

Delphi Technical Center Piracicaba Engine Dynamometer Laboratory

The Engine Dynamometer Laboratory at the Delphi Technical Center Piracicaba (TCP) offers passenger vehicle and motorcycle manufacturers and component suppliers state-of-the-art facilities for engine performance and durability testing. The Lab has conducted studies in:

- Combustion research
- Product development
- Product performance
- Engine management systems calibration
- Component durability

The TCP Engine Dynamometer Laboratory has test resources that have been enhanced over the years through collaboration with major manufacturers. Testing is conducted by a highly trained and experienced staff that understands the challenges facing manufacturers today. Complete confidentiality is assured. Laboratory services are conducted to meet individual customer schedules and at a competitive cost. Professional, experienced account management provides customers with single-point contact to streamline test coordination.

Delphi's TCP Engine Dynamometer Laboratory is conveniently located to support manufacturers in South America. It can support manufacturers in other regions through Delphi's global network of technology centers. It supports customers who do not have in-house testing capabilities, or require "overflow" testing services.

► Capabilities

Delphi's Engine Testing Laboratory at the TCP offers:

- Two double-sided AC dynamometers with transient capabilities for performance testing:
 - EDL1 maximum power: 220 kW, maximum torque: 450 Nm
 - EDL2 maximum power: 130 kW, maximum torque: 300 Nm
 - Transient test capacity: up to 9,000 rpm
 - Inertia 0.55 kgm²
 - Gross emissions bench pre-catalytic converter
 - Gravimetric fuel consumption measurement system
 - Automated controls for environment and engine conditions (engine oil, coolant, intake air and fuel conditioning units)
 - Test automation system
 - Data acquisition rate: 10 Hz



Control Room for the Engine Dynamometer Laboratory at Delphi's Technical Center Piracicaba.



Equipment Room for Engine Dynamometer Laboratory at Delphi TCP.

- Two Eddy current dynamometers for durability assessment:
 - Both offer maximum power: 250 kW, maximum torque: 400 Nm
 - Automated controls for environment and engine conditions (engine oil, coolant and fuel)
 - Coriolis fuel consumption measurement system
 - Data acquisition rate: 1 Hz
- Multiple fuel capabilities:
 - Gasoline
 - Diesel
 - Alcohol (up to 100% ethanol)
 - Gaseous fuel
- Combustion analyzer system to measure pressure inside combustion chamber:
 - Interface for combustion analysis system and application tools for engine control modules
- Spark plug measurement with integrated cylinder pressure sensor for combustion analysis
- Engine calibration tools available
- Machine shop for engine instrumentation and prototype construction
- Test stands are equipped with complete data acquisition and controls are integrated with instrumentation systems
- ISO/IEC 17025 accreditation (General Requirements for the Compliance of Testing and Calibration Laboratories) from the Brazilian National Institute of Metrology Standardization and Industrial Quality (INMETRO)
- Compliant with code of practice of the Environmental Sanitation Technology Company, Brazil (CETESB) and the Brazilian Institute of Environmental and Renewable Natural Resources (IBAMA)



Engine Dyno Test Cell in the TCP Engine Dynamometer Laboratory.

► The Delphi Advantage

The Delphi Technology Center Piracicaba supports customers worldwide in the design, development, testing and validation of their products. It is a development location for several Delphi ISO/TS 16949 certified manufacturing sites and is part of Delphi's network of state-of-the-art technical centers around the world. TCP has received a Certificate of Compliance for OHSAS 18001 (Occupational Health and Safety Management System) and a Certificate of Compliance to ISO 14001 (Environmental Management System).

Delphi is a leading global supplier of a broad range of technologies with manufacturing facilities located in more than 30 countries. Delphi's products are engineered to meet the rigorous standards of the automotive industry, but Delphi technologies are also used in many other industries. We leverage a rich heritage and extensive technical knowledge to offer customers an array of innovative, cost competitive solutions.

► Contact Information

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