

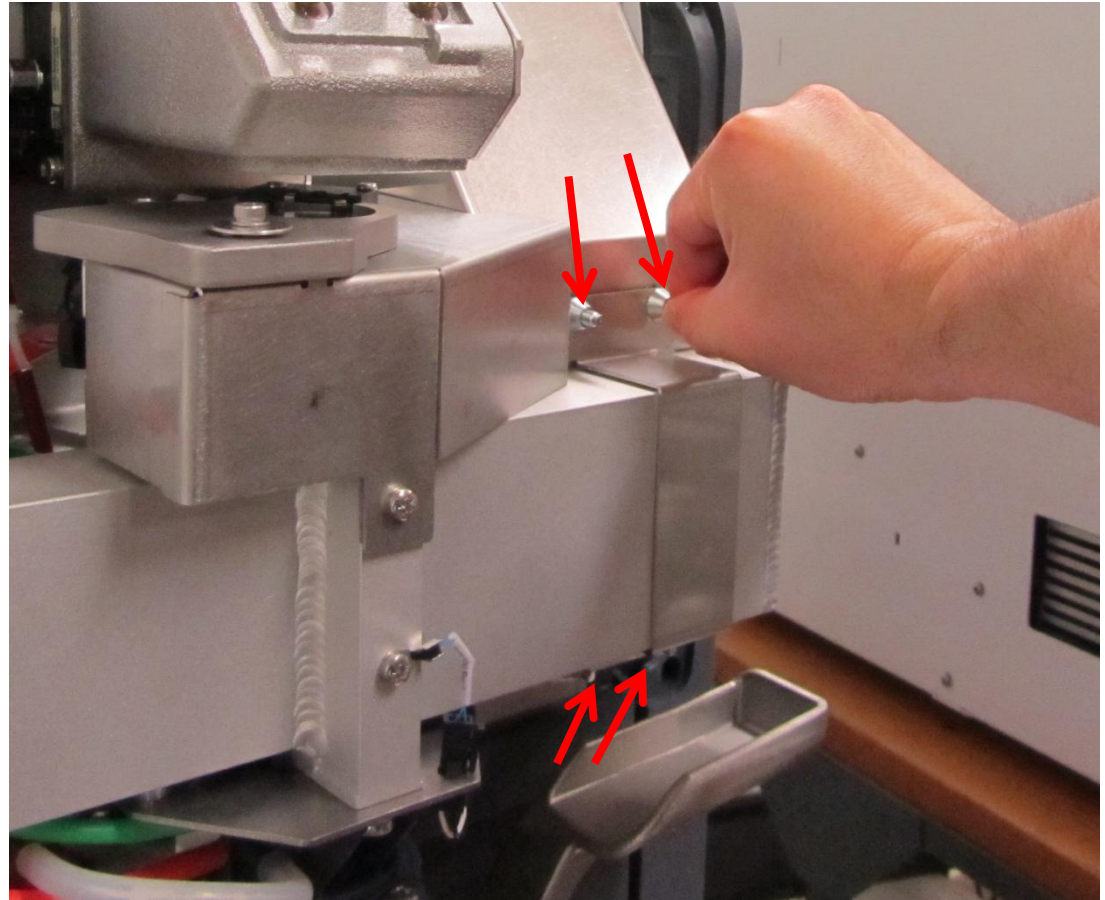
# Microwave Leak Testing The 4100 MP-AES

Stephen Anderson, November 2012



# Check Tamperproof Screws Attaching the Magnetron to the Waveguide are NOT Loose

- Two Screws at the Top
- Two Screws at the Bottom
- If loose screws are detected replace the Waveguide assembly



# Required Equipment : Handheld Microwave Leak Tester

- Leak Test Meter Range and Measurement Capability
  - Ranges: 2.45 GHZ (microwave frequency) or 50MHZ~3.5 GHZ.
  - RF power density: 0.01~2.700 mW / cm<sup>2</sup>
- Agilent 4100 MP-AES Leak Test Frequency : 2.45 GHz
- Agilent 4100 MP-AES Leakage Limit 1 mW/cm<sup>2</sup> at each test point
- Agilent 4100 MP-AES Test Points
  - Waveguide and Magnetron Interface
  - Welds
  - Joins

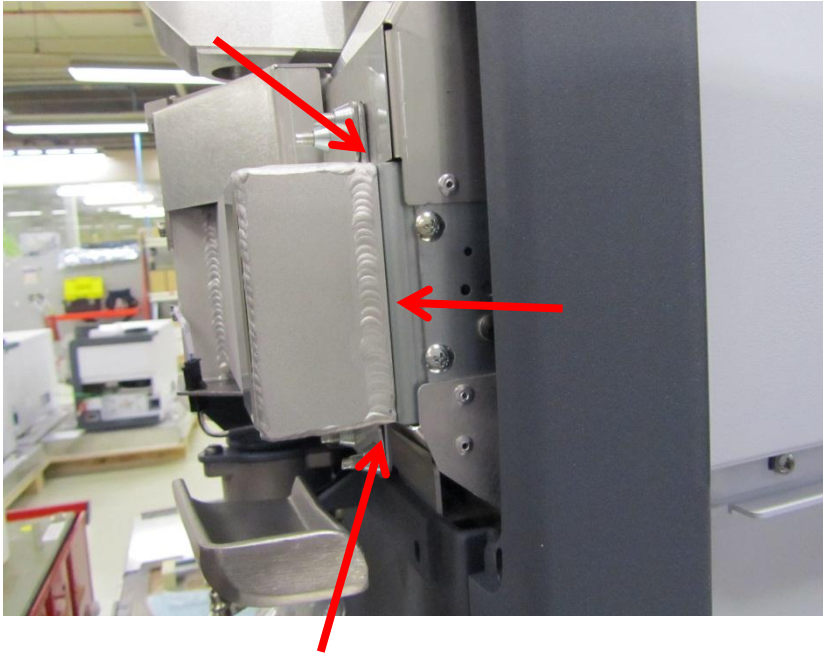


# Instrument Configuration

- Install the standard sample introduction system
  - Standard Glass Concentric Nebuliser
  - White/White Sample Pump Tubing
  - Blue/Blue Drain Pump Tubing
  - Single Pass Glass Cyclonic Spray Chamber
- Aspirate deionized water or blank solution
- Ignite the plasma
- Proceed with Microwave Leak Testing at the locations indicated in the following slides



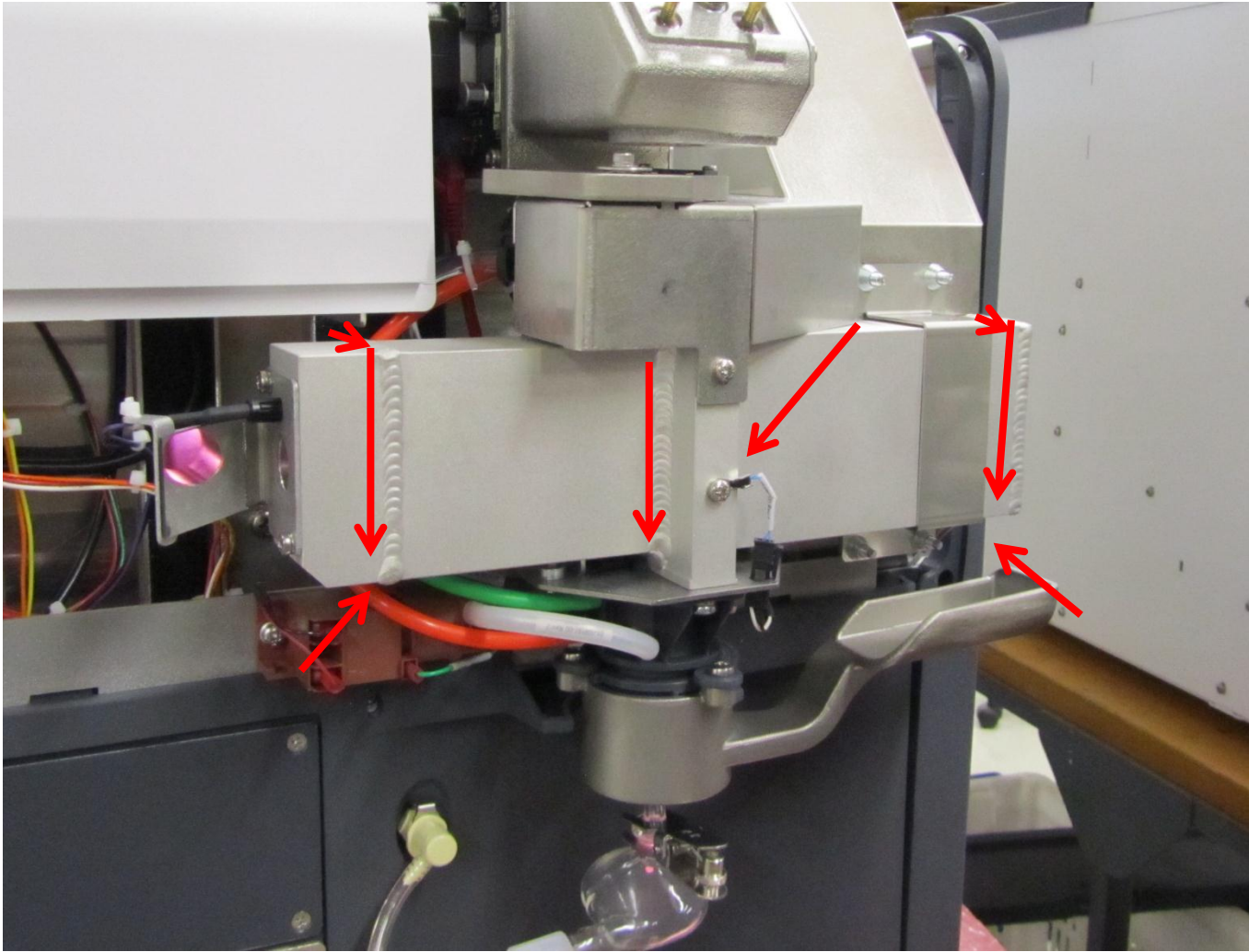
# Leak Test Point on the 4100 MP-AES : Waveguide and Magnetron Interface



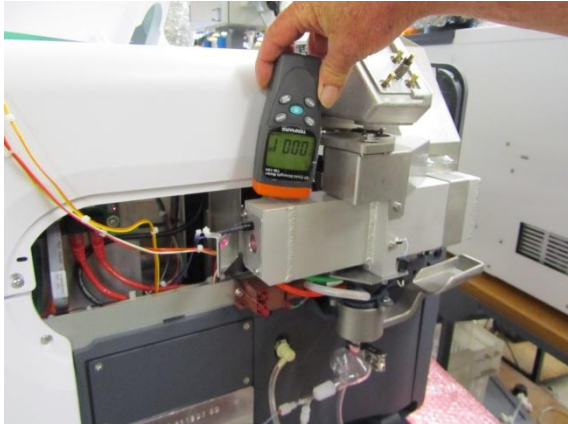
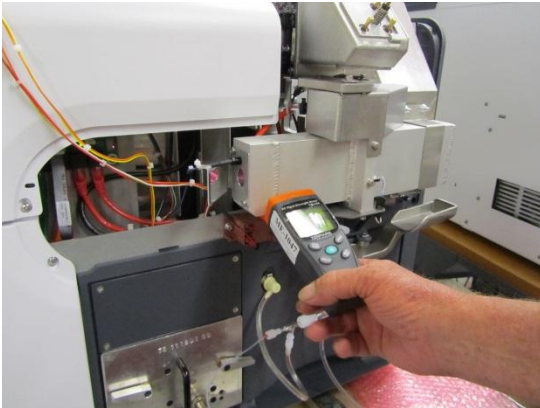
# Waveguide and Magnetron Interface



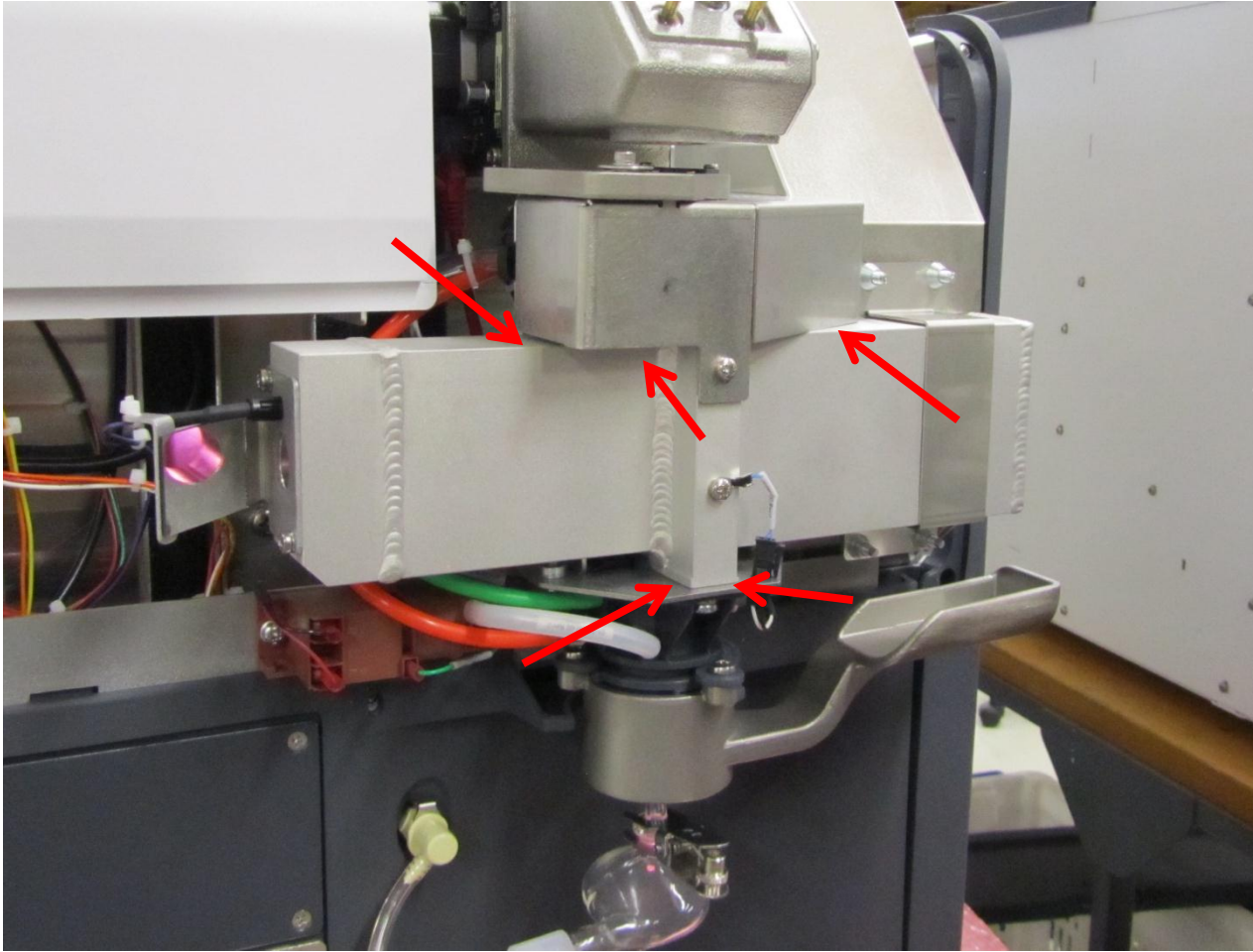
# Leak Test Point on the 4100 MP-AES : Welds



# Check Welds



# Leak Test Point on the 4100 MP-AES : Joins



# Check Joins



# If a Leak is Detected in the Microwave Assembly

- If a Microwave leak at any point is greater than  $1 \text{ mW} / \text{cm}^2$ , replace the Waveguide Assembly
- Part Number G8000-64126



