

**Vibration Analysis :**

Vibration analysis monitoring & trending programs using time waveform & frequency spectrum information to evaluate condition of machines. Frequency plot identifies operating speed fault of machine components



such as blade or vane pass on fans or pumps impellers. Magnitude over time represents physical change in condition of machines. Waterfall analysis can graphically show transient vibration on start up or display frequency spectrums over time for trending vibration readings.



**Laser Alignment :**

ATT is setting new standards for simplicity and precision in shaft alignment of coupled & uncoupled horizontal and vertical



rotating machinery. Through the use of state of art technologies cost reductions in energy consumption, maintenance, prolonged life of bearings, gears, mechanical seals and couplings, reduced vibration and operating temperatures.

**Field Balancing :**

Precision Balancing is another corrective techniques for vibration control, and extending the life of new or existing machinery installations. ATT provides this service in single or multi-plane applications.



“It is impossible to solve significant problems with the same level of knowledge that created them “

Albert Einstein



**Infrared Inspection**

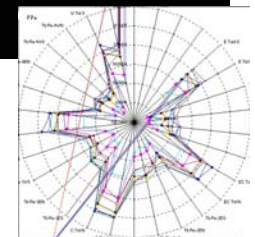
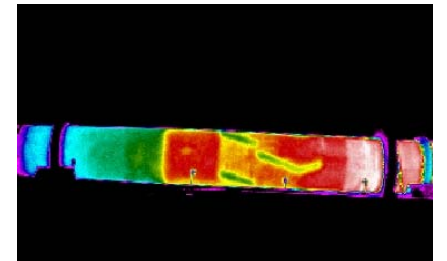
**Vibration Analysis**

**Laser Alignment & Balancing**

**Motor Current Testing**

**CARMA® Engine Analysis**

**Training & Certification**



ATT Offices:  
2667 East 28th Street  
Suite #520  
Signal Hill, CA 90755

Office: (562)-421-6730  
Fax: (562)-421-6890  
Email: chiefeng@gte.net

# American Thermo Tech



In business today, it's all about reaching for the next level of productivity, improving efficiency, maximizing yields, and building the skills of your staff. Tens of thousands of maintenance professionals around the world have learned that by applying more technology to their problems, they can be more effective.

**ATT** understands this and continues to pioneer the advancement of our technical expertise and field applications to better assist in solving our clients maintenance challenges. Our staff of professional engineers and technical personnel are experienced and certified for both industrial and marine solutions.

**ATT** offers a full range of on-site inspection services, condition monitoring, machine evaluation testing, program setup, as well as training with certification in infrared thermography and vibration analysis from our Level 3 ASNT-TC1A certified instructors.

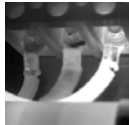


## Hotel, Grocery and Commercial Applications

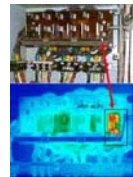
### Infrared Thermography:

#### The Basics

All matter above absolute zero, continuously emits energy to the environment in the form of infrared radiation. This emitted infrared energy is detectable and quantified as an object's temperature through the technique of infrared thermography. The human eye can "see" in a very narrow margin of the electromagnetic spectrum in the wavelength ranges from .4 to .7 microns. The infrared portion of the spectrum ranges from 1 to 100 microns and the amount of energy radiated at any given wavelength is dependent on the temperature. By applying the fundamental laws, the amount of energy radiated can be predicted and quantified. While the physics of thermography are well established, the interpretation of the thermal images are still to some degree qualitative.

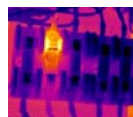


In **Electrical Inspections** faulty electrical components almost always generate heat before failing and causing an open circuit or in a worst case scenario, fire. As a matter of interest, heat is generated from an electrical component directly proportional to the square of the current passing through it multiplied by the components resistance or  $P = I^2R$ . As the condition of the component deteriorates, it's resistance increases and generates more heat and as this temperature rises so then does the resistance. This self propagating process continues until the melting point of the weakest component is reached. Because heat loss is in direct proportion to current flow, overload conditions can



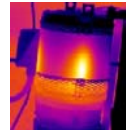
also be identified and faulty components classified in order of severity.

In **Electrical Distribution** main buss runs can have a critical impact on systems and equipment being supplied.



Investigation of temperature rises associated with a main distribution buss is primary. **Controller** inspections such as motor control connectors, breakers, fuses, transformers, and instrumentation can be identified quickly and effectively.

**Mechanical** inspections, can provide quick and accurate information on the condition of bearings, motor windings and valves.



**Heating and Air Conditioning** systems can be surveyed for efficiency and effectiveness. Excess loss in either cooling or heating from the **Insulation and Building Envelope** condition can be both expensive and create maintenance problems on overworked equipment.

**Refrigeration & Coolers** which have been poorly positioned or are inefficient in operation or stocking can cause excess energy consumption and spoilage. In the grocery industry, which operates on competitive margins this can cause a substantial loss in profits.

**Moisture and Water Intrusion** into conventional flat roofing and concrete in buildings will cause damage and expensive replacements. Early detection through infrared thermography can be the key to equipment longevity and structural integrity.

### Production Line

