



*National Skill Competition*



# *Industrial Maintenance*

## *Test Project*



*Skill Area: Instrument Making*

**National Skills Competition Date: March 30 –31 2005**

## Skills Jamaica Competition March 30-31, 2005

### General Instructions

- (1) Each competitor will be required to carry out the test project as specified on the schedule to be handed out two days before the competition.
- (2) The time will be specified according to the test project.
- (3) Minor adjustments may be made to the test project on the day of the competition where a new test project will be issued to the competitor.
- (4) Competitors are expected to identify all equipment/ materials/ingredients needed and submit list to the competitions committee no later than January 28, 2004.
- (5) **Please note that all competitors should provide their own small tools and utensils.**
- (6) Competitors will be given a schedule two days before the competition. Debriefings will also be conducted for all competitors on March 28, 2004.
- (7) All competitors will get an opportunity to arrange work areas the day before the competition. Where applicable competitors for the second day will arrange their work areas on the evening of day one. Competitors who fall in the second shift will get an opportunity to do their preparation at offsite locations (to be decided) where necessary.
- (8) All competitors should be present for the opening ceremony along with their instructors/coaches.
- (9) Rehearsal for the opening ceremony will be held on the evening of March 28, 2005 (National Indoor Sport Center at 6 pm).

# Introduction

This project proposal is designed to test, over a period of (10) ten hours within two days.

The high strength or good accuracy of the range of skills that are required to machine and fabricate mechanical instruments.

There is only one task in the competition and designed to test different skill areas.

## **Tap Wrench**

This task required various machine operations, including, Milling, Turning, Tap & Die, Knurling, Drilling and Bench Work.

The tap wrench consist of several parts, part 4 should be fixed to the body of the wrench, while part 5 is secured to the movable handle (part 2). Competitors should design a means of securing part 4 and 2 to the respective areas of the tap wrench.

**Evidence of the design should be reflected by the use of a diagram and demonstrated practically.**

**The diagram should be presented on the day of competitions.**

**All competitors will be allocated a competitor number and work stations by the expert/judge.**

## **Equipment**

Adequate material and equipment will be available to each competitor.

Please check all materials and tools when they are supplied to you to ensure they are correct and not damaged.

Makes will be deducted if more materials required unless it was faulty when supplied.

Replacement parts for any equipment must be requested through an expert/judge.

## **Personal Safety Rules**

During the competition, all candidates **MUST** follow the safety rules listed below:

*Any candidate, who in the opinion of the experts/judges, is not wearing the correct safety attire or is engaging in any unsafe practice, will be stopped and not allowed to continue until the issue is resolved. The candidate will also lose marks.*

### **General:**

Never leave a running machine unattended.

Keep hands away from moving parts of the machines and away from work and tools when the machines are running.

Clean the area and machine after each usage

### **Shoes:**

Fully enclosed work shoes or boots must be worn at all times.

### **Clothing:**

Legs must be covered at all times, by either long work trousers or overalls.

Upper body must be covered at all times.

Do not wear long sleeves, loose clothing, tie, watches, ring or an item that could be caught in the machine. If your hair is long, wear it up or in a hair net.

**Clear Safety Glasses:**

Must be worn when necessary to protect your eyes.

**Gloves:**

Must be worn when necessary to protect your hands.

# SKILLS JAMAICA 2005

## EQUIPMENT TO BE SUPPLIED BY THE CANDIDATE

Personal Protective Gears  
Steel rule 150mm (min)  
Vernier Calliper  
Hacksaw & Blade

## EQUIPMENT TO BE PROVIDED BY THE ORGANIZERS

The equipment and tools is to be supplied.

### **CANDIDATE WORK AREA**

Each candidate work area should contain the following equipment

### **EQUIPMENT**

- Lath machine
- Milling machine
- Drilling machine
- Work bench

### **TOOLS**

- Turing Tools
- Round Nose End Mill
- End Mill
- Threading tools (Tap & Die)
- Dividing Head
- Bench vice
- Files(rough cut, smooth cut)

### **MATERIALS**

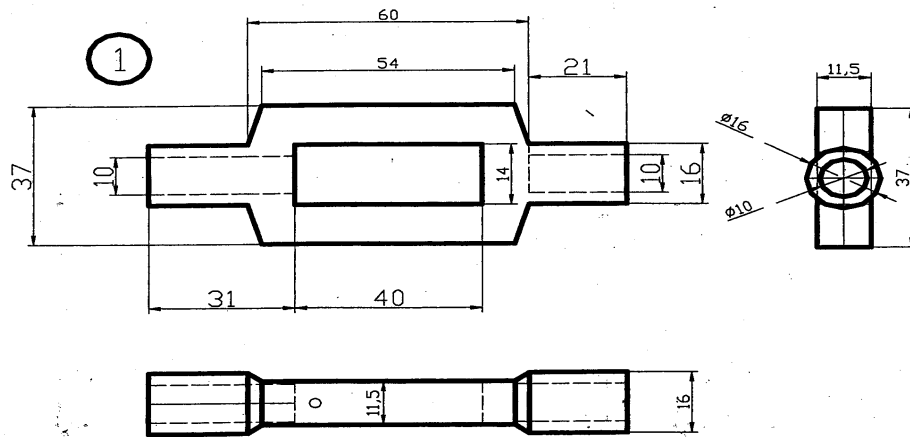
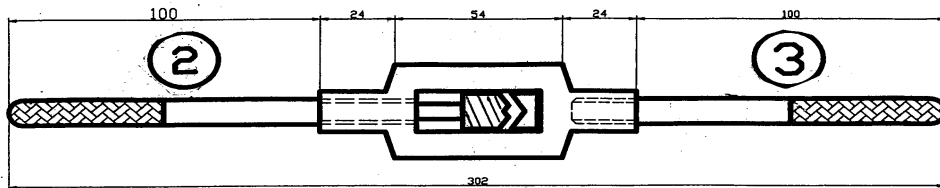
- 12mm (MSB) @ 2500mm long (Tap Wrench)
- 14mm x12mm (MSB) @ 900mm long (Tap Wrench)

All material should be of Mill Steel

(1) 2½ hours  
1<sup>st</sup> – 15 minutes  
Every 10min – 2marks

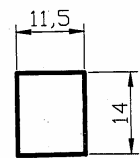
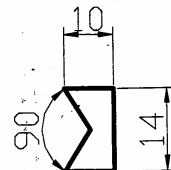
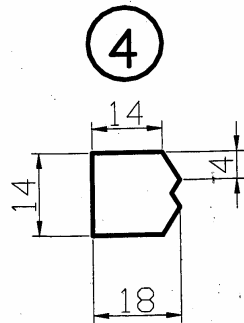
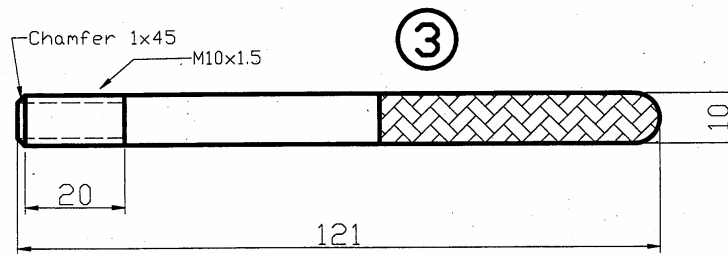
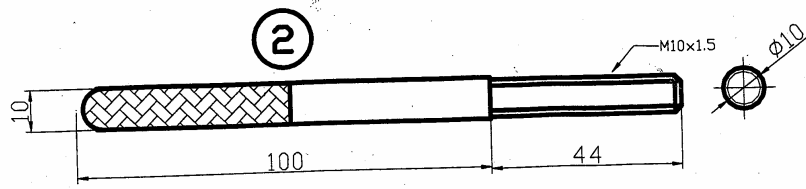
(2) 45 minutes to do it

**TAP WRENCH**



- (3) 45 minutes to do it
- (4) 30 minutes
- (5) 30 minutes

**TAP WRENCH**



side view

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