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Product Name :

Rotating Fatigue Machine

Product Code :

SLE/ETP/05



Description :

Rotating Fatigue Machine (Product Code: SLE/ETP/05) is a bench-mounted rotating-bending fatigue tester used to show how materials fail under alternating stress, covering both low- and high-cycle fatigue, in engineering and materials science laboratories. A variable speed motor spins the specimen in a collet chuck while a dead weight on a load arm bends it, and a separate unit displays the load, cycle rate and number of cycles. It is made by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, an OEM engineering lab equipment manufacturer, at its own factory in Ambala, India.

Key Details

Parameter	Detail
Mounting	Bench-mounted machine
Test	Failure under alternating stress; low-cycle and high-cycle fatigue
Drive	Motor with variable speed drive for a safe, gradual increase in cycle rate; compliant coupling; precision shaft in sturdy bearings
Specimen holding	Collet-type chuck for accurate concentricity; gimbal-mounted self-aligning bearing at the free end
Loading	Short load arm linked by a load cell to a longer load arm with an integral moveable dead weight; applies a purely vertical load even as the specimen deflects
Sensors	Load cell for load; electronic sensor for shaft rotation
Control and display	Separate control and instrumentation unit showing load, speed (cycle rate) and number of cycles
Specimens	Special design that puts the point of maximum stress at the midpoint rather than the end
Product code	SLE/ETP/05
Manufacturer	Jain Scientific Equipments Pvt Ltd (ScienceLab) — OEM
Country of origin	India (made in Ambala, Haryana)

What Is the Rotating Fatigue Machine Used For?

Parts such as axles and shafts rarely fail from one heavy load; they crack after thousands or millions of smaller ones. This machine recreates that in a lesson. The specimen is gripped in the chuck and loaded at its free end, so as it spins every point on its surface moves from tension to compression and back once per revolution — one complete stress cycle. Students set the load by sliding the dead weight along the arm, raise the speed gradually and let the counter log cycles until the specimen breaks.

Running specimens at several loads and plotting stress against cycles to failure builds the classic fatigue (S–N) curve: heavy loads give low-cycle failures, lighter loads high-cycle ones. Because the sp the broke e.