



## Inert 'V' Groove Nebulizer Instruction Sheet

The inert design of the 'V' groove nebulizer ensures that virtually any solvent including hydrofluoric acid can be nebulized. High dissolved solids and slurries can also be successfully used.

However, whilst dilute sulfuric acid may be used routinely, prolonged use of concentrated sulfuric acid should be avoided

### **Installation**To install the nebulizer into the spray chamber:

- 1 Disconnect and remove the glass concentric unit, complete with the mounting bung.
- 2 Insert the 'V' groove nebulizer into the spray chamber, with the sample inlet to the top, taking care not to touch the sandblasted front surface.
- 3 Connect the gas and sample lines as for the glass concentric nebulizer.

### **Operation**

#### **To set up for operation the with the 'V' groove nebulizer:**

- 1 Light the plasma, establish the program operating conditions and aspirate approximately 1000 ppm of yttrium.
- 2 Adjust the nebulizer gas pressure until the red bullet is just above the level of the top of the torch. The pressure setting may be similar or slightly higher than that used for the glass concentric type nebulizer.

The nebulizer can be used with the standard 'grey-grey' pump tubes with pump speeds of 10–20 rpm for aqueous solutions, where it will typically provide a little higher SBR with slightly poorer precision than the glass concentric type. For other samples, it may be necessary to select different pump tubes and/or pump speeds to optimize performance.

### **Maintenance**

#### **Cleanliness**

For best performance it is essential that the sample hole is clear, and that the front surface of the nebulizer is clean and easily wettable. To maintain this condition, the nebulizer should be thoroughly rinsed between samples and washed from time to time using a dilute detergent solution.



### Gas Orifice

If the gas flow drops (as indicated by the flow meter or by the yttrium test requiring an abnormally high pressure), the small gas orifice may be partially blocked. If this happens, it should be carefully cleaned out.

#### To do this:

- 1 Remove the gas hose and carefully clean the hole using the supplied cleaning wire. Take care that the hole is not damaged or enlarged, as this will permanently degrade the nebulizer performance.
- 2 Thoroughly wash the unit to remove the source of the blockage, and reassemble.

### Sample Capillary

If the sample capillary requires replacement, it will be necessary to enlarge the end of the new piece of PTFE capillary slightly to allow the small end fitting to enter into the tubing. Once inserted, the nut should be fitted over the capillary, and screwed into the nebulizer body. Ensure it is screwed fully home to prevent dead volume in the sample line.

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Agilent Technologies  
679 Springvale Road  
Mulgrave, VIC 3170



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