

Sonic Debubbler

(cat.#s 20444, 25098)

Warning: Do not submerge the Sonic Debubbler in water or other solvent!

Voltage Requirements: 120 VAC (battery charger) or 220 VAC*

Overview

The Sonic Debubbler is a practical, highly useful tool designed to quickly displace gas bubbles from HPLC system check valves, with no or minor disassembly of the valve system, for faster priming and more uniform fluid flow. By generating ultrasonic vibrations to displace gas bubbles, it generally enables difficult-to-prime HPLC systems to be more effectively primed without disassembly. It saves time and avoids damage, particularly to old or worn parts, by reducing repetitive loosening and tightening of check valves to effect a gas purge.



To displace gas bubbles from the valve, gently touch the tip of the Sonic Debubbler against the metal check valve external housing for 15-30 seconds.

Note that this product is not a replacement for routine maintenance or proper system care, nor can it overcome problems related to failing hardware. The Sonic Debubbler might prove ineffective in systems in which buffers have sealed the check valve mechanism or in systems that have been entirely purged of mobile phase.

The Sonic Debubbler is intended for use only with 100% mechanical check valve systems; system damage may result if it is used with electronic (solenoid type) check valves, e.g., HP Active inlet valves. Similarly, it is not designed to be used on glass, quartz, or other breakable materials.

Instructions

Position the mobile phase reservoir higher than the pump to aid in starting solvent flow.

If using a low-pressure mixing system, verify that only one solvent is passing into the check valve initially, and that it is 100% miscible with the previously used solvent.

If using a high-pressure mixer, select one channel and follow the steps below. Repeat the procedure for each channel that presents difficulty.

1. Verify that the mobile phase is properly degassed and is arriving at the inlet check valve(s) with no flow restrictions.

2. Remove the column and divert the mobile phase into a waste container, or open the system pump purge valve.

3. a. Start the pumping system at about 0.5 mL/min.

If there were no problems with the previous mobile phase, follow 3b-3c.

If no mobile phase was present in the inlet check valve previously, or if the system was erroneously purged of mobile phase, follow 3d-3g.

- b. Touch the tip of the Sonic Debubbler to the external inlet check valve housing.
 - c. Continue sonication for up to 30 seconds, until pump pressure is steady or a steady stream of solvent issues from the solvent line. Proceed to step 4. If unable to maintain steady pressure, continue with 3d-3g.
 - d. Loosen the outlet check valve to allow a slight leak. Be sure to take all appropriate precautions for solvent exposure.
 - e. Touch the tip of the Sonic Debubbler to the external inlet check valve housing.
 - f. Continue sonication for up to 30 seconds, until no gas bubbles are seen escaping with the mobile phase or leaking around the edges of the outlet check valve.
 - g. Stop the pump flow and tighten the outlet check valve.
4. Increase the flow to normal and verify pressure is steady (typically within 10 psi or 1 bar). Consult your system owner's manual for parameters of nominal system pressure fluctuation.
 5. Repeat steps 3 and 4 for additional solvents.
 6. Connect the column and close the purge valve.
 7. Verify system operation under pressure and check flow delivery past the column.

Maintenance

User maintenance of this product is not required and is not possible. In the event of a problem, contact Restek for instructions.

For best results, store the unit in the charger when it is not in use.

The Sonic Debubbler contains nickel-cadmium batteries. Please recycle or properly dispose of worn batteries.

*220 VAC version, cat.# 25098, has CE mark.

Troubleshooting

| Symptom | Possible Causes |
|---|--|
| <ul style="list-style-type: none"> No solvent arriving at inlet check valve. | <ul style="list-style-type: none"> Reservoir empty or excess air in inlet line/degasser. |
| <ul style="list-style-type: none"> No solvent issuing from outlet check valve. | <ul style="list-style-type: none"> Inlet check valve stuck in closed position.* Outlet check valve too tight. |
| <ul style="list-style-type: none"> Mobile phase moving outward at edges of outlet check valve, but appears to be pulled back into housing. Mobile phase visible around edges of outlet check valve, but a constant leak does not develop. | <ul style="list-style-type: none"> Springs may be worn and unable to maintain pressure (for spring-loaded outlet check valves) . Seals worn.** Solvents not miscible. Buffer precipitating within check valve mechanism. |
| <ul style="list-style-type: none"> Pressure does not fluctuate with purge valve open or when no column is attached, but pump will not maintain steady flow/pressure when purge valve is closed or column is attached. | <ul style="list-style-type: none"> Inlet check valve stuck in open position.* Seals worn and unable to maintain pressure.** |

**If a check valve is stuck open or closed:*

1. Remove the check valve from the pump head and place in 90:10 water:methanol in a sonic bath. Sonicate for 20 minutes.
2. Place the valve cartridge in sufficient 90:10 water:methanol to cover the surface. Touch the tip of the Sonic Debubbler directly to the cartridge and sonicate for 30 seconds.
3. Shake the valve. If it rattles slightly, place it back into the system to determine if it is operating normally. If no rattle is heard, repeat the treatment, or replace the valve.

***Check user's guide to perform system leak test (pressure decay test).*

**Call Technical Service at 800-356-1688 or 814-353-1300, ext. 4 (or your local Restek representative)
if you have any questions about this product or any other Restek product.**



Restek: 110 Benner Circle, Bellefonte, PA 16823
phone: (800) 356-1688 or (814) 353-1300 • fax: (814) 353-1309; www.restekcorp.com
Restek GmbH: phone: (49) 06172 2797 0 • fax: (49) 06172 2797 77
Restek France: phone: (33) 01 60 78 32 10 • fax: (33) 01 60 78 70 90
Thames Restek UK Ltd.: phone: (44) 01494 563377 • fax: (44) 01494 564990
Restek Ireland: phone: (44) 28 9081 4576 • fax: (44) 28 9081 4576