

TESTCell Automation Software

TESTCell™ is a complete test platform for real-time hydraulic motion control, dynamometer control and test system automation. TESTCell incorporates modular software utilities, modular hardware components, and an open architecture philosophy to provide users with a universal platform for all of their testing requirements. The open architecture and nonproprietary hardware approach allows users to adapt the TESTCell system to their ever changing test environment while securing low long-term equipment maintenance and training costs.



TESTCell is a LabVIEW™ Real-Time based application that allows users to extensively define their test architecture:

- > Sensor inputs
- > Control channels
- > Test profiling and block cycling
- > Alarm conditions
- > Complete communication protocol support
- > Calculated channels
- > Digital inputs and outputs
- > Test limits
- > User interface screens

All of this information is easily configured through a number of utilities that are provided with TESTCell software. The Variable Manager, Test Environment Editor, and Alarm Manager are utilities that provide users incredible flexibility to “design” their own test system by defining the channels, sensors, profiles and tests that meet their specific needs, all with no programming knowledge required.

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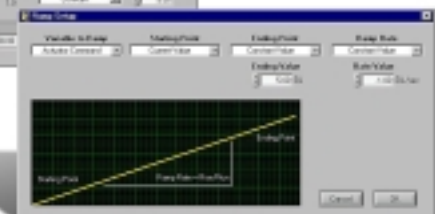
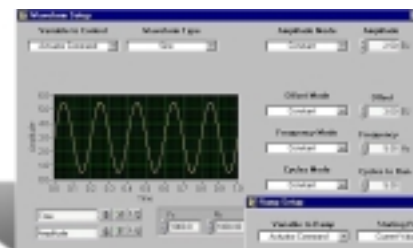
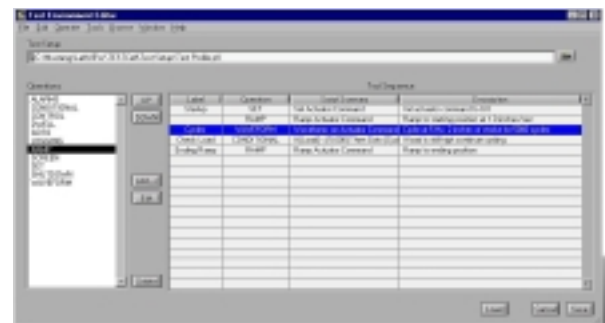


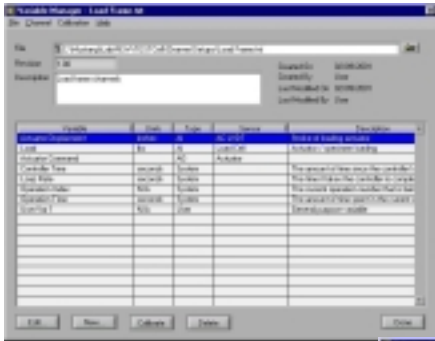
Test Environment Editor

The Test Environment Editor allows the operator to generate simple to complex test profiles for controlling all system components.

Each test profile can contain virtually any number of:

- > **Loops** – repeated sequences and profiles.
- > **Conditionals (If Then)** – on any system sensor, user variable, or calculated channel.
- > **Ramps** – single channel ramps or multi-channel ramps.
- > **Dwells** – Timed program pauses and setpoint dwells.
- > **Waveforms** – single channel or multi-channel waveforms. Sine, triangle, square, sawtooth, random and data file playback are all supported.
- > **Alarms** – multiple alarm settings with configurable actions can be used and enabled at any time during a test.
- > **Data Logging** – Logging files are supported to store any system information. Logging can be started and stopped programmatically throughout a test.
- > **User Interface Screens** – Mustang provides many turnkey screens and allows the user to create their own screens with minimal effort thereby allowing complete flexibility.
- > **Control Loops** – Perform multiple PIDF control loops with variable loop rates, setpoints, feedbacks and burpless transfers at sub-millisecond rates.





Variable Manager

With the Variable Manager, users define all variables used in their test application. These include:

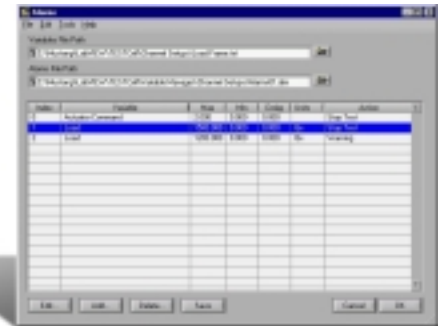
- > **Sensor Inputs** – pressure transducers, load cells, etc.
- > **User Variables** – values entered by a user during testing or a value read from a database
- > **Calculated Variables** – a variable calculated from one or more other variables or user configurable algorithms.
- > **System Variables** – predefined variables that display information about the control system, e.g. counters, status, etc.



Each variable has polynomial scaling, programmable digital filtering, calibration information and more. Also, all calculated channels are updated in real-time and synchronized with the data acquisition channels.

Alarm Manager

To configure channel limits and alarm conditions, the TESTCell software provides the Alarm Manager utility. With this utility, alarms and limits are defined based on any channel, either a sensor input or a calculated value. Each alarm incorporates a high limit, low limit, trip delay, and logging feature as well as a minimum of four events to perform after a fault interrupt: warning, shutdown, abort, or a user-defined event. The monitoring of alarms can also be controlled and adjusted during test operation to accommodate multiple alarm scenarios.



TESTCell™ DAC Integrated Control System

TESTCell DAC combines the flexibility of the TESTCell software with a modular hardware platform for a complete integrated control and test system.

TESTCell™ DAC Base Control System	Options
<ul style="list-style-type: none"> > 333 Mhz embedded controller > 8 channels of AC LVDT excitation and signal conditioning > 2 axes of 16-bit PIDF control with $\pm 10V$ or ± 100 mA output > TESTCell™ software application and utilities > 16-bit; 100,000 samples/second data acquisition > 4 channels of strain gauge, thermocouple, or voltage conditioning > Ethernet / network connectivity > User interface PC & monitor 	<ul style="list-style-type: none"> > 850 Mhz high speed controller > 32 digital inputs (up to 240 VAC/DC) > 32 digital outputs (up to 240 VAC/DC) > 32 thermocouple inputs > 8 thermocouple or millivolt/volt inputs > additional axes of 16-bit control, voltage or current drive > Cabling with BNC, Amphenol or other connectors

For more information on TESTCell™ or any other products offered by Mustang Hydraulic Test Systems, call 1-888-468-7826 (ext. 256). Or visit www.mustangdyne.com.

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