

## Instron E 10000 Biaxial (axial-torsion) all-electric dynamic test instrument



### **Features:**

Force capacity:	10 kN
Max.displacement:	60 mm
Load capacity:	100 Nm
Maximum rotation:	+/-16 degrees
Work area:	450x410 mm
Position of the actuator:	upper
Other features:	amplitude control, adaptive control, security test

### **Specifications:**

The equipment can carry out static and tiring tests, and its console software provides full system control from a PC. The equipment has two actuators (an axial and a torsion), that we can control together and independently also. The T-slot table in the bottom of the equipment allows to test even larger structures. The equipment can measure the following quantities: force, torque, displacement, rotation, axial and torsial strain, and transversal strain deformation.

In case of fatigue tests, the available maximum of frequency is approximately 100 Hz in the axial direction, and approx. 30 Hz by rotation. The actual maximum of the frequency depends on the amount of displacements or rotations.

All the tests can be controlled and evaluated by the software. The measured values (time, force, torque, displacement, rotation, strain) can be stored, so we can use them for further evaluations.

## **Options for tests:**

### **Static tests:**

- Tensile tests
- Compression tests
- Shear tests
- Tests under load

### **Fatigue tests:**

- Large cycle fatigue tests (HCF) for pull/press
- Low cycle fatigue tests (LCF)
- Random fatigue
- Determination of fatigue limit for pull/press
- DMA testing of plastics/rubber

### **Fracture mechanics tests:**

- Determination of fracture toughness (K<sub>IC</sub>)
- Determination of J-integral (J<sub>IC</sub>)
- Determination of R-curve
- Determination of crack growth rate (da/dN)
- Determination of the critical voltage intensity factors (DK<sub>th</sub>)

### **Technological tests:**

- Bending tests
- Upsetting tests
- Tests of welded joints
- Fracture tests

### **Contact:**

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