

Get Your LC Back Up and Running After the Shut Down



When you restart your LC systems after a long lab shutdown, you need to follow a systematic approach to avoid issues directly after a restart.

Here is Agilent's guide on how to get up and running quickly and safely with your LC instruments.

Follow the checklist to power up your LC system

System	<ul style="list-style-type: none">- Make sure power cables are connected- All modules are connected to each other through CAN cables- The system is connected to the network through LAN cable
Mobile phases	<ul style="list-style-type: none">- Flush solvent bottles / use clean bottles- Prepare your mobile phases freshly (Sonication and LC filtration apparatus recommended to remove particles and air bubbles)- If you have installed seal wash on your pump, prepare 10% isopropanol in water and flush the seal wash channel
Pump	<ul style="list-style-type: none">- Open the purge valve and purge every solvent channel with 5 mL/min for 5 minutes to remove bubbles in your solvent lines (Note: if the backpressure at purging is higher than 10 bar, please replace the PTFE frit in the purge valve)- Make sure that the flushing solvent is mixable with the storage solvent of your solvent channel. If not, use isopropanol for transition- Close the purge valve after purging is completed- Equilibrate your system with the solvent composition of your application for 15 minutes
Column	<ul style="list-style-type: none">- Equilibrate your column by flushing for 5–10 column volumes with the initial mobile phase composition of your application
Detector	<ul style="list-style-type: none">- UV (VWD/DAD) detector: After turning the detector on, the deuterium lamp needs to be warmed up for at least 1 hour- Fluorescence detector (FLD): The Xenon lamp does not need warm-up and can be used for analysis immediately- RI detector (RID): flush both the reference and sample side with the fresh solvent used for the current application

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General recommendations

- Conduct **preventive maintenance** (PM) using Agilent's on-demand service or by yourself using PM kits. Residuals of salts or solvents in your systems during a shutdown could slowly block or corrode some of your system parts. Preventative maintenance can ensure that your instruments deliver peak performance and avoid unplanned troubleshooting after a restart
- Before running your samples: run a **checkout sample** to verify your system is following the procedure described in your instruments' user manual
- Before running your samples: Conduct **diagnostic tests** such as pump leak rate test, system pressure test, lamp intensity test, etc. using Lab Advisor to ensure that your system is in good condition

Common issues after a shutdown

1. I forgot to replace the aqueous phase with organic before the shutdown and now algae is growing in my solvent lines. What should I do?

- Use hot water with 60–70°C to purge your solvent lines at 5 ml/min until solvent lines are clean
- If it doesn't work, you need to replace your solvent lines

2. My solvent lines are all filled with air after shutdown. The air cannot be purged out even with 5 ml/min flow. What should I do?

- Disconnect solvent outlet tube from your pump/degasser
- Push syringe adapter (P/N 9301-1337) onto the syringe (P/N 5067-6624), pull syringe plunger to draw at least 30 ml of solvent through degasser and tubing
- Disconnect syringe adapter from the solvent tube and connect solvent tube back to your pump

3. I left buffers in my solvent bottle and solvent lines before the shutdown. What should I do?

- If LC/MS, throw away the bottles or re-purpose it. If other detectors, clean the bottles thoroughly with detergent
- Throw away the solvent inlet filters and solvent lines and replace with new ones because they are hard to clean and can contaminate your flow path

4. My flow path is blocked, what should I do?

- If any parts are obviously affected by visual inspection, remove them from the instrument and sonicate in HPLC grade water for 30 minutes
- If it's not obvious which parts are affected, remove parts and capillaries in the flow path one by one, starting from detector moving toward the pump, checking pressure after each part, until identifying the cause. Replace the part with a new one

If you still see any issues, refer to Agilent's LC Troubleshooting Poster ([5994-0709EN](#)) for additional guidance.

To know more, please visit:

www.agilent.com/en/product/liquid-chromatography

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Valuable resources for a safe start after a shutdown.

Just click on the links below:

Troubleshooting and best practices

LC best practices tech note [01200-90090](#)

Troubleshooting poster [5994-0709EN](#)

How to deal with unstable solvents [01200-90092](#)

LC Handbook [5990-7595EN](#)

Making the most out of your LC eBook:

www.agilent.com/cs/library/primers/public/Best_Practice_LC_Operations.pdf

Quick Reference Guides (QRG) to find parts for different systems

1260 Infinity II with vial sampler [5991-6888EN](#)

1260 Infinity II with multisampler [5991-6887EN](#)

1260 Infinity II Prime LC [5991-8743EN](#)

1290 Infinity II with vial sampler [5991-7041EN](#)

1290 Infinity II with multisampler [5991-6446EN](#)

1220 Infinity II [5990-8144EN](#)

1260 Infinity II Bio-inert LC [5991-7669EN](#)

1260 Infinity II SFC [5991-8116EN](#)

1260 Infinity [5990-8537EN](#)

1290 Infinity [5991-7841EN](#)

1260 Infinity Bio-inert [5990-9408EN](#)

PM kits and catalog

Agilent preventive maintenance service webpage:

www.agilent.com/en/service/laboratory-services/maintenance-repair/on-demand-services/preventive-maintenance

PM kits brochure [5994-0017EN](#)

InfinityLab catalog [5991-8031EN](#)