

An Automated Wet Cranking Device For Aircraft Engine Preservation During Ground Inhibition

Application Number: 202511037025

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ABSTRACT

The invention relates to an automated wet cranking device (100) for aircraft engine preservation during ground inhibition. The device (100) includes a handheld unit (102) with an input device (104) to receive a target RPM, a motor (108) to rotate the engine's crankshaft, and a display (114) for real-time RPM monitoring. A structural housing (104) encloses a motor driver (128), energy storage unit (130), and microprocessor (132), which validates the target RPM, generates PWM signals for precise speed control, and dynamically adjusts power to maintain operation within a permissible range. The automated wet cranking device (100) ensures reliable engine cranking in diverse conditions, with features like cold-weather adaptations, fault detection, and ergonomic handling. Compact and portable, the automated wet cranking device (100) is ideal for hangar and field maintenance, enhancing efficiency and safety during engine preservation.

KEY APPLICATION AREAS

1. Aircraft engine preservation and maintenance.
2. Aviation MRO (Maintenance, Repair & Overhaul).
3. Grounded aircraft storage and inhibition procedures.
4. Portable aircraft servicing equipment.
5. Aerospace field maintenance operations.

POTENTIAL USE

1. Wet cranking aircraft engines during long-term storage.
2. Preventing corrosion and lubrication loss in inactive engines.
3. Pre-reactivation engine conditioning before return to service.
4. Hangar-based routine maintenance of aircraft engines.
5. Remote and field maintenance where fixed cranking systems are unavailable.
6. Training and demonstration of engine preservation procedures.