

**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: MS005 / MS006)**

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:

HS-GC-MS (Codi EMATSA: MS006 ; Núm. Sèrie Cromatògraf model 6890N: CN10436026)

GC-MS (Codi EMATSA: MS005 ; Núm. Sèrie Cromatògraf model 6890N: US10337073)

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 per a cadascun dels equips).
 - 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: el proveïdor enviarà amb periodicitat semestral la factura corresponent al servei de manteniment del semestre en

curs. Atès que la durada del contracte s'estableix, per les raons indicades a l'informe de necessitats, pel període 19/01/2025 - 31/12/2025, les factures que enviarà el contractista correspondran:

- La primera, pel període 19/01/2025 - 18/07/2025, per un import de 10.876,50 € (IVA exclòs).
- La segona, pel període 19/07/2025 - 31/12/2025, per un import de 9.880,65 € (IVA exclòs).

Cadascuna de les factures s'emetrà dins dels primers cinc dies del primer mes del semestre en curs, i 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](http://www.agilent.com/en-us/products/crosslab-instrument-services/service-repair), please visit our website using the following URL: <http://www.agilent.com/en-us/products/crosslab-instrument-services/service-repair>
- To access [Agilent University](http://www.agilent.com/crosslab/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](https://www.agilent.com/en-us/agilentresources) 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) at <http://www.agilent.com/search/support>
- Get answers. Share insights. Build connections:
Join the [Agilent Community](https://community.agilent.com/welcome) 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	
Yes/No	Interim/Major	Description	
☐ ☐ ☒ ☒		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 ☐

				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.
				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.

				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	Interim/Major/As needed	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	Interim/Major/As needed	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	Interim/Major/As needed	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	
☐	☐	☐	☐	☒	EI 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 6890 Series GC Preventive Maintenance Checklist
AGILENT TECHNOLOGIES SPAIN SL

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6850 and 6890 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 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.

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.

6850 and 6890 GC
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.
- ☐ 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.



6850 and 6890 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 6850 or 6890 manual – “Maintaining Your GC” - for the inlet(s) installed.
- ☐ Replace the split vent trap on units with these inlets: Split/Splitless Capillary (SSL), Programmable Temperature Vaporization (PTV), Volatiles Interface (VI).
- ☐ If the GC includes a Flame Ionization Detector (FID), replace the jet. If the ignitor shows any build up 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 6890 Service Manual.
- ☐ Perform inlet pressure decay tests(s) as defined in the 6890 Service Manual. If the PM is done in preparation for an OQ/PV, 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 rod – clean if necessary
- ☐ Check for correct operation of syringe volume stops.

Restore Instrument

- ☐ Restore the normal operating conditions using the Keyboard or Data System.
- ☐ Check and record detector offset. Results should be similar to offset test conducted 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.

6850 and 6890 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.

6850 and 6890 GC Test Results Table

Signal Output test	Before PM service	After PM service
Front detector output		
Back detector output (6890 Only)		
Pressure decay test	Expected result	Actual result or N/A
Front inlet pressure decay test	Pass	
Back inlet pressure decay test (6890 Only)	Pass	

6890 and 6850 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	G1530/G1540/G2630	
SSL Capillary Inlet PM kit, split	5188-6496	G1530/G1540/G2630	
Larger O.D. Liner O-Rings for SS Flip Top - 10/pkg.	5188-5366	G1530/G1540/G2630	
PP Inlet PM kit	5188-6498	G1530/G1540/G2630	
Split vent trap PM kit, single cartridge (for PTV & VI)	5188-6495	G1530/G1540/G2630	
Ignitor (glow plug) assembly with O-ring	19231-60680	G1530/G1540/G2630	
.011-inch FID Jet for capillary FID base	G1531-80560	G1530/G1540/G2630	
.018-inch FID Jet for packed column with packed FID base	18710-20119	G1530/G1540/G2630	
.011-inch FID Jet for capillary column with packed FID base	19244-80560	G1530/G1540/G2630	

**6850 and 6890 GC
Preventive Maintenance Checklist – Standard**



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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.

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: G2630-90130

Agilent G1888 Headspace Sampler Preventive Maintenance Checklist
AGILENT TECHNOLOGIES SPAIN SL

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G1888 Headspace 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.

Additional Instruction Notes

- This PM service requires the Headspace Optical Alignment Tools, part number G1888-80000.



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.

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.



G1888 Headspace Preventive Maintenance Checklist – Standard

Self-test and Update Firmware

- ☐ **Section NOT applicable**
- ☐ Power cycle the sampler. Check power-on self-test. If it does not pass the self-test, consult the customer for the appropriate repair options.
- ☐ If appropriate, update the main processor PCA firmware.

Inspect, Clean, & Adjust Robotic Components

- ☐ Power OFF the sampler and disconnect the power cord. Disconnect the transfer line to allow working on the Headspace.
- ☐ Lift the lid and remove the fan screen, oven fan blade, and carousel.
 - ☐ Clean and vacuum residue, dust, or debris from the bottom of carousel and tray cooling fans. Pay special attention to broken glass and spills.
 - ☐ Verify that the oven fan axle spins freely without touching the carousel sleeve. If there is any touching, realign the fan assembly to the base of the sampler.
 - ☐ Realign the carousel and reassemble the fan blade and fan screen.
- ☐ Lift pneumatics cover and inspect pneumatics area for any debris that may be around the 6-port valve sensor and motor shaft. Put back the cover.
- ☐ Remove the back cover and clean and vacuum any residue or dust from the power supply fan.
- ☐ To clean the oven sensor, lifter sensors and lifter gears, the unit must be resting on the tray in order to remove the bottom cover. Inspect the lifters. Make sure that the lifter rod hole is clear. If necessary, remove them for cleaning.
 - ☐ Check the carousel motor belt for wear. If worn, consult customer on replacing belt.
 - ☐ Dust off carousel sensor. Reassemble the bottom cover and upright the G1888A.
- ☐ Clean the shutter sensor, vial sensor, and tray position 1 sensor.
- ☐ Check for worn belts on tray motor and shutter motor. If worn, consult customer on replacing Tray-shutter drive assembly.
- ☐ Clean any debris that may be in the sample tray area. Check chain tension and make adjustment only if necessary.

Final Alignment and Verify Robotics

- ☐ Reattach the power cord and power on the sampler. Verify that it passes self test successfully.
- ☐ Use the headspace alignment tools, part number G1888-80000, to realign the tray motor group.
- ☐ To verify all robotics are running properly by running unheated reliability test for 5 minutes with 12 empty capped vials. Press this sequence of keypad keys: CLEAR . (dot) 9 DOWN ARROW 1 ENTER.

G1888 Headspace Preventive Maintenance Checklist – Standard



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Leak Test

- ☐ Run the standalone restriction and leak tests.
- ☐ If the unit does not pass the restriction and leak test, consult the customer for repair options.

Flow path	Valve position	P (psi) after 5 min	P (psi) at time 0	Difference Must be < 2 PSI
Vial pressurization	Loop in vial			
Carrier	Loop in vial			
Vial pressurization	Loop in carrier			
Carrier	Loop in carrier			

Restore Instrument

- ☐ Reinstall the headspace transfer line.
- ☐ Return instrument to initial conditions.
- ☐ Perform a system checkout test and record the results in the results table.

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.

**G1888 Headspace
Preventive Maintenance Checklist – Standard**



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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.

G1888 Headspace Test Results Table

Observation		Record
Firmware revision:	Latest revision:	Updated: YES / NO
Valve count		
Test Description	Expected Test Result	Actual Test Result
Leak test	Pass	
Chemical checkout	Pass	

**G1888 Headspace
Preventive Maintenance Checklist – Standard**



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Service Engineer Comments (optional)

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

Service Completion

Service request number _____ Date service completed _____

Agilent signature _____ Customer signature _____

Document part number: G1888-90004