

Manual SPME Sampling

For Non-SMART SPME fibers only

Non-SMART SPME Manual Injection Kit

SPME manual sampling

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

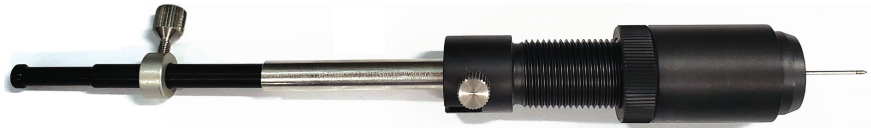
p/n 5191-5877



Part	Component
1	Extraction guide
2	Injection guide
3	Syringe
4	Large inner diameter (id) locking screw
5	Small inner diameter (id) locking screw

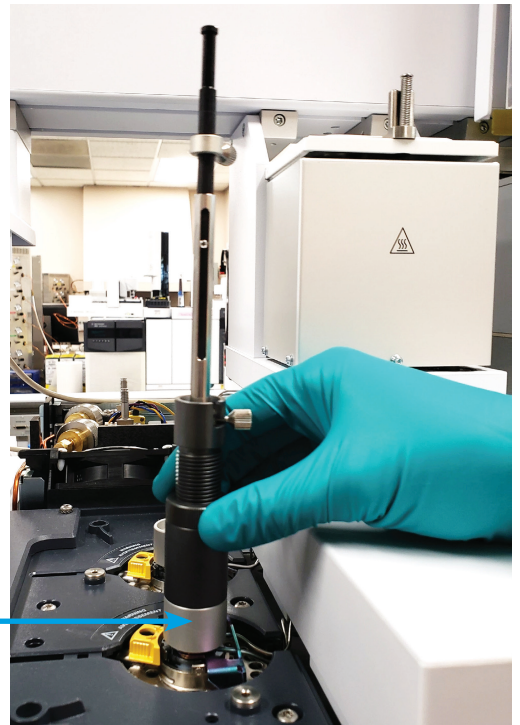
PAL3 alignment ring (gray) for split/splitless (S/SL) inlet

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

Note: The images in this document show the installation of a Non-SMART PDMS SPME (100 μm) Arrow. As of January 2024, the manufacturer has obsoleted the production of all Non-SMART SPME Arrows.

The installation directions remain the same for the Non-SMART SPME fibers so the method directions and use are maintained.

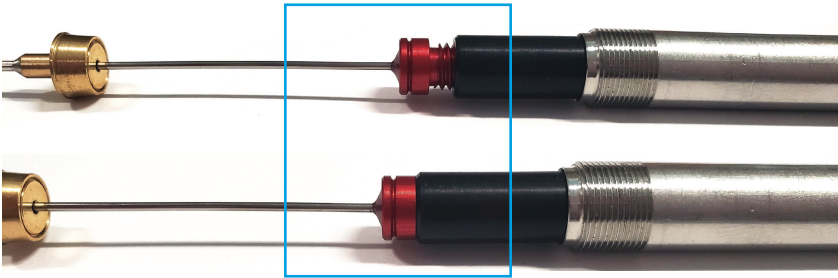
Loosen the cap at the base of the syringe and remove it.



Depress the black plunger completely.



Screw the hub of the Non-SMART SPME fiber into the bottom of the plunger at the end of the syringe body.



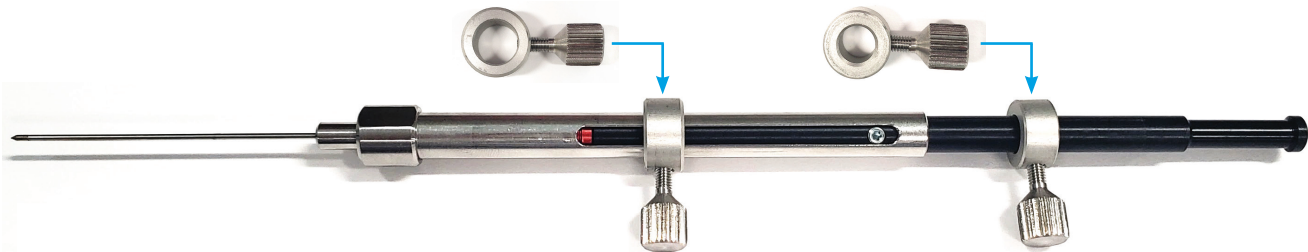
Retract the black plunger and slide the cap over the the Non-SMART SPME fiber and tighten it onto the syringe.



Setting the locking screws

Large inner diameter (id)
locking screw

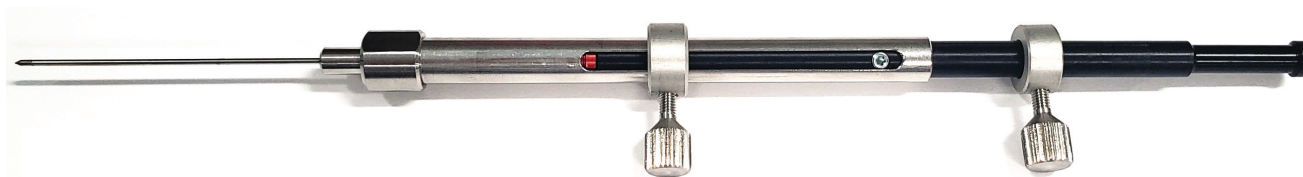
Small inner diameter (id)
locking screw



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.



Do not tighten the screw against the black plunger or you will not be able to move the Non-SMART SPME fiber into position for sampling.

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

The upper position is used for headspace extraction.



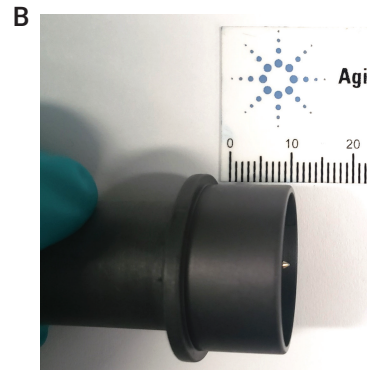
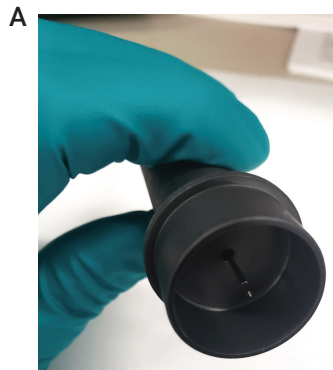
The lower position is used for immersion extraction.

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 Non-SMART SPME fiber is protruding ~1 cm beyond the inner base of the extraction guide (A).
- Tighten the lower locking screw securely.
- The tip of the Non-SMART SPME fiber 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 Non-SMART SPME fiber to the desired exposure depth by moving the black plunger.

Choose a depth that ensures that the Non-SMART SPME fiber will be in the gas phase.



Once the Non-SMART SPME fiber 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 Non-SMART SPME fiber within the vial.



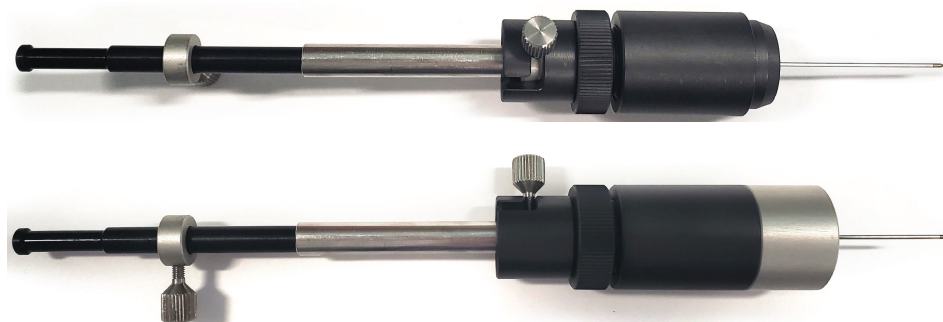
Adjust the lower locking screw and upper locking screw to obtain the desired exposure depth (to ensure immersion in the sample liquid).



Adjusting the injector penetration depth



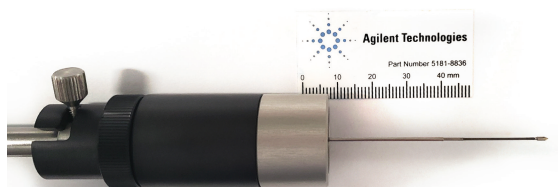
1. Manual SPME injection guide
2. PAL3 alignment ring (gray) for S/SL inlet (G7371-67001)



- Carefully insert the syringe into the injection guide.
- Use caution to avoid damaging the Non-SMART SPME fiber 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 Non-SMART SPME fiber 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).

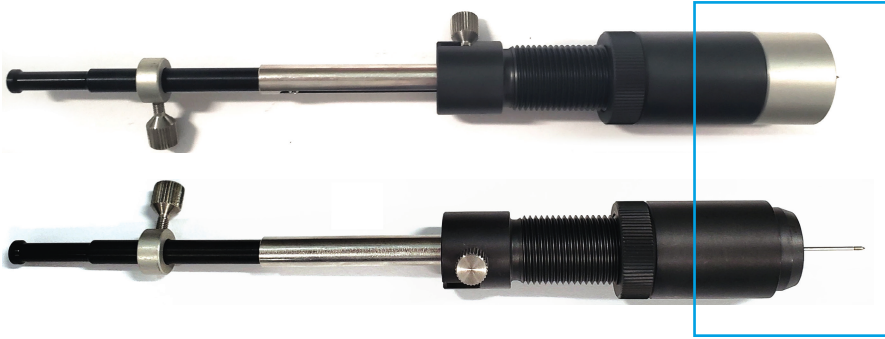
Twist the locking ring down until it locks on the body of the injection guide.



Injection onto the GC inlet

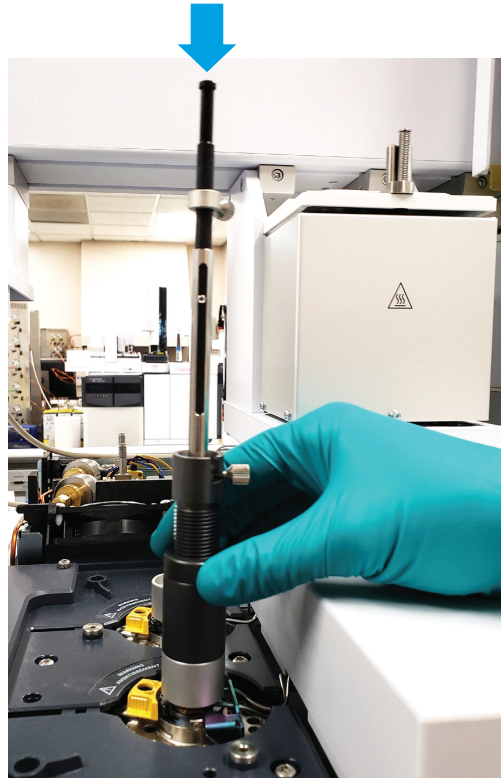
Remove the adapter cup from the injection guide.

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.



www.agilent.com

DE.3985648148

This information is subject to change without notice.

© Agilent Technologies, Inc. 2020, 2024
Printed in the USA, April 3, 2024
5994-1732EN