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Thermal Shock Chamber

Standards:

Specification:

Description and Application

As we know that thermal shock occurs when a thermal gradient causes different parts of an object to expand by different amounts. This differential expansion can be understood in terms of stress or of strain, equivalently. At some point, this stress can exceed the strength of the material, causing a crack to form. If nothing stops this crack from propagating through the material, it will cause the object's structure to fail. Normally we use thermal shock test equipment to test how much amount can a product withstand thermal shock.

Thermal shock testing exposes products to alternating low and high temperatures to accelerate failures caused by temperature cycles or thermal shocks during normal use. The transition between temperature extremes occurs very rapidly, greater than 15 °C/min.

Working Principle

there are three chambers used to perform thermal shock testing, high-temperature chamber, low-temperature chamber and test chamber. Sample is placed in the test chamber, more extreme temperature than test temperature can be set in high-temperature chamber and low-temperature chamber. When doing low temperature testing, cold chamber door open, and low-temperature chamber working together with test chamber.
When converted into high-temperature test, cold chamber door closed, hot chamber door are opened, and test chamber working together with high-temperature chamber. Conversion of mechanical action (transferring from high temperature to low temperature or low temperature to high temperature) can be completed in less than 1second, and the temperature can be quickly stabilized.
During the whole test, test sample is no need to be moved, and without any human intervention.

KOMEG Model	KTS-150D
Temperature range hot zone	+60°C to +200°C
Temperature range cold zone	- 80°C to -10°C
Temperature range test zone	-65°C to +150°C
Pre-heat time	+60°C to +200°C within 20 min
Pre-cooling time	+20°C to -70°C within 60 min
Interior dimentions	60*50*50(W*H*D)
Exterior dimentions	164*189*183(W*H*D)
Interior materail	Stainless steel plate(SUS304)
Exterior materail	Baked painting steel or stainless steel(SUS304)
Maximum loading capacity	20KG
Electrical connection	AC 380 ±10% 3 phase 4 wires+ Groud wires