

Emergency Drive for Two Wheelers

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Abstract

It is absolutely not safe to drive in a punctured tire as there are chances of losing the control over a vehicle. Keep running with puncture will definitely destroy the tire that cannot be fixed any sooner. Until you keep your vehicle on a leveled surface you are safe. Driving vehicle on an unlevelled surface can immediately destroy your tire. Straight driving is safe with a punctured tire as turning and twisting your tire needs more pressure and struggle. If the air leaks slowly due to puncture (front or rear) the scooter will start to wobble and you can come to safe halt but if the air leaks instantly because of tube or tyre (in case of tubeless tyre) bursting you are most likely to fall and if its front tyre then it would be dangerous because the steering may turn to any side before you know anything. Keeping in mind the above difficulty faced by the rider during the vehicle's tyre been punctured and inability to handle the situation safely, a portable emergency drive for two wheelers will be fabricated as accessory, that can help the person to slowly run the vehicle safely to a destination, were it can get repaired without any damage to the tyre/s.

Keywords: Struggle, Tyre, Safety, Punctured, Emergency.

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1. INTRODUCTION

From the past till now, we have seen a tremendous amount of growth in the sales of two wheelers in many of the developing and under developed country, as it has become the basic means of transportation for large population [1]. The increase in the vehicle sales has resulted in lot of trouble's in the road and sometimes it has it has cost many life's or in property damage. This observation has been made through various survey that reveals that, most of accidents are due to two wheelers on the road and rash driving behavior of the person [2]. Every day, we hear about an accident involving a motorcycle or a scooter, be it in a newspaper or the television. This is evident by the fact that how common accidents pertaining to a motorcycle have become. Considering this, it is crucial that you leave no stone unturned in the safety department [3]. Entering a corner too fast - This happens a lot to many of us. Even to the most experienced of the riders! The first and the most important thing to do, as with many worst-case scenarios, are not panic! The best strategy to employ in this situation is – balance and ride it out. In simple words, think on your feet and ensure minimum risk. Do not hit the brakes too hard that might result in slipping [4, 5]. We can note here that, the health of the tires are very important for the vehicles as they be the integral

part of driving a vehicle, but can go to extreme levels of incidents if it is ignored, causing loss of control over the vehicle leading to injuries and vehicle damage [6]. The modern day world looks for safe transportation system which always tries to eliminate the accidents caused due to vehicles on the roads and also due to the poor maintenance of the road and the vehicle [7, 14]. Though the vehicles capacity is anticipated to be resistant to the damages to due the accidents, the understanding on the failure that causes the for vehicle breakage many be intense [8, 9].

2. PROBLEM FORMULATION

Driving seems to be very joyful for the people, but this can happen only when proper understanding of the vehicle and rules & traffic regulations if known only. The construction of and maintenance of the road also matters in this regard. But when it comes to vehicle safety, it the prime importance to have an accessory or attachment to help us in emergency conditions like tire puncture or tire failure, so an emergency drive unit may help us in solving the such problems, an attempt has been made to study such issues and we have tried to provide an appropriate solution for the same through designing an emergency drive unit for two wheelers to help the people in such situations [10-12, 15].

3. PROJECT OBJECTIVES

The following are the project objects framed keeping in mind the emergency drive as a safety unit.

- Fabrication of emergency drive for two wheelers.
- To study the emergency drive system’s capabilities in different conditions.
- To evaluate the emergency drive system’s reliability.

4. METHODOLOGY

- Review of literature

- Collection of existing data: Relevant reports and publications will be utilized for the purpose.
- Material Procurement: Materials for fabrication from selected agencies ensuring quality.
- Fabrication Work: By adopting proper manufacturing processes, the fabrication will be carried out.
- Testing Work: capability of the emergency drive will be tested in different conditions.

5. Design of the Emergency Drive System

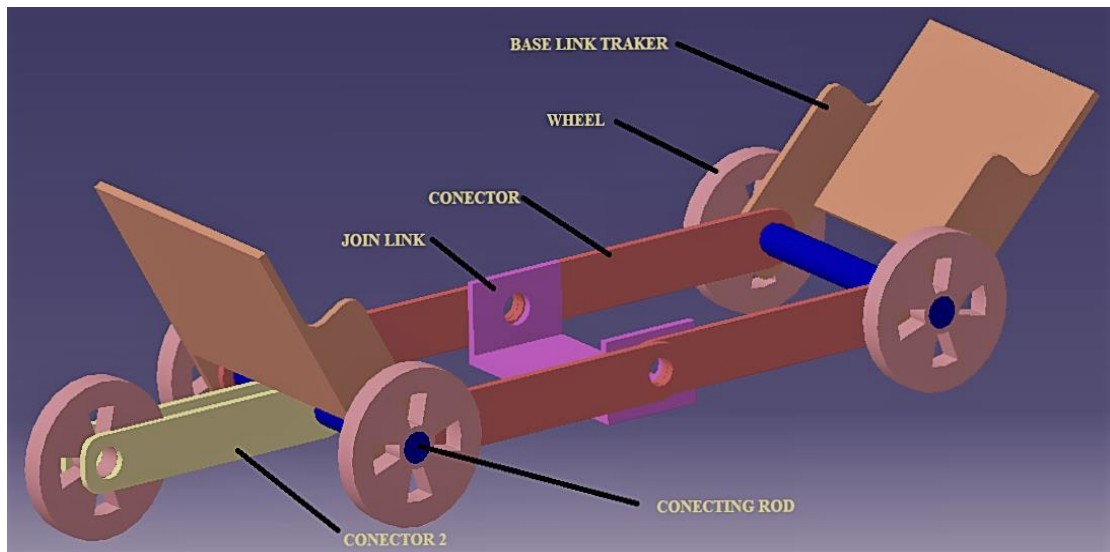
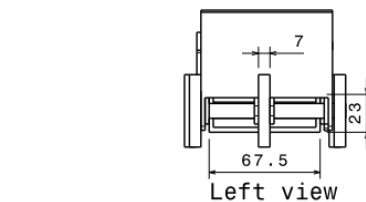
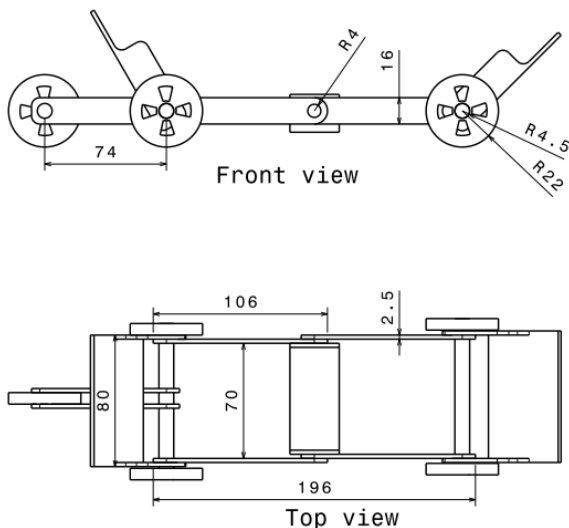


Fig 1: 3D Modeling of Emergency Drive System



Quantity	Part Number	Type	Nomenclature	Revision
4	CONNECTOR	CATPart	-	-
2	BASE LINK TRACKER	CATPart	-	-
2	ROD	CATPart	-	-
5	WHEEL	CATPart	-	-
2	CONECTOR 2	CATPart	-	-
1	JOINTER	CATPart	-	-

Fig 2: Orthographic Views of Emergency Drive System

6. Working of Emergency Drive System

From the Figure 1 & 2, working of the drive system can be understood, whenever there is flat tyre emergency; we can mount the flat tyre on the space provided on emergency drive [16].

- Use on front wheel, we can ride our vehicle to nearest two-wheeler service station.
- But we need to make sure we ride slowly less than 10 km to avoid accidents.

- Better road condition is expected to avoid accidents.
- Use it on rear wheel, we can't ride vehicle but we can push it easily to nearest service station which is easier than pushing a flat tyre.
- When both front and back wheels are mounted on emergency drive, both wheels are no longer in contact with surface so we won't be able to apply brakes due to that we need to make sure to push slowly and carefully.

CONCLUSION

By involving the safety of two-wheelers at certain conditions and environment's. The emergency drive was created, that can provide the following benefits.

- User friendly emergency drive system for two wheelers
- Avoid any damage to tire
- Help's the rider to safely ride his vehicle to reach nearest service station.
- The emergency drive may also avoid any accidents while riding the vehicle.

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