

1.2.03-00 Mechanical hysteresis



What you can learn about ...

- Mechanical hysteresis
- Elasticity
- Plasticity
- Relaxation
- Torsion modulus
- Plastic flow
- Torque
- Hooke's law

Principle:

The relationship between torque and angle of rotation is determined when metal bars are twisted. The hysteresis curve is recorded.

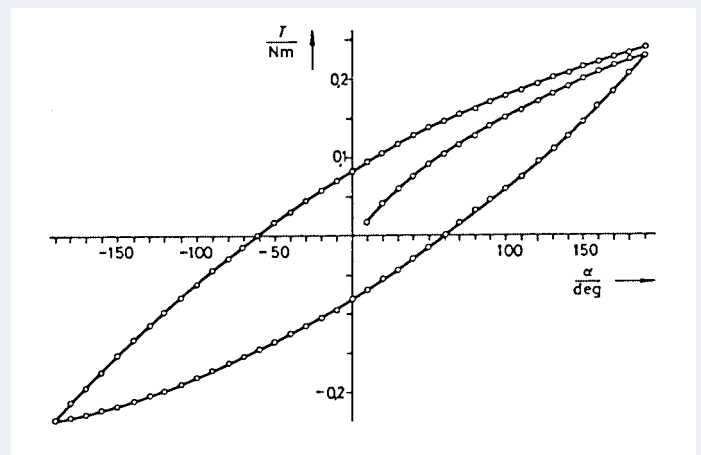
Tasks:

1. Record the hysteresis curve of steel and copper rods.
2. Record the stress-relaxation curve with various relaxation times of different materials.

What you need:

Torsion apparatus	02421.00	1
Torsion rod, steel, $l = 500 \text{ mm}$, $d = 2 \text{ mm}$	02421.01	1
Torsion rod, Al, $l = 500 \text{ mm}$, $d = 2 \text{ mm}$	02421.02	1
Torsion rod, Al, $l = 400 \text{ mm}$, $d = 2 \text{ mm}$	02421.03	1
Torsion rod, Al, $l = 300 \text{ mm}$, $d = 2 \text{ mm}$	02421.04	1
Torsion rod, Al, $l = 500 \text{ mm}$, $d = 3 \text{ mm}$	02421.05	1
Torsion rod, Al, $l = 500 \text{ mm}$, $d = 4 \text{ mm}$	02421.06	1
Torsion rod, brass, $l = 500 \text{ mm}$, $d = 2 \text{ mm}$	02421.07	1
Torsion rod, Cu, $l = 500 \text{ mm}$, $d = 2 \text{ mm}$	02421.08	1
Spring Balance 1 N	03060.01	1
Spring balance 2.5 N	03060.02	1
Stopwatch, digital, 1/100 sec.	03071.01	1
Support base -PASS-	02005.55	1
Support rod -PASS-, square, $l = 250 \text{ mm}$	02025.55	1
Support rod -PASS-, square, $l = 630 \text{ mm}$	02027.55	1
Right angle clamp -PASS-	02040.55	2

Complete Equipment Set, Manual on CD-ROM included
Mechanical hysteresis P2120300



Mechanical hysteresis curve for the torsion of a copper rod of 2 mm diameter and 0.5 m long.