



TWO STATION LEAK TESTER FOR AIR CONDITIONER A-COILS



VTI's design of this system for leak testing air-conditioner A-coils incorporates an initial station to check the coils for gross leaks and then to evacuate and charge them with helium, before they go into the test chamber for sensitive, mass-spectrometer leak testing. This avoids any production slow-downs due to large leaks, and eliminates the complexity of vacuum- and helium-line attachments to the coil within the vacuum test chamber. At this initial "charging" station (left), the coils are pressurized with nitrogen for a combined burst test and pressure-decay test for gross leaks. They are then evacuated and charged with helium and sealed by ultrasonic welding.

The coils next enter the test chamber for helium mass-spectrometer testing to a sensitivity level equivalent to 0.25 ounce/year of Refrigerant leakage. In continuous production, one coil is in the test chamber, while others are being gross-leak tested and charged with helium. The system's production rate is approximately 100 coils/hours, and all steps are performed by a single operator since the system has a fully computer-controlled test cycle and Pass/Fail decision. Bar coding is incorporated for test-cycle initiation, inventory control, and quality records.