weiss**technik**®
a schunk company

Galaxy®
HALT / HASS System
Stand the test of time.

HALT Testing
Highly Accelerated Life Test

The goal of every manufacturing company is to bring a product of world-class quality to market in the shortest time, and at lower cost. There is even further incentive to improve field reliability and lower warranty claims. Many manufacturers use HALT and HASS testing to help them achieve these goals.

In the HALT process, the test sample is subjected to progressively higher stress levels, thermal dwells, rapid temperature transitions, vibration, and a combination of the two.
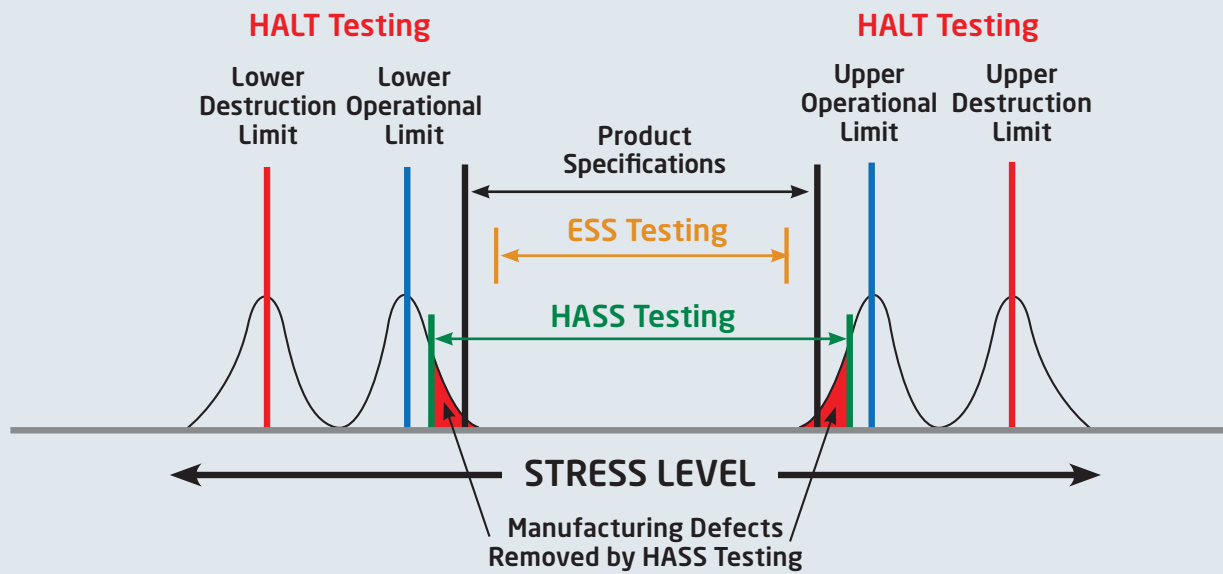
HASS Testing
Highly Accelerated Stress Screen

HASS is a post-production process that can be performed on 100% of products or a partial sample of units (HASA – Highly Accelerated Stress Audit)

The main goal of HASS is to precipitate and detect hidden or latent failures. It is used to verify that no new "weak link" has crept in to the product. Ultimately, its purpose is to prevent flawed units from reaching the end-user/customer.
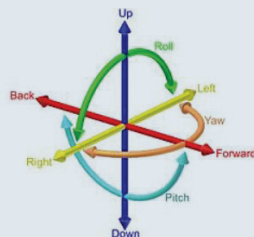
Typically, HASS stress levels are less than those used in HALT; however, they are generally more severe than anticipated in actual service. The goal is to use enough stress to find fault – but not enough to remove a significant amount of the product's life.

HALT Testing

Lower Destruction Limit | Lower Operational Limit | Product Specifications | Upper Operational Limit | Upper Destruction Limit

HALT Testing

ESS Testing

HASS Testing

STRESS LEVEL

Manufacturing Defects Removed by HASS Testing

Random Vibration Table

The integrated vibration table provides acceleration, utilizing quasi-random, six-degree-of-freedom, vibration acceleration in the frequency range 0 to 10kHz. The table can deliver axis-specific vibration levels up to 100gRMS.

Table acceleration levels can be mounted and controlled via a tri-axial accelerometer block, or single Z-axis control.

Benefits of HALT/HASS include:

- Precipitates hidden or latent failures caused by poor workmanship or manufacturing processes.
- Verifies integrity of mechanical interconnects
- Prevents flawed units from reaching the end-user
- Detects changes in components and processes
- Decreases warranty and field service costs
- Increased customer satisfaction

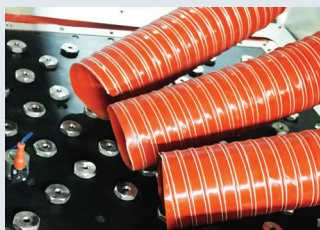# Galaxy – Advanced Product Reliability Testing

Weiss Technik's Galaxy HALT/HASS systems are integrated test chamber with vibration.

The Galaxy system offers rapid thermal change rates, up to 70°C/min, using LN2. The cryogenic cooling system, with modulating valve and directed air flow to the product, provides the rapid thermal change rates needed to achieve maximum product stress. Additionally, these rates are accomplished with smaller space requirements, lower audible noise, no water requirements, and lower maintenance costs than a typical refrigeration system

Features:

- Isolated vibration compartment for low noise
- Easy-to-use software capable of graphing performed profiles
- Easier maintenance access with fully removable vibration table
- Door safety switches for personnel safety
- High table weight capacity, up to 1,000 pounds, to maximize customer throughput
- High vibration levels, up to 100 gRMS, to defeat your product

- Direct product cooling, for efficient usage of costly LN2
- Fully vacuum jacketed inlet assembly, to save the customer money
- Optional items include:
    - External O2 sensor for additional operational safety
    - Exclusive Component Control, to create a more stable environment for items unable to be exterior to test space, ex. power packs.

Multi-Directional Air Flow

Full Table Access

Universal Port

Front & Rear Door Openings

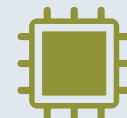## HALT/HASS Testing is Applicable for Many Industries

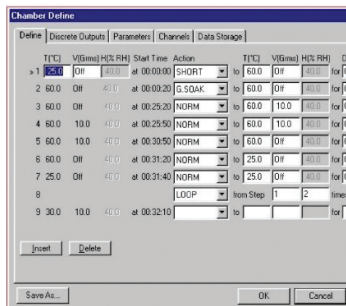Defense   Automotive   Aerospace   Consumer Products   Electronics   Medical

Control & Analysis

StarVIEW

StarVIEW is a user-friendly software that provides easy "point and click" program writing. As you write the test profile, a graph is generated, allowing the user to easily check for errors. Ideal for creating your custom HALT tests and HASS profiles.

The StarVIEW software works in conjunction with the chamber controller to monitor the air and product temperature. Up to 16 channels of vibration, and 16 channels of temperature can be monitored and graphed.

Design & Performance

Model		Galaxy 28	Galaxy 36	Galaxy 44
Test Space Volume	Cubic Feet/Liters	50 / 1400	60 / 1700	84 / 2400
Test Space Dimensions	Width	38" (965mm)	50" (1295mm)	54" (1372mm)
	Depth	50" (1295mm)	54" (1371mm)	54" (1372mm)
	Height	44" (1118mm)	42" (1067mm)	49" (1245mm)
External Dimensions	Width	71" (1791mm)	83" (2096mm)	86" (2197mm)
	Depth	64" (1626mm)	67" (1702mm)	67" (1702mm)
	Height	98" (2496mm)	100" (2546mm)	105" (2667mm)
Temperature Range	Minimum	-100°C (-148°F)		
	Maximum	+200°C (+392°F)		
Temperature Change Rate [1,3]		Up to 70°C/min		
Vibration Levels [2,3]		Up to 60gRMS		
Cooling and Heating System		Liquid nitrogen / electric heating elements		
Door Type		Front and Rear Bi-part	Front and Rear Bi-part	Front and Rear Bi-part
Shaker Table Dimension		28" x 28" (711mm x 711mm)	36" x 36" (914mm x 914mm)	44" x 44" (1118mm x 1118mm)
Number of Pneumatic Hammers		8	12	16
Table Maximum Loading	Pounds/Kg	500/228	750/340	1000/453

Performances are based on laboratory conditions at +24°C, 60 Hz. Please consult with your local Sales Representative if your conditions vary.
Temperature ramp rates are average, not linear rates of change.
[1] Heating and cooling rates between +125°C and -55°C in an empty chamber; measured 3" above the table
[2] Measured at z-axis on an empty table. An extended range is offered up to 100grms
[3] Temperature and vibration levels limited if export license is not granted, please consult with your local sales representative

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