

Automated Marker Filling System

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Abstract : Marker pens are widely used all over the world, mainly in educational institutions due to their neat, accurate and easily erasable nature. But refilling the ink in these pens is a tedious and time consuming job. Besides, it requires careful handling of the pens and ink bottle. A fully automated marker filling system is a solution developed to overcome this problem. The system comprises of pneumatics and electronics modules as well as PLC control. The system design is done in such a way that the empty markers are dumped in a marker container which then sent through different modules of the system in order to refill it automatically. The filled markers are then collected in a marker container. Refilling of ink takes place in different stages inside the system. An ink detecting system detects the colour of the marker which is to be filled and then refilling is done. The processes like capping and uncapping of the cap as well as screwing and unscrewing of the tip are done with the help of robotic arm and gripper. We make use of pneumatics in this system in order to get the precision while performing the capping, screwing, and refilling operations. Thus with the help of this system we can achieve cleanliness, accuracy, effective and time saving in the process of filling a marker.

Keywords : automated system, market filling, information technology, control and automation

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