

# Agilent UltiMetal Plus Flexible Metal Ferrules



Make inert, leak-free connections between GC columns and Capillary Flow Technology (CFT) devices

Each UltiMetal Plus Flexible Metal ferrule is uniquely designed to prevent inventory mix-ups, and to help you find the ferrule you need quickly. The swaging range varies between the different sizes, so it's important to follow the swaging angle diagram in order to avoid overtightening.

**CAUTION:** Overtightening may result in leaks and possible column damage!

**STEP 1**  
Finger tighten the column nut and using the wrench, turn clockwise to minimum swaging angle

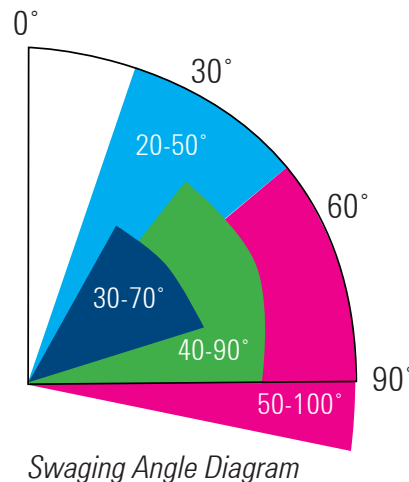
Swaging Angle = 0°

**STEP 2**  
Continue to tighten until you feel the column grip then add 10-20°

Swaging Angle =  $\alpha + 10-20^\circ$

**COLUMN GRIP**  
Swaging Angle =  $\alpha^\circ$

Swaging Angle = 0°



| PN                   | G3188-27501   | G3188-27502 | G3188-27503    | PN G3188-27504 | G3188-27505              | G3188-27506       |
|----------------------|---------------|-------------|----------------|----------------|--------------------------|-------------------|
| Column id            | 0.1 - 0.25 mm | 0.32 mm     | 0.45 - 0.53 mm | Plug           | 0.25 - 0.32 mm UltiMetal | 0.53 mm UltiMetal |
| Ferrule Illustration |               |             |                |                |                          |                   |
| Swaging Range        | 50-100°       | 30-70°      | 20-50°         | 60°            | 40-90°                   | 20-50°            |

Find your local Agilent Representative or Agilent Authorized Distributor at [agilent.com/chem/contactus](http://agilent.com/chem/contactus)  
To learn about Agilent Inert Flow Path solutions visit [agilent.com/chem/inert](http://agilent.com/chem/inert)



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