



AIRaider™

Instruction & Installation Manual

All Residential & Small System Models

TABLE OF CONTENTS & FIGURES

1. PRE-INSTALLATION	3
1.1 Safety Matters.....	4
1.2. Water Flow Requirements.....	5
1.3. Unpacking and Locating System Components.....	5
1.3.1. Unpack All System Components.....	5
1.3.2. Locate All Components.....	5
1.4. Use Qualified Technicians.....	5
1.5. Full Water Test.....	5
1.6 ASV Overflow and Alarm System.....	6
2. INSTALLATION INSTRUCTIONS	7
2.1. System Location.....	8
2.2. Readyng the AIRaider for Installation.....	8
2.3. Plumbing Hook-up.....	11
2.4. Electrical Hook-up.....	13
2.5. Automatic Shut-off Valve Control Panel Installation and Valve Test	16
2.6. Vent Line Installation.....	17
2.7. Remote Air Intake.....	18
2.8. System Start-up.....	19
2.9. System Check.....	20
3. RETESTING	21
4. MAINTENANCE	21
4.1. Six Month Service (recommended).....	21
4.2. Annual Service (required).....	22
4.3 Recommended Addiional Service	22
5. TROUBLE SHOOTING	23
LIMITED WARRANTY	24
APPENDICES A.1. Pump Specification, 433-S50 Systems, pump model 20DOMO5121+1.....	insert

Table of Figures

Figure 1 - ASV System - Installed.....	6
Figure 2 - ASV System Components.....	6
Figure 3 a,b,c - Typical Systems (433-S, 433, 321).....	7
Figure 4 - Electrical Hookup to Power Supply.....	8
Figure 5 - Pump and Bypass Assembly	9
Figure 6 - Installed 433 ND System.....	10
Figure 7 - Plumbing Installation 433-S ND System.....	11
Figure 8 - Plumbing Installation 433-S50.....	12
Figure 9 - Wiring Diagram 321ND and 433ND 115V.....	14
Figure 10 - Wiring Diagram 433-S50(X)ND and 321-S50X 115V (½HP Submersible Pump).....	15
Figure 11 - Vent Line Connection.....	17
Figure 12 - Vent Line Installation (2 inch).....	17
Figure 13 - Vent Line Installation (3 inch).....	18
Figure 14 - Air Filter.....	18
Figure 15 - Air Intake Connection.....	18
Figure 16 - Installed AIRaider (433-S50).....	19

1. Pre-Installation

WARNING: FAILURE TO INSTALL AND MAINTAIN THE UNIT ACCORDING TO THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE.

The AIRaider Systems are diffused bubble aeration systems for the removal of radon and other VOCs from residential and municipal water supplies. This installation/operation manual is designed to guide professionals through the safe and proper installation of the AIRaider Systems.

Before beginning the installation of the AIRaider System, there are 5 items to be considered. They are:

1. Safety
2. Installation Site Requirements
3. Inspection of System Components
4. Necessity for Qualified Technicians
5. Knowledge of all Contaminants in the Water

1.1. Safety Matters

Safety is the most important step in the installation process. Never perform any step of the installation that you are not qualified to perform (i.e. Electrical or plumbing hook up). It is important that you read through the entire manual prior to beginning the installation. When performing the installation, work slowly and deliberately. Follow all instructions carefully and never take shortcuts. Our team of technicians is available to answer your questions at 800-355-0901.



WORK SAFELY!

1.2. Water Flow Requirements

The standard residential AIRaider Systems are designed for use with water flows up to 20 gallons per minute (GPM).^{*} The system comes equipped with an outflow ball valve. If higher/ lower system outflow is needed, open/close the ball valve by the amount necessary to balance the system. The well pump output must produce at least 1 GPM more than the output of the AIRaider (i.e. well output = 8 GPM ; AIRaider™ outflow setting = 7 GPM) for proper system performance. If the well pump output is less than the system output the AIRaider will run dry and possible damage may occur. To prevent this from occurring the water flow rate must be determined before the system is installed.

**Some AIRaider Systems are not recommended for high flow residential properties. All repressurization systems (except for the AIRaider™ EZ⁹⁵, 433-S50 & 433-S50X) are sold separately. Proper repressurization system sizing is required to meet water flow needs. Consult manufacturer if assistance is needed for system selection.*

1.3. Unpacking and Locating System Components

1.3.1. Unpack All System Components

Remove all packing material and discard appropriately away from the work area.

1.3.2. Locate All Components

Check to ensure all components are intact and included in shipment.(See Figure 5 and 8)

Included component list (may vary with order):

- Tank Assembly with External Plumbing
- Control Panel Wiring, Float Switches and Pressure Switch^{*}
- Submersible Pump^{**} and Blower
- Installation Kit – Manual, Vent Connection Coupling, ASV Overflow Control and Alarm System, etc.

^{*} Included on 321-S50X, 433-S50, and 433-S50X models.

^{**} Mounted internally on 321-S50X, 433-S50 and 433-S50X Systems.

1.4. Use Qualified Technicians

A Licensed Plumber, Electrician, Contractor and/or Certified Water Treatment Specialist may be required to install the AIRaider System in accordance with the installation instructions. All wiring must be performed in accordance with the National Fire Protection Association's (NFPA) "National Electrical Code, Standard #70"-current edition for all commercial and industrial work. All wiring must be performed by a qualified and licensed electrician. Check your Local and State Code and Licensing requirements. Failure to follow the instructions may lead to poor system performance and/or possible system damage.

NOTICE: The Installation must comply with all applicable Local and State Codes and NFPA National Electrical Code, Standard #70!

1.5. Full Water Test

A full Water Sample Analysis **must be performed*** to determine the quality of the water that requires treatment. In many water supplies, contaminants other than radon are present and may need to be pre-treated in order for the AIRaider to work properly. The AIRaider System is only effective for the removal of radon and some other VOCs. The Aeration Process employed by the AIRaider System and other radon removal systems can worsen problems due to iron or manganese contaminants in the water supply.

***For optimal removal of radon or other VOCs, other contaminants such as iron or manganese must be removed before the water supply enters the AIRaider System. Installation of a sediment filter is highly recommended as a pre-treatment of the water supply. The filter should be routinely cleaned or replaced.**

FAILURE TO REMOVE OTHER CONTAMINANTS INCLUDING SEDIMENT CAN REDUCE SYSTEM EFFECTIVENESS AND MAY RESULT IN SYSTEM DAMAGE , COMPONENT MALFUNCTION, PROPERTY DAMAGE, AND PERSONAL INJURY.

1.6. ASV Overflow and Alarm System

An Auto Shutoff Valve (ASV) Water Sensor and Alarm System has been installed in this AIRaider to provide overflow detection. If an overflow is detected, an electrically powered, motorized ball valve will automatically shut off the AIRaider's water supply and prevent potential further water overflow. The ASV controller features an audible alarm and a flashing light to alert residents that water was detected outside of the system and that the water supply valve was closed in response.

The ASV system includes the following components: (Figures 1 & 2)

- **Motorized Ball Valve (Factory Installed on AIRaider)**
- Control Unit
- Water Sensor Pad
- Power Adapter
- Control Harness
- Mounting Hardware
- Installation Instructions



Figure 1
ASV System - Installed



Figure 2
ASV System Components

- 1.6.1. Remove the ASV system's control panel, water sensor, control harness, and power adapter. Determine a suitable mounting location for the control panel and water sensor in relation to the planned location of the AIRaider unit, keeping mind of the length of the control harness and power adapter wiring.

2. Installation Instructions

OVERVIEW

Now you are ready to begin the installation process. The nine steps to properly install the AIRraider System are listed below. Read all components of each step prior to beginning the actual installation.

1. System Location
2. Readyng the System for Installation
3. Plumbing Hook-up
4. Electrical Hook-up
5. Mount and Connect ASV Control/Alarm Unit
6. Vent Line Installation
7. Remote Air Intake Installation
8. System Start-up
9. System Check



SAFETY TIP: Do Not undertake any step for which you are Not Qualified.



433-S50



433 & 433-1



321

Figure 3 a,b,c
Typical System

(Repressurization Systems not shown, sold separately on 321, 433 and 433-1)

INSTALLATION INSTRUCTIONS

2.1. System Location

When selecting the location for the AIRRaider™ System, five factors should be among those considered:

1. System Plumbing Hook-up. Find a location that will minimize the amount of plumbing necessary, this is typically in proximity to the well tank.
2. Electrical Hook-up. A dedicated 20 Amp, 110-120VAC circuit power supply is required for any AIRRaider system. This should be in the form of a dedicated junction box with conduit and a receptacle for plugging in the ASV power adapter. (Figure 4)

***Note: The AIRRaider must be hardwired to the dedicated circuit. It must NOT be connected to power with a flexible cord with a 3-prong grounding plug!**

3. Exhaust Line Venting. The location of the system must allow for outside venting of the system exhaust above the eave of the structure. The manufacturer requires that the exhaust pipe pitch back toward the system (see Section 2.6).

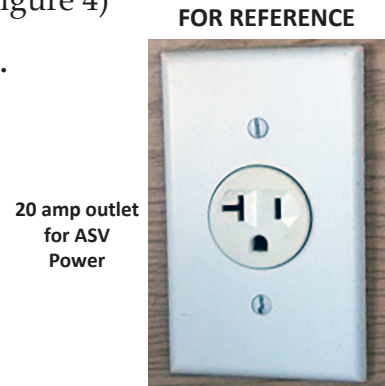


Figure 4
Electrical Hookup to Power Supply

4. Remote Air Intake. If the system must be installed in an area with questionable air quality (i.e. furnace room, garage, crawl space) then ducting from the air intake to a remote location having good air quality may be required.
5. System Must Be Level. The system should not be located on a significant slope as this may impede system performance.

Place the system in the location acceptable to the customer that maximizes the ease of installation by considering these five factors. All Local and State codes as well as any applicable AARST, EPA and/or State Radon standards must be adhered to when locating the AIRRaider (i.e. away from electrical panel, furnace, exits, etc.).

2.2. External Re-Pressurization Pump Installation

This section does not apply to Systems with integral pumps (321-S50X, 433-S50 & 433-S50X Systems).

1. If using a pump attach Mounting Bracket to wall as shown in Figure 5 (page 9). Note bracket hole height is specific to the pump. Adjust bracket height as required to place pump suction pipe centerline at the system outlet centerline as specified in Figure 5.

Note: Short horizontal pipe run from system outlet to pump inlet is optimal. If this pump location is impractical because of space constraints the pump may be located remotely at a higher location, but pump lift, pipe diameter, and equivalent pipe length must comply with limits specified in the pump installation instructions.

Do not mount pump lower than shown as removal of the pump for service may result in tank contents siphoning out onto the floor!

INSTALLATION INSTRUCTIONS

2. Install the Suction Check Valve provided with the pump into the pump inlet as shown in the pump installation instructions. This will prevent loss of pump prime and possible interruptions in the water supply to the house. Remove the priming plug from the pump and add the specified volume (See Pump Installation Instructions) of water to the pump. Either re-install the priming plug or install a $\frac{3}{8}$ " NPT x 2" long pipe nipple and attach a $\frac{1}{4}$ " NPT Pressure Gauge with with $\frac{1}{4}$ " x $\frac{3}{8}$ " FNPT Reducer to the pipe nipple (Figure 5).

3. Sit the pump onto the mounting bracket and connect pump inlet to system outlet. The system outlet is provided with a $\frac{3}{4}$ " Sharkbite Connection suitable for $\frac{3}{4}$ " Nominal Copper Tube or Pex Tube; insertion length into Sharkbite Fitting is 1". Additional fittings will be required to connect the tube to the 1" MNPT threaded connection on the pump used. Cut the tubing to the length required to align the pump base with the mounting holes in the pump mounting bracket. Bolt the pump to the mounting bracket.

4. With the System located as desired, install the pipe/tube from the pump discharge to the desired location of supply to house. At the house end a tee is required to accommodate supply to house and to System Bypass Connection. Fittings will be required to connect to the 1" MNPT threaded connection on the pump. Fittings required may vary with pump used. The optional Bladder Tank has a $\frac{3}{4}$ " MNPT threaded connection. A tee will be required if the bladder tank is installed, otherwise an elbow may be used at the same location. To facilitate removal of pump for service, a quick disconnect (sharkbite as illustrated, or pipe union) is recommended on the pump side of the required System Outlet Valve (normally open ball valve).

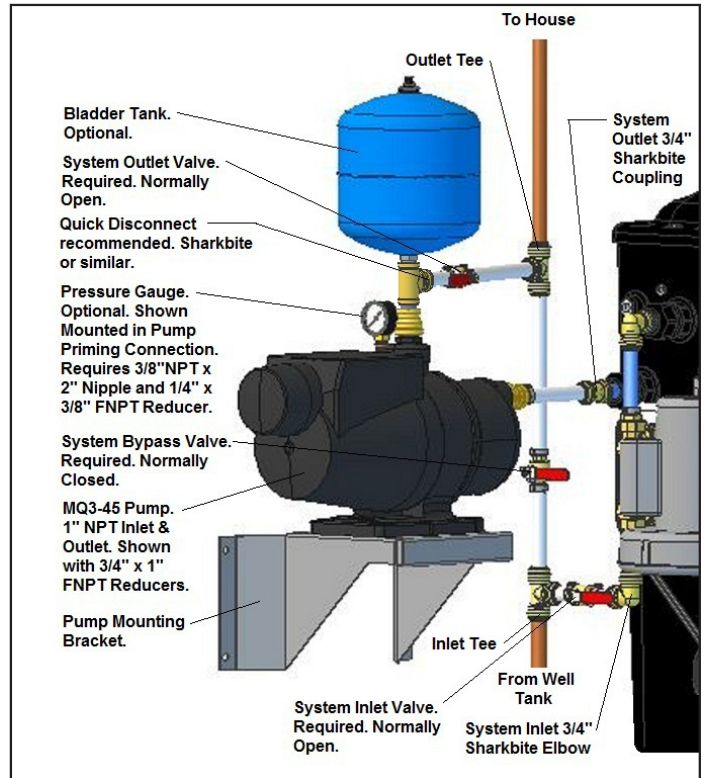


Figure 5
Pump and Bypass Assembly

INSTALLATION INSTRUCTIONS

5. Install pipe/tube from System inlet (Figure 5) to the desired location of the supply from the well tank. At the supply end a tee is required to accommodate supply from the well and the system bypass connection. The system inlet is provided with a $\frac{3}{4}$ " Sharkbite Elbow suitable for $\frac{3}{4}$ " Nominal Copper Tube or Pex Tube, insertion length into Sharkbite Fitting is 1". A System Inlet Valve (normally open ball valve) is required between the tee and Sharkbite Elbow.

NOTE: A System Inlet Valve (normally open ball valve) is required between the tee and Sharkbite Elbow.

6. Install the pipe/tube between the tees at the desired locations of the supply to house and the supply from well. A System Bypass Valve (Normally Closed Ball Valve) is required between the tees.

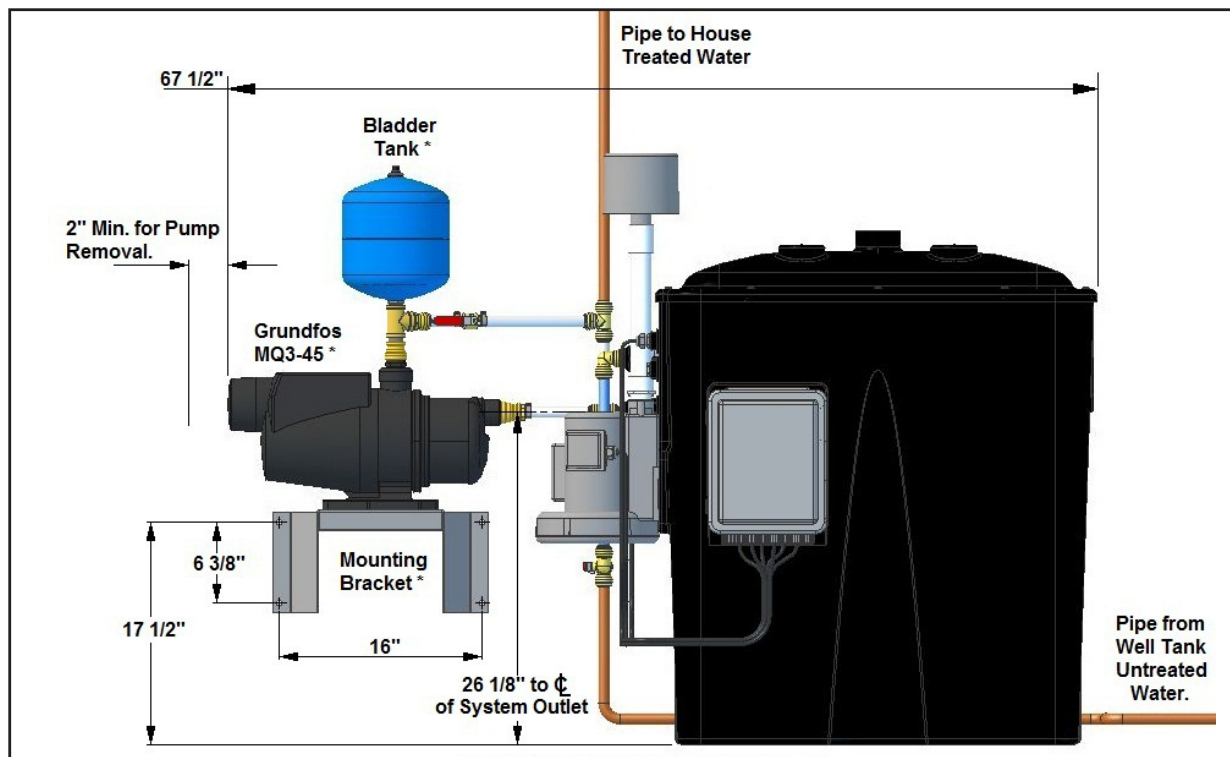


Figure 6
Installed 433 ND System

INSTALLATION INSTRUCTIONS

2.3. Plumbing Hook-up

All Plumbing should be performed in accordance with Local and State Codes by a Qualified Plumber.

1. Locate and shut off the water main valve located after the pressure tank on the house equipment.

2. Drain the water line.

3. Plumb the water line after the existing pressure tank and all other water treatment equipment into the Inlet Tee (or elbow) on the AIRraider unit.

NOTE: A System Inlet Valve (normally open ball valve) is required between the household plumbing and the Sharkbite elbow on the AIRraider (Equipped on all units with an integral bypass system or the S50X models)

4. Plumb the water line to the house into the Outlet Tee (Figure 5, 7 or 8, depending on System and Pump).

NOTE: A flow restrictor or gate valve in the water line to the house is required for balancing the system flow.

NOTE: A Bladder Tank with a minimum capacity of 5 gallons is required for 433-S50 Systems (20 gal/min. for 433-S50X).

WARNING: Bladder Tank must be supported by hanger attached to wall or joist.

5. On S50X models, make sure the Bypass valve is open and Inlet and Outlet Valves are closed; slowly open the water main valve and check for leaks. On non-S50X models, make sure the system inlet valve installed prior to the AIRraider elbow is closed; slowly open the water main valve and check for leaks.

6. Slowly change bypass to the "service" configuration, Bypass valve closed, inlet and outlet valves open. Prime jet pump as per Manufacturer's Instructions (enclosed with pump) if not previously primed. Note that integral pump on 321-S50 and 433-S50 systems will self-prime when the system tank is filled.

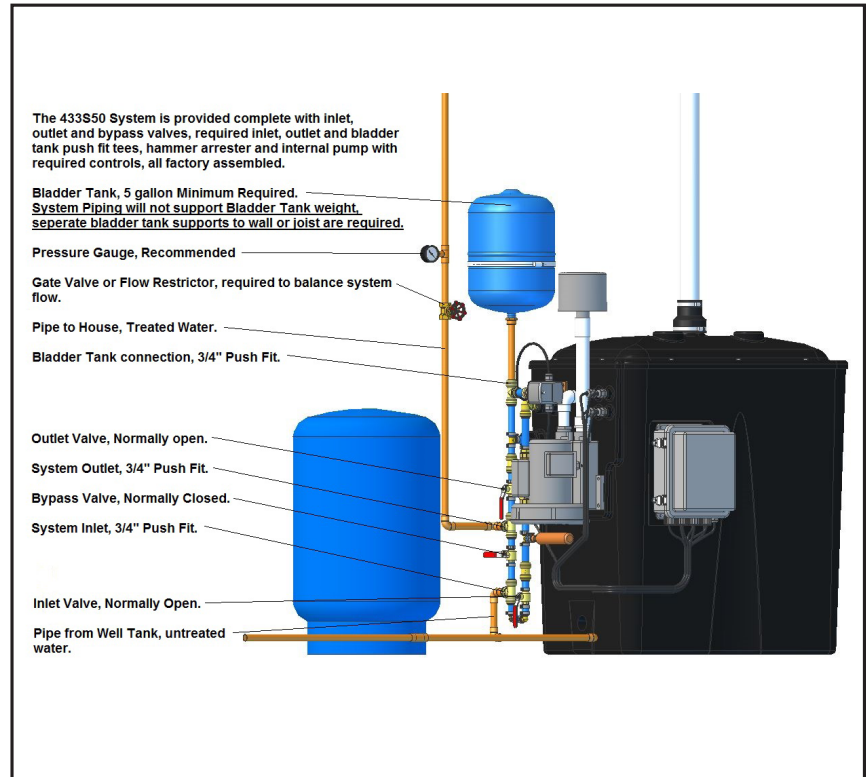


Figure 7
Plumbing Installation 433-S ND System

INSTALLATION INSTRUCTIONS

433-S50X Systems are provided without a pressure regulator or other device which would enable the use of small inline bladder tanks. The pressure switch is factory set but must be installed on the bladder tank tee by the installer. Type MC Armored Cable with connectors and clips are provided to connect the pressure switch to the system control box. Inlet, outlet and bypass valves are not provided. Sharkbite inlet and outlet connections are provided. Hammer Arrestor and Internal Pump with controls supplied factory assembled.

Existing Well Tank. Pressure Switch, Drain Valve, Pressure Relief Valve and Pressure Gauge usually located at the well tank are not illustrated but may be required by local or State Codes.

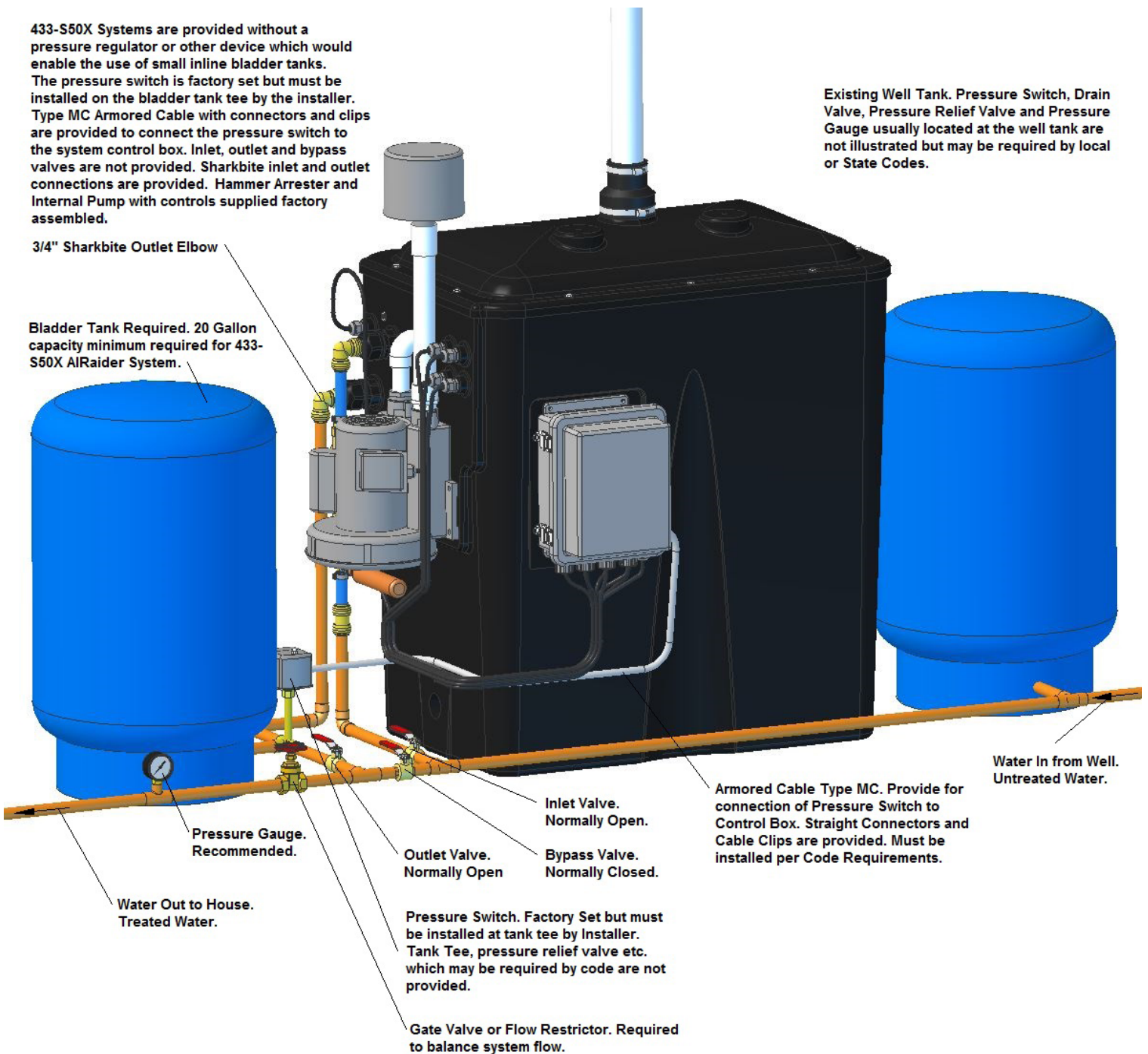


Figure 8
Plumbing Installation 433-S50X

2.4. Electrical Hook-up

All Electrical Work should be performed in accordance with Local and State Codes, and NFPA National Electrical Code, Standard #70 by a Qualified and Licensed Electrician .



WARNING: Never perform electrical work while standing in water. Do not attempt wiring on a live circuit.

WARNING: Do not attempt wiring on a live circuit.

WARNING: Power Supply Voltage must match the voltage marked on the System Nameplate. Improper wiring may result in system damage.

1. Turn main power switch, located on the AIRaider to the "Off" position.
2. Connect the Jet Pump power cord to the Jet Pump. (Does not apply to 433-S50 or 433-S50X Systems; pump is factory connected) Note the Jet Pump power cord from the AIRaider is provided with an electrical receptacle. The Jet Pump may be connected either by connecting a suitable power lead with plug and plugging into the receptacle or by removing the receptacle from the Jet Pump power cord and connecting the power cord directly to the pump. Follow wiring instructions located in the enclosed Jet Pump Manual.

WARNING: Never remove the Receptacle from the Jet Pump Power Cord without connecting the wires thus exposed to the jet pump, inside the Jet Pump Electrical Enclosure. Always secure the Jet Pump Enclosure Cover after making electrical connections.

3. On 433-S50X units only the installer may need to disconnect the Armored Cable supplied in order to install the Pressure Switch. The Armored Cable may require trimming to the desired length before reconnecting. Connect per the wiring diagram Figure 10, Page 15.
4. Make sure all connections in the control panel are tight.
5. Bring in power to the control panel using the hole provided, either an appropriate strain relief bushing, or electrical conduit fitting(s), with correctly rated electrical wire or cable must be used in accordance with all applicable Electrical Codes.
6. Connect the power line to the control panel as shown in the applicable wiring diagram (See Figures 9 and 10 on pages 14 and 15).
7. Connect power line to power source.*

***NOTE: Manufacturer recommends that the AIRaider System be directly wired to the panel on a dedicated circuit (20 Amp 110-120VAC) from a locally mounted junction box that also contains a receptacle for the ASV control power. Follow all code requirements regarding wire and circuit breaker size.**

INSTALLATION INSTRUCTIONS

321ND and 433ND 115V - 1Ph-60Hz Power Supply

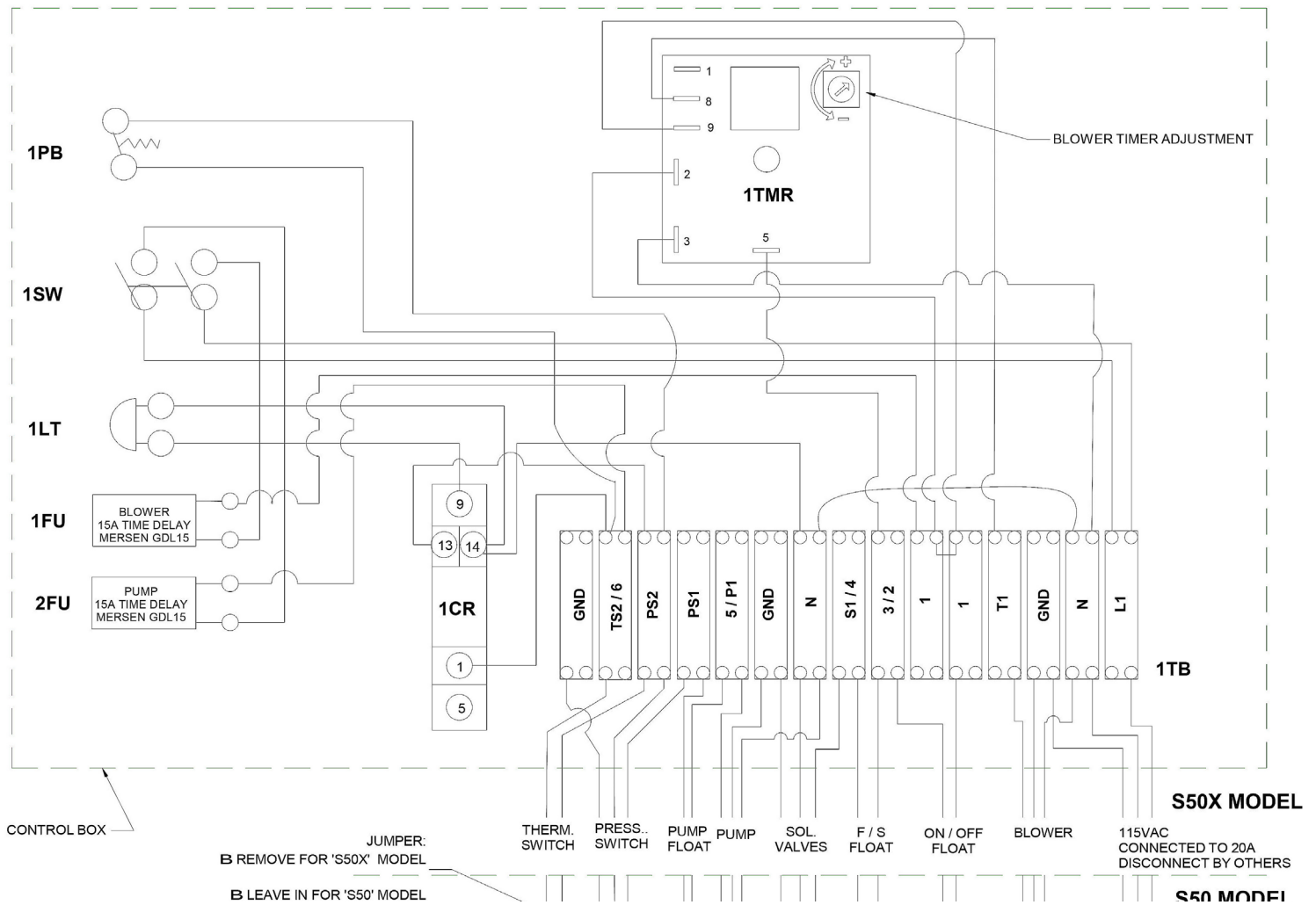


Figure 9
 Wiring Diagram 321ND and 433ND 115V - 1Ph-60Hz Power Supply

INSTALLATION INSTRUCTIONS

433-S50(X)ND and 321-S50X with 1/2HP Submersible Pump 115V-1PH-60Hz Power Supply

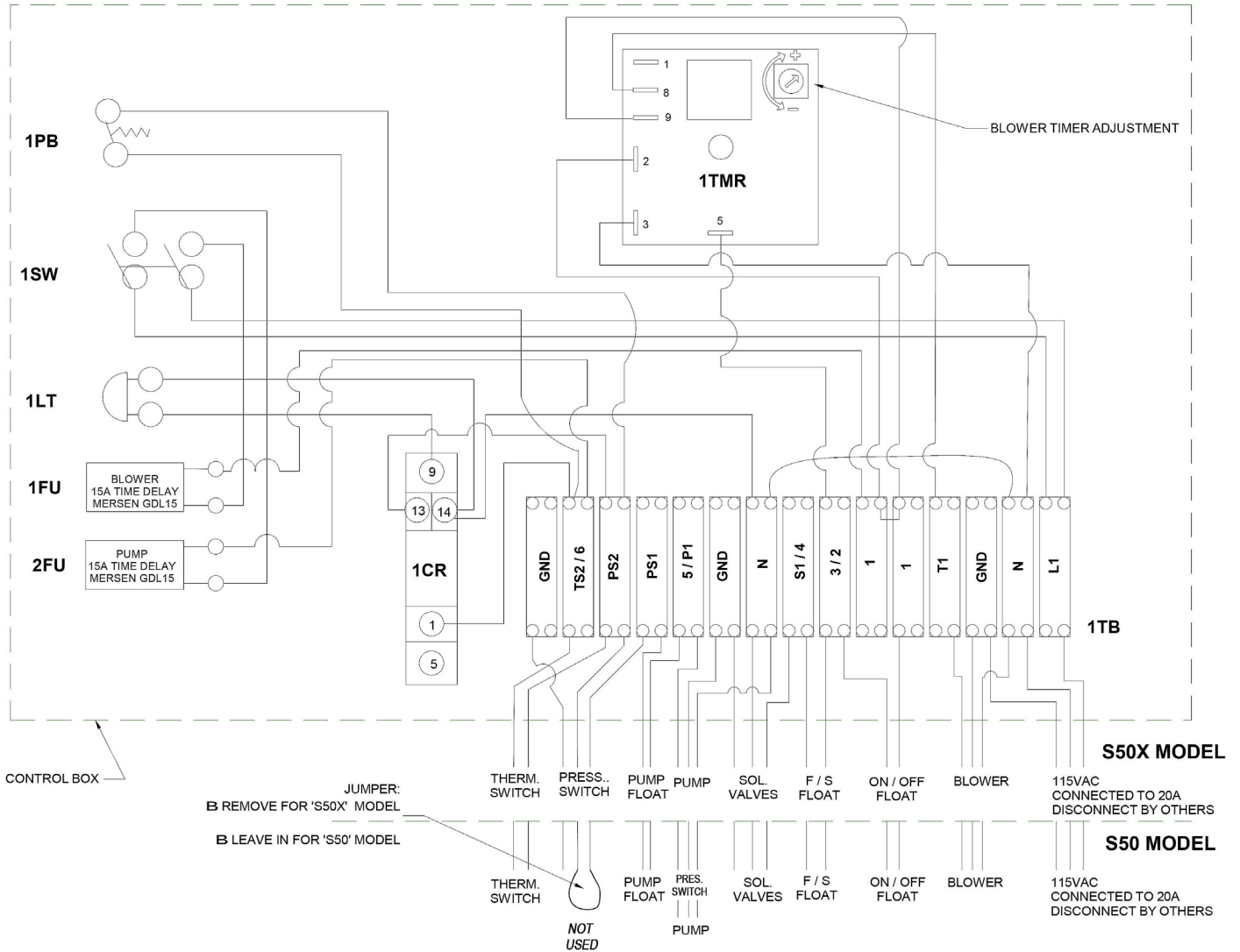


Figure 10

Wiring Diagram 433-S50(X)ND and 321-S50X 115V with 1/2HP Submersible Pump 115V - 1PH-60Hz Power Supply

INSTALLATION INSTRUCTIONS

2.5. Automatic Shut-off Valve Control Panel Installation and Valve Test (Refer to instructions included with the ASV)

1. Mount the ASV Control Panel in an easily accessible location within 30 inches of the ASV body. You may mount the panel using the screws and anchors or Hook & Loop Mounting Pad provided. When using the Hook & Loop Mounting Pad, make sure the adhesive is put on a clean, dry surface.
2. With the contacts of the wire harness connector facing you, plug the 6-pin connector end of the Wire Harness into the bottom of the Control Panel.

NOTE: Depending on the location you picked and the distance between the Control Panel and the ASV installed on the AIRaider unit, you may need to purchase an Extension Wire. (Available from the manufacturer.)

3. Take the short round wire coming from the Control Panel and plug it into the wire coming from the ASV Valve. Make sure the arrow on the side of each plug lines up with each other.

NOTE: The Leak Sensor comes with a paper sleeve. The paper sleeve acts as a barrier between the Leak Sensor and metal. When the paper sleeve becomes wet, it will signal the ASV Valve to shut off. If the Leak Sensor will not be contacting metal and placed directly on concrete or such, you may remove the paper sleeve.

4. Connect plug on end of long flat wire coming from Control Panel to either set of prongs on the Leak Sensor, pushing until plug snaps in place. Then place Leak Sensor on the floor, preferably directly under the AIRaider inlet plumbing and valves.

5. Plug the pin on the end of the AC Adaptor cord into the bottom of the ASV Control Panel, and then plug AC Adaptor into a wall outlet mentioned in Section 2.1.2. Green indicator lights will start to flash, showing you have power. Note that a red low battery indicator light will also flash about every 30 seconds, and the unit will beep once a minute until the batteries are installed.

NOTE: If a nearby wall outlet is not available you will need to purchase a low voltage AC Adaptor Extension Wire. This wire extends the length of the AC Adaptor cord and is available from the manufacturer.

CAUTION: Do not plug the AC Adaptor into an extension cord!

6. The ASV control panel has a battery backup system that allows the unit to continue working in the event that you have a power outage. To set up the backup system, open the front of the Control Panel and install 4 fresh AA alkaline batteries (batteries not included). The low battery indicator light will now stop flashing and the beep will stop.

CAUTION: Replace batteries once a year or sooner as necessary. If batteries need to be changed sooner, a red low battery indicator light will flash and a beep will sound.

7. The ASV is capable of being operated directly from the Control Panel by pressing either the Open or Close buttons. There is also a Mute button which silences the audible alarm sounding when a leak has been detected.

NOTE: The ASV must be in the Open state for normal AIRaider system operation.

INSTALLATION INSTRUCTIONS

To test the ASV System:

1. Push the Open button to make sure ASV is open. When the ASV is opening or closing, you will hear the valve motor operating for a few seconds.
2. Saturate a rag with water and squeeze over Leak Sensor, or dip the Leak Sensor into a small bucket of water. Once the Leak Sensor is wet, it will signal the ASV to close, then an audible alarm will sound and a red light will flash. Push the Mute button to silence the alarm, and note that the red light will continue to flash. This means the ASV is closed, and will remain closed until you push the Open button.
3. Before the ASV can be opened, the Leak Sensor needs to be dry! There is no need to unplug the AC Adaptor when drying off the Leak Sensor. The water test can be done with the paper sleeve still on the Leak Sensor if it was left in place.
8. Once a month, the ASV will automatically close and open by itself. The Control Panel is programmed to run this cycle to ensure that the valve continues to function properly in the event that it needs to shut off the water.

2.6. Vent Line Installation

Use only 2", 3" or 4" Schedule 40 PVC or equivalent pipe for vent line. Follow all applicable AARST, EPA, and/or State Standards for Radon or VOC venting.

1. Place the lid of the AIRraider on to the tank and secure into place using the Hex Head Screws and Washers provided.
2. Connect vent line (piping purchased separately) to AIRraider lid using the enclosed rubber coupling (See Figure 11).
3. The vent line must be routed in a manner that allows the system to exhaust above the level of the roof (see Figure 12).
Note: When "Freeze Up" is possible, a minimum pipe diameter of 3" is recommended (See Figure 13, p. 18).
4. The vent line must be pitched back toward the system to prevent condensation build up.



Figure 11
Vent Line Connection



Figure 12
Vent Line Connection (2 Inch)

INSTALLATION INSTRUCTIONS

5. Cement all fittings in a manner that ensures no leakage will occur.

Note: Be certain to use cement that is suitable for potable water applications.

6. Install weather cap on top of the vent line. This cap should not restrict air flow and must prevent rain, snow and other contaminants from entering the vent line.



Failure to install a proper vent line may cause contamination of the water, outgassing of contaminants into the building, and/or limit system performance.



Figure 13
Vent Line Installation (3 inch)

** The Manufacturer has found that vent lines less than 250 equivalent linear feet do not cause a decrease in contaminant removal percentages.*

90° Bend = 15 Equiv. Linear Ft ; 45° Bend = 7 Equiv. Linear Ft.

2.7. Install Air Filter (Figure 14)

1. Install air filter provided using the PVC pipe and fittings provided (Figure 14).

2.7.1 Remote Air Intake (Figure 15)

If a Remote Air Intake is required because of Air Quality or Quantity issues then Use Only 1-1/4" or larger Schedule 40 PVC or equivalent pipe for the air intake line.

1. Connect air intake line to the blower using the proper reducer coupling.
2. Run the intake line from the pipe connection on the blower to the location selected for air intake.
3. Connect the Air Filter to the vent line using the proper reducer coupling.

If the air intake is located outside, the filter or intake must be mounted high enough off the ground to prevent the drawing in of snow, water and other contaminants. Do not locate the air intake in the vicinity of vents from furnaces, barbecue grills, etc.

Note: In-Line Air Filters are also available from the Manufacturer.



Figure 14
Air Filter



Figure 15
Air Intake Connection

2.8. System Start-Up

1. Remove cover and lid and pour $\frac{1}{4}$ cup of chlorine into the first chamber. (This will disinfect the system.) Replace the lid making sure all screws are secure.

2. Check that all plumbing and electrical connections have been properly completed.

3. Slowly change bypass to the "service" configuration. Check for leaks.

3a. Manually open ASV using Controller by pressing the OPEN button.

4. Turn power switch for AIRaider to "On". The water inlet solenoid valve will now open allowing water into the system. The aeration process will also start. Check for leaks.

5. Allow the AIRaider to fill with water.

6. **On 433-S50 & 433-S50X Systems** the submersible pump installed in the Aeration Tank will self prime when the rising water level lifts the pump float and the pump starts. (Follow pump manufacturer's instructions to prime other external pumps.) The normal operating range is nominally 40 PSI – 60 PSI* but will vary (Pressure Switches on 433-S50 & 433-S50X factory set at 38 PSI - 55 PSI approx.).

CAUTION: Do Not Attempt to Adjust the Pressure on 433-S50 or 433-S50X Systems, as this may result in the pump not shutting down as it attempts to reach too high a set pressure. This problem may not occur immediately but can occur later when a low voltage supply occurs due to high electrical demand or other external factors. The factory pressure setting is deliberately less than maximum to provide an allowance for a low voltage supply event. Continuous operation of the pump when there is no water demand will overheat the system causing the thermal overload to trip and consequent pump shut down.

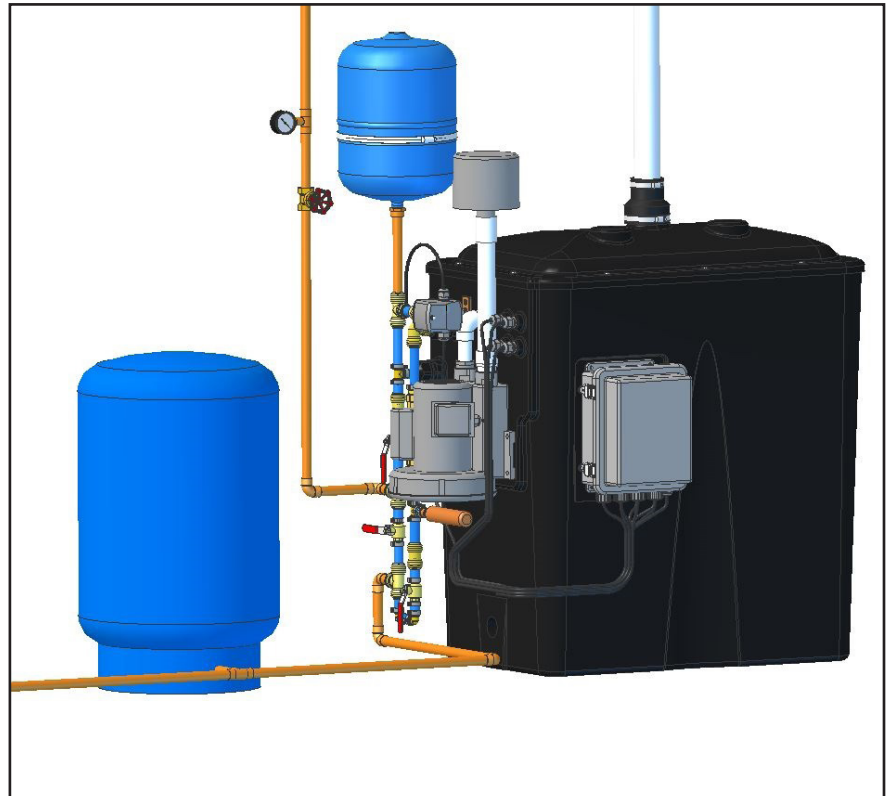


Figure 16
Installed AIRaider 433-S50

2.9. System Check

1. Run the system through a couple of cycles to ensure all components are working properly.
2. The blower timer is preset for 5 minutes delay. After the solenoid valves shut, check that the blower continues running for the preset number of minutes delay.
3. Open the tank and check the system.
 - a. Remove the tank lid.
 - b. Lower the water level in the tank by opening a bath tub tap, or similar, within the residence. The floats will fall with the water level. The minimum water level is reached when the lower float drops (except on 433-S50 & 433-S50X systems where minimum water level occurs when the middle float drops). There will be an audible click and the solenoid will open allowing the tank to start filling; the blower should also start running. The water level must rise regardless of how many taps are open within the residence.
 - c. While the tank is filling, lift the lower float (middle float on 433-S50 & 433-S50X), water in flow should stop and the blower will remain running (until the end of the preset delay). Release the lower float.
 - d. While the tank is still filling lift the upper float; water in flow should stop and the blower will remain running. Release the upper float. Pushing down the lower float on 433-S50 and 433-S50X Systems will shut off the pump.
 - e. Remember to shut off any open taps within the residence.
4. Replace the lid and secure with the fasteners provided. With the System running check the lid for air leaks between lid gasket and tank. If leaks occur the fasteners should be tightened until leaks are eliminated.
5. Make sure you have properly labeled the system with the necessary installer information (i.e. company name, phone number, date installed, etc.) and you have left all system information with the home owner.
6. The AIRaider System is now operational.

3. Retesting

After the AIRaider installation, the installer should perform another water analysis to ensure proper system performance. This sample should be performed one week after the date of installation.

Sampling Procedure:

1. Remove aerator from faucet or spigot, if applicable.
2. Run water so that the AIRaider operates for two cycles.
3. Turn off water for 5 minutes.
4. Turn water on and proceed with sampling as per the laboratory instructions.

4. Maintenance

Proper maintenance of the AIRaider can prevent possible system failure and provide years of trouble-free service.

4.1. Six Month Service (recommended)

The following procedures should be followed to maintain the AIRaider

- Check and clean the blower air intake filter.
- **Check and/or clean any filters or strainer installed on the inlet line to the AIRaider. In installations with particularly high levels of sediment, cleaning of filters may be required more frequently.**
- Check and clean inlet screen on pump, if applicable.
- Using a wet/dry vac, clean sediment from bottom of aeration tank if necessary.
- Clean (if necessary) tank and diffusers of all mineral buildup.
- Chlorinate tank and lines by pouring $\frac{1}{4}$ cup of chlorine into the first aeration chamber.
- Check all control panel connections and electrical components (blower, pump, timer, fuses, etc.) for proper operation.
- **Check float switches for proper operation.**
- Inspect vent line for possible obstructions.
- Run system through two cycles to ensure good working order.

4.2 Annual Service (required)

The following procedures should be followed annually to maintain the AIRaider:

- Tasks listed in section 4.1 (Six Month Service) that are in **bold**.
- Check the ASV Water Overflow and Alarm System annually to ensure correct operation and to maintain product warranty status. Test the sensor with water. Place a drop of water or a wet paper towel on the sensor. The valve should actuate to a closed position to stop water flow and the alarm should sound and light should flash if operating properly
- On the control unit, press the "open" button to turn the water flow back on.
- Clean solenoids. Replace O rings (P/N 28605-1 for 3/4" rings and P/N 28605-2 for 1" rings).
- Check all hose connections.
- Check and replace the blower air intake filter.
- **Check and/or clean any filters (P/N 28195-1 for 321 models, 28195-2 for 433 models) or strainer installed on the inlet line to the AIRaider.**
- Check and clean inlet screen on pump, if applicable.
- Using a wet/dry vac, clean sediment from bottom of aeration tank if necessary.
- Clean (if necessary) tank and diffusers of all mineral build up.
- Chlorinate tank and lines by pouring ¼ cup of chlorine into the first aeration chamber.
- Check all control panel connections and electrical components (blower, pump, timer, fuses, etc.) for proper operation.
- **Check float switches for proper operation.**
- Inspect vent line for possible obstructions.
- Run system through two cycles to ensure good working order.

4.3 Recommended Additional Service*

- Perform Water Test.
- Every 3-5 years, replace the solenoid valves.

* During Annual Service

TROUBLE SHOOTING

Symptom

Solution

No water in house

- Check power: Switch in on position, circuit breaker at panel in on position, fuses in control panel intact.
- Check pressure in tank. If below the proper settings, reset the pump as described in System Start-up (p. 19).
- Bypass System. If there is still no water, main well pump may not be functioning.
- Check on/off float for proper operation. Replace if necessary.

System running dry

- Verify Automatic Shut-off Valve is Open. Open if necessary.
- Check sediment strainer and/or filter (if applicable) and clean if necessary.
- Install a flow restrictor or meter down the ball valve until the AIRaider outflow is 1 GPM or more less than the water flow entering the system.

Water not entering system

- Verify Automatic Shut-off Valve is Open. Open if necessary.
- Check solenoids for proper operation. Replace if necessary.
- Check float switches for proper operation. Replace if necessary.
- Check sediment strainer and/or filter (if applicable) and clean if necessary.

Jet Pump not functioning

- Check fuse in control panel.
- Check breaker at electrical panel.
- Replace jet pump if necessary.

Pressure in tank is less than 40 PSI

- Reset jet pump as described in System Start-up (p. 19).
- Check bladder tank.
- Replace jet pump and/or bladder tank as necessary.

Low water flow at faucets

- Clear sediment strainers on faucets.
- Clear pump inlet screen/water injector.
- Replace pump if necessary.

Loud banging when solenoids shut

- Install water hammer suppressor or loop of flexible hose in pump inlet line.
- Shorten the length of pipe between the well pressure tank and the system.

Solenoids chatter when closing

- Check On/Off float for proper operation. Replace if necessary.

Blower not running

- Check fuses in control panel.
- Replace timer if necessary.
- Replace blower if necessary.

Blower does not stop running

- Check On/Off float for proper operation.
- Check Timer Settings.
- Replace Timer Relay if necessary.

Pump is short cycling

- Bladder tank may be ruptured. Replace if necessary.
- Check pressure switch on pump for proper operation.

Pump won't shut off

- Call for support.

IMPORTANT INSTRUCTIONS TO INSTALLER

Inspect the RadonAway® AIRaider™ for shipping damage within 15 days of receipt. **Notify RadonAway of any damages immediately.** RadonAway is not responsible for damages incurred during shipping.

Install the AIRaider in accordance with all current industry standards and federal, state, county and local building codes and regulations.

Provide a copy of this instruction or comparable water system and testing information to the building occupants after completing AIRaider installation.

Limited Warranty

RadonAway® warrants that the AIRaider will be free from defects in materials and workmanship for a period of 12 months from the date of purchase or 18 months from the date of manufacture, whichever is sooner (the "Warranty Term").

RadonAway will replace or repair any AIRaider which fails due to defects in materials or workmanship during the Warranty Term. This Warranty is contingent on installation and system maintenance (including annual service requirement) in accordance with the instructions provided. This Warranty does not apply where any repairs or alterations have been made or attempted by others, or if the unit has been abused or misused. Warranty does not cover damage in shipment unless the damage is due to the negligence of RadonAway.

To make a claim under this limited warranty, the defective equipment must be returned to RadonAway. All other warranties, expressed or written are not valid.

2-YEAR EXTENDED WARRANTY WITH INSTALLATION BY A FACTORY-CERTIFIED PROFESSIONAL

RadonAway® will extend the Warranty Term of the AIRaider to twenty-four (24) months from date of installation or thirty (30) months from the date of purchase, whichever is sooner, if: (1) the AIRaider is installed in a professionally designed and professionally installed radon in water reduction system; and (2) proof of an installer Factory Training Certificate. Upon request, proof of purchase and/or proof of professional installation may be required for service under this warranty. No extended warranty is offered outside the Continental United States and Canada beyond the standard 12 months from the date of purchase or 18 months from the date of manufacture, whichever is sooner. RadonAway is not responsible for installation, removal or delivery costs associated with this Warranty.

EXCEPT AS STATED ABOVE, THE AIRAIDER IS PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL RADONAWAY BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR RELATING TO, THE BLOWER OR THE PERFORMANCE THEREOF. RADONAWAY'S AGGREGATE LIABILITY HEREUNDER SHALL NOT IN ANY EVENT EXCEED THE AMOUNT OF THE PURCHASE PRICE OF SAID PRODUCT. THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY SHALL BE THE REPAIR OR REPLACEMENT OF THE PRODUCT, TO THE EXTENT THE SAME DOES NOT MEET WITH RADONAWAY'S WARRANTY AS PROVIDED ABOVE.

For service under this Warranty, contact RadonAway for a Return Material Authorization (RMA) number and shipping information. No returns can be accepted without an RMA. If factory return is required, the customer assumes all shipping costs, including insurance, to and from factory.

RadonAway®
3 Saber Way
Ward Hill, MA 01835 USA
TEL (978) 521-3703
FAX (978) 521-3964
Email to: Returns@RadonAway.com

Record the following information for your records:

Serial No. _____

Purchase Date: _____



3 SaberWay
Ward Hill, MA 01835

Phone: (800) 355-0901

Fax: (978) 521-3964

E-mail: sales@spruce.com