

# Installing a Uniliner® Liner without an Adaptor in a Standard Packed Column Injection Port

## Overview

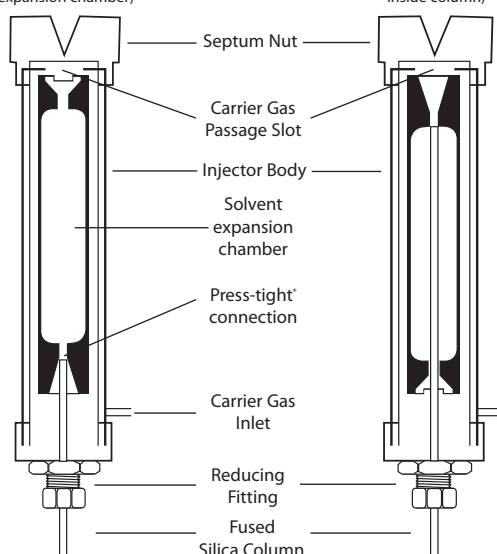
These instructions are to be used ONLY if an adaptor cannot be used. A stainless steel Reducing Kit (cat.# 20312) or a reducing ferrule should also be purchased.

### Direct Injection

(needle terminates in expansion chamber)

### On-column Injection

(needle terminates inside column)



Uniliner® OD	Description	Catalog numbers each 5-pk.	
1/4-inch	Standard version	20300	20304
5mm	Standard version 0.53mm ID	20301	20305
5mm	Standard version 0.32mm ID	20308	20309
5mm	Open-top version 0.32/0.53mm ID	20315	20316
5mm	Cyclo version 0.32/0.53mm ID	20319	20320

## Installation Instruction

1. To prepare the injection port for the on-column mode for packed columns, remove all internal pieces of the injection port.
2. Select either the on-column or direct injection mode of the Uniliner® liner, and carefully slide it inside the injection port.\* Next, tighten the stainless steel reducer (cat.# 20312) onto the injection port fitting.
3. Cut approximately 10cm from each column end using a ceramic wafer (cat.# 20116). Point the column end down to prevent ferrule fragments from falling inside the column. Next, slide the 1/16-inch nut followed by the 0.8mm ID graphite ferrule from the Stainless Steel Reducer Kit (cat.# 20312) onto the column end.

4. Cut an additional 10cm from the column making sure the end is perfectly square. A square end can be obtained by scoring the column with a ceramic wafer and bending away from the cut.

Closely examine the column end with a pocket magnifier (cat.# 20124) to make sure it is square. A square column end is essential in obtaining a leak-free connection to the Uniliner® liner. Failure to obtain a square cut creates an inadequate seal and results in poor peak shapes.

5. Insert the column end through the stainless steel reducer and gently push it against the tapered seating surface of the Uniliner® liner to support the liner.

*When first inserting the column into the Uniliner® liner, do not push the liner against the top of the injection port. Leave approximately a one inch gap between the septum and the liner to seat the ferrule. Failure to seat the ferrule will crush the column end inside the liner taper and will result in broad, tailing solvent peaks.*

Next, tighten the 1/16-inch nut onto the stainless steel reducing fitting. The column should be held firmly by the graphite reducing ferrule and should not slide freely when gentle downward pressure is applied.



\* Uniliner® liners for 0.32mm ID columns, along with the Open-Top and Cyclo versions, can only be installed in the direct injection mode.

6. Once the ferrule has been seated, loosen the 1/16-inch nut and 0.8mm ID ferrule and slowly push the column into the injection port until the Uniliner® liner touches the inside top of the injection port. When you feel it touch, lower the liner approximately 1/32-inch. Retighten the nut and ferrule until the column can no longer be moved using moderate force.

**Note:** If the Uniliner® liner is installed too far into the injection port, the upward movement of the graphite ferrule may crush the column end against the liner's seating surface. The solvent peak test described in Restek's online Column Installation Guide ([www.restek.com/guide\\_cap.asp](http://www.restek.com/guide_cap.asp)) will indicate if this problem has occurred.

7. Turn the carrier gas on and set the column head pressure to the values indicated in Table 1. These head pressures deliver approximately a 5-10cc/min. flow rate. Some GC detectors are not air-tight, therefore, the carrier gas flow should be measured at the column end before installing it in the detector. Next, confirm a leak-free connection by using the Restek Leak Detector (cat.# 22839). Usually a leak-tight connection is assured if the column cannot be moved up or down with moderate force. Do not use liquid leak detectors because they may contaminate or damage the column.
8. Install the column outlet according to your make-up gas instructions and GC instrument manual.
9. Perform the methane test and the solvent peak test as described in Restek's online Column Installation Guide ([www.restek.com/guide\\_cap.asp](http://www.restek.com/guide_cap.asp)) to confirm installation integrity before conditioning the column or running samples.

**Table 1** Approximate column headpressures (helium or hydrogen carrier gas) for flow rates of 5-10cc/min.

Length	Inside Diameter (0.53mm)
15m	2psig
30m	4psig
60m	8psig
105m	14psig

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**Call Technical Service at 800-356-1688 or 814-353-1300, ext. 4 (or your Restek representative)  
if you have any questions about this product or any other Restek product.**



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