

## FATIGUE IN ROTATING BENDING STUDY UNIT



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### Experimental capabilities

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- Identification of parameters inducing the rupture by fatigue
- Curve plotting S-N Wöhler
- Statistical approach of the fatigue

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# SFT400



## Operating principle

The SFT 400 bench allows to study the various parameters involved in the mechanical fatigue process

Counting the number of cycle at the rupture.

Alternating constraints variation by applying a force / variable rotating bending

Different forms of test tubes provided

The robust design of this device makes it suitable for use in schools.

The equipment is set up on an Anodized aluminium frame on casters wheels. This gives it great strength and a flexibility of integration into your premises.

The manufacture of this equipment complies with the European standard for machinery manufacturing.

## Illustrations

## Technical details

Electrical box +  
control panel

Drive motor

Anodized aluminum  
structure on feet



Thumbwheel for variation of the  
force inducing the alternating  
bending constraint

Dynamometer for measuring  
the force

Application support of the  
force on the test tube and  
rupture detector

Transparent protective cover

Test tubes diameter casing  
12mm and length 150mm / all  
profiles variants and achievable  
grooves

**10 test tubes provided  
(aluminum and steel /  
diameters from 6 to 12mm)**

### Structure :

- In profile anodized aluminum of section 45mm\*45mm
- 4 adjustable feet dampers
- Transparent cover held closed by 2 knurled nuts

### Electrical box:

- Metallic electrical **box**
- **Control panel** in frontage integrating: Disconnecter, main circuit breaker, differential, emergency stop, general start-stop with light indicator, on/off motor, LED motor condition and general electrical supply
- **LCD display** of the number of cycles before rupture / reset by button with frontage

### Turning part:

- Three phase asynchronous **motor** 2850rev/min - 230/400V - 50/60Hz
- Shaft guided by ball bearings
- A conical clamping chuck for immobilization of test tube (specific key provided)
- 1 inductive **detector** for **counting the number of test cycles.**

### Device for application of the force:

- A **Thumbwheel** allows to **adjust the force** exerted of the test tube extremity up to 30kg
- A **dynamometer** allows to measure the effort
- The force is applied to the end of the test piece by a **bearing** linked to the application of load support
- 1 mechanical detector of test tube rupture / triggers the automatic stopping of counting the number of cycles

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## Services required

- Electrical supply : 400Vac – 50 Hz
- Dimensions: (LxWxH mm): 750 x 300 x 600
- weight (Kg): 40

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## Documentation

- User's manual
- Technical documentation of the components
- Certificate of conformity CE

Note : if the equipment installation is operated by our staff, all supplies and exhaust connections required must stand at less than 2m from the machine