

UNIVERSITI TEKNOLOGI MARA

**SCROLL SAW
MACHINE**

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ABSTRACT

A scroll saw is a power tool used to make intricate cuts and curves in wood, metal, or other materials. It consists of a small, narrow blade that moves up and down rapidly in a reciprocating motion. The blade is attached to an arm that is connected to a motor, which drives the movement. The scroll saw machine typically features a flat work surface, often referred to as a table, where the material to be cut is placed. The blade can be adjusted in terms of speed and tension, allowing for versatility in cutting different materials and achieving different cutting effects. Some scroll saw machines also come with additional features such as dust blowers or vacuum attachments to remove debris and improve visibility during cutting. There may be adjustments for angle or bevel cuts, as well as blade clamps that facilitate easy blade changes. It's important to note that the specific design, features, and functionality of scroll saw machines can vary between different manufacturers and models. To obtain detailed information about a specific scroll saw machine or its abstract, I recommend referring to the product literature, manufacturer's website, or relevant patents and publications in the field.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

A cutting machine is a mechanical device that is designed to cut or slice materials into different shapes and sizes. Cutting machines can be operated manually or automatically and are commonly used in manufacturing, fabrication, and crafting industries. They can be used to cut a wide range of materials including metal, wood, plastic, paper, fabric, and foam. Some common types of cutting machines include saws, shears, lasers, plasma cutters, waterjets, and routers. The selection of a cutting machine depends on the type of material being cut, the desired shape and size of the final product, and the required level of precision and accuracy. One of the cutting machines is scroll saw machine.

A scroll saw machine is a useful tool for making intricate and detailed cuts in a variety of materials. However, like any machine, it can experience issues that can hinder its performance and affect the quality of the work produced. One common issue with a scroll saw machine is blade breakage, which can be caused by incorrect tension or encountering knots or hard spots in the wood. Blade drift is another issue that can occur, causing the blade to move in a direction other than intended. Excessive vibration is another issue that can affect the precision of cuts and make it uncomfortable to use the machine. Additionally, dust collection can be a problem as sawdust and debris can quickly accumulate around the saw, making it difficult to see the cutting line and causing the blade to slow down. Threading the blade can also be difficult for beginners. Proper maintenance and following the manufacturer's instructions for tensioning the blade and setting up the saw can help to prevent these issues. Consulting a professional can be helpful if the issues persist.

To avoid issues with a scroll saw machine, using the correct blade is important because different materials require different blades. Blades with fewer teeth per inch are better for thicker materials, while blades with more teeth per inch are better for thinner materials. Using the wrong blade can cause blade breakage or drift, which can