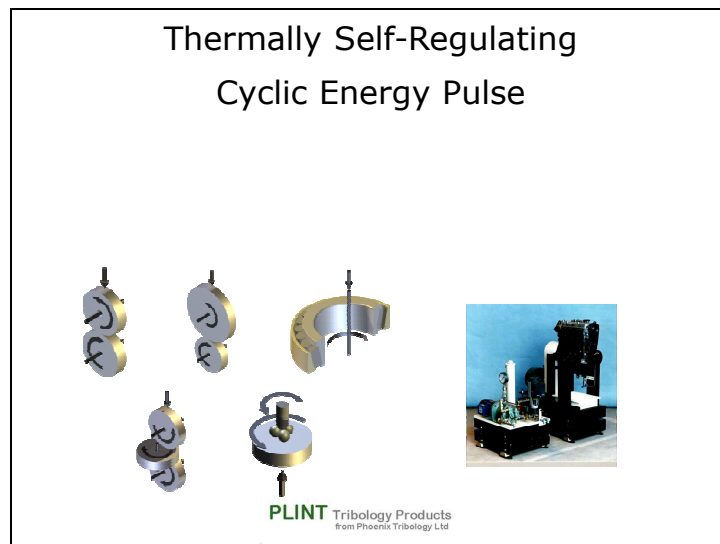


Guidance – Thermally Self-regulating Cyclic Energy Pulse Machines

Extract from:

<https://www.phoenix-tribology.com/wp-content/uploads/products/guidance/Tutorial-Tribology-Testing.pdf>



Thermally self-regulating cyclic energy pulse machines are those where the point of contact moves with respect to both contacting surfaces and there is a close approximation to the motion in actual machine components (for example, gears, cams, joints and mechanisms).

Thermally Self-Regulating Cyclic Energy Pulse

- Includes component test machines using idealized or standardized components such as gears, cam/follower and rolling element bearings
- Designed to emulate real contact conditions and typically operate under conditions broadly similar to those found in practical applications
- Contact temperature cannot be independently controlled

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These include a number of component test machines, using idealized or standardized components such as gears, cam/follower and rolling element bearings.

These machines are essentially designed to emulate real contact conditions and typically operate under conditions broadly similar to those found in practical applications. For all intents and purposes these machines are "full scale" and are hence emulators of the real contact.

Thermally Self-Regulating
Cyclic Energy Pulse
Two-roller Machine



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The most generalized version of this type of device is the two-roller machine. Here two specimen rollers are loaded together. If they are rotated at the same surface speed the motion is pure rolling and such machines are used to study pitting failure (rolling contact fatigue) caused by the cyclic stressing of the surfaces. Rolling element bearing test rigs and rolling four ball machines perform a similar function.