

Controlling 4 Axis Delta Robot Using Mapp Technology & Developing HMI

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Abstract: *The project is an overview of robotics, its brief history, in which we come to know that how it was initialized and who are the pioneers of robotics. Further, on which basis they are classified and at the end of this chapter there are some implemented and future applications of robotics all around the world. Literature review is in and it is about the mechanics and motions of robotics further, there are brief theories on positioning, orientation, degree of freedom and geometry involved in robotics. At the end of this chapter servo motors are discussed in greater depth. Research methodologies are placed. design and material selection are the main concern of mechanical design of robotic arm and what sort of hardware selection is carried out which suites best the servo drive. also learn mechanical and electronic hardware selections are implemented along with the best suitable power supply unit and microcontroller. At the last but not the least is the summarized version of our achievements, limitations facing in project, robotics in future, cost analysis and conclusion. We mention point to point references for every student who want to ripe this fruit and enhance the curiosity. This represents an ideal pick and place robot should carry out the operations in minimum time and should also be cost efficient. One of the fastest configurations of industrial robot used is the Delta configuration. It is three degrees of freedom parallel configuration used for very high-speed pick and place operations capable of achieving high cycle rates up to 200 cycles per minute.*

REFERENCES

- [1] Brezina, T. & Brezina, L. "Controller Design of the Stewart Platform Linear Actuator", 8th International Conference on Mechatronics, Luhacov ice, CZECH REPUBLIC, pp. 341-346, 2009.
- [2] Briot, S., Arakelian, V., Glazunov, V. "Design and analysis of the properties of the DELTA inverse robot", 2008, available from Laribi, M.A., Romdhane, L., Zeghloul, S., "Analysis and dimensional synthesis of the DELTA robot for a prescribed workspace", 2006.
- [3] López, M., Castillo, E., García, G., Bashir, A. "Delta robot: inverse, direct, and intermediate Jacobians", IMechE, 2006.
- [4] Neugebauer, R., Wittstock, V. and Drossel, W. "Werkzeugmaschinen Mechatronik", Arbeitsblätter. Chemnitz: TU-Chemnitz, 2010.