



Motor Base ARM System

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ABSTRACT

Our project is related to the part of the human safety. Due to multinational collaborations of domestic companies with foreign country companies near about 40% such organizations have their production facilities in India. Hence after globalization many clauses regarding factory act have been changed by the government of India, Ministry of human resource department & company & labours act 1957. For all such companies domestic as well as multinationals these rules & regulations are same. In the organizations having rotating & moving machineries the employee safety is given a first preference. As per the Japanese concepts- under ISO & its procedures & clauses there are different citizens about employee training & safety. We are concentrating out of one very important clause it to maintain the operating, working & movement height of the person inside & outside the company campus. So no employee can work over 8 feet height measuring from the shop floor. Or if any material has to move more than 8 feet height no employee is allowed to move it manually. Not to allowing to do so, because of the certain person health related issues.

Keywords: ARM, human safety, globalization, employee training & safety.

1. INTRODUCTION

The arm is very simple to operate. Initially the objects to be picked & placed are stacked over the pipe OD. The objects are stacked one over another as shown in the block dia. They all are the individual items. At the top the object presence sensor is such placed that should the topmost item. One round flange having pipe size ID & outside collar for mounting the cross joining flats is inserted in the pipe under the objects. These cross flats are joined to the lead screw nut which travel over the vertical mounted lead screw. The lead screw bottom portion is joined. The bracket or the housing in which the object to be placed is arrive & stop at the position. For this bracket will come one by one by the belt conveyor. Here we are not making the conveyor; the bracket will be placed annually by hand at the position decided. The operator will grip the handle provided over the bracket & lift upward rotate the arm in polar direction moves towards him & bring the picking device exact over the object to be pick. The gripper fixture guide either pipe OD or ID & align the concentricity of the object to be picked the object will stick to the down face of the picking device. As the object to be pick & place is gripped by the picking device the operator will move the arm upward & rotate in the polar direction & move down over the bracket or the housing the gripper or the picking device fixture guide it & concentricity will align automatically. Operator will press the button & the picking device deactivate. This release the object inside the bracket. During this operation the gap is created near the object motor gives supply to the dc. The motor will on & the lead screw move up world. The nut travel upward & the next object will sensed by the job presence. The next job will be ready for picking & placing. The operator will do the same procedure as mentioned above & the cycles are repeated. Hence there is only one work for the operator is the to rotate the arm. As mentioned above in the feature enhancement this can also be avoided by using cylinder. But this will depends on the production demand in the existing setup in a predefined time & effect of the cost & tap make the system.

2. APPLICATION OF PROJECT

1. In small manufacturing shop section.
2. In industries purpose.
3. Can be used in workshop.

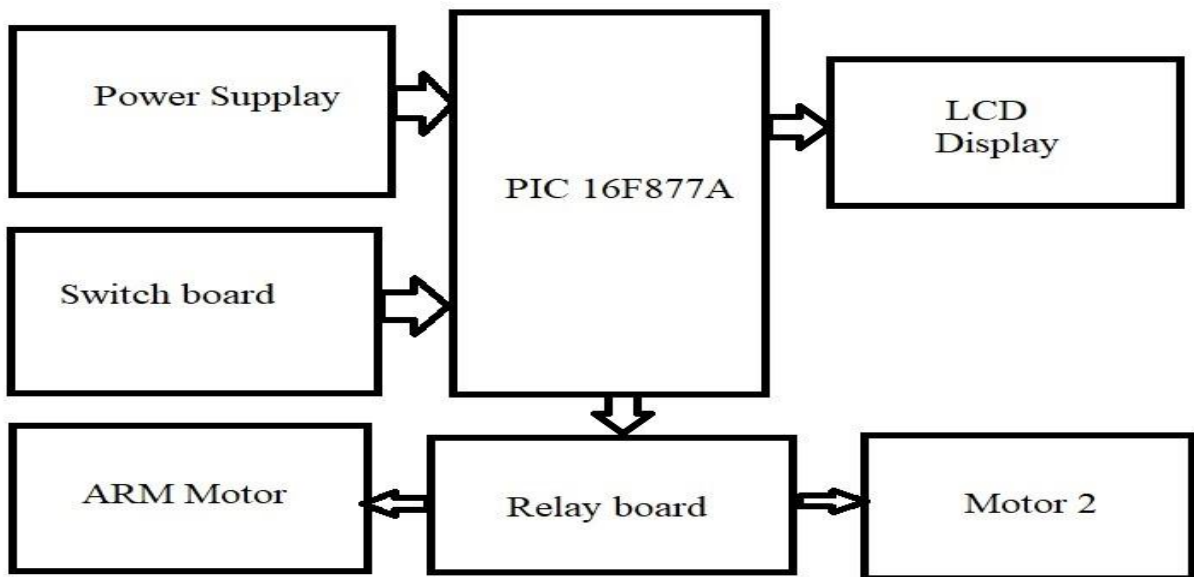
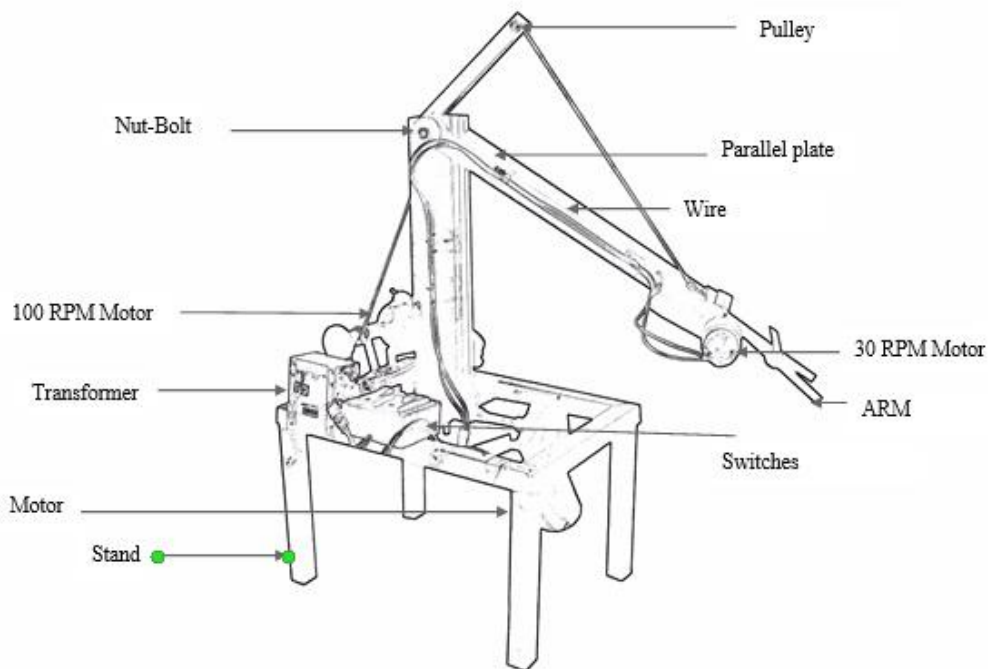
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4. Production of diffract types of manufacturing industries.

MECHANICAL STRUCTURE

Mechanical structure of the robot is done using appropriate height torque DC motor, wheel and Basement using metal sheet and wooden portion. Required washer, nut bolts are used tighten the assembly.

**4. BLOCK DIAGRAM**

Fig; - Diagram of motor base ARM System

5. ADVANTAGES

1. Capable of down-shifts in less than 5 to 8 min, depending upon motor RPM.
2. Leading to significantly increased performance.
3. Leading to reduced lap/stage times.
4. The machine has very low error.
5. The size of project made by is more suitable for pick & place system.
6. The cost of machine is less.
7. It is easy to make.
8. It has low maintenance.
9. The system has low energy consumption.
10. Size of machine is small therefore it is easy to transport.
11. Weight of machine is low.

6. DISADVANTAGES

1. Being semiautomatic we cannot neglect at least one operator.
2. Electricity is required to operate the machine motor.

7. SALIENT FEATURES

1. High accuracy.
2. High productivity.
3. Simple in operation.
4. No skilled manpower required.
5. No hydraulic or Pneumatic power required.
6. Very low maintenance cost.
7. Manual operation cycle.
8. Minimum setup changes over time.
9. Robust in construction.
10. Minimum wears & tears.