The MEINHARD® NEBULIZER

NOZZLE SELECTION GUIDE:

**TYPE A**
- **Application:** General purpose
- **Calibration reference:** 1.0 L/min Ar
- **End surfaces:** Lapped
- **Capillary tip recess, mm:** 0.0

**TYPE C**
- **Application:** High solids
- **Calibration reference:** 1.0 L/min Ar
- **End surfaces:** Vitreous
- **Capillary tip recess, mm:** ~0.5

**TYPE K**
- **Application:** Ar low-flow
- **Calibration reference:** 0.7 L/min Ar
- **End surfaces:** Lapped
- **Capillary tip recess, mm:** ~0.5

MODEL DESIGNATION:

**TR-P-NR_a**
- Substitute A, C, or K for N to select Nozzle type
- Substitute nominal working pressure (20, 30, 50) for P.
- Substitute nominal aspiration rate (0.5, 1, 2, 3) for R.

SPECIFICATIONS:
- **Configurations:** Concentric, monolithic
- **Materials:** Borosilicate glass or quartz
- **Tubulation O.D.:** Shell, 6mm; Fluid inputs, 4mm
- **Nozzles:** See selection guide (above)
- **Internal liquid volume:** ~0.1 mL
- **Annular Separation at Nozzle:** ~20 µm
- **Annular area:** ~0.03 mm²
- **Capillary I.D.:**
  - **TR-series** 0.22 - 0.32mm
- **Functional criteria TR, TQ, TQH:**
  - **P_c:** Calibration input pressure at rated Ar flow
  - **R_a:** Water aspiration at -5cm lift, rated Ar flow
  - **P_c (psig)**
    - **Nominal Range:** 30 25 - 40
    - **Nominal Range:** 50 41 - 60
  - **R_a (mL/min)**
    - **Nominal Range:** 0.5 0.3 - 0.6
    - **Nominal Range:** 1 0.7 - 1.4
    - **Nominal Range:** 2 1.5 - 2.4
    - **Nominal Range:** 3 2.5 - 3.5

NEBULIZER OPTIONS:
- **TQ** Any Meinhard nebulizer is available in quartz. The A-type is available from stock.
- **TQH** Any Meinhard nebulizer is available in high purity quartz on request.

NEBULIZER OPERATION:

The MEINHARD® nebulizer will aspirate liquid sample naturally when the rated flow of gas is directed into the sidearm and a sample feed is connected to the liquid input. All models may be operated with externally pumped analyte provided the sample flow is not significantly below or above the natural aspiration rate. Calibrations reflect a standard operational reference and are not intended as limitations on conditions of use, which can vary widely. Operation can be optimized for specific instruments.
NEBULIZER ACCESSORIES:

FG
Compatible with all MEINHARD nebulizers, and tested to 90 psi (600 kPa), the FG fitting provides a secure, high-purity quick disconnect for the gas supply. An FG gas fitting is included with standard Meinhard nebulizers.

F5
The easy-to-grip PFA fitting and PTFE tubing provide a clean, secure solution connection for all standard MEINHARD nebulizers. While 60 cm having an internal diameter of 0.50 mm is included with most TR, TQ, and TQH nebulizers, 0.25, 0.80, and 1.0 mm versions are available.

Simply press the fitting on until the fluoropolymer tubing makes contact with the internal capillary, creating a seal.

Fit Kit #1
Union, ferrules, and fluoropolymer tubing (1/16") to connect 1/16" sample tubing to Small Bore liquid input tube. A butt-fitting provides essentially continuous inside diameter between the sample tubing and the solution capillary. Standard tubing is 0.5 mm X 1.57 mm 600 mm PTFE. For use with SB option, HEN, and DIHEN

Fit Kit #1 Micro
Union, ferrules, and microbore fluoropolymer tubing for use with HEN, DIHEN and SB option. The microbore tubing feeds through the SB end fitting until it seals against the solution capillary to minimize dead volume. Includes 0.10 mm x 0.45 mm x 600 mm fluoropolymer tubing.

Fit Kit #2
Union and ferrules for secure connection of high pressure argon supply line (1/4", 6.3 mm) especially for HEN and DIHEN when pressure exceeds 90 psig (600 kPa).