



THE AUTOMOTIVE INDUSTRY

CALIBRATION | SOLUTIONS | TO | IMPROVE | YOUR | PERFORMANCE



CALIBRATION IN THE AUTOMOTIVE INDUSTRY

Although it has recently gone through its worst crisis in two decades, the automotive industry is currently seeing positive developments and vehicle sales are on the rise in most countries.

Over the next thirty years, the number of vehicles on our roads is expected to double. Such strong growth is predominantly due to demand in developing countries such as China, India or Brazil, where the total number of vehicles is set to quadruple by 2030. Against this background of strong growth combined with heavy dependence on its non-renewable and practically sole energy source petroleum, the automotive industry is faced with several challenges:

- > independence from petroleum
- > implementation of sustainable alternative technologies into practical application
- > response to pressing economic and ecological demands
- > optimization of testing and simulation systems

Since the early 1980s, anti-pollution regulations and industry standards have played a decisive role in technological developments. Emphasis has been placed on optimizing the efficiency of conventional engines and fuels, whilst at the same time designing alternatives (electric engines, hybrids, etc.). Any such technological developments must take into account of the particular constraints of the automotive industry (competition, regulatory, tax) and come at a price that consumers can accept.

In order to meet these challenges and stay competitive, car manufacturers and their whole chain of suppliers are focusing their energies on improving efficiency and performance on both domestic and international markets. Calibration laboratories, whether internal or outsourced are no exception to this new reality. Laboratories must master constraints specific to the sector, and all standard requirements IATF 16949 and ISO/IEC 17025 and the evolution of industry standards over time. When outsourcing metrological services it is important for industrial groups to choose a service provider that has the adequate size and expertise to ensure that the asset management and the provision of calibration and repair services, meet the technical, quality and price requirements consistent with industry demands.

In this multi-domain and multi-site industrial sector; the

reliability of measurements carried out, of the expertise provided, and of the management of measuring processes are all essential to guarantee a uniform level of quality in mass-produced equipment.

Trescal, through its competence in projects of various sizes, which is recognised with several international accreditations, as well as its unique geographical reach, possesses a proven ability to support car and equipment manufacturers wherever their locations, to ensure a constant standard of calibration services and to offer innovative solutions that guarantee substantial savings.



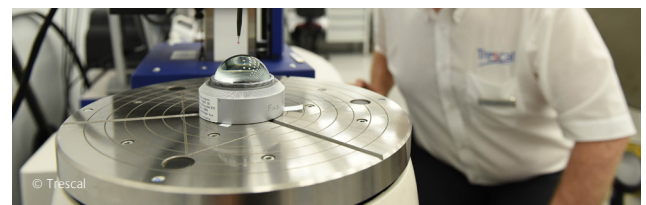
WHAT TRESCAL HAS TO OFFER

OUR SERVICES

Trescal, a worldwide expert in calibration, offers automotive industry manufacturers a broad range of services for projects of different magnitudes, with multi-site and multi-national coverage, associated with high-performance IT and logistics solutions that can simultaneously be applied to portable instruments, industrial chain-production equipment, and laboratory equipment.

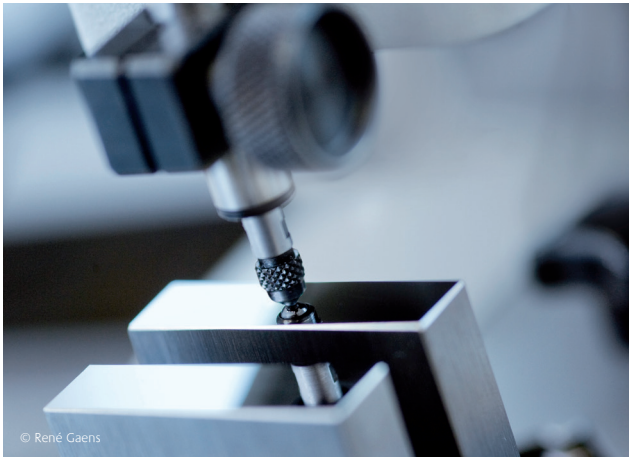
- > Calibration/Verification and Tests
- > Repair/Maintenance
- > Measurement management and acquisition systems
- > Dynamic asset management and software solutions
- > Engineering/Training/Support/Consultancy

Dedicated teams with expertise in industry standards (IATF 16949, ISO 9001, ISO/IEC 17025...) and backed up by our Technical Department as well as our accredited laboratories, can be installed on site and integrated with the customer's organization to ensure a responsive and on-hand service.



WHY CHOOSE TRESICAL?

- > Business-oriented organization, operational running of projects and follow-up of delivered contracts carried out by a dedicated team
- > Integration of operational and organizational constraints relating to the automotive industry
- > Large coverage of metrological domains plus related technical expertise
- > IT and software solutions for assets management and optimization
- > Broad scope of operations (calibration, preventative/corrective maintenance, qualification) at all stages of customer processes
- > An offer with complementary services (rental, sale of equipment, sub-contracting, repair)
- > Quality, metrological and market expertise through proficient knowledge of the references and standards in force (IATF 16949, ISO 9001, ISO/IEC 17025)
- > The ability to assist customers in adjusting and improving their calibration processes



OUR AREAS OF EXPERTISE

CALIBRATION DOMAINS

- > Accelerometry
- > Acoustics
- > Chemical
- > Dimensional
- > Electricity/Magnetism
- > Force
- > Gas flow
- > Hardness
- > Humidity
- > Liquid flow
- > Mass/Scale
- > Pressure/Vacuum
- > Radiometry/Photometry
- > Temperature

- > Time/Frequency
- > Torque
- > Volume

INSPECTION AND TESTING

- > Analysis
- > HVAC control
- > Mechanical inspection
- > Pressure processes and devices tests
- > Scale (Legal metrology)
- > Strain gauges testing
- > Testing machines (Force & Hardness)
- > Thermic and climatic testing

OUR ADDED VALUE

- > A unique range of technical skills and services in the world: a "One-Stop-Shop" offer
- > A real proximity to our customers thanks to our regional branches and customers' satellites
- > A recognized expertise based on a worldwide network of accredited laboratories
- > Solid experience in equipment and processes dynamic management and optimization
- > A multi-brand expertise in repair and MCO for maintenance operations relevant to your asset inventory
- > An extensive knowledge of standard requirements in our customers' industrial sectors (ISO 9001, ISO 9100, IATF 16949, GMP, GLP, ISO 15189, ISO 22716, ISO 14001, ISO 10012, ISO/IEC 17025, ISO/IEC GUIDE 98-3 (GUM), VIM...)
- > A group technical division composed of engineers, and project managers in charge of coordinating and animating a structured network of experts

OUR CUSTOMERS

• Aldridge • Alstom • Autoliv • AVL • BMW
• Bombardier Transportation • Borg Warner
• Chrysler • CNH • COMAU • Continental
Automotive • Cummings • Daimler • Delphi • Deutsche Bahn • DOGA • Eaton • Faurecia • Fiat Group • General Motors • GKN • Honeywell • HUF • Inergy Automotive Systems • Jaguar • Johnson Controls • Land Rover • Leoni • Magna • MG • Michelin • Nissan • Opel (GM) • Pirelli • PSA • Renault • Ringmill • Robert Bosch • SKF • Toyota • TRW • Valeo • Volkswagen • Volvo Trucks •



CUSTOMER TESTIMONIAL

JEAN-LUC OBERLÉ – LABORATORY & PROTOTYPES MANAGER – INERGY AUTOMOTIVE SYSTEMS – COMPIÈGNE SITE*

“As manager of the testing lab and Inergy Automotive prototypes at the Compiègne technical centre, I'm in charge of carrying out product testing and validation for our projects with international car manufacturers. The quality of measurements and the level of responsiveness in carrying out tests are decisive factors for an equipment supplier in this intensely competitive market. Cost reduction and the optimization of means and resources are also constant concerns in a situation of economic uncertainty that I have piloted the outsourcing of our calibration services.

Trescal has gradually established its position as our sole supplier. The technical coverage that it provides, the range of services and the strength of its overall offering meet our expectations by matching activities to needs. Trescal has proven able to adapt to our needs in terms of availability of test

& measurement equipment. It has set up on-site operations that meet all of our diverse calibration requirements, whether in electricity, temperature, pressure, flow rate or force measurement, accelerometry or mechanical, all the while bringing its expertise to the core of our processes through regular follow-up meetings to optimise Maximum Permissible Error (MPE) results, programmes, and frequencies. Trescal lets us concentrate on our core business by providing hosted Hasting Web calibration activities, which opens up possibilities such as interactive planning or digital archiving of technical and quality data.

Today, our calibration activities have been rationalized and optimized with minimal involvement of internal resources. Inergy Automotive Systems, in an extremely competitive international environment, puts its trust in the breadth and quality of services and skills provided by Trescal.”

*2010

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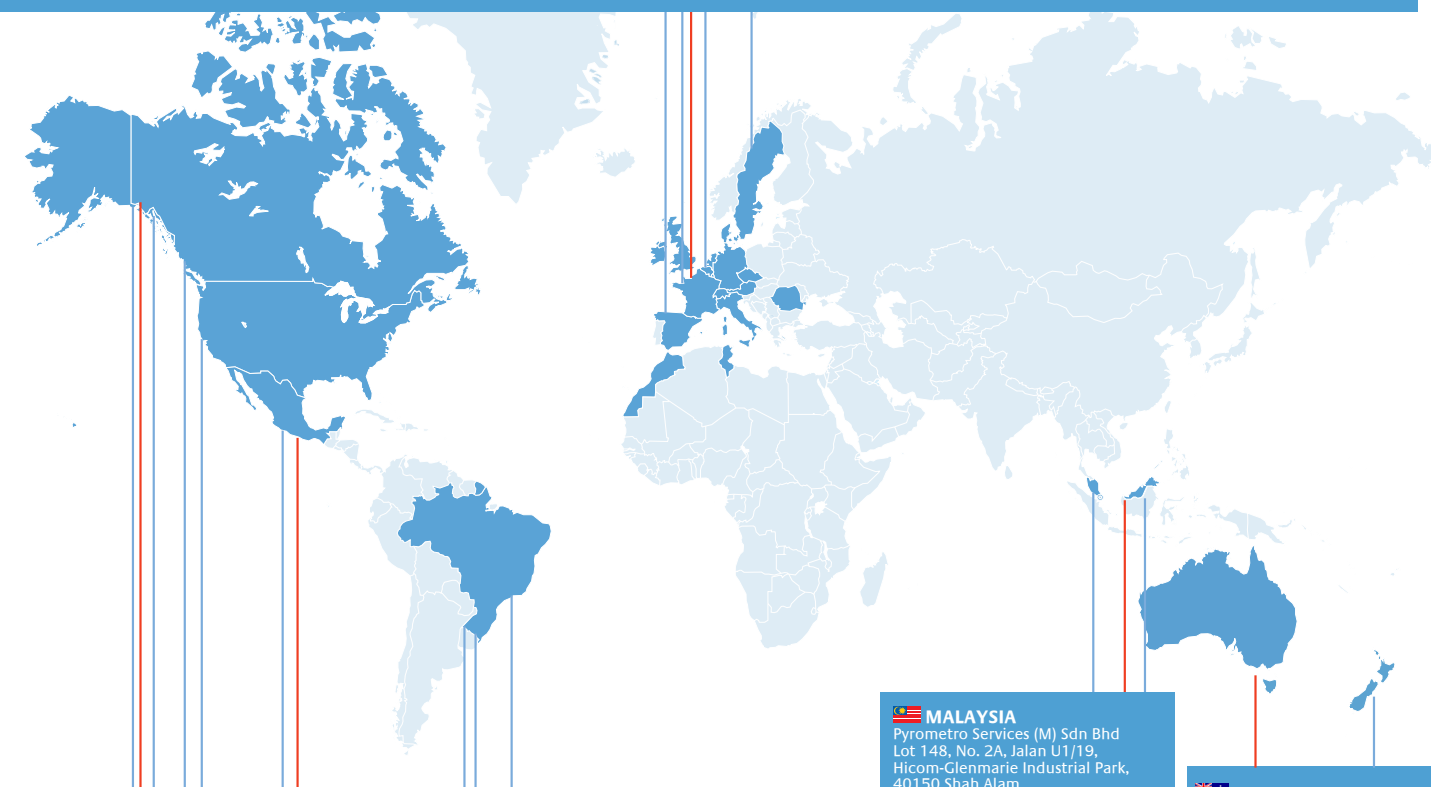
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