

Keeping quayside cranes in motion with critical DC motor rewinds and refurb

Industry Sector:
**Maritime Logistics /
Infrastructure**



Application:
Crane DC Drive Motors

Ref: P5220



Problem

At a major UK container terminal, the availability of ship-to-shore cranes is non-negotiable. Operating continuously, these cranes form the backbone of portside logistics, handling vessel loading and unloading under strict timeframes. The consequences of unplanned downtime are significant — from disrupted schedules to financial penalties and contractual breaches.

When two large DC motors, central to crane hoisting operations, showed signs of electrical failure, the site's engineering team required a fast, technically sound intervention to restore resilience and avoid disruption to vessel handling. A quick call to the local ERIKS Workshop and the team were on-site to offer support.

Challenge

A 400kW DC motor, central to the hoist mechanism of one of the container cranes, was removed from service after insulation testing revealed a fault to earth, identified during site-based testing. A second unit was taken out of service as a preventive measure, it did pass conventional insulation and surge tests, but later failed bar-to-bar testing at ERIKS, revealing a short between windings that would have otherwise gone undetected.

The site operates with a limited pool of spares — typically three motors of this specification — and a third unit was also due for maintenance. With two already in the workshop and a third pending, the operation faced a scenario in which critical motor availability could be compromised.

The risk of falling below minimum operating capacity was real, and any delay in returning these motors to service could result in loss of crane functionality, with immediate commercial and operational consequences.

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Solution

ERIKS delivered a complete overhaul of both 400kW DC motors, working across multiple engineering service centres. The motors were fully dismantled and cleaned. Armatures were rewound to the original bar-wound layout, using upgraded insulation materials to meet Class F specification. One motor required a new commutator due to severe wear; this was manufactured to exacting standards at ERIKS' in-house commutator facility in Bristol, one of the few such operations remaining in the UK.

The unit was restored to OEM specification, mechanical components were changed, including bearing and seal replacement, reworking of the non-drive end housing, and reconditioning of the brush gear and steelwork. Parallel to the motor work, the force ventilation units were refurbished, with new bearings, seals and filters installed and the housings cleaned and repainted.

The process included advanced diagnostic testing, such as bar-to-bar analysis and surge testing, with clear documentation and video evidence of faults shared with the customer to support technical sign-off. Repair activities were coordinated across ERIKS' sites in Leeds, Swansea, Cardiff and Bristol, allowing parallel workflows and minimising total turnaround time.

The Result

Despite the complexity of the rewind and component manufacturing, both motors were completed well ahead of the expected delivery window. The first unit was returned to site over two months early, restoring essential spare capacity and ensuring that crane operations could continue without interruption. The motors were reinstalled by the customer's own engineering team and have since returned to full service without issue.

By identifying faults that standard testing methods may have missed and delivering high-precision mechanical and electrical work in compressed timeframes, ERIKS helped safeguard uninterrupted crane operations at one of the UK's key logistics sites — where every hour of uptime matters.