DESIGN AND DEVELOPMENT OF A PNEUMATIC-BASED ALUMINUM CANS CRUSHER

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ABSTRACT

In efforts to support waste management and promote efficient recycling practices, an effective tool for processing used aluminum cans is required. This tool utilizes both semi-automatic and manual systems, with the primary drive being a double-acting pneumatic cylinder. The operational system of this tool is such that when a proximity sensor detects a can, the cylinder will activate, and the crushed can will fall into a collection area or onto the floor. Testing of the proximity sensor on the can crusher shows that the sensor detects cans at a distance of 1 cm, with the cylinder advancing for 1 second and then retracting for 1 second to compress a single can. The can crushing process requires an air pressure of 10 bar to achieve maximum compression. The can crusher can produce up to 30 compressed cans per minute.

Keywords: crusher, STM32F103C8T6, pneumatic, cans.