

Robot Arm as Object Selector

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ABSTRACT

The use of robotic arms in the industrial era 4.0 is a necessity in supporting industrial automation. The design of the robot arm is intended as a selector of metal objects and non-metal objects. This design aims to: (a) Design a robotic arm that functions as a mover for metal and non-metal objects; (b) implementation of robotic arm hardware; (c) robotic arm performance test. The Continuous Improvement Cycle development model is used as the basis for developing the robot arm design. The object of this design is a mechanical robotic arm that can sort metal objects and non-metallic objects. The research results obtained are: (a) mechanical design of the robot which has four degrees of freedom (4-DoF), the angle of freedom consisting of 3 brushed DC motors of power window type and servo motors of MG995 type; (b) Robotic arm movement using CodeVision AVR and Xloder software; (c) the performance test of the robotic arm for sorting metal and non-metal objects has significant success, and the test of the movement of the robot arm for placing objects in a predetermined place has very significant success.

Kata Kunci: robotic arm, sorting metal and non-metal objects, robot performance test, continuous improvement cycle