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SEMI AUTOMATIC PRINTING MACHINE

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INTERNAL GUIDE:
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CONTAIN

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PROBLEM STATEMENT

- In past time printing on plastic bags, glass, plywood, ceramics, PVC are human effort able and time consume process
- Low quality of images, jerk functioning
- Current time printing machine are more advanced society becomes technologically this means that when machine breaks so disabled until the problem is resolved.

PROJECT BACKGROUND

- Semi-automatic printing machine is a mechanism of printing batch, stamp, codes, and other types.
- Semi automatic printing machine is the made for effort less work. Semi-automatic printing machine design for the industrial mass production and repeated working provided. In the silkscreen process, stamping is very important to produces high quality stamping result so that more accuracy to provided hand printing machine is converted into the semi automatic printing machine.

- Though it is little in size This machine being used by many for high profile printing jobs either on paper, plastic, metals, glass, wood, PCB, membranes switch, DC card, cloth and many other flat products.
- This machine is easy to operate and electric driven machine. In printing machine combined of roller carrying a stamp, a plurality of gears of roller therewith, n inking roller carried by the gear
- This machine makes the job quality much higher than that of doing by hand.

INTRODUCTION

- Semi automatic printing machine is a mechanism of printing batch, stamp, codes, and other types.
- It is little in size this machine being used by many for high profile printing jobs either on paper, plastic, membrane switches, PVC, Ceramics, Jute, Plywood, Glass, Cardboard and many type of substrate with flat surface.
- Semi automatic printing machine is the innovation of hand operated batch printing machine, the hand operated machine was firstly developed in early of 95's.

TYPES OF PRINTING MACHINES

There are mainly three types of the printing machine. They are as discussed below:

(1) Hand press printing machine

(2) Semi automatic printing machine

(3) Automatic printing machine

CONSTRUCTION SEMI AUTOMATIC PRINTING MACHINE



- The construction of semi automatic printing machine is simple and vibration free machine. In the machine the first base is provided on the base motor and gear box are fitted, then both are connected with help of rubber belt.

- Now with gear box crank and lever shaft attached which has eccentric arm. With arms roller drum and roller supported guide is connected. With it also rack and pinion connected. With pinion ink roller connected which spread ink on die.
- On the other side with motor foot operating switch is connected. This is the construction of semi automatic printing machine.

PARTS OF MACHINE

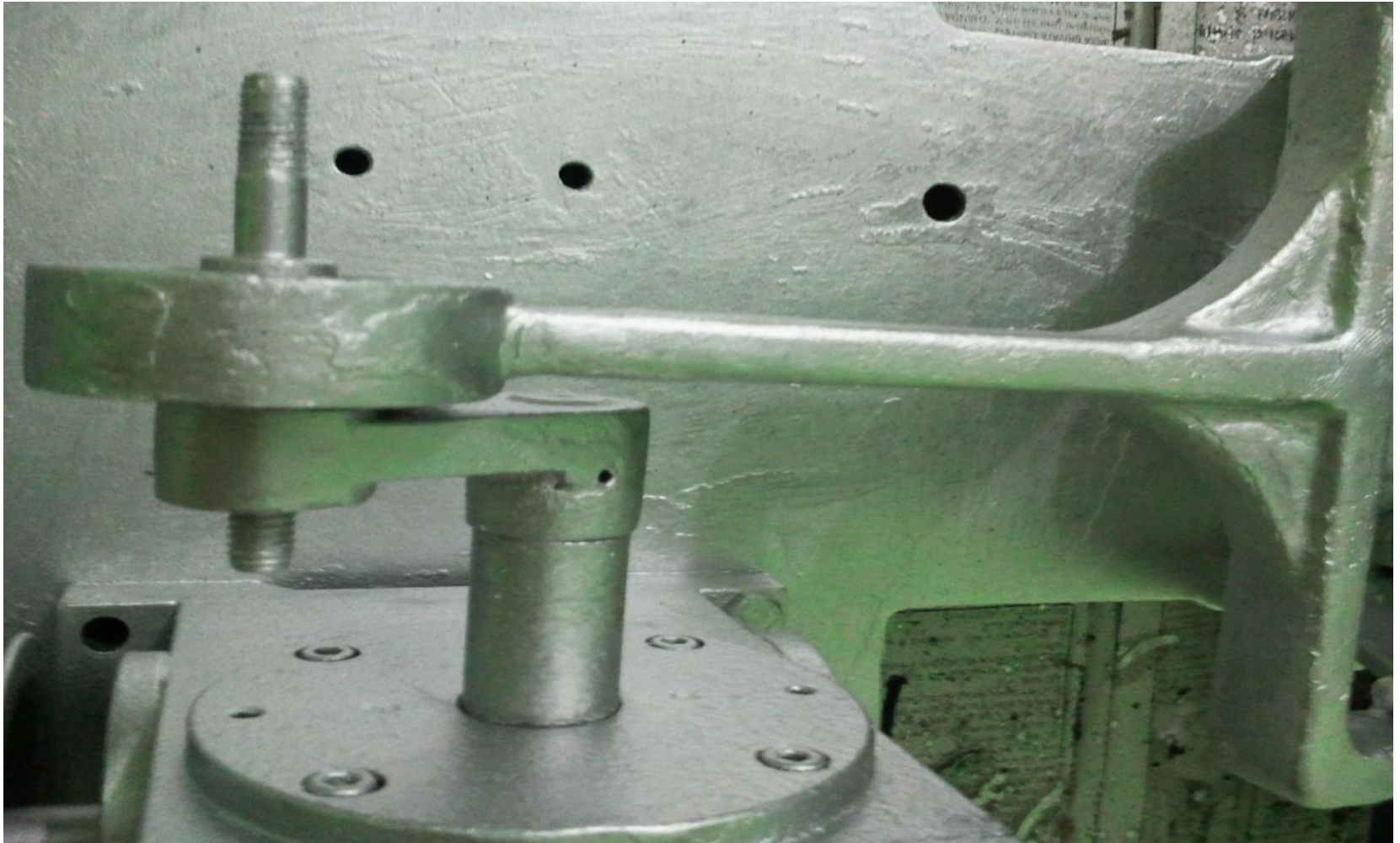
- **Base:**

Base is provided support foundation of machine which have vibration absorb quality. In this machine base carried out the parts of electric motor, gear box, die mechanism, ink drum etc

- **Crank and lever with arm:**

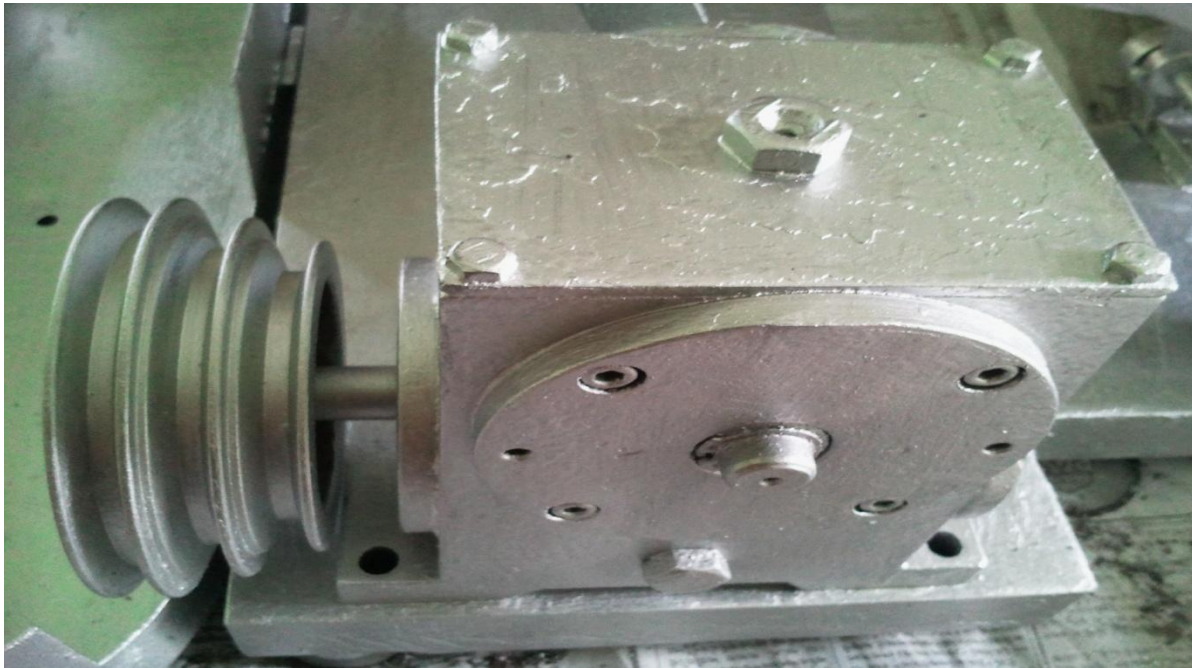
This mechanism is used for transfer rotary motion to linear motion convert by the gear box.

The linear motion of arm is transmit to the die section.



- **Gear box:**

The gear box is received rotary motion by belt from the electric motor. Gear box have attached with step pulley. The step pulley which different motion generate. Gear box give output to the eccentric arm.



- **Electric Motor:**

An electric motor is an electric machine that converts electrical energy into mechanical energy. In this machine the motor is 1440 R.P.M and 0.25 H.P. the end side of motor rod on located one step pulley and the pulley transmit the motion to other side pulley by rubber belt.



- **Ink roller with roller drum:**

Roller drum attach with eccentric arm which have gate the linear motion. Die is repeated touch to the roller drum. Ink roller is fulfilled ink on roller drum.



- **Printing die:**

Die is the main component of the printing machine what kind of shape and alphabetically are provided on die give output of that type of print.



- **Foot key:**

Foot key is used for operating the printing machine. Foot key is provided to “ON” or “OFF” machines. Fig is showing below.



WORKING OF SEMI AUTOMATIC PRINTING MACHINE

- First when foot key is pressed the motor is started, with motor gear box is connected by help of rubber belt so gear box is running, with it is crank and lever is operated with the help of rack and pinion the rotary motion of lever converted to reciprocating motion of arms, with arm roller drum is connected which placed ink on it, with the help of ink roller ink is spread on die and print is done by pressing die.

SPECIFICATION OF MACHINE

Printing area:	95mm X 90mm
Printing speed:	48 stroke /min.
Drive motor	0.25 H.P. , 1440 R.P.M. , 1 Ph.
Weight:	48 Kg.

INSPECTION&QUALITY CONTROL

- The art of checking the components is capable to perform certain function or not is called inspection.
- Inspection measures the quality of product or service in term of pre-decided standards. Product quality may be specific by its strength, hardness, surface finish, chemical composition, dimensions, etc.

OBJECTIVES OF INSPECTION

- (1) Inspection separates defective components from non defective ones and thus ensures the adequate the quality of product.
- (2) Inspection prevents further work being done semi finished product already defected as spoiled.
- (3) Inspection makes sure that the products work and it works without hurting anybody i.e. its operations are safe.

- (4) Inspection locates defects in raw material and flow in progress, which otherwise cause problem at the final stage.
- (5) Inspection build up the reputation of the concern as it helps, reducing the number of complains from the customers.

SAFETY RULES

- (1) Never operate a machine unless you know the working of the machine.
- (2) Before starting a job make yourself familiar with the entire procedure for finish.
- (3) Always use protective clothing and equipments as required to job.
- (4) Before starting machine check for the correct setup.

- (5) Don't rush through the join observe safety rules.
- (6) Practice cleanse and other lines in the shop.
- (7) Only work in a properly guarded and safe equipment with proper ventilation and lighted work area.
- (8) Check the work for proper alignment in use of alignment between centres tightens the stock after alignment.
- (9) Use safety goggles for eye protection.
- (10) Don't wear loose clothes and watch.

ADVANTAGES

- (1) The machine is very useful in pharmaceutical industries packing industries and also for packaging industries.
- (2) The machine is use to print cartons, plastic bags, cotton labels, tin printing and same other type printing.
- (3) The machine is use to print MRP-Rs, batch code, lot no, product code, expire and mfg dates etc.

- (4) This is easy to operate.
- (5) High speed to hand operated machine.
- (6) Comparatively low cost.
- (7) Higher efficiency of working.
- (8) Power consumption is low.
- (9) And mainly this is modified to auto for men power saving.

APPLICATION

- Pharmaceutical Industries.
- Packaging Industries.
- Printing Industries, etc.....

METHODOLOGY

Find the definition of project



Read the research paper

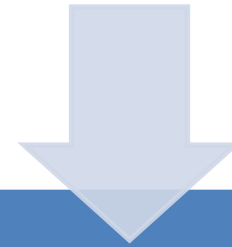


Dismantle the model



Take dimensions of all parts of model

Result analysis & discussion



Future scope & conclusion

REFERENCES

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THANK YOU....