

Manual SPME Sampling

SPME fibers and Arrows

SPME Fiber or Arrow Manual Injection Kit

SPME manual sampling

The Agilent manual injection kit will allow the end user to extract samples using SPME fibers or Arrows. They can then inject the samples into a GC inlet.

p/n 5191-5877



Part	Component
1	Extraction guide
2	Injection guide
3	Arrow/fiber syringe
4	Large inner diameter (id) locking screw
5	Small inner diameter (id) locking screw

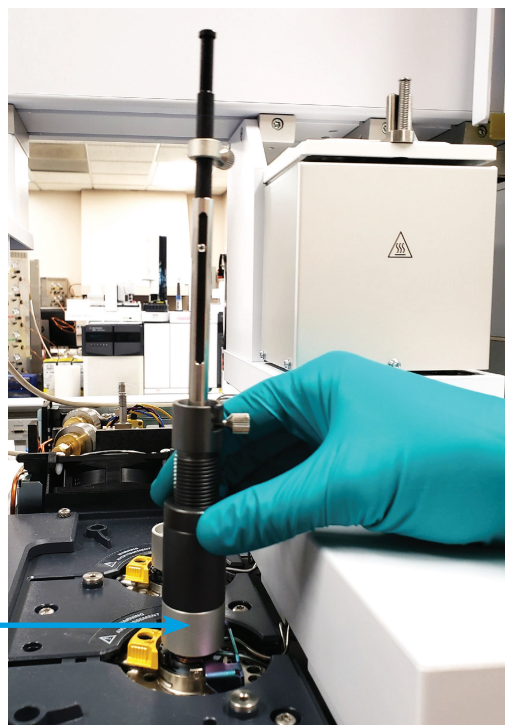
PAL3 alignment ring (gray) for split/splitless (S/SL) inlet

Manual injection



Manual injection guide

PAL3 alignment ring (Gray) for S/SL inlet (G7371-67001)



The manual injection guide sits on the alignment ring for manual sample injection.

Methodology—manual sampling

Installing a PDMS SPME (100 µm) Arrow into the manual syringe

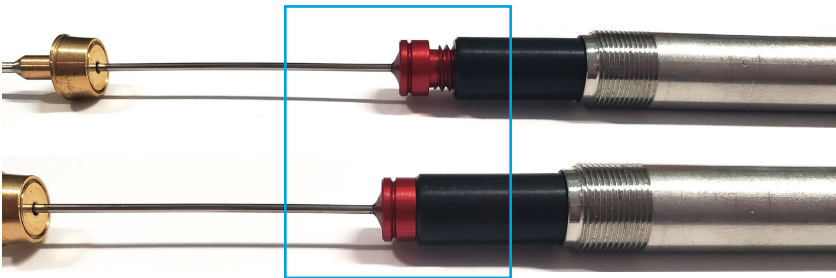
Loosen the cap at the base of the syringe and remove it.



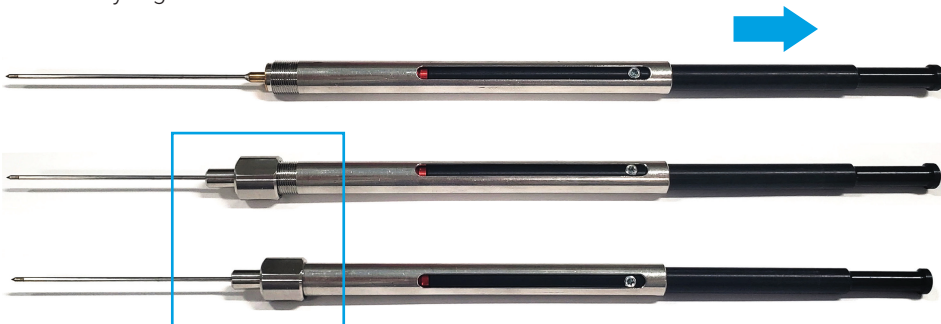
Depress the black plunger completely.



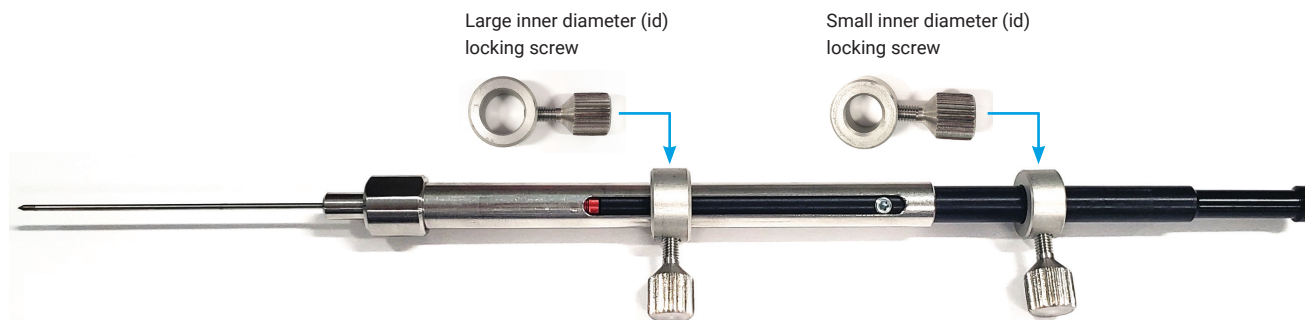
Screw the hub of an SPME fiber/Arrow into the bottom of the plunger at the end of the syringe body



Retract the black plunger and slide the cap over the SPME fiber/Arrow and tighten it onto the syringe.



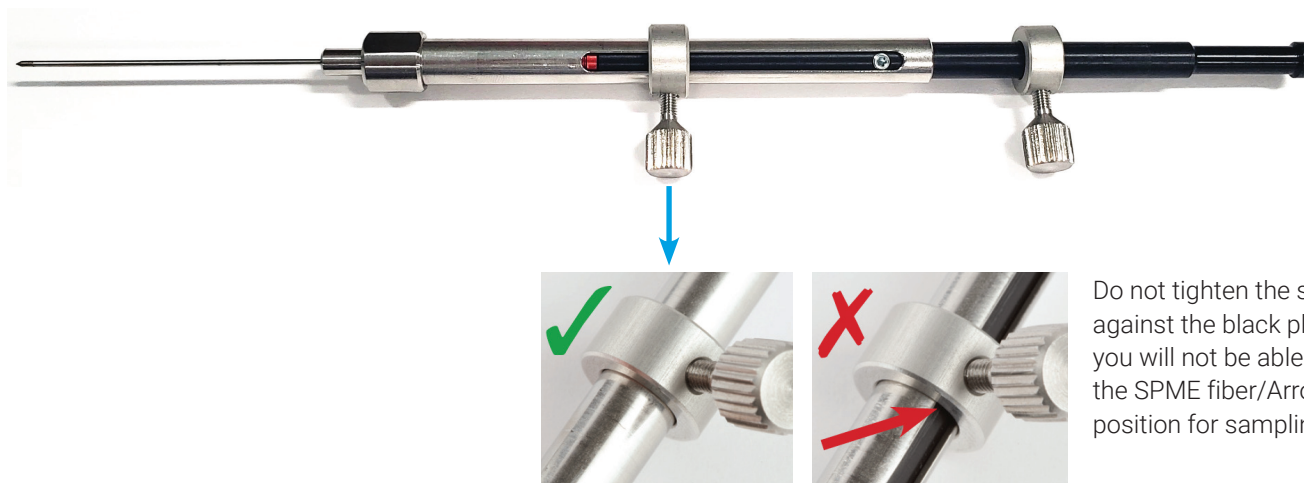
Setting the locking screws



Slide the locking screws onto the syringe from the plunger side (the right side as shown above).

- Install the large id locking screw onto the silver body of the syringe.
- Install the small id locking screw onto the wider portion of the black plunger.
- Tighten the locking screws until finger-tight. Do not overtighten, as they will be adjusted in later steps.

Incorrect and correct position of the lower locking screw.



The extraction guide has two positions where the syringe can be installed.

The upper position is used for headspace extraction.



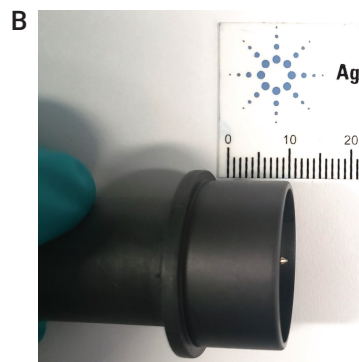
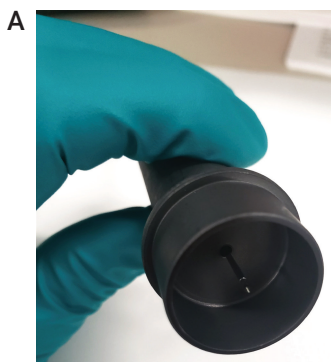
The lower position is used for immersion extraction.

Setting the locking screws for septum penetration depth

- Raise the syringe plunger to the fully extended position and insert the syringe and lower locking screw into the upper position of the extraction guide.
- Lock the syringe into place by rotating it until the locking screw is positioned in the notch.



- Adjust the syringe so that the SPME fiber/Arrow is protruding ~1 cm beyond the inner base of the extraction guide (A).
- Tighten the lower locking screw securely.
- The tip of the SPME fiber/Arrow will be recessed at least 1 mm in from the end of the extraction guide (B).



Setting the exposure depth for headspace extraction

Place the extraction guide (with syringe in place) on a headspace sampling vial and loosen the upper locking screw.



Adjust the SPME fiber/Arrow to the desired exposure depth by moving the black plunger.

Choose a depth that ensures that the SPME fiber/Arrow will be in the gas phase.

Once the SPME fiber/Arrow is at the proper depth, hold the plunger in place and slide the upper locking screw until it is flush against the top of the silver syringe body. Then tighten the upper locking screw securely.

Fine depth adjustment for direct immersion extraction

Insert the syringe into the lower position of the extraction guide.



Penetrate a vial and fully expose the SPME fiber/Arrow within the vial.



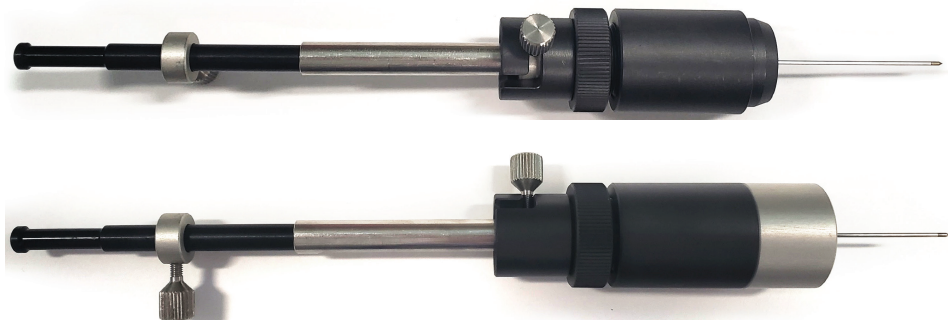
Adjust the lower locking screw and upper locking screw to obtain the desired exposure depth (to ensure immersion in the sample liquid).



Adjusting the injector penetration depth



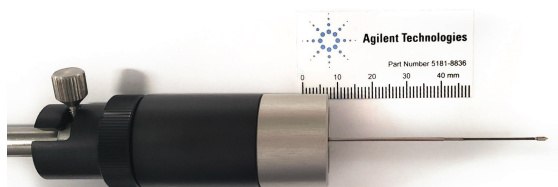
1. Manual SPME injection guide
2. PAL3 alignment ring (gray) for S/SL inlet (G7371-67001)



- Carefully insert the syringe into the injection guide.
- Use caution to avoid damaging the SPME fiber/Arrow when threading it through the hole in the base of the injection guide.
- Lock the syringe into place by rotating it until the locking screw is positioned in the notch.

Setting injector penetration depth

With the appropriate GC-specific adaptor cup on the end of the injection guide, measure the distance from the tip of the SPME fiber/Arrow to the groove inside the adaptor cup.



Adjust the desorption depth by screwing the body of the injection guide up or down (maximum depth = 67 mm).

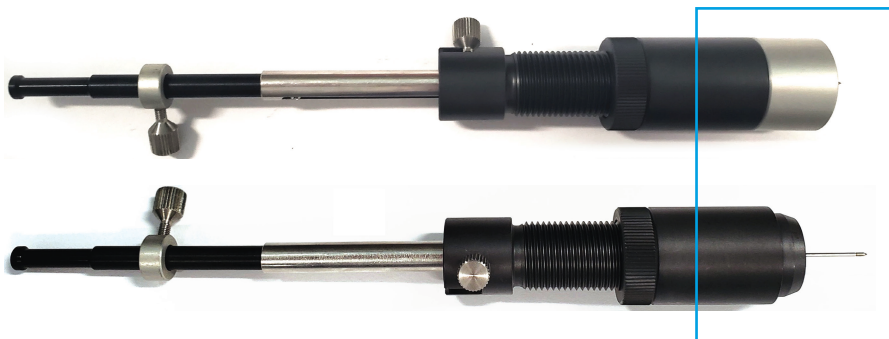
Twist the locking ring down until it locks on the body of the injection guide.



Injection onto the GC inlet

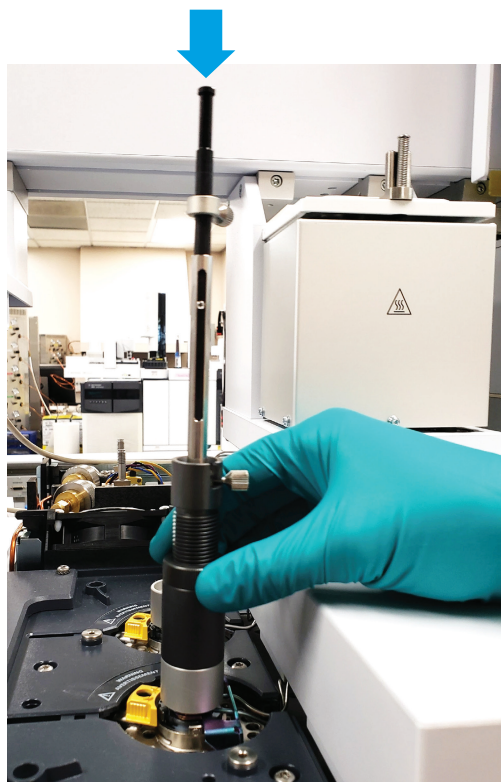
Remove the adapter cup from the injection guide.

The adapter cup is placed onto the GC inlet to guide the manual injection.



Push the plunger down until the top locking screw is resting on the body of the syringe.

The sample is then injected.



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