

MISSION & VISION

MISSION

Develop and offer, through constant innovation, commitment, professionalism and updating, increasingly qualified services of maintenance and on-site assistance.

VISION

Create transparent operational synergies and cordial and familiar customer-supplier relationships combined with a precise service and attention to the professional, organized and certified customer.

OUR VALUES Transparency Professionalism Commitment and dedication Personalized assistance Attention to the environment

TGERME MARKET SERVICE

2002

TG Emme Service S.r.l. is founded

2007_

TGEMME Doubled the surface area for production, new plant in Leinì (TO)

2015-

Inauguration of a branch in Molfetta (BA) on an area of 1000 square meters

2016-

New expansion of the Headquarters of Leini (TO) arriving to 2000 sqm + 1000 sqm of offices

2018

Expansion of the test room for testing engines up to 1MW in A.C. and D.C.

Commitment and dedication to the future •2003 Service Partnership with Siemens

-2008

Expansion of the headquarters in Leini (TO) extending the plant to **2000 square meters**

_2015

Implementation of departments for the repair of aircraft and overhaul of railway engines

2019

Expansion of the area of production up to **3000 sqm**

•**2020** ISO TS 22163 IRIS Certification



Innovation, professionalism, certified technical figures, on-site assistance, and SIEMENS partnerships at the service of your company... to look forward.

TG EMME is a national leader in the repair and maintenance of electric motors for industry, automation and railway applications.

TG. Emme Service Srl, was founded in September 2002 in a small shed of 500 square meters on the outskirts of Settimo T.se, as a company for the maintenance of electric motors for industry and automation.

The technical preparation in the areas of competence has allowed immediately to invest in resources, equipment, stains and create an organization adapted to the demands of its customers. Tenacity, passion and sacrifice have always been principles shared betwee the property and the technicians allowing to achieve the objectives set in terms of quality and competitiveness of the services offered.

In 2003, just one year after the opening, TG Emme Service srl obtained the name of "Siemens Service Partner" for the repair of electric motors.

The strong synergy with Siemens, the ability to adapt to market demands and the ability of the technical team to want to be among the best, allows us to collect new certifications that enable the repair of increasingly complex components, including engines for railway application.



spread over two Locations **Technical**

Internal **3500** Surface for **3500** production **Sqm**

Surface for 1000 offices and 1000 common sqm areas 1 Mobile on Station for on-site site assistance Assistance

3 National **3** commercial agencies **Agencies**

A strategic and operational Pole

Two national offices in Leinì (TO) e Molfetta (BA). A single strategic and operational pole to respond to domestic and foreign requests.

TG EMME SERVICE is a partner of **SIEMENS** and **SIEMENS** Mobility.

TG EMME's Services

Accurate, fast and on-site predictive maintenance and support services.

- > Repair and overhaul brushless servomotors, electro spindles, generators, traction motors, Industrial engines in A.C. and D.C.
- > Gearbox repair
- > Repair drives
- > Repair and supply of electronic and electromechanical spare parts
- > Equipped mobile station for On Site assistance
- > Assistance and technical advice
- > Measurements and monitoring service
- > Condition Monitoring (vibrational analysis, thermographic analysis and alignments)

Our success is in passion and teamwork



Preventive and Predictive maintenance

TG EMME SERVICE, has developed its own method to be able to carry out preventive maintenance on site.

The instrumental tests are performed by highly trained and specialized technicians and with state-of-the-art instrumentation of the latest generation.

The TG EMME method

ANALYSIS

LR -11 HR -16

Leonova

Vibrational, Thermography, alignment and Balancing check, electrical surveys of the general state of the windings, mechanical surveys of the general state of the rolling bodies.

DATA PROCESSING

highly qualified technicians process the data collected, providing a complete test report on the actual state of the motors. Reduction of emergency maintenance

Limitation of handling costs and risks

Timely productivity recovery

Reduction of machine downtime

The TG EMME method

EVALUATION WITH THE CUSTOMER

Identification and evaluation of the actions to be taken in case the test report has highlighted factors that could create damage in the near future.

PLANNED PLANT DOWNTIME

Evaluation with the customer to apply controls, to prepare the necessary plant downtime for engine restorations.

Preventive and predictive Maintenance **operations**

MEASUREMENTS ON MOTORS/GENERATORS BT/MT OVER 6000V

Vibration Analysis RMS/FFT/Shock Pulse

Thermographic analysis

Static analysis of DC voltage insulation type RI/IP/DAR/Hi-pot/Surge test

Static analysis of AC voltage insulations Tandelta type, Capacity

Partial discharge analysis

MEASUREMENTS ON GENERATOR MOTORS BT/MT UP TO 6000V

Vibrational Analysis RMS/FFT/Shock Pulse

Thermographic Analysis

Static analysis of DC voltage insulation type RI/IP/DAR/Hi-pot/Surge test

Static analysis of AC voltage insulation type Tandelta, Capacity.

Measurements of shaft voltages and currents

Control of devices and thermal sensors

Verification of the rectifier unit (synchronous /brushless)

Collector verification

39VL10140

Technical report after data processing



Shaft voltage and current measurements

Rotor static impedance analysis

Rotor reflectometric survey

Dynamic Rotor Impedance Analysis

Dynamic Reflectometric Survey Rotor

Boroscopy

Control of thermal devices and sensors

Rectifier group check (synchronous / brushless)

MEASUREMENTS ON MOTORS GENERATORS BT UP TO 1000V

Vibrational Analysis RMS/FFT/Shock Pulse

Thermographic Analysis

Static analysis of DC type voltage insulations RI/IP/DAR/Hi-pot/Surge test

Dynamic and harmonic analysis

Measurements of shaft voltages and currents

Control of devices and thermal sensors

Verification of the rectifier unit (synchronous / brushless)

Collector verification

Technical report after data processing



PREDICTIVE OR PREVENTIVE MAINTENANCE

Operational Safety

All the disconnection works and consequent reconnection or possible disassembly of panels and supports will be borne by TG EMME SERVICE srl, returning the object under test as previously entrusted.

Measurement report

A report of overall measurement for each machine examined, where the measurements made of all the tests carried out with a final evaluation of the object under test will be reported.

Calibration

All the instrumentation used is subjected to periodic control of calibration by competent and certified bodies.

TG EMME Advantages

PREDICTIVE OR PREVENTIVE MAINTENANCE

Personalized service

TG EMME SERVICE in addition to standard diagnostic services on motors and generators, offers the possibility of **customizing the service** of predictive maintenance as needed.

Qualified personnel

Specialized personnel in possession of **PES certifications** with the possibility of operating safely.

Cost and time reduction

The methodology of preventive maintenance, allows, in case of scheduled repairs, to proceed from the moment of planning, to the supply of spare parts necessary for repair, **reducing in a sensitive way the permanence of the engine at our workshop.**



Repair and overhaul in our plant

The technical team of **TG EMME SERVICE** has as its objective, not only to give indications for the restoration of the damaged engine, but to try to understand the causes that caused the problem and apply adequate and dedicated solutions to make the component more reliable.

SECTORS AND AREAS OF APPLICATION

Rubber Mills Rolling Mills Food Mills Paper Mills Plastics Foundries Steelworks Mines

45% Reduction of downtime

75% Re

60%

Reduction of emergency interventions

Savings in maintenance/repair costs

The knowledge of the application of the traction motor of the ropeway systems, by the **TG EMME SERVICE** staff in charge, allows to analyze and identify problems related to the service.

The normal work cycles required by the operation, in particular on D.C. engines, give rise to phenomena that can generate inefficiencies and sudden stops.

QUALIFIED TECHNICAL INTERVENTIONS

Bearing replacement

- Replacement and adaptation of brushes for DC motors
- Replacement and evaluation of the effectiveness of the type of filter
- Restoration of insulation to mass with adequate washing and degreasers

Collector grinding

- Eye-lying and chamfering of collector blades
- Intervention on the drives





The TG EMME SERVICE information technologies adopted to support it, allow to

- > view current offers
- > download related documents to works in progress
- consult test reports and preventive analysis



The technical team of **TG EMME SERVICE** has as its objective, not only to give indications for the restoration of the damaged engine, but to try to understand the causes that caused the problem and apply adequate and dedicated solutions to make the component more reliable.

QUALIFIED TECHNICAL INTERVENTIONS

- Bearing replacement
- Replacement and adaptation of brushes for DC motors
- Replacement and evaluation of the effectiveness of the type of protection
- Restoration of insulation to mass with adequate washing and degreasers
- Collector grinding

- Eye-lying and chamfering of collector blades
- Intervention on the drives
- Technical support and possible engine dimensioning
- Technical support and possible dimensioning of the switching unit
- Gearbox repair and overhaul

The TG EMME SERVICE information technologies adopted to support it, allow to

- > view current offers
- > download related documents to works in progress
- consult test reports and preventive analysis

FOR PORT LIFTING

The technical team of **TG EMME SERVICE** with its sector skills, not only performs repairs and preventive checks, but offers adequate solutions for modifying the components treated both in the repair phase and in predictive intervention.

QUALIFIED TECHNICAL INTERVENTIONS

- Bearing replacement
- Replacement and adaptation of brushes for DC motors
- Replacement and evaluation of the effectiveness of the type of filter
- Restoration of insulation to mass with adequate washing and degreasers
- Impregnation adapted to the type of environment and service

- Eye-lying and chamfering of collector blades
- Intervention on the drives
- Technical support and possible engine sizing
- Technical support for the correct sizing the switching unit
- Adaptation of protections to the weather

The TG EMME SERVICE information technologies adopted to support it, allow to

- > view current offers
- > download related documents to works in progress
- consult test reports and preventive analysis





FOR NAVAL APPLICATION

The training of the technical team of **TG EMME SERVICE** together with the equipment and systems available to the company, makes our company a reliable partner for the repair of generators and electric thrusters in A.C. and D.C.

QUALIFIED TECHNICAL INTERVENTIONS

- Bearing replacement
- Replacement and adaptation of brushes for DC motors
- Remaking windings
- Restoration of insulation to ground with adequate washing and degreasing
- Collector grinding

- Eye-lying and chamfering of collector blades
- Release of necessary test reports and declarations of conformity
- Technical support for correct and timely diagnostics

The TG EMME SERVICE information technologies adopted to support it, allow to

- > view current offers
- > download related documents to works in progress
- consult test reports and p reventive analysis

Maintenance Generators

FOR ENERGY PRODUCTION

The difficulties of handling or dismantling the generators requires careful preventive and conservative maintenance, in order to obtain a complete monitoring of the electric machine, minimizing different maintenance.

The **TG EMME SERVICE** technical staff, with training and adequate instrumentation, is able to perform what is necessary and possibly propose adequate and dedicated solutions to make the component more reliable over time.

QUALIFIED TECHNICAL INTERVENTIONS







VPI impregnation system with suitable resins





 Technical, electrical and mechanical support

The TG EMME SERVICE information technologies adopted to support it, allow to

- > view current offers
- > download related documents to works in progress
- > consult test reports and preventive analysis



Wind turbines and hydroelectric power plants

DIAGNOSTIC MEASURES AND FAULT DETECTION

TG EMME SERVICE has acquired skills in interventions on Wind Turbines through specific training and partnerships with leading companies.

The support provided to companies that manage wind farms is customizable, but also effective and targeted, not only to prevent plant downtime, but above all to increase the final efficiency of the structure.

ACTIVITIES ON WIND TURBINES

IEMENS

- Static analysis of insulation RI/IP/DAR HI-POT SURGE TEST
- TANDELTA static analysis AND CAPACITY on medium voltage generators
- Partial discharge analysis
- Measurements of shaft voltages and currents
- Thermographic analysis
- Vibration analysis RMS/ FFT/PULSE SHOCK
- Dynamic analysis to monitor voltages and currents in real time.

WORKSHOP ACTIVITIES

- Same measurements (but made on site) except for measurements of shaft currents
- Precise technical analysis following the disassembly of the machine
 - Complete electrical makeover: stator and/or rotor winding
- Complete mechanical overhaul through dimensional analysis of shaft bearing seats, shield bearings and verification of mechanical centering
 - Final testing, at load, of the generator in the test room and consequent painting and packaging operation

Wind turbines and hydroelectric power plants

CERTIFICATIONS AND OPERATIONAL SAFETY

TG EMME SERVICE Thas obtained the necessary certifications for work at height with third-class devices and for the use of the emergency descender acquired at the **GWO** (Global Wind Organization).

The activities carried out by **TG EMME SERVICE** comply with **CEI EN 60034** standardsandoperate under **ISO 9001-14001-45001** certification.

QUALIFIED TECHNICAL INTERVENTIONS

- > Thermographic analysis using the FLIR CAT.1 certificate
- Vibrational analysis with MOBIUS CAT.2 certification
- > PES certified operations after the machine has been secured
- > Use of instrumentation subjected, on an annual basis, to periodic calibration and calibration control by competent bodies with the relative issue of certification.

INSTRUMENTATION USED

BAKER

- CHAUVIN-ARNOUX and DOBLE for static analysis
- FLIR T530 for thermal imaging
- LEONOVA DIAMOND and INTELLINOVA for vibrational
- EXPLORER 4000 for dynamics





Testing Room *DYNAMIC AND STATIC TESTS*

All electrical machines both in Direct Current and Rotary Current, repaired or overhauled by **TG EMME SERVICES** srl, are subjected to dynamic and static tests.

Dynamic tests are performed by applying the load to the engine, to verify the acceptability of the vibration level in accordance with the requirements dictated by current regulations and the electrical compliance with respect to the original data plate.

The staff working in the Testing Room is also certified according to the ANSF DECREE N. 4 / 2012 – All. C "Rules for the qualification of personnel employed in railway traffic safety activities".

The static and dynamic tests comply with the requirements of the EN 60034 machinery standard and the test bulletins comply with **ISO EN 9001: 2015** requirements

Testing Room

TESTING ROOM 1 - BRUSHLESS MOTORS

Testing room equipped and dedicated to dynamic checks and phase sync on Brushless motors of different brands.

TESTING ROOM 2 - AC and DC

Industrial and Auxiliary motors for railway application.

Test room dedicated to dynamic and static tests for industrial and auxiliary motors for railway applications (fans, pumps, compressor motors) with power up to 250 kW in Direct Current and Alternating Current.

Power supply up to 690 V

TESTING ROOM 3 - AC and DC

Industrial Motors, Generators and Railway Traction.

Testing room dedicated to dynamic and static tests for Industrial Motors, Generators and Railway Traction with power up to 1400 kW in Direct Current and Alternating Current

Power supply up to 6000 V Tests and inspections for traction motors according to CEI 60034-1 / CEI 60349-2.

Load capacity 1500 Nm / 1500 RPM Power supply 0 ÷ 6000 V AC and DC





TG EMME Certifications and qualifications

Authorized Service Partner of SIEMENS for Motors and Generators

SIEMENS Riparatore Autorizzato Motori

Authorized Service Partner of Flender for Gearboxes



UNI EN ISO 9001:2008 UNI EN ISO 14000:2004 UNI EN ISO 45001:2007



WHO ARE OUR CUSTOMERS

- Port operators for lifting engines.
- National Railways for traction engines and on-board auxiliaries.
- Railways granted for traction engines and on-board auxiliaries.
- Operators and builders of cable car systems for traction and auxiliary motors.
- Steel industries for electric motors, drives, gearboxes.
- Energy for wind, marine and water generators.



Services and much More

Annual production capacity

spindle motors 630	900 brushless motors
medium voltage AC motors 150	500 DC motors
medium voltage AC motors for railway traction	680 asynchronous motors
medium voltage 60 DC motors	150 torque motors
medium voltage DC 160 motors for railway auxiliary application	Present in most important national and international trade fairs

