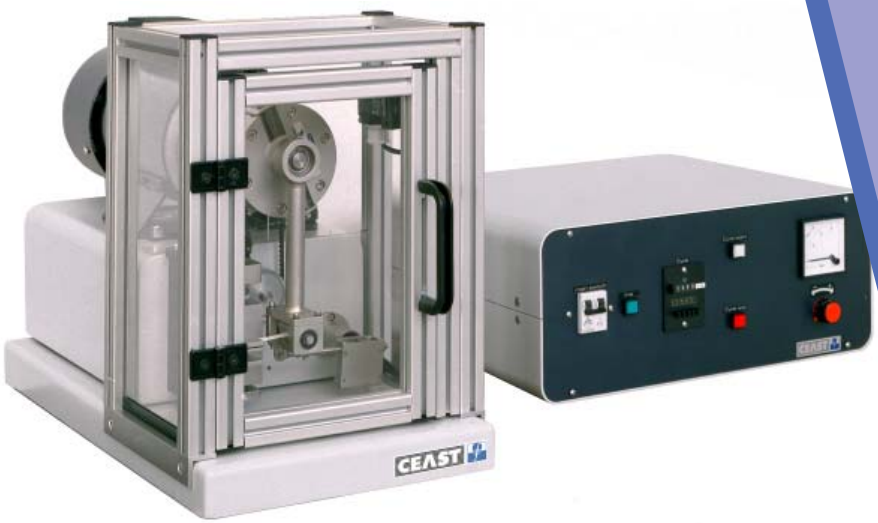
CEAST 50 years 1953 - 2003

DYNAMIC FATIGUE

CEAST

DESIGN AND PRODUCTION OF INSTRUMENTS AND APPARATUS FOR QUALITY CONTROL ON MATERIALS



These instruments are made in compliance with CE health and safety requirements

CE

Dynamic Fatigue Apparatus - code 6071.000

Scope

The apparatus was designed to carry out flexion fatigue tests on flat specimens, at steps, with stress at constant amplitude.
The bending force is transmitted through a rod moved by a crank gear, blocking the specimen at one end through a rotating connection point. The fixed part of the specimen is tightly fastened through a vice which can be adjusted vertically so as to exert a static pre-stress. Moreover by regulating this stroke or the arm on the crank gear of the rod it is possible to establish any combination of alternate and static stress within the regulation possibility of the equipment.Motion is transmitted by a motor with adjustable speed so as to be able to apply alternate stresses with continuously adjustable frequency. The apparatus is equipped with a counter totalling the number of cycles to which the specimen has been subjected during the test and stops the testing device till the break occurs.

Test Method

The specimen obtained with the usual methods (moulding, milling, notching, etc.) of the material to be tested is fastened in the vice at the end simulating the support and, at the other one, to the rod transmitting the force. Through the arm of the crack gear amplitude of the stress is regulated and then the P load to be applied. The load-deflexion ratio necessary to determine the stroke established in advance with an appropriate calibration. The test frequency is established with the regulation of the motor speed. The specimen has standardized dimensions; as a matter of fact, the same are linked with the stresses applied by the correlation:

$$P = sbd^2/6L$$

Where:
P = load to be applied to the specimen
S = desired alternating stress
B = base specimen width
D = specimen thickness
L = test span

The test consists of measuring the ability of a material to resist deterioration from cyclic stress. The test results provide data on the number of cycles of stress to produce specimens failure by fracture, softening, or reduction in stiffness.

Standards

Designed and built to meet the following standards:

ASTM D 671

and other equivalent.

Technical Characteristics

• Measuring system of cycles	electromechanical counter
• Frequency measuring system	speedometer dynamo
• Working range of frequency	1 ÷ 33 Hz (60 ÷ 2000 rpm)
• Test span	0 ÷ 25,4 mm
• Specimen length	103,2 mm
• Specimen width	50.8 mm
• Specimen thickness	10 mm max.
• Motor	1 HP d.c.

Technical Data	
Overall dimensions (LxDxH) [mm]	650 x 350 x 450
Weight [kg]	60 approx.
Supply	230 V - 50 Hz - Singlephase (110 V - 60 Hz on request)
Power [W]	2000
Paint	fuchsia RAL 4006 - gray RAL 7035

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