

Development of Automatic Hand Brake Release System

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Abstract:- By observing the society in many fields we come upon a conclusion that there is a need of automation required in every field during our study as the world moves on faster rate, So we have decided to work on Automatic Handbrake release system as our final year's major project. We removed totally handbrake from car and automated handbrake through ignition switch and seat belt locking system.

Keywords:- Ignition switch, Seat belt lock, 12v DC battery, 12v dc geared motor, universal circuit, robotic wheel and motor driver.

I. INTRODUCTION

The handbrake is used to keep the car stationary on hills or slopes or in parking areas. In conventional handbrake system the chances of accident is more because of negligence care of driver. Sometimes driver forget to pull the lever of handbrake and also sometimes children who behave mischievously make the lever of handbrake down which increases the chances of accidents, so in our project we introduced a new concept in which we have removed manual handbrake system totally and automated the handbrake through ignition switch and seat belt locking system. Without making ignition switch on or without locking the seat belt we cannot move our vehicle because the wheel of the car is locked.

II. CONSTRUCTION & WORKING

Working of the automatic hand brake release system is that in our idea of development of this project we introduce a new concept which without using seat belt we can not move our vehicle. So here if switch is off and seat belt is unlock the braking system is activate to make this project we need first a energy source which is 12V battery and a key switch and a seat belt locking switch, universal circuit, motor driver, 12v DC geared motor, a wheel and 2 wooden rip for provide friction. Now as we on power switch in car it is automatic from battery but here we on the power switch and now we on key switch or ignition switch as well we lock seat belt this two input comes in universal circuit where a microcontroller accept this input and display the instruction on LCD display here voltage regulator also use because microcontroller and display needs only 5v current and motor driver and motor need 12 volt so this voltage regulator supply current according their need now the motor driver [4.]

works on output which is based on AND GATE if one of the switch is of motor driver will not give any instruction to motor and the break is applied but if both switch is on one is ignition switch and on other one is seat belt then the motor driver send the instruction to motor and the brake is released.

• Advantages-

- Reduces accident chances
- Easy maintenance
- Ensure safety of both car and driver
- Easy operation
- Can be used in very compact places

III. FUTURE SCOPE

The most important thing on the earth is living things so we should be careful about our movement which affects other living or non-living things directly or indirectly. So here in our project we have automated handbrake which is very useful in future because everything in future will be automated. So automobile industries take a great advantage of this concept because it is much more secure than manual handbrake system.

IV. CONCLUSION

The automatic hand brake release system i.e. mechanical device brake facilitate with automatic brake application supported engine ignition condition and seat belt locking system. This may reduce human efforts and human errors whereas parking or beginning the vehicle. This technique has complete automatic operation for straightforward drivability and safety This braking system give more security because many people not using seat belt while driving but in our case if driver not using properly seat belt he can not move his vehicle so if everyone use seatbelt there we can save many lives during accident so seat belt is necessary for everyone and this our main motive to add this idea in our project.

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