



Full Locomotive Rebuilding & Heavy Engineering

"From the frame up - we deliver."

Prime Contractor | ISO 9001:2015 Compliant | Pan-African Execution



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CORPORATE OVERVIEW

Company Name	Lege Investment (Pty) Ltd.
Registration Number	2015/367830/07
Founder & Managing Director	Mpho Mamburu
Headquarters	1009 Cam Crescent Street, Robertville, Roodepoort, Gauteng, 1739
Operational Workshop	No. 76 Spoornet Premises, Hattingh Street, Elandsfontein, Germiston, 1702
Years in Operation	11 years (established 2015)
Core Business	Full locomotive rebuilding, traction motor remanufacturing, component machining, prime contracting for rail operators
Ownership	100% South African, majority black-owned
BBBEE Level	1
Accreditation	ISO 9001:2015 , NDT certification , SANS 10052-1 and PRASA VO17 specifications



Legal Status for International Bidding: Lege Investment (Pty) Ltd is fully compliant with South African company law and holds the corporate governance structure required to act as a prime contractor for multilateral development banks (AfDB, DBSA, World Bank) and state-owned entities.

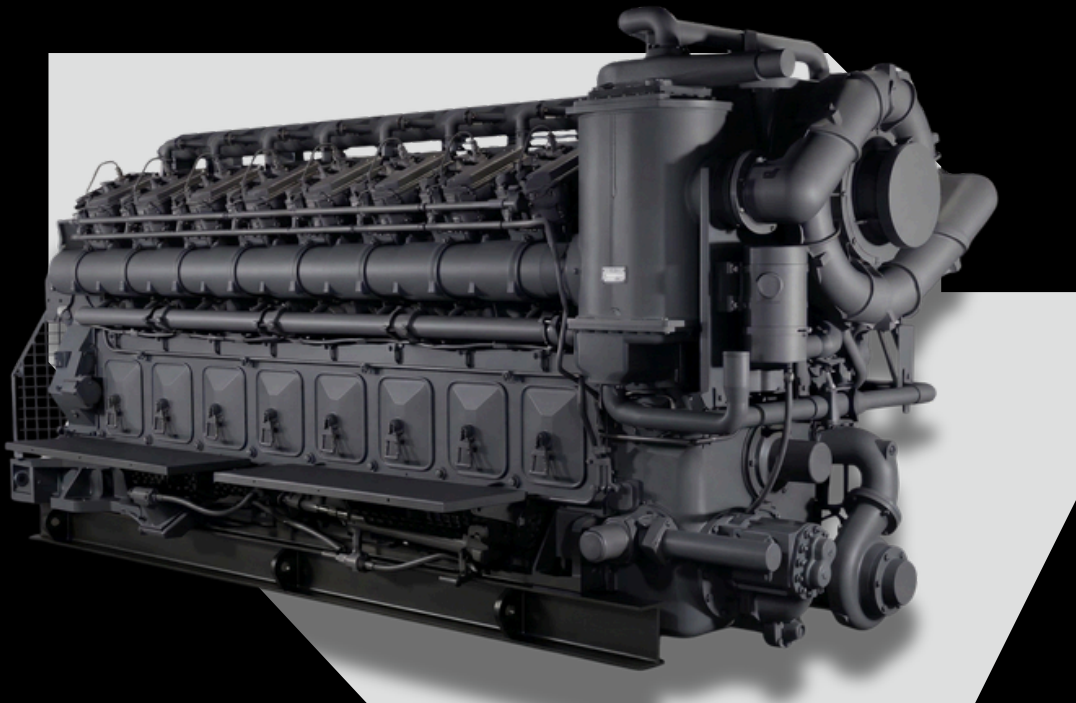
CORE BUSINESS: FULL LOCOMOTIVE REBUILDING

Lege Investment (Pty) Ltd does not perform piecemeal repairs. We execute complete locomotive rebuilding – returning legacy fleets to service with better-than-OEM reliability and extended operational life.

Locomotive Classes We Rebuild

Power Type	Classes/Models
Electric	5M2, 5M5, 10M5, 18E, 6E, 7E
Diesel-Electric (EMD)	D29, D31, D43, SW1002, GT26
Diesel-Electric (GE)	761, 764, Class 36-000 (SG10B), U20C
Motor Coaches & Power Cars	5M2A, 10M3, PRASA motor coaches, backup generator power cars

Every rebuild concludes with dynamic load testing and on-track commissioning.



Rebuild Depth - Full Scope

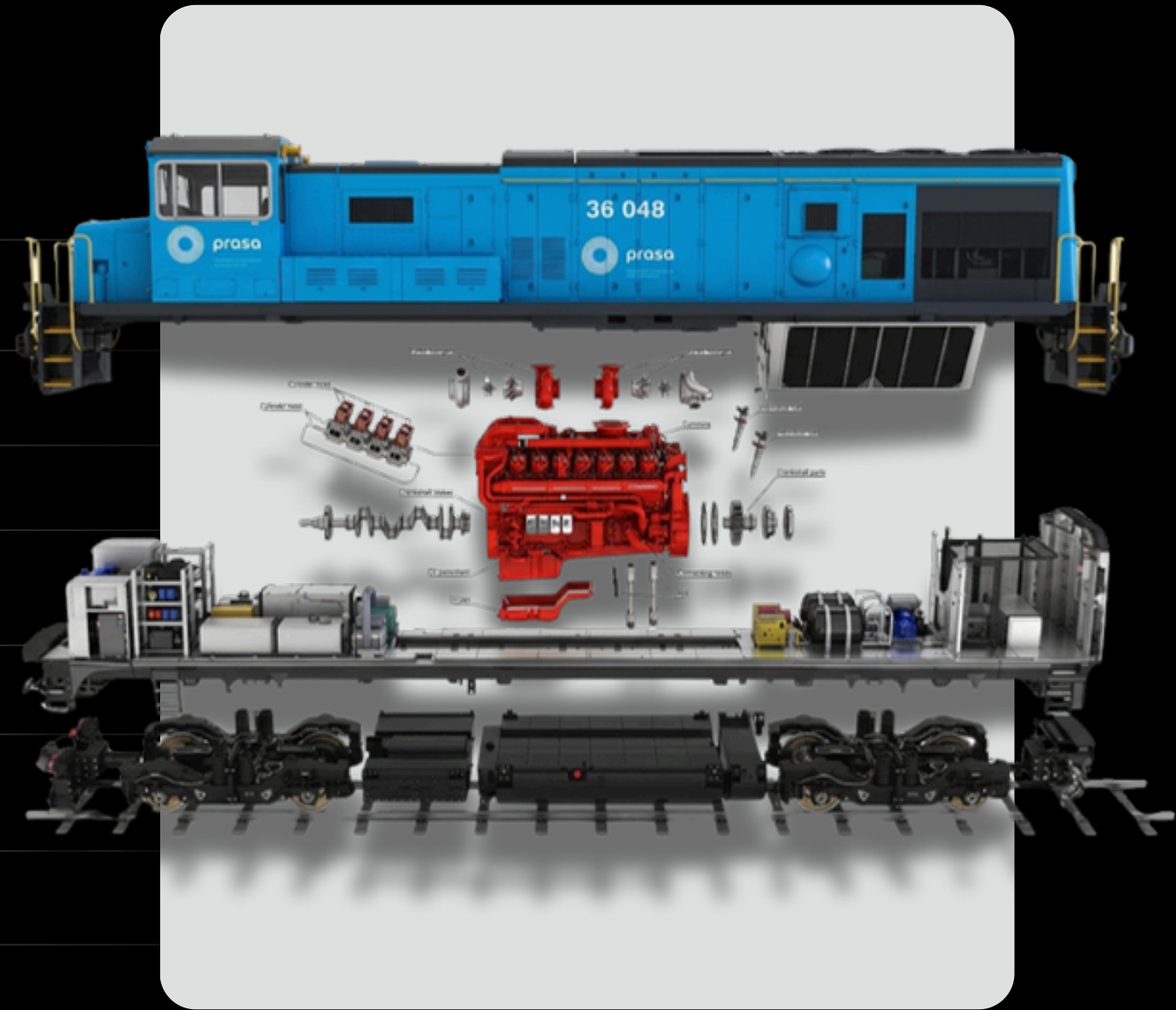
Subsystem	Work Performed
Structural	Stripping, grit blasting, rust remediation, breast plate & cowcatcher replacement, full repainting
Bogie & Underframe	Complete bogie strip, NDT crack testing, brake rigging overhaul, V-hanger re-bushing, wheel re-profiling
Traction Motors	Full strip, armature rewinding, commutator re-manufacture, field/interpole coil re-insulation, TIG welding
Engine (Diesel)	Complete engine overhaul, power contactor & relay rebuild, compressor overhaul, radiator flush & pressure test
Electrical (HT/LT)	HV/LV panel rewire, reverser refurbishment, transducer testing, CBR overhaul, PLC/controller fault finding
Brake & Air Systems	Brake slack adjusters, vacuum cylinders, main air/vacuum reservoirs, exhauster & compressor refurbishment
Cab & Body	Master controller rebuild, pushbutton control box, door mechanisms, corrosion repair, stenciling
HVAC & Saloon	Deakin Voslou/HLK air-conditioning overhaul, lighting MCB panels, seat repair, window replacement

TECHNICAL DEEP DIVE: REBUILD WORKFLOW

Our rebuild process follows a controlled, documented, and repeatable industrial sequence.

Stage	Duration	Key Technical Activities
1. Intake & Stripping	5 days	Full disassembly, component tagging, bogie drop, traction motor extraction, chemical cleaning
2. Structural Repair	10 days	Rust cutting, panel replacement, air duct renewal, canopy & louvers repair
3. Bogie & Underframe	15 days	Bogie frame NDT, brake rigging re-bush, wheel turning, coupler overhaul
4. Traction Motor Rebuild	20 days	Commutator turning & undercutting, armature coil winding, TIG welding, dynamic balancing
5. Electrical System	12 days	HT panel rewire, LT contactor refurbishment, electronic card testing, CPU/LAN validation
6. Engine & Auxiliaries	18 days (diesel)	Cylinder head reconditioning, turbocharger rebuild, fuel pump calibration, radiator pressure test
7. Reassembly & Integration	10 days	Component reinstallation, torque auditing, brake system bleeding, electrical continuity testing
8. Load Test & Commissioning	5 days	Dynamic load bank test, brake efficiency test, track running, roadworthy certificate

Total typical turnaround: 12-15 weeks for a complete locomotive rebuild.

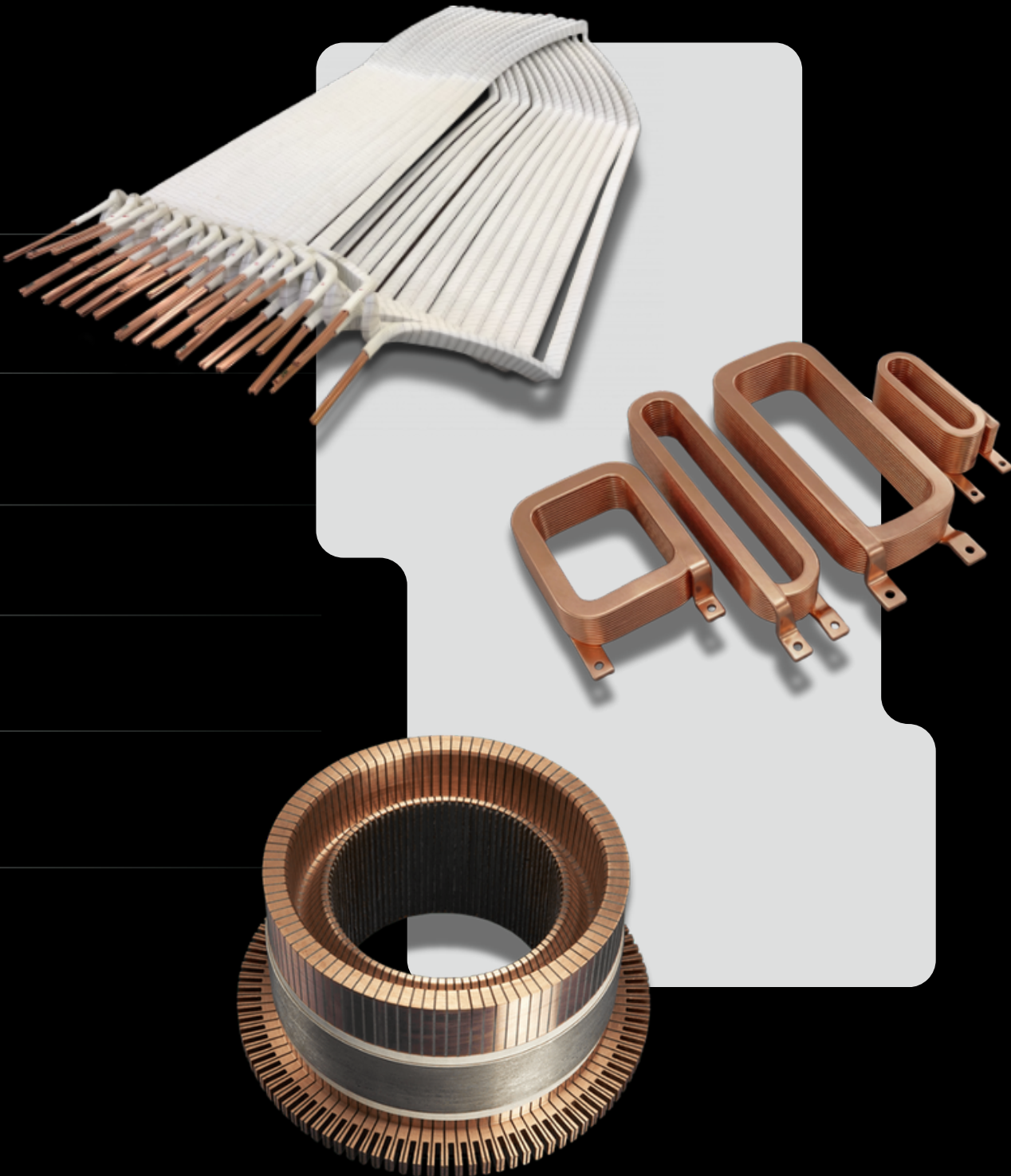


COMPONENT MANUFACTURING

Lege Investment operates a dedicated component manufacturing cell – we manufacture critical rotating electrical parts in-house, not from third parties.

In-House Manufacturing Capabilities

Component	Specifications
Armature Coils	Dust-free environment, lap or wave wound, equalizer coils, class H insulation, length up to 2,500mm
Commutators	Imported silver-bearing copper, mica V-rings, bushes, segment profiling, electrical testing to OEM
Field & Interpole Coils	New manufacture or re-insulation, loose or encapsulated to pole piece
Electronic Cards	Full refurbishment and functional testing to OEM specifications (GE, EMD, Alstom)
Fabricated Parts	Shaft modifications, frame modifications, cooling ducting, cable trays



ISO 9001:2015 certified processes for all manufacturing and testing.

TRACTION MOTOR & COMMUTATOR REMANUFACTURING

We specialise in DC traction motor remanufacturing for the most common southern African locomotive platforms.

Supported Traction Motor Models	
OEM	Model Numbers
EMD	D29, D31, D43
GE	761, 764, 5M2AR
Alstom / ACEC	TA 659, TA 676

Technical Process - Traction Motor Rebuild

- **Strip & Clean** - Full disassembly, degreasing, grit blast of frame
- **Armature** - Rewind or re-insulate, TIG weld commutator risers, dynamic balance, season in oven (24h at 150°C)
- **Commutator** - Re-profile on lathe, undercut mica, final polish to <0.5µm surface finish



Warranty: 12 months on workmanship and materials.

- **Field Coils** - New coils wound on CNC machine, vacuum pressure impregnation (VPI)
- **Assembly** - New bearings (SKF/FAG), brush gear alignment, air gap calibration
- **Testing** - Dielectric (HiPot), surge comparison, no-load run, load test on dyno

HIGH-TENSION & LOW-TENSION ELECTRICAL SYSTEMS

Lege Investment has fully equipped electrical workshops for HT (600V–3kV DC) and LT (24V–110V DC) systems.

Electronic & Control Systems

CPU / LAN / DIN32-1/ DIN32-2 - Functional test and firmware validation

BIDEC / ADDA power supply - Ripple measurement, capacitor replacement

Route 16-1/16-2 - Route relay refurbishment



Low-Tension (LT) Compartment

Component	Work Performed
Knife switches	Contact replacement, bus bar cleaning
MCB panels	Complete rewire, new miniature circuit breakers
Contactor panels	Coil replacement, arc chute rebuild
VR / VR cut-out	Voltage regulator calibration
Field injection transformer	Insulation resistance testing, rewind if required

High-Tension (HT) Compartment

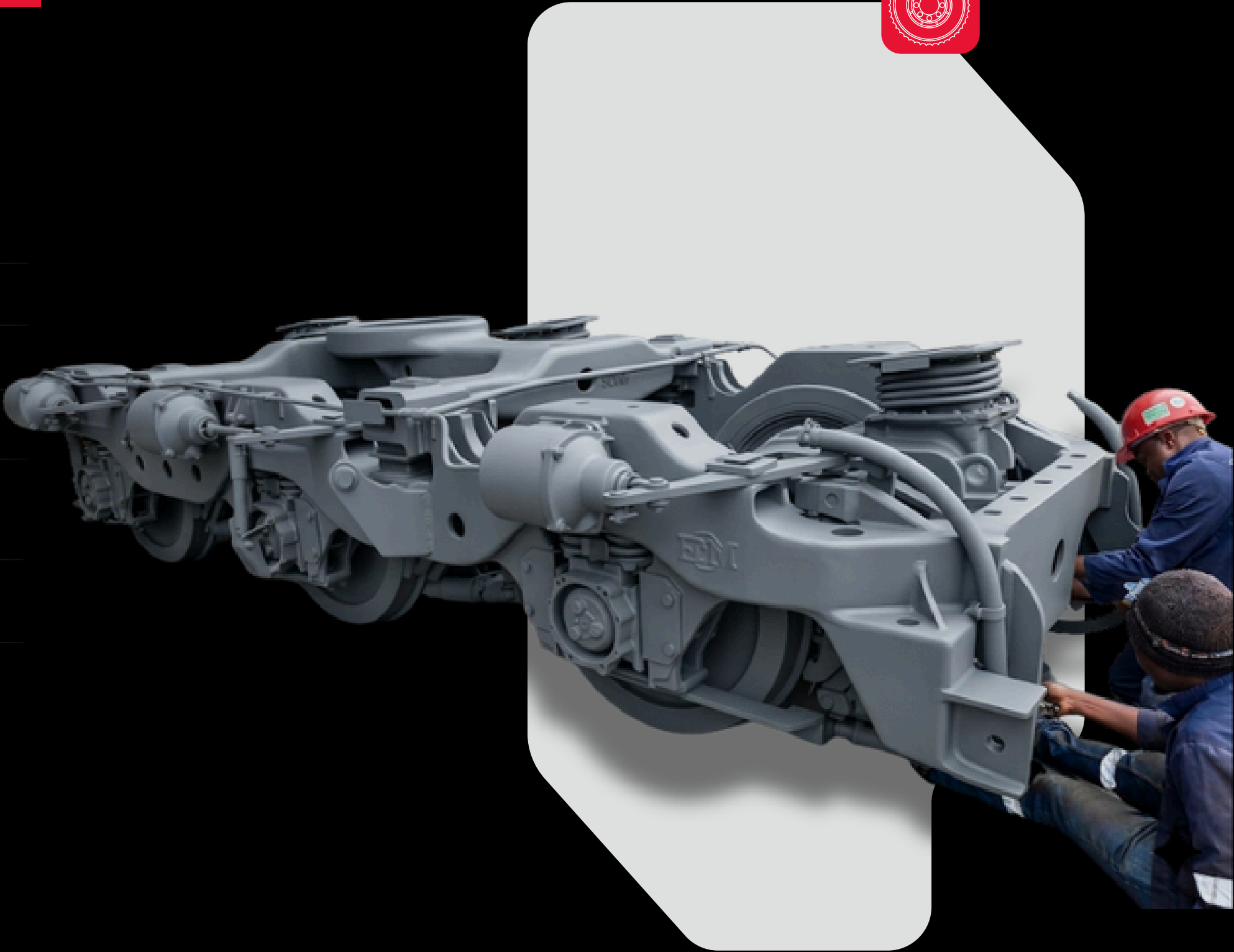
Component	Work Performed
Line switches	Arc chute replacement, contact tip dressing, spring calibration
Reverser	Full strip, silver contact replacement, insulation testing
Current transducers	Calibration, signal validation
Master governor	Overhaul, pneumatic calibration
HV interlocks	Replacement, continuity testing

UNDERFRAME, BOGIE & BRAKE RIGGING

We execute heavy mechanical repairs with full NDT certification



Component	Technical Detail
Bogie frames	Magnetic particle inspection for cracks, weld repair, stress relief
Brake slack adjusters	Full strip, new non-return valves, stroke calibration (25-35mm)
Vacuum cylinders	Diaphragm replacement, piston seal renewal, leak test at -0.8 bar
Wheelsets	Underfloor wheel lathe (minimum tread depth 25mm), ultrasonic axle testing
Couplers	Knuckle replacement, draft gear overhaul, pin gauge inspection



All bogie and underframe repairs comply with SANS 10052-1 and PRASA VO17 specifications.

DIESEL ENGINE OVERHAUL & POWER CAR SERVICES

We execute heavy mechanical repairs with full NDT certification

Engine Platforms

OEM

EMD

GE

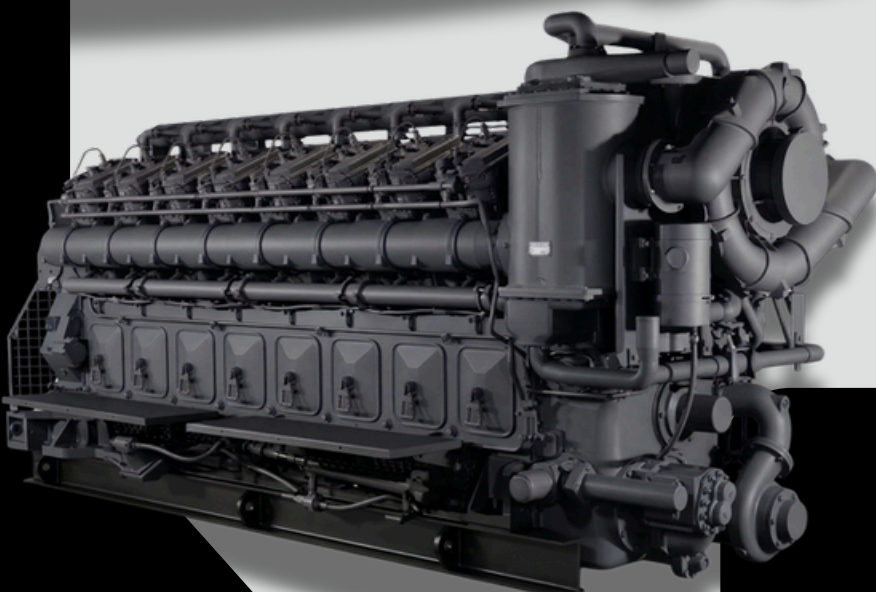
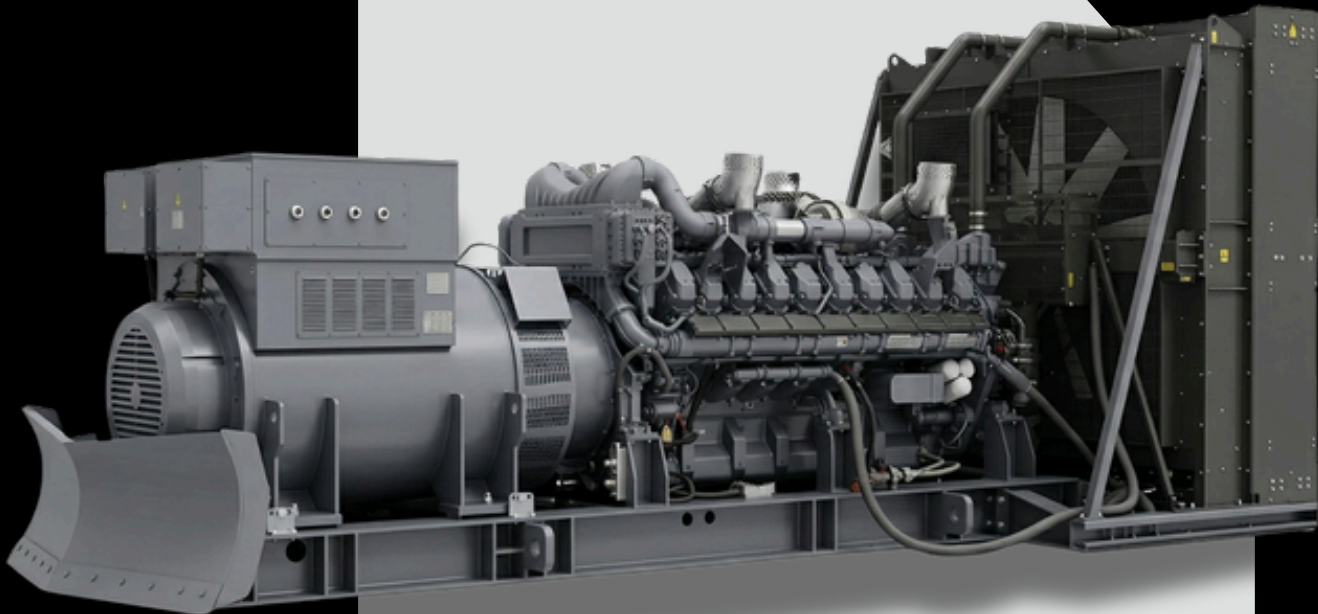
MTU

Models

645E, 710G

7FDL-8, 7FDL-12

12V 396, 16V 4000



Overhaul Scope

- Cylinder head reconditioning (valve grind, seat replacement)
- Piston ring replacement, liner honing
- Connecting rod bolt replacement (torque to OEM)
- Turbocharger rebuild (balance to 60,000 rpm)
- Fuel injector calibration (pop test)
- Radiator flush, pressure test (1.5x operating)
- Engine run-in on test bed (4 hours at varying loads)

Power Cars

- 2000-hour services
- Charging system (alternator/regulator)
- Fuel tank flush & internal coating
- Change-over switch (ATS) refurbishment
- Bus line cable replacement

HVAC, SALOON & COACH REFURBISHMENT

We overhaul entire passenger coaches – from air-conditioning to seats.

System	Work Performed
Air-conditioning	Deakin Voslou/HLK overhaul, compressor replacement, refrigerant recharge, duct cleaning
Lighting	LED conversion, MCB panel rewiring, emergency lighting battery replacement
Toilets	Flush valve overhaul, tank pressure test, sensor calibration
Seats	Reupholstery, frame welding, armrest replacement
Windows	Poly carbonate or glass replacement, draft screen repair
Doors	Sliding door mechanism, magnet valve (ASCO) replacement, interlock adjustment



QUALITY ASSURANCE, TESTING & WARRANTY

Trusted Quality Assurance, Testing, and Warranty Services

Testing Equipment (On-Site)

Test	Equipment
HiPot (dielectric)	5kV AC / 10kV DC insulation tester
Surge comparison	Baker DX surge tester
Dynamic balancing	Schenck hard-bearing balancer
Load bank	500kW resistive/inductive load bank
Wheel lathe	Underfloor CNC wheel lathe (1.2m diameter capacity)

Warranty

- 12 months from dispatch (ex-works)
- Covers workmanship and materials
- Joint failure investigation (Lege + client)
- Excludes abuse, improper storage, or unapproved modifications

On-Site Testing of Wheel Lathes



For demonstration, archive, and ownership of legal investments.

PAST PERFORMANCE

Technical video gallery



PAST PERFORMANCE

Technical image gallery



PRIME CONTRACTOR CAPABILITY

Lege Investment (Pty) Ltd is fully equipped to act as prime contractor for locomotive rebuild and maintenance programs.

Capability	Detail
Contract types	Fixed-price, cost-plus, performance-based (PBL)
Scheduling	MS Project / Primavera P6 - critical path method
Subcontractor management	Qualified vendors for sandblasting, painting, NDT, transport
Financial bonding	Access to surety and bank guarantees (R5m-R50m)
HSE	OHS Act 85 of 1993 compliant, risk assessment, lock-out/tag-out
Reporting	Weekly progress, quality control, NCR management



ISO 9001:2015
SANS 10052-1 (railway maintenance compliance)
OEM specifications for all electrical and mechanical tolerances

We have successfully managed multi-million rand subcontracts for PRASA and Transnet - now we manage directly.

CONTINENTAL MARKET EXPANSION

Lege Investment is positioned to support continental African rail operators.

African-Ready Capabilities

Service	Technical Detail
Gauge conversion	Cape gauge (1,067mm) to Metre gauge (1,000mm) - axle box repositioning, frame modification
Legacy fleet support	EMD SW1002, GE SG10B, Class 36-000 - parts manufactured locally
Mobile rebuild teams	6-person crew, containerised tooling, on-site traction motor exchange
Luxembourg Rail Protocol	URVIS identifier registration - cross-border asset finance ready

We bring South African heavy engineering quality to the rest of Africa - at half the cost and half the lead time of European OEMs.

Target Markets

Region/Country	Focus Locomotives
Zimbabwe, Zambia	Class DE2 (EMD), Class 20th, 20A, 15th, 15A (Garratt), DE 11 class
Tanzania, Mozambique	GE U30C, CK6, SDD20, GE Class 43-000 (C30ACI)
South Africa	Class 33, 34, 35, 36-000 (GE), 36-200 (EMD), Class 37, 43-000
Zambia Railways	GT36, GT26 series (EMD), Class 35-200 (EMD)
Botswana	BD6 Class
Angola	CKD8F, SDD6, SDD6A, CRRC Dalian
Eswatini	RL30SCC-3 (RRL Grindrod)
DRC	CNR Diesel-Electric, Class 33-200 (ex-SAR), CRRC Dalian
Malawi	Historic colonial-era locomotives
Namibia	South African locomotive classes (Cape gauge)
Lesotho	South African operated (single branch line)

CLIENT PORTFOLIO & PAST PERFORMANCE

The performance of Lege Investments concerning both completed and ongoing partnerships has been noteworthy.

Client / Prime Contractor	End Client	Scope Summary
Dartingo Trading 226	PRASA	A/B/C shedding, cab repairs, master controller overhaul
Saflog	Transnet	Compressor & exhauster refurbishment
Limacon (Phuto Engineering)	Private	Diesel engine overhaul (GE 7FDL)
Makeover	PRASA	Coach interior & saloon refurbishment

and many more



CONTACT & BID OFFICE

LEGE INVESTMENT (PTY) LTD



Headquarters (Administration):

1009 Cam Crescent Street, Robertville, Roodepoort, Gauteng, 1739

Bid Office Hours: Mon-Fri 08:00-17:00 | Emergency 24/7

ISO 9001:2015 | 11 years of rail engineering | Africa ready

Registration No: 2015/367830/07

Locomotive Rebuilding | Component Manufacturing | Prime Contractor

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