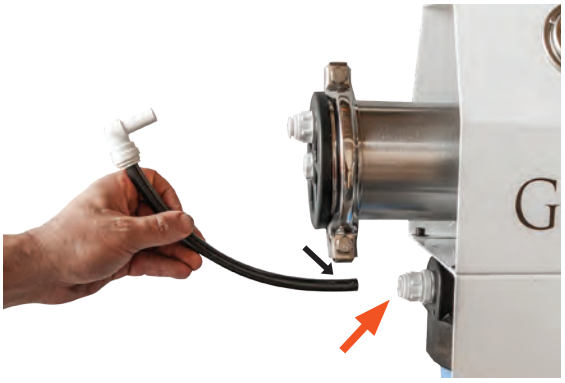
7



Reconnect all locking clips as shown

SETUP INSTRUCTIONS FOR GX

1



Slide locking clip off of carbon filter output fitting and remove the short length of 1/2” tubing feeding the membrane input.

2

Remove caster nut and washer

3

Attach BP-6010-CH chassis to GX600/1000 housing. Replace caster nut and washer and tighten.

4

Insert supplied 1/2” tubing into carbon filter output. Install locking cip.

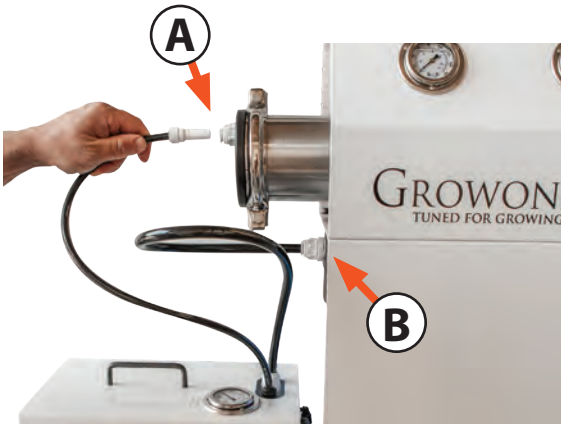
5

Cut tubing to appropriate length (ensure no kinks or flow restrictions) and insert into the 1/2” pump input. Install locking clip.

6

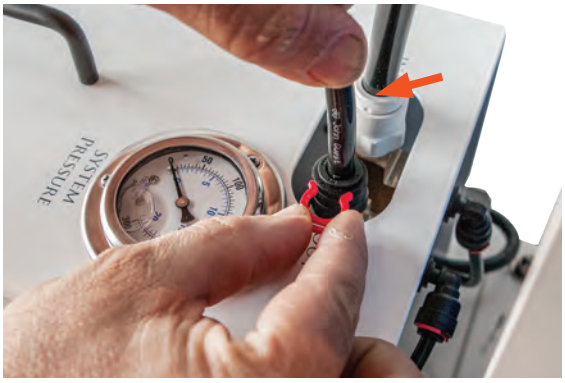
Insert supplied 3/8” tubing into pump high pressure output. Install locking cip.

7



Cut tubing to appropriate length (ensure no kinks or flow restrictions) and install the 1/2” x 3/8” stem reducer onto tubing. Insert the stem reducer into the 1/2” membrane input fitting. Install locking clip.

8



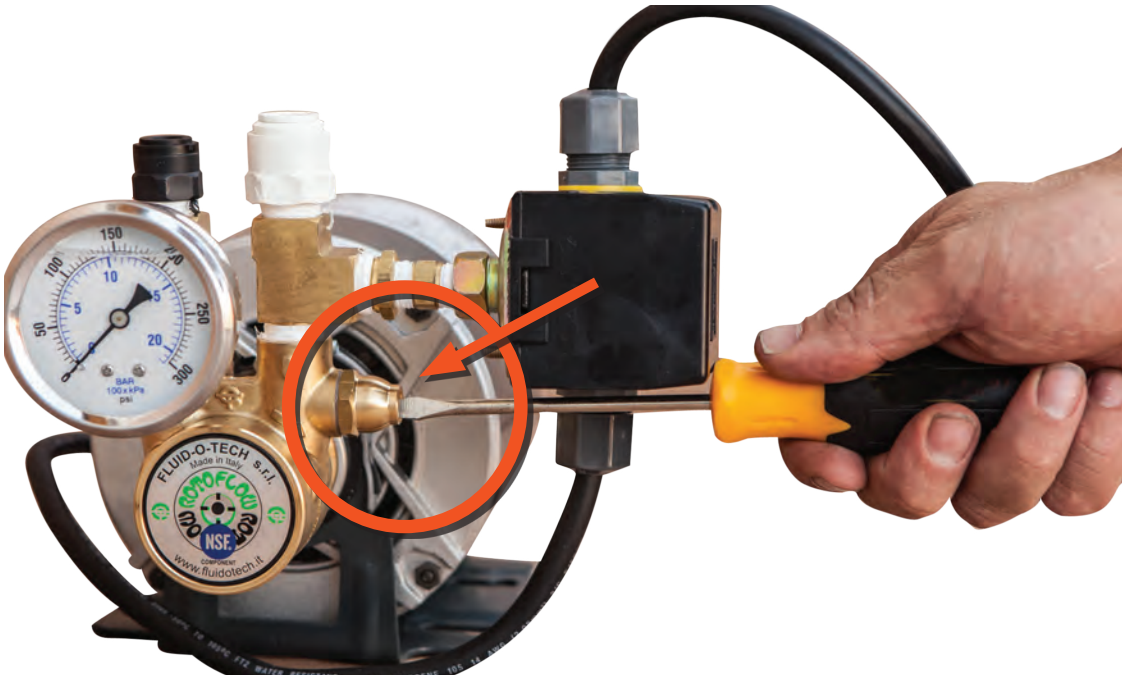
Slide locking clip off of prefilter output fitting.

9

Reconnect all locking clips as shown

PUMP TUNING

TUNING THE BP-6010 PUMP



1. The bypass valve, located on the input side of the pump can be used to regulate pump output pressure. It is adjustable with a flat head screwdriver.

2. While referencing pump pressure gauge,
turn screw clockwise to increase system pressure.

3. Turn screw counterclockwise to decrease system pressure.

4. Set system pressure at maximum 150 psi. Running the system at higher pressure could result in failure of fittings, and possible injury.

PUMP TUNING

TUNING THE BP-6010-CH PUMP

1. The bypass valve, located on the input side of the pump can be used to regulate pump output pressure. It is adjustable with a flat head screwdriver.

   On the BP-6010-CH, an access hole located on the rear cover allows for pump adjustment. Depending on pump/motor combination, it may be necessary to remove access hole rubber grommet to allow more room for adjustment.

2. While referencing pump pressure gauge,
   turn screw clockwise to increase system pressure.

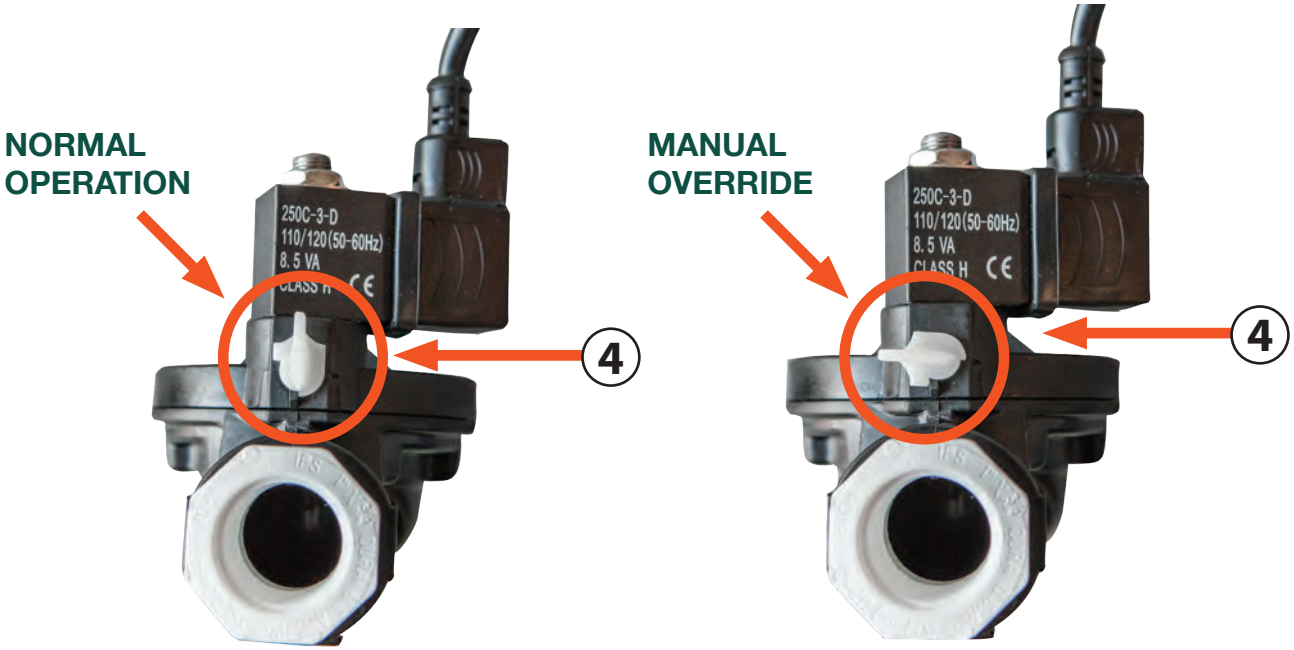
3. Turn screw counterclockwise to decrease system pressure.

4. Set system pressure at maximum 150 psi. Running the system at higher pressure could result in failure of fittings, and possible injury.

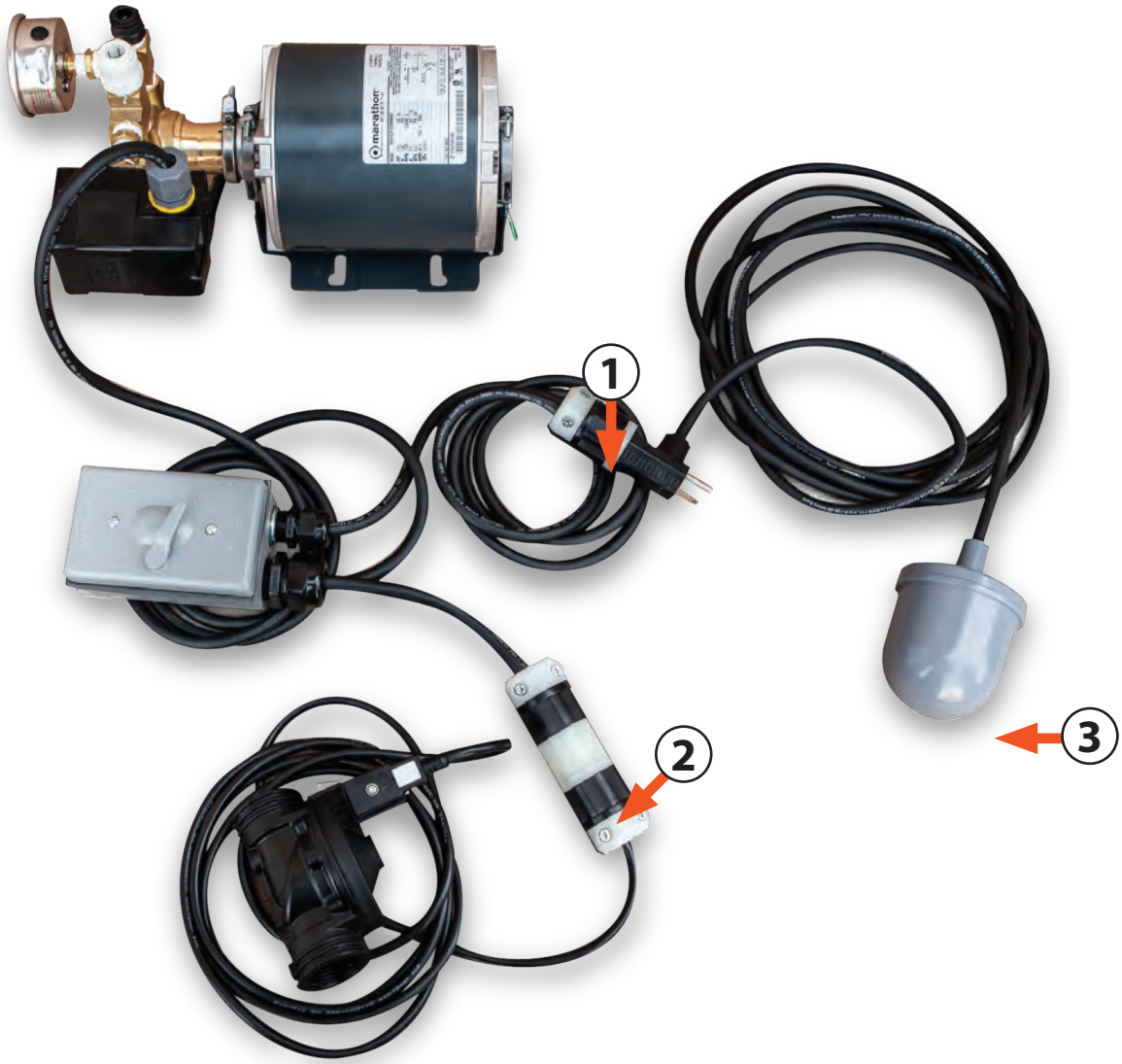
ELECTRIC SHUT OFF KIT COMPONENT DIAGRAM

1. **SOLENOID VALVE**
2. **FLOAT SWITCH**
3. **FLOAT SWITCH PIGGYBACK CORD**
4. **SOLENOID VALVE MANUAL OVERRIDE SWITCH**
5. **SOLENOID VALVE DIRECTION OF FLOW**

SOLENOID MANUAL OVERRIDE SWITCH



ELECTRIC SHUT OFF KIT CONNECTION



DISCONECT PUMP AND ALL COMPONENTS FROM ELECTRICAL SUPPLY, AND TURN OFF FEED WATER SUPPLY BEFORE CONNECTING THE ESOK.

1. Install float switch in tank. (refer to page 21)
2. Attach float switch piggyback cord to male plug end from pump control box.
   - The float switch will now govern whether current will flow to the pump control box or not.
   - Float ball facing up=current does not flow (pump off).
   - Float ball facing downwards-current flows (pump on)
3. Plug solenoid valve into female plug end extending from pump control box (3).
   - When pump control switch is “ON”, current will flow to the solenoid valve, and the valve will open.
   - If being used in conunction with the float switch, current will not flow to pump control box or solenoid valve until float ball faces downward.

SOLENOID VALVE

4. Install solenoid valve on the input of the GX600/GX1000, making sure valve is installed in the correct direction of flow. (see arrow stamped on valve housing).
5. Make sure override switch is in the Normal Operation position (see: page 18).
6. Turn on feed water supply and check for leaks in solenoid water connections.
7. Turn on Booster Pump manualy or with Float Switch.
8. Adjust output pressure (see page 16-17)

ELECTRIC SHUT OFF KIT CONNECTION

DISCONECT PUMP AND ALL COMPONENTS FROM ELECTRICAL SUPPLY, AND TURN OFF FEED WATER SUPPLY BEFORE CONNECTING THE ESOK.

1. Install float switch in tank. (refer to page 21)
2. Attach float switch piggyback cord to male plug end from pump control box.
   - The float switch will now govern whether current will flow to the pump control box or not.
   - Float ball facing up=current does not flow (pump off).
   - Float ball facing downwards-current flows (pump on)
3. Plug solenoid valve into female plug end extending from pump control box (3).
   - When pump control switch is “ON”, current will flow to the solenoid valve, and the valve will open.
   - If being used in conunction with the float switch, current will not flow to pump control box or solenoid valve until float ball faces downward.

SOLENOID VALVE

4. Install solenoid valve on the input of the GX600/GX1000, making sure valve is installed in the correct direction of flow. (see arrow stamped on valve housing).
5. Make sure override switch is in the Normal Operation position (see: page 18).
6. Turn on feed water supply and check for leaks in solenoid water connections.
7. Turn on Booster Pump manualy or with Float Switch.
8. Adjust output pressure (see page 16-17)

SOLENOID PLUMBING CONNECTION

It's recomended to remove garden hose fittings from water filter input and attach supplied SCH80 PVC as shown below.

Solenoid installed on EX and GX Series Filter

IN-TANK FLOAT SWITCH INSTALLATION

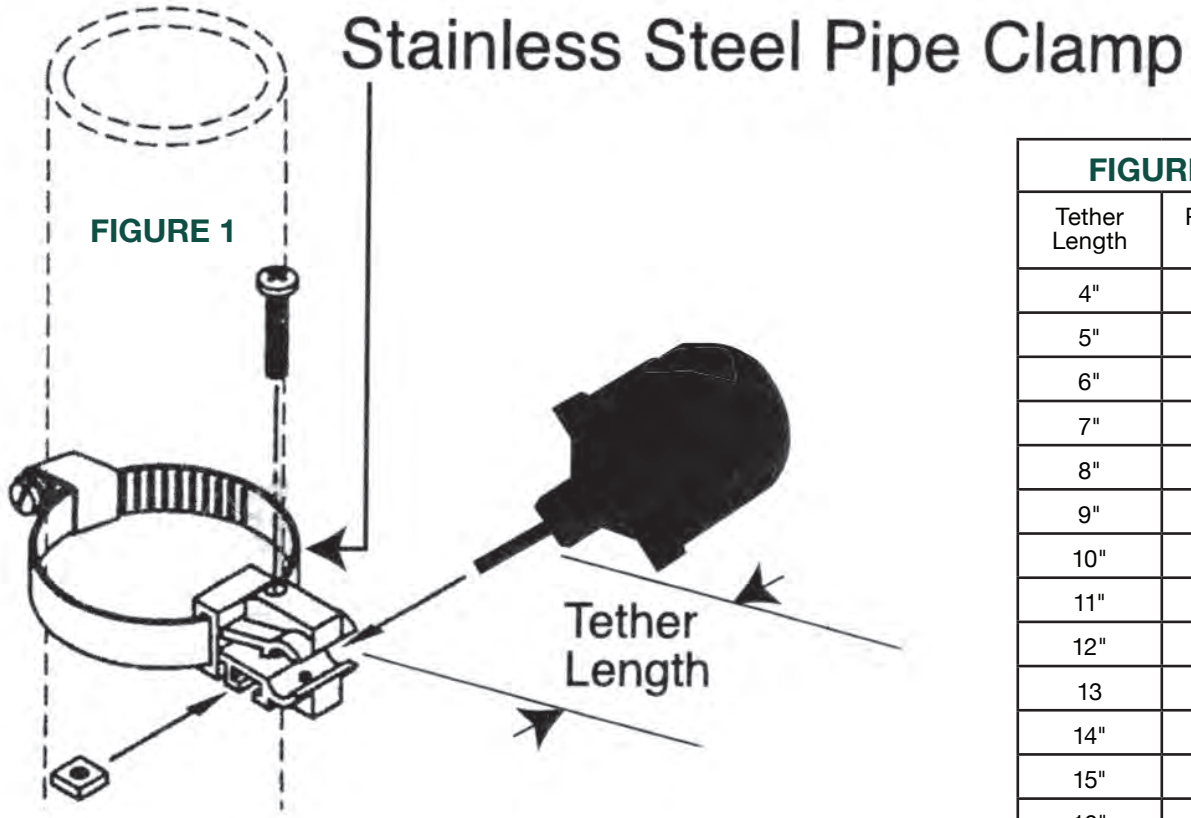


FIGURE 1

FIGURE 2	
Tether Length	Pumping Range
4"	8"
5"	9"
6"	10"
7"	11"
8"	12"
9"	13"
10"	14"
11"	15"
12"	16"
13	17"
14"	18"
15"	19"
16"	20"
17"	21"
18"	22"

NORMALLY CLOSED FLOAT SWITCHES ARE CLOSED WHILE HANGING "DOWN" AND WILL OPEN ON A RISING LIQUID LEVEL. TYPICALLY USED FOR "FILLING TANK" APPLICATIONS.

1. Determine desired cord tether length . See Figure 2.
2. Attach the Pipe Clamp at the desired location. See Figure 1.
   Adjust the tether length to achieve the desired pumping range.
   Use Figure 2 as a guide and test system by filling tank and cycling the system to achieve actual desired pumping range.
3. Tighten the clamp
4. Electrical outlet must not be located in pump chamber.
   Electrical outlet voltage, piggyback plug voltage, and pump voltage must match.
5. Insert switch's piggyback plug into outlet.
6. Plug pump into piggyback plug and check the system by allowing the system to cycle to insure proper operation.

WARNING:

Turn off all power when installing or adjusting unit.
Failure to turn off all power could result in serious injury or death!
Warning: End user to provide overcurrent protection rated at 240VAC minimum, 15 Amps maximum.
Read instructions thoroughly. Check local codes and install to meet requirements.

GROWONIX REVERSE OSMOSIS SYSTEM WARRANTY

For a period of one year from the date of original purchase, we will replace or repair any part of the GrowoniX reverse osmosis water system that we find to be defective in operation du e to faulty materials or workmanship with the EXception of the replaceable filters and membranes.

GENERAL CONDITIONS

Damage to any part of this reverse osmosis system because of misuse; misapplication; negligence; alteration; accident; installation; or operation contrary to our instructions, incompatibility with accessories not installed by GrowoniX, or damage caused by freezing, flood, fire, or Act of God, is not covered by this warranty. In all such cases, regular charges will apply. This limited warranty does not include service to diagnose a claimed malfunction in this unit. This warranty is void if the claimer is not the original purchaser of the unit or if the unit is not operated under normal municipal water or well water conditions.

GrowoniX assumes no liability in connection with this reverse osmosis system. GrowoniX assumes no liability for any damages incurred through the use of this product. It is the responsibility of the end user to gauge the safe use of this product in the environment where it is applied. We do not authorize any person or representative to assume for us any other obligations on the sale of this reverse osmosis system. The information given out in the manual we believe to be true, but are offered to you in good faith without guarantee because each application of this product is different and beyond our control.

THE FOLLOWING STANDARD OPERATING CONDITIONS FOR RESIDENTIAL/COMMERCIAL REVERSE OSMOSIS SYSTEMS MUST BE MET FOR WARRANTY TO BE VALID.

	Water Pressure	pH Range	Maximum TDS	Water Temp
Standard System	40-80 psi	2-11	2000 ppm	40-100 F

GROWONIX RETURN POLICY

MERCHANDISE RETURN DETAILS AND PROCEDURE:

If any merchandise was defective —we will refund the full purchase price upon receiving and reviewing the merchandise returned in undamaged condition.

RMA NUMBER:

You must first obtain a Return Merchandise Authorization (RMA) number from GrowoniX.com. Any products sent to GrowoniX without an RMA number will not receive a refund and may be returned to the sender at their expense.

All refund amounts will be based on the manufacturer's warranty and GrowoniX return policy. Refunds will be issued back using the payment method you used when you placed your order. Refunds take up to 3-5 business days to process once we receive the return.

PACKAGING:

Please kindly re-pack the product in its original box, or a box of equivalent strength. The unit should be packed in the same manner as it came to prevent damage in shipping. Please return everything that was in the original box, including any free items if applicable. Be sure to drain out all water from wet systems and parts and wrap them in plastic bags before packing.

RETURN TO:

We will provide you with an GrowoniX warehouse address for return merchandise when we issue the RMA number.