

6850 Gas Chromatograph Split/Splitless Inlet Maintenance

The following document outlines a procedure for performing routine maintenance on the 6850A Split/Splitless inlet. The frequency of maintenance depends upon:

- The level of usage
- The types of samples injected
- Whether the injections are manual or automatic
- Whether the instrument is used for multiple applications or dedicated to one
- Other environmental factors, such as dirt, ambient temperature, etc.

It is a good idea to change the septa and check the tightness of the liner and column nuts on a daily basis and consider checking and or replacing the glass liner on a weekly basis.

The G2629a Control Module allows tracking of usage of the septa, liner, column and syringe through Early Maintenance Feedback (EMF). After a preset number of injections expire, a warning message is displayed; however, system readiness is not affected. The GC will still operate normally.

This document is believed to be accurate and up-to-date. However, Agilent Technologies, Inc. cannot assume responsibility for the use of this material.
The information contained herein is intended for use by informed individuals who can and must determine its fitness for their purpose.

Preparing to service the GC

If you can edit setpoints using either a Control Module or a ChemStation, turn off the heated zones you will be working with and wait for them to cool. If you cannot edit setpoints, load the SERVICE method.

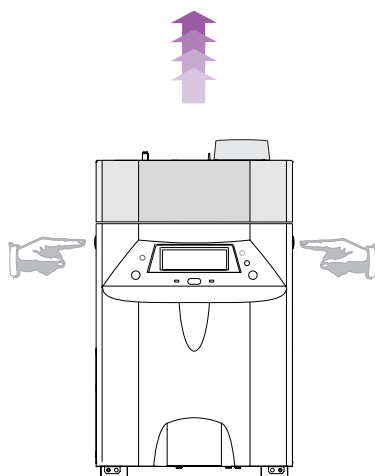
The factory provides a default SERVICE method, which:

- Resets the oven setpoint to 35°C if greater than 35°C.
- Turns inlet, detector, and auxiliary heaters off
- Turns cryogenic cooling off
- Turns the carrier gas off
- Turns the detector off

You can create a more elaborate SERVICE method if you wish using a Control Module or a ChemStation. See their documentation for more detail.

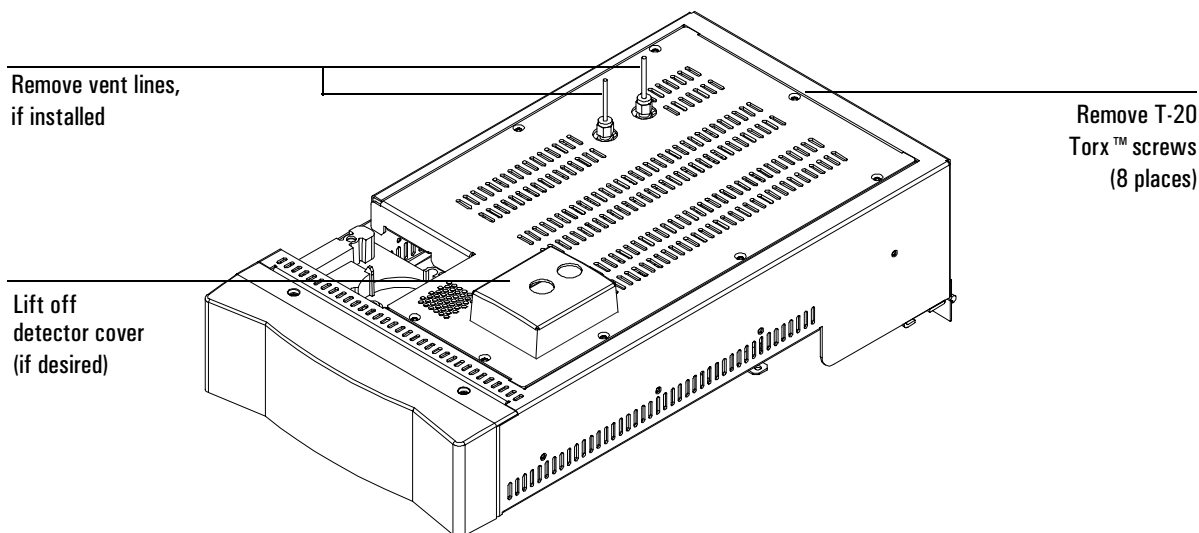
Opening the oven

1. If an auto injector is present, lift it off its mounting post and place it on the bench top or on the (optional) bracket that mounts on the side of the GC.
2. Press the buttons on each side of the GC just below the lid to release the latches.



3. Raise the lid.
4. When closing the lid, press down on both top front corners to compress the insulation and engage the latches.

Removing the lid top cover



Lid top cover without valve box accessory is shown

Maintaining a split/splitless inlet

To install a liner and O-ring

Choose liners according to the type of injection you are doing—split or splitless. Many liners are available and can be ordered from the Agilent catalog for consumables and supplies.

Tools and materials

- Liner, part no. 5183-4647 (split) or 5062-3587 (splitless)
- Septum wrench (part no. 19251-00100)
- Viton O-ring (part no. 5180-4182)

Procedure

1. Load the SERVICE method or reset the inlet and oven temperatures to OFF or turn the main power switch off.

Warning

If the inlet cools to room temperature, the liner will probably stick and be broken. The rest of this procedure should be performed with the inlet hot. Use

gloves and forceps to avoid burns

2. Turn the carrier gas off at the source.
3. Loosen the insert retainer nut, using a wrench, if needed.
4. Lift the top insert assembly straight up to avoid chipping or breaking the liner.
5. If a liner is present, remove it with tweezers or a similar tool. Be careful not to chip the liner.
6. Place a new Viton O-ring on the new liner about 2 to 3 mm from its top end.
7. Press the liner straight down into the inlet, flush with the top of the weldment.

Caution

Do not add an O-ring or other seal either at the bottom of the inlet or at the bottom of the liner; this will damage the inlet and shatter the liner.

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8. Replace the insert retainer nut, tightening it to firm finger tightness. Do not overtighten.
 9. Pressure check the inlet. Retighten if necessary.

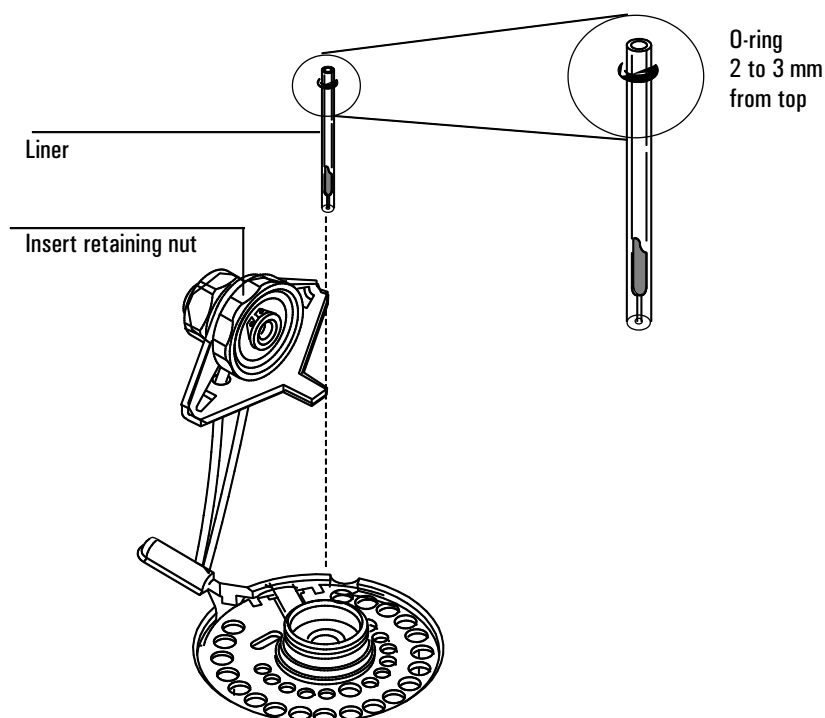


Figure 11. Installing a liner

Table 18. O-Rings for the Split/Splitless Inlet

Description	Part No.
Viton O-ring for temperatures up to 350°C	5181–4182
Graphite O-ring for split liner (temperatures above 350°C)	5180–4168
Graphite O-ring for splitless liner (temperatures above 350°C)	5180–4173

Changing septa

If a septum leaks, you will see symptoms such as longer or shifting retention times, loss of response, and/or loss of column head pressure. Signal noise will increase.

Septum lifetime depends on injection frequency and needle quality; burrs, sharp edges, rough surfaces, or a blunt end on the needle decrease septum life-time. When the instrument is in steady use, daily septum replacement is recommended.

The type of septa you use depends on your chromatography needs. You can order septa directly from Agilent Technologies; see the Agilent catalog for consumables and supplies for ordering information.

Table 19. Recommended Septa for the Split/Splitless Inlet

Description	Part No.
11 mm septum, low-bleed red	5181–1263
11 mm septum with partial through-hole, low-bleed red	5181–3383
11 mm septum, low-bleed gray	5080–8896
Merlin microseal septum	5181–8815
11 mm high-temperature silicon septum (350°C and higher)	5182–0739

Tools and materials

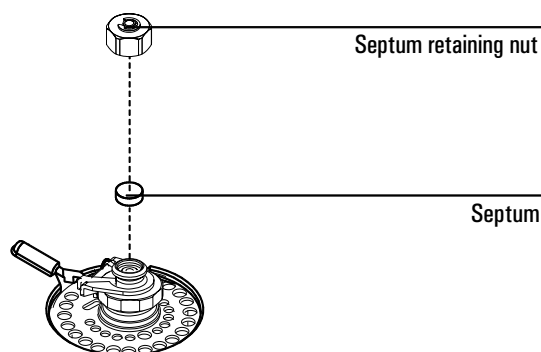
- New septum
- Septum nut wrench (part no. 19251–00100)
- 0- or 00-grade steel wool (optional)

Procedure

Warning

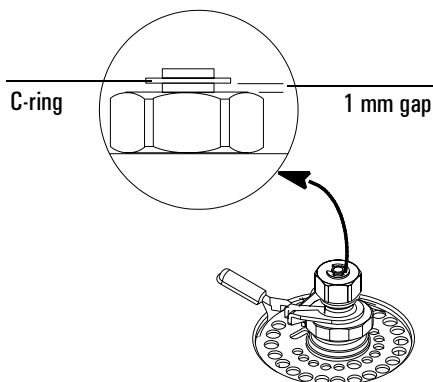
Be careful! The oven and/or inlet may be hot enough to cause burns.

1. Load the SERVICE method or reset the inlet and oven temperatures to OFF or turn the main power switch off. Let the heated zones cool to room temperature.
2. Turn the inlet pressure off at the source.
3. Remove the septum retainer nut, using a wrench if the nut is hot or sticks. Remove the old septum. If the septum sticks, use a sharp tool to remove it. Take care to avoid gouging or scratching the metal.



4. If pieces of the septum stick, use a small piece of rolled-up steel wool and forceps or tweezers to scrub the residue from the retainer nut and septum holder. Use compressed air or nitrogen to blow away the debris.

5. Use forceps to insert a new septum. Press it into the fitting firmly.
6. Replace the septum retainer nut, tightening it until the C-ring is about 1 mm above the nut. Avoid overtightening.



7. Restore normal operating conditions.

Replacing the inlet base seal

Replace the inlet base seal whenever you loosen or remove the reducing nut. Chromatographic symptoms such as ghost peaks indicate that the inlet base seal is dirty and needs replacement.

You change the inlet base seal from inside the oven, so you must remove the column.

Materials

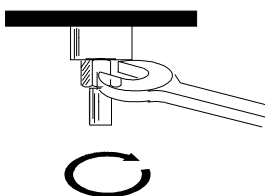
- T-20 torx screwdriver
- 1/2-inch wrench
- A new washer (part no. 5061–5869)
- Gold-plated seal (part no. 18740–20885) or stainless steel seal (part no. 18740–20880)

Procedure

Warning

Be careful! The oven and/or inlet may be hot enough to cause burns.

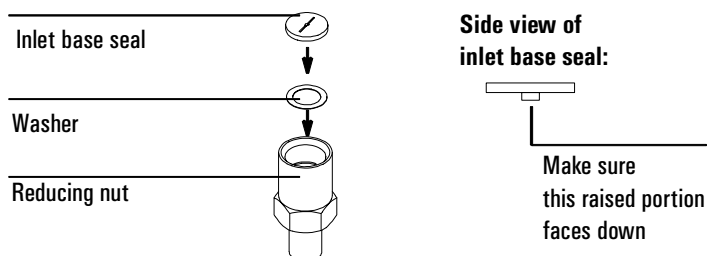
1. Load the SERVICE method or reset the inlet and oven temperatures to OFF or turn the main power switch off. Let the heated zones cool to room temperature.
2. Turn the inlet pressure off at the source.
3. Remove the column from the inlet. Cap the end of the column to prevent contamination. Remove the insulation cup around the base of the inlet.
4. Use a wrench to loosen and remove the reducing nut. The washer and seal are inside the reducing nut. Remove them.



Caution

Wear gloves to protect the inlet base seal and washer from contamination.

5. Place the washer in the reducing nut. Place the new inlet base seal on top of it.



6. Replace the reducing nut and tighten with a wrench. Replace the column and the insulation cup. After the column is installed, you can restore normal operating conditions.