

1. Intake Prefilter strainer: This can clog in very dirty water, or if it is in contact with bottom sediment or vegetation in a lake or stream. If pump output decreases, check this first. Look at the strainer closely------it may not appear to be clogged, but it can be glued shut with clear algae.

Rinse the strainer in water to remove any particles that may be caught in the strainer. For a more thorough cleaning, remove the prefilter from the input hose and clean with water and a toothbrush. Reassemble. Apply a small amount of silicone lubricant to the strainer barb to ease assembly.

2. If unit pumps easily, but no water flows: (The pump doesn't prime)

Make sure prefilter is submerged.

Make sure that hoses are not blocked or pinched. (rarely, some creature may chew a hole in the intake hose-----this will also affect priming).

Open up the Vario, like you are going to adjust the settings, by holding the lower part of the Vario in one hand and turning the upper part about 1/8 turn. The upper part (pump head) will then lift up and off.

Turn the pump-head upside down. With the inlet hose in water, pump this until water is flowing freely.

If this doesn't work, fill the pump-head partly with water, and then pump until it is drawing water normally.

You have now removed the air bubble or silt particle that was not allowing the intake valves to close. Then re-assemble.

If the above suggestions do not prime your Vario, you may have a damaged o-ring on one of the pump pistons. Follow instructions in **4**. There is a pack of replacement o-rings that come with the Vario. Lube any 0-ring you are replacing with silicon lube.



3. Clogging and slow water output. If you operating the Vario in Longer Life mode, certain types of dirty water can clog the ceramic prefilter in less than one gallon. The clues to look for here are:

a. Output of water from the filter slows considerably.

- b. Pumping resistance may increase.
- c. If you continue pumping: water may seep or spray out from where the Vario screws together.

d. If you are not sure if the ceramic is clogged: turn the ceramic prefilter to Faster Flow setting and then re-assemble and test the Vario. If it now pumps easily, the ceramic is clogged.

Clean the Ceramic Prefilter!

Open up the Vario and clean the ceramic prefilter_____>



with the green cleaning pad provided. The ceramic may be cleaned in either dirty or clean water up to 200 times. Clean the top of the ceramic until a lighter color appears, then rinse and reassemble. Please note that there is a o-ring on the base of the ceramic disk that may be dislodged in aggressive cleaning.

Put some of the silicon lubricant from the provided tube on the oring that sets on the top of the lower section of the Vario.___> Reassemble and pump slowly to get water started, then resume normal pump rate when flow has begun.

4. If handle is hard to push or if water leaks or sprays from around the pistons when pumping:

Lubricate o-rings of pistons. Silicone lubricant is provided with your new unit.

Remove the axle-pin from top cap by turning it 90° and pushing it out of its position. A coin can be used to turn the pin. Detach the translucent top cap and put aside. Grasp the

pump handle and lift it upwards until the pistons come out of their position. Clean

excess build-up from black rubber o-rings on pistons. Place a small amount of silicone

lubricant all the way around the o-rings. Re-assemble. Note: When reassembling:

carefully insert pistons, making sure to not pinch o-rings. When re-inserting the axle-pin make sure it is pushed all the way through the housing and turned to locked position.



5. **Clogged glass fiber cartridge**. A clogged cartridge may require replacement. However as a temporary solution in the field, remove the cartridge and swish it around in water. Make sure untreated water does not contact the cartridge output barb. If flow is not restored, replace cartridge.

7. **Reinstalling the glass-fiber cartridge**: When reinstalling this cartridge turn it until the cartridge drops into the correct position, when the five notches in its top are filled by the five black flanges inside the lower part of the Vario housing. The photo above that shows the ceramic disk also shows proper positioning of the glass-fiber cartridge. If you can not get the Vario to re-assemble, most likely you have not replaced the cartridge correctly.

Refill of Carbon Cartridge

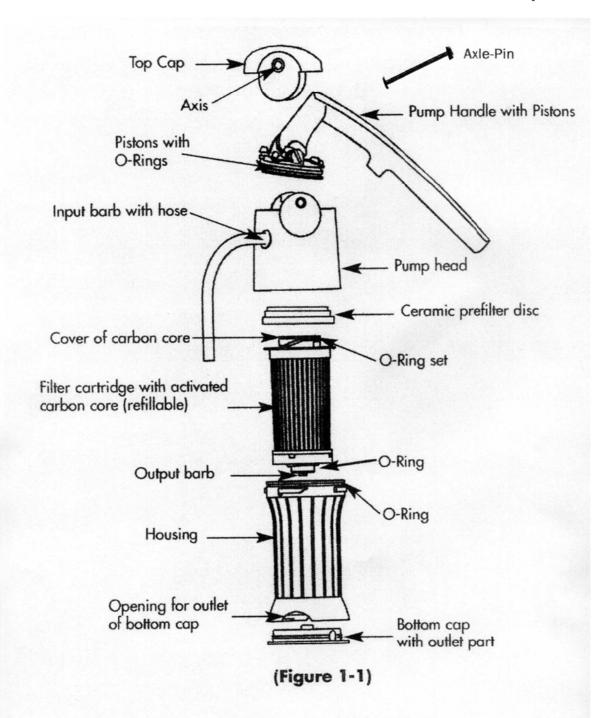
Remove red cover on glass-fiber filter cartridge and green foam underneath to reveal activated carbon.

2) Rinse inside of cartridge with filtered water. Do not remove white filter disc from the bottom of the cylinder.

3) Open package of activated carbon and pour into the cartridge. Cover with new green foam and red lid. Note: Apply a small amount of silicone lubricant to o-ring

4). The top of the red cover must be flush with the upper edge of the filter cartridge.





The Illustrated Vario. Lube O-rings if leaking. Clean Ceramic Pre-filter disk with green cleaning pad if needed.