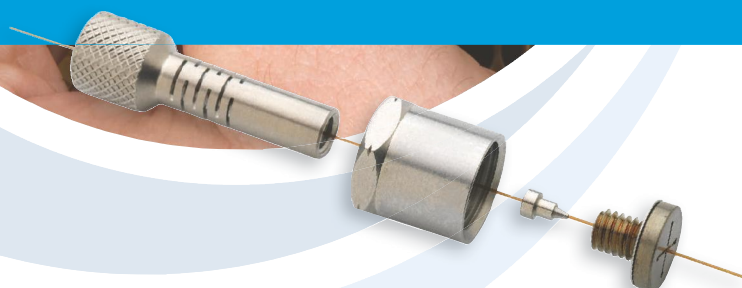




## SilTite™ FingerTite GC Ferrules: The Smart Alternative



- EASY
- RELIABLE
- LEAK FREE
- NO TOOLS REQUIRED

SilTite™ FingerTite is the next generation ferrule system for gas chromatography systems delivering an easy, leak free installation for capillary columns without the use of any tools.

Ako nás možno kontaktovať:

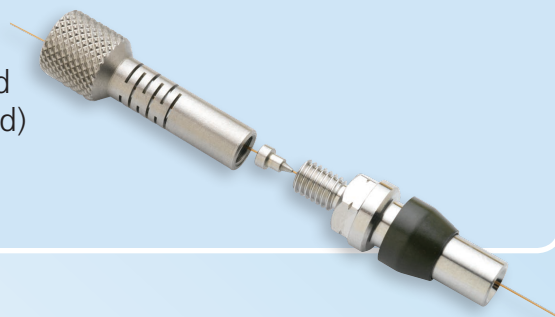


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[www.azetchrom.sk](http://www.azetchrom.sk)



## What is SilTite™ FingerTite?

It's a GC ferrule that has been designed to be installed only with the force of your fingers (no tools required) delivering an easy, leak and maintenance free seal.



## How is it a 'next generation' connection?

	100 % Graphite	Graphite Vespel®	SilTite™ FingerTite
Mechanical Strength	Soft	Hard	Hard
Temperature Limit	450 °C	350 °C	No practical limit
Grip strength on column	Soft	Moderate	Strong
Doesn't need retightening after installation	✓	x	✓
Ideal for GC-MS applications (minimal porosity)	x	✓	✓
No tools required for installation and removal	x	x	✓
Permanent positioning of ferrule	x	x / ✓	✓
No deterioration	x	x	✓
Cannot break the capillary column with over-tightening	x	x	✓
No column creep	x	x	✓
Chemically inert	x	x	✓

## Who will benefit from this product?

If you are running a capillary column equipped gas chromatography system, SilTite™ FingerTite will simplify your column installation process giving you less hassle and more time for chromatography.

## GCMS users

SilTite™ FingerTite has been developed with the unique, leak and air free properties of SilTite™ ferrules, resulting in superior air tightness to reduce background noise in sensitive MS applications so you can use them with confidence.

### Graphite Vespel® ferrule

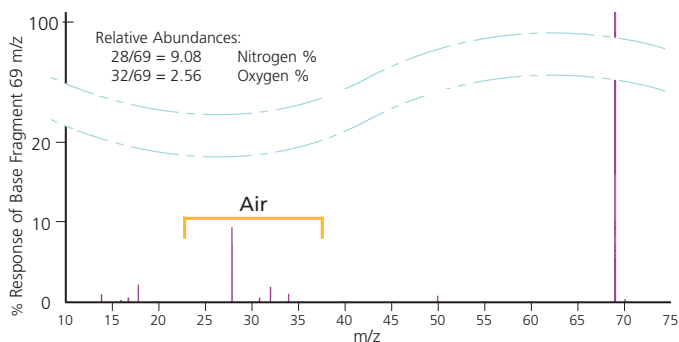


Figure 1. MS trace using a Graphite Vespel® ferrule after 5 temperature cycles.

### SilTite™ FingerTite™ ferrule

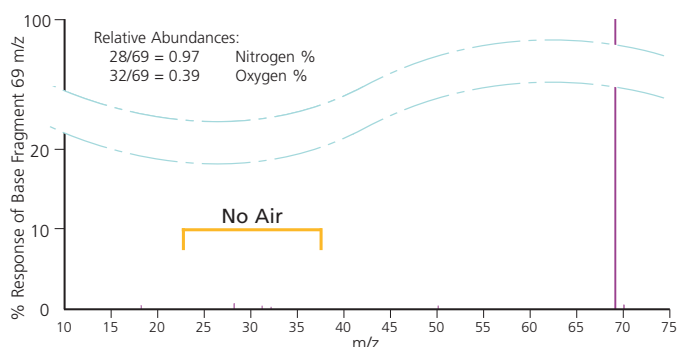


Figure 2. MS trace using a SilTite™ FingerTite™ ferrule after 5 temperature cycles. (Using an MS, no leaks can be detected, even after 400 temperature cycles between 70 °C and 400 °C).

## How do I install SilTite™ FingerTite?

The SilTite™ FingerTite ferrule requires a unique adapter to enable the finger force connection. Purchase one of the following starter kits with the corresponding adapters for your system, complete the once off 5 minute install using the instructions provided and you are ready to go!

The system requires no permanent instrument modifications, so if you need to switch back to conventional connections this can be done quickly and easily.

Part Number	Description	
073610	Siltite™ Fingertite Agilent INJ / FID Starter Kit	
073612	Siltite™ Fingertite Agilent INJ / MS Starter Kit	
073640	Siltite™ Fingertite Agilent INJ Base Seal Pk2	Replacement Items
073614	Siltite™ Fingertite Thermo INJ / DET Starter Kit	
073616	Siltite™ Fingertite Thermo INJ / MS Starter Kit	
073618	Siltite™ Fingertite Varian INJ / FID Starter Kit	
073619	Siltite™ Fingertite Varian INJ / MS Starter Kit	
073620	Siltite™ Fingertite Shimadzu 2010 INJ / FID Starter Kit	
073621	Siltite™ Fingertite Shimadzu 2010 INJ / MS Starter Kit	
073628	Siltite™ Fingertite Shimadzu 17A INJ / FID Starter Kit	
073629	Siltite™ Fingertite Shimadzu 17A INJ / MS Starter Kit	
073622	Siltite™ Fingertite PerkinElmer INJ / FID Starter Kit	
073623	Siltite™ Fingertite PerkinElmer INJ / MS Starter Kit	
073630	Siltite™ Fingertite Ferrule 0.4 mm Pk10	Replacement Items
073631	Siltite™ Fingertite Ferrule 0.5 mm Pk10	Replacement Items
073633	Siltite™ Fingertite Blanking Ferrule Pk 2	Replacement Items
073636	Siltite™ Fingertite Female Nut Pk5	Replacement Items

## Frequently Asked Questions

### Q1 Can I reuse the ferrules?

A1 Once the SilTite™ FingerTite ferrule is crimped onto the tubing using the ferrule installation tool, the fitting is permanent. However, the column can be removed and reinserted multiple times without tools.

### Q2 Can I break my column if overtighten the nut?

A2 No - with the SilTite™ FingerTite system you cannot generate enough force with your fingers to break the column. Never use pliers or any other tool on the nut or you will possibly damage the adapter as well as break the column.

### Q3 Can I touch the nut even when the oven is at 200 °C?

A3 No - the nut will be at the oven temperature so it will be too hot to touch. However, the nut is designed to dissipate the heat from the injector/detector/transfer line, so that when the oven is cool you can change the column without waiting for the injector/detector to cool down. For Mass Spectrometers always follow the manufacturer's recommendations to vent the system.

### Q4 Can I reuse the SilTite™ FingerTite nuts?

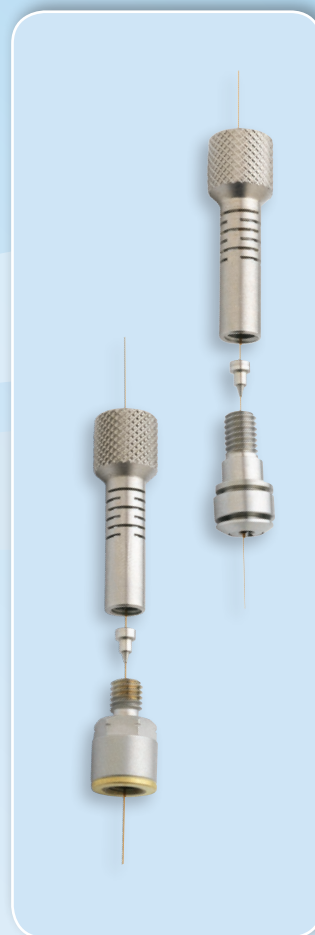
A4 Yes, the nuts can be reused although the nuts will be permanently fixed to the column when the ferrule is in place. Spare nuts can be purchased if more are required.

### Q5 What's included in the starter kit?

A5 Each starter kit includes all the parts necessary to convert one GC system (one injector and one detector) to the SilTite™ FingerTite system suitable for installing 0.1 - 0.25 mm ID capillary columns. In addition there are five matching SilTite™ FingerTite nuts, one packet (10 ferrules) of 0.4 mm ID SilTite™ FingerTite ferrules and a ferrule install tool which allows you to seat the ferrule in the correct position on the capillary column.

### Q6 Can I use any dimension of GC capillary column?

A6 SilTite™ FingerTite is suitable for any GC capillary column of nominal ID 0.1 - 0.25 mm (0.4 mm ID SilTite™ FingerTite ferrule) and 0.32 mm (0.5 mm ID SilTite™ FingerTite ferrule).



# AGILENT SiLTite™ FingerTite KIT

## Installation Instructions - PN 073610

*Congratulations you have purchased the latest innovation in GC capillary column connections by SGE Analytical Science. The SiLTite™ FingerTite fittings system enables you to install and remove a column without using a wrench and is designed to be self installed using this installation manual.*

*Suitable for the following Gas Chromatographs: HP5890 Series I and II; Agilent/HP 6890; Agilent 7890; Agilent 6850*

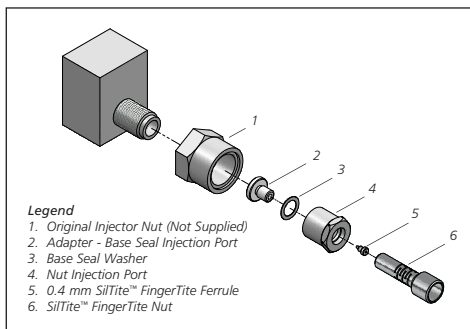
### KIT CONTENTS

- 5 x SiLTite™ FingerTite nuts - Female Re-order P/N 073636
- 10 x 0.4 mm SiLTite™ FingerTite Ferrules Re-order P/N 073630  
(Reorder P/N 073631 pk 10 for 0.5 mm ferrules)
- 1 x Adapter Base Seal Injection Port
- 1 x Nut Injection Port
- 1 x Adapter FID
- 2 x Graphite Vespel® Ferrule FID
- 1 x Ferrule Install Tool



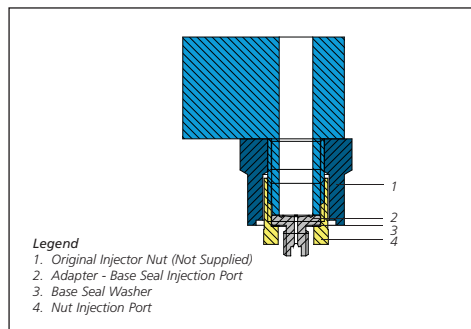
### Injector Adapter Installation

This procedure is no different than cleaning the inlet or replacing the seal or base plate. Do not lose any of the items that are replaced.



**Figure 1. Exploded diagram of the SiLTite™ FingerTite Injection Port assembly.**

1. Cool the inlet and FID.
2. Remove the column and column nut (if attached). When the inlet is cool remove the septum nut, septum and inlet liner/O-ring. This is a good time to clean the inlet.
3. Remove the thermal insulator from the injector.
4. Unscrew the large nut (1) assembly at the base of the injector, turn anticlockwise. Remove the base injector seal and nut assembly. Retain these original parts.
5. From the SiLTite™ FingerTite kit, locate the base seal injection



**Figure 2. The image of the Injector showing the SiLTite™ FingerTite injector adapter assembly.**

- port adapter (2), the base seal washer (3) the injection port nut (4) and assemble as displayed in the Figure 2.
6. Insert the base seal injection port adapter (2) and base seal washer (3) into the base of the injector and tighten with the injection port nut (4) clockwise until firm. Replace the original injector nut (1). Replace the thermal insulator.
7. We recommend reassembling the inlet with a clean inlet liner, a deactivated base seal, new O-ring and new septum (SGE P/N 495100).

Install the FID Adapter

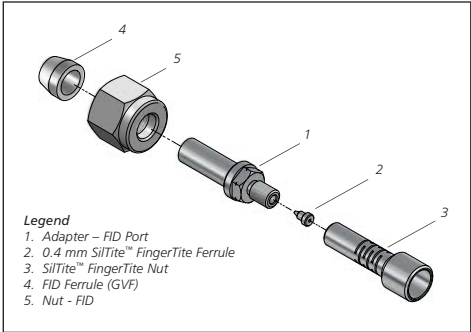


Figure 3. Exploded diagram of the FID detector SilTite™ FingerTite assembly.

1. Ensure the FID nut assembly is cool.
2. Remove the column and column nut (if attached).
3. Unscrew the large nut assembly at the base of the detector, turn anti-clockwise. Remove the seal and capillary adapter assembly. Retain these parts.
4. Locate the Adapter FID (1), original nut adapter (4), and ¼" Graphite Vespel® ferrule (5) and assemble as displayed in Figure 4.
5. Insert the Adapter FID into the base of the detector and finger tighten the nut clockwise until it stops and then an additional ½ a turn with a wrench.

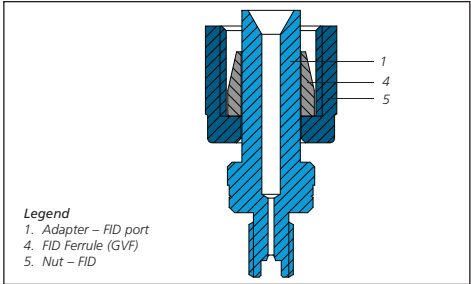


Figure 4. Image of the detector showing the lower nut assembly.

Column Installation



Figure 5. SilTite™ FingerTite ferrule install tool.

1. First, slide a SilTite™ FingerTite nut onto the tubing, followed by a SilTite™ FingerTite ferrule. The flat base of the ferrule aligns with the nut and the cone points to the detector or injector.
2. Using the SilTite™ FingerTite ferrule install tool displayed in Figure 5, push approximately 20 mm more tubing than required through the install tool. Tighten the nut, using your fingers only to seat the ferrule onto the column – there is no need to use excessive force, once the seal is made the tubing will be held firm and will not move. Use a rule to mark the column insertion distance, then cut the column. The distances for column insertion into Agilent instruments are in Table 1 and are calculated from the back of the ferrule.
3. Insert the pre assembled nut and ferrule into the injector/detector port and screw in the nut using finger force only – again, there is no need to use excessive force to make a seal. You cannot break the capillary column if you over tighten the ferrule although an over tightened ferrule may stick to the cone of the adapter. To remove an over tightened ferrule we simply recommend gently levering between the shoulder of the ferrule and the relevant adapter (please refer to SGE's web site <http://www.sge.com/siltitefingerite> for the recommended method of removing an over tightened SilTite™ FingerTite ferrule). Under no circumstances are wrenches or pliers to be used on these fittings.

Injector/Detector	Distance mm
Split/Splitless	7.5 - 9.5 mm
FID	67.5 mm

Table. 1 Column measurements for correct assembly.

# AGILENT MS SilTite™ FingerTite KIT

## Installation Instructions - PN 073612

*Congratulations you have purchased the latest innovation in GC capillary column connections by SGE Analytical Science. The SilTite™ FingerTite fittings system enables you to install and remove a column without using a wrench and is designed to be self installed using this installation manual.*

*Suitable for the following Gas Chromatographs: HP5890 Series I and II; Agilent/HP 6890 Agilent 7890; Agilent 6850*

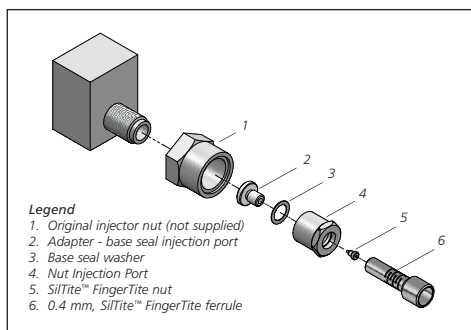
### KIT CONTENTS

- 1 x Adapter Base Seal Injection Port
- 1 x Nut injector port
- 2 x Adapter MS
- 5 x SilTite™ FingerTite nuts - Female Re-order P/N 073636
- 10 x 0.4 mm, SilTite™ FingerTite Ferrules Re-order P/N 073630  
(Reorder P/N 073631 pk 10 for 0.5 mm ferrules)
- 1 x Ferrule install tool



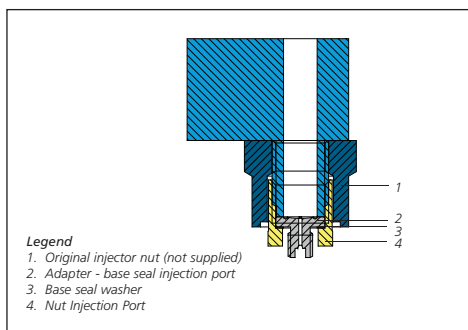
### Injector Adapter Installation

This procedure is no different than cleaning the inlet or replacing the seal or base plate. Do not lose any of the items that are replaced.



**Figure 1. Exploded diagram of the SilTite™ FingerTite Injection Port assembly**

1. Cool the inlet and shutdown the mass spectrometer.
2. Remove the column and column nut (if attached). When the inlet is cool remove the septum nut, septum and inlet liner/O-ring. This is a good time to clean the inlet.
3. Remove the thermal insulator from the injector
4. Unscrew the large nut (1) assembly at the base of the injector, turn anticlockwise. Remove the base injector seal and nut assembly. Retain these original parts.
5. From the SilTite™ FingerTite kit, locate the base seal injection



**Figure 2. Image of the Injector showing the SilTite™ FingerTite injector adapter assembly**

- port adapter (2), the base seal washer (3) the injection port nut (4) and assemble as displayed in the Figure 2.
6. Insert the base seal injection port adapter (2) and base seal washer (3) into the base of the injector and tighten with the injection port nut (4) clockwise until firm. Replace the original injector nut (1). Replace the thermal insulator
7. We recommend reassembling the inlet with a clean inlet liner, a deactivated base seal, new O-ring and new septum (SGE P/N 495100).

Install MS Adapter

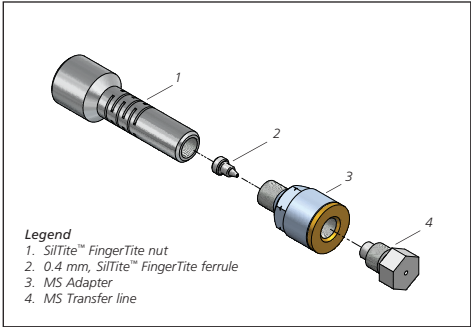


Figure 3. Image of the detector showing the lower nut assembly

1. Make sure the transfer line temperature is cool before you proceed.
2. Locate the adapter MS interface (3) and ensure that the seal (3a) is in place. The seal is pre assembled but may have come loose during transit.
3. Using fingers screw the adapter MS interface (3) (brass end – 3b) onto the transfer line until it stops. Using a wrench tighten a further 30 ° to ensure a good seal. Do not attempt to tighten further as this may damage the mass spectrometer interface.

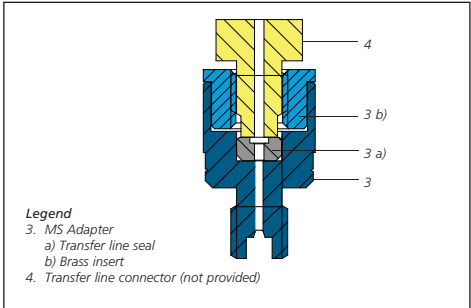


Figure 4. Exploded diagram of the MS SiTite™ FingerTite assembly.

Column Installation



Figure 5. SiTite™ FingerTite ferrule install tool

1. Slide a SiTite™ FingerTite nut (1) onto the tubing first, followed by a SiTite™ FingerTite ferrule (2). The flat base of the ferrule aligns with the nut and the cone points to the MS transfer line or injector.
2. Using the SiTite™ FingerTite ferrule install tool displayed in Figure 5, push approximately 20 mm more tubing than required through the install tool. Tighten the nut, using your fingers only to seat the ferrule onto the column – there is no need to use excessive force, once the seal is made the tubing will be held firm and will not move. Use a rule to mark the column insertion distance, then cut the column. The distances for column insertion into the Agilent injector are in Table 1 and are calculated from the back of the ferrule.
3. For MS installation screw the additional MS adapter (3) onto the column installation tool (G1099-20030) supplied with the instrument. With the MS Adapter added to the gauge tool it will be the correct length for the modified transfer line. Using the modified column installation tool, push the tube approximately 2 mm past the end of the tool. Tighten the nut, using your fingers only to seat the ferrule onto the column. Alternatively follow the manufactures instructions for column insertion without the column installation tool, found in the MDS hardware guide.
4. Insert the pre assembled nut and ferrule into the injector and mass spectrometer and screw in the nut using finger force only – again, there is no need to use excessive force to make a seal. You cannot break the capillary column if you over tighten the ferrule although an over tightened ferrule may stick to the cone of the adapter. To remove an over tightened ferrule we simply recommend gently levering between the shoulder of the ferrule and the relevant adapter (please refer to SGE's web site <http://www.sge.com/silitifingertite> for the recommended method of removing an over tightened SiTite™ FingerTite ferrule). Under no circumstances are wrenches or pliers to be used on these fittings.

Injector/Detector	Distance mm
Split/Splitless Injector	7.5 - 9.5 mm

Table. 1 Column measurements for correct assembly



# SHIMADZU GCMS QP2010

## SilTite™ FingerTite KIT

### Installation Instructions - PN 073621

*Congratulations you have purchased the latest innovation in GC capillary column connections by SGE Analytical Science. The SilTite™ FingerTite fittings system enables you to install and remove a column without using a wrench and is designed to be self installed using this installation manual.*

*This kit contains the parts for Shimadzu GCMS - QP2010.*

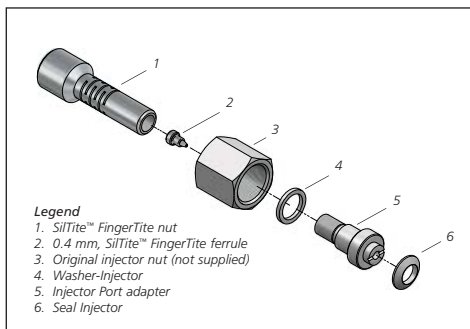
## KIT CONTENTS

- 1 x Injection Port Adapter assembly
- 2 x MS Port Adapter assembly
- 5 x SilTite™ FingerTite nuts - Female Re-order P/N 073636
- 10 x 0.4 mm SilTite™ FingerTite Ferrules Re-order P/N 073630  
(Reorder P/N 073631 pk 10 for 0.5 mm ferrules)
- 1 x Ferrule install tool



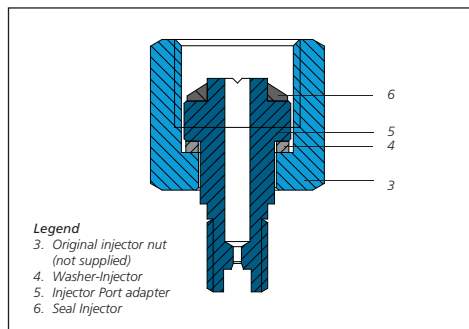
## Injector Adapter Installation

This procedure is no different than cleaning the inlet or replacing the seal or base plate. Do not lose any of the items that are replaced.



**Figure 1. Exploded diagram of the Injector Adapter SilTite™ FingerTite assembly**

1. Cool the inlet and shutdown the mass spectrometer.
2. Remove the column and column nut (if attached). When the inlet is cool remove the septum nut, septum and inlet liner/sealing ring. This is a good time to clean the inlet.
3. Remove the thermal insulator from the injector
4. Unscrew the large nut assembly at the base of the injector, turn anticlockwise. Remove capillary adapter assembly. Retain these original parts.

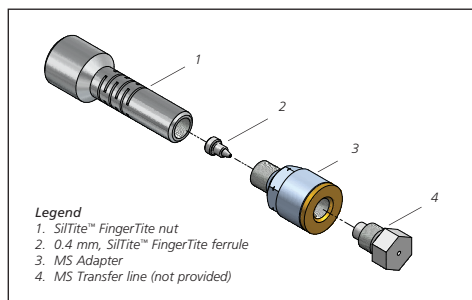


**Figure 2. Image of the Injector showing the SilTite™ FingerTite injector adapter assembly**

5. Locate the SilTite™ FingerTite Injection Port adapter (5), washer (4) and seal (6) and assemble as displayed in the Figure 2. Insert the Injection Port adapter (5) into the base of the injector and tighten the nut (3) clockwise until the fitting is firm.
6. Replace the thermal insulator
7. We recommend reassembling the inlet with a clean inlet liner, new sealing ring and new septum (SGE P/N 495105).

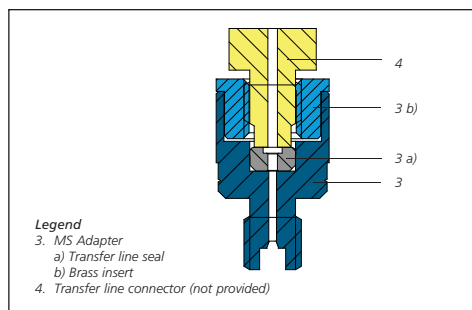


## Install MS Adapter



**Figure 3. Exploded diagram of the MS SiTite™ FingerTite assembly.**

1. Make sure the transfer line temperature is cool before you proceed.
2. Locate the adapter MS interface (3) and ensure that the seal (3a) is in place. The seal is pre assembled but may have come loose during transit.
3. Using your fingers, screw the adapter MS interface (3) (brass end – 3b) onto the transfer line until it stops. Using a wrench tighten a further 30° to ensure a good seal. Do not attempt to tighten further as this may damage the mass spectrometer interface.



**Figure 4. Image of the MS detector interface showing the SiTite™ FingerTite adapter assembly.**

## Column Installation



**Figure 5. SiTite™ FingerTite ferrule install tool**

1. Slide a SiTite™ FingerTite nut (1) onto the tubing first, followed by a SiTite™ FingerTite ferrule (2). The flat base of the ferrule aligns with the nut and the cone points to the MS transfer line or injector.
2. Using the SiTite™ FingerTite ferrule install tool displayed in Figure 5, push approximately 20 mm more tubing than required through the ferrule install tool. Tighten the nut, using your fingers only to seat the ferrule onto the column – there is no need to use excessive force, once the seal is made the tubing will be held firm and will not move. The distances for column insertion into the injector are in Table 1 and are calculated from where the cone of the ferrule has collapsed onto the capillary column. For ease of use we recommend using the column fitting jig supplied with the instrument (Shimadzu PN 225-11657-09) to accurately cut the capillary tubing.
3. For MS installation screw the additional MS adapter (3) onto the column fitting jig (Shimadzu PN 225-11657-08) supplied with the instrument. With the MS Adapter added to the fitting jig it will be the correct length for the modified transfer line. Using the modified column fitting jig, push the tube approximately 10 mm past the end of the tool. Tighten the nut, using your fingers only to seat the ferrule onto the column. Cut the column flush with the end of the column fitting jig. The column can now be inserted into the MS interface.
4. Insert the pre assembled nut and ferrule into the injector/MS interface and screw in the nut using finger force only – again, there is no need to use excessive force to make a seal. You cannot break the capillary column if you over tighten the ferrule although an over tightened ferrule may stick to the cone of the adapter. To remove an over tightened ferrule we simply recommend gently levering between the shoulder of the ferrule and the relevant adapter (please refer to SGE's web site <http://www.sge.com/silitifingertite> for the recommended method of removing an over tightened SiTite™ FingerTite ferrule). **Under no circumstances are wrenches or pliers to be used on these fittings.**

Injector/Detector	Distance mm
Split/Splitless GC - 2010	40.0 mm

**Table. 1 Column measurements for correct assembly**

# SHIMADZU GC 2010 SilTite™ FingerTite KIT Installation Instructions - PN 073620

*Congratulations you have purchased the latest innovation in GC capillary column connections by SGE Analytical Science. The SilTite™ FingerTite fittings system enables you to install and remove a column without using a wrench and is designed to be self installed using this installation manual.*

*This kit contains the parts for GC-2010 Gas Chromatograph*

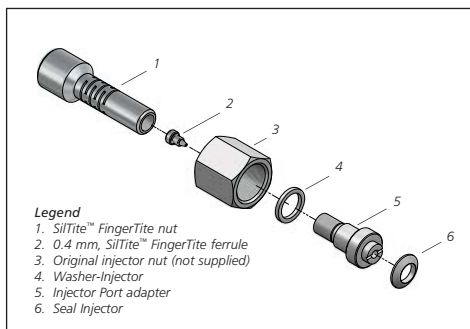
## KIT CONTENTS

- 1 x Injection Port Adapter assembly
- 1 x FID Port Adapter assembly
- 5 x SilTite™ FingerTite nuts - Female Re-order P/N 073636
- 10 x 0.4 mm, SilTite™ FingerTite ferrules Re-order P/N 073630  
(Reorder P/N 073631 pk 10 for 0.5 mm ferrules)
- 1 x Ferrule install tool



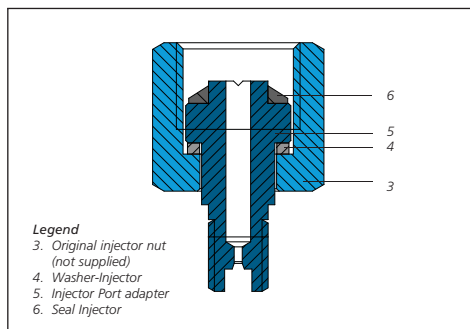
## Injector Adapter Installation

This procedure is no different than cleaning the inlet or replacing the seal or base plate. Do not lose any of the items that are replaced.



**Figure 1. Exploded diagram of the Injector Adapter SilTite™ FingerTite assembly**

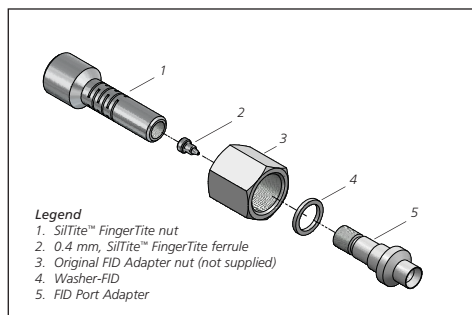
1. Cool the inlet and FID.
2. Remove the column and column nut (if attached). When the inlet is cool remove the septum nut, septum and inlet liner/sealing ring. This is a good time to clean the inlet.
3. Remove the thermal insulator from the injector
4. Unscrew the large nut assembly at the base of the injector, turn anticlockwise. Remove capillary adapter assembly. Retain these original parts.



**Figure 2. Image of the Injector showing the SilTite™ FingerTite injector adapter assembly**

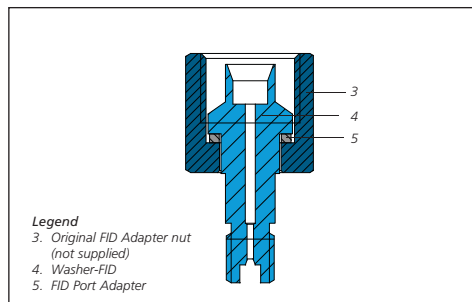
5. Locate the SilTite™ FingerTite Injection Port adapter (5), washer (4) and seal (6) and assemble as displayed in the Figure 2. Insert the Injection Port adapter (5) into the base of the injector and tighten the nut (3) clockwise until the fitting is firm.
6. Replace the thermal insulator
7. We recommend reassembling the inlet with a clean inlet liner, new sealing ring and new septum (SGE P/N 495105).

## Install Detector Adapter



**Figure 3. Exploded diagram of the FID detector SilTite™ FingerTite assembly.**

1. Ensure the FID nut assembly is cool.
2. Remove the column and column nut (if attached)
3. Unscrew the large nut assembly at the base of the detector, turn anticlockwise. Remove the capillary assembly. Retain these original parts.
4. Locate the Adapter FID (5), washer (4), the original nut (3) and assemble as displayed in Figure 4. Insert the Adapter FID into the base of the detector and tighten the nut clockwise until the fitting is firm.



**Figure 4. Image of the FID detector showing the SilTite™ FingerTite FID adapter assembly**

## Column Installation



**Figure 5. SilTite™ FingerTite ferrule install tool**

1. First, slide a SilTite™ FingerTite nut onto the tubing, followed by a SilTite™ FingerTite ferrule. The flat base of the ferrule aligns with the nut and the cone points to the detector or injector.
2. Using the SilTite™ FingerTite ferrule install tool displayed in Figure 5, push approximately 20 mm more tubing than required through the crimping tool (for the recommended distance see Table 1.). Tighten the nut, using your fingers only to seat the ferrule onto the column – there is no need to use excessive force, once the seal is made the tubing will be held firm and will not move. Use a rule to mark the column insertion distance, then cut the column. The distances for column insertion into the injector and detector are in Table 1 and are calculated from where the cone of the ferrule has collapsed onto the capillary column. For ease of installation into the injector we recommend using the column fitting jig supplied with the instrument (Shimadzu PN 225-11657-09) to accurately cut the capillary tubing.
3. Insert the pre assembled nut and ferrule into the injector/detector port and screw in the nut using finger force only – again, there is no need to use excessive force to make a seal. You cannot break the capillary column if you over tighten the ferrule although an over tightened ferrule may stick to the cone of the adapter. To remove an over tightened ferrule we simply recommend gently levering between the shoulder of the ferrule and the relevant adapter (please refer to SGE's web site <http://www.sge.com/siltitefingerite> for the recommended method of removing an over tightened SilTite™ FingerTite ferrule). Under no circumstances are wrenches or pliers to be used on these fittings.

Injector/Detector	Distance mm
Split/Splitless GC - 2010	40.0 mm
FID GC - 2010	70.5 mm

**Table 1. Column measurements for correct assembly**