

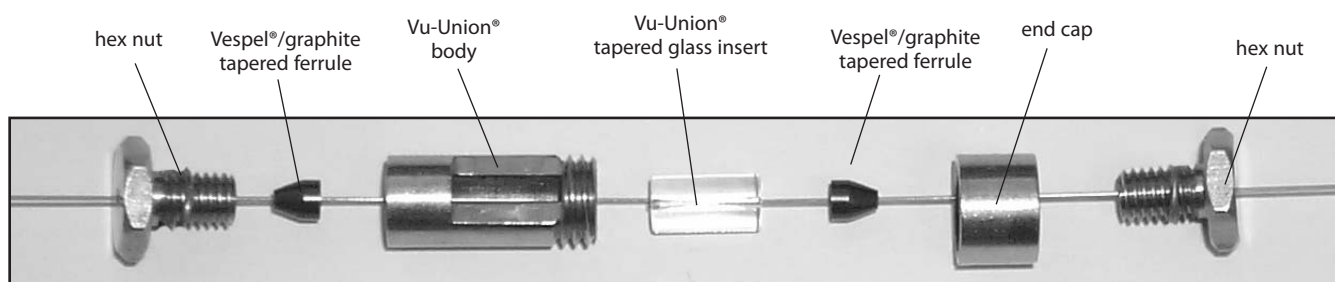
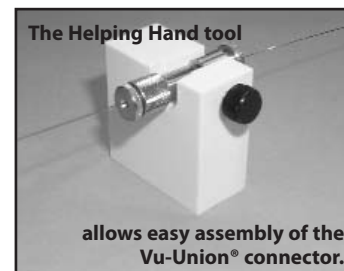
Vacuum Vu-Union® Connectors

(cat.# 20427; glass inserts: cat.# 20428)

Overview

Use only Vespel®/graphite ferrules in vacuum applications.

The Vu-Union® connector is a Press-Tight® connector that uses ferrules to make a secondary seal between the column and connector. A reverse-ferrule design prevents the column end from being crushed in the taper when the ferrule is compressed. The hex nuts apply independent pressure to each ferrule to make a leak-free seal with the column end. Through the window, analysts can visually confirm the presence of a brown sealing ring at the column and glass insert connection. The Helping Hand tool is designed to hold the metal housing of the Vu-Union® connector in place while the user assembles the columns in the glass insert and tightens the hex nuts.



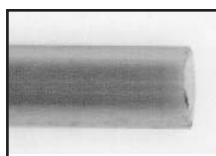
Installation Instructions

1. Remove the end cap from the Vu-Union® connector body. Insert the tapered glass piece and replace the end cap.
2. Place the Vu-Union® connector body with the slotted window facing up into the Helping Hand tool. Tighten the thumbscrew to secure the Vu-Union® connector in place.
3. Unscrew both hex nuts from the fitting ends.
4. Slide both hex nuts and ferrules onto the fused silica column ends. Install the ferrule so the tapered end faces outward towards the nut. *Always point the column end down during installation so ferrule shards do not fall inside the column bore.*
5. Cut both column ends using a ceramic scoring wafer (cat.# 20116). *Pointed scoring devices are not recommended.* Verify a square cut by using a pocket magnifier (cat.# 20124) to inspect the end of the tubing. A square cut must be obtained or a poor connection between the column end and the tapered glass insert will result.

6. Push the column ends through the Vu-Union® connector body and partially into the glass insert taper. Leave a $1/16$ -inch gap between the column end and the tapered region until the ferrules are preseat.

Preseat the ferrule before inserting the column completely into the taper to alleviate the possibility of damaging the column or tapered insert when tightening the fitting. To preseat the ferrule, finger-tighten the hex nuts simultaneously until the column does not slide when gentle pressure is applied. The ferrules are now preseat and properly deformed to fit the connector cavity.

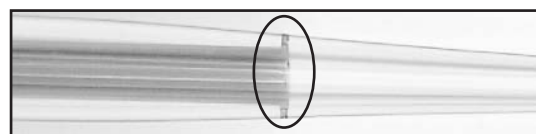
7. Loosen both hex nuts and gently push each column end into the glass insert taper until it makes contact. Tighten **both hex nuts simultaneously** until the column is held firmly (approximately $1/8$ -turn past finger-tight). Look for the appearance of a brown ring at the point where the column ends contact the glass taper. The presence of a uniform brown ring circling the entire column at the tapered region indicates a proper connection. Remove and clean the glass insert if the column appears to be fractured or if the ring is not continuous.



A good column cut.



A bad column cut.



The presence of a brown ring at the point where the column ends contact the glass taper means the column has been properly installed.

8. Restore carrier gas pressure and leak-check the connection with Restek's Leak Detector (cat.# 22839). Do not use liquid leak detectors because they will contaminate and damage the column.
9. Inject methane to set the proper dead time. Examine the peak symmetry. If the peak is tailing, reinstall the connector.
10. Next, inject 1.0µL of a solvent such as methylene chloride. If the peak exhibits the same shape as prior to installing the Vu-Union® connector, then the connection has been successfully achieved. Otherwise, reinstall the column into the connector.
11. Briefly condition the column. Check the Vu-Union® connector for leaks after the cool-down cycle. **Note:** *It is common for Vespel® ferrules to require tightening after thermal cycling because they shrink slightly after initial heating.*

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 Other trademarks: Vespel (E.I. duPont de Nemours & Co.)

Tailing peak indicates improper installation



Symmetrical peak indicates proper installation



Replacement VESPEL®/Graphite Ferrules (10-pk.)

Ferrule ID	Fits Column (mm)	cat.#
0.3mm	<0.22 ID—<0.4 OD	20423
0.4mm	0.25 ID—0.4 OD	20420
0.5mm	0.32 ID—0.5 OD	20421
0.8mm	0.53 ID—0.8 OD	20422

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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