Thesis Title	Robotic Assembly Based on Force Feedback Signals
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Abstract

Wedging and jamming are the two main problems in assembly tasks. Wedging refers to geometrically static equilibrium of pegs due to cancellation of reaction forces from contact points. Jamming occurs when combination between reaction forces-moments from contact points and insertion forces-moments from robots or assembly machines equal to zero. This thesis presents an analytical work underlying a jamming diagram of dual pegs from their six contact geometries. The experiments of the dual round pegs insertion were performed by force control algorithm. Forces and moments versus time curves during insertion were analysed compared with theoretical findings. Forces and moments data were then plotted in dual pegs jamming diagram to verify the effectiveness of our algorithm. A wedging diagram of dual pegs were also plotted and verified.

Keywords : Force Feedback Control / Robotic Assembly / Automatic Assembly
/ Dual Pegs Insertion / Active Compliance