

FRONTIER

BY LACO TECHNOLOGIES



THERMAL VACUUM SYSTEM ACCESSORIES

LACO offers a full line of accessories for your FRONTIER TVAC and Bake-Out systems. Add any of these accessories to enhance and simplify your testing process.

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FRONTIER TVAC & BAKE-OUT

LRS CELLULAR REMOTE SUPPORT KIT

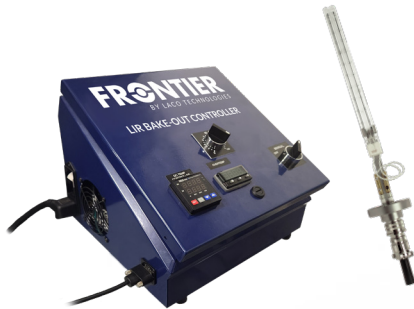
- Connects to LACO HVC and VC controllers
- AT&T sim card and plan (sold separately) for 4G cellular service
- LACO engineer remotely connects to controller
- Easily connect to controller via ethernet cable
- Engineer support included with your product warranty and service contracts



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LIR BAKE-OUT CONTROLLER SYSTEM

- Accelerate the outgassing process by heating the chamber components from the inside
- Reduce the presence of volatile substances, ensuring a cleaner more stable vacuum environment
- Decrease the amount of time required for the vacuum system to reach the desired vacuum level
- Uniformly heat the chamber components and avoid thermal stresses

LHV HIGH VACUUM SET POINT KIT

- Control high vacuum setpoint in the 1×10^{-3} - 1×10^{-6} torr range
- NW16 connection to an existing port
- Effortlessly integrate into your current LACO Frontier TVAC systems with a simple HVC-3500 software upgrade
- Electric nitrogen pressure regulator available for enhanced control over a wider vacuum range with integration to LACO's HVC-3500 controller



MORE INFO



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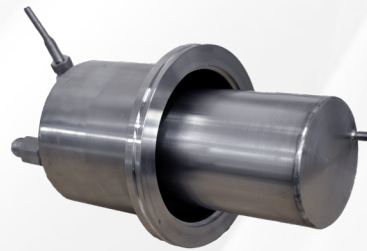
TITAN VERSA HELIUM LEAK DETECTOR

- High sensitivity leak detection
- Detect leak rates as low as 5×10^{-12} atm-cc/sec
- Mobile cart to easily test all of your systems
- Integrated helium spray probe
- Integrates with system pump or separate auxiliary pump
- Includes gas bottle attachment kit for helium supply

KEY SYSTEM ACCESSORIES

LCF LN2 COLD FINGER

- Liquid nitrogen used as cooling agent
- Traps volatile contaminants in the vacuum chamber
- Extend reliability and life of system components
- Protect sensitive equipment and vacuum process integrity
- Reduce cleaning and decontamination downtime
- Aids in achieving lower vacuum levels
- Improve pumpdown times and vacuum performance



MORE INFO



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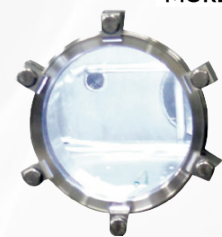
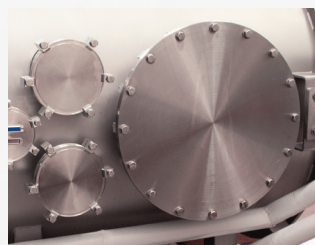


LCF REFRIGERANT COLD FINGER

- External cryochiller eliminates the need for LN2
- Can be removed for cleaning
- Extend reliability and life of system components
- Traps volatile contaminants in the vacuum chamber
- Improve pumpdown times and vacuum performance

SPARE PORTS & VIEWPORTS

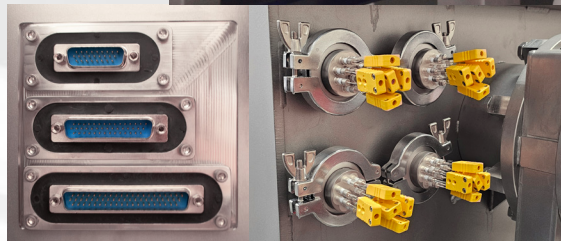
- Flanges & Ports: NW or KF flanges, ISO flanges, CF Flanges, ASA/ANSI flanges, NPT
- Large ISO and ASA/ANSI flanges for future feedthroughs
- Viewports: 4", 6", 8", or 10" viewable diameters in ISO flanges



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ELECTRICAL & THERMOCOUPLE FEEDTHROUGHS

- Electrical feedthroughs: coaxial, multipin, D-sub, microD, USB
- Thermocouple feedthroughs: Type K, J, E, C, R-S, T, N
- Multiple D-sub feedthroughs (9, 15, 25, 26, 37, 44, 62, 50 or 104 pin) built into port blank offs or directly into the vacuum chamber wall
- High voltage feedthroughs

FRONTIER STANDARD SYSTEMS

Configurable to meet your precise testing requirements, Frontier TVAC and Bake-Out systems give you the power and versatility of a custom system with the price point, convenience, and shorter lead times of a standard system. Our full line of Frontier accessories are just one of the many options offered to create your ideal solution.

STANDARD FEATURES

- Control temperature setpoints and ramp rates
- Vacuum levels down to 10^{-7} torr range
- Spare ports and with multiple feedthrough options
- ISO-17025 calibrated vacuum gauges
- Dry roughing vacuum pump
- Turbo pump with gate valve and bypass pumping setup
- Viewport on door with internal LED lighting
- Vent and N₂ purge valves
- HVC-3500 Controller with:
 - 20 customizable recipes
 - Full integration to system valves and gauges
 - Automated vacuum and temperature control
 - Data logging and remote access



CONFIGURABLE OPTIONS

- Choose from cube or cylindrical chamber configurations
- Cube chamber sizes (Inside LxWxH):
 - 20" x 20" x 20"
 - 24" x 24" x 24"
 - 30" x 30" x 30"
 - 36" x 36" x 36"
- Cylindrical chamber sizes (OD x Length):
 - 18" x 24"
 - 24" x 30"
 - 30" x 36"
 - 36" x 40"
- Platen thermal cycling options:
 - LN₂ & electrical heat: -150° C to 150° C
 - Recirculation chiller: -70° C to 150° C
- Vacuum: ATM to 10^{-7} torr
- Thermal shrouds and custom feedthroughs
- Full line of accessories available