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Houston Forensic Science Center Inc
 500 Jefferson St Fl 13
 HOUSTON TX 77002-7300
 USA

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Invoice To:

Houston Forensic Science Center Inc
 500 Jefferson St Fl 13
 HOUSTON TX 77002-7300
 USA

SERVICE REPORT

Customer Purchase Order Number:	Customer Number: 70449002
Service Request: N/A -BAM 3/20/2024	Service Request Date: N/A -BAM 3/20/2024
Service Order: 6006582774	Service Confirmation: 6905496846

Delivery Site:

Houston Forensic Science Center Inc
 500 Jefferson St Fl 13
 HOUSTON TX 77002-7300
 USA

Direct Inquiries to:

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Location:

Room
Bldg
Lab
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Federal Tax ID: 77-0518772

Beneficiary Bank: Bank of America
 SWIFT: BOFAUS3N
 Beneficiary Account: 12331-31561
 Beneficiary Name: Agilent Technologies Inc

ORIGINAL

Service Confirmation Number: 6905496846

Service Confirmation Date: March 08, 2024

Service Instrument:

Model Number	Model Description	Serial Number	System Handle	Parent Asset
SYS-GC-7890-E	GC 7890 System Enhanced GC Features			
G3445B	7890 Series GC for Analyzers	US16163003		SYS-GC-7890-E
G4557A	7697A Headspace Sampler, 111 Vial	CN16140002		SYS-GC-7890-E

Service Items:

Item	Service/Part #	Description	Qty	Entitlement	Service Start	Service End
1000	PM	Preventive Maintenance	1.00	Agreement Entitlement - 100 % covered	03/05/2024	03/05/2024

Additional Information:

Service Information:

Problem Description:

N5291272 Mar'24,PMGC-7890-E #

Service Provided:

Performed PM in accordance with Agilent Protocols.

Service Overview Code:

Reason Code: Scheduled Service

Diagnosis Code: Scheduled Service

Resolution Code: Scheduled Service

Reported Hours:

4.5

Travel Hours:

1.0

Customer Field Service

Representative Name:

CATH BRISCOE

Customer Field Service

Representative Signature:

Can Bin

Date:

05 MAR 2024

Customer Name:

Brooke Mendenhall

Customer Signature:

Date:

03/25/2024

Additional Comments:

Agilent CrossLab Start Up Services

Agilent 7697A Headspace Sampler Preventive Maintenance - Standard

Agilent Preventive Maintenance provides factory recommended service for your analytical instruments 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 what you need to reduce unplanned downtime and keep your systems operating at their peak performance.

This checklist is used as a guide for completing the preventive maintenance tasks. A signed copy of this checklist is provided for your records.

Introduction

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. Customers are responsible for regular maintenance and are encouraged to observe the service representative.
- 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 extra or special procedures and/or parts for the maintenance service, then these must be ordered separately and charged as a repair, which may incur additional costs.

Important Customer Web Links

- To access **Agilent training and education**, visit <http://www.agilent.com/chem/training> to learn about training options, which include online, classroom and onsite delivery. A training specialist can work directly with you to help determine your best options.
- To access the **Agilent Resource Center** web page, visit <https://www.agilent.com/en-us/agilentresources>. The following information topics are available:
 - Sample Prep and Containment
 - Chemical Standards
 - Analysis
 - Service and Support
 - Application Workflows
- The **Agilent Community** is an excellent place to get answers, collaborate with others about applications and Agilent products, and find in-depth documents and videos relevant to Agilent technologies. Visit <https://community.agilent.com/welcome>
- Videos about specific preparation requirements for your instrument can be found by searching the **Agilent YouTube** channel at <https://www.youtube.com/user/agilent>
- **Need to place a service call?** [Flexible Repair Options | Agilent](#)

Service Engineer's Responsibilities

- Contact the customer and ensure that all necessary supplies are available before the preventive maintenance visit.
- Only select those pages that relate to the system or module being serviced.
- Complete empty fields with the relevant information.
- Complete the relevant checkboxes in the checklist using either a "X" or tick mark "✓".
- Check "**Service not applicable**" check boxes to indicate services/tasks not delivered, as appropriate.
- Complete the Preventive Maintenance services in the most logical order relevant to the individual system service in the order of the tasks listed.
- Complete the **Service Review** section together with the customer.
- Complete the fields for page numbers at the foot of each selected page.
- Add relevant page numbers to selected pages and complete the total number of pages field in the Service Completion section
- It is important to consult with the customer prior to a PM to determine which parts are installed in the instrument to decide if individual components need to be purchased rather than the 7697A Standard PM Kit. The 7697A Standard PM Kit contents are based off of the contents of the original shipment. Different types of deactivated treatment for the sample probe and sample loop, different sample loop sizes, and transfer line sizes may require for individual parts to be ordered to perform the PM procedure. If different parts are required, reference the Agilent supplies catalog for part numbers.
- **Ask the customer to sign the Service Verification section including the customer's and your signature.**

Instrument Maintenance

Select the appropriate service to be performed.

- Interim Preventive Maintenance (when available, is typically 6 months or at the request of the customer)
- Major Preventive Maintenance (Yearly)
- Enhanced Preventive Maintenance (when available, is provided "As needed")

System Information

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

Instrument System Name and ID	GC-3 Headspace-3 -BAM 3/12/2024
Instrument System Site and Location	Houston Forensic Sc. Ctr, 500 Jefferson St., Houston, TX 77002

List System Component Product Numbers	List the Serial Numbers of each Component
1. 7697A Headspace Sampler	CN16140002
2. N/A	
3.	
4.	
5.	
6.	
7.	
8.	
9.	

Preparation

- Discuss any specific issues with the customer before starting.
- Review the instrument logbook for recorded problems and comments.
- Save instrument control settings before starting the procedure.
- Perform a general inspection of the system for cleanliness.
- Check for proper installation of parts, assemblies, sensors etc.
- Check system for required installation of components and implementation of Service Notes
- Check for required firmware updates and verify with customers if they would like them installed. Firmware update(s) are strongly recommended.

Preventive Maintenance Procedures

Service Not Applicable

Inspect and Clean Sampler

- Service Not Applicable.*
- If a tray is part of the system, remove the tray and pneumatics to allow for access to the oven.
- If a tray is part of the system, check that the shutter sensor is not dusty. If it is, use air duster to remove the dust.
- Check for any debris in the carousel and clean if necessary.
- If a tray is part of the system, reinstall the tray and pneumatics unit.
- Remove the front panel of the instrument.
- Check the carousel belt for wear. If it is worn, consult with the customer to determine if it should be replaced.
- Use a dry, clean cloth to wipe the lifter rod(s) clean. Do not apply any lubricant.
- Vacuum the inside of the unit.
- Reinstall the front panel of the instrument.
- Using the Manual Operations function under the Service Mode Key on the instrument keypad, confirm that the following components work:
 - Tray Lifter (If applicable)
 - Sampler Lifter
 - Carousel Motor
 - Shutter Motor (If applicable)

Pneumatic Components

- Service Not Applicable.*
- Remove the sample probe.
- Remove the sample loop.
- Install the new sample loop.
- Install the new sample probe.
- Remove the fused silica transfer line.
Special note: If OQ will be performed after the PM, remove the fused silica transfer line and do not reinstall it until the transfer line measurement is taken for the OQ procedure.
- Reinstall the fused silica transfer line.

- ☑ Use Service Reminders under the Service Mode Key on the instrument keypad to run the instrument restriction and leak test. Verify that it passes (make a note below the tests results table). If it fails, consult the customer for repair options.

Tray Components

- Service Not Applicable.*
- ☑ Check for any debris in the sample trays and clean if necessary.
- ☑ Check that the tray gantry rod is clean. If it is dirty or dusty, wipe it clean with a dry cloth. Do not apply any kind of lubrication.
- ☑ Check that the sensors are not dusty. If they are, use air dusters to remove the dust.
- ☑ Check the tray belts for any wear. If they are worn, consult with the customer to determine if they should be replaced.
- ☑ Verify the three LED's for the tray racks light up when the trays are installed.
- ☑ Run the tray calibration.
- ☑ Reset the counter (pressing the OFF key) of the tray calibration.

Restore Instrument

- Service Not Applicable.*
- Connect the headspace transfer line if it has not been already reconnected.
- Return instrument to initial condition.
- Perform system checkout procedure or test.

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.

Service Review

- Attach available reports/printouts of all tests to this documentation.
- Record the Preventive Maintenance service activity in the customer's records/logbook.
- Record the PM event in the Smart Alerts logbook, if applicable.
- 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 Engineer Comments section if there are additional comments.
- Review this service, parts replaced, and test results obtained with the customer.
- If the instrument firmware was updated, record the details of the change in the Service Engineer's Comments box. Systems in a compliant environment may need additional documentation.
- Complete the Signature Page with both Service Engineer and Customer signatures.**

7697A Headspace Sampler Test Results

Test Description	Expected Test Result	Actual Test Result
Tray Calibration	Pass	Pass
Leak Test	Pass	Pass
Chemical Checkout Test		Pass

7697A Headspace Sampler Parts List

Part Description	Part Number	Product or Model# where used	Quantity consumed
7697A Standard PM Kit ¹	G4556-67011	7697A HS Sampler	1
Ferrule Flexi Inert 0.53 mm Col 10/PK NFS	G3188-27503	7697A HS Sampler AND G3520A module	1 (Optional, not included in PM kit)

¹ Part numbers and descriptions for the kit contents

Part Description	Part Number	Quantity
Sample Probe	G4556-63825	1
Sample Loop (1mL)	G4556-80106	1
Thermal Gap Insulation Foam	G3530-00610	1
7697A Fused Silica and ProSteel Kit	G3903-61001 (Not Orderable)	1
Polyimide, Valcon Ferrule, 5 pack	0100-2595	1
Nut and reducing union for 6 port valve transfer line connection	0100-2594	1
Liner, direct, 2mm ID, deactivated	5181-8818	1

Signature Page

Service Engineer Comments (optional)

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

Performed PM in accordance with Agilent Protocols.

Service Verification

Service Request Number:

6006582774

Service Engineer Name:

Cash Briscoe

Service Engineer Signature:

Cash Briscoe

Total number of pages in this document:

12

Date Service Completed:

05MAR2024

Customer Name:

Brooke A. Mendenhall

Customer Signature:

Agilent CrossLab Start Up Services

Agilent 7890 Gas Chromatograph

Preventive Maintenance Checklist

Agilent Preventive Maintenance provides factory recommended service for your analytical instruments 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. This checklist will be completed at the end of the service and provided to you as a record of the preventive maintenance activities.

Introduction

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 extra or special procedures and/or parts for the maintenance service, then these must be ordered separately and charged as a repair, which may incur additional costs.

Important Customer Web Links

- For more information about **Agilent Technologies services**, please visit our website using the following URL: <http://www.agilent.com/en-us/products/crosslab-instrument-services/service-repair>
- The **Agilent Community** is an excellent place to get answers, collaborate with others about applications and Agilent products, and find in-depth documents and videos relevant to Agilent technologies. Visit <https://community.agilent.com/welcome>.
- To access **Agilent University**, visit <http://www.agilent.com/crosslab/university/> to learn about training options, which include online, classroom and onsite delivery. A training specialist can work directly with you to help determine your best options.
- A useful **Agilent Resource Center** web page is available, which includes short videos on maintenance, quick lists of consumables for new instruments, and other valuable information. Check out the Resource Page here: <https://www.agilent.com/en-us/agilentresources>.
- Need technical support, FAQs, supplies? – visit our **Support Home page** <http://www.agilent.com/search/support>.
- **Videos** about specific preparation requirements for your instrument can be found by searching the **Agilent YouTube** channel at <https://www.youtube.com/user/agilent>.
- **7890B Manuals** are also available on Agilent.com:
 - **Safety**
https://www.agilent.com/cs/library/usermanuals/public/7890B_Safety.pdf
 - **Installation and First Startup**
https://www.agilent.com/cs/library/usermanuals/Public/7890B_Installation.pdf
 - **Operation Manual**
https://www.agilent.com/cs/library/usermanuals/Public/7890B_Operation.pdf
 - **Maintaining Your GC**
https://www.agilent.com/cs/library/usermanuals/public/G3430-90052%207890B_Maintaining%20Guide.pdf

Service Engineer's Responsibilities

- Contact the customer and ensure that all necessary supplies are available before the preventive maintenance visit.
- Only select those pages that relate to the system or module being serviced.
- Complete empty fields with the relevant information.
- Complete the relevant checkboxes in the checklist using either a "X" or tick mark "✓".
- Check "**Section not applicable**" check boxes to indicate services/tasks not delivered, as appropriate.
- Complete the Preventive Maintenance service in the order of the tasks listed.
- Complete the Service Review section together with the customer.
- Complete the fields for page numbers at the foot of each selected page
- Complete the total number of pages field in the Service Completion section
- **Ask the customer to sign the Service Completion section including the customer's and your signature.**

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.

System Information

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

Instrument System Name and ID	GC-3 - 7890 Headspace-3 -BAM 3/12/2024
Instrument System Site and Location	Houston Forensic Sc. Ctr., 500 Jefferson St, Houston 77002

List System Component Product Numbers	List the Serial Numbers of each Component
1. 7890 GC	US16163003
2. N/A	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Preparation

- Discuss any specific issues with the customer before starting.
- Review the instrument logbook for recorded problems and comments.
- Save instrument control settings before starting the procedure.
- Perform a general inspection of the system for cleanliness.
- Check for proper installation of parts, assemblies, sensors etc.
- Check system for required installation of components, settings as defined by current Service Notes.
- Check for required firmware updates and verify with customers if they would like them 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.

Preventive Maintenance Procedure

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 remove 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

Restore Instrument

- Restore the normal operating conditions or customer method using the Browser interface 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.

Note: 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.

Signature Page

Service Review

- Attach available reports/printouts of all tests to this documentation.
- Record the Preventive Maintenance service activity in the customer's 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 Engineer Comments section if there are additional comments.
- Review with the customer this service, parts replaced, and test results obtained.
- If the instrument firmware was updated, record the details of the change in the Service Engineer's Comments box or if necessary, in the customer's IQ records.
- Supply the customer with a copy of the Smart Alerts flyer.
- Describe Smart Alerts to the customer.
- Install Smart Alerts if requested.

7890 GC Test Results Table

Detector Signal Outputs	Before PM Service	After PM Service
Front detector output	FID 3.1	FID 2.8
Back detector output	FID 3.4	FID 2.7
AUX detector output	N/A	
Pressure decay test	Expected test result	Actual test result
Front inlet pressure decay test	Pass	Pass
Back inlet pressure decay test	Pass	Not in use

7890 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	Product or model# where used	Quantity consumed
SSL Capillary Inlet PM kit, Splitless	5188-6497	7890A/B	1
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	
Standard .011-inch FID Jet for capillary FID base	G1531-80560	7890A/B	2
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	
NPD Jet, universal fit, .011-inch ID	G1534-80580	7890A/B	
NPD Jet, universal fit, .011-inch ID Extended tip	G1534-80590	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	
**FID Collector Replacement Kit, if needed	G1531-67001	7890A/B	

Service Engineer Comments

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 include them in this box.

Instrument passed all test and operated within specifications.

Service Completion

Service request number 6006582774 Date service completed 05MAR2024

Agilent signature *Cash Briscoe* Customer signature _____

Total number of pages in this document 9