

## WOODEN TREADMILL

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### Abstract

The concept behind the project of “Wooden Treadmill” is to ensure fitness with no power consumption and less maintenance. Now a days, people are focusing more on fitness and health as hazardous diseases are spreading over. People started focusing on exercises and one of the equipment widely used for exercises is treadmill. As the cost is high, it is not affordable for common people. To reduce burden of cost, utilising wooden treadmill is highly benefited.

### 1. INTRODUCTION

Now-a-days, fitness plays a vital role in our day-to-day life. Today in a polluted environment and change in lifestyle it is very difficult to live healthy. In fact, regular physical activity can help to manage a wide range of health problems. Treadmill is one of the exercise machines in which someone walks or runs over a belt. Changes in environment and spread of hazardous diseases made people to focus on various fitness management activities. Exercises are one of these activities. The human efforts during exercise goes waste in conventional manual treadmill.

### 2. RELATED WORK

The purpose of a ball bearing is to reduce rotational friction and support radial and axial loads. It achieves this by using at

least two races to contain the balls and transmit the loads through the balls. In most applications, one race is stationary and the other is attached to the rotating assembly (e.g., a hub or shaft). As one of the bearing races rotates it causes the balls to rotate as well. Because the balls are rolling they have a much lower coefficient of friction than if two flat surfaces were sliding against each other. Ball bearings tend to have lower load capacity for their size than other kinds of rolling-element bearings due to the smaller contact area between the balls and races. However, they can tolerate some misalignment of the inner and outer races.

- Treadmills are widely used for fitness equipment that is generally found in gyms and seldom at home. Usually, treadmills are very costly in the range 15k-20k,

which cannot be affordable by common people.

- So, we came up with an innovation like man made wooden treadmill, which works without power and also ecofriendly to user.

### 3. IMPLEMENTATION

As people started to focus on fitness, different equipment's for exercise came into existence. One of the widely used equipment is treadmill, but as the cost is high, it is not being affordable by common people. To reduce the burden of cost, we came up with an idea of wooden treadmill, which is low cost and user-friendly. Wooden treadmill works on the principle of ball bearings. The purpose of a ball bearing is to reduce rotational friction and support radial and axial loads. It achieves this by using at least two races to contain the balls and transmit the loads through the balls.

#### Requirement Analysis

- Low Cost
- Less Maintenance
- Durable
- User Friendly
- Simple in Operation
- Comfortable in structure
- Portable

The principle behind "Wooden Treadmill" is ball bearings. The working principle of the wooden treadmill is based on the ball

bearings. The purpose of a ball bearing is to reduce rotational friction and support radial and axial loads. It achieves this by using at least two races to contain the balls and transmit the loads through the balls. In most applications, one race is stationary and the other is attached to the rotating assembly (e.g., a hub or shaft). As one of the bearing races rotates it causes the balls to rotate as well. Because the balls are rolling they have a much lower coefficient of friction than if two flat surfaces were sliding against each other.

Ball bearings tend to have lower load capacity for their size than other kinds of rolling-element bearings due to the smaller contact area between the balls and races. However, they can tolerate some misalignment of the inner and outer races.

The ball size increases as the series increases, for any given inner diameter or outer diameter (not both). The larger the ball the greater the load carrying capacity. Series 200 and 300 are the most common.

### 4. EXPERIMENTAL RESULTS

In this project, a wooden treadmill is designed which is used as fitness equipment.

As the electrical treadmill is very expensive, wooden treadmill comes into picture, as it is made of wood and runs without electricity, wooden treadmill is

cost friendly. Wooden treadmill runs with ball bearings. A person who stands on the treadmill runs on the walkable belt and due to ball bearings, the belt moves.



### Wooden treadmill

## 5. CONCLUSION

The purpose of a ball bearing is to reduce rotational friction and support radial and axial loads. It achieves this by using at least two races to contain the balls and transmit the loads through the balls. In most applications, one race is stationary and the other is attached to the rotating assembly (e.g., a hub or shaft). As one of the bearing races rotates it causes the balls to rotate as well. Because the balls are rolling they have a much lower coefficient of friction than if two flat surfaces were sliding against each other. Ball bearings tend to have lower load capacity for their size than other kinds of rolling-element bearings due to the smaller contact area between the balls and races. However, they can tolerate some misalignment of the inner and outer races.

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