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Agilent Preventive Maintenance provides factory recommended service for your analytical systems to assure reliable operation and the accuracy of your results. Delivered by highly-trained and certified service engineers using genuine Agilent parts and supplies, Agilent Preventive Maintenance provides everything you need to reduce unplanned downtime and keep your systems operating at their peak.

For more information about Agilent Technologies GC Support please visit our web site using the following URL:

http://www.agilent.com/en-us/products/gas-chromatography/gc-systems/7890b-gc#support

Customer Information

- Customers should provide all necessary operating supplies upon request of the engineer.
- A customer representative should be available to the engineer while performing the preventive maintenance procedures.
- Any parts, not included in the Parts Lists section of this document, are not part of the recommended Preventive Maintenance service, nor are they included in the price of this service.
- If a system requires the use of additional or special procedures and/or parts for the instrument service, then these must be ordered separately and charged as a repair, which may incur additional costs.

Service Engineer's Responsibilities

- Only complete sections that relate to the system or module being serviced.
- 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 services not delivered, as needed.
- Complete the PM Service in the order of the tasks listed.
- Complete the Service Review section together with the customer.

Additional Instruction Notes

- Check for any active service notes for this unit. If there are any applicable "Safety" or "Modification Recommended" Service notes, plan to implement the changes on this unit before doing any qualification service.
- Do not implement firmware updates, unless you get approval from the customer and are sure that they are compatible with the instrument control software.

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System Information

Guidance

- ❑ Check this box if an instrument configuration report is attached instead of completing the table.

Instrument system name and ID	
Instrument system site and location	
List system component product numbers	**List the serial numbers of each component**
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10.

Preparation

- ❑ Discuss any specific issues with the customer prior to starting.
- ❑ Review the instrument logbook.
- ❑ Save instrument control settings before starting the procedure.
- ❑ Perform general inspection of system for cleanliness
- ❑ Check for proper installation of safety-related parts, assemblies, sensors etc.
- ❑ Check for required firmware updates and verify with customers if they would like it installed.
- ❑ Before starting the following procedures, record the Detector Signal Output(s) in the results table. If the GC is turned OFF or in a service mode, comparing the detector outputs before and after the service is not possible.

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Clean and inspect GC

- ❑ Unplug power cord from the power source.
- ❑ Open GC covers and vacuum/remove any dust/debris. Pay particular attention to cooling fans.
- ❑ Inspect internal connectors for proper contact and placement.
- ❑ Reconnect Power to the GC. Power the GC on and verify the power on self-test passed.
- ❑ Verify oven motor spins freely and turns on with the oven door closed; off when the door is opened.
- ❑ Verify operation of all other fans - the inlet and EPC cooling fans.
- ❑ Verify oven intake/outlet flap assembly is operating smoothly while heating and cooling the oven

Inlet and detector consumable replacement

- ❑ For the inlets installed, perform inlet maintenance as defined in the 7890 manual – "Maintaining Your GC" - for the inlet(s) installed.
- ❑ Replace the split vent trap cartridge filter on units with these inlets: Split/Splitless Capillary (SSL), Multi-Mode Inlet (MMI), Programmed Temperature Vaporizer (PTV), Volatiles Interface (VI).
- ❑ If the inlet system is used in Split Mode with viscous samples, inspect and clean the split vent tube on the inlet and flush or replace the tubing between the inlet and the split vent trap.
- ❑ If the GC includes a Flame Ionization Detector (FID), replace the jet. If the ignitor shows any buildup of sample or corrosion, replace the ignitor. Examine the FID collector and castle assemblies for contamination – clean as necessary.

Zero Sensors and Leak test

- ❑ Zero all pressure sensors per the procedure in the 7890 "Advanced User Guide".
- ❑ Perform inlet pressure decay test(s) as defined in the 7890 "Troubleshooting Manual".
  If the PM is done in preparation for an Operational Qualification, then the pressure decay test defined within that protocol can be used for the PM.
- ❑ Record if test passed or failed in the results table.

ALS Maintenance

- ❑ **Section NOT applicable**
- ❑ Check all cabling and configuration settings between GC, tray, and injectors.
- ❑ Vacuum or removed any dust, especially around fans.
- ❑ Check operation of all fans.
- ❑ Check syringe for smooth plunger operation.
- ❑ Check for smooth operation of the needle support – clean if necessary
- ❑ Check for correct operation of syringe volume settings.

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Restore Instrument

- ❑ Restore the normal operating conditions or customer method using the Keyboard or Data System.
- ❑ Purge the system with carrier flow for 15 minutes
- ❑ Bake out the system, then restore the normal operating conditions
- ❑ After equilibration, check and record the post PM detector signal output values.
  Results should be similar or lower than the detector outputs recorded prior to PM.
- ❑ Perform a chemical checkout. If this is a routine PM, inject the customer's sample using the ALS if applicable. This will act as a final checkout of both the ALS and the GC.

Guidance

If the PM Service is performed prior to a qualification service, then use the qualification procedure as a guide for final instrument set up and checkout.

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Service Review

- ❑ Attach available reports/printouts of all tests to this documentation.
- ❑ Record the PM service activity in the customer's instrument records/logbook
- ❑ Update/reset instrument maintenance counters as appropriate
- ❑ Affix the PM sticker to the system or instrument logbook based on the customer's request.
- ❑ Complete the Service Review Comments section below if there are additional comments
- ❑ Review the service and any test results with the customer.
- ❑ If the Instrument firmware was updated, record the details of the change in the Service Engineer's Comments box below or if necessary, in the customer's IQ records.
- ❑ Please ask the customer if they would like to have Smart Alerts installed on their computer.

7890 GC Test Results Table

Detector Signal Outputs	**Before PM service**	**After PM service**
Front detector output		
Back detector output		
AUX detector output		
Pressure decay test	**Expected result**	**Actual result or N/A**
Front inlet pressure decay test	Pass	
Back inlet pressure decay test	Pass	

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7890 GC Parts List Table

The following kits are recommended for capillary and purged packed inlets. If this is a general PM and the customer has a preferred set of consumables, you may use the customer's consumables.

Part Description	Part Number	Model# where used	Quantity Consumed
SSL Capillary Inlet PM kit, Splitless	5188-6497	7890A/B	
SSL Capillary Inlet PM kit, split	5188-6496	7890A/B	
SSL Capillary Ultra Inert Inlet Gold Seal with Washer	5190-6144	7890A/B	
SSL Capillary Ultra Inert Inlet Splitless Liner - Single taper with Glass Wool	5190-2293	7890A/B	
SSL Capillary Ultra Inert Inlet Low Pressure Drop Split Liner - with Glass Wool	5190-2295	7890A/B	
PP Inlet PM kit	5188-6498	7890A/B	
Split vent trap PM kit, single cartridge (for MMI, PTV & VI)	5188-6495	7890A/B	
MMI Cleaning Kit	G3510-60820	7890A/B	
PTV Septumless Head Rebuild Kit	5182-9747	7890A/B	
PTV Septumless Head Teflon Guide	5182-9748	7890A/B	
Ignitor (glow plug) assembly with O-ring	19231-60680	7890A/B	
FID Collector Rebuild/Cleaning Kit	G1531-67000	7890A/B	
FID Collector Replacement Kit	G1531-67001	7890A/B	
Standard .011-inch FID Jet for capillary FID base	G1531-80560	7890A/B	
High Temperature .018-inch FID Jet for capillary FID base	G1531-80620	7890A/B	
Standard .018-inch FID Jet for packed column with packed FID base	18710-20119	7890A/B	
Standard .011-inch FID Jet for capillary column with packed/adaptable FID base	19244-80560	7890A/B	
High Temperature .018-inch FID Jet for capillary column with packed/adaptable FID base	19244-80620	7890A/B	

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Service Engineer Comments (optional)

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

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Other Important Customer Web Links

- 7890 GC manual "Maintaining Your GC" - http://www.agilent.com/cs/library/usermanuals/public/G3430-90052%207890B_Maintaining%20Guide.pdf
- Need to know more? - http://www.agilent.com/crosslab/university/
- Need supplies? - www.agilent.com/chem/supplies

Service Completion

Service request number _____ Date service completed _____

Agilent signature _____ Customer signature _____

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