



# Marthinusen & Coutts

A division of ACTOM (Pty) Ltd

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**Your Assets. Your Needs. Your Service Partner.**





Marthinusen & Coutts (M&C), a division of ACTOM (Pty) Ltd, is a leading provider of electromechanical services for the repair and maintenance of rotating machines and transformers throughout Africa.

M&C's offerings cover power generation equipment, medium and low voltage AC and DC motors, transformers and coil manufacture, as well as the full range of engineering, testing, diagnostics, balancing and maintenance services.

## MISSION

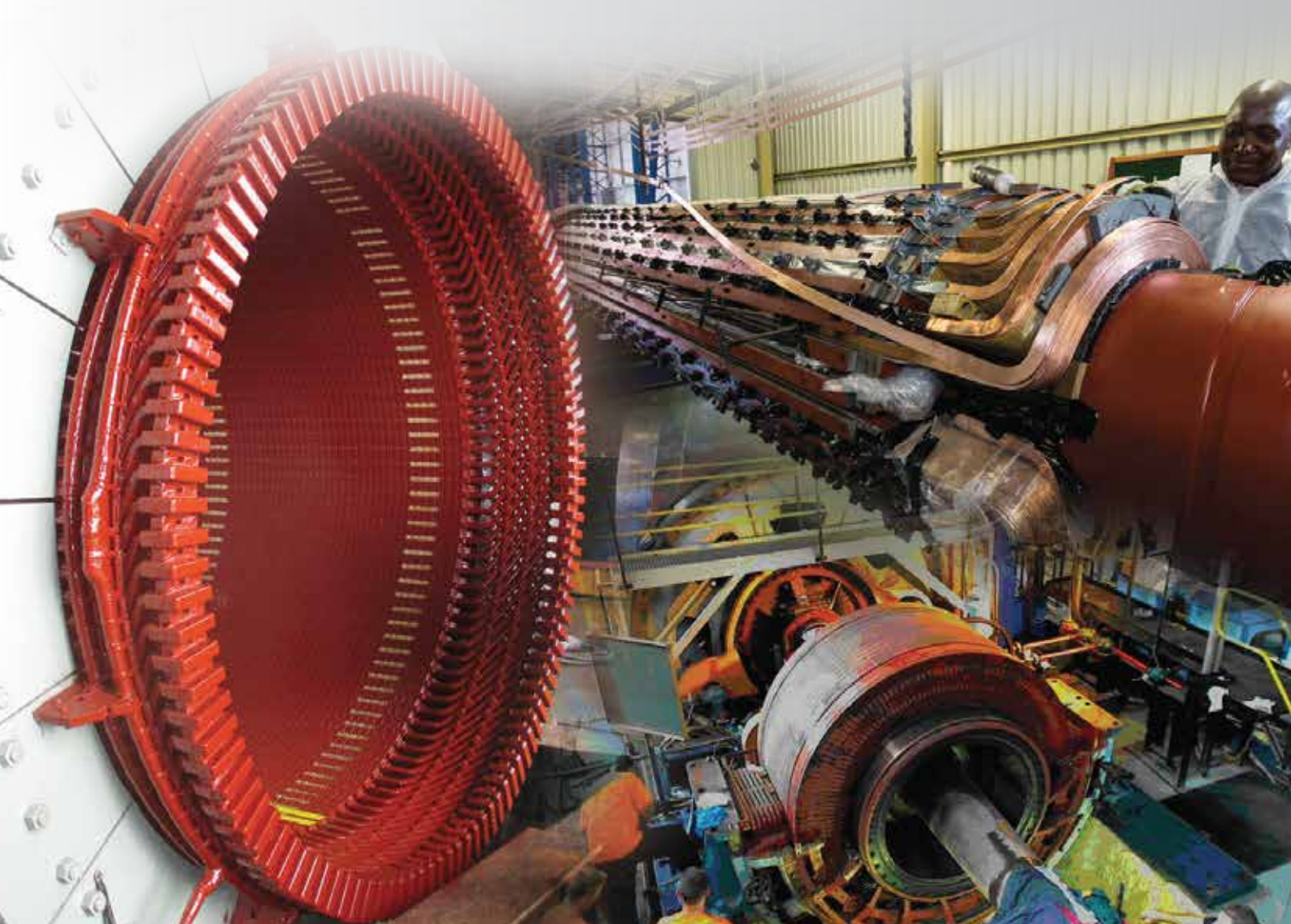
To improve our customers' business by understanding their needs and providing the best solution.

## VISION

To be recognised as the first choice service partner for all electrical and mechanical rotating equipment.

## M&C's electromechanical services include:

- ▶ Electrical and mechanical repair and maintenance of power generation plant up to 373 MVA and larger machines on site
- ▶ Repair of electric motors, generators and transformers
- ▶ Specialised design and manufacture of new machines and components
- ▶ Coil manufacture
- ▶ Wire drawing and covering
- ▶ On-site engineering services
- ▶ All types of mechanical repairs





**M&C products and services:**

**Electrical Machines**

- ▶ All types of generators
- ▶ Power generation equipment and turbines
- ▶ Medium and low voltage AC motors
- ▶ Flameproof motors
- ▶ Large DC machines
- ▶ Industrial DC machines
- ▶ AC and DC traction motors
- ▶ Alternators
- ▶ Transformers
- ▶ Manufacture of specialised motors and components

**Mechanical Machines**

- ▶ Compressors
- ▶ Blowers
- ▶ Pumps
- ▶ Fans
- ▶ Gearboxes
- ▶ Decanters
- ▶ Centrifuges
- ▶ Filter presses
- ▶ Scrubbers
- ▶ Steam governors
- ▶ Other mechanical equipment





## M&C's technical capabilities:

- Four dedicated winding insulation systems to ensure the right system for the right application
- Vacuum Pressure Impregnation (VPI)
- High-speed balancing (G1) to 32 ton
- Dedicated ovens for drying, burn-off and curing
- Full load testing of direct current, traction, flameproof, low and medium voltage motors up to 2 MW
- Specialised vibrating motors test facility
- Specialised testing facility for ventilation fan motors
- Submerged arc micro-welding capability
- State-of-the-art machine shop including CNC lathes and milling machines
- In-house developed failure analysis database
- Winding data verification and design systems
- 3D CAD with finite element analysis



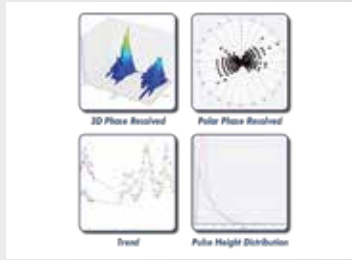


## M&C's global on-site electrical and mechanical engineering services

M&C is able to offer a wide range of proactive and reactive maintenance services on-site, minimising your downtime and helping you maintain or improve productivity.



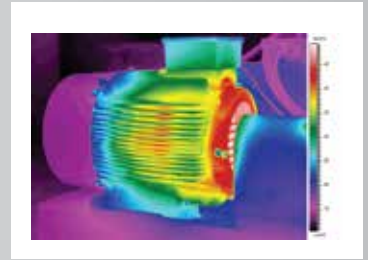
De-magnetising



Partial discharge testing



Dynamic balancing



Thermography

### On-site services:

- ▶ Insulation resistance
- ▶ Polarisation index testing
- ▶ Resistance testing
- ▶ Current signature analysis
- ▶ Recurrent surge graph (RSG)
- ▶ Tennessee Valley Authority (TVA) probe testing
- ▶ Stray flux analysis
- ▶ Tan-Delta testing
- ▶ Partial discharge testing
- ▶ Laser alignment of all types of equipment
- ▶ Vibration analysis and fault finding
- ▶ Bearing temperature measurement
- ▶ Pre-alignment checks
- ▶ Stator rewinds
- ▶ Condition monitoring
- ▶ Transformer oil sampling
- ▶ Bearing removal
- ▶ Inspection and installation
- ▶ Dimensional inspection
- ▶ Rotor removal and inspection
- ▶ Non-Destructive Testing (NDT) of all machine components
- ▶ Inspection of the oil system, oil pumps, pressure regulating and pressure control valves including all control devices
- ▶ Emergency stop and valve control valves
- ▶ Commutator skimming and on-site balancing
- ▶ Oil purification and replacement
- ▶ Root cause analysis
- ▶ De-magnetising
- ▶ On-site balancing
- ▶ Thermography
- ▶ Reverse engineering



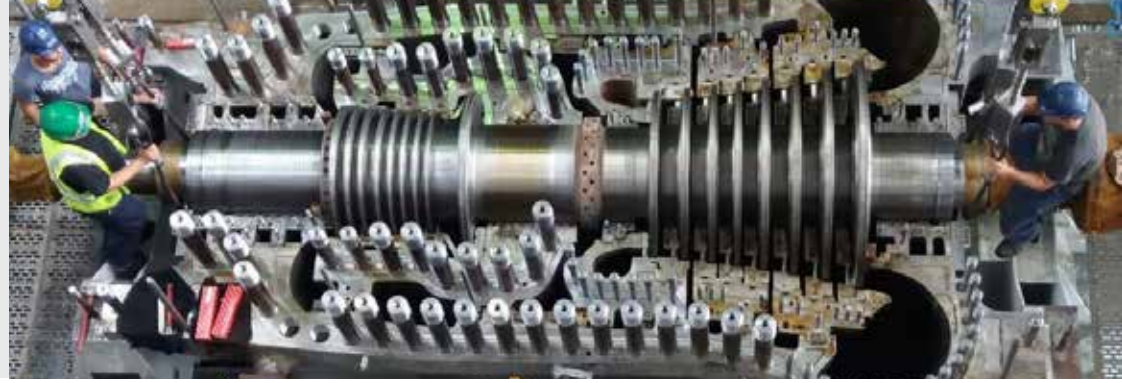
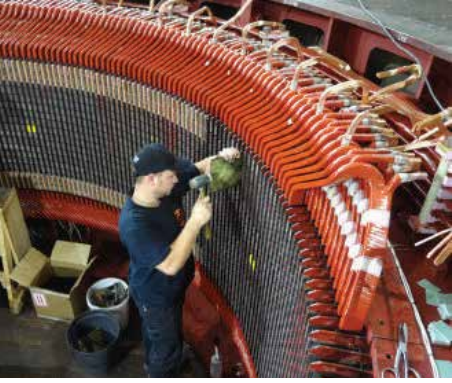
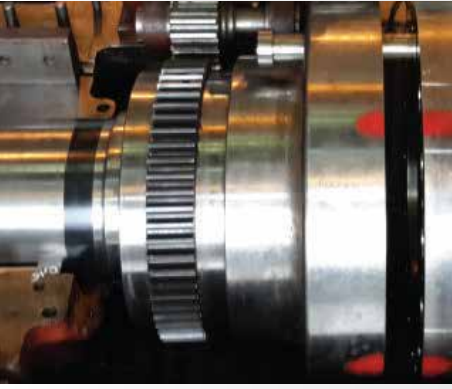


## Completed projects:

- Anglo Coal - 22 kW traction motor upgrade to 30 kW
- Lonmin Rowland Shaft - 1425 HP large DC mine winder
- Sasol Synfuels - 4 X 36 MW, 2 pole, 11 kV turbo rotor rewinds
- Kelvin Power Station - 60 MW turbine generator sets
- SCK Kolwezi DRC - 70 MVA synchronous condensers
- Sapele Power Station Nigeria - 120 MW turbine generator
- Nzilo Hydro Power Station DRC - 26 MW 18 pole stator rewind
- Eskom Duvha Power Station - 12.8 MW 4 pole 11 kV motor
- Arcelor Mittal Saldanha - 28 MW 4 pole compressor motor
- Kalumbila & Lumwana Copper Mines Zambia - 18 MW gearless mill drive motors
- Rooiwal Power Station - 60 MW generator rotor rewind
- Newmont New Zealand - 3000 HP Yaskawa 180 rpm complete rehabilitation
- Tongaat Hulett Xinavane Mozambique - 20 MW 1500 rpm salient pole rotor rewind
- Goldfields South Deep Twin Shafts - Alstom 6063 kW 47 rpm 1470 V squirrel cage induction winder motor
- NamPower Van Eck Power Station Namibia - 30 MW turbine refurbishment
- Eskom Matla Power Station - 12 X 9.8 MW GEC electrical feed pump motors coils overhang redesign
- Eskom Ingula Hydro Power Station - Complete rotor refurbishment of 373 MVA 14 pole reversible motor generator



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