Booster Pump Installation & troubleshooting guide

The booster pump comes with the following components and works as follows:

1. **The tap water runs thru an in-line sediment filter to keep dirty water from going into the pump.**
2. **Then thru an in-line check valve to stop any reverse pressure to the incoming PSI.**
3. **Then the water runs into and out of the pump.**
4. **From there the water runs thru a High Pressure Switch which has an adjustment screw and allows you to adjust pressure with the provided allen wrench.**
5. **From there the water runs through a Union T. One side runs into the PSI gauge and then into your RO system, while the other side connects to a Brass Control Needle Valve.**
6. **The Brass Control Needle Valve is used to balance the pressure properly by recirculating the water. This adjustment stops the pump from turning on and off in a rapid manner.**

When you sent up the pump for the first time make sure you have good water access to the pump. Do not use a standard Saddle Valve connection, as this has too small of a hole to allow sufficient water to be pulled into the pump.

Next, you do need to know your current PSI. You can always take the PSI gauge from this Unit, attach it to your feed line and put a ball valve on the end. When the ball valve is closed, the gauge will give an accurate reading, when it is open the water is flowing thru the gauge, the readings are not relevant as it is not a flowmeter.

Next set the High Pressure switch. Put a ball valve on the tubing that feeds into the unit. This allows you to set the high pressure switch properly. Use the allen wrench to adjust the pressure so the pump shuts off when either you hit 15 PSI

greater that Existing PSI (but not more than 60PSI). This is the PSI Reading of the gauge when pump shuts off leaving the tubing pressurized. (This is a booster pump, not a delivery pump, crank up too high and troubles begin. Do not try to overwork the pump (for example do not try to get 60PSI when incoming PSI is only 30 … set high pressure switch at 45PSI.)

The RO system works like this … The RO unit make water until the RO production "stops" because the pure water has nowhere to go (ie with a ball valve or float valve or pressure tank), when that happens, the pressure build up in between the RO water "Stop" and the RO Membrane. On this tubing line is an ASOV. When the Pure RO water line gets pressurized, the ASOV valve closes and stops the water feeding into the membrane housing. If no water can come into the RO unit, then pressure builds up between the unit and the pump. The High pressure switch then senses the pressure and shuts down the electric to the pump. Pretty straight forward if you think about it!

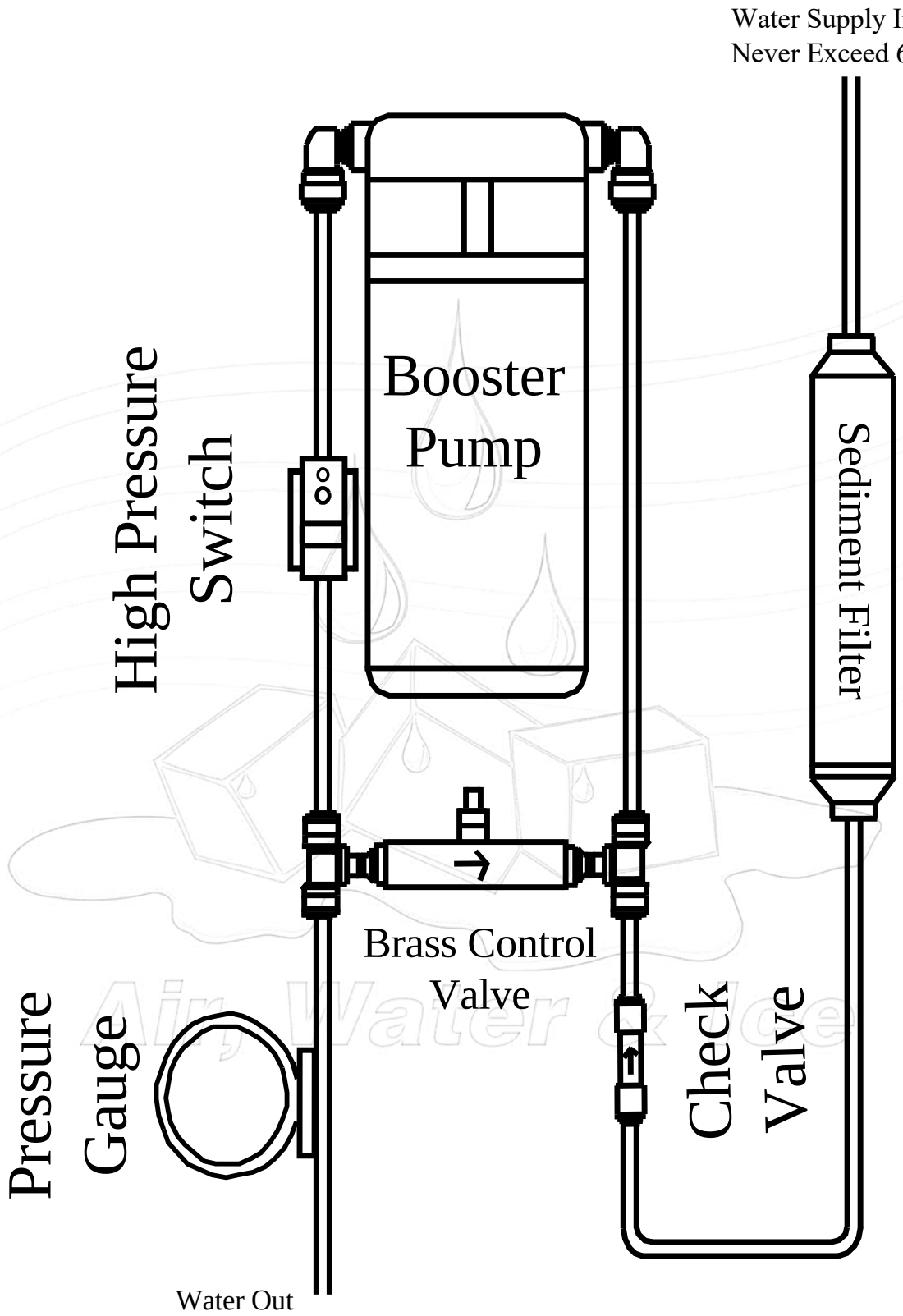
What are the things that can cause the pump to not shut down correctly?

A. **The pump is set too high and in overpowering the RO's ASOV and Fast Flush, thus water is forced through the unit and out the waste water line. So you must know your existing PSI and High Pressure Switch set properly to make sure you are not overpowering the RO system.**
B. **The ASOV has something stuck inside thus is not closing down properly, so the valve cannot close properly. To fix, while making RO water, open & close the fast flush rapidly a few times while thumping on the ASOV will normally solve that issue.**
C. **The Fast Flush valve is not properly closed (Black handle in the perpendicular position) … if the valve is left open, then no back pressure in put on the membrane to make RO water … if no RO water is being produced that means no pressure on the ASOV … … so the ASOV does not function properly (as there is no backpressure is created) …. Thus no pressure builds up to trigger the high pressure switch to kick in … so the**

pump continues to run and all the water goes down the drain. To FIX: close the Fast Flush!

D. **The Membrane is fouled out…. When this happens, no RO water is water is not stopped from coming into the unit thus just runs down the drain line, so the same chain of events as in "C" above occur. FIX: Replace the membrane.**
E. **Sometimes the Brass Control Valve need to be tweaked to stop the pump from turning on and off rapidly. This is common if you have long tubing lines and or have any evaporation in you storage system. FIX: Open slowly to get the correct balance.**
F. **Sometimes the Fast Flush flow restrictor fails, or is left open in error or gests something stuck in it so does not close properly. FIX: Open & close the fast flush multiple times while making water to clear any blockage. If that does not fix it, then replace the Fast Flush Flow restrictor.**
G. **Maybe the ASOV has failed. A good way to test the system is to remove the membrane and put cap back on, then and unplug the pump. Now turn on the water to the system (this test will work with only 30PSI) . Water should come out the RO line and water should come out the waste water line… now close off the RO line output and after a couple of minutes the ASOV should kick in and the no more waste water. FIX: replace the ASOV.**
H. **If Step G works …. Then leave the membrane out and turn on the pump and repeat … pump should shut off also, if the pump does not shut off FIX: adjust the high pressure switch and or the brass control valve until it does shut off.**

AIR WATER ICE, LLC
Installation Diagram
Booster Pump Power Station



HEADON®

DIAPHRAGM PUMP
WE-P6010

SPECIFICATIONS

MODEL NUMBER: WE-P6010

PUMP DESIGN: positive displacement three chamber diaphragm pump

MOTOR: permanent magnet

VOLTAGE: 36VDC

PRESSURE SWITCH: none

LIQUID TEMPERATURE: 65 ° C (149 ° F) max.

PRIME: self-priming up to 2 meter

RUNS DRY WITHOUT DAMAGE

PORTS: 3/8"-18 NPT female

NET WEIGHT: 1.85 kg (Plastic plate) 1.93 kg (Iron plate)

DUTY CYCLE: continuous

TYPICAL APPLICATIONS: R.O. booster pump and water delivery

BYPASS: 125psi

CERTIFICATION: CE & SASO

DIAPHRAGM PUMP

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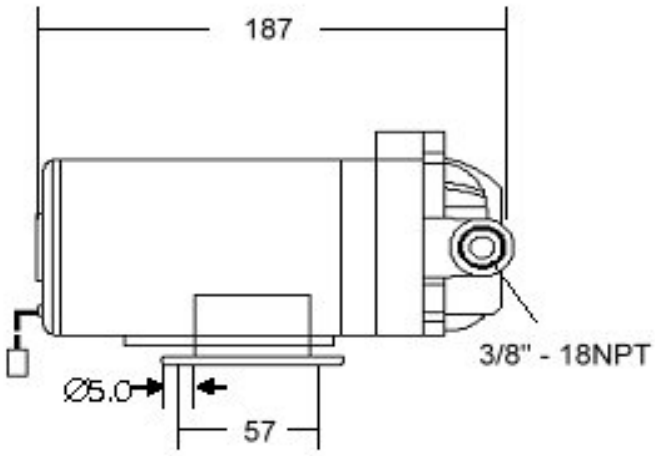
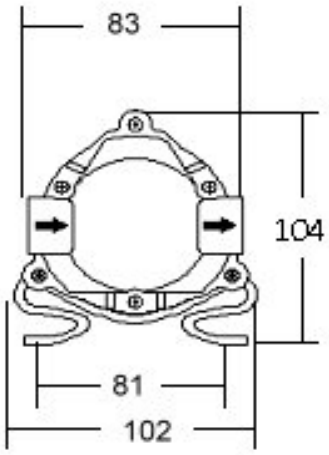
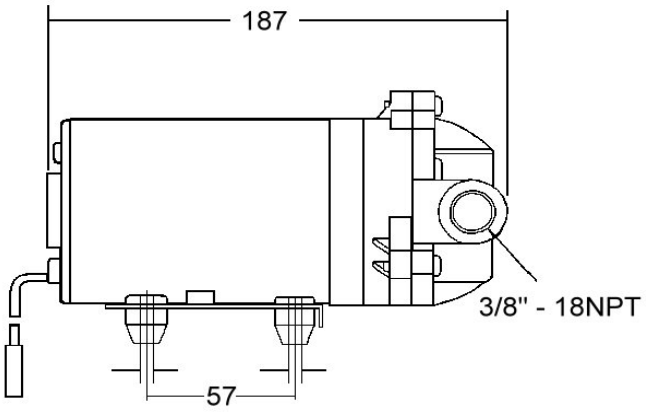
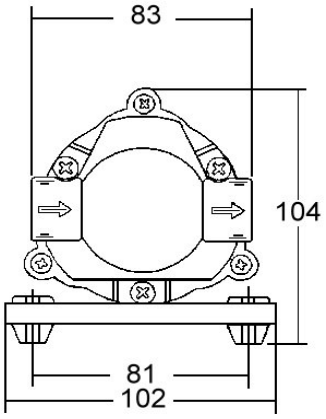








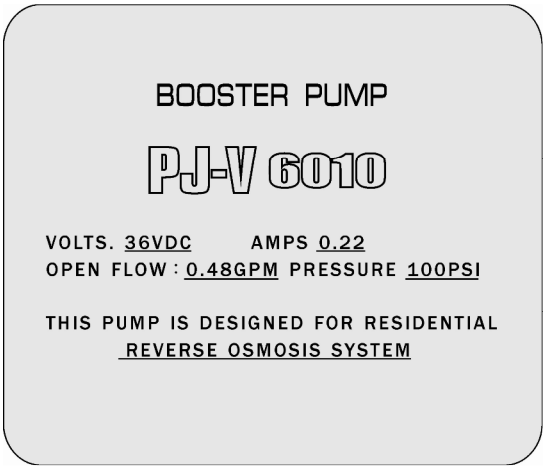
(UNIT : mm)

DIMENSIONS

HEADON®

DIAPHRAGM PUMP
WE-P6010

INLET : 8 psi		
PRESSURE (psi)	FLOW (L/min)	CURRENT (amps)
0	2.70	0.175
10	1.90	0.210
20	1.70	0.275
30	1.55	0.330
40	1.48	0.400
50	1.40	0.450
60	1.35	0.510
70	1.28	0.565
80	1.20	0.620
90	1.00	0.670
100	0.66	0.730
128	0	0.878
ALL DATA BASED ON TESTING WITH WATER		
VOLTAGE (VOLTS): 36VDC /1.5A / Transformer		
NOTE: PERFORMANCE WILL VERY WITH VARIATION IN SERVICE VOLTAGE		
AND TRANSFORMER OUTPUT		



DIAPHRAGM PUMP

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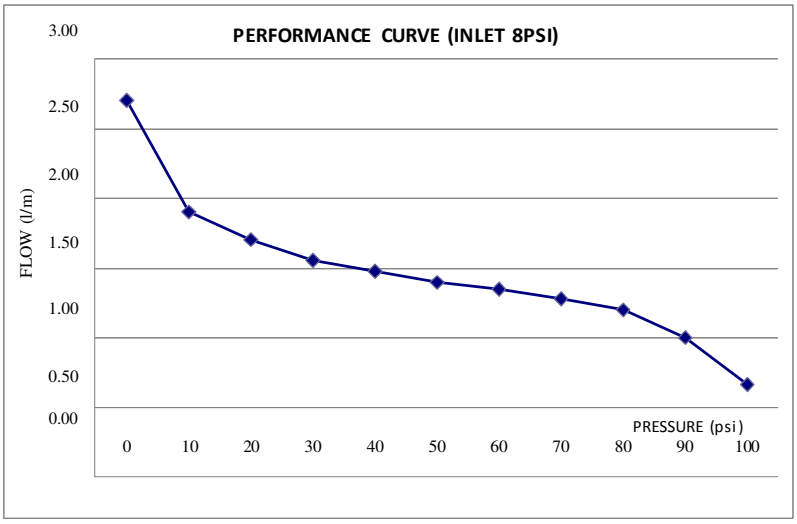
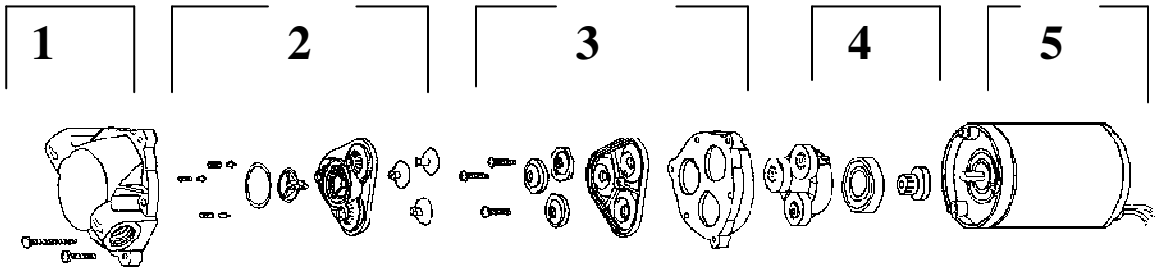


THIS TEST IS BASED ON RUNNING CONTINUOUSLY WITH AN AMBIENT TEMPERATURE OF 26 ° C IN STILL AIR



1	UPPER HOUSING
2	BYPASS VALVE AND DISCHARGE VALVE ASSEMBLY
3	DIAPHRAGM AND PISTON COMPONENTS
4	DRIVE ASSEMBLY
5	MOTOR ASSEMBLY (LESS BASE PLATE)

DISASSEMBLY