SilTite®

Instructions for the SilTite® mini-union

Introduction

The SilTite® series of mini-unions are used to connect polyimide coated fused silica columns with negligible loss of efficiency. The unions are glass lined ensuring an inert and precise internal diameter. Their low dead volume and low thermal mass make them the ideal connector for all capillary applications.

Instructions

A. Joining tubing of similar outer diameters

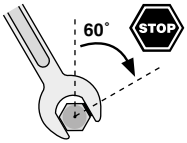
1. Select the mini-union using the following table:

Description
0.1-0.25 mm ID
0.32 mm ID
0.45-0.53 mm ID

2. Take the first piece of tubing and place it through the nut and ferrule. Note that the ferrule should have the cone end towards the nut. Hold the tubing securely between thumb and index finger and scribe perpendicularly across it with a column cutter so that the outer polyimide coating is scored. Grasp the tubing on either side of the scribe mark and pull gently apart with a slight bending motion. The tubing should snap cleanly leaving a square end.
3. Carefully push the tubing into one end of the mini-union and finger tighten the nut. The end of the tubing should be approximately at the center of the union. This is equivalent to around 11 mm measured from the back of nut.
4. Gradually tighten the nut using two 3/16" AF Trajan spanners until the ferrule just begins to hold the fused silica. Then tighten a further 60°, a leak tight seal is guaranteed.

Do not overtighten the nut.
A 180° further tightening of the column will cause it to break.

NB: Always use the union hex for tightening to avoid overtightening the SilTite ferrule.



5. Repeat A.2 for the second piece of tubing to obtain a clean square cut end.
6. Carefully put the tubing into the other end of mini-union union and finger tighten the nut. Push the tubing into the union until it contacts the end of the first piece at the center of the union.
7. Repeat A.4 for the second piece of tubing.

B. Joining tubing of different outer diameters

Where the tubing to be joined is of widely different diameters and the narrower tube will fit inside the larger tubing (e.g. 0.22 mm to 0.53 mm ID capillaries) a slightly different method will minimize dead volumes and give the optimal joint.

NB: In this situation it is important that the smaller OD material is not inserted inside the larger to any major degree. If this occurs, an unswept annular volume is formed which will contribute to peak broadening and cause loss of separation efficiency. For this reason we recommend that the following procedure is followed.

1. Select the mini-union closest to the smallest tubing ID.
2. Take the smaller diameter tubing and place it through the nut and ferrule, noting that the cone end of the ferrule should be towards the nut. Cut the tubing according to the method described in A.2.
3. Carefully push the tubing into the union and finger tighten the nut. Push the tubing through the union until it just protrudes through, a millimeter is ample.
4. Tighten the nut using the method described in A.4.
5. Take the larger diameter tubing and pass it through the nut and ferrule. Note that it may be necessary to use a different diameter ferrule than that supplied with the mini-union. Visit www.trajanscimed.com to find a suitable ferrule.
6. Again cut the tubing to give a clean, square end.
7. Carefully locate the larger tubing over the end of the smaller tubing protruding from the union. While holding the tube in this position finger tighten the nut as per Step A.4.

The procedures outlined will give the best possible joint. When using metal tubing an appropriate cutter should be used to obtain a clean square end.

Information and support

Visit www.trajanscimed.com or contact techsupport@trajanscimed.com

Specifications are subject to change without notice.

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