Agilent Technologies

Thank you for purchasing an Agilent instrument solution. This checklist is used to provide a guide on what aspects of your instrument should be covered when the Familiarization service has been included in your order. This checklist will be completed at the end of the service and provided to you as a record of the familiarization.

Customer Information

- Familiarization is intended to give operators a basic overview of the operation and maintenance of new instruments and is not designed to substitute for a full operator-training course.
- Further training, advice and consultation can be obtained upon request.

  The manuals/media delivered with the system will be used as a guide during familiarization. Please make sure they are available.
- **Specifically Not Included in the Familiarization service (unless explicitly ordered):**
  - Training on basic PC operation, peripherals and/or operating systems
  - Training to groups larger than five people
  - Customized method/application development and/or testing or testing of customer samples
  - Fundamentals/theory of instrument techniques unless explicitly stated.
  - Preventative Maintenance advice

Service Engineer's Responsibilities

Discuss familiarization topics and agree upon focus areas with customer within the allotted time.

Only complete/printout sections or pages that relate to the system that has been installed.

Complete empty fields with the relevant information.

Complete the relevant checkboxes in the checklist using a "X" or tick mark "✓" in the checkbox.

Complete Not Applicable check boxes to indicate optional services or product functionality not included

Complete the Service Review section together with the customer. In case of diagnostic tests, record test results in section service review (test results).

General Familiarization

- ❑ Provide the customer with an overview of their system, its components and locations which have been installed and indicate the parts of the system that familiarization will be provided on.
- ❑ Identify associated instrument connections, including power connections, communications and LAN interface connections.
- ❑ Describe where to find the resources available (e.g. user manuals, on-line help) for the instrument.
- ❑ Demonstrate how to use the on-line and off-line help.
- ❑ Explain need for avoiding growth of algae within the system which can create problems and high costs for customers as this is not covered by the warranty or support contract (Customer is liable for repair charges).
- ❑ Explain need for stopping flow into the instrument, when instrument is powered off.
- ❑ Explain availability of consumables, supplies and accessories, e.g. columns, capillary kits for low dispersion systems, starter kits, tool kits, and maintenance parts.
- ❑ Give recommendations on solvents (solvent quality, possible degradation, growth of algae, pH range, buffer concentrations etc.).
- ❑ Give recommendations on correct storage of the system (flush with organic solvents etc.).
- ❑ If applicable: explain emulation mode, instrument control framework (ICF) and potential consequences for feature set.

System Start-up

- ❑ Explain how to start up and close down the instrument/modules in the correct order
- ❑ Explain where to find the status indicators and what they mean

G1322A Degasser, G1379B µ-Degasser, G4225A 1260 Degasser

- ❑ **Section NOT Applicable**
- ❑ Explain basic operating principle, applications and key specifications.

G1310B 1260 Iso Pump, G1311B/C 1260 Quat Pump/VL, G1312B/C 1260 Bin Pump/VL, G5611A 1260 QuatPump Bio

- ❑ **Section NOT Applicable**
- ❑ Explain the basic operating principle of the pump, features and key specifications.
- ❑ Explain pump settings in the Agilent Control Software.
- ❑ G1312B: Explain solvent tables, solvent compressibility and pump elasticity calibration. Explain low delay volume configuration.
- ❑ Other 1260 Infinity pumps: Explain when and how to optimize compressibility settings.
- ❑ Quaternary pump: Explain recommended installation of solvent lines, especially for buffers.
- ❑ Explain procedures for priming and flushing the pump and system and changing solvents.
- ❑ If applicable, explain seal wash function. Recommend using the seal wash if installed.
- ❑ Explain diagnostic features in Lab Advisor: Leak rate test and system pressure test.
- ❑ Explain availability of optional upgrades: SSV for binary pumps, seal wash for all pumps, quaternary option for isocratic pump, active inlet valve for isocratic and quaternary pumps.
- ❑ Explain availability of optional PE seals for normal phase applications.
- ❑ Explain regular maintenance of purge valve (PTFE frits) and solvent bottle filters.

G1376A 1260 Cap Pump, G2226A 1260 Nano Pump

- ❑ **Section NOT Applicable**
- ❑ Explain the basic operating principle of the pump, features and key specifications.
- ❑ Explain pump settings in the Agilent Control Software.
- ❑ Explain the different operating modes: normal mode, micro mode, purge mode.
- ❑ Explain when and how to optimize compressibility settings.
- ❑ Explain the operating principle of micro flow mode, EMPV and flow sensor.
- ❑ Explain the solvent table, why it is essential to select the correct solvents and what to do if a solvent is not listed.
- ❑ Explain procedures for priming and flushing the pump and system and changing solvents.
- ❑ If applicable, explain seal wash function. Recommend using the seal wash if installed.
- ❑ Explain diagnostic features in Lab Advisor: Leak rate test, system pressure test and micro pressure test.
- ❑ Explain availability of optional upgrades: 100 µL flow sensor (G1376A only), passive seal wash.
- ❑ Explain regular maintenance of purge valve (PTFE frits - if pump is used with bypassed EMPV/flow sensor), SSL solvent bottle filters.

G4220A/B 1290 Bin Pump/VL, G4204A 1290 Quat Pump

- ❑ **Section NOT Applicable**
- ❑ Explain the basic operating principle of the pump, features and key specifications.
- ❑ Explain pump settings in the Agilent Control Software.
- ❑ Explain the use of solvent types and generic solvents.
- ❑ Explain procedures in the Agilent Control Software for priming and flushing the pump and system.
- ❑ If applicable, explain seal wash function. Recommend using the seal wash if installed.
- ❑ G4220A/B: Explain regular maintenance of high pressure filter assembly (PTFE frits) and solvent bottle filters.
- ❑ G4204A: Explain flushing the inline filter and maintenance of the high-pressure filter assembly and inline filter.
- ❑ Explain the use of the Jet Weaver and availability of different volumes (Jet Weaver is optional for the 1290 Quaternary Pump).
- ❑ Explain availability of ISET as a temporary license. Give a short introduction to ISET features, a detailed familiarization is included if a full license is purchased.
- ❑ Explain diagnostic features in Lab Advisor: Leak rate test and system pressure test.
- ❑ Explain that the 1290 Infinity pump head maintenance can only be performed by trained personnel and requires specific tools.

G1329B ALS SL, G1367E 1260 HiP ALS, G1377A 1260 µHiP ALS, G4226A 1290 Sampler

- ❑ **Section NOT Applicable**
- ❑ Explain the basic operating principle of the autosampler, features and key specifications.
- ❑ Explain autosampler settings in the Agilent Control Software.
- ❑ Show the use of the sample trays and explain which trays and sample vessels are usable with the specific autosampler.
- ❑ Explain needle wash function and solvent compatibility (G1367E and G1377A only)
- ❑ Explain when to use the different sample loops and seat assemblies and how to exchange them (G1377A only, no demonstration).
- ❑ Show proper routing of waste capillary and condensation drain tube (if G1330B is installed).
- ❑ Explain diagnostic features in Lab Advisor: Injector steps, arm parking.
- ❑ Explain availability of optional upgrades: available sample trays, BCD board, different ID seat assemblies (G1377A only).
- ❑ Explain regular maintenance of purge pump, needle, needle seat assembly, rotor seal.

G2258A 1260 DLA

- ❑ **Section NOT Applicable**
- ❑ Explain the basic operating principle of the autosampler, features and key specifications.
- ❑ Explain autosampler settings in the Agilent Control Software.
- ❑ Show the use of the sample trays and explain which trays and sample vessels are usable.
- ❑ Explain priming of the metering head.
- ❑ Explain the effect of draw and eject speed on accuracy.
- ❑ Explain needle wash function and solvent compatibility.
- ❑ Explain partial loop fill mode and overfill mode.
- ❑ Show proper routing of waste capillary and condensation drain tube (of G1330B is installed).
- ❑ Explain diagnostic features in Lab Advisor: Injector Steps, Arm Parking.
- ❑ Explain availability of optional upgrades: available sample trays and loops, BCD board.
- ❑ Explain regular maintenance of purge pump and rotor seal.

G4277A 1290 HTS, G4278A 1290 HTC

- ❑ **Section NOT Applicable**
- ❑ Explain the basic operating principle of the autosampler, features and key specifications.
- ❑ Explain autosampler settings in the Agilent Control software.
- ❑ Explain the defining and description of objects in the Object Manager software.
- ❑ Show the teaching of the sample trays, the injection valve and the wash station.
- ❑ Show the creating of a backup file using Pal Loader.
- ❑ Explain the operating principle of the DLW (Dynamic Load & Wash).
- ❑ Explain the priming by using the utilities functions "wash station" or "syringe".
- ❑ Show proper installation of DLW Holding Loop.
- ❑ Explain the replacement of the DLW syringe assembly.
- ❑ Show proper installation of valve needle guide assembly, especially the needle seal.
- ❑ Explain the structure and the maintenance features via terminal.
- ❑ Explain regular maintenance of purge pump, syringe plunger, valve needle seal and rotor seal.

G1316A 1260 TCC, G1316C 1290 TCC

- ❑ **Section NOT Applicable**
- ❑ Explain the basic operating principle of the column compartment, features and key specifications.
- ❑ Explain the settings in the Agilent Control Software: Temperature settings, door sensor (G1316C).
- ❑ Explain the different hardware features if applicable: low dispersion heat exchangers (G1316C), column switching valve, door sensor, column ID modules.
- ❑ Explain the diagnostic features in Lab Advisor: Thermostat test and calibration possibilities.

G1314B/C 1260 VWD VL/VL+, G1314E/F 1290 VWD/1260 VWD, G1315C/D 1260 DAD VL+/VL, G1365C/D 1260 MWD/VL, G4212A/B 1290 DAD/1260 DAD, G1321B 1260 FLD, G1362A 1260 RID

- ❑ **Section NOT Applicable**
- ❑ Explain the basic operating principle of the detector, features and key specifications.
- ❑ Explain detector settings in the Agilent Control Software.
- ❑ Explain the pressure and pH range limitiations of the flow cells.
- ❑ Explain the preventive use of over pressure regulators to secure the flow cell (G4212A/B, G1321B/C).
- ❑ Explain the flow cell maintenance (if applicable).

G4260A/B ELSD, G4261A/B ELSD

- ❑ **Section NOT Applicable**
- ❑ Explain installation, especially installation of front drain to waste bottle, and rear exhaust tube.
- ❑ Explain why inert gas (typically nitrogen) must be used with inflammable solvents or samples.
- ❑ Explain how noble gases may give different performance. Explain the importance of setting the right nitrogen pressure by using the correct pressure regulator, and avoiding pressure fluctuations.
- ❑ Explain how to avoid and check for leaks.
- ❑ Explain the operating principle of the ELSD.
- ❑ Explain the detection principle in contrast to UV/Vis (absorption vs. intensity of scattered light).
- ❑ Explain using the front panel keypad.
- ❑ Explain optimization for instrument sensitivity by monitoring solvent quality, gas cleanliness etc.
- ❑ Explain basic troubleshooting in case of baseline noise issues.
- ❑ If applicable, explain interfaces to third party instruments.
- ❑ Explain “steam cleaning” procedure.
- ❑ Explain that no self repair is possible for internal parts due to safety reasons.

G4240A 1260 Chip LC

- ❑ **Section NOT Applicable**
- ❑ Explain the operating principle of the chip cube and chip cube interface assembly.
- ❑ Explain chip cube settings in the Agilent Control software.
- ❑ Demonstrate HPLC-Chip loading and unloading.
- ❑ Explain diagnostic features in Lab Advisor: Rotor maintenance position, inner and outer rotor calibrations.
- ❑ Explain the difference between standard operating mode and background reduction mode.
- ❑ Explain how to prevent charging (grounding, aux air setting).
- ❑ Demonstrate how to start the nano spray.
- ❑ Give overview of the HPLC-Chip portfolio.
- ❑ Explain regular maintenance of the chip cube rotors.

G5611A 1260 QuatPump Bio, G5628A 1260 Manual Injector 600 bar Bio , G5667A 1260 HiP ALS Bio, G5664A 1260 Fraction Collector Bio

- ❑ **Section NOT Applicable**
- ❑ Explain improved features for the Bio-inert LC (new materials, extended pH range, solvent compatibility as explained in manuals considering eventual exceptions for flow cells).
- ❑ Explain identification of bio-inert parts and modules.
- ❑ Advice not to mix standard LC and bio-inert LC parts and modules.
- ❑ Explain how to install and handle steel-cladded PEEK capillaries and bio-inert ZDV unions.
- ❑ Explain maintenance of the Bio-inert High-Performance Autosampler.

Maintenance & Diagnostics

- ❑ Demonstrate how to search and access maintenance/diagnostic tools, documents and guides.
- ❑ Review the following basic instrument maintenance and troubleshooting procedures.
  - ❑ Explain available diagnostics and tools in LabAdvisor.
- ❑ Explain how to download and update any necessary customer-installable firmware
- ❑ Explain availability and importance of the Preventive Maintenance Service (PM).

Service Review

- ❑ Complete the Service Engineer Comments section below, if applicable.
- ❑ Explain how to log an instrument service call and what support services are available.
- ❑ Perform a review (~10mins) of Agilent's web site and web links listed below.
- ❑ Explain Agilent's instrument warranty policy.
- ❑ Advise customer of additional instrument training options available.

Service Engineer Comments

(optional)

If there are any specific points you wish to note as part of performing the familiarization or other items of interest for the customer, please write in this box.

Service Completion

Service Request number.....

Date service completed.....

Agilent Signature.....

Customer Signature.....

Other Important Customer Web Links

How to get information on your product: Literature Library - http://www.agilent.com/chem/library

Need to know more? - www.agilent.com/chem/education

Need technical support, FAQs? - www.agilent.com/chem/techsupp

Need supplies? - www.agilent.com/chem/supplies

Software Status bulletins, patches, drivers, software utilities - www.agilent.com/chem/techsupp