



MCLAREN PERFORMANCE
TECHNOLOGIES



"Combining the Heritage of Racing with Excellence in Powertrain and Chassis System Engineering Services"



McLaren Powertrain specializes in the Design, Development, Integration, and Validation of Powertrain Systems. McLaren Powertrain is recognized as the partner of choice for everything from automotive testing to full-service design.

McLAREN PERFORMANCE TECHNOLOGIES



We are a leading source for automotive:

- ▶ Powertrain and Driveline Design and Development
- ▶ Engineering Services and Testing
- ▶ Fabrication, Assembly and Testing
- ▶ Performance Parts Manufacturing, Assembly and Testing
- ▶ Powered by McLaren™ means the most unique combination of performance-focused and motorsports-inspired engineering services within the automotive industry.
- ▶ McLaren Powertrain provides services ranging from the durability and development testing of powertrain systems to the complete engineering, validation testing and manufacturing engineering of niche engines.
- ▶ We excel at delivering the highest quality results, with uncommon craftsmanship, under the tightest project deadlines.

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McLaren Powertrain Engineering houses a modern engine testing facility that operates around-the-clock. There are sixteen dynamometer test cells. Our testing facility features standardized test cells for quality and scheduling flexibility.

[Our world class engine system testing expertise means that development projects are supported with agile and cost-effective systems that fast-track technical value back to our clients.]

We test complete engines, powertrain subsystems, and related components.

These test cells feature:

- ▶ 16 Dynamometer Cells:
 - 25 to 2500 HP, up to 14000 RPM, up to 3500 ft. lbs. of Torque
 - Horiba and ECM Air/Fuel Analyzers
 - Temperature Controlled Engine Intake Air Systems
 - Oil Aeration Test Equipment
 - Motoring stands 1/2 to 40HP
 - Emission Benches – Horiba, Mexa 1500
 - Cell Calibration Equipment (in house)
 - Electronic Air Flow Measuring Equipment
 - Catalyst testing/Oxygen Sensor
 - Deep Thermal Shock Testing
 - Heat Rejection - Standard and Adiabatic
 - Production Engine Audit Testing
 - Engine Teardown Analysis
 - High HP & RPM Combustion Development

The performance of valve train operation and accessory drive systems can be studied on a variety of driven fixtures with the following features:

- ▶ The latest computer interface and PC controls
- ▶ Innovative data acquisition systems
- ▶ Subsystem testing capabilities including:
 - Detailed Coolant System Analysis
 - Combustion Analysis
 - Water Pump Power/Efficiency Evaluation
 - Knock/Pre-ignition Monitoring
 - Circulation Rate
 - Lubrication Analysis
 - Oil Sump Windage
 - Aeration Evaluation
 - Exhaust Emissions
 - Air/fuel Ratio Analysis
 - Induction and Air
 - Component

[Our strong simulation and analysis capabilities have all appropriate quality certifications and have the ability to communicate with our clients' systems for collaborative analysis and knowledge management that leverages client and McLaren capability.]



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We have an extensive 3D CAD capability to perform component and system design using:

- Parametric, Solid Modeling
- Advanced FEA and CFD Capabilities
- Part Validation and Verification
- UTS Gear Design Software

We have seats for all key customer-utilized design software which includes Unigraphics, Catia, Solid Works, Pro-Engineer, Ideas, AutoCAD, Fluent, Sifius and others.

Quality Audit and Validation

McLaren Powertrain enjoys a unique relationship with our customers as a source for engine and driveline system quality audit and validation.

We process warranty returns for our customers and perform inspection and analysis of in-use performance with reporting and analysis for warranty cost reduction and continuous improvement programs.

We carry out production validation, with first-run and end-of-line batch samples passing through McLaren Powertrain for quality sampling, analysis, statistical reporting and findings to help optimize our customer's component production operations.

▶ McLaren Powertrain specializes in the Design, Development, Integration and Validation of Powertrain Systems.

▶ McLaren Powertrain maintains a staff of highly experienced designers and technicians who are capable of complete design, development, manufacturing, and assembly of prototype and production powertrain systems.

▶ As a premium engineering partner, we provide full-service design and development capability, from concept initiation to the creation of release-level design drawings.

[Our strong simulation and analysis capabilities have all appropriate quality certifications and have the ability to communicate with our clients' systems for collaborative analysis and knowledge management that leverages client and McLaren capability.]



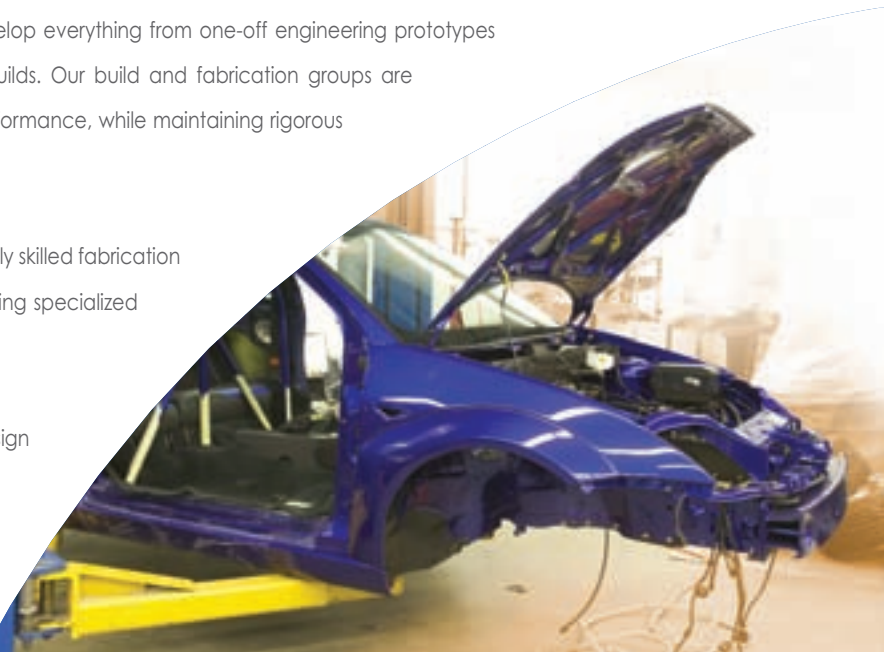
The strong tradition of competitive spirit, agility, integrity and innovation at McLaren Powertrain is derived from its long-standing involvement in performance, motorsports, and production engine development.

[We excel at delivering the highest quality craftsmanship under the tightest project deadlines.]

McLaren Powertrain has the capability of designing, fabricating, assembling, painting and testing concept, prototype and performance products. We have the ability to design and develop everything from one-off engineering prototypes to low-volume, specialty, or production engine and vehicle builds. Our build and fabrication groups are particularly skilled at producing products that have superior performance, while maintaining rigorous engineering standards.

Our prototyping and fabrication facilities are supported by a highly skilled fabrication and machining work force with many years of experience building specialized concept and one-off products.

Together with our component manufacturing and system design and development capabilities, McLaren Powertrain offers an integrated system of specialized vehicle fabrication capabilities that is second to none. We can take you from vision to vehicle with robust program management and validation services.



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McLaren Powertrain combines the technology advances of our high performance engine development programs and state of the art manufacturing to provide the latest in high performance, high precision components.

[McLaren Powertrain specialty and performance products puts the winning power of McLaren Powertrain to work for you.]

The performance products division provides innovative services and products that are the choice of leading engine builders and part suppliers worldwide. From custom parts to complete engine assemblies, McLaren Powertrain crafts only the finest performance parts for your applications.

The McLaren Powertrain Performance Product Division is an exciting and new expansion to the McLaren Performance Technologies portfolio. Top racing professionals have used McLaren Engines for the last 30 years. That winning power is yours to command from McLaren Powertrain.



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[Linamar designs, and manufactures every precision machined component used in today's cars and trucks.]

- From engines, to transmission/driveline systems, Linamar is an international vehicle systems Developer, Manufacturer, and Integrator.
- We offer full-service, system-specific capabilities for functional assemblies and modules.

Our Core Values and Management Principles:

- Balance Customer, Employee and Financial Satisfaction
- Innovative Use of Technology
- Intense Entrepreneurship
- Responsiveness to Stakeholders
- Unsurpassed Work Ethic
- Providing an Environment of Opportunity and Mutual Respect

In North America, Europe, and Asia, Linamar has over 11,000 highly-skilled employees with facilities in Canada, the United States, Mexico, and Hungary, Germany, the United Kingdom, China, Korea and Japan.

- We offer prototyping, production-intent, and full production tooling.

- **Engine Group**
- **Transmission/Driveline Group**
- **Europe Group**
- **Industrial Group**
- **Asia-Pacific Group**

[Linamar is aligned into five product groups.]

Linamar Product-Focused Groups are known for their product-specific expertise in a lean corporate structure. Our organization encourages sharing of best practices to fully utilize core strengths and optimize overall company performance and customer value.

- Product innovation
- Technical leadership
- Outstanding quality
- Exceptional customer service
- Responsive support for engine and transmission/driveline products.
- Functional vehicle system design and integration



[We are the supplier and partner of choice for all light passenger vehicles and heavy-duty vehicle

engine and transmission/driveline systems, plus functional components.]

Linamar's Product Group structure matches the right resources at the right time to exceed customer needs quickly, efficiently, and cost-effectively. The Linamar Production System streamlines the delivery of innovative technology, high quality production, system integration, and world class program management to launch programs on time, under budget, while adding value to all areas of our customer's operations.

Our goal is the focused pursuit of becoming the precision system manufacturing company of choice for all stakeholders, our Customers, our Investors, and our Employees.

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POWER TO PERFORM



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