

Thermonics News

Volume 2, October 2011

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- Enhanced Temperature Performance
- Improved Reliability, Safety and Serviceability

Introducing the New T-2800Q

Thermonics' New T-2800Q self-contained precision temperature forcing system operates quietly, safely and is easier to service.

Thermonics engineering staff has made significant improvements to the T-2800 precision temperature forcing system (PTFS). These enhancements have resulted in a product with quieter operation, enhanced temperature performance, and reliability.

The resulting product is sufficiently distinct to deserve a contemporary appellation: T-2800Q – a quieter, fully self-contained PTFS that can easily meet the temperature-test requirements of electronic components.

Specific enhancements to this product include:

- Quieter Operation
- Enhanced Temperature Performance
- Improved Safety, Reliability and Serviceability.

About Self-Contained Systems

Thermonics' T-2800Q self-contained precision temperature forcing system eliminates the need for installation of an external air source.

We developed self-contained systems in response to market demand for a fully functional PTFS that does not require installation of an external air supply. The T-2800Q provides its own air source, in the form of an internal air compressor, enabling flexibility of the operating environment and reduced consumption of facility resources. You simply plug the system into an electrical power source and immediately begin using it. Notably, the cost benefit obtained by eliminating the requirement to install and maintain an external air supply system can be significant.

New, Quieter Operation

Auditory and acoustic improvements include modifications to system packaging that result in a three-fold reduction of noise.

The T-2800Q has significant improvements with regard to emitted sound levels relative to the previous design.

Any PTFS will emit noise. The addition of an internal air compressor, such as that found in the T-2800Q, adds to the challenge of creating a system that is sufficiently quiet for operation in an office work environment. *Our engineers have met this challenge.* (Cont.)

This reduction in noise is accomplished by the development of subtle, yet significant, changes to the overall packaging and design of the unit.

The approach utilized by our engineers, encompassed three main spheres: vibration reduction, mechanical sound absorption, and airflow noise abatement. The result is that the acoustical energy output by the PTFS has been reduced from 70dB to 65dB – making it about three times quieter than the previous iteration and about as quiet as a standard PTFS like the T-2500.

Changes to the system were numerous. The specific areas of concentration included the air input, the air compressor chamber and the compressor exhaust. General noise level abatement was addressed by the addition of sound absorbing insulation throughout, and a new compressor cover seal.

Shock absorbers were also added to the compressor base plate. Sound insulation and airflow routing changes were made to the condenser cover and to the compressor exhaust to reduce air noise and flanking.

(See illustration on last page.)

Enhanced Temperature Performance

Temperature performance of the T-2800Q is enhanced by refinements to the temperature control system which includes improved air-flow measurement accuracy, and over-temperature monitoring.

Enhanced Airflow Measurement Accuracy

Airflow on the system is measured using a venturi, which translate variations in velocity and pressure into a flow reading. Our systems display this data in Standard Cubic Feet per Hour (SCFH). Changes to this measurement system have improved accuracy by providing a better offset value, enhancing the calibration data and displaying flow data with increased precision.

Custom Failsafe PCB

We have included our new Failsafe PCB into the temperature control electronics of the T-2800Q. The addition of this over-temperature failsafe board (1B-162-1A) eliminates the use of mechanical thermostats. Detected faults immediately terminate system operation and display error codes on an LED strip panel, located on the thermal test head.

Firmware independence and isolation from the PTFS control software provides independent and redundant temperature monitoring and added operating safety.

Improved Safety, Reliability and Serviceability

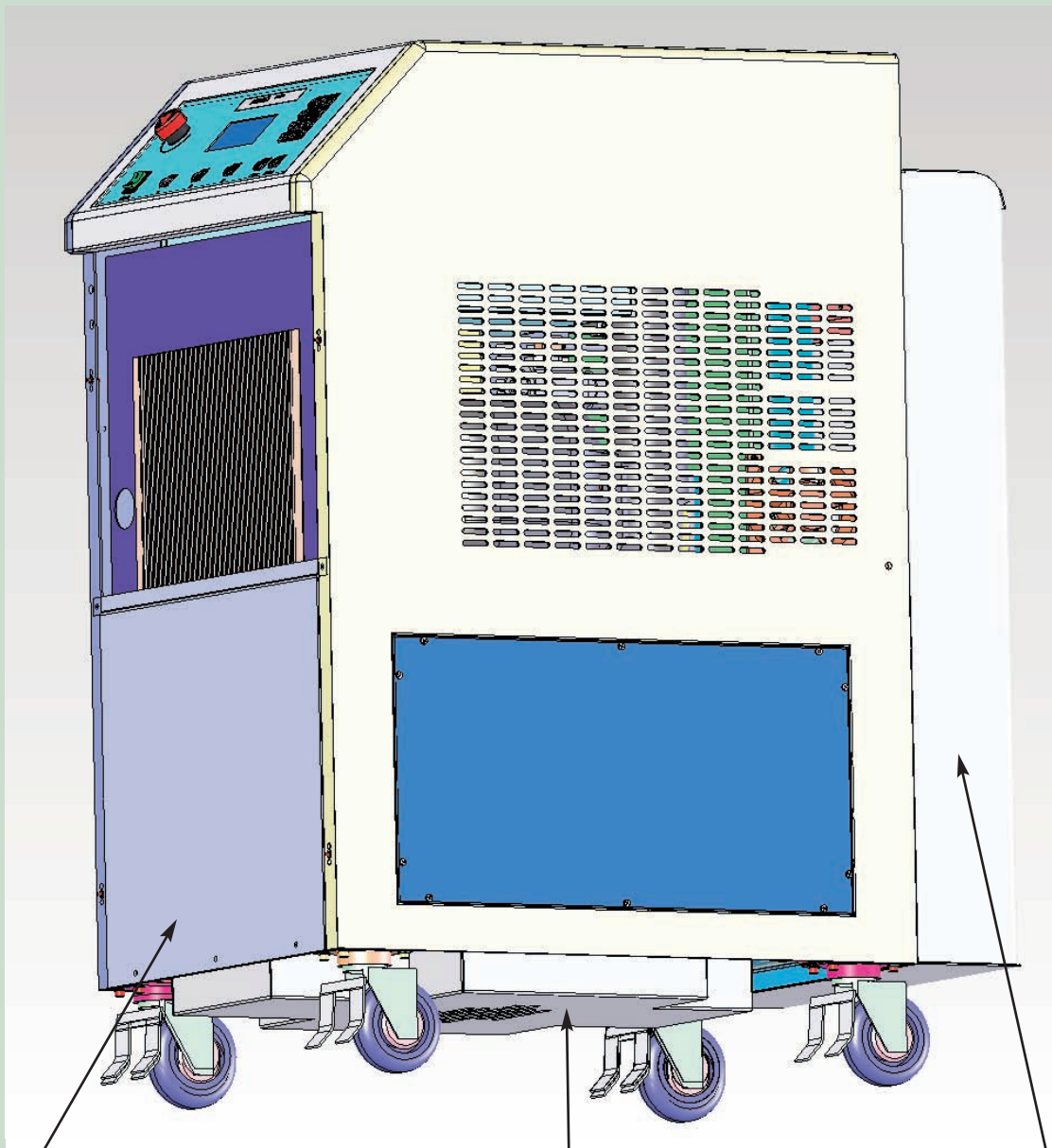
Incorporation of Thermonics' Modular Thermal Test Head design and the optional air ionization system - enhance the operating safety, reliability and serviceability of the system.

If you received Thermonics' previous newsletter, *Volume 1, January 2011*, we discussed the addition of a modular thermal test head and air ionization module to the T-2500 product family. We have now made those same improvements available on our T-2800Q product line.

Modularity provides the following improvements:

1. The modular thermal test head is composed of easy-to-replace elements that provide for efficient servicing of the unit.
2. Frost formation inside the thermal test head is eliminated, reducing the possibility of test electronics' exposure to moisture.

Additionally, our popular air ionization system is now available as a system option. Incorporation of the ionizer enhances the product's ability to test electronic components safely. If installed, ionizer use is software selectable.



Seal added to compressor chamber. Includes sound absorbing insulation and physical gap to reduce vibration.

Air output is directed through a sound insulation egress.

Air input to the compressor system is routed through heavily insulated input. Channel complexity prevents flanking of compressor noise.

Modifications to system packaging that reduce vibration, provide mechanical noise abatement and redirect air input and exhaust results in a three-fold reduction of noise.