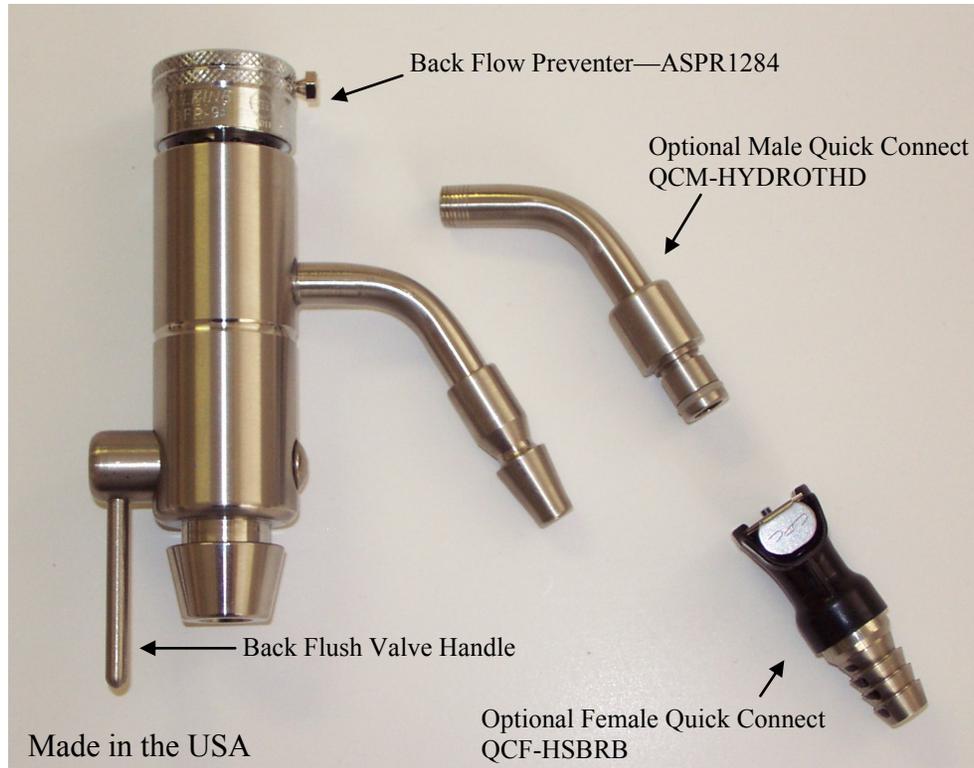


INSTRUMENT DESIGN & MFG. Co.**VACUA HYDRO ASPIRATOR™
TESTING & TROUBLE GUIDE**

INSTALLATION: To install simply attach to any sink faucet with garden hose type threads. Attach suction hose to 90 degree elbow on side of unit. Next attach a splash tube to outlet at the base of the Hydro Aspirator.

OPERATION: To operate place the back flush valve handle in the vertical position and turn on the water. Vacuum should be present at end of inlet hose. Increase water flow to increase vacuum. The Hydro Aspirator does not require water pressure and may not function properly if faucet is not turned on sufficiently. Adjust water flow to obtain the level of vacuum required. Excessive vacuum may draw excessive amounts of material such as clots in to the Hydro Aspirator potentially clogging the Hydro Aspirator. If this occurs try reducing the water flow or using a Trocar with smaller holes.

CLEANING: To clear a blockage in your Hydro Aspirator you can turn the back flush handle to the horizontal position and force water backward through the inlet hose (Note: Some water will still come out the base of the Hydro Aspirator, this is normal). In the event material becomes clogged and disassembly is required, simply unscrew the Hydro Aspirator from the Back flow preventer and remove the rubber washer inside. Tap unit upside down to remove the venturi (Black cone shaped piece inside DO NOT Stick anything into the venturi, Only water passes through it and putting anything in it will damage it . A replacement Venturi is available from your distributor. #HYDROSS005). Clean any obstruction from the inside of the Hydro Aspirator and reassemble.

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Minimum Requirements

Water Pressure: Water pressure should be 60 PSI or greater. While the Hydro Aspirator will function at less than 60 Psi is performance will be reduced or at some point it may not function when pressure gets low.

Water Volume: 2 Gallons Per Minute is sufficient. Keep in mind facilities with small diameter piping and a lot of bends will reduce the flow rate. Toilets flushing or other water demands may also result in a loss of pressure and flow.

Testing Procedures

Facility Water Pressure: If possible obtain a water pressure gauge with an adapter to allow it to be connected directly to the faucet to be used. Turn on the water and read the PSI which should be 60 psi or greater. With gauge installed turn on additional water sources and see if this causes a loss of pressure. If so this may indicate a under sized supply line.

Facility Water Flow Rate: Using a measuring container like a 1 gallon milk jug, fill jug from faucet with nothing installed and time how long it take to fill the container. 2 gallons per minute equals 30 seconds to fill container. If 1 gallon container can be filled in 30 second or less you have enough flow.

Hydro Aspirator Vacuum: If possible obtain a vacuum gauge (Available at most automotive parts stores) and connect to Hydro Aspirator inlet tube with water already flowing at full pressure. Read gauge, we are looking for between 20" to 27" in Hg. While this is the maximum vacuum, most aspiration is successful at reduced vacuum. This can be achieved by reducing the water flow rate. Excessive vacuum will cause large clots and fat to be drawn into the trocar and possible cause clogging and or the Hydro Aspirator to reverse water flow back out through the trocar. If you have good vacuum and this problem occurs check to see if the trocar is 3/8" in diameter and has just 2 holes in the shaft. These trocars have larger diameter holes and allow larger material to pass through than can pass through the Hydro Aspirator. Trocars with 6 smaller diameter holes filter the liquid from the solids and help prevent this problem.

Hydro Aspirator Flow: Using a 1 gallon jug, time how long it takes to fill the jug. Use the back flush lever and the vacuum hose to fill the jug at full pressure and time how long it takes. It should take approximately 40 to 50 seconds. If less than 30 seconds the venturi has been damaged and should be replaced. Now put the lever in the down position and time how long it takes to empty the gallon container. It should take approximately 30 to 40 seconds. If much longer than 40 seconds review the following to determine the possible cause.

Problem Solving

Low Vacuum:

- Use back flush handle to reverse flow and clean out residue from vacuum chamber.
- Check water pressure
- Check seal around inlet tube thread and slip hub. Apply hand cream or petroleum jelly to these areas to block any air leaking in. If this solves problem, clean and apply film of silicon sealant.
- Test without the Back Flow Preventer temporarily to confirm it is not the cause.

No Vacuum:

- Use back flush handle to reverse flow and clean out residue from vacuum chamber.
- Remove Hydro Aspirator from faucet, remove back flow preventer, tip upside down and tap to remove black venturi, inspect chamber to make sure it's clean and reassemble. DO NOT stick anything through the small hole in the venturi. This WILL damage it requiring replacement.
- Test without the Back Flow Preventer temporarily to confirm it is not the cause.

Reversing Flow:

- Check Trocar or Instrument for oversize inlet holes. 3/8" Trocars with two 3/16" holes have been know to allow oversize material to enter the trocar and clog the Hydro Aspirator. Try a different trocar with 6 holes which are smaller and work as a filter to prevent large obstructions. This tends to occur in facilities with good water pressure which creates greater vacuum. This high vacuum is not necessary for good aspiration. To correct try reducing the water flow at the faucet which will lower the vacuum.

Water Leaks:

- Water leaking between the Backflow Preventer or above the Backflow check to see if the black garden hose washer is present and in good condition.
- Check the small holes at the base of the Backflow Preventer. If water is leaking from the holes the Backflow need to be replaced.
- Water leaking out discharge end of Hydro when reversing lever is turned horizontal. This is normal and is not intended to be a complete shut off.
- Water leaking out on the sides of the reversing lever indicate the o-rings are damaged and need to be replaced. There is no reason to remove the reversing valve for cleaning. Doing so will likely cut the o-ring upon reassembly so it is best to not disassemble this part.

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