

# SilTite® $\mu$ -Union Installation Instructions

SilTite®  $\mu$ -Union for capillary columns enables a leak-free, low dead volume, low thermal mass connection system designed to be self installed using this manual.

## KIT CONTENTS

- 5 x SilTite double taper ferrules
- 2 x Female  $\mu$ -connector end fittings
- 2 x Male  $\mu$ -connector end fittings
- 1 x Set of connection tooling (2 x FingerTite  $\mu$ -connector male/female end fitting tools, 1 x Connection nut, 1 x Ferrule/nut adaptor)

## INSTALLATION

1. The connection is made in two stages – use only the tools provided in the kit, and never use a wrench.

### First Stage

2. Referring to Figure 1, locate the ferrule/nut adaptor tool (1) and connection nut (2).

Screw the nut onto the tool – the internal thread of the connection nut is designed to allow the male  $\mu$ -connector end fitting to swage the double taper ferrule (see Fig. 2).

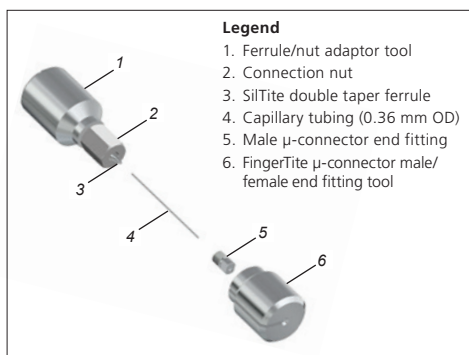


Figure 1. Exploded view of installing the male  $\mu$ -connector end fitting.

3. To swage the male  $\mu$ -connector end fitting (5) onto the double taper ferrule; first slide the male  $\mu$ -connector end fitting onto the capillary tubing (4) – the thread of the end fitting should be facing towards the end of the capillary tubing that will be connected to the  $\mu$ -Union (see Fig. 2).

Locate a double taper ferrule (3) and place it into the connection nut (2) – it simply sits in the connection nut (see Fig. 2).

4. Insert the capillary into the double taper ferrule and screw the male  $\mu$ -connector end fitting (5) into position making sure the capillary seats inside the ferrule – there is a stop designed within the ferrule. Gently tighten the male  $\mu$ -connector end fitting with your fingers until you feel resistance, while ensuring the capillary end is against the stop inside the ferrule.

Locate one of the FingerTite  $\mu$ -connector male/female end fitting tools (6) and slide it over the capillary via the slot cut into the tool, onto the male  $\mu$ -connector end fitting (5). To swage the ferrule, gradually tighten the male  $\mu$ -connector end fitting until the ferrule just begins to hold the capillary, then tighten a further 60° (see Fig. 2 and Fig. 7).

You have now completed the first stage of installing the SilTite  $\mu$ -Union.

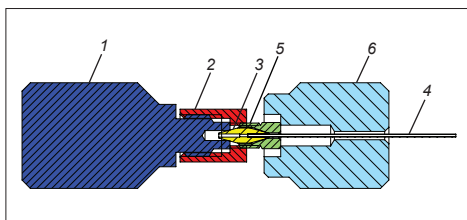


Figure 2. Section view of swaging the male  $\mu$ -connector end fitting onto the double taper ferrule.

## Second Stage

5. Remove the ferrule/nut adaptor tool (1) with connection nut (2), by unthreading it from the male  $\mu$ -connector end fitting (5). Replace the ferrule/nut adaptor tool and connection nut into the kit.

Referring to Figure 3, locate the female  $\mu$ -connector end fitting (7) and slide onto the second piece of capillary tubing (4) – the thread of the end fitting should be facing towards the end of the capillary tubing that will be connected to the  $\mu$ -Union (see Fig. 4).

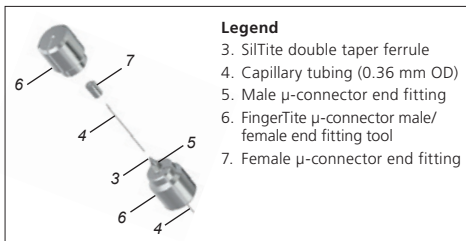


Figure 3. Exploded view of installing the female  $\mu$ -connector end fitting.

6. Insert the capillary into the double taper ferrule and screw the female  $\mu$ -connector end fitting (7) into position making sure the capillary seats inside the ferrule – there is a stop designed within the ferrule. Gently tighten the female  $\mu$ -connector end fitting with your fingers until you feel resistance, while ensuring the capillary end is against the stop inside the ferrule.

Locate both of the FingerTite  $\mu$ -connector male/female end fitting tools (6) and slide them over the capillary via the slot cut into the tools, onto the end fittings (5 and 7). To swage the ferrule, gradually tighten the female  $\mu$ -connector end fitting (7) until the ferrule just begins to hold the capillary, then tighten a further 60° (see Fig. 4 and Fig. 7).

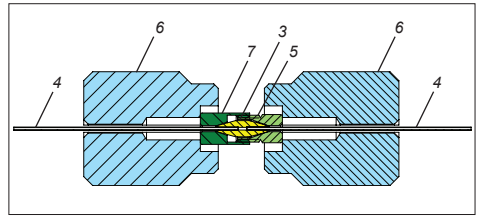


Figure 4. Section view of swaging the female  $\mu$ -connector end fitting onto the double taper ferrule.

7. Remove both of the FingerTite  $\mu$ -connector male/female end fitting tools (6) from the male and female  $\mu$ -connectors and the capillary. Replace the tools into the kit.

You have now completed both stages of the SilTite  $\mu$ -Union connection (see Fig. 5 and Fig. 6).

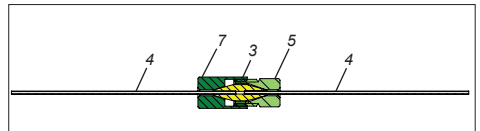


Figure 5. Section view of completed SilTite  $\mu$ -Union connection.

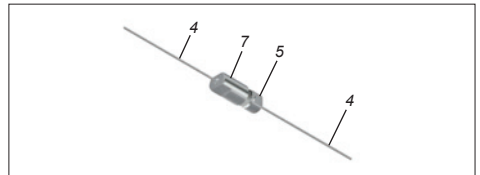


Figure 6. Completed SilTite  $\mu$ -Union connection.

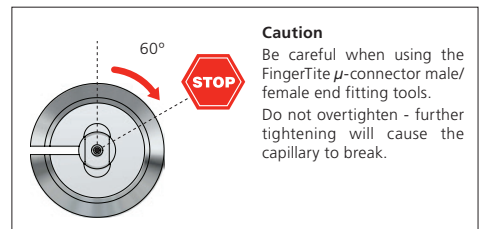


Figure 7. Do not overtighten  $\mu$ -connector end fittings.