



# Arsenic Filtration System Installation and Operating Instructions Model AS-301E

## Specifications

Pressure Range:	2.1–8.62 bar (30–125 psi)
Temperature Range:	4.4–37.8°C (40–100°F)
Service Flow Rate @60 psi (4.1 bar):	2.3 Lpm at 4.1 bar 0.6 gpm
Rated Service Life:	3,785 L (1000 gallons)
Dimensions:	394 mm x 133 mm x 356 mm (15.5 in. x 5.25 in. x 14 in.)
Weight (filled with water):	8.6 kg (19 lbs.)

## Parts Included

- Filter system with filter cartridges
- Installation hardware (mounting screws, saddle valve, fittings)
- 6.35 mm (1/4-inch) tubing
- Lead-free faucet

<p><b>Tools and Materials Required:</b></p> <ul style="list-style-type: none"> <li>• Safety Glasses</li> <li>• Hand or electric drill (cordless recommended)</li> <li>• File</li> <li>• Phillips head screwdriver</li> <li>• 2 Adjustable wrenches</li> <li>• Tube cutters or utility knife</li> </ul>	<p><b>If sink does not have hole for separate faucet:</b></p> <ul style="list-style-type: none"> <li>• Center punch</li> <li>• 19 mm (3/4-inch) drill bit</li> </ul>
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## Precautions

**⚠ WARNING:** Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

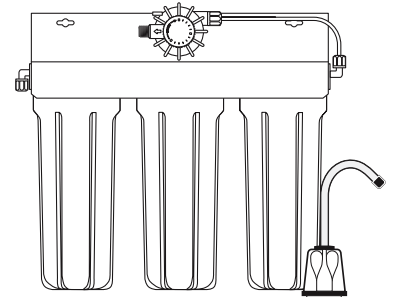
**⚠ CAUTION:** Filter must be protected against freezing, which can cause cracking of the filter and water leakage.

**⚠ CAUTION:** The rubber o-ring provides the water-tight seal between the cap and the bottom of the housing. It is important that the o-ring be properly seated in the groove below the threads of the housing or a water leak could occur.

**⚠ CAUTION:** To prevent costly repairs or possible water damage, the sump of plastic housings must be replaced every five years for clear, and ten years for opaque. If sump is older than recommended, replace immediately. Date sump for reference and indicate replacement date.

### NOTE:

- For cold water use only.
- Make certain that installation complies with all state and local laws and regulations.
- The contaminants or other substances removed or reduced by the selected cartridges are not necessarily in your water. Ask your local water municipality for a copy of their water analysis, or have your water tested by a reputable water testing lab. See water pre-treatment requirements in Arsenic Information sheet.



- After prolonged periods of non-use (such as during a vacation) it is recommended that the system be flushed thoroughly. Let water run for 5-6 minutes before using.
- The filter cartridges used with this system have a limited service life. Changes in taste, odor, and/or flow of the water being filtered indicate that the cartridges should be replaced.

## Installation

- For standard under-sink installation on 10 mm (3/8-inch) cold water line.
- Please read all instructions and precautions before installing and using your Arsenic Filtration System.
- Numbered diagrams correspond with numbered steps.

### 1. Installing the Saddle Valve

diagram on page 2

**⚠ WARNING:** Use of a hand drill is recommended. To protect yourself from serious injury or fatal shock when using an electric drill, be sure the drill and the outlet it is plugged into are properly grounded. When using a drill, follow the manufacturer's guidelines and procedures.

**NOTE:** Saddle valve must be installed on a 51 mm (2-inch) long, straight-walled section of 10-22 mm (3/8-inch to 7/8-inch) steel, brass, copper, or PVC pipe.

- Turn off cold water supply and (B) turn on nearest faucet before starting installation. Place a tray or towels under the cold water line to catch excess water.
- Drill a 3 mm (1/8-inch) hole in cold water line. Remove any burrs with sandpaper or file.
- Turn handle on the saddle valve to expose lance no more than 5 mm (3/16-inch) beyond black rubber gasket.
- Place valve body over hole in cold water line so lance fits into hole.
- Attach back plate of clamp and tighten bolts evenly and firmly so brackets are parallel.
- Turn valve handle clockwise to closed position and leave closed until installation is complete.

### 2. Selecting the Faucet Location

Diagram on page 2

**NOTE:** The drinking water faucet should be positioned with function, convenience, and appearance in mind. An adequate flat area is required to allow faucet base to rest securely. The faucet fits through a 19mm (3/4-inch) hole. Most sinks have pre-drilled 35 or 38mm (1 3/8-inch or 1 1/2-inch) diameter holes that may be used for faucet installation. If these pre-drilled holes cannot be used or are in an inconvenient location, it will be necessary to drill a 19mm (3/4-inch) hole in the sink to accommodate the faucet.

**⚠ CAUTION:** This procedure may generate dusts which can cause severe irritation if inhaled or come in contact with the eyes. The use

of safety glasses and respirator for this procedure is recommended.

**CAUTION:** DO NOT ATTEMPT TO DRILL THROUGH AN ALL-PORCELAIN SINK. If you have an all-porcelain sink, mount the faucet in pre-drilled sprayer hole or drill through countertop next to sink.

**CAUTION:** When drilling through a countertop make sure the area below the drilled area is free of wiring and piping. Make certain there is ample room to make the proper connections to the bottom of the faucet.

**CAUTION:** Do not drill through a countertop that is more than 25mm (1-inch) thick.

**CAUTION:** Do not attempt to drill through a tiled, marble, granite or similar countertop. Consult a plumber or the countertop manufacturer for advice or assistance.

(A) Line bottom of sink with newspaper to prevent metal shavings, parts, or tools from falling down drain.

(B) Place masking tape over the area to be drilled to prevent scratches if drill bit slips.

(C) Mark hole with center punch. Use a 6mm (1/4-inch) drill bit for a pilot hole, then, using a 13mm (3/4-inch) drill bit or hole saw, drill a hole completely through the sink. Smooth rough edges with a file.

### 3. Mounting the Faucet

(A) Remove wing nut **C** and metal washer **B** from the threaded shaft of the faucet. Leave the black rubber washer **A** on the threaded shaft.

(B) Slide the threaded shaft of the faucet into drilled hole.

(C) From under the sink, slide the metal washer on and thread on the wing nut. Tighten wing nut by hand until tight. It may be necessary to have a second person hold the faucet while tightening the wing nut.

**NOTE:** Do not overtighten the wing nut. Hand tighten only. Do not use pliers or wrench to tighten.

### 4. Mounting the System

(A) Center system between water supply adapter and drinking water faucet.

**NOTE:** Allow 38 mm (1½ inches) clearance below system to enable filter cartridge changes.

(B) Install mounting screws at least 380 mm (15-inches) from cabinet floor and 235 mm (9¼ inches) apart. Leave enough space [approximately 13 mm (1/2-inch)] between the head of the screw and the wall to slip system onto screws.

(C) Place system over screws on wall and slide sideways. Tighten screws.

**CAUTION:** Make certain system is firmly attached to wall to prevent it from falling and possibly being damaged.

### 5. Connecting the Faucet (diagrams on page 3)

**CAUTION:** Do not over-tighten compression nut. Use caution not to bend or crimp tubes when securing.

(A) Locate compression nuts in installation kit and faucet package.

(B) Attach compression nuts to faucet stem and Effective Life Indicator (ELI) and hand tighten. Then loosen compression nut one full turn.

**NOTE:** If the compression nut should come apart, reference diagram 5A for correct reassembly.

### 6. Attaching Tube

(A) Attach tube to compression nut on faucet stem by inserting tube into the compression nut opening. Gently push the tubing until it comes to a stop.

**CAUTION:** Tube must be fully inserted in the compression fitting base to the tube stop on the faucet stem and on the outlet stem of the ELI.

(B) Turn the nut hand tight.

(C) Wrench tighten the nut 1½ to 2 turns.

**NOTE:** All nuts must be retightened when the system reaches projected operating temperature.

**NOTE:** A squeaking sound when tightening the nut is normal. If fittings are removed, Teflon® tape must be used for pipe threaded connections.

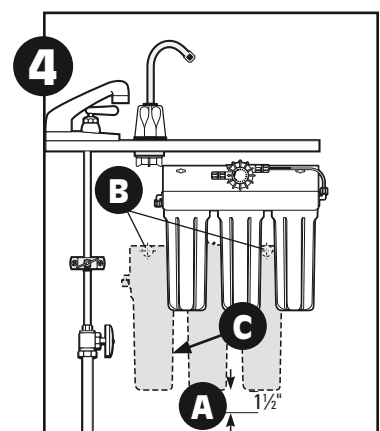
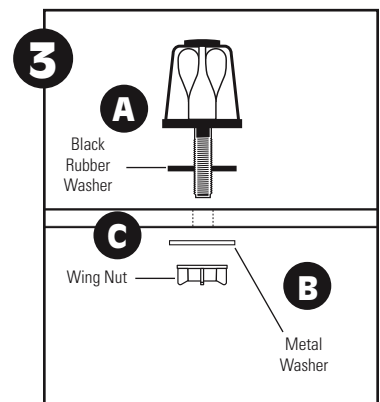
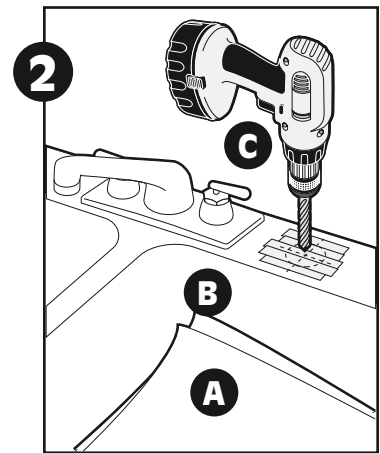
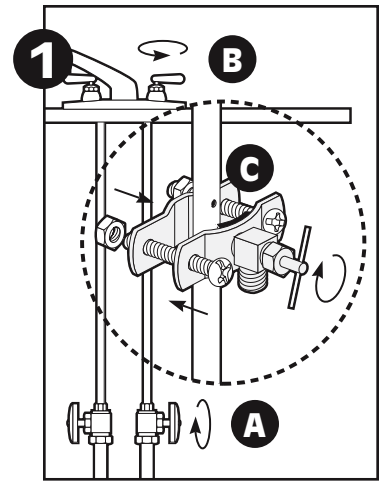
**NOTE:** Compression nut should come preassembled with ferrules inside. If nut should come apart, see figure 5A for proper reassembly

(D) Determine the length of tubing needed from the faucet to the ELI and cut the tubing. A slight sag in the lines will allow for some ease in installation. Insert the tubing into the compression nut on the ELI. Repeat steps 6B and 6C.

### 7. Connecting the Saddle Valve

(A) Determine the length of plastic tubing needed to connect the inlet (left) side of the filter with the saddle valve. Be sure to allow enough tubing to prevent kinking and cut the tubing squarely. Slide brass compression nut onto tubing, followed by plastic ferrule. The long, tapered end of the ferrule should face towards the end of the tubing. Place insert into end of tubing.

(B) Insert tubing into saddle valve and hand-tighten compression nut. Using a wrench, tighten nut 1 to 1½ turns.



## 8. Connecting Inlet Line to System

- A) Locate Compression Nut in installation kit package and attach to inlet fitting. Tighten the nut until it is hand tight and then loosen one full turn.
- B) Repeat steps 6B and 6C.

## 9. Setting the Effective Life Indicator

The effective life indicator is the black dial located on the center of the mounting bracket. Each white mark on the dial represents 378.5L (100 gallons). The START mark represents 4542.5L (1,200 gallons); however, the filter cartridges have an effective life of 3785.4L (1,000 gallons), so you will need to move the dial clockwise so that the indicator arrow lines up with the 3785.4L (1,000 gallons) mark (2 marks past the START mark).

**NOTE:** To prevent indicator malfunctions, only move the dial when the system is depressurized.

## 10. Putting the System into Operation

- A) Slowly turn on cold water supply.
- B) Press red pressure relief button on top of system.
- C) Make sure effective life indicator is set at 3785.4L (1,000 gallons).
- D) Rotate base of drinking water faucet counter-clockwise to "ON" position. Allow water to run for 5 minutes to flush air and carbon fines from filter cartridges. Check system for leaks before leaving installation.

**NOTE:** A drinking water cartridge may contain carbon fines (very fine black powder). After installation, flush the cartridge for 5 minutes to remove the fines before using the water. It is recommended that you run the tap at least 20 seconds prior to using water for drinking or cooking purposes.

**NOTE:** Initially, filtered water may appear cloudy. If you set a glass of water on a level surface, you should be able to watch the cloudiness disappear from the bottom of the glass upwards. This harmless cloudiness results from the release of trapped air within the cartridge and will disappear within a few weeks after installation.

**INSTALLATION IS NOW COMPLETE.**

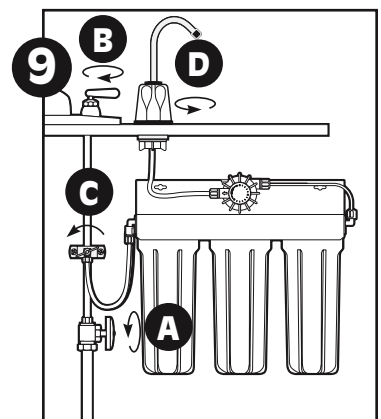
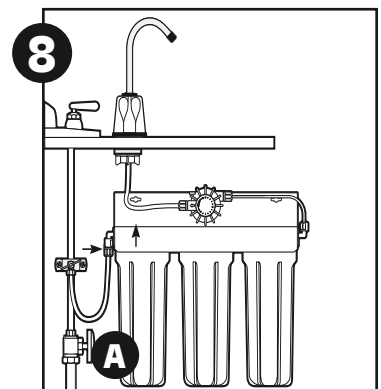
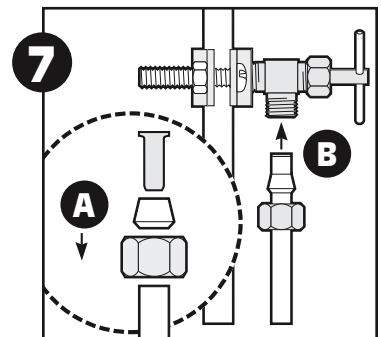
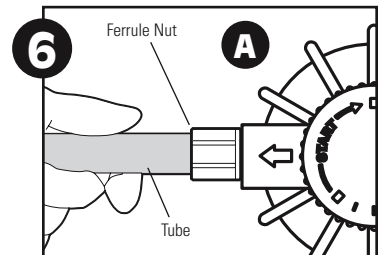
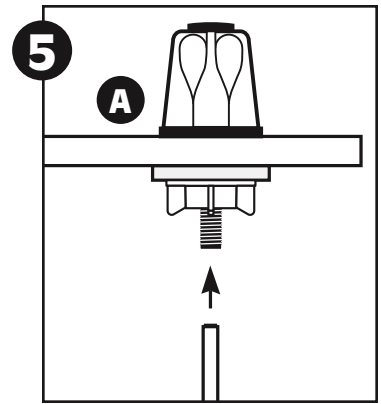
## Filter Cartridge Replacement

- Filter cartridges will last about 3785 liters (1,000 gallons) or twelve months before they need to be replaced. Filter cartridge life varies depending on filter life, usage, and/or water conditions. Changes in taste, color, and flow of the water being filtered indicate that the cartridge should be replaced.
- Read all instructions before replacing filter cartridges.

1. Turn off cold water supply to system and press red pressure-relief button.
2. Unscrew and remove bottom of filter housing. Locate and remove large o-ring, wipe clean of lubricant, and set aside. Repeat for second and third housings.
3. Discard used filter cartridges. Using a non-abrasive sponge or cloth, scrub the bottom of filter housings, o-ring grooves, and caps with dish soap and warm water. Rinse thoroughly. Fill bottom of each housing 1/3 full with water. Add 14.7ML (1 tablespoon) of household bleach and scrub to disinfect.

**CAUTION:** Read "WARNING" information on the bleach container before using its contents.

4. Lubricate o-rings with clean silicone grease. Insert each o-ring in groove and press into place.  
**NOTE:** This step is important to ensure a proper housing seal. Make certain each o-ring is seated level in its groove or a leak may occur.
5. Screw bottom of housings with bleach water onto caps without filter cartridges and hand-tighten. **DO NOT OVER-TIGHTEN.**
6. Turn on water supply. Let faucet run for about 10 seconds, then turn off faucet and let stand for 20-30 minutes.
7. Turn on faucet and allow bleach water to run out (about 3-5 minutes).
8. Turn off water supply to system and press pressure-relief button. Remove bottom of housings and empty out water.
9. Insert each filter cartridge in bottom of appropriate filter housing.
10. Screw bottom of housings onto caps and hand-tighten. **DO NOT OVER-TIGHTEN.** Make certain cap standpipe slips into cartridge.
11. Reset effective life indicator to 1000 gallons (see instructions under "Setting the Effective Life Indicator" on Page 3).
12. Turn on water to system and press pressure-relief button. Let faucet run for 5 minutes to remove trapped air and carbon fines. Check system for leaks before leaving installation.



**NOTE:** A drinking water cartridge may contain carbon fines (very fine black powder). After installation, flush the cartridge for 5 minutes to remove the fines before using the water. It is recommended that you run the tap at least 20 seconds prior to using water for drinking or cooking purposes.

**NOTE:** Initially, filtered water may appear cloudy. If you set a glass of water on a level surface, you should be able to watch the cloudiness disappear from the bottom of the glass upwards. This harmless cloudiness results from the release of trapped air within the cartridge and will disappear within a few weeks after installation.

## Troubleshooting

### Leaks between cap and bottom of filter housing

Turn off water supply and turn on drinking water faucet to release pressure in system. Remove bottom of housing. Clean o-ring and o-ring groove (located directly beneath threads of housing). Lubricate o-ring with silicone grease and replace securely into groove. Screw bottom of housing onto cap and hand-tighten. **DO NOT OVERTIGHTEN.** Turn on water supply and check for leaks.

### Leaks on system inlet/outlet connections

Turn off water supply and turn on drinking water faucet to release pressure in system. Remove tubing from fitting and make sure end of tubing is cut squarely and free of burrs. Reinsert tubing into fitting, making sure to push tubing to a hard stop. Hand tight compression nut first, then tighten 1 to 1½ turns for new compression nut. Tighten only 1/2 to 1 turn with wrench for previously tightened compression nut.

### Leaks on faucet/tubing connection

Turn off water supply, then turn on drinking water faucet to release pressure in system. Loosen and remove compression nut fitting on faucet stem. Make sure tubing is inserted firmly into end of faucet stem, then retighten compression nut with fingers until secure. Turn on saddle valve, then turn off faucet to check for leaks.

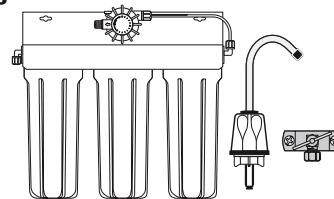
**NOTE:** If leaks persist, or if there are other leaks on system, turn off water supply. Call our Technical Support Department at 920.451.9301.

## Low Water Flow

1. Check flow at faucet. The AS-301E system should fill a gallon jug in approximately 2 minutes (1 liter in 30 seconds). Flow rates will vary with individual household water pressure.
2. Check filter cartridge installation. Make certain all filter cartridges are properly oriented in filter housings.
3. Check flow through empty system. To do this, turn off water supply and press the red pressure relief button. Then remove filter cartridges from housings and screw housings back onto caps. Turn on faucet to check flow through empty system. Flow should be about one to two gallons per minute. If flow is less than 1.5 liters per minute, call Technical Support at 920-451-9301.
4. If flow through empty system is adequate, place one filter cartridge in system at a time and check flow to make sure cartridge is not clogged. Replace clogged cartridge if necessary.

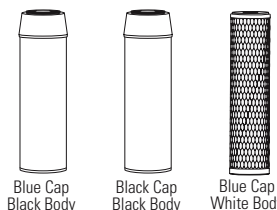
## Replacement Filter Cartridges

1. 155634 -43 EPM-10
2. 255401-43 AS-CK [Arsenic Cartridge Kit Includes one IMS-10 (blue cap) and one GFM-10 (black top)].



## Replacement Parts

3. 153017 Blue housing bottom
4. 151121 O-ring (not shown)
5. 244440 Faucet
6. 144730 Saddle Valve
7. 144312 Effective Life Indicator



## PENTEK® LIMITED WARRANTY

Pentek warrants to the original owner (under normal use): all products and parts to be free from defects in material and workmanship for a period of one (1) year. Notwithstanding the foregoing, (a) the warranty period for sumps shall be a period of five (5) years and the warranty period for quick change heads shall be a period of two (2) years. Any replacement products furnished will be free from defects in material and/or workmanship for the remainder of the original warranty period, or 30 days, whichever is longer. This warranty does not cover: (1) cartridges, filter bags, media, UV bulbs, and accessories (2) defects not reported within the above time period, (3) items manufactured by other companies, (4) problems arising from failure to comply with Pentek instructions, (5) problems and/or damage arising from acts of nature, abuse, misuse, negligence or accident by any party other than Pentek, (6) problems and/or damage resulting in whole or in part from alteration, modification, repair or attempted alteration, modification or repair by any party other than Pentek, (7) noncompliance with applicable codes/ordinances.

If a defect in workmanship and/or material in a product or part covered by the warranty should arise, Pentek, at its sole discretion, will repair or replace the defective product or part (Pentek may consider, in good faith, the customer's preference).

All claimed defective product must: (1) be authorized for return by Pentek with an RGA number (2) include proof of the purchase date of the product or part (3) returned to Pentek prior to the expiration of the warranty date, at the customer's expense, shipment pre-paid, (4) be accompanied by a letter detailing the Model Number, Serial Number (if any), and a brief description of the problem.

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Pentek's maximum liability under any provision of this Limited Warranty shall be limited to the amount actually paid for the products or parts.

NOTE: Because some states do not allow the exclusion or limitation of incidental or consequential damages, the above limitations or exclusions may not apply.

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