Agilent GC, MS, and ALS

Installation Checklist

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This checklist is designed to help you correctly install your GC, 5977 Series MSD, 7000/7010 Series Triple Quad GC/MS, or 7250 Series Accurate-Mass Q-TOF MS (referred to as MS in this document) and ALS, and have them function properly in your facility. Correct installation is the first step to operate your instruments and system reliably over an extended time.

Make sure that necessary operating supplies, fittings, consumables, and usage-dependent items such as vials, syringes, and solvents are available before beginning installation.

Verify Site Preparation for Your GC, GC/MS, and ALS

- ☐ Adequate space available
- ☐ Suitable supporting bench

CAUTION **The supporting surface for the 7250 Q-TOF GC/MS system should be kept relatively vibration free. Vibration can lead to a loss of mass accuracy and resolution.**

- ☐ Adequate electrical power available at the correct voltages and frequencies
- ☐ Environmental control systems adequate to maintain a correct, stable operating environment
- ☐ Adequate safe exhaust venting preparations
- ☐ Necessary supplies for instrument operation are available, including solvents, carrier and reagent gases for performance verification, makeup and purge gases (if applicable), and printer paper
- ☐ Computer as required for your instrument
- ☐ Verify shipped materials are unpacked and inspected

GC and MS Installation

MS installation

- ☐ Unpack and verify condition and completeness of shipment with shipping documents.
- ☐ Check serial numbers and fill in installation documentation serial number fields if necessary.
- ☐ Place MS on bench (when used with 9000 GC, 5977 Series must be placed on supplied drawer for proper alignment).

CAUTION **The supporting surface for the 7250 Q-TOF GC/MS system should be kept relatively vibration free. Do not put the rough pump on your laboratory bench with the Q-TOF GC/MS due to the vibration that the pump creates. Vibration can lead to a loss of mass accuracy and resolution.**

- ☐ Place the foreline pump on the floor or on the bench.
- ☐ Open MS top cover. (5977 Series only)
- ☐ Connect the standard or dry foreline pump to the MS.
- ☐ Remove diffusion pump cap from MS (diffusion pump-equipped 5977 Series only).
- ☐ Vent the MS.

- ☐ If included, install G3397A/B High Vacuum Gauge Controller (required and standard on CI-equipped 5977 Series, optional on EI-only 5977 Series).
- ☐ Prepare and connect reagent gas lines to MS (CI-equipped instruments only).
- ☐ Prepare and connect hydrogen gas lines to MS (JetClean-equipped instruments only).

WARNING **The use of hydrogen is specifically prohibited with the 7250 Q-TOF MS.**

- ☐ When using hydrogen as a carrier gas, remove and store the plastic cover over the window on the front of the MS. (5977 Series and 7000/7010 only)
- ☐ Connect the collision cell gas line from the GC's EPC module to the CC input on the analyzer manifold. (7000/7010 GC/MS and 7250 Q-TOF MS).
- ☐ Connect AC power cord to the MS.

GC Installation

- ☐ Unpack and verify condition and completeness of shipment with shipping documents.
- ☐ Check serial numbers and fill in installation documentation serial number fields if necessary.
- ☐ Check voltage settings of the instrument and computer systems.
- ☐ Verify that power cables are correct (must correspond with power socket).
- ☐ Verify line voltage and voltage settings.
- ☐ Place GC drawer stand on benchtop. (7000/7010 Series and 7250 Series MS only)
- ☐ Place the GC on the bench (5977 Series) or on the drawer (7000/7010 Series and 7250 Series).

WARNING **The use of hydrogen is specifically prohibited with the 7250 Q-TOF MS.**

- ☐ Remove the round side cover, insulation, and GC/MS interface blank plate from the appropriate position (front or rear) of left side of the GC.
- ☐ Connect supply gases/traps (if ordered).
  - Verify gas purity.
  - Leak check all connections and purge the gas lines.
- ☐ Connect cryogenic coolant (if included).
- ☐ Plug in power cable.
- ☐ Connect the signal output and/or remote cables (if applicable).
- ☐ Turn on GC power.
- ☐ Set up LAN for use with data system.
- ☐ Configure the IP address if required for data system.
- ☐ Verify that the GC column is installed in the inlet and conditioned.
- ☐ Configure the GC time and date, devices, columns, gases, etc.

Connect the MS to the GC

- ☐ Turn off GC power.
- ☐ Align the GC/MS interface with the hole in the left side of the GC.
- ☐ Connect GC/MS interface heater cable.
- ☐ Carefully slide the MS and GC together so the GC/MS interface protrudes into the GC oven..
- ☐ Connect remote cable between the GC and the MS.
- ☐ Plug in the MS.
- ☐ Loosen sideplate thumbscrews completely and open analyzer door to view column end.
- ☐ Install column in the GC/MS interface.
- ☐ Turn on GC power.
- ☐ Turn off GC/MS interface heater.
- ☐ Set GC carrier gas flow to 1.0 mL/min with constant flow enabled.
- ☐ Set collision cell EPC gas flows (mL/min):
  - 7000 Series 1.5 N_2 and 2.25 He
  - 7010 Series 1.5 N_2 and 4.00 He
  - 7250 Series 1.5 N_2 and 4.00 He
- ☐ Turn on MS power (press on the sideplate(s)).
- ☐ Verify standard or dry foreline pump and front fan operation.
- ☐ Verify foreline pump stops gurgling within 60 seconds (standard pump).
- ☐ Verify turbo pump stops whining within four minutes (turbo pump-equipped MSs).
- ☐ Verify diffusion pump heater turns on (diffusion pump-equipped MSs).
- ☐ Verify MS does not turn off after 10 minutes of pumping down.
- ☐ Turn on GC heated zones.

Automatic Liquid Sampler (ALS) Installation

- ☐ Unpack and verify condition and completeness of shipment with shipping documents.
- ☐ Check serial numbers and fill in installation documentation serial number fields if necessary.
- ☐ Install the ALS hardware on the GC:
  - Prepare the GC.
  - Install the tray, if applicable.
  - Install injector mounting post and injector.
  - Connect the injector and tray cables, if applicable.
- ☐ Connect to the controlling device.
- ☐ Turn on GC power.
- ☐ Install the tray vial racks, if applicable.
- ☐ If a tray is not installed, install the standalone sample turret.
- ☐ Configure the ALS on the GC and data system.
- ☐ Calibrate the tray, then the ALS system.
- ☐ Perform a dry run to verify the functionality of the instruments:
  - Cap three sample vials.
  - Place the sample vials in sample positions 1, 2, and 3.
  - Place the solvent and waste vials in position.
  - Install the syringe.
  - Prepare the GC and controlling device.
  - Start the sequence.

Acquisition Software and PC Installation

- ☐ Install PC and printer as needed.
- ☐ Create system LAN as needed.
- ☐ Install/upgrade software and configure.
- ☐ Install the user documentation on PC (if applicable).
- ☐ Install Agilent Instrument Utilities on the PC.

Performance Verification

- ☐ Perform Checkout Tune.
- ☐ Perform Tune Verification.
- ☐ Verify EI performance.
- ☐ Switch from EI to CI operating mode (CI-equipped instruments only).
- ☐ Perform PCI autotune.
- ☐ Verify PCI performance.
- ☐ Perform NCI autotune.
- ☐ Verify NCI performance.

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