



# Case Study

## POWER TRANSMISSION



Industry sector:  
**STEEL MANUFACTURING**

Application:  
**MOTOR REPAIR**

Actual saving:  
**£134,578.97**

Payback period:  
**IMMEDIATE**



**INCREASED**  
production  
through **FAST** lead  
time



**ERIKS technical**  
**EXPERTISE**



**Significant**  
**COST SAVINGS**  
with **BESPOKE**  
design

# Repair claims victory over costly replacement

**At first glance, replacing a problematic piece of machinery may seem the most cost-effective option. But the reality is, that's not always the case.**

**All it takes is access to the right expertise, engineering know-how and an impartial viewpoint, and waiting long lead times for replacement components could be a thing of the past.**

## THE ISSUE

One UK steel manufacturer was experiencing issues with a Leroy Sommer SN 172209-2 motor, where an inter-turn fault on the stator windings and further problems on the laminated iron core pack were creating inconvenient downtime.

The core had originally been designed not to be repaired, ensuring that you would have to go back to the manufacturer for any replacement. The manufacturer would then fabricate and weld the inner support struts and outer casing around the laminated core, and then machine location spigots for the alignment of the bearings.

**'the core had originally been designed not to be repaired'**

Discussions with the OEM confirmed that this particular motor was no longer supported, and it was clear that it had been manufactured not to be dismantled. As such, it meant that the motor would be scrapped.

So, the customer called upon ERIKS' strong supply network to source a replacement.

## THE SOLUTION

Happy to source a replacement, ERIKS Specialist Engineering at Chesterfield secured a price for a WEG motor, which would fulfil, as near as possible, the existing criteria of the application.

During inspection, ERIKS Technical team identified that a repair was also a viable option, even though it seemed against all odds. So, staying impartial, both options were put forward to the customer.

Close discussions followed, and it was agreed that the motor should be investigated further, and it was shipped to the Chesterfield Service Centre to be put under the microscope.



Several internal meetings were held, and a solid repair programme was created, which included the construction of various specialised jigs that would enable the support of the core and keep a mechanical datum.

### **‘a solid repair programme was created’**

The proposed plan began with the case being removed by cutting the welds. From there, all eight support struts were ground down along the length of the core, allowing the core pack to be cleanly removed.



Once the outer case end was removed, the core pack was secured in place, while the welds on the support struts were also removed along the entire length of the core. A keyway was then manufactured and fitted, preventing the core from moving, maintaining its skew.

Each of the 863 individual core plates were removed – grinded where necessary – split, cleaned and painted. Once the paint had thoroughly dried, all core plates were refitted, and the core pack was pressed until its original widths were met.

### **‘removed, split, cleaned and painted’**

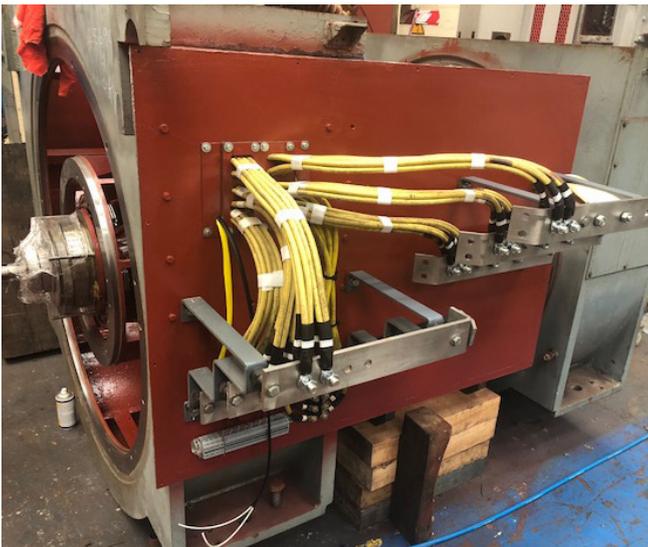
The support ring was welded into position and final dressing of the core performed. Case ends were then refitted and welded back into position. A final flux test was then undertaken to prove the success of the repair.



Taking full advantage of ERIKS' impartiality and experience in motor repair, the motor was rewound to only a fraction from its original efficiency, with the lifecycle now expected to be better than that of the manufacturers design.

### 'repaired with a significant cost saving'

ERIKS know-how led to a significant cost saving, in excess of £134,000, compared to the purchase of a replacement motor, which was priced at over £200,000.



The programme also ensured no modifications were made to the plant blueprint, further reducing any potential costs to the customer.

Finally, the whole solution was back in place over a month sooner, winning the customer an extra four weeks of productivity.

## OUTCOME AND BENEFITS

- Choosing the ERIKS repair over replacement option, the customer made a cost saving of £134,578.97
- The customer received a bespoke design courtesy of ERIKS know-how and expertise in motor repair
- The unit was rewound to a fraction from that of its original efficiency
- Lifecycle now expected to be better than the manufacturers original design
- No modifications to the customers current site were required, further reducing potential costs
- An improved delivery time of 4 weeks was attained over the 16 week lead of a replacement motor