

# Design & Fabrication of Sugar Globules Making Machine

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**Abstract-**As progress of Medical Science increasing day by day likewise the side effect of allopathic medicines are also being seen in the world. Looking to the adverse effect of allopathic medicines population of this era is moving towards the Ayurveda & Homeopathic Medicines because it is well known that adverse effect of homeopathic & Ayurveda medicines are quite low. Homeopathic globules are commonly used in clinical practice, while research focuses on liquid potencies. Sequential dilution and succession in their production process has been proposed to change the physico-chemical properties of the solvent(s). Various machines have been used over the years to prepare homeopathic medicines. Although these machines follow the same principles, i.e. energetically mixing the medicines and diluting them significantly, their mode of operation is different from each other.

**Keywords-** Globules machine, sugar Globules making machine, pills making machine, pillow shape tablet making machine, Boilie making machine.

## I. INTRODUCTION

The project proposes to manufacture Sugar Globules which is an adjunct for taking Homeopathic medicines. It is based on the principle that "like cures like". In simple words, it means that any substance, which can produce symptoms in a healthy person, can cure similar symptoms in a person who is sick.

## II. HISTORY

Homeopathy is a medical science developed by Dr. Samuel Hahnemann (1755-1843), a German physician. sugar globules is also increasing because Homeopathic medicines can only be taken with sugar globules or water due to sweet in nature and easy solubility in mouth. Sugar globules are mainly being used by homeopathic doctors. Hence, we can say that industry of Sugar Globules have bright future.

In manufacturing of sugar globules basic raw material is sugar which is easily available in each and every part of the country beside this sugar globules have good absorption power than other globules and easily absorbs the homeopathic drug without any change in composition and property.

## III. OBJECTIVE

- The main objective of this project is to manufacturing and fabrication of manually operate sugar globules

making machine which can be apply at small industries, laboratories.

- To modify a machine this will produce less noise, vibrations and to reduce time consumption for Sugar Globules Machine operation by modifying u grooved shape roller design.
- To avail the opportunity to produce globules in small scale industries.
- To make process simple and effective.
- To avail the benefits of homeopathic treatment to rugged terrain.

## IV. DIAGRAM

Figure shows complete set up of sugar Globules Making Machine. Complete set up consist 2 equipment Dough gun and Boilie making machine.

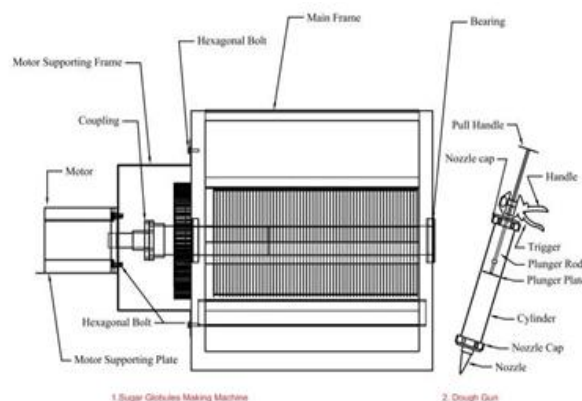


Fig 1. Complete setup of Boilie Making Machine.

## V. PARTS SPECIFICATION

### 1. Globules Forming Machine:

- 1.1 Nylon Roller:** The nylon rod is consist of 7.5cm & length=30cm and it's a solid combination of Nylon is a thermoplastic silky material generally made from petroleum that can be melt-processed into fibres, films, or shapes Nylon polymers can be mixed with a wide variety of additives to achieve many different property variations. Nylon polymers have found significant commercial applications in fabric and fibres (apparel, flooring and rubber reinforcement), in shapes (moulded parts for cars, electrical equipment, etc.), and in films (mostly for food packaging)
- 1.2 Roller Bearing:** An independent support for a bearing, usually incorporating a bearing housing. Dimensions: 14 x 3.8 x 3.65 cm; 600 Grams
- 1.3 Spur Gear:** Determine allowable force on gear teeth, including the factors necessary due to angle of involute of tooth shape and materials selected for gears. Design actual gear systems, including specifying materials, manufacturing accuracy, and other factors necessary for complete spur gear design. Prevent surface wear. Steel 50 Teeth Spur Gear, 50mm Pitch Diam., 14mm Hub Diam., 6mm Bore Dia.
- 1.4 Rigid Coupling:** A rigid coupling permits neither axial nor radial relative motion between the shafts of the driver and driven unit. When the two shafts are connected solidly and properly, they operate as a single shaft. A rigid coupling is primarily used for vertical applications 3 inch Length, 5/16-18 x 1/2
- 1.5 AC Motor:** An AC motor is an electric motor driven by an alternating current (AC). The AC motor commonly consists of two basic parts, an outside stator having coils supplied with alternating current to produce a rotating magnetic field, and an inside rotor attached to the output shaft producing a second rotating magnetic field. Holding Torque 8.5 Kg-cm, Nema 23, and Step Angle: 1.8 deg, Shaft: 15 mm.
- 1.6 Angle:** Iron MS iron angle is used to build up outer frame of our project which is dimension 25x25x5 mm
- 1.7 Motor:** Iron MS iron angle is used to build up outer frame of our project which is dimension 25x25x5 mm.
- 1.8 Motor Supporting Frame:** Iron MS plate with thickness t=5mm is bolted to the main frame by hexagonal bolt.
- 1.9 Motor supporting Plate:** Iron MS Plate thickness t= 3 mm, motor is fixed to motor supporting plate by hexagonal bolt.

### 2. Dough Gun:

- 2.1 Handle:** The handle adopts ergonomics design, which is more comfortable to use. It is to support the dough gun.

**Handle Length:** 10 cm Width: 2 cm

- 2.2 Trigger:** Press the trigger at the back of gun while moving the dough gun steadily one direction. Hold the

dough gun with to hands. One hand should be by the trigger. Use your second hand to the hold the end of the dough gun nozzle cap or cylinder, assisting your aim. Trigger will push some of the material out of nozzle. Once you push the trigger the aluminium plunger rod will push the material out of the nozzle. Press the trigger firmly and steadily. The material should be come out of the nozzle in a slow, controlled manner.

**Trigger Length:** 10 cm, Width: 2 cm

- 2.3 Dough gun cylinder:** Extruder cylinder in which sugar Dough is put. The cylinder is the space through which the plunger rod travels. Cylinder is made of the aluminium material and which is more rust proof and durable.

- **Cylinder Length:** 23cm
- **Cylinder Inner Diameter:** 5cm
- **Cylinder Outer Diameter:** 5.6 cm
- **Cylinder Thickness:** 3mm

- 2.4 Plunger Rod:** Plunger rod or Piston Exerts the pressure on the sugar dough with the help of plunger rod connected on it. The Compress load is passed through piston rod to piston and the on the dough Piston Rod .the plunger rod is made of the aluminium material. It must be rigid and able to support the forces associated with the process of delivering the material product. Once the material inserts in the cylinder and pushes the back of the plunger rod into the cylinder.

- **Plunger Rod Length:** 30 cm
- **Plunger rod diameter:** 7mm

- 2.5 Plunger Plate:** It is use to push out of material from nozzle.

- **Plunger Plate Diameter:** 5 cm
- **Plunger plate thickness:** 2mm

- 2.6 Nozzle Cap:** it is attach to the cylinder end of portion dough gun. It is made of plastic material.

- **Nozzle Cap Inner Diameter:** 6cm
- **Nozzle Cap Outer Diameter:** 6.5cm
- **Nozzle Cap Thickness:** 5mm

- 2.7 Nozzle:** It is plastic material, cone shape nozzle. It is used to come out of material. Dough is compressed in cylinder between plunger rod and nozzle. Nozzle is made of plastic in which on bottom side there are hole of 3 mm is provided.

- **Nozzle length:** 10.5 cm
- **Nozzle tip diameter:** 3mm

**2.8 Ladder:** It is made of aluminium material. The function of press the ladder and hold to pull out the hook to adjust.

## VI. EXPERIMENTAL SETUP

In dough gun the nozzle cap is with 5 mm nozzle inserted into the aluminium dough gun end cap, firmly screw the end caps on the filled dough gun. The nylon rod are fix with rod, the rod are placed in bearing in one side and other side the spur gear assembly are mounted to make a distance between the roller also its give motion to them. When the raw material pour on the roller there is gap between the two rollers which is 30mm gap.

When motor start the end rod of the roller rod are attached with them so both are rotating after the material are pour between the roller then the sharp edge of the nylon rod are try to cut the raw material in required shape. It's come out from bottom of the frame with small shapes of boilie.

## VII. WORKIG OF SUGAR GLOBULES MAKING MACHINE

- Plug the adaptor and ensure the motor and ON-OFF switch working properly.
- Assemble the all the part of dough gun with nozzle, piston, piston rod. Make sure the spring mechanism functions correctly.
- With 5 mm nozzle (red nozzle) insert into the aluminium dough gun end cap, firmly screw the end cap on the filled dough gun.
- Start forming the vermicelli manually applying pressing the trigger mechanism.
- Ensure bait catching tray is properly placed at the roller out flow.
- Start Boilie machine feed the vermicelli in to the Boilie machine over the rollers.
- As the Boilie falls into the catching tray, remove crushed material and small globules material at the end of the roller. Collect this material for re-extruding in the final dough gun of the lot.
- Place the catching tray after finishing process on drying racks for 5-6 hours I well-ventilated area.

## VIII. CONCLUSION

It is concluded that of work is simple in construction and common in size, power consumption is low as compared to the bigger machines used in the small and large scale industries. These machines can be fabricated had less production time with ease by mass or batch production. This work can be implemented in small scale industries.

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