



معمل التصنيع  
المتقدم

Advanced  
Manufacturing  
Lab F218









DUET TURN & MILL DUO









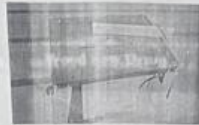


PHAROS UNIVERSITY  
ALEXANDRIA

Faculty of Engineering

ENGINEERING  
P.U.A.

### Wood Saw Drum



#### Instrument data

Location:

Product & Country of Origin:

What is Saw Drum?

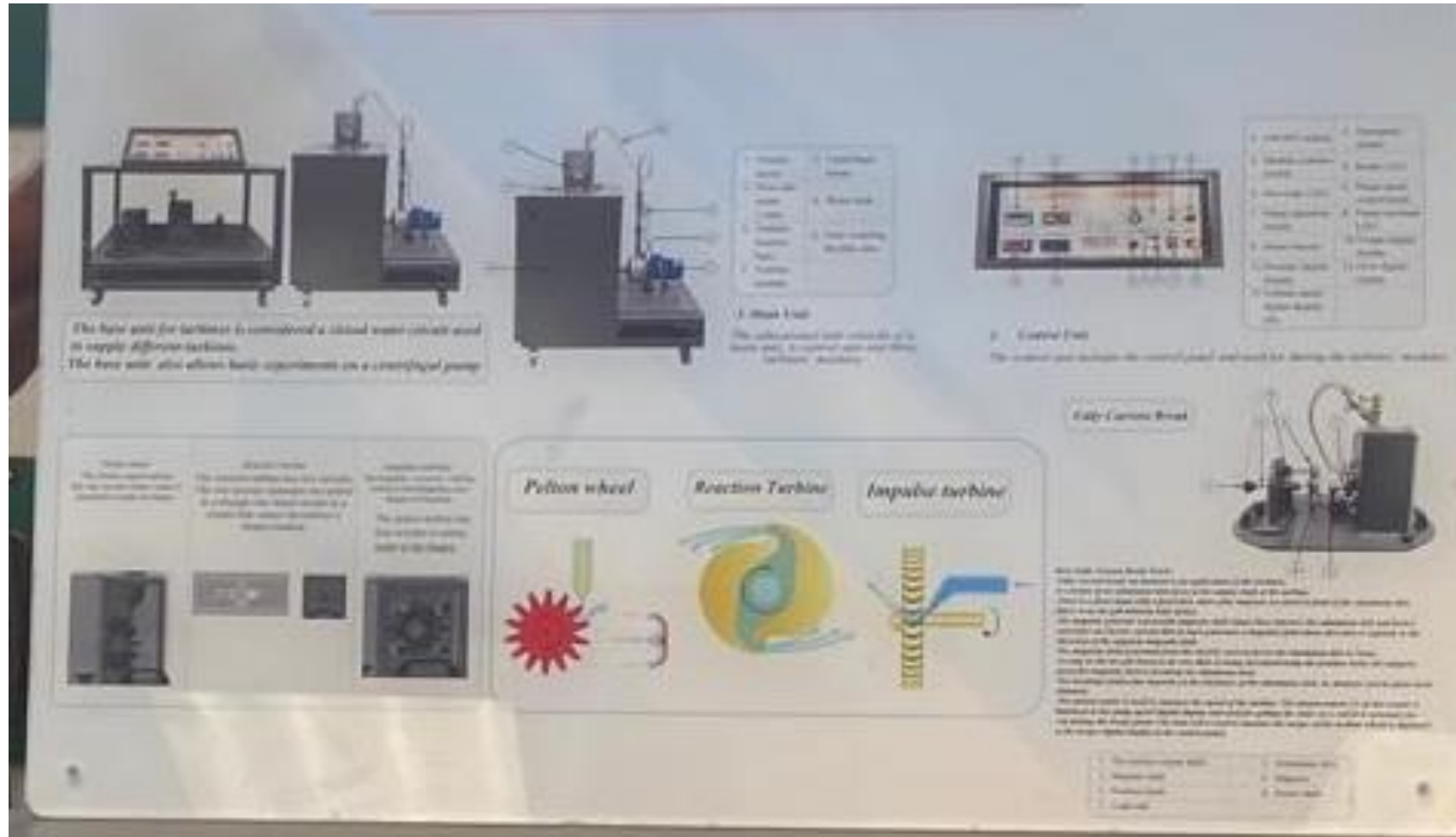
Faculty of Engineering - F218

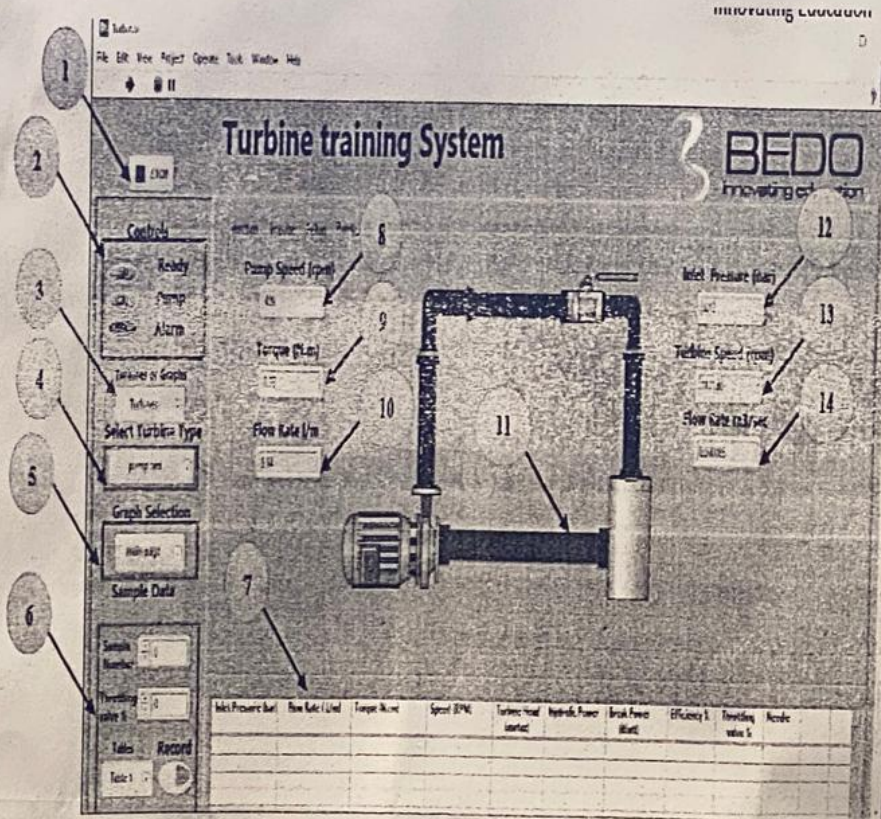
Instrument:

It has a drum consisting of a rough blade, wire or chain with a fixed wooden edge. It is used for cutting through materials, very often used, through some times used as a saw. The saw is made by placing the wooden edge against the material and moving it back and forth, or continuously forward. The force may be applied by hand, or powered by steam, water, electricity or other power source.



# Turbine Training System





1. Stop button for stopping the measuring process.	2. The controls monitor for displaying the status of the system.
3. Turbine/Graph drop menu	4. Turbine selection drop menu.
5. Graph type selection drop menu	6. Sample data tab.
7. Acquired data table	8. Pump speed display tab.
9. Torque display tab	10. Pump flow rate display tab.
11. The current assembled system's schematic display.	12. Turbine inlet pressure display tab.
13. Turbine speed display tab.	14. Turbine flow rate display tab.





# Vibration Analyzer















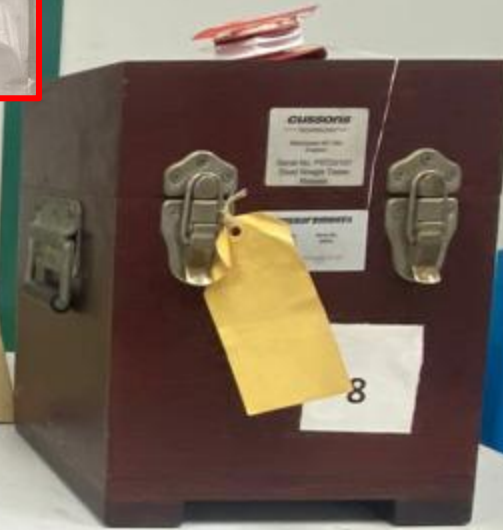






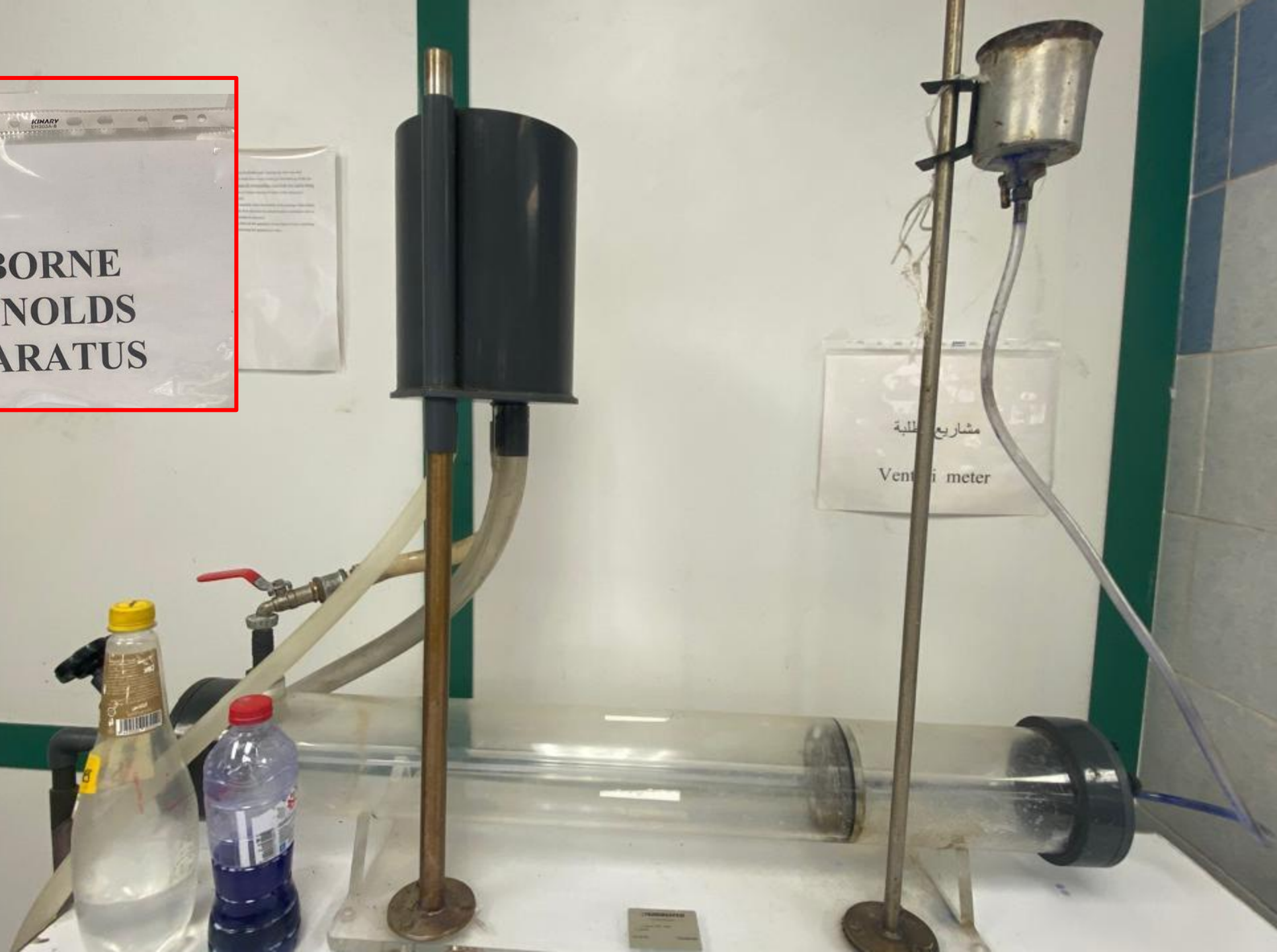


# HYDRAULIC DEADWEIGHT TESTER



**OSBORNE  
REYNOLDS  
APPARATUS**

مشاريع الطلبة  
Venturi meter





# FRICTION LOSSES IN PIPES AND FITTINGS





**HELE SHAW  
APPARATUS**







**Turbine Training System**

**Components:**

- 1. Control Panel
- 2. Motor
- 3. Pump
- 4. Turbine
- 5. Torque Transducer
- 6. Pressure Transducer
- 7. Flow Transducer
- 8. RPM Transducer
- 9. Emergency Stop
- 10. Alarm
- 11. Overload
- 12. Pump ON/OFF
- 13. Speed Control
- 14. Module Confirm
- 15. Emergency Stop

**Operation:**

The flow rate for turbines is controlled by a closed water circuit used in supply different turbines. The flow rate can be adjusted by a centrifugal pump.

**3- Main Unit**

The main unit consists of a motor, a pump, and a turbine. The motor is connected to the pump, which is connected to the turbine. The turbine is connected to the torque transducer, which is connected to the control panel.

**4- Control Panel**

The control panel includes the control panel and used for displaying the turbine's readings.

**5- Pelton wheel**

The Pelton wheel is a type of impulse turbine. It is used for generating power from high head water.

**6- Reaction turbine**

The reaction turbine is a type of turbine. It is used for generating power from low head water.

**7- Impulse turbine**

The impulse turbine is a type of turbine. It is used for generating power from high head water.

**8- Emergency Stop**

The emergency stop button is used to stop the turbine in case of an emergency.

**الوحدة التعليمية للتربينات Turbine Training System**

**Torque Measurement**

**Pressure Measurement**

**Flow Measurement**

**RPM Measurement**

**Speed Control**

**Pump ON / OFF**

**Overload**

**Alarm**

**Module Confirm**

**Not Ready**

**Ready**

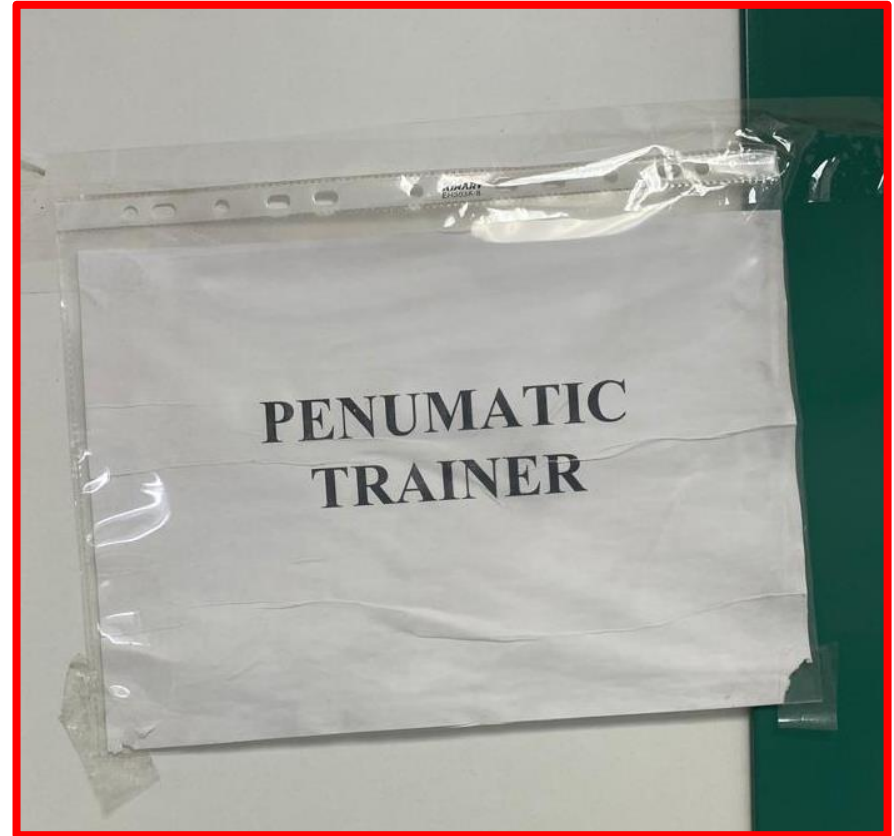
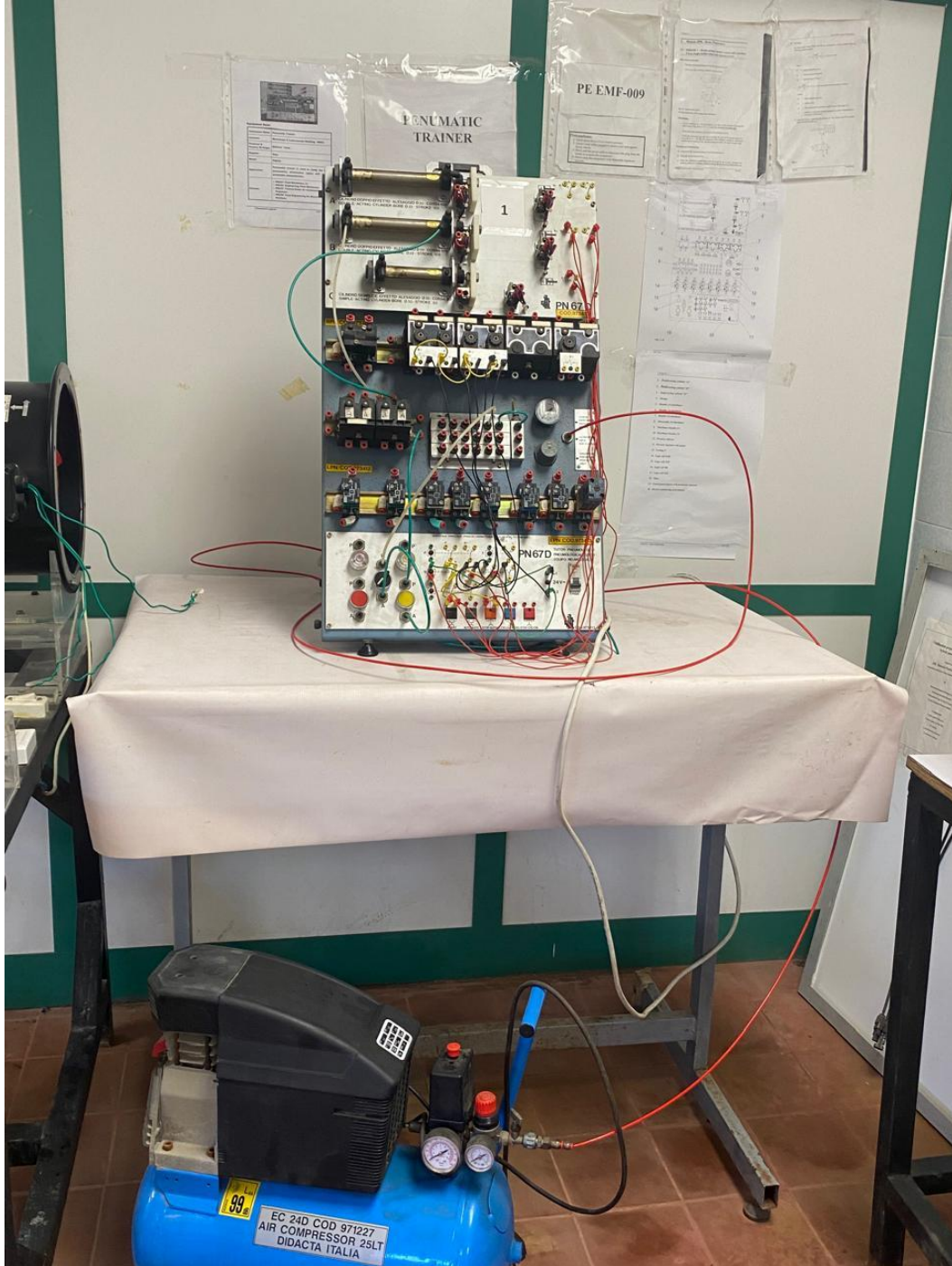
**تفعيل / إيقاف ON / OFF**

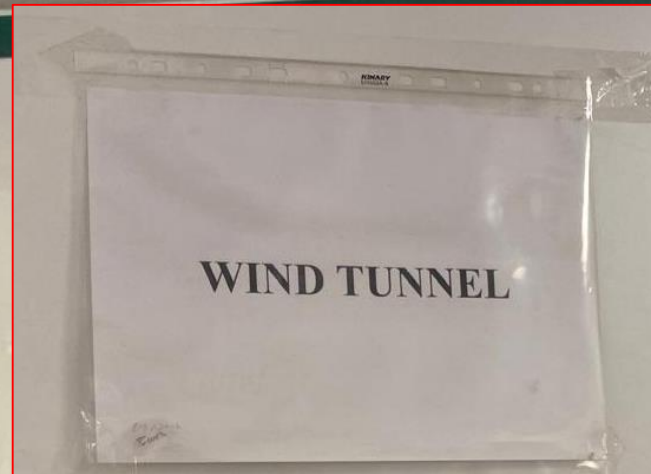
**توقف طوارئ Emergency Stop**

**BEDO**  
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MADE IN EGYPT

















## Wire Torsion Testing Machine

### Procedures:

**1-preparation of specimen:** Keep the specimen straight as possible.

**2-Mounting of specimen:** Select gripper based on the rigidity of specimen. Gripper with two grooves is available for hard specimen, and that with one groove and one raised is available for soft one.

- Push the gripper into the square hole of the left/right heads & Connect on the mains switch

- place the left/right travel switch to corresponding position based on the length of specimen and distance between the two heads and Press the green test button to keep proper distance between two heads

- Insert one end of the specimen into one head for 30mm, and turn the M20 screw under the head with hexagon spanner to keep the specimen center align with the central line of the head. Then turn the M20 screw above the head with hexagon spanner to keep the gripper clamping the specimen.

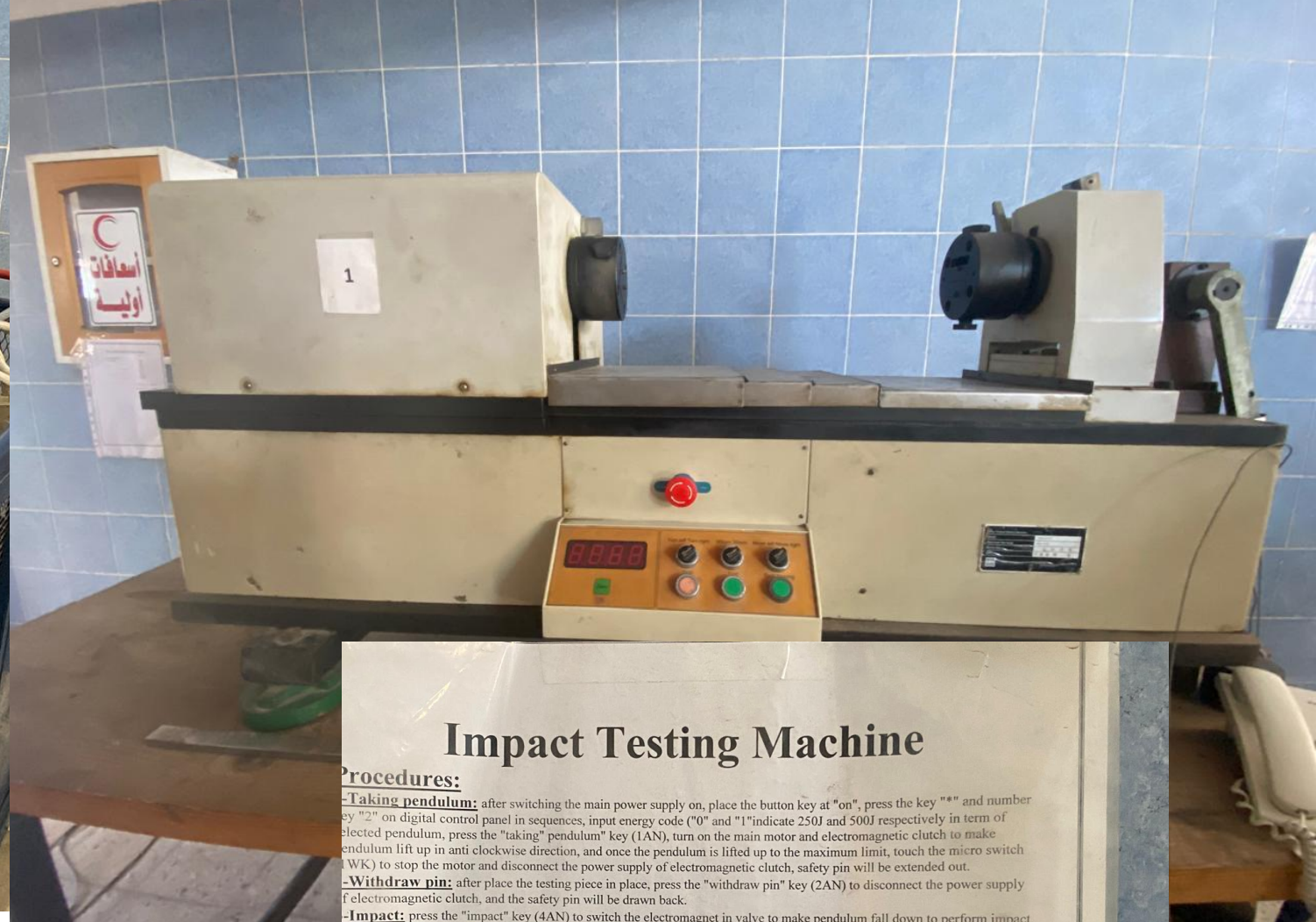
- Adjust the two screws repeatedly to keep the specimen align with the central line of the head and fasten the screw. Fasten the other end of the specimen accordingly.

**3-Test:** Put left/right travel switch at left travel position and Press the green test button.

### Experiments:

Measuring the Elastic Deformation Performance of Metallic Wire

**Code Number: EMF-WI-008**



## Impact Testing Machine

### Procedures:

**-Taking pendulum:** after switching the main power supply on, place the button key at "on", press the key "\*" and number key "2" on digital control panel in sequences, input energy code ("0" and "1" indicate 250J and 500J respectively in term of selected pendulum, press the "taking" pendulum" key (1AN), turn on the main motor and electromagnetic clutch to make pendulum lift up in anti clockwise direction, and once the pendulum is lifted up to the maximum limit, touch the micro switch (WK) to stop the motor and disconnect the power supply of electromagnetic clutch, safety pin will be extended out.

**-Withdraw pin:** after place the testing piece in place, press the "withdraw pin" key (2AN) to disconnect the power supply of electromagnetic clutch, and the safety pin will be drawn back.

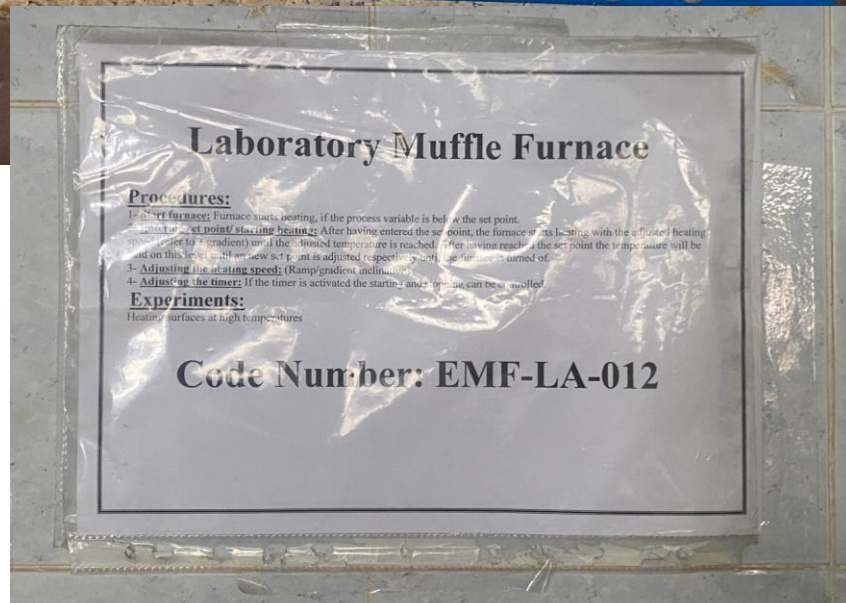
**-Impact:** press the "impact" key (4AN) to switch the electromagnet in valve to make pendulum fall down to perform impact test. After the impact action is completed, pendulum will be re-hung automatically for the next impact test.

**-Releasing pendulum:** press the "releasing pendulum" key (3AN). The pendulum will fall back automatically slowly, after it arrived at the vertical position, release the key.

**-Printing:** after each time (or each lot) impact test is finished, presses the "PRINT" key on the digital control panel and the testing results can be printed out.

**Code Number: EMF-IM-007**













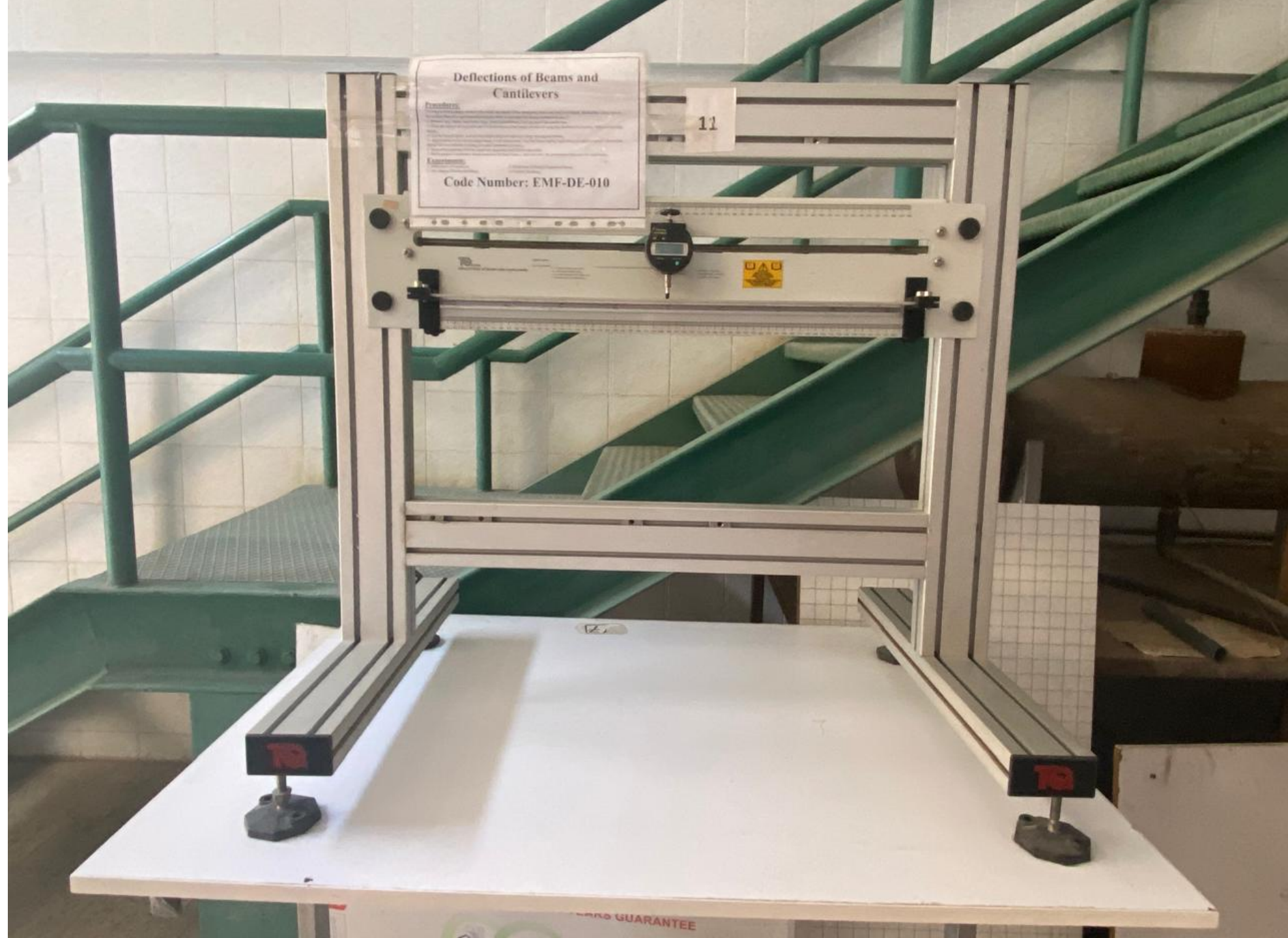












# Deflections of Beams and Cantilevers

## Procedure:

1. The beam is supported on two supports, one of which is a roller support and the other is a fixed support. A load is applied to the beam at a point between the two supports. The deflection of the beam is measured at various points along its length.

## Experiment:

Code Number: EMF-DE-010

11



12

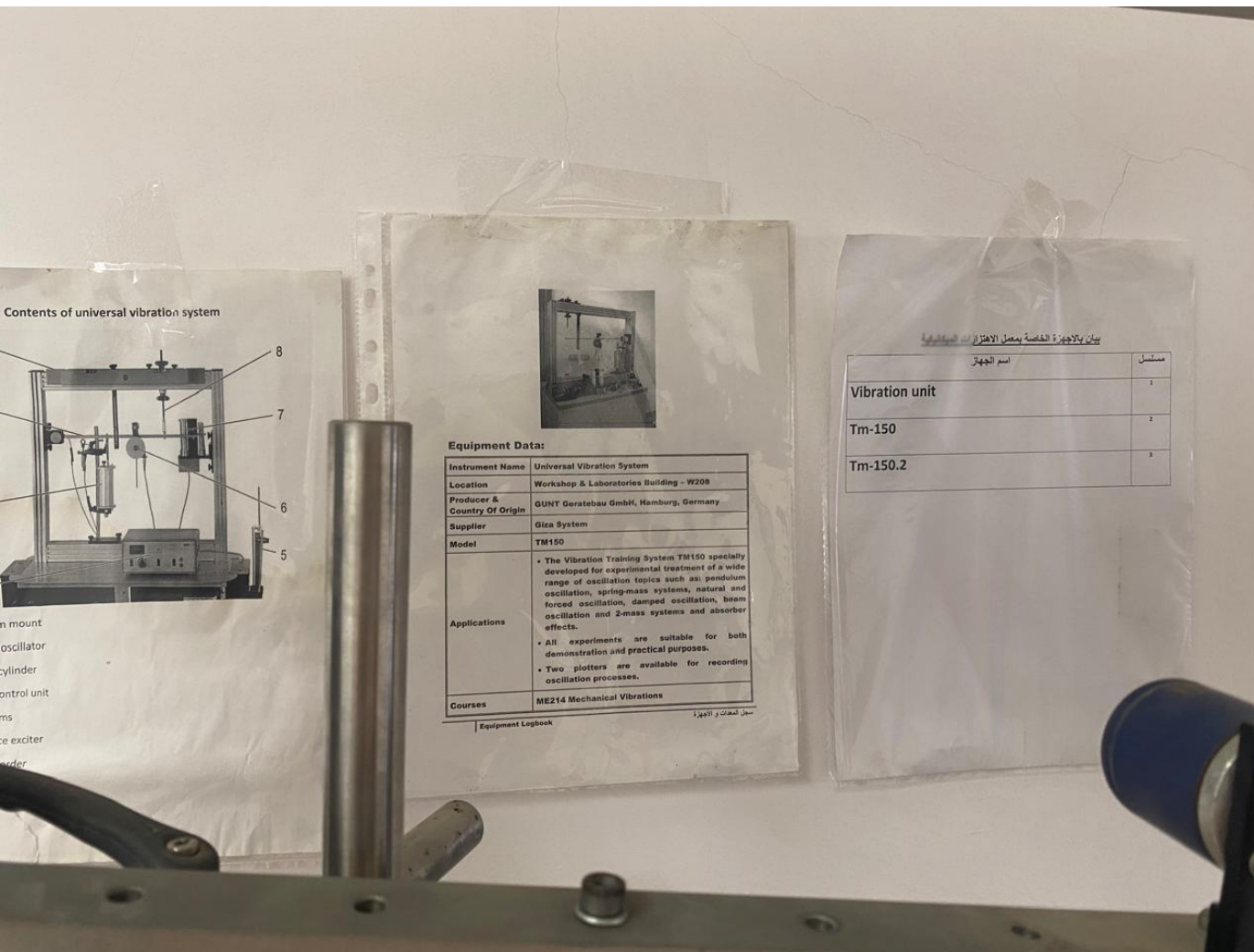
WARRANTY







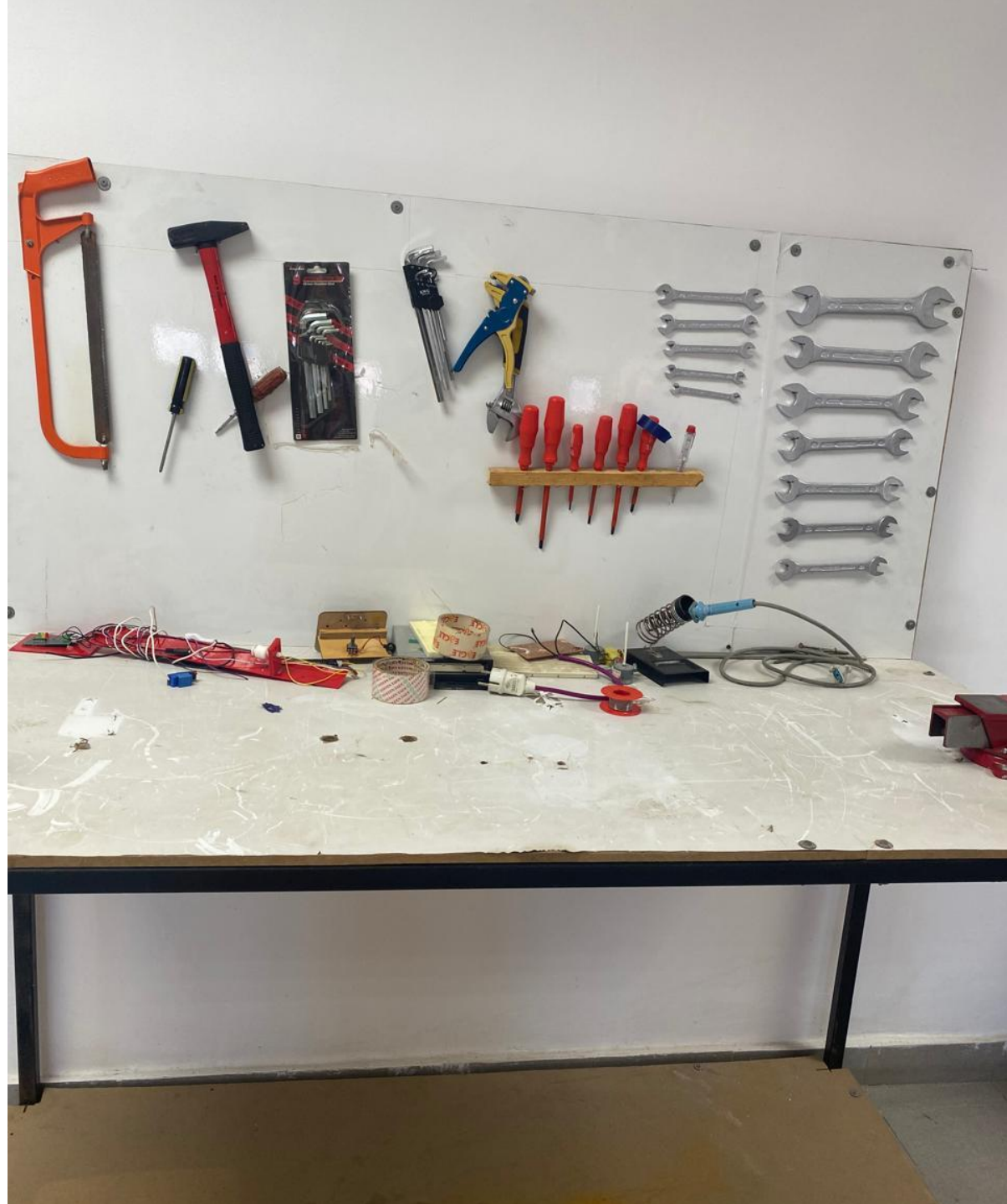




# Vibration Analyzer

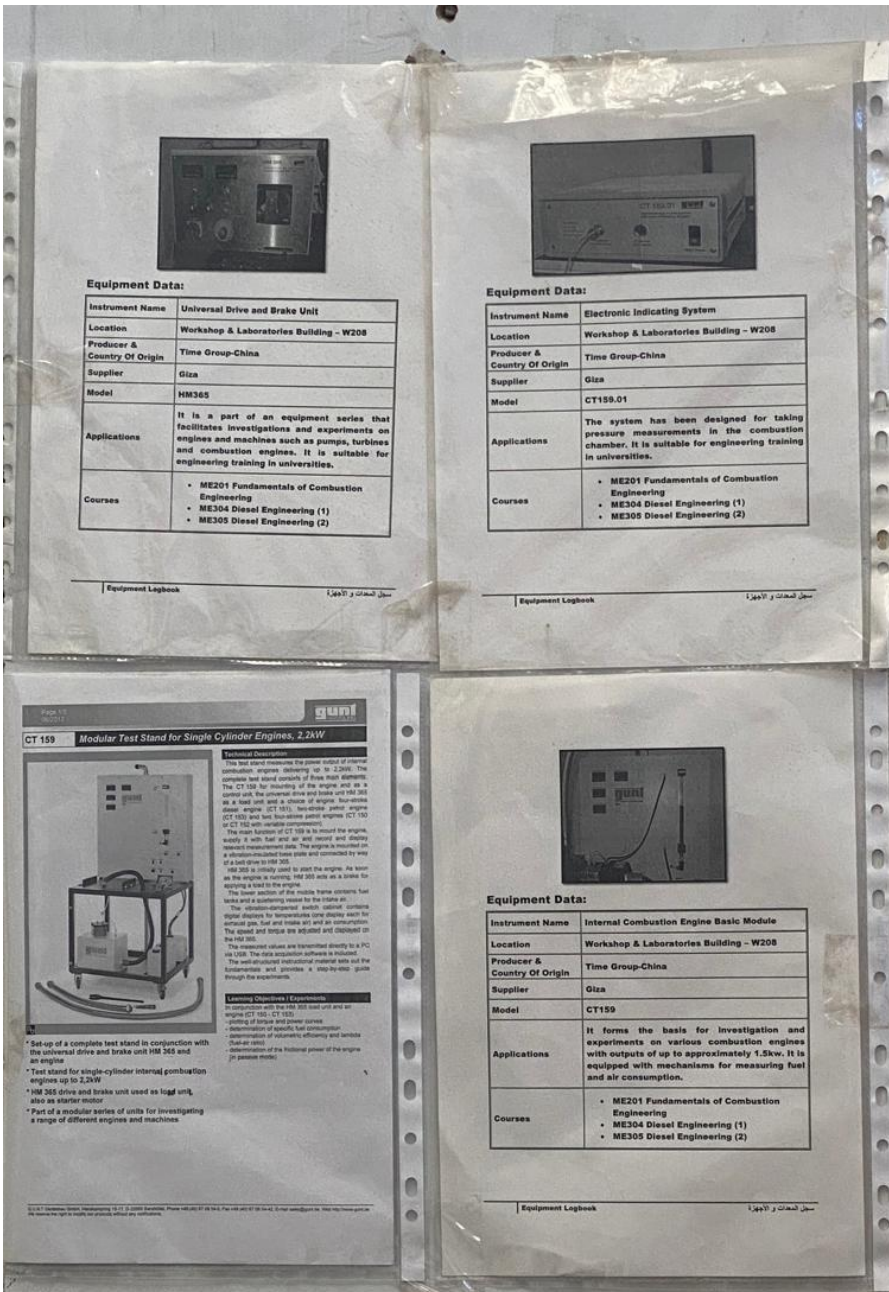












Equipment Data:

Instrument Name	Universal Drive and Brake Unit
Location	Workshop & Laboratories Building - W208
Producer & Country Of Origin	Time Group-China
Supplier	Giza
Model	HM365
Applications	It is a part of an equipment series that facilitates investigations and experiments on engines and machines such as pumps, turbines and combustion engines. It is suitable for engineering training in universities.
Courses	<ul style="list-style-type: none"><li>ME201 Fundamentals of Combustion Engineering</li><li>ME304 Diesel Engineering (1)</li><li>ME305 Diesel Engineering (2)</li></ul>

Equipment Logbook

سجل المعدات والأجهزة

Equipment Data:

Instrument Name	Electronic Indicating System
Location	Workshop & Laboratories Building - W208
Producer & Country Of Origin	Time Group-China
Supplier	Giza
Model	CT159.01
Applications	The system has been designed for taking pressure measurements in the combustion chamber. It is suitable for engineering training in universities.
Courses	<ul style="list-style-type: none"><li>ME201 Fundamentals of Combustion Engineering</li><li>ME304 Diesel Engineering (1)</li><li>ME305 Diesel Engineering (2)</li></ul>

Equipment Logbook

سجل المعدات والأجهزة

Page 1/1  
Modular Test Stand for Single Cylinder Engines, 2.2kW



- \* Set-up of a complete test stand in conjunction with the universal drive and brake unit HM 365 and an engine
- \* Test stand for single-cylinder internal combustion engines up to 2.2kW
- \* HM 365 drive and brake unit used as test unit, also as starter motor
- \* Part of a modular series of units for investigating a range of different engines and machines

Equipment Data:

Instrument Name	Internal Combustion Engine Basic Module
Location	Workshop & Laboratories Building - W208
Producer & Country Of Origin	Time Group-China
Supplier	Giza
Model	CT159
Applications	It forms the basis for investigation and experiments on various combustion engines with outputs of up to approximately 1.5kW. It is equipped with mechanisms for measuring fuel and air consumption.
Courses	<ul style="list-style-type: none"><li>ME201 Fundamentals of Combustion Engineering</li><li>ME304 Diesel Engineering (1)</li><li>ME305 Diesel Engineering (2)</li></ul>

Equipment Logbook

سجل المعدات والأجهزة























T1 - TEMPERATURE LEAVING EVAPORATOR  
 T2 - TEMPERATURE ENTERING CONDENSER  
 T3 - TEMPERATURE LEAVING CONDENSER  
 T4 - TEMPERATURE ENTERING EVAPORATOR  
 T5 - TEMPERATURE COOLING EVAPORATOR

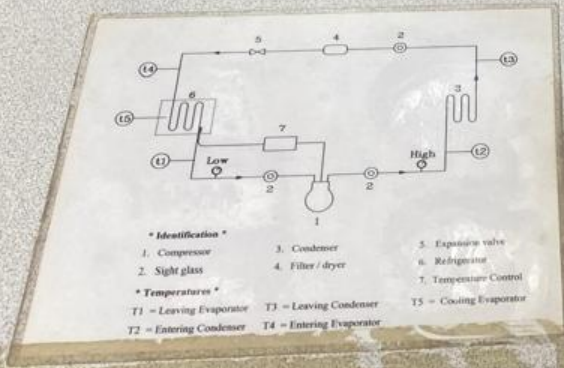
BASIC REFRIGERATION SYSTEM  
 MODEL TH 520  
 ESSOM COMPANY LIMITED

8.8.8.8 °C  
 TEMPERATURE °C

TEMPERATURE SWITCH  
 1 2 3 4 5

TEMPERATURE CONTROL

POWER SWITCH





AIR Conditioning System

