



Your **TESTING RESOURCE PARTNER**
for transportation science, systems & components

VEHICLE COMPONENT QUALIFICATION TESTING

HELPING ENSURE THE SAFETY AND QUALITY OF COMPONENTS DESIGNED FOR THE AUTOMOTIVE INDUSTRY

Located just north of Detroit, our ISO 17025 accredited facility in Troy, MI specializes in component level durability, fatigue and vibration testing using servo-hydraulic, electro-dynamic, environmental and burner technology. The flexible infrastructure allows our customers to create custom test cells including, but not limited to, hot or environmental vibration, multi-axis fatigue and durability, ultimate strength and pneumatic cycling. Examples of products we test include:

SUSPENSION SYSTEMS

- Shocks & Struts
- Springs

EXHAUST SYSTEMS

- Full After-treatment Packages (DOC/DPF/SCR)
- Manifolds
- Mufflers
- Catalytic Converters & GPF's
- Joints, Clamps & Seals
- Heat Shields
- Hanger Rods
- Sensors

STEERING SYSTEMS

- Control Arms and Knuckles
- Ball Joints & Tie Rods

OTHER TESTING CAPABILITIES

- Seating Mechanisms
- Fuel & DEF System Tanks/Components
- Railroad Components (Clips)
- Roof Racks & Hitches
- HVAC Components
- Axles & Breaks
- Lighting & Electronic Components
- Filtration & Carbon Canisters
- Thermal Management Systems (Hoses, Lines, Battery Cooling Plates)



VIBRATION

- Capacity up to 22K lbf
- Various Electro-Dynamic (ED) Shaker Systems
- Slip Tables Available for Off-axis
- Diverse Control Strategies Available



HYDRAULIC

- Capacity up to 50K lbf
- Stroke, Load, Amplitude, or Field Data Playback Control
- Combined with Environmental or Burner Inputs



THERMAL

- Temp/Flow up to 1200 °C/1,000 SCFM
- Propane or Natural Gas Fuel Source
- In-house Burner Development



ENVIRONMENTAL

- Environmental Chambers Capable of -55 °C to 175 °C
- Hydraulic, Electro-dynamic or Pneumatic Inputs Available
- Thermal Shock Chambers Available

We have the laboratories, equipment and expertise to provide numerous component tests and support services.

AMBIENT, ENVIRONMENTAL AND HIGH TEMPERATURE VIBRATION TESTING

- We use electro-dynamic shakers to test your product's ability to withstand shock and vibration while exposed to simulated engine heat and harsh climates.

SERVO-HYDRAULIC TESTING

- TRP can design and build custom hydraulic test set-ups to run single or multi-axis inputs. All hydraulic tests can be coupled with our burner or environmental systems.

BURNER TESTING

- TRP burners are capable of running up to 1200 °C. Independent temperature and flow control allows for complex and customized temperature cycles.



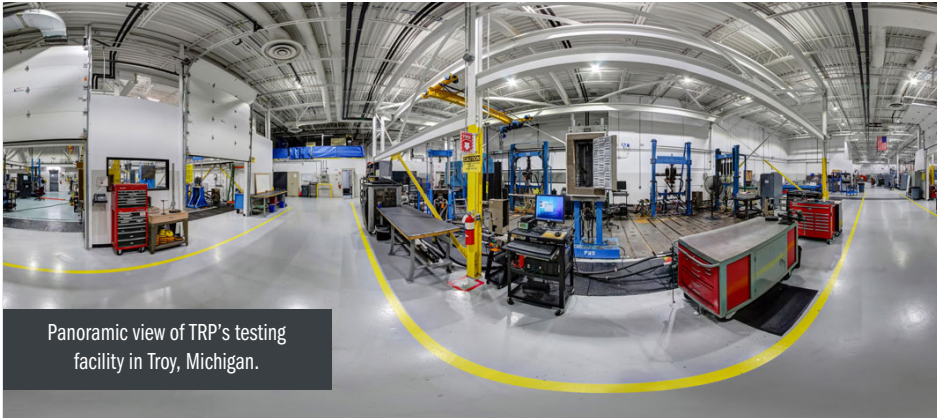
ACCREDITATIONS

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VEHICLE COMPONENT QUALIFICATION TESTING



Panoramic view of TRP's testing facility in Troy, Michigan.

EQUIPMENT CAPABILITY RANGES

TEST	PARAMETER(S)
Airleak Testing	Up to 100 SLPM
Durability / Axial and Bending Fatigue & Ultimate Strength	50,000 lbs max. (0 to 250) Hz, Up to 10" peak to peak displacement
High / Low Temperature with Humidity	(-55 to 175) °C, 62 ft3, RH up to 95%@40 °C
High Temperature Air Flow	2000 SCFM, 1200 °C max.
Thermal Shock (Waterspray)	Up to 50 SLPM at 25 PSI
Acoustic Measurements	(45 to 138) dbA in anechoic chamber
Shock Pulse	(3 to 2500) G (0.3 to 65) ms (Up to 200 lbs)
Vibration	(5 to 3,000) Hz Up to 3" peak to peak displacement
Sine	22,000 lbf
Random	22,000 lbf
Shock	54,000 lbf
Kiln (Oven) - High Temperature	1200 °C max.

WHY US?

At TRP, we provide comprehensive testing services to ensure your products meet the highest safety, reliability, and compliance standards. With decades of experience, we are a trusted partner for automotive manufacturers, OEMs, and aftermarket producers.

UNMATCHED EXPERTISE

Backed by years of industry experience, our team of seasoned professionals excel as skilled testing specialists.

HIGH PRECISION LABORATORIES

ISO accredited labs feature innovative technologies, specialized facilities and advanced testing equipment.

EXTENSIVE TESTING SOLUTIONS

Diverse testing capabilities, from large commercial vehicles to small parts and their components.

CUSTOMER FOCUSED

A customer centric approach with tailored solutions to meet your specific project needs.

TRUST AND RELIABILITY

A proven track record of reliability, delivering quality results with quick turnaround times.

AURORA, CO

- High Altitude Laboratory
- Vehicle & Engine Testing
- Emissions Cert Testing
- PEMS Testing Services
- Mileage Accumulation
- Sub-Zero Cold Testing
- In-use Verification Program
- EV & HEV Testing



EMPIRE, CO

- High Altitude Test Center
- Elevation 8,900 ft
- On-road Development
- Sub-Zero Cold Testing
- 700 ft Drive-away
- On-Site Refueling
- EV & HEV Charging



COLUMBUS, IN

- Sea Level Laboratory
- Vehicle & Engine Testing
- Emissions Cert Testing
- Sub-Zero Cold Testing
- Mileage Accumulation
- Motorcycle/ATV/UTV
- In-use Verification Program
- EV & HEV Testing



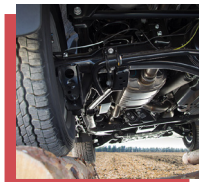
LAPEER, MI

- Fuel Storage & Systems
- Component Testing
- Environmental & Durability
- Evaporative Emission
- Fill & Refueling Testing
- Lateral Slosh Testing
- Fire Resistance Testing



TAYLOR, MI

- Catalyst Aging
- Equipment Design & Production (NG1/NG2, Next Gen Burners)
- Fabrication & Machining
- Thermal Component Testing



TROY, MI

- Chassis & Suspension
- Shock Absorber Testing
- Component Testing
- Fatigue & Cyclic Testing
- Vibration Testing
- Thermal Test Conditions
- Exhaust Systems Testing

