

## How to Install our Automatic Air Bleeder on any Portable Hot Tub

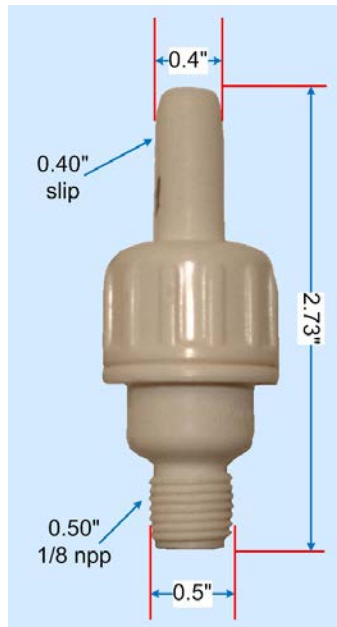


Figure (1) Automatic Air Bleeder Valve (AABV)

- Step 1) Find a rigid PVC pipe or pipe fitting [Figure (2)] as close as possible to the heater manifold. The AABV can be installed before or after the heater manifold. The AABV must be installed on the Pressure side of the pump.



Figure (2) Rigid PVC Elbow

- Step 2) Using a 7/16" drill bit (drill bit size 0.4375" or 7.4mm [Figure (3)]), drill a hole in the rigid PVC pipe as shown in Figure (4).



Figure (3) Drill Bit 7/16"



Figure (4) Drilled Rigid PVC Elbow

Step 3) Using a ¼ NPT (National Pipe Thread) thread cutter [Figure (5)], form the threads in the hole by rotating clockwise.



Figure (5) Thread Cutter

Step 4) Apply Silicone or Teflon Tape to the threads of the AABV [Figure (1)].

Step 5) Install the AABV into the threaded hole of the PVC pipe or fitting [Figure (6)] by rotating clockwise until it stops.



Figure (6) AABV Installed in Rigid PVC Elbow

Step 6) Step (1) through Step (5) are not necessary if you instead use an ABV140 as shown Figure (7). The ABV140 can be installed before or after the heater manifold on the pressure side of the pump (Pressure side of the pump is the discharge or output of the pump). Use Steps (7) and (8) OR Step (9) to complete your installation.



Figure (7) ABV140 - 2" slip X 2" slip X ¼ NPT Tee

Step 7) Install the flex tube on the AABV [Figure (8)]. The Flex tube size with I.D. 0.375" is an industry standard used to connect the air control of your spa to the air manifold and to the air line of any water jet in your spa.



*Figure (8) Flex Tube Installed on AABV*

Step 8) Install the other open side of the flex tube to an air manifold located in the plumbing of your hot tub [Figure (9)]. Make sure the hose bib on the manifold is drilled and not plugged. In general, all hot tubs made after the mid-1980s are provided with similar air manifolds.

*Figure (9) Flex Tube Installed in Air Manifold*



Step 9) If you cannot find an air manifold in your spa plumbing, you can drill a  $\frac{3}{4}$ " hole in the spa shell or in the filter canister using a hole saw (**Do not use a large drill bit to drill the hole, you may crack the spa shell**). Install an Air Bleeder Fitting (ABF) Figure (11) in the drilled hole of your spa. Make sure the ABF is installed higher than the AABV to allow the air trapped in the heater chamber to escape from AABV through the ABF out to the Atmosphere. You may use Silicone to seal the ABF to the spa shell or filter canister. IMPORTANT: Do NOT cap or bend the flex tube connecting the AABV to the ABF.



Figure (10) 3/4" Hole Saw



Figure (11) ABF Air Bleeder Fitting with Flex Tube Installed