

**PLEC DE PRESCRIPCIONS TÈCNIQUES
PARTICULARS PER A LA CONTRACTACIÓ
DELS SERVEIS DE MANTENIMENT DELS
EQUIPS DE CROMATOGRÀFIA DE GASOS
DE LA MARCA *AGILENT* DEL
LABORATORI DE L'EMPRESA
MUNICIPAL MIXTA D'AIGÜES DE
TARRAGONA SA(EMATSA)
(Codi dels equips: MS034 / MS035 / MS069)**

1/5

DOMICILI SOCIAL:

Muntanyeta de St. Pere i St. Pau, s/n
43007 Tarragona · A-43049956

ADREÇA DE CORRESPONDÈNCIA:

Ap. Correus 4195
43007 Sant Pere i Sant Pau (Tarragona)

Tel. 977 25 09 12

www.ematsa.catwww.lab.ematsa.cat

1. ANTECEDENTS

L'Empresa Municipal Mixta d'Aigües de Tarragona, S.A. (en endavant, Ematsa), té com a objecte principal aquelles activitats relacionades amb el cicle integral de l'aigua.

Per tal de prestar correctament els seus serveis, Ematsa disposa d'un Laboratori d'anàlisi per a poder portar a terme adequadament les tasques de control de qualitat de l'aigua de l'abastament de la ciutat.

El Laboratori d'Ematsa, a més de realitzar el control de qualitat de l'aigua de consum de l'abastament municipal, també presta serveis analítics a d'altres municipis i a diferents clients dins de l'àmbit mediambiental. El Laboratori està situat a la ctra. N-240, km 3 de Tarragona.

Entre l'equipament del Laboratori es disposa de diversos equips de cromatografia de gasos de la marca *Agilent*, amb diferents sistemes de detecció i d'introducció de la mostra, amb els quals es realitza la determinació de nombrosos compostos orgànics volàtils i semivolàtils. Es considera que aquests equips són estratègics per al funcionament del laboratori donat que els paràmetres que determinen estan regulats pel RD 3/2023, de 10 de gener, pel qual s'estableixen els criteris tècnic-sanitaris de la qualitat de l'aigua de consum, el seu control i subministrament.

Degut a la funció estratègica que exerceixen aquests equips per a donar compliment al que estableix el RD 3/2023 i garantir la qualitat sanitària de l'aigua de consum dels diferents abastaments gestionats per Ematsa, convé que estiguin coberts per un contracte de manteniment que inclogui les revisions anuals corresponents per tal d'assegurar el seu correcte funcionament i que garanteixi així mateix la reparació de qualsevol avaria que es pugui produir.

2. OBJECTE DEL PRESENT CONTRACTE

L'objecte del present plec és establir les condicions tècniques que regiran la contractació, per procediment negociat, dels serveis de manteniment dels equips següents:

SBSE-GC-MSMS (Codi EMATSA: MS069 ; Núm. Sèrie Cromatògraf model 7890A: CN12051088)

HS-GC-MS (Codi EMATSA: MS034 ; Núm. Sèrie Cromatògraf model 7890B: CN13463011)

GC-FID (Codi EMATSA: MS035 ; Núm. Sèrie Cromatògraf model 7890B: CN13463049)

3. UBICACIÓ DE LES INSTAL·LACIONS ON S'HA DE PRESTAR EL SERVEI

Els equips objecte de la prestació del servei de manteniment es troben ubicats a les instal·lacions del Laboratori d'Ematsa, les quals estan situades a la carretera N-240, km 3 de Tarragona.

4. DESCRIPCIÓ DELS TREBALLS

El servei de manteniment s'iniciarà a partir de la data que es faci constar al document de formalització del contracte entre Ematsa i el contractista. Inclourà, com a mínim, els conceptes que s'indiquen a continuació:

- Suport telefònic per a la identificació i resolució de problemes de hardware i software.
- Visita anual per a la realització del manteniment preventiu dels equips que inclogui:
 - Substitució de peces específiques, protocols de neteja, ajustament, lubricació, inspecció i proves del sistema.
 - Neteja de la font d'ions dels detectors de masses (2 neteges a l'any als 2 equips que disposen de detector MS).
 - Mà d'obra, desplaçament i peces necessàries pel manteniment.
- Resolució de problemes i reparació de hardware al propi laboratori.
- En cas d'avaria:
 - Servei de resposta ràpida de com a màxim 3 dies hàbils des de la notificació per part del Laboratori d'Ematsa al proveïdor.
 - Despeses de personal i desplaçament incloses al preu del contracte.
 - Costos de peces i consumibles necessaris per a la reparació inclosos al preu del contracte.

Les condicions tècniques concretes que s'han de contractar per a cadascun dels equips objecte d'aquest expedient estan definides a la documentació tècnica sol·licitada a *Agilent Technologies Spain SL*, la qual s'adjunta als annexos inclosos al final d'aquest Plec de Prescripcions Tècniques Particulars.

5. CONDICIONS DEL SERVEI

Els treballs es realitzaran a risc i ventura del contractista.

Tots els danys a la propietat o a tercers ocasionats en la realització de la seva tasca, seran de la seva exclusiva responsabilitat, i immediatament reparats pel contractista.

Tota feina que a judici del representant d'Ematsa fos defectuosa serà tornada a executar amb les condicions escaients per compte del contractista.

Si sorgís alguna diferència en la interpretació del present Plec de Prescripcions Tècniques, el contractista s'haurà de sotmetre a les decisions de la persona que Ematsa designi com a responsable del contracte.

Resta obligat el contractista a fer en general tot allò que calgui per la bona realització de les feines encomanades, encara que no es trobi taxativament expressat al Plec de Prescripcions

Tècniques, i sempre que, sense separar-se del seu esperit i recta interpretació, sigui ordenat per Ematsa.

Quan els mitjans utilitzats en l'execució del manteniment no fossin idonis a judici del responsable designat per Ematsa, aquesta donarà ordre al contractista perquè a la seva costa els substitueixi per garantir la correcta prestació dels serveis contractats.

Si per qualsevol circumstància es decideix, per alguna de les parts, la suspensió temporal, parcial o total dels treballs, o una suspensió definitiva, s'haurà d'aixecar el corresponent informe o acta de suspensió on es faran constar els motius que van originar la decisió de la suspensió del servei. Aquesta suspensió no atorgarà dret al contractista per demanar cap mena de compensació i/o indemnització.

6. PERSONAL

Degut a la pròpia complexitat dels equips objecte del servei de manteniment, el personal tècnic que ha de fer aquestes revisions, reparacions i operacions de manteniment, cal que hagi rebut una formació i entrenament específics, la qual serà acreditada aportant la documentació que el contractista consideri adient.

Serà obligació del contractista disposar del personal suficient a fi de realitzar les necessàries substitucions del personal sense afectar al servei.

El contractista està obligat a separar del servei aquell personal que, a judici d'Ematsa, no compleixi les obligacions contingudes al contracte.

7. CONEIXEMENT DEL CONTRACTE

El desconeixement del contracte en qualsevol dels seus termes, dels documents annexos que formen part del mateix o de les instruccions de les normes de caràcter reglamentari o de qualsevol altra índole que puguin tenir aplicació a l'execució dels subministraments pactats, no eximirà l'adjudicatari de l'obligació del seu compliment.

8. HORARI DE PRESTACIÓ DELS SERVEIS

La prestació dels serveis objecte del present contracte que requereixin una actuació presencial a les instal·lacions d'Ematsa s'hauran de dur a terme, preferentment, entre les 8 hores i les 15 hores.

Les actuacions de manteniment preventiu es faran en la data acordada, prèviament i amb la suficient antelació, entre el contractista i Ematsa, sempre dins del termini de vigència del contracte.

9. FACTURACIÓ DELS TREBALLS

El mètode de pagament del servei de manteniment serà el següent: a partir de la data de signatura del contracte, el proveïdor enviarà amb periodicitat semestral la factura

corresponent al servei de manteniment del semestre en curs. L'import de cadascuna d'aquestes factures serà la part proporcional corresponent i s'emetrà dins dels primers cinc dies del primer mes del semestre en curs. Durant el període de vigència del contracte de manteniment s'emetraran, doncs, un total de 6 factures semestrals, d'un import de 11.538,72€ (IVA exclòs) cadascuna d'elles.

Les factures s'enviaran a la següent adreça de correu electrònic:
facturacioematsa@ematsa.cat

Per tal de poder ser admesa, cada factura haurà d'incloure el corresponent número de comanda, el qual haurà estat enviat prèviament pel Laboratori d'Ematsa a l'adreça que el contractista hagi facilitat.

Tarragona, en la data que consta a la signatura electrònica.

Signat: Ginés Sánchez Pérez
Responsable Àrea de Laboratori

Agilent GCMS Preventive Maintenance Checklist
AGILENT TECHNOLOGIES SPAIN SL

DOMICILI ENTITAT D'INSPECCIÓ:
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Agilent CrossLab Start Up Services

Agilent GCMS 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

Select the appropriate PM to be done and then perform the checklist under that section

- ☐ Interim Preventive Maintenance 6 months
- ☐ Major Preventive Maintenance Yearly

This checklist covers the following model(s):

Type	Model
SQ	5973 Series MSD
SQ	5975 Series MSD
SQ	5977 Series MSD
TQ	7000 Series MS/MS
TQ	7010 Series MS/MS
QTOF	7200 Series QTOF
QTOF	7250 Series QTOF

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

- 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>
- 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](#) at <http://www.agilent.com/search/support>
- Get answers. Share insights. Build connections:
Join the [Agilent Community](#) at <https://community.agilent.com/welcome>

Service Engineer's Responsibilities

- Contact the customer and ensure that all necessary supplies are available before the preventive maintenance visit.
- 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 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.
- Ask the customer to sign the Service Completion section including the customer's and your signature.

Additional Instruction Notes

- Preventive maintenance is a factory recommended procedure designed to reduce the likelihood of electromechanical failures. Failure to perform preventive maintenance may reduce the long-term reliability of certain instruments and systems. **Two preventative maintenances (PMs) per year are recommended, the Major PM Service will be performed annually with an Interim PM performed 6 months after the Major PM.**

System Information

- ☐ 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.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

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 settings as defined by current Service Notes
- ☐ Check for firmware updates and verify with customers if they would like them installed. Firmware update(s) are strongly recommended.

Customer Responsibilities

Customers should ensure that all necessary operating supplies, consumables, and usage-dependent items such as gases, vials, syringes, calibrant solution and solvents required for successful preventive maintenance are available. A customer representative should be available while the preventive maintenance is being performed.

Important notice for customers

The customer should complete the following before the Support Provider arrives on site:

- ☐ Perform an autotune and retain the printed tune report just prior to the start of the PM to verify performance of the equipment.

Note: it is recommended to have the customer run the autotune and tune evaluation prior to the PM and then start the vent cycle so that the instrument will be ready for the service representative.

Definition of the Task/Recommended items within the document

Task		Recommended			
Yes	No	Interim	Major	As needed	
☒	☐	☐	☐	☐	Yes selected means that the task was done or the part was required.
☐	☒	☐	☐	☐	No selected means that the task was not done or the part was not required.
☐	☐	☒	☐	☐	Interim selected means that this task is recommended to be done at 6-month intervals.
☐	☐	☐	☒	☐	Major selected means that this task is recommended to be done yearly; if the customer would like a service to be done at the 6-month interval then the service could be purchased.
☐	☐	☐	☐	☒	As needed selected means that the task was done or the part was used as needed. For example, there could be two types of filters that could be used and this was the one selected.

Preventive Maintenance Procedures

Yes/No	Interim/Major	Description
☐ ☐ ☒ ☒		Perform general inspection of system for cleanliness
☐ ☐ ☒ ☒		Discuss any problems the customer is having with the instrument
☐ ☐ ☒ ☒		Review customer maintenance records and exclude maintenance on recently serviced items
☐ ☐ ☒ ☒		Review the most recent autotune report. This will give a starting point for evaluating spectral peaks, baseline noise, peak shape, mass assignments and resolution.

GCMS				Description
Yes/No	Interim/Major			
☐ ☐ ☒ ☒				Record Instrument model no.
☐ ☐ ☒ ☒				Record Instrument serial no.
☐ ☐ ☒ ☒				Record Rough Vacuum
☐ ☐ ☒ ☒				Record Manifold Vacuum
☐ ☐ ☒ ☒				Type of Column installed

				System Checks
Yes/No	Interim/Major			Description
☐	☐	☒	☒	Verify that calibration peaks were seen prior to starting the PM
☐	☐	☒	☒	Vent the instrument
☐	☐	☒	☒	Inspect vacuum hoses, pump, exhaust tubing, and power cords for excessive wear.
☐	☐	☒	☒	Visually inspect calibrant levels – PFTBA PFDTD (if appl.), IRM (if appl.). Refill if available.
☐	☐	☒	☒	Look for any obvious external damage or problems.
☐	☐	☒	☒	Clean air intake(s). Cosmetic cover(s) may need to be removed.
☐	☐	☒	☒	Verify system line voltage meets instrument specifications: Yes ☐ No ☐

Yes/No	☐	☐	Wet Mechanical vacuum pumps	
Yes/No	Interim/Major			Description
☐	☐	☒	☒	Check for evidence of oil leakage. Check pump gasket for leakage.
☐	☐	☒	☒	Drain and replace mechanical pump oil.
☐	☐	☒	☒	Replace Oil Mist Filter if applicable.
☐	☐	☒	☒	Discuss with customer the need for more frequent oil changes if the oil is dirty
☐	☐	☒	☒	Don't use mist filters with Chemical Ionization.
☐	☐	☒	☒	Perform anti-suckback valve test. Power on until side plate is held closed, power off and check that side plate holds closed. Visually confirm that no oil returns up vacuum hose.
Yes/No	☐	☐	Dry Mechanical vacuum pumps - Diaphragm	
Yes/No	Interim/Major			Description
☐	☐	☒	☒	Check for evidence of poor vacuum – Turbo power demand, poor manifold vacuum, etc.
☐	☐	☒	☒	Clear air flow paths of dust.
☐	☐	☒	☒	If vacuum is poor, then replace the diaphragm pump.
☐	☐	☒	☒	Perform anti-suckback valve test. Power on until side plate is held closed, power off and check that side plate holds closed.

Yes/No	☐	☐	Dry Mechanical vacuum pumps - Scroll	
Yes/No	Interim/Major			Description
☐	☐	☒	☒	Replace the tips seal on the IDP pump.
☐	☐	☒	☒	Check for evidence of poor vacuum – Turbo power demand, poor manifold vacuum, etc.
☐	☐	☒	☒	Replace the Exhaust Filter if required.
☐	☐	☒	☒	Discuss with customer the need for more frequent changes, if needed.
☐	☐	☒	☒	Inform customer that pump gas ballast should be installed all the time.
☐	☐	☒	☒	Perform anti-suckback valve test. Power on until side plate is held closed, power off and check that side plate holds closed.

				Cleaning System and Filters	
Yes/No	Interim/Major			Description	
				Fans	
☐	☐	☒	☒		Remove dust from fans and vent covers.
☐	☐	☒	☒		Verify fans are functional and that there is enough space around the instrument for proper cooling.
				Source cleaning	
☐	☐	☒	☒		Open analyzer and remove the source.
☐	☐	☒	☒		Disassemble, Clean, Re-assemble source.
☐	☐	☒	☒		Re-install source and close analyzer.
				Filters	
☐	☐	☒	☒		Replace RMSH-2 Helium gas filter – if applicable.
☐	☐	☒	☒		Replace RMSN-2 Nitrogen gas filter – if applicable.
☐	☐	☒	☒		Replace RMSHY-2 Hydrogen gas filter – if applicable.
☐	☐	☒	☒		CP17988 – Gas Clean Carrier Gas Kit for 7890 for Nitrogen or Helium; Bracket, Mount, and Filter – if applicable.
☐	☐	☒	☒		CP17974 – Gas Clean Filter Kit GC/MS 1/8"; Mount and Filter – if applicable.
☐	☐	☒	☒		CP17973 – Gas Clean Filter; Replacement Filter – if applicable.
☐	☐	☒	☒		5190-9071 – Methane Gas Filter – if applicable

Guidance: If gas filter is replaced, write the change date on the filter using a permanent marker.

				System post-check
Yes/No	Interim/Major			Description
☐	☐	☒	☒	Pump system back down. Wait until system stability has been achieved.
☐	☐	☒	☒	Verify system vacuum reading(s) via the gauge controller.
☐	☐	☒	☒	Leak Check
☐	☐	☒	☒	Verify system in manual tune
☐	☐	☒	☒	Compare against previous tune file report(s)
☐	☐	☒	☒	Change to Tune and verify that all temperatures, pressures, and gas flows reach method set points
☐	☐	☒	☒	Check manually that you have calibration peaks.
☐	☐	☒	☒	EI Autotune Performed

Guidance: If the PM Service is performed prior to a qualification service, then use the qualification procedure as a guide for final instrument setup 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 Comment box. Systems in a compliant environment may need additional documentation.

Agilent Test Results Table

Test Description	Expected Test Result	Actual Test Result

Agilent Consumed Parts List Table

☐ Section not applicable

Part Description	Part Number	Product or Model# where used	Quantity consumed

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.

Service Completion

Service request number _____ Date service completed _____

Agilent signature _____ Customer signature _____

Total number of pages in this document _____

Parts – As needed as part of the PM

Common MS Filters and Seals – 5973/5975/5977/7000/7010/7200/7250 Series

					Supplies	
Yes/No	Interim	Major	As needed		Description	Part number
☐	☐	☐	☒	☒	Helium gas filter – if required	RMSH-2
☐	☐	☐	☒	☒	Nitrogen gas filter – if required	RMSN-2
☐	☐	☐	☒	☒	Big Universal Trap, 1/8" fittings, Hydrogen, if required	RMSHY-2
☐	☐	☐	☒	☒	Gas Clean Carrier Gas Kit for 7890 for Nitrogen or Helium; Bracket, Mount and Filter – if required	CP17988
☐	☐	☐	☒	☒	Gas Clean Filter Kit GC/MS 1/8 in (complete replacement kit) – if required	CP17974
☐	☐	☐	☒	☒	Gas Clean GS/MS Filter – if required	CP17973
☐	☐	☐	☒	☒	Chemical Ionization Gas Purifier (CI systems) – if required	5190-9071
☐	☐	☒	☒	☐	Agilent AVF Platinum, 1 quart	5191-5851

Gas filters need to be changed only if required

MS Maintenance Supplies for 5973/5975/5977 Series

					Supplies	
Yes/No	Interim	Major	As needed		Description	Part number
☐	☐	☐	☒	☒	Diffusion pump fluid (Diffusion Pump Models)	6040-0809 Qty 2
☐	☐	☐	☒	☒	IDP-3 Tip Seal Replacement Kit (IDP-3 Dry Pump Models)	G7077-67018
☐	☐	☐	☒	☒	IDP-3 Tip Seal Replacement Kit (no tools – CSD P/N)	5190-9561
☐	☐	☐	☒	☒	IDP-3 Tip Seal Replacement Kit (no tools – VPD P/N)	IDP3TS
☐	☐	☐	☒	☒	Filter element for IDP-3	REPLSLRFILTER2
☐	☐	☐	☒	☒	DS42 Oil Mist Eliminator 3/4G & 3/8	SR03706556
☐	☐	☐	☒	☒	Exhaust oil mist trap (thread) Edwards/Pfeiffer	G1099-80039

MS Maintenance Supplies for 7000/7010 Series

					Supplies	
Yes/No	Interim	Major	As needed		Description	Part number
☐	☐	☐	☒	☒	Nitrogen gas filter	RMSN-2
☐	☐	☐	☒	☒	IDP-10 Tip Seal Replacement Kit (IDP-10 Dry Scroll Pump Models)	G7004-67023
☐	☐	☐	☒	☒	IDP-10 Tip Seal Replacement Kit (no tools – VPD P/N)	X3807-67000
☐	☐	☐	☒	☒	Oil Mist Filter RV5	G6600-80043
☐	☐	☐	☒	☒	Filter element for the IDP-10	REPLSLRFILTER1

MS Maintenance Supplies for 7200/7250 Series

					Supplies	
Yes/No	Interim	Major	As needed		Description	Part number
☐	☐	☐	☒	☒	Nitrogen gas filter – if required	RMSN-2
☐	☐	☐	☒	☒	RIS Probe Maintenance Kit (7200 Series only)	G7005-60170
☐	☐	☐	☒	☒	DS202 Oil Mist Eliminator	SR03706800
☐	☐	☐	☒	☒	IDP-15 Tip Seal Replacement Kit (IDP-15 Dry Pump Models)	5190-9613
☐	☐	☐	☒	☒	IDP-15 Tip Seal Replacement Kit (no tools – VPD P/N)	X3815-67000
☐	☐	☐	☒	☒	Filter element, for SH-110/SH-112/IDP-15 exhaust silencer	REPLSLRFILTER
☐	☐	☐	☒	☒	DS 3/8 MAG. PLUG AND GASKET	SR03701824

MS Maintenance Supplies for JetClean

					Supplies	
Yes/No	Interim	Major	As needed		Description	Part number

☐ ☐ ☐ ☒ ☒	Big Universal Trap, 1/8" fittings, Hydrogen, if required	RMSHY-2
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Consumable Parts Reference – Purchasable by customer, not included as part of PM

Common MSD Maintenance Supplies 5973/5975/5977/7000/7010/7200/7250 Series

					Common Recommended Consumables Parts	
Yes/No	Interim	Major	As needed		Description	Part number
☐	☐	☐	☐	☒	El High Temperature Filaments	G7005-60061 Qty 2
☐	☐	☐	☐	☒	HES El Filaments	G7002-60001
☐	☐	☐	☐	☒	LE-El Filaments	G3850-60021
☐	☐	☐	☐	☒	CI High Temperature Filament – all MSDs	G7005-60072
☐	☐	☐	☐	☒	PFTBA GCMS Tuning Standard calibrant	05971-60571
☐	☐	☐	☐	☒	PFDTD calibrant, 1 mL	8500-8510
☐	☐	☐	☐	☒	PFET, IRM calibrant for GC QTOF 0.5 mL	5190-0531

MSD Maintenance Supplies 5973/5975/5977 Series

Yes/No	☐	☐				Supplies	
Yes/No	Interim	Major	As needed			Description	Part number
☐	☐	☐	☐	☒		CI Interface tip seal (tip and spring combo)	G1999-60412
☐	☐	☐	☐	☒		CI Interface tip seal (tip only)	G3870-20542
☐	☐	☐	☐	☒		CI Interface tip seal spring (spring only)	G1999-20023
☐	☐	☐	☐	☒		Repeller insulator	G1099-20133 Qty 2
☐	☐	☐	☐	☒		Lens insulator/holder (HES)	G7002-20074
☐	☐	☐	☐	☒		Ring heater/sensor assembly (HES)	G7002-60043
☐	☐	☐	☐	☒		Ceramic insulator for Extractor (HES)	G7002-20064
☐	☐	☐	☐	☒		Transfer-Line Tip Cap, Threaded	G3870-20547
☐	☐	☐	☐	☒		Transfer-Line Tip Base, Threaded	G3870-20548

MS Maintenance Supplies for 7000/7010 Series

Yes/No	☐	☐				Supplies	
Yes/No	Interim	Major	As needed			Description	Part number
☐	☐	☐	☐	☒		CI Interface tip seal - 7000	G1999-60412
☐	☐	☐	☐	☒		CI Interface tip seal - 7010	G7002-60412
☐	☐	☐	☐	☒		CI Interface tip seal (tip only)	G3870-20542
☐	☐	☐	☐	☒		CI Interface tip seal spring (spring only)	G1999-20023
☐	☐	☐	☐	☒		Repeller insulator - 7000	G1099-20133 Qty 2
☐	☐	☐	☐	☒		Lens insulator/holder (HES)	G7002-20074
☐	☐	☐	☐	☒		Ring heater/sensor assembly (HES)	G7002-60043
☐	☐	☐	☐	☒		Ceramic insulator for Extractor (HES)	G7002-20064
☐	☐	☐	☐	☒		Transfer-Line Tip Cap, Threaded	G3870-20547
☐	☐	☐	☐	☒		Transfer-Line Tip Base, Threaded	G3870-20548

MS Maintenance Supplies for 7200 Series

Yes/No	☐	☐				Supplies	
Yes/No	Interim	Major	As needed			Description	Part number
☐	☐	☐	☐	☒		Extractor Lens Insulator	G7005-20133
☐	☐	☐	☐	☒		Ion Focus Insulator	G7005-20442
☐	☐	☐	☐	☒		Ring Heater/Sensor Assembly	G7005-60110
☐	☐	☐	☐	☒		RIS Xfer Tip	G7005-20542
☐	☐	☐	☐	☒		RIS Xfer Tip Spring	G7005-20024

MS Maintenance Supplies for 7250 Series

Yes/No	☐	☐	Supplies		
Yes/No	Interim	Major	As needed	Description	Part number
☐	☐	☐	☒	Lens insulator/holder (HES)	G7002-20074
☐	☐	☐	☒	Ring heater/sensor assembly (HES)	G7002-60043
☐	☐	☐	☒	Ceramic insulator for Extractor (HES)	G7002-20064
☐	☐	☐	☒	Transfer-Line Tip Cap, Threaded	G3870-20547
☐	☐	☐	☒	Transfer-Line Tip Base, Threaded	G3870-20548
☐	☐	☐	☒	El Extractor Transfer Tip	G3870-20542
☐	☐	☐	☒	CI Tip Compression Spring	G1999-20023

MS Maintenance Supplies for Intuvo 9000 MS Systems

Yes/No	☐	☐	Supplies		
Yes/No	Interim	Major	As needed	Description	Part number
☐	☐	☐	☒	Swaged MS Tail - Packaged	G4590-60009
☐	☐	☐	☒	Swaged MS Tail (HES) - Packaged	G4590-60109

Common MS Maintenance Supplies

Parts required					
Yes/No	Interim	Major	As needed	Description	Part number
☐	☐	☐	☒	Abrasive paper, 30 um	5061-5896
☐	☐	☐	☒	Alumina powder	393706201
☐	☐	☐	☒	Cloths, clean (pkg of 15)	05980-60051
☐	☐	☐	☒	Cloths, cleaning (pkg of 300)	9310-4828
☐	☐	☐	☒	Cotton swabs (pkg of 100)	5080-5400
☐	☐	☐	☒	Gloves, clean, large	8650-0030
☐	☐	☐	☒	Gloves, clean, small	8650-0029

Agilent 7890 Series GC Preventive Maintenance Checklist
AGILENT TECHNOLOGIES SPAIN SL

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7890 GC**Preventive Maintenance Checklist – Standard**

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.

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.

7890 GC
Preventive Maintenance Checklist – Standard**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.

7890 GC
Preventive Maintenance Checklist – Standard**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.

7890 GC
Preventive Maintenance Checklist – Standard**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.

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	

7890 GC
Preventive Maintenance Checklist – Standard
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	

7890 GC
Preventive Maintenance Checklist – Standard**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.

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 _____

Document part number: G3430-90004

Document Control Logs

Revision Log

Revision	Date	Reason For Update
A.01.06	4-Mar-2011	Migrated the content of revision A.01.05 to the new Agilent template. Reviewed by subject matter expert, Dave Park.
A.01.07	10-Mar-2012	Clarified the Pressure Decay test versus Leak Check and standardized on the term "Detector Signal Outputs"
A.01.08	9-Feb-2013	Update to accommodate the introduction of the 7890B
A.01.09	20-Jan-2015	Added Split Vent trap to MMI, PTV and VE - also PTV and FID PM Parts
A.01.10	31-March-2015	Added Ultra Inert Gold Seal and Liner to SS Consumables
A.01.11	10-Dec-2015	Added step to perform maintenance on the Split Vent Tube and .018" FID Jet part numbers - Fixed broken web links

Approval Log

Revision	Approver	Title of Approver
A.01.06	Don Gage	Product support manager
A.01.09	Kai Meng	Product support manager
A.01.10	Suneetha Tippireddy	Product support manager
A.01.11	Suneetha Tippireddy	Product support manager

Agilent 7697A Headspace Sampler Preventive Maintenance Checklist
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7697A Headspace Sampler Preventive Maintenance Checklist – Standard

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For more information about Agilent Technologies services please visit our web site using the following URL <http://www.chem.agilent.com/en-us/products/services/pages/default.aspx>

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/printout 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 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.
- **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.

**7697A Headspace Sampler
Preventive Maintenance Checklist – Standard**

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.

7697A Headspace Sampler Preventive Maintenance Checklist – Standard

Inspect and Clean Sampler

- ☐ 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)
 - ☐ Sample Lifter
 - ☐ Carousel Motor
 - ☐ Shutter Motor (If applicable)

Pneumatic Components

- ☐ 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 to reset the counter (press the OFF key) of the sample probe, sample loop and transfer line.
- ☐ Use the Leak Test 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 in the tests results table). If it fails, consult the customer for repair options.

**7697A Headspace Sampler
Preventive Maintenance Checklist – Standard****Tray Components**

- ☐ **Section 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 duster 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 that 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

- ☐ Reconnect the headspace transfer line if it has not been already reconnected.
- ☐ Return instrument to initial conditions.
- ☐ 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.

7697A Headspace Sampler Preventive Maintenance Checklist – Standard

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.

7697A Headspace Sampler Test Results Table

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

7697A Headspace Sampler Parts List Table

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

❶ Part numbers and descriptions for the kit contents.

Part Description	Part Number	Quantity
Sample Probe	G4556-60125	1
Sample Loop (1mL)	G4556-80106	1
Thermal Gap Insulation Foam	G3530-00610	1
7697A Fused Silica and ProSteel Kit	G3903-61001	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

**7697A Headspace Sampler
Preventive Maintenance Checklist – Standard****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.

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

Service Completion

Service request number _____ Date service completed _____

Agilent signature _____ Customer signature _____

Document part number: G4556-90022