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this project, research the Absorbing Shock of simulation velocity impact



DESIGN OF A SHOCK ABSORBER OF AN AUTOMOBILE

PROBLEM DEFINITION

The aim of this Project is to decrease the weight of the shock absorbing component without any decrease in the strength.

Full scale frontal crash of an automobile was conducted in order to investigate low velocity impact characteristics of a shock absorbing component. According to test results the optimum design is found to be fourth design shown in the table below. Consequently, the fourth design resulted in a decrease in the weight of the component whereas the energy absorbed by the component is increased.



Figure. Energy B

	Baseline Design	First Design	Second Design	Third Design	Fourth Design	Fifth Design
Absorber Mass [g]	854,21	776,55	658,15	598,32	717,99	626,21
% Mass Change	-	-9,09	-22,95	-29,96	-15,95	-26,69
Absorbed Energy [Joule]	85,57	83,33	85,79	83,22	86,09	85,88
%Energy Change	-	-2,62	0,25	-2,75	0,62	0,36
Max Stress [MPa]	75,59	76,63	77,23	79,00	74,38	79,37
%Max Stress Change	-	1,35	2,12	4,31	-1,64	4,76
Max Strain [mm]	0,29	0,32	0,32	0,35	0,27	0,38
%Max Strain Change	-	7,82	9,06	17,28	-7,78	23,16







CONCLUSION

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alance Graph	for Low-Speed (Crash Simulation