

Greensand filter filling and installation guide

(Note: In order to print these, you may need to go to “edit”, then “select all”, then “copy”, open up a word processing blank document or notepad and go to “edit” then “paste” to give you a printable format. Sometimes it will not print completely from a web browser. You can also change the page layout orientation to get it all printed out. If you have problems, email us and we can reply with a word format file in which you can open and print from.)

Read all instructions before starting!

Some unit's ship without the media loaded due to shipping guidelines and restrictions. If shipped by UPS, you will probably be loading the filter media in the tank using instructions below. Loading your system is very easy following these instructions and will not take very long at all. The advantage to loading your own system besides saving a lot on shipping charges over shipping by truck is that it is easy to move the unit and components to the install location before loading it. If your system is already loaded, (most shipped by truck are loaded already) skip down to installation guidelines just below these filling instructions. Please follow the step-by-step loading instructions below. Loading the units should only take about 10-15 minutes.

- The number of packages you receive can vary depending on the unit you order and how it is packaged for shipping. In general, the following is what to expect.

For Greensand filter units:

You will have 1 tall slender tank 48” – 54” in height with an opening on the top, 1 control head either shipped in place on the tank already or in a separate box. 1 chemical tank, the potassium tank is about 18” tall and has a plastic lid, 1 small box of gravel about 15-20 lbs. 1 or more boxes with the filter media used inside the tank. If you also ordered the potassium permanganate needed for this unit, you will have a box containing 6 of the 5 lb bottles of potassium permanganate. If you did not order this separately, you will need this for your unit. You can sometimes pick this up in local hardware stores, but if not, it can be ordered by the case from our website which will last about 12-18 months.

For Iron filters, ph filters, carbon filters, turbidity filters:

You will have 1 tall slender tank 48” – 54” in height with an opening on the top, 1 control head either shipped in place on the tank already or in a separate box. 1 small box of gravel about 15-20 lbs. 1 or more boxes with the filter media used inside the tank.

Water softeners:

You will have 1 tall slender tank 48” – 54” in height with an opening at the top, 1 control head either shipped in place on the tank or in a separate box, 1 brine tank (salt

tank which looks like a trash can, shorter than the media tank, round or square with a plastic lid), 1 or more bags of ion exchange filter media. Sometimes on the 48k size unit you will have a full bag and a partial bag of the same media but packaged in a different type bag. Most water softeners do not need gravel and gravel is not shipped, but some water softeners do use gravel like the water pro or iron pro 2 unit. If your water softener shipped with gravel, go ahead and use it.

Dual alternating water softeners 9000 or 9100 control head:

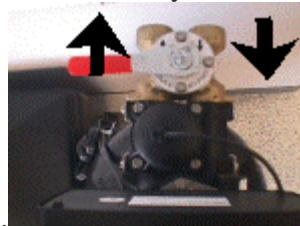
You will have 2 tall slender tanks, 9” -12” in diameter, 48” – 54” tall with openings at the top, The control head shipped in separate box with connector top for second tank, 1 brine tank (salt tank looks like trash can with plastic lid) and the filter media to go inside the tank media tanks. You will divide filter media between the 2 media tanks.

- **Look inside your media tank, if the control head is already on the tank, simply unscrew the head counter-clockwise. (The tank that is tall and slender with a hole in the top of it), and there will be a 1” plastic tube inside. This is your “Riser Tube” that delivers treated water into your home through the valve. It may have a plastic plug on the top end of it (many do not), so nothing can fall down inside the tank while you are loading the media. You should pull out the riser tube just to inspect it to make sure it is intact with no damage. These are very durable and would rarely ever be damaged. Then make sure tube is placed back into the tank all the way to the bottom and centered before filling. The riser tube sits in the center of the bottom of the tank and extends to the top either flush with the top or ¼” above the opening.**
- **If the top of the tube does not have a plug in it, simply put a piece of tape over the end, or plastic and rubber band, to keep the media from falling down into the tube!**
- **Next, stand back and look at your media tank, and make sure it is standing straight up and not tilted to one side. Sometimes during shipment, the black “Boot” on the bottom of the tank will get knocked out of alignment and you will need to straighten it out before filling the tank with media.**
- **If your tank is a bit tilted, simply pick the tank up 2 – 3 inches off the floor and drop it gently but firmly down, favoring the side of the boot that needs to be adjusted to make the tank stand straight up again.**
- **You can use a funnel with a large opening for the media or just fill by using a cup. If you do not have a large funnel to fit, the best thing to use is your household blender pitcher. Take the bottom blade section off of your blender and the pitcher will screw directly into your mineral tank making a perfect funnel. You will load the media in the top of the media tank with the riser tube still inside the media tank. Make sure the top of the tube has a plug of tape over the end of it to keep media out! Gravel and filter media loads in easily, softener resin clings to itself and it is easier to pour in a little at a time to work it down around the riser into the tank.**
- **Most filter systems come with gravel to go in the tank first. Water softeners in general do not use gravel unless you have ordered a special media or have a unit over 3 cu. Ft. size. For units using gravel, (iron filters, ph filters, birm filters, greensand filters, carbon filters, pyrolox filters, etc) load the gravel in the tank first before any other media.**
- **Scoop the media into the funnel, slowly letting it fall down inside the media tank around the riser tube. If you have a twin alternating water softener using the Fleck 9000 or 9100 head, divide the media equally between the two media tanks.**
- **If you have ordered any additives like KDF ,or special carbon media in addition to your system, this smaller amount of media will go in the tank on top of the larger bag of media.**

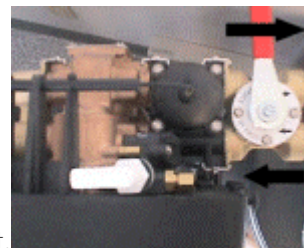
- On 48k water softeners, many times you will be shipped one full bag of media and one partial to make up the ½ cu. Ft. needed for your size system. The half bag may be different than the full bag but the contents will be the same once opened up. Since they are the same, it does not matter which goes in first.
- On iron filters, you will have the gravel bed to put in first, then the filter media, some special order units may have several filter media's to use, the order does not matter as long as you put the gravel in first.
- When you have scooped all of the media into the media tank, it will be half, or a bit more full. Some systems like the pyrolox may be a little less than half due to the density of the media. Water softeners are sized to be filled to about 2/3. Just make sure the unit is not filled past ¾ full to leave room for backwashing.
- Remove the media funnel and then the plastic plug (or tape) out of the end of the riser tube.
- Inspect the top edge of the media tank. Make sure there are no deep scratches or cuts. This is where the o ring seals against the top of the tank. If there are deep scratches, use sand paper to smooth out before connecting the control head.
- **NOTE:** Now is the best time to fill the tank with water. Filling the tank now before putting the control head on eliminates the amount of air to work out of the system later. On iron filters such as the Pyrolox, putting water in now will greatly help with clearing up the water later, see further instructions below.
- Use a hose or bucket and fill with water up to within a couple inches of the opening on the tank. Water can and will fill the riser tube also at this point.
- Brush any loose media and dry water off the top opening of the tank and apply a silicone lubricant or very, very light coat of regular cooking vegetable oil to the top surface of the media tank with your finger. This will help lubricate the large “O” ring on the bottom of the valve. **DO NOT** apply anything to the threads of the valve or to the inside of the media tank threads!
- Look at the bottom of your valve and you will see a 1” opening with “O” rings inside. Make sure to also lubricate this o ring. Tilt the valve over on top of the media tank making sure the top of the riser tube inserts inside the opening in the bottom of the valve.
- Screw the valve down onto the media tank. Have someone hold the tank as you snugly tighten the valve onto the tank. Be sure to grasp the valve close to the solid body of the valve as you tighten it onto the tank. Do not try to over tighten the valve onto the tank. The large “O” ring will seal itself, and you will not be able to turn it any further. Tighten it snugly, then snug it a bit more and stop!
- Your unit is ready to install!
- **Follow basic plumbing instructions in service manual if your unit has one. Please note:** The control heads used on iron filters and other filter systems are basically the same as control heads used on water softeners. Therefore, you will see reference to water softeners in parts of the service manual. **This does not pertain to your system. Follow local plumbing codes.** See supplemental instructions below. The service manuals cover several styles of the same control head. If you have an iron filter, the control head is the backwash version and some of the information relating to water softeners does not apply to you. Fleck is an OEM provider so the end dealer can label the units and control heads with their company information. We are a wholesaler of these units and do not label any of these with our information. You can identify the control head by your sales receipt and by the pictures on the manual.

Filter tank Installation guide

- Before you start installing your new system, here are some important considerations. *These instructions are for most general installations. These instructions cover a number of filter systems and are similar to water softeners and other types of filters as well as any type of backwashing filter. So if something refers to a unit you do not have, that would be why. Please contact us by email or phone if you have further questions. Many homeowners install their own water systems with basic plumbing skills; if you are not comfortable with projects like this, please get help from a friend or a professional plumber. Abundant Flow Water systems will not be responsible for mistakes, damage or injury caused by improper installation. By making your purchase, you agree to these terms.*
- Abundant Flow Water Systems can answer most questions for you, we are water treatment specialist and can answer questions relating to your needs on treating your water, but installation questions vary and we are not plumbers so please consult with a local plumbing expert for plumbing related questions. Always check with local plumbing codes to make sure you are following any local guidelines for installation needed.
- Make sure your chosen location will be fairly level, dry, and protected from possible freezing conditions. The plastic base of the media tank is slightly adjustable to non-even floors. If shimming is needed, you can make shims from small, flattened pieces of copper pipe, or some other non corrosive material. Do not use wood or make shift platforms as this can damage the tank, or cause the tank to topple.
- The actual installation of the system is very similar to installing a hot water tank. There is an inlet and an outlet and a drain line. If you are looking at the front of



the unit, the inlet is on the right side.



- If Installing a Twin demand system, the inlet is in front. **IT IS IMPORTANT NOT TO INSTALL THE CONTROL HEAD BACKWARDS, DOING SO WILL RESULT IN FILTER MEDIA BEING THROWN INTO YOUR HOME'S PLUMBING SYSTEM CAUSING DAMAGE TO IT AS**

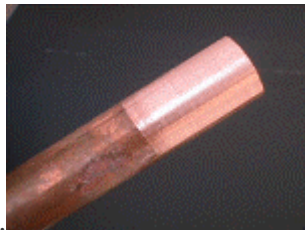
WELL AS THE CONTROL HEAD. Refer to your service manual for the in and out, and also look for the molded arrows on the valve body. Always double and triple check this before turning your water on.

- Different states have different plumbing codes, so make sure you follow them. We recommend a GFI (ground fault interrupter) 120-volt outlet within 5 feet of the filter. Extension cords should be avoided at all costs unless only temporary.
- The following materials can be used for installing your new system, but remember to check your local plumbing codes. Copper, PVC, CPVC, and PEX are the most popular. Galvanized iron can be used but is labor intensive and requires tools that most people don't have. Flexible connectors are also used by some that don't have any interest in soldering. If code permits these can be very easy to use cutting the install time in half. A simple hot water tank installation kit available at most Home Depot or Lowes stores will do just fine if you have 3/4" (7/8" OD) copper or CPVC. These kits include compression fittings that will attach to the filter's inlet & outlet, and to the main line. Whichever material you choose, it's a good idea to set the system in the desired location and try to estimate the number of fittings and pipe you will need. Some prefer not to soften the water spigots that go outside used for irrigation or sprinkler systems. You will have to plan the job so that you cut in the water line AFTER these spigots. Installing your filter after the pressure tank on a well water system is the preferred location. If you have a sediment or ph filter, that goes inline before the iron filter. If you have a water softener, the iron filter goes in before the water softener unit. Read the unit assembly instructions, then, proceed to the next step. The service manual will give you specs on the control head. The book covers 2-3 different models available in that control head. If instructions here to not seem to match for your control head, please refer to the service manual. Service manuals are also available for download from our website if needed at www.abundantflowwater.com if you have questions on setting up your control head or identifying a part, email us at support@abundantflowwater.com and include the name of the person the order was placed under.

Plumbing in your filter unit

- **PLEASE READ ALL INSTRUCTIONS FIRST BEFORE STARTING, THIS WILL HELP WITH ANY CONCERNS OR QUESTIONS YOU COME UP WITH LATER!**
- If you have private well, turn the power off to the pump then shut off the main water shut off valve. If you have municipal water, simply shut off the main valve. Go to a faucet, (preferably on the lowest floor of the house) turn on the cold water until all pressure is relieved and the flow of water stops. If your hot water tank is electric, turn off the power to it to avoid damage to the element in the tank.
- Locate the media tank with control valve installed in the desired location. If installing a 5600 or 2510, try locating the filter to the left of a vertical main line. This way the inlet can be easily ran to the main line, then the outlet a few inches higher.

- Many newer homes have a plumbing loop or bypass loop already plumbed in. In this case, you may just use a yoke connection on the back of the control head and not a bypass valve. Most iron filters are shipped with a bypass valve, if you need a yoke only; please contact us for ordering information. A bypass valve installed makes servicing the unit much easier.
- If you're installing a unit with a bypass valve, notice that these assemblies will travel slightly up and down. This is normal because of the O-ring seals at each end. You may need to support this into a level position with a temporary brace until the pipes are soldered, or glued together, and all pipe straps are installed for a neater, straighter job. When connecting adapters take care not to exert too much force on the bypass valve or pipe yoke. Take the bypass or pipe yoke off when installing fittings if need be. We recommend a liquid pipe dope for copper and brass fittings, Teflon tape for other plastic fittings.
- If you plan to solder the connections, remember the pipes must be clean (shiny),



and DRY.

DO NOT try to stuff bread into a pipe to stop water from dripping into your fittings. If a shut off valve leaks some water slightly or the pipes above keep dripping, try to install a new valve, or drain down the house's plumbing further by opening more taps and or removing some water from the bottom of the hot water tank with power and/or gas off. Use a high quality soldering flux and solder used for making plumbing connections, not electric wire. Always wear safety glasses. A fire extinguisher nearby is also a good idea for novice plumbers to have handy.....just in case. Soldering will cause some smoke detectors to go off if located in close proximity.

- Measure out two pieces of 4 or 5" pipe, assemble into two male adapters and



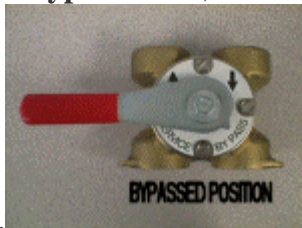
solder them away from the unit.



- Let cool or dunk in a bucket of water after one minute to rapid cool. Apply pipe dope to the threads, and then screw the inlet piece on first, then the outlet piece. Line up the tank so that the inlet is lined up with the main line. Measure over to the "cut in point" of the main line and make a mark with a pencil. Cut the tubing on this mark. Cut the tubing again about 2 to 4 inches above

the first mark, then remove the section of pipe just cut. Clean the cut ends, flux and wait for any water to drain completely out. You may also want to siphon some water out of the main line, just enough so the water level standing in the pipe is lower than where you will solder your fitting. Measure pieces of pipe, clean, flux and complete the inlet connection to the main line. (*The water feeding your home*) Do the same for the outlet (*the treated water line returning to the house*) Make sure you have a faucet open before soldering or steam will buildup and the last joint soldered will most likely leak. If soldering to the yoke or bypass valve, remove the yoke or bypass from the control head to avoid heating up the control head which can be damaged by too much heat.

- Once soldered, let the pipes cool for 5 minutes. **If using a Yoke**, remove the filter from the yoke by removing the small clamps on each side. Put a bucket under the yoke and flush the lines with water by slowly turning the main valve slightly on then off quickly. *Do Not stand in front of the Yoke while doing this in case the water is very hot. This flushes any solder, or grit out of the pipes. Leave the water off until the drain line steps and brine tank steps have been completed.* Then follow startup procedure in owner's manual.
- **If using a bypass valve**, make sure the valve is in the "bypassed"



position. Then turn the main valve on slightly all the time watching for leaks. Make sure a faucet is on somewhere and that any aerator is removed to avoid clogging from loosened scale in the pipes. Leave the bypass valve in the bypassed position and slowly turn the main shutoff valve on all the way. If you have no leaks, proceed to the next steps.

- There is a black plastic, drain hose barb located on the lower, backside of the 5600 valve. Make certain this black plastic fitting is securely threaded into the valve body and that the threads have been coated with either Teflon tape or pipe joint compound. You should easily be able to see if the fitting has tape or joint compound on the threads. If you do see tape or joint compound on the threads of this fitting, then you can proceed to carefully push the 1/2" ID flexible plastic drain line fully onto this plastic barbed end. If this fitting is loose, and/or doesn't have any tape or joint compound visibly present, simply unscrew the fitting and apply some of either material to the threads, and then re-thread the fitting back into the valve body. Be careful not to over tighten the fitting! Just snug it up a bit!
- Drain line is not usually provided for the unit since it is part of your plumbing and every application is different. Sometimes we do include a short piece of tubing that can use for your drain if it is long enough. Otherwise you will need some 1/2" inner diameter flexible tubing you can get from any hardware store to use. Install the backwash line by applying Teflon tape on the drain fitting



first.

The barbed elbow is made for 1/2" poly tubing



that can be purchased by the foot at most well stocked hardware stores. This can be ran up overhead or down along the floor. If running drain line more than 30 feet overhead, increasing the line size to 3/4" will be required. Please follow your local health dept. Codes for where to run filter discharge water. NEVER MAKE A DIRECT CONNECTION INTO A WASTE WATER DRAIN. A PHYSICAL AIR GAP OF AT LEAST 3" SHOULD BE USED TO AVOID BACTERIA AND WASTEWATER TRAVELING BACK THROUGH THE DRAIN LINE INTO THE FILTER. Using a simple P-trap on your home drain line to connect to or Standpipes of at least 1-1/2" are always best.

- Before connecting the potassium tank to the system, you need to take the chemical float valve assembly out of the potassium tank and **remove the rubber band from the bottom of the assembly.**
- The float valve should be set at $\frac{3}{4}$ " above the felt pad level to maintain the correct mixture of potassium for your system. You just have to estimate the float level at this time.
- Next, connect your potassium tank to your system. One end of the 3/8" brine line tubing will be connected to your potassium tank and the opposite end needs to be connected to your 5600 valve. This connects on the side of the control head with the brass compression nut included in the service manual plastic cover. Slide the potassium Line nut fitting on the tubing, then the ferrule ring over the tubing, then the insert inside the end of the tubing. Tighten snugly in place. Be careful not to over tighten and cause leaks.



- **NOTE: IF YOU ALREADY FILLED YOUR TANK WITH WATER BEFORE PLACING THE CONTROL HEAD ON THE UNIT, SKIP THE NEXT PARAGRAPH!**

- MANUALLY PUT THE UNIT CONTROL HEAD INTO THE BACKWASH CYCLE. (SEE OWNERS MANUAL, USUALLY BY TURNING THE KNOB ON THE FRONT CLOCKWISE INTO THE BACKWASH POSITION. EACH UNIT CAN BE A LITTLE DIFFERENT) TURN THE BYPASS VALVE SLIGHTLY TO ALLOW WATER TO RUN INTO THE UNIT. YOU WANT WATER TO INITIALLY FILL THE TANK SLOWLY. ONCE THE TANK IS FULL OF WATER, YOU CAN OPEN VALVE FULLY. THIS PREVENTS MEDIA FROM BEING PUSHED UP INTO THE CONTROL HEAD BY THE INITIAL SURGE OF WATER GOING IN. ONCE THE TANK IS FULL OF WATER YOU SHOULD START TO SEE WATER FLOWING FROM THE DRAIN LINE. IT MAY LOOK SOMEWHAT DISCOLORED AT FIRST. THIS IS NORMAL. IF THE MEDIA TANK IS OVERFILLED, SOME MEDIA MAY COME OUT THE DRAIN AT FIRST. THIS IS OK AS LONG AS IT IS JUST A SLIGHT AMOUNT. IF THE WATER IS RUNNING CLEAR AND FREE FROM AIR POCKETS, GO AHEAD AND TURN THE BYPASS VALVE FURTHER AND FURTHER INTO THE "SERVICE POSITION". YOU SHOULD HAVE A FULL FLOW TO THE DRAIN AT THIS POINT.*
- For iron filter units, it is best to let the unit stand with the water in it for 12-24 hours before running water through the unit. You can keep the bypass valve in the "bypass position" to keep water running in your home. Letting the water tank stand with the water inside allows air to work itself out of the filter media. The filter media has a lot of dust in it and can look very black when you turn the water on.
- NOTE: If you have a water softener or any other filter system installed inline after the pyrolox or iron filter, put that second unit in bypass to keep the black dust from the iron filter from filling up that second unit or water softener. This will not damage your water softener but just takes longer to clear out the black dust from your plumbing and system tanks. This is only needed for the initial running of water until clear.
- Plug the electric cord in. You can manually turn through each cycle on the control valve to test each position. When turning the control valve, pause for 30 seconds to a minute in each position to allow the gears to rotate and fully engage. If turned through too fast, you will have to go all the way around to the "in service" position and let it time out for a while before attempting again.
- After the tank has been standing with water for 12-24 hours, open a close by faucet or put in backwash position as described in the service manual. Slowly open up the bypass valve to the full open service position. Let water run out of a close by faucet for 30 minutes to an hour. The water will be VERY BLACK!

This is normal! Once it clears up, can take up to 2 hours, you can start using the system.

- Note: models 5600 and 2510 owners manuals have instructions for both standard timer (*12 day estimated*) You will be using the backwash control head on an iron filter system so refer to the settings for the backwash filter model. For an iron filter, you want to set the backwash cycle to backwash every 2-3 days. For heavy iron, at least every 2 days is preferred. See the manual for setting the days of backwashing.
- Next, the potassium tank, you will need to make sure it is adjusted to the correct level before adding potassium permanganate. See the service manual for advancing the control head to the different positions. As you advance the control head by turning the knob clockwise to each position, allow a minute or two in each position before advancing to the next to give time for the motor to move the piston. (make sure unit is plugged in at this point)
- First position will be backwash, 2nd is brine draw where it pulls water out of the potassium tank, 3rd is another backwash, 4th is brine refill. This is where it puts water in the potassium tank. This is the step you want to stop on and let it run through. This will put water in the potassium tank. Once the water hits the float level, the water will stop entering the potassium tank. The cycle will continue until it times out, but the float valve stops the water from entering. After the water flow stops, check the level of the water in the potassium tank. Make sure it is about 3/4" above the felt pad level. If too high, lower the flow accordingly, if too low, raise the float accordingly. The float valve is adjustable by using the rubber grommets on the rod that is part of the float valve.
- Once the float is set properly, you can pour potassium permanganate into the chemical tank. **WARNING!** Potassium permanganate is a very strong oxidant and can damage skin, eyes, and can be fatal in large doses. It is very similar to bleach in it's chemical make up and how it works. Make sure to wear gloves and goggles when using the chemical. You can pour in part of a bottle or a whole bottle if you want. About 1.5 ounces will dissolve into the amount of water you have in that tank determined by the float valve. This will give a mixture ready to use by the unit when it regenerates. You will need to check the level of potassium in the tank once every month or so and add more as needed. Potassium permanganate can be ordered through us on our website at www.abundantflowwater.com by the case which will last a year or so.
- The amount of Potassium permanganate is used to regenerate the greensand media then the excess washed off down the drain. There is a residual left in the water in your home but is in the safe limits range similar to chlorine in city water. If you see your water turn a pink color, then the float is set too high and dissolving too much potassium permanganate. For safety, you can install a carbon filter, a 20" big blue carbon filter in line after the greensand unit to eliminate all traces of the potassium permanganate from your water after the unit. This gives you the safest water for use in your home if the chemical in your water is a concern. Most people like to use either a carbon filter or a reverse osmosis unit under their sink for all drinking and cooking water. Either of these types of filters can be ordered from our website at www.abundantflowwater.com

- When the filter media is new, the water will be treated as soon as raw water flows through the tank so backwashing is not required unless you just want to observe the backwash process to check for leaks. Backwashing right away does help to clean the media and is a good idea to do within the first day after installing an iron filter system. Remember that the first few days you can have some discolored water. It is a good idea to let the water run through a close by faucet for a couple hours after install before a backwash to help flush air and dust from the media. You may also see some discolored water after the first few backwash cycles initially.
- When installing an iron filter, it is a good idea to chlorinate your well and system. You can do this by pouring a couple gallons of bleach into your well, turning on water in the home until you smell chlorine, and then let it stand not being used for a few hours. Then run to flush out. You can do a backwash on the iron filter at this point too. The Iron filter media is actually rejuvenated by using chlorine helping the media to last longer. Chlorinating helps to remove iron sulfur build up from your plumbing and hot water tank that has been building up. It is a good idea to do this once or twice a year.
- Carbon and Iron filter media will last on average about 4-5 years before needing changed out. This can vary depending on the actual amounts of contaminants in your water and other water chemistry. If you have problems, make sure to get a complete laboratory test of your water. In some cases the filter media may need changed every couple years for severe iron and sulfur. Carbon may need changed more often if treating sulfur with it.
- In severe sulfur cases, you may need to put a carbon filter inline after the iron filter unit. A 20" big blue carbon block filter is usually fine in removing the small residual amount of sulfur that may get through after an iron filter system. These can be ordered from us or on our website. You can also use a back flushing tank system such as the catalytic carbon system. These can be helpful in extreme sulfur cases when the levels are too high for the greensand unit. This is rarely needed, but an option.
- Replacement filter media and gravel can be ordered from our website when needed for replacement. www.abundantflowwater.com You just put the unit in bypass to keep water going in your home, disconnect the bypass valve from the control head using the 2 screws on the side. Unscrew control head, siphon or pump out water, dump out old filter media. Then put in new gravel and filter media following instructions for loading above.