

# BALANCING A DIRECT DRIVE FAN

PRESENTATION OF THE PROJECTX-FINAL LEVEL 1.

# THE FAN TO BALANCE





# FOR USE IN THIS CORE AREA: general and particular.

- ▶ GENERAL / KNOWLEDGE: MECHANICAL.
- ▶ PARTICULAR / ACTIVITIES: MEASUREMENT, CALCULATION AND BALANCING.



# LEARNING OUTCOMES. Common to be shared.

- ▶ 1. MCHMS01 (TopMost). Measuring equipment for mechanical systems, compliance with dimensional tolerances, avoiding measuring errors.
- ▶ 2. MCHMT02 (TopMost). Maintenance and repair of machines and mechanical functional units.
- ▶ 3. MCHMT03 (TopMost). Applying preventive maintenance on machines, according to instructions of the manufacturer
- ▶ 4. MCHQL02 (TopMost). Applying non-destructive testing of materials.



# DURATION

- ▶ Theory: 3 hours
- ▶ Practice: 10 hours



# THEORETICAL OBJECTIVES AND ACTIVITIES

## OBJECTIVES

- ▶ 1. Handle of the vibrometer.
- ▶ 2. Vibration measurement of a direct drive fan.
- ▶ 2. Analysis of the measured vibration.
- ▶ 2. Balancing a direct drive fan.

## ACTIVITIES

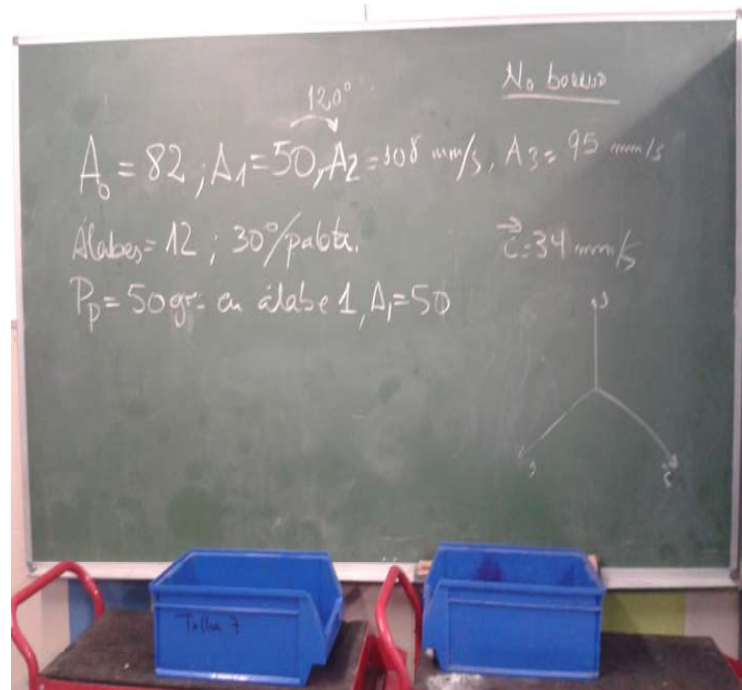
- ▶ 1. Evaluation Questionnaire
- ▶ 2. Scheme drawing of the fan to balance
- ▶ 3. Multiple choice test.



# PRACTICE.

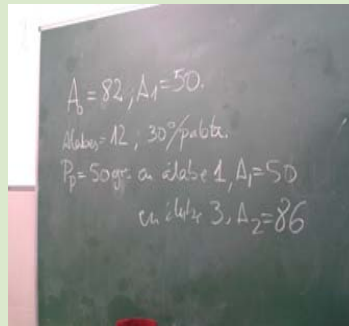
## Brief description and pictures.

- ▶ The student will balance a direct drive fan, previously unbalanced. To achieve that, he will find out the reference value of vibration and after several measurements, calculations and placing the test and balance weights, he will check the final balance under the reference value.



## PRACTICE. Activities.

- Reference values.
- Vibration measurement.
- Check the need to balance
- Fifth: Place test and balance weights.
- Eighth: Calculates.
- Tenth: Check and report.

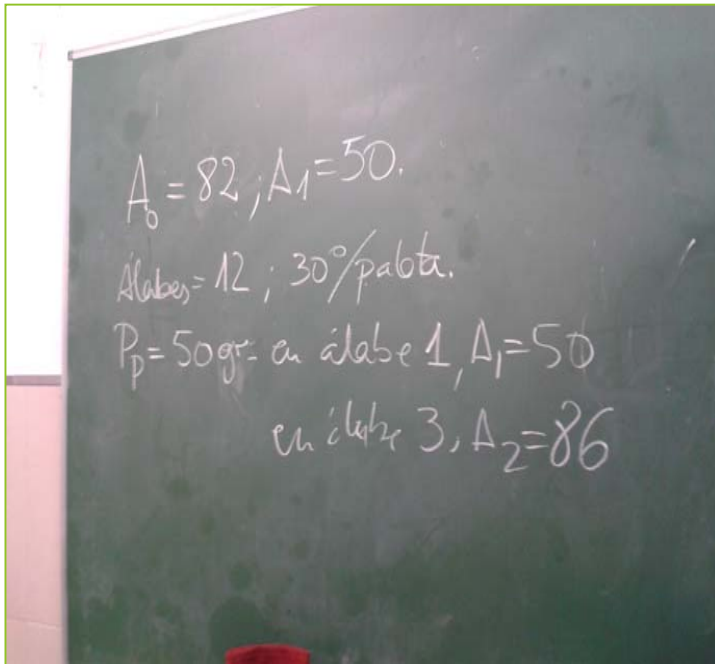




# PRACTICE. Measuring vibration.



# PRACTICE. Determine weights for test and balance.





# PRACTICE. Check and report.



فرع المنطقة الغربية  
 Western Region: JEDDAH 3 JEDDAH WP # \_\_\_\_\_  
 الشركة السعودية للكهرباء  
 Saudi Electricity Company  
**MAINTENANCE REPORT**  
 SLNO # 9346214

DATE GREG	DATE HEJ	TIME	RUNNING HRS	UNIT OR LOCATION
20-5-2003				17

WORK CLASS	SHOP	PRIORITY	STATUS
- PH	- BBC - MECH	(2) TODAY	- IN PROCESS
- EMERGENCY REPAIR	- GE - MECH	(1) URGENT	- WAITING PARTS
- REPAIR ORDER	- AUX - MECH	(3) SCHEDULE	- WAITING PARTS
- OPD/OPC/SF	- INT - MECH	(3) OUTAGE	- CLOSED
- T S E	- ELECTRICAL		
- MHC	- MNT & CONTROL		
- EQUIPMENT	- MP2		

EQUIPMENT: Temporary laid cable to Resistor "A"  
 DESCRIPTION OF PROBLEM OR WORK TO BE DONE:  
 The temporary laid cable (not in use now) coming to panel "A" for top of the duct... needs to be removed.

DUE DATE: \_\_\_\_\_ ESTIMATED MANHOURS: \_\_\_\_\_  
 REPORTED DATE: 20/5/2003 REPORTED BY: Ki.  
 AUTHORIZED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 PARTS LIST ATTACHED: \_\_\_\_\_ WORK PERMIT REQUIRED: \_\_\_\_\_

ACTION CODE	FAILURE MODE	FAILURE CAUSE

DESCRIPTION OF WORK PERFORMED: REMOVED. CAUSED UNIT DUTY (Y/N) \_\_\_\_\_

PH PERSONNEL	LABOR RATE	HOURS	LABOR COST

DATE COMPLETED: 21-5-2003  
 TOTALS: \_\_\_\_\_  
 VERIFIED BY: \_\_\_\_\_ DATE CLOSED: \_\_\_\_\_ VERIFIED BY: \_\_\_\_\_