



HELIUM LEAK TEST SYSTEM FOR AUTOMOTIVE FUEL TANKS



Automotive fuel tanks are leak tested in this automated system designed for high reliability and sensitivity. Helium mass-spectrometer testing was chosen because the large volume, complex plastic part made pressure decay and other test methods impractical. To test to a leak rate specification of $5 \times 10E-4$ atm-cc/sec, the fuel tanks are filled with helium at a low-pressure inside a vacuum chamber. Differential pressure monitoring and control are used to insure that the tank is not damaged during the evacuation, pressurization and venting portions of the cycle. The customer's production requirements are met with three automated systems operating with a 65-sec cycle, including load and unload. The test cycle is initiated with a bar code scan of the tank serial number that allows tracking of results for QA purposes.