

# ***Automated Pressure Gauge Calibration System***

## **Description**

The APP Automated Pressure Gauge Calibration System (APGCS) tests the linearity of analog pressure gauges from atmospheric pressure to 60,000 PSI. Highly accurate master gauges ensure precise calibration of up to nine slave gauges per iteration. The APGCS also allows fatigue testing of the gauges. The APGCS results in less down time and fewer overall costs.

## **Software**

The APGCS is completely microprocessor controlled and fully automated, thereby eliminating operator error. Easy-to-use APGCS software runs with Windows '98 and higher. The APGCS software allows user-determined pressure steps, holding times, pressurization rates, and calibration at specific target pressures. Throughout the calibration process, the software provides useful reports and data, including a pressure versus time graph, a Pass/Fail rating for each slave gauge, and a percent error. Upon completion of the process, a report is generated containing this information.

## **Applications**

The APGCS is utilized in manufacturing and industrial environments where pressure gauges are used or manufactured. The APGCS is unique in its ability to calibrate any make of pressure gauge, regardless of manufacturer. Moreover, the APGCS is adaptable to any calibration procedure currently in use. Rather than ask our customers to change their calibration procedure, we customize our instrument to fit that procedure.



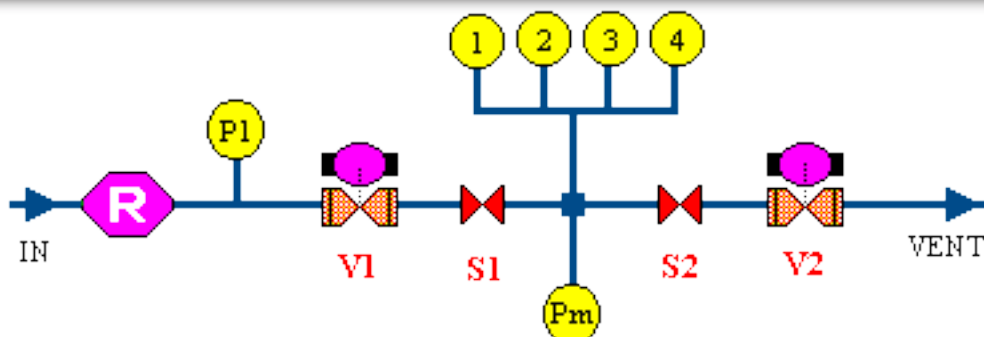
## Features

- Up to three highly accurate pressure transducers monitor system pressure and provides feedback
- User-defined pressure steps, holding times, pressurization rates, and multiple target pressures
- Cyclic pressure allows fatigue testing of gauges
- Tests can be performed under elevated temperature to simulate actual operating conditions (optional)
- Multi-level, fail-safe system provides over-pressurization protection
- Windows-based software handles all control, measurement, data collection, and report generation. Complete manual control is also possible
- Compatible with Windows '98 and higher
- Real-time graphical test display depicts testing status and results throughout operation
- Multiple pressure generator systems for continuous and multi-axis pressurization (optional)
- Customized report formats available
- Minimal maintenance required

## Hardware: Pneumatic System (Application up to 5,000 psi)

The Automated Pressure Gauge Calibration System - Pneumatic System comprises a motorized pressure generator, air-operated hydraulic pump, HEISE gauges, HEISE master gauges, motorized valves, air-operated valves, regulator, and manifold. The APGCS - Pneumatic System uses the motorized pressure generator or the air-operated hydraulic pump to generate and hold high pressure for calibrating the slave gauges. Three HEISE gauges (more accurate than the slave gauges) are used to monitor and control the system pressure, and serve as the reference for calibrating the slave gauges. All the testing data are stored in a data file compatible with a customized Excel data sheet.

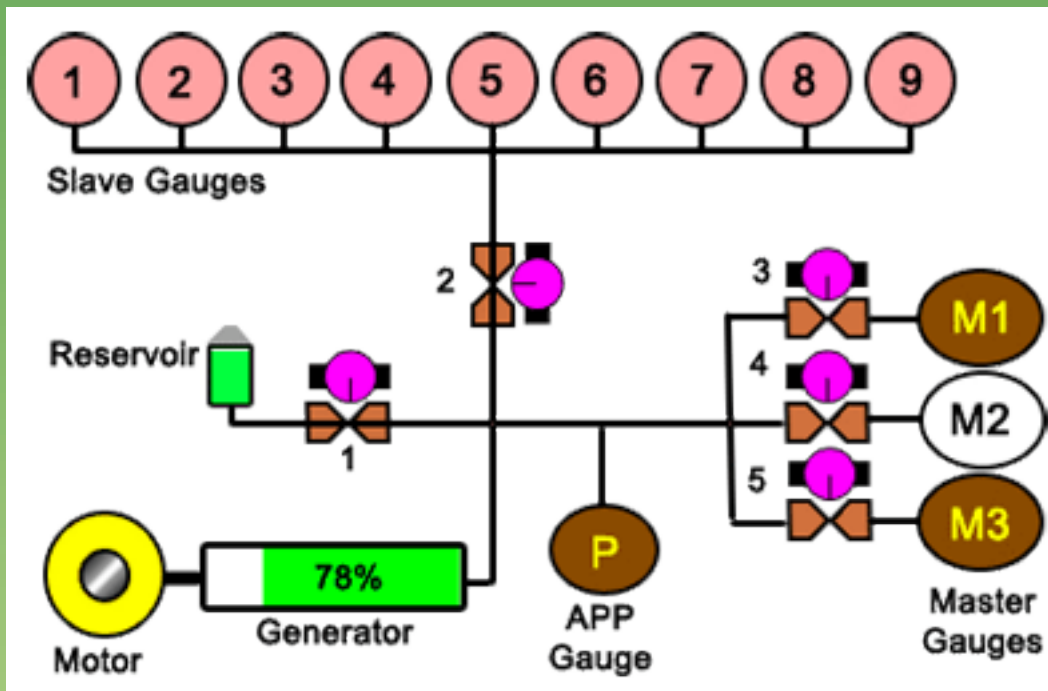
The APGCS - Pneumatic System has two control modes: multi-target pressure control and pressurization rate control mode. (Control algorithms are based on PID control.) Multi-target pressure control allows the operator to reach the targeted pressure quickly and smoothly, while minimizing overshoot. Additionally, multi-target control holds the designated pressure for a specified length of time. The pressurization rate control provides operator control of the pressurization rate at which the target is approached.



## Hardware: Hydraulic System (Application up to 60,000 psi)

The Automated Pressure Gauge Calibration System - Hydraulic System comprises a motorized pressure generator, pressure transducer, internal master gauges, motorized valves, reservoir, and manifold. The APGCS - Hydraulic System uses the motorized pressure generator to generate and hold high pressure for the slave gauges being calibrated. Three master gauges (more accurate than the slave gauges) monitor and control the system pressure, and serve as the reference for calibrating the slave gauges. All the testing data are stored in a data file compatible with a customized Excel data sheet.

The APGCS - Hydraulic System has two control modes: multi-target pressure control and pressurization rate control mode. (Control algorithms are based on PID control.) Multi-target pressure control allows the operator to reach the targeted pressure quickly and smoothly, while minimizing overshoot. Additionally, multi-target control holds the designated pressure for a specified length of time. The pressurization rate control provides operator control of the pressurization rate at which the target is approached.



## Specifications

### Pneumatic

Working Fluid.....	Air & N2
Air Requirement.....	80 psi Air
Pressure Range.....	0 - 5,000 psi
Pressure Transducer.....	Range: 0 - 5,000 psi (Accuracy: Up to 0.01 % FS)
System Resolution.....	1/20,000 (65536 optional)
System Control Accuracy.....	+/- 0.02 % FS
Pressure Setting.....	Up to 20 different pressure steps
Pressurization Rate.....	0.1 psi/sec - 500 psi/sec
Power Requirements.....	110 VAC, 60 Hz (220 VAC, 50Hz optional)
Maximum Hold Time.....	Infinity
Dimensions.....	51" H x 28.5" W x 26" D
Weight.....	125 lbs

### Hydraulic

Working Fluid.....	Water, oil or alcohol
Air Requirement.....	N/A
Pressure Range.....	Range: 0 - 60,000 psi
Pressure Transducer.....	Range: 0 - 60,000 psi (Accuracy: Up to 0.01 % FS)
System Resolution.....	1/20,000 (65536 optional)
System Control Accuracy.....	+/- 0.02 % FS
Pressure Setting.....	Up to 20 different pressure steps
Pressurization Settings.....	0.1 psi/sec - 500 psi/sec
Power Requirements.....	110 VAC, 60 Hz (220 VAC, 50Hz optional)
Dimensions.....	51" H x 28.5" W x 26" D
Weight.....	300 lbs

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