

Our goal is to earn your trust by delivering the best products in the industry.



ISO 9001:2015

## Additional Products & Capabilities



787 SCU / CRU R134A Recovery



R134A Refrigerant Charging Station



SCU / CRU Glycol Flushing Cart

## Stand Alone 'Closed Loop' Valve Testers

We also manufacture stand-alone 'closed loop' valve testers, LVDT, and resolver open / closed loop control test boxes that operate manually or take remote command setpoint inputs. On the rear panel of these products are the output signals that allow for external data logging.



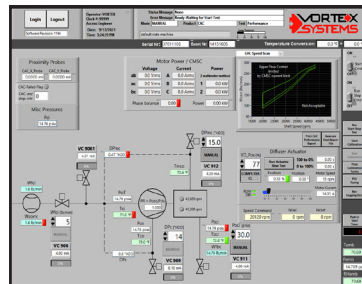
Aircraft Valve Tester



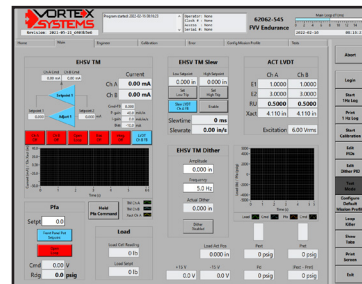
Front View

## LabVIEW Instruments

We use National Instruments LabVIEW in our computer systems. Testers can be configured to operate in a manual or automated test mode. In the automated mode, the system will calculate values such as null bias currents, slewrates, hysteresis and follow CMM specifications, in addition to generating custom reports.



CAC Test Screen



JFC Test Screen



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## Ground Support Test Equipment



■ Turn-key automated aircraft test equipment   ■ Fuel, hydraulic, and process air stands   ■ National Instruments LabVIEW software

## Designing, Engineering, and Fabricating Ground Support Equipment for the Aerospace Industry

Vortex is a worldwide supplier of test solutions, with over 100 installations in 7 countries, delivering user-friendly, robust, and dependable systems. A full service provider, Vortex provides technically advanced turn-key solutions complimented by onsite-field support, thorough documentation and technical training. Vortex is ISO 9001:2015 certified.

Located in Enfield, Connecticut, USA, Vortex Systems is a leading provider of Ground Support Test Equipment for the Aerospace and Defense industries. Vortex Systems solutions span large multifunction test stands operating in both manual and automated modes, aircraft component test solutions for digital fuel control systems, computer-based electronic engine controls, engine starters, Air Cycle Machines (ACM) and valve test stations. In addition, we have extensive experience in testing fuel pumps, fuel controls and hydraulic systems.

Exemplary of Vortex's engineering expertise is the recently installed Boeing 787 CAC/RAF/MDC test stands in Connecticut, North Carolina, Singapore and Germany. This integrated test rig solution is the single most complex piece of 787 test equipment worldwide. This 787 application required the development of unique software capable of communication with the aircraft motor controller via a CAN (Controller Area Network) bus.



Cabin Air Compressor



Ram Air Fan



Motor Driven Compressor

## Specializing In:

- Automated / Manual test stands
- Jet Fuel Control (JFC) component testers
- Electronic Control Simulators (EEC)
- Engineering Services
- Air Cycle Machine (ACM) test stands
- Software Drivers: CAN Bus, MODBUS
- Custom circuitry to interface with UUT hardware:
  - Torque motors, Resolvers, LVDT's
  - Solenoids (Pulse Width Modulation)
  - Pressure transducers, Flowmeters, RTD's
  - Thermocouples, Speed pickups
  - Proximity probes, Motor power measurements
  - Vibration and accelerometer measurements
- Calibration Procedures
- Environmental Testing



Breakout Boxes



Custom PCB Design



Espec Environmental Chamber  
-70 to 180°C ; 10-95% RH

## Industries Served

- Aerospace / Defense
- Ground Support
- Manufacturing
- Overhaul and Repair Facilities



787 Component Test Station

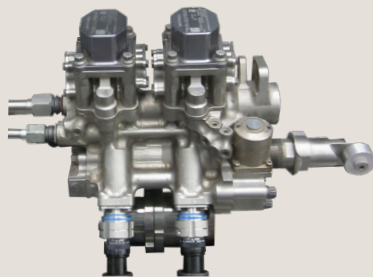


787 SCU/CRU Helium Leak Station

## JFC Component Testers

We specialize in the fabrication of purged Jet Fuel Control (JFC) component testers, built to customer specifications.

- Flexible Power Options
- High Speed Logging Function
- Manual or Automatic Testing
- Multiple Control Loops
- Purged Console
- Test Reports



Jet Fuel Control (JFC)



Jet Fuel Control (JFC) Tester

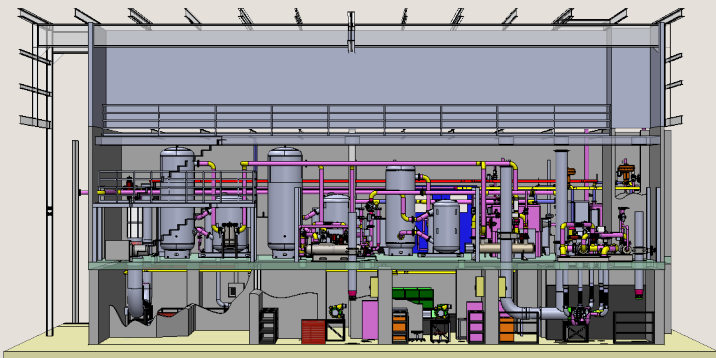


CAC/RAF/MDC Console



787 SCU/CRU Final Test Station

## SOLIDWORKS® Capability



787 CAC/RAF/MDC Test Cell Layout



Joint Strike Fighter (JSF) Actuator Test Rig



Air Cycle Machine (ACM) Test Cell