

# Combined Roti Maker

**Aqsa Shaikh, Rashmi Rabha, Sanika Sapkale, Shiddhi Pakhare**

Department of Mechanical Engineering  
Guru Gobind Singh Polytechnic, Nashik, India

**Abstract:** *A combined roti maker is an innovative kitchen appliance designed to simplify the process of preparing traditional flatbreads like rotis and chapatis. This multi-functional device integrates various cooking techniques, allowing users to knead dough, roll it out, and cook the roti all in one machine. Typically featuring adjustable temperature controls and non-stick surfaces, it ensures evenly cooked, soft, and perfectly round rotis with minimal effort and time. The combined roti maker is especially useful for busy households, offering convenience, consistency, and ease of use, while reducing the time spent on manual preparation.*

**Keywords:** roti maker

## I. INTRODUCTION

A **combined roti maker** is a versatile kitchen appliance designed to simplify and speed up the process of making rotis, chapatis, or flatbreads. It integrates multiple functionalities, such as kneading dough, rolling it into perfect discs, and cooking the rotis, all in a single device. This eliminates the need for manual effort and multiple tools like rolling pins, boards, and traditional stoves. Ideal for modern households, it offers convenience, consistency, and time-saving benefits, making it especially appealing to busy individuals or those seeking uniform results with minimal effort.

Chapati also known as roti, safati, shabaati, phulka and roshi, is an unleavened flatbread originating from the Indian subcontinent and staple in India, Nepal, Bangladesh, Pakistan, Sri Lanka, East Africa and the Caribbean. Chapatis are made of whole wheat flour known as atta, mixed into dough with water, edible oil and optional salt in a mixing utensil called a parat, and is cooked on a tava (flat skillet). It is a common staple in the Indian subcontinent as well as amongst expatriates from the Indian subcontinent throughout the world. Chapatis were also introduced to other parts of the world by immigrants from the Indian subcontinent, particularly by Indian merchants to Central Asia, Southeast Asia, East Africa, and the Caribbean islands.

### Design

One of the key benefits of a combined roti maker is its versatility. It comes equipped with different settings and features that allow users to prepare various types of flatbreads with ease.

Most models feature a non-stick cooking surface, ensuring that rotis don't stick and come out perfectly cooked. Some also include adjustable temperature controls, enabling users to customize the cooking process according to the type of flatbread being made. The ability to control heat and time ensures that each roti is cooked to perfection, with the desired level of crispness or softness.

### Cooking

Chapatis are made using a soft dough comprising wheat flour, salt and water. It is more finely ground than most western-style whole wheat flours. Traditionally, roti (and rice) are prepared without salt to provide a bland background for spiced dishes. Chapati dough is typically prepared with flour, salt and water, kneaded with the knuckles of the hand made into a fist and left to proof for at least 10 or 15 minutes to an hour for the gluten in the dough to develop. After proofing, the dough becomes softer and more pliable. Small portions of the dough are pinched off and formed into round balls that are pressed between the two palms to form discs which are then dipped into flour and rolled out on a circular rolling board (a chakla), using a rolling pin known as a velan or belan, into a flat disc. There are also automatic roti makers which automate the whole process

### Health Benefits

In today's fast-paced world, time is a precious commodity, and cooking can often feel like a chore. However, with the advent of combined roti makers, preparing delicious and authentic flatbreads has become a breeze. These versatile appliances offer a plethora of advantages that make them an indispensable addition to any kitchen.

A combined roti maker provides a convenient and efficient way to prepare a variety of flatbreads, from traditional rotis to parathas, naan, and tortillas. The convenience factor is unparalleled, allowing users to whip up fresh flatbreads in a matter of minutes, eliminating the need for separate appliances for kneading, rolling, and cooking.

A plain roti is an excellent source of soluble fibre, which helps lower blood cholesterol levels, prevents constipation and helps keep our digestive system healthy. Loaded with complex carbohydrates that give you sustained energy and it can keep you satiated for hours. Other benefits of chapatis are as follow:

1. Enriched with nutrients.
2. Good for skin.
3. Power packed with energy
4. It prevent diseases.
5. Maintain haemoglobin level.

### Description and Analysis

Machinery for Chapati includes the following Dough Mixer Main Chapati making machine Chapati making machine is mainly used to produce final eatable chapati from the dough prepared in the dough mixer. With the help of this machine the work of Rolling, heating completes in a very short span.

Chapati, a traditional staple food of Indians, is unleavened flat bread made from whole wheat flour. With rapidly changing lifestyles, changing socio-economic trends and increasing urbanization and consumerism there is a rising demand for convenience foods which require minimum or no preparation time particularly the ready-to-eat, because of all these reasons machines for chapatti has been evolved, which make it easy to prepare chapatti. In India Around 70% of population eat chapati on daily basis in every meal. Manufacturers are introducing different types of machinery in different sizes and ranges, targeting consumers from low-income groups, so that chapatti can be prepare easily.

### Chapati Making Manufacturing Process

- Firstly, pour the Flour and water in proportionate ratio into the dough mixer.
- After that start the mixer so that dough can be prepare properly.
- Then put the dough into the Chapati machine for rolling of chapatti.
- After that rolled chapati is moved towards heater/flat Tava, which heat the chapati to make a final product.

Machinery & Equipment's required: Name Cost Dough Mixer 30000 Chapati Machine 300000

Total 3,00,000

Cost of the machine is exclusive of GST & value of the machine varies with the change in batch size.

Land & Building required:

Land required 500 Square Feet (approx.) Approximate rent for the same is 10000.

Labour Requirement: 2-3 Manpower is required for the chapatti machine. Includes: 1 skilled Labour 1-2 Unskilled Labour

Raw Material Requirement of chapati □ Flour □ Water □ Salt (if required)

Average raw material cost per KG: Rs. 25-30

Chapati Unit License & registration For Proprietor:

- Obtain the GST registration.
- FSSAI License.
- Fire/ Pollution Registration as required

Choice of a Brand Name of the product and secure the name with Trademark if required. Implementation Schedule  
S.N. Activity Time Required (in Months) 1 Acquisition Of premises 1  
2 Construction (if Applicable) 1- 2 Months 3 Procurement & installation of Plant & Machinery 1 4 Arrangement of Finance 1 5 Requirement of required Manpower 1 Total time Required (some activities shall run concurrently) 2-3 Months.

### **Intuitive controls and settings**

Combined roti makers are designed with user- friendliness in mind. The controls are typically intuitive and easy to understand, making the operation simple and hassle-free. Most models feature a clear display that indicates the selected settings, such as temperature, timer, and cooking mode.

Some models also offer preset functions for specific types of flatbreads, allowing users to cook their favorite rotis with just a press of a button. The ease of use makes combined roti makers an ideal choice for both seasoned cooks and beginners alike.

### **Easy cleanup and maintenance**

A combined roti maker is designed to be easy to clean and maintain. Most models feature removable non-stick plates that can be easily wiped clean with a damp cloth. The appliance itself is typically made of materials that are resistant to rust and corrosion, ensuring that it remains in good condition for years to come.

The ease of cleaning and maintenance is an important factor for many home cooks. Combined roti makers minimize the time and effort required to keep the appliance clean and functional, making them a practical choice for busy kitchens.

### **Compact and space saving**

Combined roti makers are typically compact and space-saving, making them ideal for smaller kitchens. The appliance is designed to fit comfortably on a countertop, taking up minimal space.

This compact size is an advantage for kitchens that are short on storage space. The combined roti maker eliminates the need for separate appliances for kneading, rolling, and cooking, freeing up valuable countertop space.

### **Durability and performance**

Combined roti makers are built with durability and long-lasting performance in mind. The appliances are typically made of high-quality materials and constructed with precision engineering, ensuring that they can withstand the rigors of daily use.

A combined roti maker is an investment that can provide years of reliable service. The durability and longevity of the appliance make it a cost- effective choice in the long run.

### **Troubleshooting**

Combined roti makers come in a variety of types, including electric, manual, and gas-powered models. Electric models are typically the most popular, offering convenience and ease of use. Manual models require a bit more effort, but can be a good option for those who prefer a more traditional approach. Gas-powered models are also available, offering quick and efficient cooking.

Most combined roti makers feature removable non- stick plates that can be easily cleaned with a damp cloth. The appliance itself can typically be wiped clean with a damp cloth or sponge. It's important to refer to the manufacturer's instructions for specific cleaning and maintenance recommendations.

If your combined roti maker is not heating up, check the power cord and ensure that it is properly plugged in. If the roti is not cooking evenly, try adjusting the temperature or cooking time. If the roti is sticking to the plate, make sure to apply a light coating of oil or butter before cooking. If you are experiencing any other issues, refer to the user manual for troubleshooting tips or contact the manufacturer for assistance.

### **Resources**

Material Resources (Physical Components)

**Copyright to IJARSCT**

**DOI: 10.48175/IJARSCT-24283**

**[www.ijarsct.co.in](http://www.ijarsct.co.in)**

Metal Plates & Body – Usually made of stainless steel or non-stick material.  
Heating Elements – Electric coils or infrared heating for cooking.  
Motor (if automated) – Used in pressing or rolling the dough.  
Sensors & Electronics – For temperature control and automation.

**Human Resources**

Designers & Engineers – For designing and improving the machine.  
Manufacturing Workers – For assembling the roti maker.  
Marketing & Sales Team – To promote and sell the product.

**Financial Resources**

Investment & Capital – Money for production, marketing, and sales.  
Raw Material Costs – Budget for metals, plastics, and electrical parts.

**Technological Resources**

Automation Technology – AI or smart sensors for automatic roti making.  
Software & Electronics – For temperature and pressure control.

**Energy Resources**

Electricity or Gas – Needed for heating and operation.  
Knowledge & Skill Resources  
User Guides & Instructions – Helps users operate the machine efficiently.  
Research & Development – To improve performance and efficiency.

**II. CONCLUSION**

The Combined Roti Maker is a modern innovation designed to simplify the process of making rotis by integrating multiple functions like kneading, rolling, and cooking into a single machine. It reduces manual effort, ensures consistency in size and thickness, and saves time, making it a valuable addition to households and commercial kitchens. With advancements in automation, heating technology, and user-friendly controls, this device enhances convenience and efficiency. However, factors like energy consumption, maintenance, and affordability should be considered for widespread adoption.

In the future, improvements in AI-driven automation, smart sensors, and eco-friendly materials could make combined roti makers even more efficient, sustainable, and accessible to a larger audience.