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(57) Abstract :

The invention discloses an automated device for shaft coupling and dismantling operations, comprising alignment sensors (101), an actuator system (102), a coupling engagement unit (103), a dismantling mechanism (104), a control module (105), and a safety housing (106). The device ensures precise alignment, applies controlled axial forces, and reduces downtime. Experimental validation demonstrated accurate coupling, safe dismantling, and adaptability to different shaft sizes. The invention enhances safety, efficiency, and repeatability, making it highly suitable for industrial maintenance and assembly applications.

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