

# Hand-Eye Coordination Equipment Testing for Trainees

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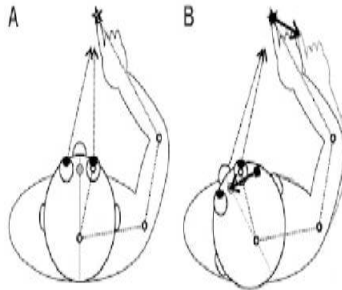
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**ABSTRACT-** The hand eye coordination equipment requires both arms to work together. The subject's task is to move the metal pointer around the star pattern without leaving the boundaries of the pattern. This research is useful for assessing the abilities of personnel involved in using production equipment, most especially for those performing jobs such as operating a crane. The test can be used for assessing proficiency for several other applications that require coordination as well.

## I.OBJECTIVE

Need of checking Hand – Eye coordination to assess the skill levels of the pupil to absorb in specific machining process is essential.



## II. INTRODUCTION OF PROJECT

- The process of hand-eye coordination uses the eyes to direct attention and the hands to execute a task. This has been studied in activities has diverse as the movement of solid objects such as wooden blocks, archery, sporting performance. It is a part of mechanism of performing everyday task.
- Most hand movements require visual input to be carried out efficiently. For example, when children are learning to draw, they follow the position of the hand holding the pencil visually as they make lines on the paper.
- Hand-eye coordination is the coordinated control of eye movement with hand movement and the processing of visual input to guide reaching and grasping along with the use of hands to guide the eyes. Poor hand- eye coordination can greatly compromise your ability to acquire required skills for the machine operation or fabrication works which industry specific.

### A.PROBLEM IN CO-ORDINATION

Hand-eye coordination problems are usually first noted as a lack of skill and poor orientation. Hypertonia, a condition marked by an abnormal increase in muscle tension and a reduced ability of a muscle to stretch causes this co-ordination defect in humans.

**B.NEED FOR CO-ORDINATION**

Hand eye co-ordination is very much needed for certain intricate operations in assembly lines and certain operating structures like joist and fork lift. This also results in improving the concentration skill of the individual.

**C.DESIGN CONSTRAINTS**

- Material selection
- Life
- Weight
- Space occupancy
- Cost
- Strength
- Reliability

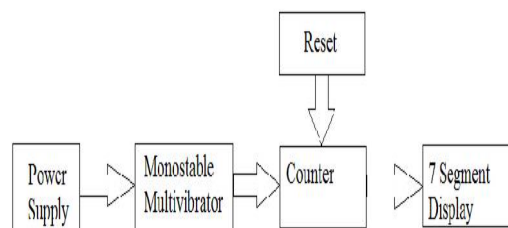
**D.MATERIALS USED**

- Sunboard, wooden board
- Nylon plates coated with copper
- Steel links
- Steel pointer
- Push button
- PCB with integrated circuits
- Connecting wires
- Nylon handles

**E.TEST BOARD**

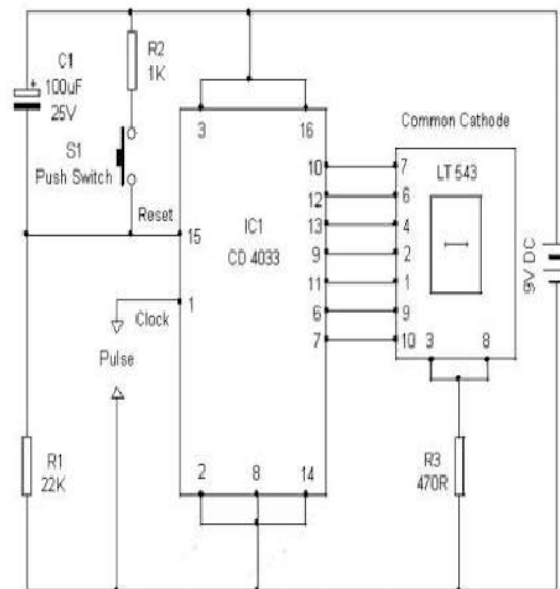
This test board is mainly used to evaluate the individual and record the performance throughout the process.

**III.BLOCK DIAGRAM**



**IV.CIRCUIT DIAGRAM**

CD4033 is a **Johnson counter IC** commonly used in digital display. It has a 5 stage Johnson decade counter with decoder which convert the code to a 7 segment decoded output. Means it will convert the input into numeric display which can be seen on 7 segment display or with the help of LED.



**1.Pin 1 Known As Clock In:**

It receives clock signals, and at every positive clock counter advances one by one.

**2.Pin 2 Known As Clock Inhibit:**

Cd4033 Counter Advances One By One By Receiving Positive Pulse At This Time Clock Inhibit Pin Should Be Grounded. If It Is Connected To Supply Than Counter Advancement Will Be Inhibited Means There Will Be No Meaning Of Clock Pulse.

**3.Pin 3 And Pin 4:**

It Is Used To Display Zero. It Improves The Readability Of The Circuit.

**4. Pin 5 Known As Carry Out:**

It Is Used To Complete One Cycle For Every 10 Clock Input Cycle.

**5. Pin 6, Pin 7 And Pin 9-13:**

These Are 7 Decoded Output From A To G Used To Illuminate The Corresponding Segment Of 7 Segment Display To Display The Digit From 0-9.

**6. Pin 14 known as lamp test:**

It is used to check whether all segments of the 7 are working properly.

**7.Pin 15 Known As Reset:**

It is used to reset the counter. When it receives high it clears the counter and counting again starts from zero. One important thing reset pin should made low to start the counter once again.

**8.pin 8 known as ground and pin 16 known as vdd:**

It should be connected to power supply.

**1.Interfacing CD4033 with LED'S**

Working of circuit is simple whenever it detects radiation it receive clock at pin 1 and its counter starts and LED'S connected at output stars glowing. And the cycle repeats till the reset pin receives high at its input.

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## 2. Interfacing CD4033 with 7 segment display

The circuit describes below count numbers from 0 to 9 and display the same on 7 segment display. Whenever you press the switch, clock input receives the signals and its counter advances one by one. And it will count up to 9 and again start counting from 0 on each successive pressing of switch.

### V. COUNTER



### VI. RESET



### VII. CONCLUSION

Stage by stage development is seen in individuals who perform this test regularly and there by their motor skills are also developed during the short period of time. Precise use of resources are clearly characterized.

### REFERENCES

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