

## Development and Fabrication of Fast Food Products Making Machine

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**Abstract:-** This machine is related to food Industry. It helps to reduce the labour cost as well as time. It will also reduce the work load. We are trying to manufacture a machine which will give maximum production of multiple shapes of fast food products such as Noodles, Sewai, Chakli, Gathiya, Namkeen etc. This machine will have high efficiency also the production rate as compare to the manual process.

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### I. Introduction

India has a great heritage of traditional food products. There are many food products here which are likely to be made traditionally. But today's modern day to day life people have no time to spend in making their favourite fast food products. So, to overcome this clause we are trying to manufacture a machine which will produce multiple shape fast food products from one assembly.

The different types of shapes are Spiral, Thick long threads, Thin long threads etc. by which the finished and well hygienic fast food product will obtain. This project will explain the simple well designed Mechanical assembly which will produces a multiple shape fast food products at faster rate. Choosing a right machine is extremely important in any type of manufacturing business.

A wrong selection of machine may damage the quality and profitability of the product. A product development process is the set of activities beginning with the perception of a market opportunity and ending in the production, sale and delivery of a product.

Product development is an interdisciplinary activity requiring contributions from nearly all the functions of a firm, however marketing, design and manufacturing are almost always central to a product development. Design and development of fast food products making machine is best suited for mass production.

### II. Literature Review

1. Design & Development of Fast Food Machine by Amit B Solanki (2014)

Goal of this paper is propose the detail design and development of automated fast food machine for large food industry applications. Automated fast food machine is a device that squeezing the duff mixture of fast food with following categorized efficiency such as time, human effort, safety, cleaning and quality during fast food making.

2. Fabrication of portable noodle making machine by Bharathraj M, Murali Kumar L (2017)

The popularity of noodle can be attributed to its sensory appeal, versatility, low cost, ease of preparation, nutritional content and excellent storage stability as well as increased consumer interest in ethnic foods in the western world. Noodles are a value-added item made from flour. As regular breakfast item. The raw material required for making noodles is available in the local market. It is widely used by school children for breakfast because it takes less time for preparation

### III. Working

This model consist of Pneumatic cylinder, a stainless steel cylinder which is connected with has connected a die holder at the end, Rotating disc, a DC motor, lead screw and the whole assembly is mounted on a stand support.

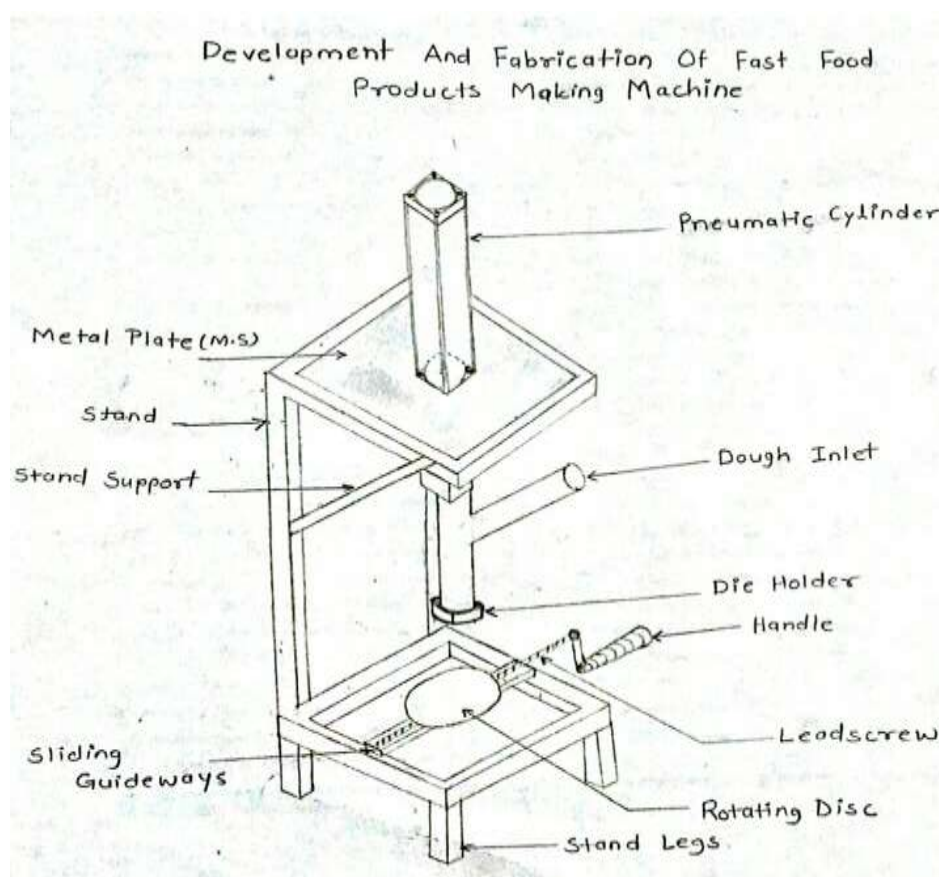
The working principle is same as compared to hydraulic system. The pneumatic system transmit power using compressed air with the help ocompressor. The receiver hold the large volume of compressed air to be used by Pneumatic system as needed.

The Hopper and cylinder is made of stainless steel when the operator put the dough in the hopper inlet of cylinder, then the actuator from the pneumatic cylinder press the dough at lower end towards the die.

The particular shape of die will form the multiple shape of food products which is directly placed on lower end platform.

For obtaining spiral shape food products like Chakli (Murukku) we use rotating disc mechanism which is placed on lead screw slider mechanism on the platform.

For obtaining Non-Spiral shape food products like Noodles, Sheawai, Gathiya we also provide the stationary platform by switching OFF the DC motor which help the rotating disc to rotate.



**Fig: Schematics Representatio**

**Components Utilised :-**

- ❑ MAIN FRAME
- ❑ PNEUMATIC CYLINDER
- ❑ PNEUMATIC VALVE
- ❑ HALLOW SS PIPE FOR DOUGH
- ❑ DC GEAR MOTOR FOR ROTARYTABLE
- ❑ TABLE TOP PLATE
- ❑ SLIDER
- ❑ LEAD SCREW

**PNEUMATIC CYLINDER:-**



Pneumatic actuators are mechanical devices that use compressed air acting on a piston inside a cylinder to move a load along a linear path.

- Specification: SC-50mm×300mm.
- Bore:- 50mm Bore
- Stroke Length:-300mm)

**Dc Gear Motor:-**



It has high precision and efficiency.  
Durable and long service life.

- Specification:- 12 v 240 rpm

**Pneumatic Valve:-**



Directional Control Valves (DCVs) are one of the most fundamental parts of hydraulic and pneumatic systems. DCVs allow fluid flow

(hydraulic oil, water or air) into different paths from one or more sources. DCVs will usually consist of a spool inside a cylinder which is mechanically or electrically actuated.

**Slider:-**



It give linear movement to discs of 20 cm

- Specification:-20cm× 4.5cm× 1cm
- Length:-20cm
- Width:-4.5cm
- Thickness:-1cm

**Lead Screw:-**



It provide path to rotating disc

- Specification:-Overall length:-45cm
- Acting Length:-35cm

**Hallow Ss Pipe For Dough:-**



It is stainless steel cylinder which is used in pressing operation of dough.

Specification:-

- Bore:-5cm
- Length:-50cm
- Die Diameter:-5.3cm

**Conclusion:-**

After completing the work, it is concluded that work is simple in construction and compact in size for use manufacturing of machine is easy and cost of the machine is less .This machine can fabricate with less production time with ease by mass or batch production. This work can be implemented in small scale industries

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