

IMPROVEMENT OF LEAF SPRING SUSPENSION SYSTEM
INSTRUCTIONAL MODEL

Design Project

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ABSTRACT

BATUTAY, PEEJAY P. and LATOZA, RADNEY LI D. Improvement of Leaf Spring Suspension System Instructional Model. Undergraduate Design Project. Bachelor of Industrial Technology, major in Automotive Technology. Cavite State University, Indang, Cavite. June 2018. Adviser: Mr. Danielito R. Escaño.

Leaf spring was a suspension system for vehicles that has been used as far back as medieval times. The overall function of a leaf spring was to provide support and absorb shock for a vehicle. Its system has been proven to be true and primarily used on almost all vehicles up to this present time on trucks and vans that haul heavy loads.

The study aimed to produce an instructional model for the instructors and the students to lessen the difficulty of learning about leaf spring suspension system of a model car within an easier approach. The design project aimed to make a better and accessible understanding in the familiarization of the parts, function, and components of a leaf spring suspension system.

The authors canvassed the prices of the materials in different places to ensure quality and efficient budgeting. The materials and parts were purchased according to price, quality and importance. The parts were primed before painting especially the surface that are exposed to heat or moisture. The author assembled the individual parts of the leaf spring by installing it to the instructional model. The authors used hand brush painting and spray painting methods to paint the individual parts of the whole system.

The leaf spring suspension system of 1980 Toyota Corolla was used in the design project to support the suspension of the vehicle. The size of the chassis in which the suspension system was attached is 11'6.88" x 4'6.75". Color codes were set by the

authors for easier familiarization of parts and components. The chassis was painted with orange acrylic paint, leaf springs were painted light sky blue, and rebound clips were yellow. U-bolt was painted red while the shackles were painted blue. Also, the shock absorbers were painted white. The authors used bright colors to give emphasis and for the parts to be easily seen because it may give difficulty for the students to look for the small parts if the authors used dark colors.

The study was proven and tested by the evaluators, students and instructors, that it is efficient and useful for its functionality. The statement was based on the result of the evaluation which got a grand mean of 4.46 which is interpreted as outstanding. This means that the design project was really useful and has met all the objectives.

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INTRODUCTION

Leaf spring is a suspension system for vehicles that has been used as far back as medieval times. They were originally called carriage or laminated springs. Its system has been proven to be true and primarily used on almost all vehicles up to this present time on trucks and vans that haul heavy loads. Everything tends to get saggy with old age; some things need repairs while others need replacement. Leaf spring suspension, fortunately, can be repaired rather than replaced. This common type of suspension was often seen under various types of vehicles with straight- or live-axle rear ends.

The leaf spring is made up of an arc-shape, slender piece of steel that was stacked with the same material in smaller sizes and bolted together creating a reinforced bow-like item. It was then attached to the rear axle and the chassis providing support to any additional weight that was added to a vehicle, preventing the axle from buckling in and