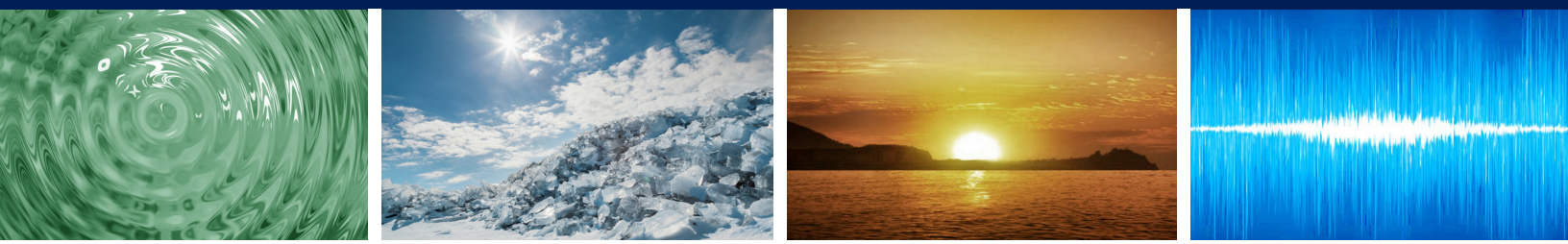


Cincinnati Sub-Zero

TIME COMPRESSOR® CHAMBERS

Engineered & Manufactured in the USA

www.cszproducts.com

TIME COMPRESSOR®
HALT & HASS CHAMBERS

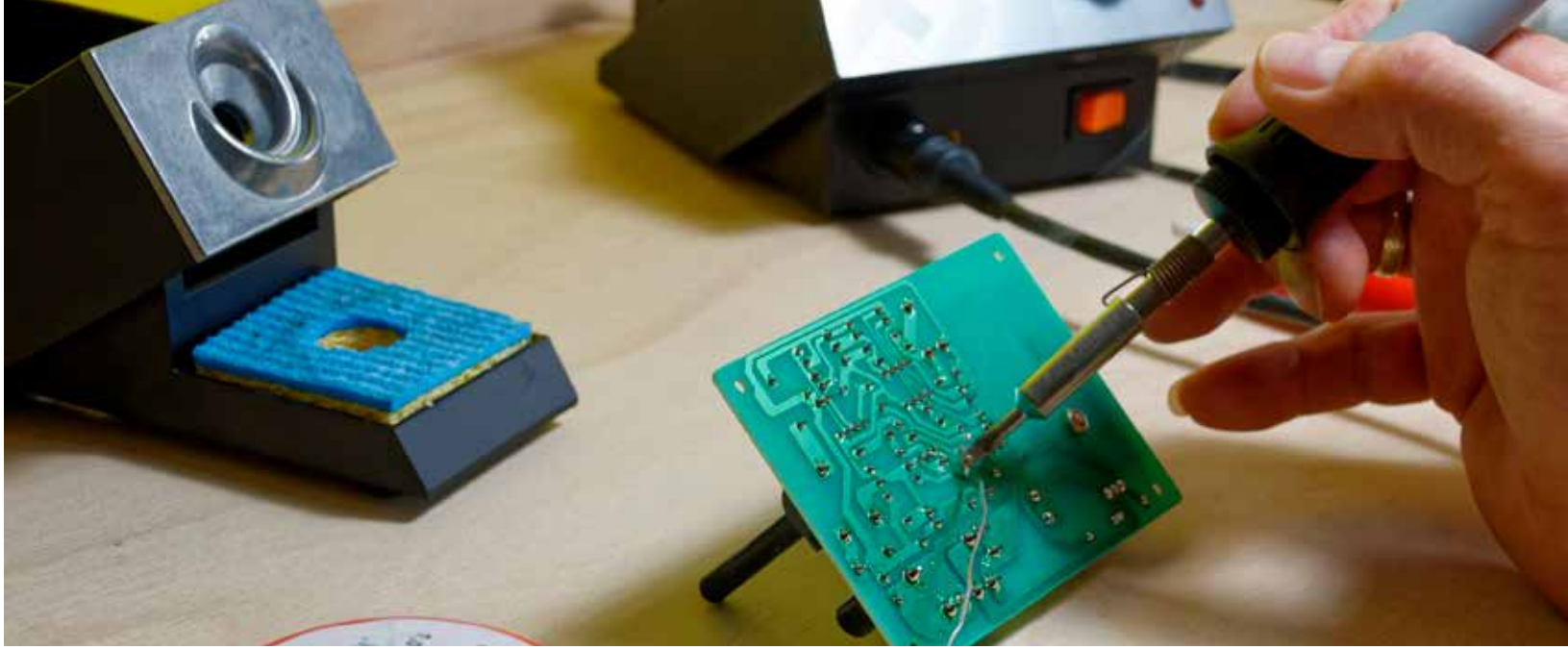
Quickly Discover Design Weaknesses

HALT (Highly Accelerated Life Testing) and HASS (Highly Accelerated Stress Screening) testing is currently in use by most major manufacturing organizations to improve product reliability in a variety of industries, including electronics, computer, defense, automotive, medical and others.

HALT/HASS chambers provide extreme temperature change rates and multi-axis vibration conditions used during the product design and manufacturing cycles to reduce the time normally required to identify design and process weaknesses.

HALT/HASS Testing Benefits:

- Reduce product development & design time
- Ensure product quality & reliability
- Increase customer confidence
- Reduce warranty costs
- Increase profitability



The chamber design of CSZ products and the vibration table design by Dr. Gregg Hobbs, inventor of HALT & HASS technology, combine to provide the broadest range of temperature and vibration capabilities in the industry which are key to both precipitation and detection of product defects.

Four standard chamber sizes for HALT & HASS testing are available with front and back access doors; larger units have double doors for easy access.

Time Compressor Chambers are state-of-the-art HALT and HASS systems for simultaneously subjecting products to all-axis broadband vibration and rapid thermal cycling. CSZ HALT & HASS chambers offer industry-leading performance levels, including ramp rates up to ±100°C/min and broad range vibration levels of 1 to 90 GRMS.

- Superior reliability and thermal performance
- Door includes heated window and safety interlock switch to prevent the system from running with the door open.
- Multiple ducts for targeted cooling
- Cable ports located in the front & side for easy cable routing
- Significantly better high and low vibration limits (required for detection)
- Quiet operation
- Low LN2 and utility usage for greater ROI

Our HALT & HASS Time Compressor® chambers incorporate the highest level of technology and quality for the optimum in reliability testing.

Features and Options

Vibration

- Large dynamic range shaker with 4 to 13 actuators and 1 GRMS to 90 GRMS with a bare table. High GRMS levels are used to enhance precipitation while low GRMS levels, with Modulated Excitation™, help to increase detection.
- A diaphragm is included to protect mechanical vibration table components.

Instrumentation

- EZT-570 Controller comes preloaded with test profiles for faster program implementation.
- Factory preset mechanical over temperature limit. Separate user-adjustable electronic limits are also included for over and under temperature and vibration, providing fully redundant safety limits.
- Safety relay connection is provided to protect the device being tested by removing power supply when the chamber is not running.

Communications

- RS-232/485 serial communications and Ethernet control/monitoring offer a selection of communications options.
- EZ-View software for programming control, monitoring and data logging of multiple chambers from remote computer.

Size	TC-2.0	TC-2.5	TC-3.0	TC-4.0
Temperature Range	-100°C to +200°C			
Temperature Ramp Rates	70°C to 100°C per minute[1]			
Vibration Levels	1 - 90 GRMS			1 - 80 GRMS
Table Size (cm)	24" x 24" (61cm x 61 cm)	30" x 30" (76cm x 76cm)	36" x 36" (91cm x 91cm)	48" x 48" (122cm x 122cm)
Workspace Dimensions W X D X H in (cm)	30" x 30" x 30" (76 x 76 x 76)	34" x 34" x 34" (86 x 86 x 86)	40" x 40" x 40" (102 x 102 x 102)	58" x 58" x 54" (147 x 147 x 137)
External Dimensions W X D X H in (cm)	62" x 41" x 80" (157 x 104 x 203)	65" x 48" x 84" (165 x 122 x 213)	75" x 54" x 90" (191 x 138 x 229)	86" x 71" x 102" (218 x 180 x 260)
Sound Levels[2]	70 dBA	72 dBA	72 dBA	76 dBA

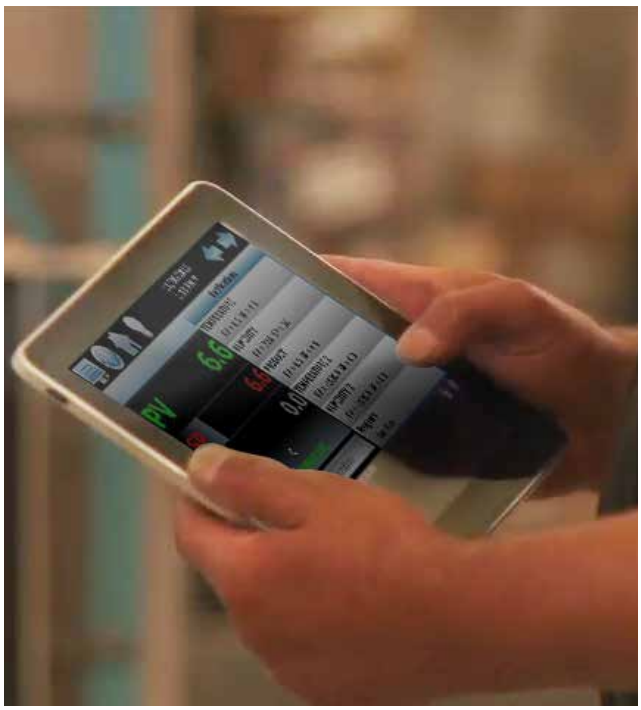
[1] Measured at -65°C to 85°C 6" above table center with hoses attached. Rate will vary depending on model and dwell time.
[2] Measured 3' (1m) from chamber @ 30 GRMS

The Next Generation Controller with Smartphone Technology

Find out more

Our EZT-570 controller offers latest in test chamber programming. Flexible configurations along with a full range of user-friendly features combine to simplify programming and save valuable time for greater return on your investment. Intuitive controller includes built-in data security & safeties to protect your chamber and product under test.

- Remotely monitor and/or Control the chamber from any device (PC, smartphone or tablet)
- Alarm notification system sends email and/or text messages.
- Multiple chambers may also be managed using VNC or optional EZ-View PC software to monitor & control and download profiles.
- Profiling includes up to 99 steps and 1000 cycles.
- Profile status view displays current step, estimated start/stop date and time.
- Profile autostart allows profiles to begin at a date, day and time.
- Data logging with custom file names.
- Easily download profiles, alarm files, audit trail files and data files using USB or email from controller in a compatible .csv file format. Files may automatically be backed up using FTP.
- Email built-in to send data, alarm, audit trail files directly from controller.
- Open and plot historical data files.
- Controller may be configured in any of one of 28 languages
- Selectable power failure/recovery options.
- Full system security allows up to 30 different users with four different levels of security.
- Audit trail files track changes in settings by each user.
- Product high/low limit protects product.



Remote control from smart phone or tablet

Features and Options

HALT & HASS Chamber Options

Spectrum Analyzer Data Acquisition

Option provides monitoring of the vibration levels and spectrum for the product under test. Also shows power spectrum vs. frequency profile. Includes signal input module and VibTrak software along with cabling to connect to the customer supplied computer.

EZT Temperature & Vibration Monitor Package

- (6) temperature thermocouples and (2) additional GRMS vibration accelerometers for monitoring in addition to the standard "z-axis" monitor. Option includes readout with individual alarms, displays, and data logging for each input that can be monitored by the EZT-570 and the EZ-View software.

Customer Event Option

- Includes 15 event outputs with connection panel & removable plug connectors Designed to turn customer's electronic DUTs (devices under test) ON or OFF at various stages of the customer programmed test profile. Each output may also be configured to perform other operations including alarm or profile status indicators.

Digital Input Option

- Includes connection panel and 8 inputs that can be configured to perform various controller functions (i.e. start, hold, resume or terminate a profile, advance steps, control customer event outputs)

Oxygen Concentration Monitor & Alarm

- Stand alone unit can be connected to the chamber to shut off LN2 Flow on alarm. Wall mount NEMA 4x enclosure with battery backup. Requires 115V/220V, <10 watt power connection.

Fresh Air Purge Option

- Flushes nitrogen from the chamber workspace utilizing compressed air. Air purge can be programmed to run as an event at the end of a profile or initiated by pressing a button. Included on TC-4.

Spare Parts Maintenance Kit

- Includes accelerometer, accelerometer cable, spare thermocouples and spare vibrators.

Basic Fixturing Kit

- Includes four lengths of 80-20 bar with holes and an assortment of threaded rod, nuts and washers

Other Custom Options Available

Benchtop Vibration Chamber

The benchtop vibration system may be used as a stand-alone vibration table for vibration testing or placed inside an environmental chamber for combined vibration & temperature testing offering flexibility and greater return on investment.

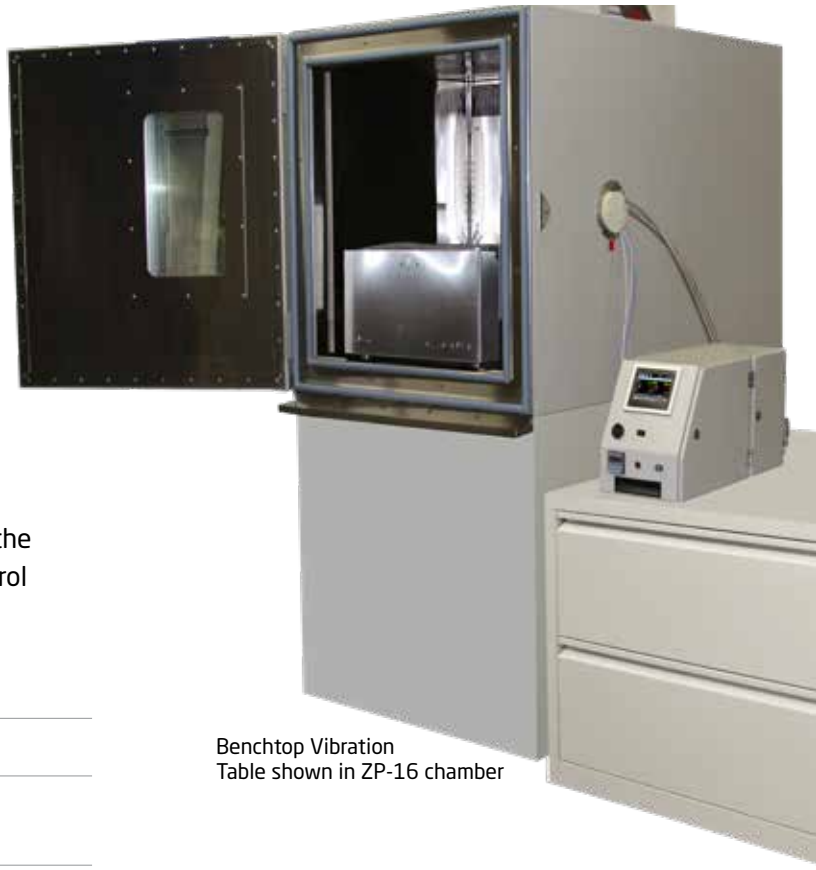
Equipped with an all-axis vibration system, the TCB-1.3 utilizes four pneumatically-actuated vibration hammers providing 6 dof, random vibration with x,y,z axis and roll, pitch and yaw rotation. The chamber comes standard with two accelerometers, one for control and one vibration monitor with a range of 1 to 60 GRMs.

Our benchtop vibration chamber is ideal for reliability testing of compact products and electronics.

Benchtop Vibration Chamber

Benefits

- Dual-purpose design allows for use as benchtop vibration chamber or with a Temperature Chamber for combined temperature & vibration testing. Design includes a removable lid & easy-lift off control console to allow the table base to be placed inside a typical 16 cu. ft. (456L) or larger chamber.
- Utilizing random vibration technology combined with an environmental chamber, provides an economical method to perform combined temperature/vibration testing.
- Quiet operation
- Includes the EZT-570 touch-screen controller with state-of-the art features including datalogging, trend charts, remote control and monitoring, automated alarm messages and more.



Benchtop Vibration
Table shown in ZP-16 chamber

Workspace	16"W x 16"D x 10"H (41cm x 41cm x 25cm)
Exterior Dimensions **Table Base**	33"W x 31"D x 23"H (84cm x 79cm x 58cm) 22"W x 23"D x 12"H (56cm x 58cm x 30cm)
Vibration Level	1 to 60 GRMS, 3 Hz to 10 kHz with unloaded table
Temperature Range* (Base Only)	-70°C to +163°C
Voltage	115V/1Ph/60Hz or 220V/1Ph/50 Hz
Compressed Air	<20 SCFM maximum @ 100 psi
Overall Table Weight	190 lbs (86 kg), Base Only: 120 lbs (54 kg)

* When used in conjunction with an environmental chamber

Cincinnati Sub-Zero is a product brand of Weiss Technik North America, Inc. Weiss Technik North America is a member of the Weiss Technik group of companies, a division of the Schunk Group with its headquarters in Heuchelheim, Germany. Weiss Technik is the world's largest manufacturer of environmental simulation systems and employs more than 2,900 people in 18 group companies in 15 countries.

Request Information

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The Testing Standard.

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