

**DEVELOPMENT OF A HYDRAULIC PRESS WITH DRILL PRESS  
MACHINE FOR AUTOMOTIVE SHOP EQUIPMENT**

**Design Project**

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**DEVELOPMENT OF A HYDRAULIC PRESS WITH DRILL PRESS MACHINE  
FOR AUTOMOTIVE SHOP EQUIPMENT**

An Undergraduate Design Project  
Submitted to the Faculty of the  
College of Engineering and Information Technology  
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of the requirements for the degree  
Bachelor of Industrial Technology  
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*Development of hydraulic press with drill  
press machine for automotive shop  
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## **ABSTRACT**

**ARELLANO, ANTHONY J. and WILLIAM CHARLIE. Development of A Hydraulic Press with Drill Press Machine for Automotive Shop Equipment in the Cavite State University.** Undergraduate Design Project. Bachelor of Industrial Technology, major in Automotive Technology. Cavite State University, Indang, Cavite. May 2017. Adviser: Prof. Keno S. Domingo.

This study was conducted to develop and to promote a good instructional mock-up in the Automotive laboratory for students in the university. The hydraulic press with drill Press machine for automotive shop equipment was tested and evaluated in terms of functionality, workability, durability and safety.

The designed project composed of steel plates, angular bars, telescopic jack, with coiled spring, round bars, ram, pulleys, gears and drill press machine were all on a single constructed framework. The telescopic jack was operated using its lever to drive the steel plate down to press automotive parts and the coil spring acting as a return mechanism. The Drill press situated on the right of the framework for drilling automotive parts. This study aimed to design and develop a prototype that will help students to perform their laboratory activities specifically in fabricating and replacement of light weight vehicle auto parts. These activities included drilling various materials for mounting.

Thorough testing was conducted before it was subjected to final evaluation. The hydraulic press was tested using left rear axle shaft to remove the bearing and replaced it back. The drill press was tested with various automotive students' activities.

The study met all the objectives and certified that it was done well. However, there were some recommendations to further enhance and improve the project.

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# **DEVELOPMENT OF A HYDRAULIC PRESS WITH DRILL PRESS MACHINE FOR AUTOMOTIVE SHOP EQUIPMENT**

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## **INTRODUCTION**

The automotive industry is a wide range of companies and organizations involved in the design, manufacturing, marketing, and selling of motor vehicles. Automotive jobs require the use of powerful force to exert in assembling and disassembling parts that is press fitted together.

A hydraulic press is a device using a hydraulic cylinder to generate a compressive force. It uses the hydraulic equivalent of a mechanical lever and was also known as Bramah press (Wikipedia Foundation, 2009).

A drill press is a vertical drilling machine powered by an electric motor which is composed of a base that supports a column; the column in turn supports a table. Work can be supported on the table with a vise clamps. Height of the table can be adjusted with a table lift crank than locked in place with a table lock. The column also supports a head containing a motor. The motor turns the spindle at a speed controlled by a variable speed