

Ion Injector Quick Reference Guide

Description

The Agilent resistive ion injector has been updated to a leaded-glass-free, RoHS-compliant-without-exemption part for use in Agilent LC/MS instruments. The ion injector acts to pull desolvated ions from the desolvation chamber into the MS. In doing so, the ions are collimated into a single, narrow beam allowing the MS to separate the ions according to their mass-to-charge ratio. The ion injector is resistive, which allows for fast polarity mode switching, and has metal contacts at either end for electrical connection to the MS. The ion injector also has a metal tab on one end, giving the user a direction reference, however, the capillary will work in either direction (see image).



FS ion injector, 0.6 mm id, 180 mm



Ultivo and MSD iQ ion injector



Metal tab extends out for user direction reference

Current Part Number	Current Description	New Part Number	New Description
G1960-80060	Capillary, FS, 0.6 mm	G3911-30000	FS ion injector, 0.6 mm id, 180 mm
G6301-80004	Ultivo ion injector	G3911-30001	Ultivo and MSD iQ ion injector

Removing the ion injector and installation

Perform the following procedure when you need to clean or replace the ion injector.

Tools needed:

- Clean powder-free nitrile gloves
- Capillary puller tool (G1964-60345)
- Lint-free cloth (05980-60051)

Warning: The spray chamber operates at very high temperatures. Do not continue until the spray chamber is cool.

To remove the ion injector, put the instrument on standby, open the spray chamber to let it cool for 10 to 15 minutes.

1. Put on clean powder-free nitrile gloves.
2. Remove the spray shield and the ion injector cap from the end of the ion injector.
3. Screw the capillary puller tool fully into the spray shield mount.
4. Push the collet assembly over the ion injector and then tighten it by holding the puller handle and turning the collet clamping knob clockwise.

5. Pull on the knob until the collet assembly stops moving.
6. Visually check that the ion injector has been pulled out by the collet by looking through the slots on the tool.
7. Rotate the knob assembly counterclockwise slightly and pull out the assembly to unlock the collet assembly from the puller.
8. Pull out the tool.

Caution: Carefully pull out the ion injector along its long axis. The ion injector is of glass or a similar material and can break if vertical or horizontal pressure is put on it.

9. Loosen the collet clamping knob slightly to loosen the ion injector from the capillary puller tool.
10. Pull out the ion injector from the collet.
11. Unscrew the tool from the shield mount.

To install the ion injector:

1. Put on clean powder-free nitrile gloves.
2. Lubricate the ion injector entrance end with LC/MS-grade isopropanol or methanol.
3. Carefully insert and slide the ion injector straight into the desolvation assembly.

Caution: Putting vertical and horizontal pressure on the ion injector can break it.

4. When 2 to 3 cm of the ion injector remains extended from the desolvation assembly, the ion injector rests against the rear contact spring, which slightly restricts further insertion of the ion injector. Slightly increase the insertion force to push the ion injector through the rear contact spring to fully insert the injector.
5. Continue to apply pressure until approximately 1 cm remains extended from the desolvation assembly.
6. Install the ion injector cap over the outer end of the ion injector.

Caution: Do not twist or turn the ion injector cap during or after installation.

7. Install the spray shield.
8. Close the spray chamber.

Cleaning

Perform this procedure if you begin to observe reduced sensitivity and signal stability. Note, however, that the sensitivity and signal may not fully recover with cleaning, and a new ion injector should be purchased.

Tools needed:

- Clean powder-free nitrile gloves
- Concentrated Citranox detergent solution (5188-5359)
- Deionized (18 MΩ/cm) water
- 100 mL glass graduated cylinder
- Two 1 mL pipette tips

To clean the ion injector:

1. Put on clean powder-free nitrile gloves.
2. Dilute 2 mL of concentrated Citranox solution in 100 mL of deionized water (2% by volume).
3. Trim 1 mL pipette tips to approximately 4 cm.
4. Insert the ends of the ion injector into the pipette tips to protect the metal plating.
5. Place the ion injector upright in a graduated cylinder and fill with the 2% Citranox solution.
6. Sonicate the graduated cylinder that contains the ion injector in an ultrasonic cleaner for 10 to 15 minutes. Do not clean for longer than 15 minutes. Sonication should be done under a fume hood.
7. Rinse the ion injector and graduated cylinder several times with deionized water.
8. Fill the graduated cylinder with deionized water and sonicate for 10 to 15 minutes.
9. Repeat steps 7 and 8 two more times.
10. Remove the ion injector from the graduated cylinder and remove the pipette tips.
11. Blow out excess water from the ion injector bore with nitrogen.

Caution: Cleaning in Alcanox detergent may cause damage to the ion injector, hence the recommendation to clean with Citranox, as described above.

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