



# Dual Pedaling Hi-Speed Full Body Fitness Cycle

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## Abstract:

This research work deals with the fabrication of dual pedaling hi-speed full body fitness cycle. This innovative idea is done in order to achieve full body workout while cycling outdoors. Here it addresses the needs of cyclists who need to get same workout for upper body as for their legs. It allows cyclists to propel themselves forward in upright position using either arms, legs or both by adding mechanical propulsion system to the front of Bicycle. It would help the fitness freaks and fat people to burn their calories in a faster rate than usual cycling process. This low cost cycle mainly concerns on the people who cannot afford as much money to keep their body fit. This cycle aids them to reduce their unnecessary fat and tightens their muscles and helps to save them from the deadly diseases like diabetes and other cardiovascular problems which would result in heart attack.

**Index Terms:** Dual pedaling, Full body Fitness, Hi-Speed.

## I. INTRODUCTION

The most enjoyable workout happens when it combines with adventure, you will feel it while on ride. In modern era, people are focused to keep their full body fit in various ways like yoga, meditation, in-house fitness workout, walking, jogging in outdoors. Some of them as their doctor's advice doing strange things to keep their body fit which are more expensive and poor people cannot afford for that. Nowadays people are more interested and keen in innovating vehicles and various kinds of machines to reach their destination in quicker time simultaneously deadly diseases and illness are also over whelming day by day. Census report says that about 80% of the people in this 21<sup>st</sup> century who crossed their age above 40 are surely having diabetes or other cardiovascular problems. Hence in order to overcome such uncertainties this hand and leg pedal powered bicycle helps to burn calories in a faster rate than normal traditional cycling manner. The design and construction of bicycles has remained largely unchanged over the course of the past century. Cyclists don't take enough advantage of the two wheels offered on a basic bicycle. In normal bicycling we can obtain workout only for our lower part of the body such as legs and thighs whereas in this dual pedaling cycle it provides a kind of motion throughout the body thus incorporates several exercises into a single workout by utilizing different muscle groups simultaneously. The exact number of calories burned during a normal bicycle ride can be difficult to gauge. On average, a 180 lb. cyclist riding at a moderate effort level will burn approximately 650 calories per hour. Comparing to this, dual pedaling hi-speed full body fitness cycle helps to achieve double the amount of calories burnt. Workout on this cycle is great for your cardiovascular system and for strengthening your lower body. Now reach the same kind of results with your upper body as well. It helps in building up the muscles present in triceps, chest, lats, biceps, shoulders and back. Doing in-house workout creates boredom and frustration. Dual pedaling cycle is the right fitness equipment to keep our body fit and healthy in enjoyable and adventurous manner since we are working out at

outdoors. In addition to fitness achievement, it also enhances the speed of the bicycle since there are two mechanical propulsion systems (i.e.) hand and leg pedaling. Compared with the average cycling speed, the rate of speed obtained in this cycle is considerably higher than that. The front handle bar includes an arm-crank coupled using a chain employed to power the front wheel. If you are the kind of person who likes working out outdoors, then this is the right product for you. Most enjoyable workout happens when it is combined with adventure. It's quite adventurous too to ride the bicycle in a different way apart from the usual way of riding it. Separate time allotted for exercise can be avoided when we use this cycles for reaching nearby destinations.

## II. DESCRIPTION ABOUT THIS INNOVATION

Here in this dual pedaling Bicycle front wheel is controlled by a rotating handle bar. Rotating member is being attached to the handle bar so that riders can pedal with either their arms or their legs or both simultaneously for add-on speed. An additional fixed handle bar is added to keep our hands being relaxed when only legs work for pedaling as such in usual bicycle and brakes are attached in this to control the speed of bicycle. A chest rest is placed in front of the rider to lean and keep away from the chain system. When we start our ride with this extraordinary bicycle using hand and leg pedaling will helps us to burn calories in huge volume than normal cycling work out. The mechanical propulsion is attached to the front wheel to propel ahead.



Figure.1. Photo View of Model

The front handle bar includes chain set which consists of sprocket chain link in inclined position with proper alignment to achieve proper forward motion. The handle bar can be freely rotated with hands around its axis to give required power to rotate the crank setup in the front position. Apart from the front portion's modification the rear remain as same as in traditional bicycle.



**Figure.2. Chest Rest Attachment**

### III. DISCUSSION ON EXPERIMENTAL MODEL AND RESULTS

The experimental set up includes the attachment of the front sprocket welded with the handle bar in the Centre position. The front wheel is replaced by the back wheel as it consist the small sprocket attached with the hub of the wheel.



**Figure.3. Sprocket Chain Setup**

The sprocket in the handle bar and the sprocket in the wheel should be properly aligned with high accuracy and chain link must be connected between the sprockets. If there is

misalignment in this set up run out of the chain from the sprocket occurs. Then the design of the handle bar must be mainly taken in consideration and proper care must be taken in fabrication processes. The fixed handle bar is then attached above the crank to hold and to attach the braking systems. Then the chest rest is welded to the handle bar, it is to lean and it helps to not getting back pain while riding the bicycle. Thus the final product is made as shown in the picture and it can be pedaled by both legs and hands.

### IV. CONCLUSION

This dual pedaling hi-speed full body fitness cycle thus can help people to burn their calories and helps them to be healthy and to live a long life. This cycle may create a huge impact in the fitness field. This cycle also concerns to be cost efficient because gym fitness equipment's costs about 1 lakh and this cycle aids every individual people to keep themselves fit and mainly also to save fuel for our future generation.

### V. SCOPE OF FUTURE WORK

We also hold the idea of further improving the project by

- To fix gear system with reverse pedaling for both the wheel to made our trip thrill and adventure.
- To fix spring setup in chest supporting pad for ideal and safe ride.
- To fix disk brakes on both wheels for safety and to have a confident in reaching destination in high speed.

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