TMI BÜCHEL

Hot Tack Tester and Seal Tester SL-25

Model 75-56

INDUSTRIAL PHYSICS

Protecting
Product Integrity

Hot Tack Tester and Seal Tester SL-25

The SL-25 Hot Tack and Seal Tester is a single-station testing center for single- or multi-layer flexible film structures.

Its main function is to seal film samples and provide data on seal strength, giving you the information you need to confirm the right sealing conditions for your packaging films.
On its own, the SL-25 works as a heat sealer, sealing film samples from 1" to 8" wide at temperatures, pressures, and dwell times you set. Attach the SL-25 Hot Tack/Seal Test Unit and testing expands to include Hot Tack, Seal Test, Hot Tack Profile, and Seal Test Profile testing.

GraphMaster Pro Interface

GraphMaster Pro runs the SL-25's user interface, in one of four testing modes: Seal Test, Hot Tack Test, Seal Test Profile, and Hot Tack Profile. It supports profiles built from temperature, dwell time, and pressure.

Computer Specification:

- No internal PC - instrument is driven by GraphMaster Pro software on a customer-supplied PC
- Connection: USB A Male to USB Mini B Male cable

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Standard Features:

- No internal PC - connects to a customer-supplied PC by USB, running GraphMaster Pro software
- GraphMaster Pro software, downloaded and updated through the GraphMaster Download Center
- Computer-controlled seal pressure, temperature, and dwell time
- Independent upper and lower sealing temperatures
- Dual load cells for consistent sealing surface pressure
- Safety guards, a guard switch that prevents operation if the guard is not correctly fitted, and an emergency stop button
- Test profiles by temperature, dwell time, and pressure
- Air dryer and filter built in for clean, dry air supply
- No onboard display or touch screen - everything is controlled from the customer's PC using GraphMaster Pro
- Conforms to ASTM F1921 for hot tack seal testing
- Conforms to ASTM F2029 Standard Practices for Making Heatseals for Determination of Heatsealability of Flexible Webs as Measured by Seal Strength

Optional Accessories, ordered separately:

- SL-25 Hot Tack/Seal Test Unit (75-56-01) - required to run Hot Tack, Seal Test Profile, and Hot Tack Profile tests
- Quick Change Seal Jaw Inserts:
  - VES-3481-3AT - hot tack flat steel insert, 1" WOS x 2" LOS
  - VES-3481-3N2 - hot tack flat steel insert, 1" WOS x 2" LOS, alternative finish
  - VES-3585-3AT - steel insert flat, 0.125" WOS x 8" LOS
- Phenolic Seal Jaw Tray (75-50-07), for safely storing hot jaw inserts
- Footswitch (49-56-02), for hands-free machine cycling. The same footswitch used with the TMI Büchel micrometer
- Manual Sample Loading Tray
- Seal jaws - a set is required to run the instrument. The same jaws used on the SL-10 and interchangeable between the two instruments:
  - VES-3485-3AT - 1/4" x 2" seal jaw, solid steel
  - VES-3545-3AT - 25mm x 203mm, Teflon nickel coated
  - VES-3581-3AT - 5mm x 203mm, Teflon nickel coated
  - VES-3557-3AT - steel flat, 1" WOS x 8" LOS, upper or lower
  - VES-3451-3AT - upper steel flat, 3/4" WOS x 8" LOS
  - VES-3455-3AT - upper steel flat hot tack, 3/4" WOS x 2" LOS
  - Custom heat seal jaw, 8" LOS, steel - configured to order
  - Custom hot tack jaw, 2" LOS, steel - configured to order

Technical Specification:

Applications:	Adhesion Testing
Seal Temperature Set Point Range:	21 to 400 °C
Sealing Temperature Control	Independent upper and lower jaw set points
Temperature Resolution:	± 0.1 °C (32.18 °F)
Temperature Measuring Accuracy:	± 0.15 °C (32.27 °F)
Seal Pressure Range:	30 to 800 N (actual pressure depends on jaw area)
Load Cell Configuration:	Dual load cells, for consistent sealing surface pressure
Sealing Pressure Resolution:	0.68 kPa (0.1 psi)
Dwell Time Range:	0.1 to 100 seconds
Sealing Dwell Time Resolution:	10 ms
Control Accuracy:	± 0.025 ms
Cooling Time Range:	0 to 6000 seconds
Peel Rate Range:	1 to 100 mm/sec
Jaw Length Range:	25.4 to 230.2 mm
Jaw Width Range:	4.9 to 25.4 mm
Hot Tack / Seal Test Sample Size:	1 in wide x 13 in long (25 x 330 mm) strips
Samples Per Test Group:	1 to 100
Seal Load Cell Capacity:	1000 lbs (4,448 N)
Seal Load Cell Accuracy:	0.89 N (0.09 kg)
Hot Tack Load Cell Capacity:	25 lbs (111.2 N)
Hot Tack Load Cell Accuracy:	0.1 % full scale
Safety:	Safety guards, guard switch and emergency stop button fitted as standard
Calibration:	ASTM E-4
Standards:	ASTM F1921 (hot tack), ASTM F2029 (heat seals)
Air Supply:	90 - 120 psi, clean and dry
Site Surface Load Rating:	275 lbs (125 kg) minimum
Minimum Bench Area:	48 in wide x 24 in deep (1219 x 610 mm)
Clearance Required, Left Side:	14 in (356 mm), for HT/ST Unit swing
Relative Humidity:	40 - 60 %, non-condensing
Dimensions, Main Unit (W x H x D)	22.2 x 22.9 x 22.8 in (563 x 583 x 580 mm)
Dimensions, Hot Tack Unit 75-56-01 (W x H x D)	7.3 x 5.9 x 7.0 in (185 x 150 x 177 mm)

Benefits:

- **Test parameters are fully computer-controlled, giving you a temperature set point range of 21 to 400°C, a seal pressure range of 30 to 800N (actual pressure depends on jaw area), a dwell time of 0.1 to 100 seconds, and a peel rate of 1 to 100mm/sec.**
- **Upper and lower sealing temperatures are set independently, so you can run each jaw at its own set point and reproduce the sealing conditions you need.**
- **Dual load cells measure the force actually applied to the film, keeping sealing surface pressure consistent from one sample to the next.**
- **A configurable cooling time of 0 to 6000 seconds gives the seal time to cool before peeling, and you can run groups of up to 100 samples per test series.**
- **GraphMaster Pro runs on a PC of your choice, connected to the instrument by USB, so you're not tied to hardware built into the unit itself.**
- **Safety guards, a guard switch and an emergency stop button are fitted as standard, so operators can run the instrument safely.**
- **Seal jaws are shared with the SL-10, so a lab running both instruments can move jaws between them.**

Disclaimer

The information contained in this document is liable to modification from time to time in the light of experience and our policy of continuous product development. Check the Industrial Physics website for the latest version.

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