

Standard and Specialty Fabrication

Manufacturing capabilities include traditional machining, CNC machining, and clean room assembly and test

High-precision tube bending to AS3361 1

- SOCO SB-50NCMP Precision Tube Bender: ¼" to 2.5"
- SOCO SB-63 CNC Precision Tube Bender: ¼" to 3"
- Accurate to +/- .030" between bends and twists
- Bends accurate to +/- 1.5°

Materials of construction include: aluminum, stainless steel, titanium, Monel, Inconel

Specialized linear and orbital welding to both AWS D17.1 and NAVSEA S9074-AQ-GIB-10,

Certified AS9100 Rev C.

Experts in very thin-walled tubing.

Fittings include cryofit, weld, and swage

Turn-key design, routing, structural analysis, layout, manufacturing and test.



Our Mission

is to provide solutions for life support and thermal control for extreme environments



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www.ParagonSDC.com

Testing Facilities



Vacuum chambers and thermal test chambers

Flow and materials testing facilities including:

- Gas Chromatograph
- Mass Spectrometer
- Flow bench
- Fume hoods

Helium leak detection and proof pressure test beds

Data Acquisition & Control (DAC) devices with LabVIEW™ software for real-time data collection, processing, and control

Gas Hazard Alarm System monitors lab atmosphere to maintain healthy work environment and can be integrated into test beds to perform emergency measures in alarm events

Wide range of electrical supply, cooling water and evacuation systems for large volumes of test gasses.

The Inspiration Mars room houses the development of ECLSS hardware for the Inspiration Mars mission, including water and air revitalization systems



ECLSS Human-rating Facility

Patented ECLSS Human-Rating Facility (EHF)

Achieves:

Increased confidence through extensive testing

ECLSS FAA Safety Approval before spacecraft integration

Simulated orbital and suborbital flight external pressure profiles

Lower ECLSS development cost, time, and program risk

Simulated flight conditions to test backup systems

Other uses:

Simulated Mars atmospheric conditions

Pressure suit testing

Other testing that requires a moderate sized vacuum chamber



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Manufacturing Logistics & Control



Romer Infinite 2.0: 6' Portable CMM

- Point Repeatability (\pm) 0.0006 in.
- Length Accuracy (\pm) 0.0009 in.
- DOCS - Tube Inspection with non-contact tube probes
- PC-DMIS –Metrology Software Suite

Mitutoyo PH-3515F Profile Projector with QM-Data200 Series 264-2-D Processing Unit

- 10x, 20x Magnification



Proof Pressure Testing and Helium Leak Detection

- Auto-calibration, w ith built-in temp. compensated calibrated leak.
- Full automation of test cycle
- Minimum detectable helium leak: 5.10-12 atm.cc/sec.

Calibrated and Controlled Hand Tools