

# Agilent Preventive Maintenance Services

## Agilent GCMS Preventive Maintenance

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

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.

## 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.**

## 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 order by sections: Review, System Checks, Pump maintenance, Cleaning System and Filters, then System Post Check.
  - The tasks in each section may be completed in the most logical order relevant to the system. 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 Verification section
- Complete Signature Page and attach Signature Page to Service Order.

## 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.**

## Definition of the Task/Recommended items within the document

| Task |    | Recommended |       |           |                                                                                                                                                                                             |
|------|----|-------------|-------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Yes  | No | Interim     | Major | As Needed |                                                                                                                                                                                             |
| ✓    |    |             |       |           | <b>Yes</b> selected means that the task was done or the part was required                                                                                                                   |
|      | ✓  |             |       |           | <b>No</b> selected means that the task was not done or the part was not required.                                                                                                           |
|      |    | ✓           |       |           | <b>Interim</b> selected means that this task is recommended to be done at 6-month intervals                                                                                                 |
|      |    |             | ✓     |           | <b>Major</b> 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    |
|      |    |             |       | ✓         | <b>As needed</b> 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. |

## 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 7890A EM-AA-117 (Serial CN13061093) |
| Instrument System Site and Location | Laboratorio                            |

| List System Component Product Numbers | List the Serial Numbers of each Component |
|---------------------------------------|-------------------------------------------|
| 1. Ver informe 30677                  | Ver informe 30677                         |
| 2.                                    |                                           |
| 3.                                    |                                           |
| 4.                                    |                                           |
| 5.                                    |                                           |
| 6.                                    |                                           |

### 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 firmware version(s). Updating to the most current versions is strongly recommended. Verify with the customer before updating.

## Preventive Maintenance Procedures

☐ Service Not Applicable

### Interim / Major Preventive Maintenance – GCMS

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

### Interim / Major Preventive Maintenance – System Checks

☐ Service Not Applicable

|                          | System Checks            |                                     |                                     |                                                                                                                                     |
|--------------------------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Yes/No                   | Interim/Major            | Description                         |                                     |                                                                                                                                     |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Verify that calibration peaks were seen prior to starting the PM                                                                    |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Vent the instrument                                                                                                                 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Inspect vacuum hoses, pump, exhaust tubing, and power cords for excessive wear.                                                     |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Visually inspect calibrant levels – PFTBA PFDTD (if appl.), IRM (if appl.). Refill if available.                                    |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Look for any obvious external damage or problems.                                                                                   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Clean air intake(s). Cosmetic cover(s) may need to be removed.                                                                      |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Verify system line voltage meets instrument specifications: <b>Yes</b> <input type="checkbox"/> <b>No</b> <input type="checkbox"/>  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | For HydroInert systems, verify customer is running hydrogen: <b>Yes</b> <input type="checkbox"/> <b>No</b> <input type="checkbox"/> |

### Interim / Major Preventive Maintenance – Wet Mechanical vacuum pumps

☐ Service Not Applicable

| Yes/No                                                                                                                    | Interim/Major | Wet Mechanical vacuum pumps                                         |
|---------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|
| Yes/No                                                                                                                    | Interim/Major | Description                                                         |
| <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |               | Check for evidence of oil leakage. Check pump gasket for leakage.   |
| <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>            |               | GC/MS SQ with diffusion pump; drain and replace diffusion pump oil. |
| <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |               | Drain and replace mechanical pump oil.                              |
| <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |               | Replace Oil Mist Filter if applicable.                              |

| Yes/No                   | <input type="checkbox"/> | <input type="checkbox"/>            | Wet Mechanical vacuum pumps         |                                                                                                                                                                                               |
|--------------------------|--------------------------|-------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <div>Discuss with customer the need for more frequent oil changes if the oil is dirty</div>                                                                                                   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <div>Don't use mist filters with Chemical Ionization.</div>                                                                                                                                   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <div>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.</div> |

## Interim / Major Preventive Maintenance – Dry Mechanical vacuum pumps - Diaphragm

☐ Service Not Applicable

| Yes/No                   | <input type="checkbox"/> | <input type="checkbox"/>            | Dry Mechanical vacuum pumps - Diaphragm |                                                                                                                               |
|--------------------------|--------------------------|-------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Yes/No                   | Interim/Major            |                                     | Description                             |                                                                                                                               |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>     | Check for evidence of poor vacuum – Turbo power demand, poor manifold vacuum, etc.                                            |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>     | Clear air flow paths of dust.                                                                                                 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>     | If vacuum is poor, then replace the diaphragm pump.                                                                           |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>     | Perform anti-suckback valve test. Power on until side plate is held closed, power off and check that side plate holds closed. |

## Interim / Major Preventive Maintenance – Dry Mechanical vacuum pumps - Scroll

☐ Service Not Applicable

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

## Interim / Major Preventive Maintenance – Cleaning System and Filters

☐ Service Not Applicable

|                          |                                     |                                     |                                     | Cleaning System and Filters                                                                                                                                                                                                                                                                                                                 |
|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Yes/No                   | Interim                             | Major                               |                                     | Description                                                                                                                                                                                                                                                                                                                                 |
|                          |                                     |                                     |                                     | Fans                                                                                                                                                                                                                                                                                                                                        |
| <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Remove dust from fans and vent covers.                                                                                                                                                                                                                                                                                                      |
| <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Verify fans are functional and that there is enough space around the instrument for proper cooling.                                                                                                                                                                                                                                         |
|                          |                                     |                                     |                                     | Source cleaning (all sources <b>except</b> Hydrolnert)                                                                                                                                                                                                                                                                                      |
| <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Open analyzer and remove the source.                                                                                                                                                                                                                                                                                                        |
| <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Disassemble, Clean, Re-assemble source. (7200, also, remove and clean entrance lens)                                                                                                                                                                                                                                                        |
| <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Re-install source and close analyzer.                                                                                                                                                                                                                                                                                                       |
|                          |                                     |                                     |                                     | Hydrolnert Source                                                                                                                                                                                                                                                                                                                           |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | Source <b>NOT</b> to be abrasively cleaned. No cleaning required at PM. If a decrease in performance is observed, recommend to the customer that filaments, insulators (repeller and extractor), extractor lens, and repeller lens may need to be replaced to restore performance. Hydrolnert source should not be run with helium carrier. |
|                          |                                     |                                     |                                     | Filters                                                                                                                                                                                                                                                                                                                                     |
| <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Replace RMSH-2 Helium gas filter (collision cell gas) – if applicable.                                                                                                                                                                                                                                                                      |
| <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Replace RMSN-2 Nitrogen gas filter (collision cell gas) – if applicable.                                                                                                                                                                                                                                                                    |
| <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Replace RMSHY-2 Hydrogen gas filter (Hydrolnert and JetClean) – if applicable.                                                                                                                                                                                                                                                              |
| <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | CP17973 – Gas Clean GS/MS Filter (for He, N2 or H2 carrier) – if required                                                                                                                                                                                                                                                                   |
| <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 5190-9071 – Methane Gas Filter (CI systems) – if applicable                                                                                                                                                                                                                                                                                 |

**Guidance:** Gas filters need to be changed only if required (ie indicating traps show color change, or if Big Universal Trap are approaching saturation based on time installed or number of gas cylinders changed for that trap)

## Interim / Major Preventive Maintenance – System Post Check

☐ Service Not Applicable

|                          |                          |                                     |                                     | System post-check |  |                                                                                                   |
|--------------------------|--------------------------|-------------------------------------|-------------------------------------|-------------------|--|---------------------------------------------------------------------------------------------------|
| Yes/No                   |                          |                                     |                                     | Interim/Major     |  | Description                                                                                       |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                   |  | Pump system back down. Wait until system stability has been achieved.                             |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                   |  | Verify system vacuum reading(s) via the gauge controller.                                         |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                   |  | Leak Check                                                                                        |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                   |  | Verify system in manual tune                                                                      |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                   |  | Compare against previous tune file report(s)                                                      |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                   |  | Change to Tune and verify that all temperatures, pressures, and gas flows reach method set points |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                   |  | Check manually that you have calibration peaks.                                                   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                   |  | 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 Comments box. Systems in a compliant environment may need additional documentation.
- ☒ Complete Signature Page and attach Signature Page to Service Order.

## Test Results

| Test Description | Expected Test Result | Actual Test Result |
|------------------|----------------------|--------------------|
|                  |                      |                    |
|                  |                      |                    |

## Signature Page

### Service Engineer Comments (optional)

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

El instrumento queda operando de acuerdo con los parámetros de aceptación establecidos por el fabricante.

## Service Verification

Service Request Number:

30677

Service Engineer Name:

Lesther Carrillo

Service Engineer Signature:

*Lesther Carrillo*

Date of Service Completion:

04 Nov 2025

Customer Name:

Total number of pages in this document:

10

## Parts for consumption during PM

### Common Oil and MS Gas Filters – 5973/5975/5977/7000/7010/7200/7250 Series

| Part Description                                                                                      | Part Number | Interim | Major | As Needed |
|-------------------------------------------------------------------------------------------------------|-------------|---------|-------|-----------|
| Agilent AVF Platinum, 1 quart                                                                         | 5191-5851   | ✓       | ✓     | ✓         |
| Helium gas filter* (collision cell gas) – if required                                                 | RMSH-2      |         | ✓     | ✓         |
| Nitrogen gas filter* (collision cell gas) – if required                                               | RMSN-2      |         | ✓     | ✓         |
| Hydrogen gas filter* ^ (HydroInert and JetClean) – if required                                        | RMSHY-2     |         | ✓     | ✓         |
| Chemical Ionization Gas Purifier (CI systems) (Methane) – if required                                 | 5190-9071   |         | ✓     | ✓         |
| Gas Clean GS/MS Filter (for He, N2 or H2) – if required                                               | CP17973     |         | ✓     | ✓         |
| # Gas Clean Filter Kit GC/MS 1/8 in (complete replacement kit - bench mounted) – if required          | CP17974     |         |       | ✓         |
| # Gas Clean Carrier Gas Kit for 7890 for He, N2 or H2; Bracket, Mount and Filter – if required        | CP17988     |         |       | ✓         |
| # Gas Clean Carrier Gas Kit for 8890 & 8860 for He, N2 or H2; Bracket, Mount and Filter – if required | CP179880    |         |       | ✓         |

Gas filters need to be changed only if required (ie indicating traps show color change, or if Big Universal Trap are approaching saturation based on time installed or number of gas cylinders changed for that trap)

\* Big Universal Trap (BUT), 1/8" fittings

^ HydroInert and JetClean Systems

# Alternate Gas Clean kit part numbers. A Gas Clean filter is included in the kits. They are only necessary if replacing carrier gas Big Universal Traps with indicating traps

### MS Maintenance Supplies for 5973/5975/5977 Series

| Part Description                                                                                                                          | Part Number        | Interim | Major | As Needed |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------|-------|-----------|
| Diffusion pump fluid (Diffusion Pump Models)                                                                                              | 6040-0809<br>Qty 2 |         | ✓     | ✓         |
| Exhaust oil mist trap (threaded) Edwards/Pfeiffer                                                                                         | G1099-80039        | ✓       | ✓     | ✓         |
| DS42 Oil Mist Eliminator 3/4G & 3/8                                                                                                       | SR03706556         | ✓       | ✓     | ✓         |
| IDP-3 Tip Seal Replacement Kit (IDP-3 Dry Scroll Pump Models – Includes tip seal, 60mm filter element, tools, mask and cleaning supplies) | 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 (diameter: 60mm)                                                                                                 | REPLSLRFILTER2     | ✓       | ✓     | ✓         |

**MS Maintenance Supplies for 7000/7010 Series**

| Part Description                                                                                                                             | Part Number    | Interim | Major | As Needed |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|-------|-----------|
| Oil Mist Filter RV5                                                                                                                          | G6600-80043    | ✓       | ✓     | ✓         |
| IDP-10 Tip Seal Replacement Kit (IDP-10 Dry Scroll Pump Models – Includes tip seal, 102mm filter element, tools, mask and cleaning supplies) | G7004-67023    | ✓       | ✓     | ✓         |
| IDP-10 Tip Seal Replacement Kit (no tools etc. – VPD P/N)                                                                                    | X3807-67000    | ✓       | ✓     | ✓         |
| Filter element for IDP-10/IDP15 (diameter: 102mm)                                                                                            | REPLSLRFILTER  | ✓       | ✓     | ✓         |
| Filter element for IDP-10/IDP15 (diameter: 79mm)                                                                                             | REPLSLRFILTER1 | ✓       | ✓     | ✓         |

**MS Maintenance Supplies for 7200/7250 Series**

| Part Description                                                                                                                             | Part Number    | Interim | Major | As Needed |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|-------|-----------|
| RIS Probe Maintenance Kit (7200 Series only)                                                                                                 | G7005-60170    |         | ✓     | ✓         |
| DS202 Oil Mist Eliminator                                                                                                                    | SR03706800     | ✓       | ✓     | ✓         |
| DS202 3/8" Magnetic Plug and Gasket                                                                                                          | SR03701824     | ✓       | ✓     | ✓         |
| IDP-15 Tip Seal Replacement Kit (IDP-15 Dry Scroll Pump Models – Includes tip seal, 102mm filter element, tools, mask and cleaning supplies) | 5190-9613      | ✓       | ✓     | ✓         |
| IDP-15 Tip Seal Replacement Kit (no tools etc. – VPD P/N)                                                                                    | X3815-67000    | ✓       | ✓     | ✓         |
| Filter element for IDP-10/IDP15 (diameter: 102mm)                                                                                            | REPLSLRFILTER  | ✓       | ✓     | ✓         |
| Filter element for IDP-10/IDP15 (diameter: 79mm)                                                                                             | REPLSLRFILTER1 | ✓       | ✓     | ✓         |

**HydroInert Source Supplies**

To determine if replacement of HydroInert parts is required, please review tune history and sample signal intensity performance. If performance is decreasing, the below parts maybe use to restore performance as part of the PM.

One way to determine if the source performance on SQ is being affected is to review the gain factor history in autotune reports or tune history csv file. If the gain factor is increasing the source performance maybe degrading.

Since TQ tunes to a fixed gain factor, review PFTBA abundance. If PFTBA abundance is decreasing over time, the source performance maybe degrading.

Real sample/standard area counts are another way to determine the performance, there could also be other factors that affect compounds abundance such as inlet and column status.

| Part Description                              | Part Number | Interim | Major | As Needed |
|-----------------------------------------------|-------------|---------|-------|-----------|
| Repeller Insulator (qty 2)                    | G1099-20133 |         |       | ✓         |
| Lens insulator for Extractor (ring insulator) | G3870-20445 |         |       | ✓         |
| HydroInert Extractor lens (9mm)               | G7078-20909 |         |       | ✓         |
| HydroInert Repeller                           | G7078-20902 |         |       | ✓         |

## Common Parts Reference

### (Purchased by customer, not included as part of PM)

#### Filaments and Calibrant Supplies 5973/5975/5977/7000/7010/7200/7250 Series

| Part Description                                 | Part Number          | SQ      | TQ    | QTOF    |
|--------------------------------------------------|----------------------|---------|-------|---------|
| EI High Temperature Filaments                    | G7005-60061<br>Qty 2 | 597X    | 7000x | N/A     |
| HES, HES 2.0 EI Filaments                        | G7002-60001          | 5977B/C | 7010x | N/A     |
| HES 2.0 EI Filament Spacer                       | G7007-20023          | N/A     | 7010x | N/A     |
| LE-EI Filaments (7250 QTOF)                      | G3850-60021          | N/A     | N/A   | 7250    |
| CI High Temperature Filament – SQ, TQ, 7200 QTOF | G7005-60072          | N/A     | N/A   | 7200A/B |
| Axial CI Filament, W/Re Straight (7250 QTOF)     | G7250-60095          | N/A     | N/A   | 7250    |
| PFTBA GCMS Tuning Standard calibrant             | 05971-60571          | 597X    | 70X0  | 72X0    |
| PFDTD calibrant, 1 mL                            | 8500-8510            | 597X    | 70X0  | 72X0    |
| PFET, IRM calibrant for GC QTOF 0.5 mL (7200)    | 5190-0531            | N/A     | N/A   | 7200A/B |

#### Transfer line seals and springs 5973/5975/5977/7000/7010/7200/7250 Series

| Part Description                                                                                                                     | Part Number | SQ         | TQ    | QTOF    |
|--------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|-------|---------|
| CI Interface tip seal (ceramic tip and spring combo)<br>( <b>non-captured</b> CI tip seal interface) (5973, 5975, 7000B)             | G1999-60412 | 5973, 5975 | 7000B | N/A     |
| CI Interface tip seal (ceramic tip and spring low/non-magnetic spring combo)<br>( <b>non-captured</b> CI tip seal interface) (7010A) | G7002-60412 | N/A        | 7010A | N/A     |
| CI Interface tip seal spring (spring only)                                                                                           | G1999-20023 | 597X       | 70X0  | 72X0    |
| CI Interface tip seal (tip only) ( <b>captured</b> style)                                                                            | G3870-20542 | 5977x      | 70X0  | 72X0    |
| Transfer-Line Tip Base, Threaded ( <b>captured</b> style)                                                                            | G3870-20548 | 5977x      | 70X0  | 72X0    |
| Transfer-Line Tip Cap, Threaded ( <b>captured</b> style)                                                                             | G3870-20547 | 5977x      | 70X0  | 72X0    |
| RIS Xfer Tip (7200)                                                                                                                  | G7005-20542 | N/A        | N/A   | 7200A/B |
| RIS Xfer Tip Spring (7200)                                                                                                           | G7005-20024 | N/A        | N/A   | 7200A/B |

#### MS Maintenance Supplies for Intuvo 9000 MS Series

| Part Description                         | Part Number | SQ    | TQ    | QTOF |
|------------------------------------------|-------------|-------|-------|------|
| Swaged MS Tail - Packaged                | G4590-60009 | 5977x | 7000  | N/A  |
| Swaged MS Tail (HES, HES 2.0) - Packaged | G4590-60109 | 5977x | 7010x | N/A  |

**Ion source insulators for 5973/5975/5977/7000/7010/7200/7250 Series**

| Part Description                                                                                      | Part Number       | SQ      | TQ         | QTOF    |
|-------------------------------------------------------------------------------------------------------|-------------------|---------|------------|---------|
| Repeller insulator (SQ, TQ)                                                                           | G1099-20133 Qty 2 | 597X    | 7000x      | N/A     |
| Lens insulator for extractor lens (ceramic ring insulator) (Extractor source)                         | G3870-20445       | 5977x   | 7000C/D/E  | N/A     |
| Lens insulator for Extractor lens (Vespel ring insulator) (7000B extractor ion source)                | G7000-20445       | N/A     | 7000B only | N/A     |
| Lens stack insulator for SS, Inert, Extractor sources (captures ion focus and entrance lens) (Vespel) | G3170-20530       | 597X    | 7000x      | N/A     |
| Lens insulator for Extractor lens for HES/HES 2.0/LEEI (ceramic ring insulator)                       | G7002-20064       | 5977B/C | 7010x      | 7250    |
| Lens stack insulator/holder for HES/LLEI (Vespel)                                                     | G7002-20074       | 5977B/C | 7010x      | 7250    |
| Lens stack insulator/holder for HES 2.0 (Vespel)                                                      | G7007-20074       | N/A     | 7010x      | N/A     |
| CI Repeller Lens Insulator (SQ, TQ)                                                                   | G1999-20433       | 597X    | 70X0x      | N/A     |
| CI Lens stack insulator (SQ, TQ) (Vespel)                                                             | G3170-20540       | 597X    | 70X0x      | N/A     |
| Repeller insulator (7200 RIS) (Ceramic)                                                               | G7005-20447       | N/A     | N/A        | 7200A/B |
| Extractor Lens Insulator (7200 RIS) (Vespel)                                                          | G7005-20133       | N/A     | N/A        | 7200A/B |
| Ion Focus Insulator (7200 RIS) (Vespel)                                                               | G7005-20442       | N/A     | N/A        | 7200A/B |
| CI Repeller Insulator/bushing (7200 RIS) (Ceramic)                                                    | G7005-20030       | N/A     | N/A        | 7200A/B |

**HydroInert coated lenses for 5977/7000 Series**

| Part Description                | Part Number | SQ    | TQ        | QTOF |
|---------------------------------|-------------|-------|-----------|------|
| HydroInert Repeller             | G7078-20902 | 5977x | 7000C/D/E | N/A  |
| Ext Source Body – HydroInert    | G7078-20903 | 5977x | 7000C/D/E | N/A  |
| HydroInert Extractor lens (9mm) | G7078-20909 | 5977x | 7000C/D/E | N/A  |
| Ion Focus Lens – HydroInert     | G7078-20905 | 5977x | 7000C/D/E | N/A  |
| Entrance Lens – HydroInert      | G7078-20904 | 5977x | 7000C/D/E | N/A  |

**Heater/Sensor assemblies for 5973/5975/5977/7000/7010/7200/7250 Series**

| Part Description                                                        | Part Number | SQ      | TQ        | QTOF |
|-------------------------------------------------------------------------|-------------|---------|-----------|------|
| Stainless Steel Heater/Sensor assembly (SST EI 350)                     | G3870-67180 | 597X    | N/A       | N/A  |
| Inert Heater/Sensor assembly (inert EI 350)                             | G3870-67179 | 597X    | 7000A/B   | N/A  |
| Extractor Heater/Sensor assembly (Xtr EI 350)                           | G3870-67177 | 5977x   | 7000C/D/E | N/A  |
| H2 EI Heater/Sensor Assembly – HydroInert (H2 EI 350)                   | G7078-67910 | 5977x   | 7000C/D/E | N/A  |
| CI 350 Heater/Sensor Assembly (CI 350)                                  | G3870-67415 | 597X    | 70X0x     | N/A  |
| Ring heater/sensor assembly (HES, HES 2.0, RIS and LEEI) (ceramic ring) | G7002-60058 | 5977B/C | 7010x     | 72X0 |

**Rough pump hoses 5973/5975/5977/7000/7010/7200/7250 Series**

| Part Description                | Part Number | SQ   | TQ    | QTOF |
|---------------------------------|-------------|------|-------|------|
| Foreline Hose - imbedded spring | G7077-60119 | 597X | 70X0x | 72X0 |

**Common MS Maintenance Supplies**

| Part Description              | Part Number | SQ   | TQ   | QTOF |
|-------------------------------|-------------|------|------|------|
| Abrasive paper, 30 µm         | 5061-5896   | 597X | 70X0 | 72X0 |
| Alumina powder                | 393706201   | 597X | 70X0 | 72X0 |
| Cloths, clean (pkg of 15)     | 05980-60051 | 597X | 70X0 | 72X0 |
| Cloths, cleaning (pkg of 300) | 9310-4828   | 597X | 70X0 | 72X0 |
| Cotton swabs (pkg of 100)     | 5080-5400   | 597X | 70X0 | 72X0 |
| Gloves, clean, large          | 8650-0030   | 597X | 70X0 | 72X0 |
| Gloves, clean, small          | 8650-0029   | 597X | 70X0 | 72X0 |