

# DESIGN OF A PNEUMATIC BIPED MECHANISM

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## ABSTRACT

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The objective of the project is to design an automated pneumatic mechanical robot with two feet (biped) that is able to achieve a unidirectional movement. The project utilizes electromechanical technology to produce the desired outcome which is a pneumatic automated robot. This project involves the application of mechanical, pneumatics and electrical studies. The biped has a minimum of four joints and uses a total of four pneumatic actuators (cylinder type) to achieve this unidirectional movement. Relay and sensors are used to synchronize the sequences of the pneumatic cylinders. As a result of the project, it is concluded that the biped mechanism cannot mimic human walking motion with only two pneumatic actuators. In the final output, the biped mechanism was able to produce a human-like walking motion with a total of four pneumatic actuators. However, the biped can be further improvised by adding more pneumatic actuators, machining structural parts identically and designing a counter weigh pendulum for upper body.