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(57) Abstract :

The invention discloses a modular device for rapid tool changing in CNC machines comprising a tool holder interface (101), quick-release locking unit (102), actuator mechanism (103), sensor module (104), control unit (105), and modular mounting base (106). The device reduces tool-change time, ensures precise alignment, and offers compatibility with multiple CNC standards. Its modular architecture enables easy upgrades, while integrated sensors provide real-time monitoring for fault detection. The invention enhances productivity, minimizes downtime, and delivers a cost-effective solution for modern CNC machining operations.

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