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(57) Abstract :

The invention discloses an automated device (100) for high-speed packaging in mechanical assembly lines, comprising a robotic arm (110), conveyor system (120), sensor unit (130), packaging module (140), and control unit (150). The device enables synchronized, high-speed, and adaptive packaging with real-time defect detection, modular adaptability, and energy efficiency. Experimental validation confirms enhanced throughput, improved quality control, and reduced downtime, making it suitable for large-scale industrial applications requiring rapid and precise packaging solutions.

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