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Dated : 11-Oct-2019

Particulars	Amount
Account : Seminar Exps - Mech	1,000.00
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On Account of : paid to shri. A.D Kachare an account of seminar mechanical depts vide enclosed bills.	
Amount (in words) : Indian Rupees One Thousand Only	
	₹ 1,000.00

Indian Rupees One Thousand Only

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PRINCIPAL
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College of Engineering
Ahmednagar



Amit Kachare <kachareamit977@gmail.com>

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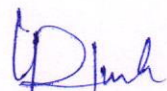
Order Amount	Rs 1000.00
Payment ID	277384216
Merchant Order ID	d0437cb25d24fb8a0aeb
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DESIGN OF SAFETY REAR IMPACT GUARD FOR HEAVY DUTY VEHICLE

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Abstract- This paper is about design and fabrication of rear safety impact guard for heavy duty vehicle. Nowadays the problem of accident is a very acute in highway transportation. Traffic accident leads to loss of life and property. We cannot avoid accidents completely but impact of accident can be reduced by applying safety measures and safety instrument. Safety impact guard is one of the safety instruments which can reduce collision impact at rear end collision when accident occurs. Also provide safety against under ride crashes which causes due to passenger vehicle collides with the truck or trailer. Proposed design of safety impact guard includes crushing element as force destroying material. Another aim of this paper is to reduce the height of safety impact guard from ground so that the truck under ride crashes should be avoided. We can save the life and prevent the loss of property. The objective of this entire paper would be of possible design of rear impact guard which provides safety against rear end collision. Also in proposed design of safety impact guard the pressure relief valve is introduced which act as force absorbing element. When rear end collision occurs then the force or energy or impact is absorbed due to action of PRV.

Keywords- Accident; Safety Guard; Rear End; Collision; Damper; Impact

1. INTRODUCTION

Now a day with increasing population number of vehicle owners are also increasing which causes large number of vehicles on the roads. Hence flow pattern of vehicular traffic, presence of mixed traffic along with pedestrians leads to number of serious accidents. At present many safety measures are available which can reduce accidents. The Statistical analysis of accident is carried out periodically at critical locations or road stretches which will help to arrive at suitable measures to effectively decrease accident rates. According to ministry of road transport and highways transport research the increase in rate of accident from year 2005 to year 2009 is shown in the table 1. In year 2009, 14 accidents occurred per hour in India. As accidents cannot be avoided completely therefore many research is going on to reduce the impact of collision when accident occurs. This study work consist design of such safety instrument which can reduce the impact or force when rear end collision occurs known as safety impact guard. When a passenger vehicle collides with a large truck or trailer rig, this mismatch is further aggravated when the passenger vehicle continues beneath the rear or side of the trailer truck. These are called truck under ride crashes and often decapitate the upper half of the passenger vehicle and its occupants.

Table 1. Number of Accidents and Number of Persons Involved: 2001 To 2009[1]

Year	No. of Accident		No. of Persons Affected		Accident severity
	Total Accident	Fatal Accident	Persons Killed	Persons Injured	(No. of persons Killed per 100 accidents)
2005	4,39,255	83,491	94,968	4,65,282	22
2006	4,60,920	93,917	1,05,749	4,96,481	23
2007	4,79,216	1,01,161	1,14,444	5,13,340	24
2008	4,84,704	1,06,591	1,19,860	5,23,193	25
2009	4,86,384	1,10,993	1,25,945	5,15,458	25.8



[Signature]
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