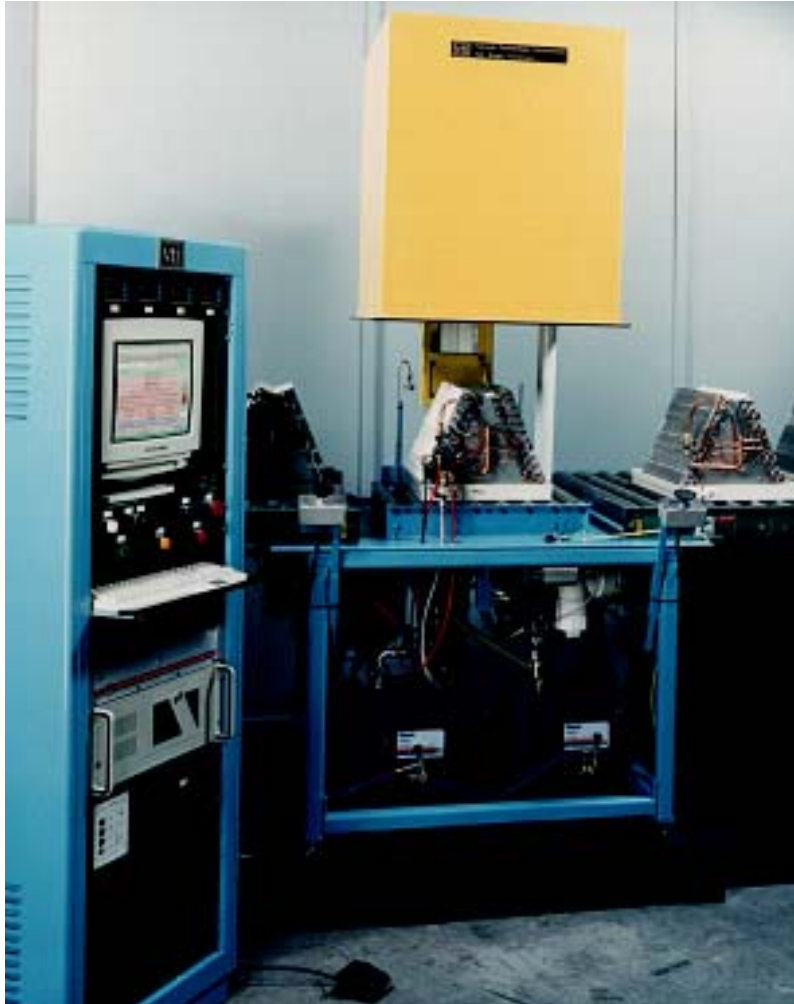




“OUTSIDE-IN” LEAK DETECTION ON AIR CONDITIONER A-COILS



VTI designed and built this system to test A-coils to meet a leak-rate specification of 0.1 oz/year of Refrigerant and a production rate of 90 parts per hour including load and unload. The PC-controlled system has a fully automated test cycle including the pass/fail decision, eliminating operator subjectivity, and provides statistical QA data storage and analysis. Manual or automated load/unload operation is available, and an automated bar code printer and a high-pressure burst test can be incorporated.

The system performs an “Outside/In” type of leak test in which the coil is evacuated and there is a helium/air mixture in the enclosure. Helium passes through any defect in the coil and is detected by a mass spectrometer which samples the gas stream flowing from the coil to the vacuum pumps. VTI also builds “inside/out” leak testing systems in which the coil is pressurized inside an evacuated chamber.

The leak rate specification for this application is for detection of 0.1 oz/year of R22 when the refrigerant is at 250 psig leaking into atmosphere, a specification which cannot reasonably be met by bubble testing. This system detects the Helium Leak Rate equivalent to that specification when a 30%-Helium/70%Air mixture at 1 atm in the test enclosure is flowing into the vacuum in the coil. Higher and lower sensitivity testing levels can be specified.