



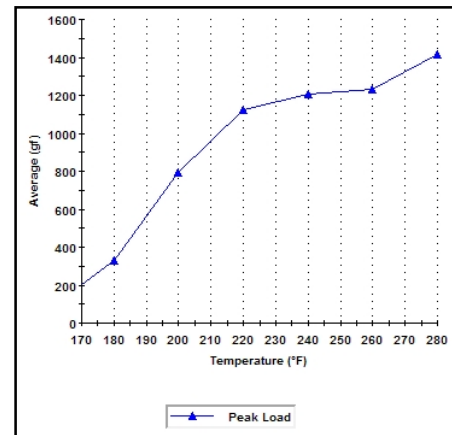
Pilot

Control Software for MAGMA Hot Tack and Heat Seal Test System

Key Features

- Simultaneous control of three test stations
- Test parameter management
- Unattended machine control
- Selectable test types
- Data analysis, exporting and reporting
- Configuration management
- User and password administration

Pilot software manages all operations of the patented MAGMA Hot Tack and Heat Seal Test System. Combining Pilot's versatility with MAGMA's three-station design results in a system that produces test data and statistics with remarkable speed.



Test parameter management

Definitions of standard test conditions can be saved in an unlimited number of parameter files for repeated use. Parameters include:

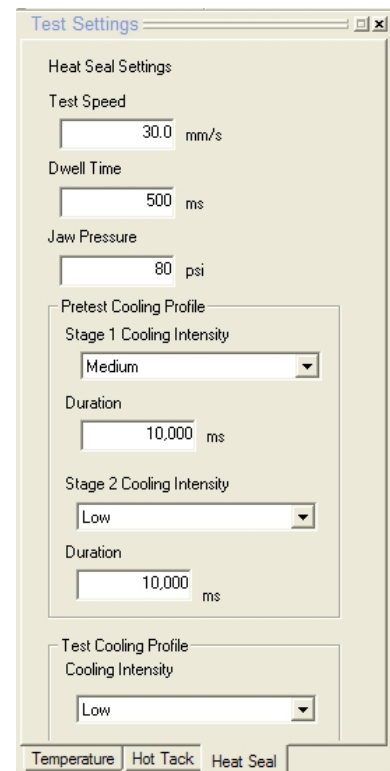
- temperature profile: start, stop and step values
- seal pressure
- dwell time
- cooling time and air flow, for heat seal tests
- force measurement time intervals, for hot tack tests (typically 250 and 500 ms)
- test speed

Selectable test types

Pilot gives you the option to test:

- Heat seal only
- Hot tack only
- Combined hot tack and heat seal
- Aged seal test

The combined hot tack and heat seal test option delivers maximum productivity when both hot tack and heat seal data are needed for a given film. At each step in the temperature profile Pilot leads you through the hot tack test sequence and then prompts you to change samples before continuing to the heat seal test sequence. Pilot saves you considerable time by eliminating the extra wait times between temperature levels.



Unattended machine control

Once a sample set is loaded you simply hit "Start" in the Pilot software and let the system do everything for you from start to finish. Under control of the Pilot software, MAGMA automatically:

- heats the seal jaws to the required temperature,
- seals the three specimens at the specified pressure and dwell time,
- cools (if required) the newly sealed specimens,
- peels the seals at the predefined test speed while collecting force data on each specimen,
- displays the data for your review, and
- prompts you to load your next specimen set when performing temperature sweeps.

Data analysis, exporting and reporting

A host of data and statistics are provided by Pilot, including:

- plots of average peak seal force vs temperature
- plots of average hot tack load at 250 ms and 500 ms time intervals versus temperature (note: time intervals are user adjustable)
- plots of seal force vs time for both heat seal and hot tack tests
- tabular data with averages and standard deviations on recorded forces; observed failure modes; temperatures; dwell times; seal pressure; test speed

Temperature	Peak Load	
	Average	Std Dev
280	1417	135
260	1229	47
240	1205	53
220	1124	86
200	795	41
180	333	18
160	75	84

Data can be exported in CSV format for further analysis by third party spreadsheet software. Data can also be saved in native Pilot EDF data format for later analysis and post-processing by either Pilot or Pilot Viewer software. Further, reports can be generated and sent to any printer available to the PC.

Configuration management

Many aspects of the Pilot software can be configured to suit your operating requirements. The software provides selection of engineering units for force, temperature, pressure and other parameters from among a choice of metric, SI and English unit systems. Graphing properties such as plot line color and pattern, axes grids and scales, and chart colors can be selected. Pilot also features a "standby" temperature in which MAGMA returns to a preset temperature once a test is done to be ready for the next test.

User and password administration

To ensure security, access to Pilot is password controlled. An unlimited number of users can be created, each with an "Operator" or "Administrator" level access. Users with operator access can recall saved parameter files, run tests, export data, and perform routine test operations. Users with administrator access can additionally set configuration values, perform calibrations, use diagnostics, and perform other higher level functions.

The MAGMA Test System may be covered by one or more pending or issued patents, including U.S. Patent No. 7,607,357.



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