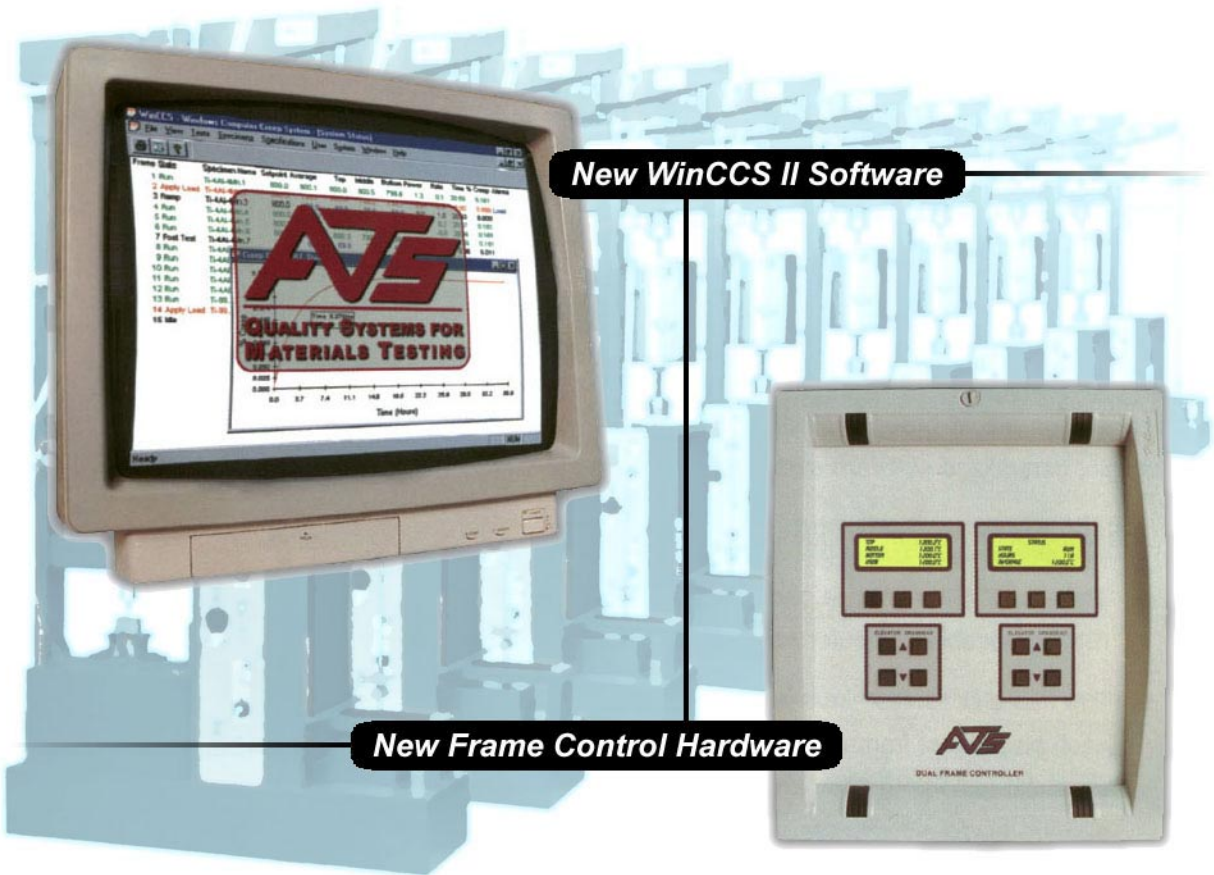


WinCCS II

Computer Creep System



**The Advanced, Versatile, Fully-
Automated System for Operating
All of Your Creep Test Frames**

Introduction

Increased Productivity and Accuracy Through Automation: WinCCS II, the New Creep Testing Software from ATS

The new and improved WinCCS II hardware/software package from ATS has revolutionized the modern testing world. Offered exclusively by ATS, this state-of-the-art system offers a number of unique features for enhanced computer control and monitoring of long-term creep, creep-rupture, and stress-rupture testing.

The result of more than a decade of creep testing software experience and over 30 years of test frame development, WinCCS II delivers an industry-leading array of test control, data acquisition, archiving, analysis, and reporting features. From frame setup, accessory calibration, and specification creation to report generation and data graphing, menu-driven displays lead the operator through easy-to-follow steps that add up to accurate, repeatable, and fully-documented test results.

A Comprehensive Software and Hardware System

WinCCS II is a comprehensive system designed to replace cumbersome manually-operated control equipment and the inherently time-consuming and error-prone data collection methods of a conventional multiple creep frame installation. Drawhead control, weight elevator operation, temperature control, accessory calibration, data acquisition and analysis, specimen queuing and archiving, and report generation are all brought under the management of a single, centralized software system.

The WinCCS II system includes:

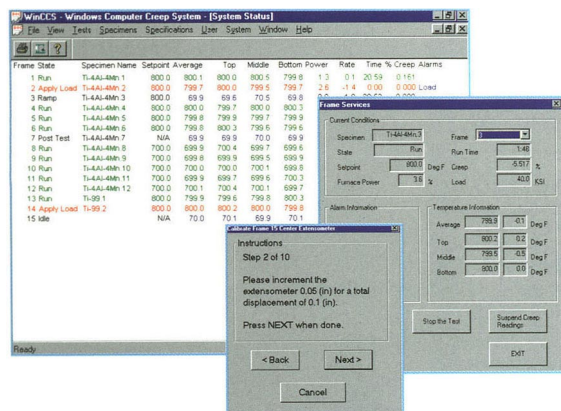
- The *WinCCS II software* package operating on an IBM-compatible computer running Windows™ NT (4.0, 2000, XP).
- The *frame consoles*, innovative and compact, one for each pair of test frames. The consoles display essential test information and operator instructions and are equipped with controls for local drawhead and weight elevator operation. The consoles also provide a reliable interface between frame hardware, accessories, and the host computer.

Complete Compatibility with Creep Test Frames from Any Manufacturer

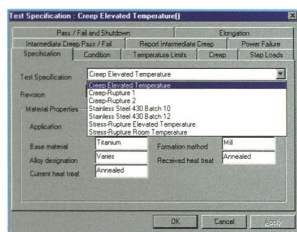


▲ Lever arm and direct load test frames, any number and in any combination, from any manufacturer, can readily be adapted to suit the WinCCS II system. WinCCS II can also be supplied as an integral part of a new ATS creep testing installation.

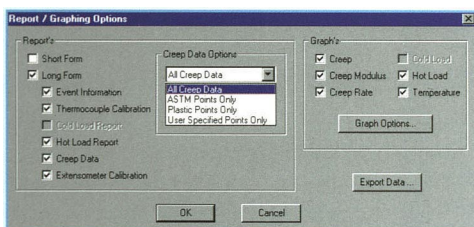
Features



▲ The system status window presents a color-coded overview of important test frame parameters. An intuitive menu structure provides a quick and clear interface with the WinCCS II system. Dialog boxes display step-by-step testing and calibration instructions.

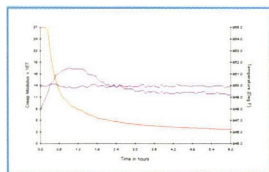


◀ A versatile test specification editor makes it easy to create, locate, select, and modify any test procedure. The WinCCS II system fully complies with ASTM testing standards such as E139 and E292.



▲ Reports are available in basic short form or in a flexible, user-defined long form. Graphing is as simple as selecting one or more of the plot types and data point options.

► Creep, creep modulus, creep rate, cold load, hot load, temperature, Larson-Miller, and isochronous graphs are all standard capabilities of WinCCS II.



Time	Creep Rate (1/%)
01-Feb-1998 @ 3:38	0.000000
01-Feb-1998 @ 3:39	0.000000
01-Feb-1998 @ 3:40	0.000000
01-Feb-1998 @ 3:41	0.000000
01-Feb-1998 @ 3:42	0.000000
01-Feb-1998 @ 3:43	0.000000
01-Feb-1998 @ 3:44	0.000000
01-Feb-1998 @ 3:45	0.000000
01-Feb-1998 @ 3:46	0.000000
01-Feb-1998 @ 3:47	0.000000
01-Feb-1998 @ 3:48	0.000000
01-Feb-1998 @ 3:49	0.000000
01-Feb-1998 @ 3:50	0.000000
01-Feb-1998 @ 3:51	0.000000
01-Feb-1998 @ 3:52	0.000000
01-Feb-1998 @ 3:53	0.000000
01-Feb-1998 @ 3:54	0.000000
01-Feb-1998 @ 3:55	0.000000
01-Feb-1998 @ 3:56	0.000000
01-Feb-1998 @ 3:57	0.000000
01-Feb-1998 @ 3:58	0.000000
01-Feb-1998 @ 3:59	0.000000
01-Feb-1998 @ 4:00	0.000000

◀ Long form reports can include an events log, thermocouple and extensometer calibration information, creep data, and hot and cold load reports.

Informative, Easy-to-Use Interface

The system status window, which appears when the software is first launched, is the main user interface. It includes an easy-to-use menu bar for controlling all aspects of the testing process. This window provides a continuously updated, color-coded overview of important test parameters, such as frame state, furnace temperature and power level, elapsed time, percent creep, and alarm status. The intuitive design of the menu structure allows for specification creation and editing, specimen queuing, system configuration, test initiation and termination, and all other testing, reporting, and maintenance functions. For tasks such as extensometer calibration and weight loading, dialog boxes are displayed to lead the operator step by step through the entire procedure.

Powerful Test Specification Editor

WinCCS II gives you the power to easily create customized specifications for any test. Each new test specification generated in WinCCS II becomes part of a readily accessible library of stored procedures and can be recalled for future testing or quickly modified for new and similar requirements. Revision control ensures that there will be a permanent record of all specification changes. Specifications in WinCCS II are appended with *conditions* which comprehensively define testing parameters, such as temperature setpoint and alarms, heating rate, soak time, step loading, pass/fail criteria, and reporting/recording options. Conditions are a very useful technique for extending the usefulness of a single specification. For example, a given specification can have multiple conditions such as varying temperature setpoints or different stress levels.

Specimen Queuing and Data Tracking

WinCCS II eliminates the common problems associated with manually tracking multiple specimens and test procedures. Specimens are named, dimensions and gage lengths are recorded, and specifications are selected via menu prompts and dialog boxes. This vital information is saved and archived by the software and automatically becomes part of any report associated with that particular specimen. Only fully-defined, queued specimens are available to operators for testing.

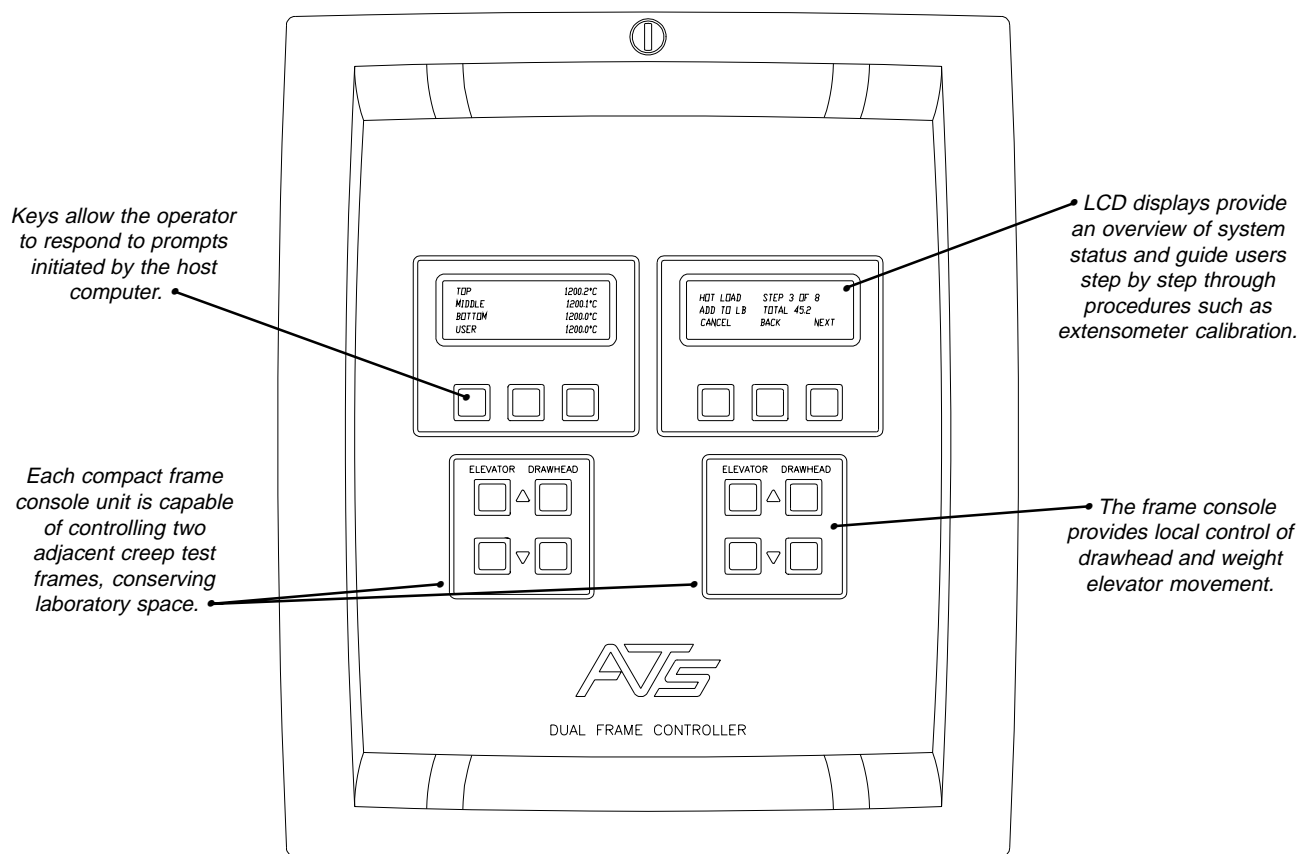
Complete Test Control

Fully-defined specimens are kept in a list which is available to the operator for selection. When a particular specimen is selected, WinCCS II ensures that only frames suitably equipped for the specification linked with that specimen will be available to the operator for the test. The operator is then prompted, if appropriate for the test, to choose from a list of previously calibrated thermocouples and to follow a step-by-step procedure to calibrate the frame's extensometer or to use a prior calibration. The specimen is then loaded and instructions are given to apply the required weight. As the test progresses, pass/fail conditions are continuously evaluated, and WinCCS II instantly alerts the operator to any anomalies. When testing is complete, the operator is prompted to remove the specimen and record post-test data, such as final specimen dimensions, rupture location, and comments.

Graphing and Report Generation

Reports can be generated at any time for tests in progress or for completed or archived tests. A wide range of report choices is available, including short and long form reports. Short form reports contain basic information for test evaluation while long form reports are custom-configured to include data such as calibration information, cold and hot load, events, and creep data. Data point intervals are selected from a standard list or can be defined by the user. Color graphing of creep, creep modulus, creep rate, cold load, hot load, and temperature is included, as well as the capability for isochronous, multiple-specimen, and Larson-Miller plots. All data can be easily exported for use in spreadsheet programs and publications, or they can be e-mailed and faxed to others.

The New Frame Console



The frame console is an integral component of the WinCCS II system and is a major innovation in multiple-frame creep testing. The console displays step-by-step instructions from the host computer for procedures such as extensometer calibration and specimen loading. Keys are provided for the operator to respond after each step. During testing, critical information such as temperature and creep rate is available at a glance.

Each compact console supports two creep frames and is generally mounted on or near the frames at about eye level. The console provides the interface, via input/output connection boxes, between the frame electronics and instrumentation and the host computer. A simple multi-drop RS-422 connection is all that is required from the host computer to the console.

The console provides an important level of protection from system-wide single-point failure: Loss of contact with the host computer will not result in test interruption. The frame console is designed to autonomously continue to control the test frames in the current mode and record data for up to 96 hours. When computer contact is restored, the accumulated data is then uploaded to the host computer.

Specifications

Frame Accommodation.....	Any combination of direct load or lever arm (fixed or variable ratio) test frames; all major manufacturers; new and retrofit.
Standard Interfaces/Controls.....	Four thermocouple input channels; one, two, or three zone furnace temperature control; furnace power control; two high-level extensometer inputs; elevator control with automatic inch-down <i>or</i> drawhead control; specimen break detection.
Optional Interfaces/Controls.....	Integral single or dual-channel LVDT or LVC extensometer signal conditioning; custom extensometer amplifier configurations; elevator <i>and</i> drawhead control; automatic hot step loading package; automatic load control package; weightless testing capability.
Furnace Control.....	Single and multi-zone furnace temperature control with patented PID power control system (replaces discrete temperature controllers and SCR power control); preemptive power compensation automatically eliminates temperature changes due to line voltage fluctuations; system-wide peak load leveling algorithm; high-resolution thermocouple A/D and multi-zone PID algorithms for precise temperature control.
Extensometer Capability.....	Accommodates LVDT, LVC, laser, and custom extensometers; displays and records both channels from averaging extensometers with automatic digital averaging.
Accessory Calibration.....	Automatic step-by-step extensometer calibration routine and classification to ASTM E83; automatic thermocouple calibration correction.
Test Specifications.....	Full specification editor for creating and modifying procedures; revision and access control; conformance to ASTM standards E4, E8, E83, E139, E292, and similar requirements.
Data Handling.....	Identification and tracking system maintains and archives all data associated with each specimen for instant access and reporting; data is ASCII exportable.
Reports.....	Short form; long form; events; calibration data for extensometers and thermocouples; cold load; hot load; test specification; creep data; system configuration.
Graphs.....	Creep; creep modulus; creep rate; cold load; hot load; temperature; isochronous; Larson-Miller; multiple-specimen superimposition.
System Safety.....	Minor and major alarms for furnace control and automatic shutdown; frames are isolated from host computer failure; frame console continues tests in current mode and collects data autonomously for 96 hours; provision for multiple positive furnace shutdown.
System Security.....	Multi-level access with password protection; system administrator determines each user's privileges and restrictions.
ISO 9000.....	Complies fully with documentation, control, and specification requirements.
Computer Requirements..... <i>(computer supplied by ATS or customer)</i>	OS: Microsoft® Windows™ NT (4.0, 2000, XP, or higher) Processor: Intel® Pentium™ III or Celeron™ (or equivalents) 500MHz or higher Memory: 64MB RAM or higher Hard Disk: 1.6GB or larger CD-ROM: Required Modem: V.90 or better Software: Symantec® pcAnywhere™ required I/O: RS-422 interface port and card Display: 17" or larger SVGA monitor recommended for easy viewing Printer: Color printer or plotter recommended for graph generation Storage: DAT backup drive recommended to prevent data loss due to computer failure

More WinCCS II Features

For Precise and Comprehensive Control, Ease of Use, and Reliability

Efficient, Patented Furnace Control

- WinCCS II replaces conventional temperature controllers and SCRs with a patented PID control system that eliminates zone-to-zone interactions and RFI/EMI problems to minimize specimen temperature gradients. High-resolution A/D conversion of thermocouple signals helps hold temperatures to the highest accuracy.
- Temperature fluctuations caused by line voltage drift are eliminated by a *preemptive* algorithm that detects and corrects for voltage changes *before* furnace temperatures are affected.

Extensometer Calibration and Digital Averaging

- Automatic step-by-step calibration and classification of extensometers in accordance with ASTM specification E83.
- Accommodation of averaging extensometers, including graphing of each strain channel and digital averaging.

Automatic Hot Step Loading

- An automatic hot step loading package is available, including two load cells, integral signal conditioner, and all cables and connectors.

Stress-Relaxation Testing Capability

- A stress-relaxation testing package is an available option.

Weightless Testing

- Capability for weightless testing, or automatic load control utilizing drawhead for force generation. Package includes two load cells.

Failure Protection

- Microprocessor control in each frame console isolates testing from any host computer failures. In the event of a computer failure, testing will continue in the current mode and data will be collected autonomously for up to 96 hours. When the computer link is reestablished, data is automatically uploaded to the host computer for processing.

ASTM Conformance

- WinCCS II testing and specification generation complies with ASTM standards E4, E8, E83, E139, E292, and similar requirements.

ISO 9000 Compliance and Data Management

- Complies fully with documentation, control, and specification requirements. (As more emphasis is placed on ISO 9000 certification and its documentation and data control requirements, a computer-controlled system like WinCCS II will become essential for laboratory information management of creep testing.)
- Complete compatibility with the user's existing data storage and laboratory information management systems (LIMS).

System Security

- Multi-level access with password protection. Each user's privileges and restrictions are determined by the system administrator.

Free
Demonstration
Available

WinCCS II: The Perfect Upgrade for Existing Creep Machines from Any Manufacturer

WinCCS II provides improved productivity, accuracy, and reliability for any multiple creep frame testing installation. Lever arm and direct load creep test frames from any manufacturer, in any combination, can be upgraded to take advantage of the enhanced WinCCS II system. ATS has extensive experience with creep frames from all major manufacturers and can provide detailed engineering support to integrate your system exactly to your requirements.

WinCCS II and a Creep Frame Installation from ATS: The Perfect New System for Creep Testing

If you are starting a new test program or are ready to replace or add to your existing equipment, then combine your new WinCCS II system with load frames and accessories from Applied Test Systems. ATS test frames and accessories offer the best performance, features, and value in the industry. We have been designing creep systems for more than 30 years, so we have the right experience and equipment for any test on any material. Contact us for detailed information on our industry-leading line of direct load and lever arm creep testing systems.



Calibration Laboratory

Certificate No. 2132.01

Inclusion of this logo does not imply certification/approval of the products calibrated.

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