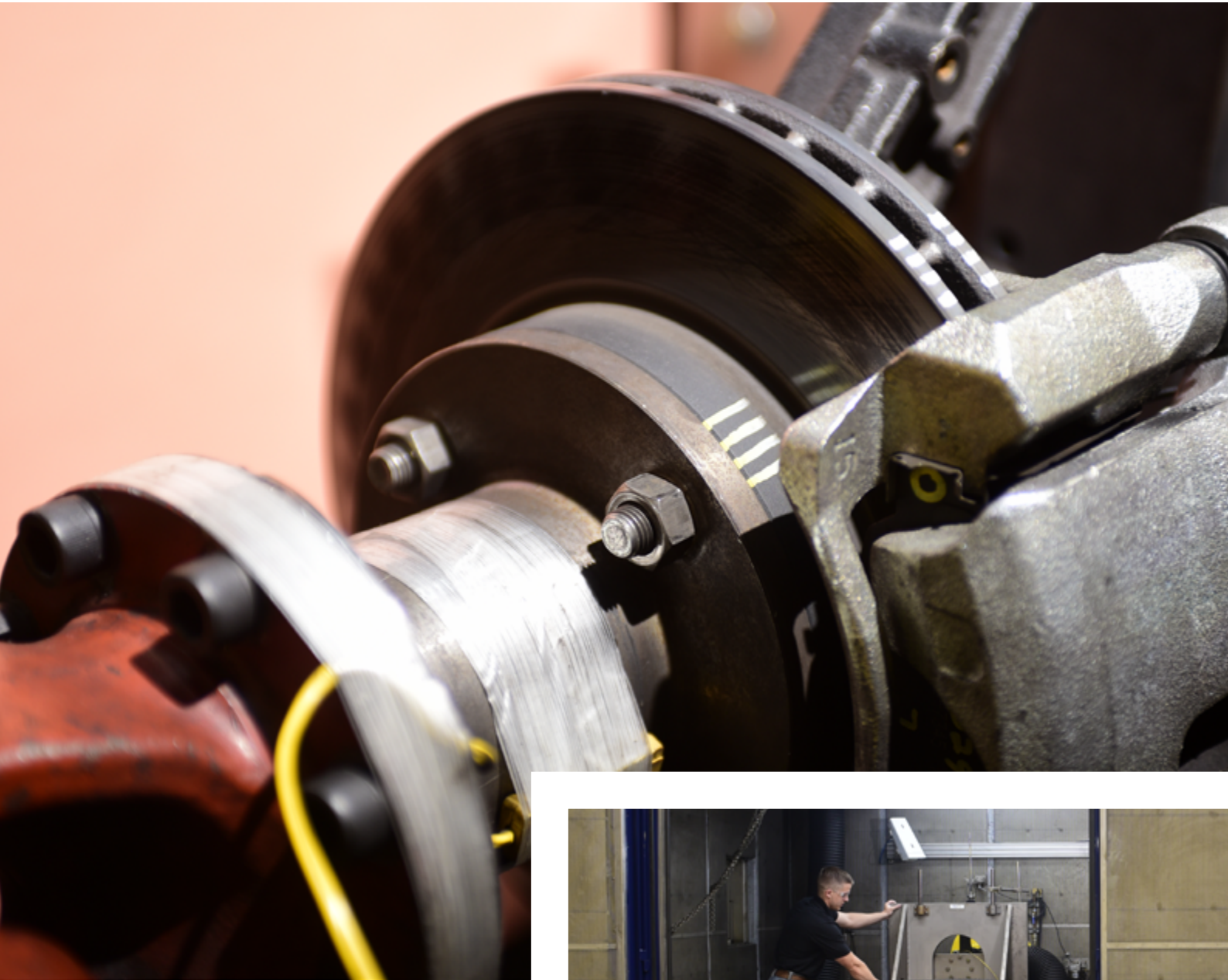




Brakes





Overview

At LINK, we are known for our extensive experience in developing industry-leading, innovative solutions in brake testing. LINK provides fully integrated test systems to evaluate brake and friction materials at all scales. We produce actionable data you can use to verify and improve your product.

Our close industry collaboration and comprehensive capabilities let us address all aspects of brake systems, including boosters, master cylinders, ABS modules, calipers, rotors, brake

linings, backing plates, insulators, friction ingredients, brake drums, and assemblies. Our systems test durability, performance, efficiency, noise/vibration/harshness (NVH) and more.

LINK also offers robust and flexible data acquisition systems for on-vehicle testing of brake and friction characteristics. Our software offers an identical interface to both laboratory and vehicle test data, so you don't have to re-learn the system every time you switch test platforms.

With LINK test systems and services, you won't just think that your brake components are ready for the market, you'll have the data to prove it.

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Why LINK?

We know the technology.

At LINK, we mobilize cutting-edge technologies to develop products and provide services that ensure the safety and performance of global transportation. We enable vehicle design professionals, development engineers, and validation engineers to reach their goals of providing safe, comfortable, sustainable, efficient, and reliable products for personal mobility.

We collaborate with industry partners.

LINK has advanced the discipline of brake system development through engagement with customers and suppliers across the global OE community. While we develop standard test methods, we also lead and participate in many SAE and ISO working groups.

We help you get better, faster.

Working hand in hand with vehicle manufacturers and suppliers, we design dedicated equipment. Our work expands the arena of possibility for vehicle safety, comfort, sustainability, efficiency, durability, and performance.

We go everywhere.

Across the globe, LINK has the most capable test footprint of any brake development laboratory. From basic chemical analysis of constituent compounds to full vehicle-level brake system evaluation, our test laboratories will surpass your expectations. As a global resource, we provide customers in North and South America, Europe, and Asia with the speed and accuracy they require.

Our labs deliver accurate answers, on schedule.

Our test laboratories are continually evolving in anticipation of technology trends, and adopting new ideas in response to measurement needs. Providing convenient access and proven customer support, LINK test laboratories offer quick communication and results that enable customers to hit their design targets on time and improve their products.

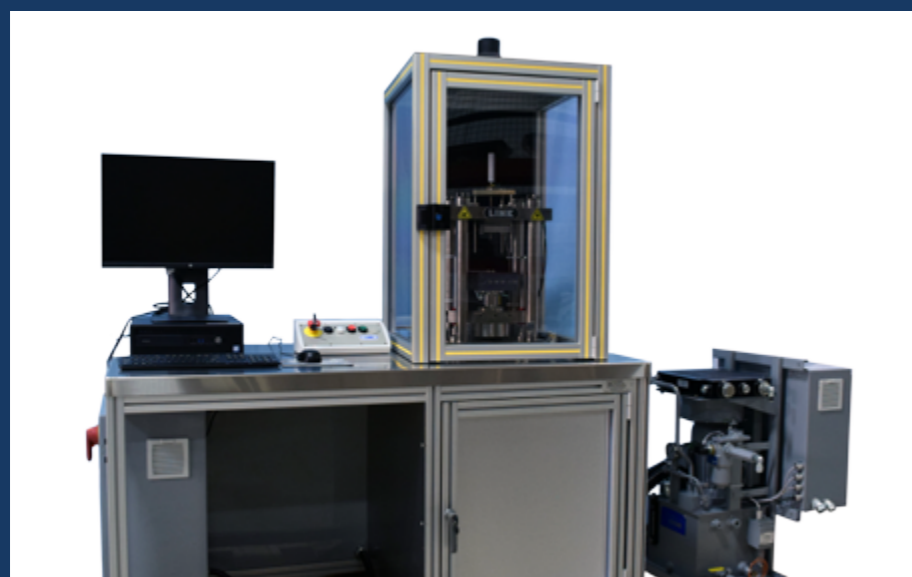




Friction Characterization

LINK offers friction test systems which support dual applications: quality inspection or material development. For objective quality inspection, users evaluate acceptable product tolerances and measure consistency in part production. For material development, users require high precision to evaluate frictional properties and raw material characteristics.

Measurement systems and mechanical assemblies are carefully engineered to eliminate potential sources of test variability. Typical test measurements include compressibility and coefficient of friction and may be expanded further to include thermal and wear characteristics.



Model 1620 Compressibility Test Machine

- Hydraulic control through air-cooled variable speed power unit (quiet operation)
- Titanium-cased hydrostatic alignment mechanism
- Lightweight loading block assembly
- High precision displacement sensor
- Optional integration to production line, as EOL quality check
- Heating unit
- Piston adapters



Model 600 Chase Friction Material Test System

- Used to evaluate the frictional characteristics of materials used in brake systems in accordance with the SAE J661 test procedure.
- Normal load or friction force control
- Sample heaters and forced-air cooling



Model 2876 Friction Shear Machine

- Evaluates friction material bonding strength for SAE J840 test procedure
- Passenger car and medium truck applications
- Customized fixtures to match lining contact radius

Component Test Stands

LINK manufactures customized brake and friction test stands, used to recreate vehicle subsystem functions within a laboratory environment. The test stands developed by LINK prove their worth through dependable, high precision performance year after year for decades.

Typical test stand capabilities include durability, life cycling, NVH, performance, development, sample verification and quality checks. Our ProLINK software control program can be easily modified to meet requirements for data recording and real-time display. Strain gauges, thermocouples, NVH sensors and other measurement devices capture the necessary data.



Model 2636 Caliper Test Stand

- Performs cyclical applies to measure part durability and performance
- Hydraulic and electric applications
- Knock-back testing



Model 3315 Rotor Mapping Station

- Measures and records disc thickness variation and rotor run out
- Precision rotary table
- Automated rotor measurement



Model 3016 Residual Drag & DTV

- Measures and records residual brake drag and wear induced rotor thickness variation
- High precision torque sensor
- Non-contact capacitive probes



Model 3394 Booster Test Stand

- Simulates braking applications to record and analyze performance and NVH characteristics
- Measurement of displacement, stroke, pressure, load and noise characteristics
- Automatic evacuation and brake fluid fill



Dynamometers

LINK is a leading designer and manufacturer of inertia brake dynamometers, which are recognized globally as an industry standard, and operating in brake testing facilities around the world. Applications range across the entire vehicle line including motorcycle, passenger car, commercial truck, off-road, military, aerospace, and railway. Dynamometer testing is used to replicate usage conditions on the complete brake system in the laboratory setting.

All LINK dynamometers feature controls which enable close correlation with existing test protocols. The ProLINK software package offers fully automatic unattended operation, as well as the option of manual operator control. The operator can select test parameters, control modes, display data, monitor test functions and execute desired test sequences.

Dynamometers are offered in both shaft-type and chassis-type configurations. Shaft dynamometers generally focus on the brake and suspension system, while chassis dynamometers assess the complete vehicle. Typical applications include performance, durability, fatigue, corrosion resistance, and NVH.



Model 2000 Friction Standards Shaft Brake Dynamometer

- Excellent value at entry level price, with short lead time and fast delivery
- Small footprint: Controls, power cabinet integrated with dyno as a single unit
- In-line reaction torque sensor
- Optional universal fixture (caliper/disc and drum/shoes)



Model 3000 Performance Shaft Brake Dynamometer

- High accuracy electric inertia simulation (I-Sim)
- ProLINK control and data with fully automatic or manual operation
- Easy installation (no concrete foundation required)
- Fold-away brake chamber for easy technician test part setup



Model 3900 NVH Shaft Brake Dynamometer

- Test fixture isolated from machine vibrations
- Large climate-controlled test enclosure with acoustic-free field properties
- Qualified to conduct both NVH and performance tests
- High accuracy electric inertia simulation (I-Sim)



Model 4900 1-Roll, 2-Roll, and 4-Roll NVH Chassis Brake Dynamometer

- Automated system for wheelbase adjustment
- Available hemi-anechoic test chamber for low background noise levels
- Available environmental conditioning unit for temperature and humidity control
- Motorcycle, Passenger Car, and Commercial Vehicle applications available



Model 6900 Commercial Vehicle Shaft Brake Dynamometer

- Up to 40,000 Nm for off-highway and commercial vehicle applications
- Multi-disc inertia section with electric motor I-Sim capability
- Compact pedestal workstation and calibration fixture for torque



Vehicle Systems

While laboratory testing offers cost savings and minimizes test variables, in-vehicle testing is essential for understanding how components behave as part of complete systems. LINK excels in providing customized data acquisition systems and accessories that offer accurate, cost-efficient, and flexible testing solutions. Standard and customized report templates offer efficient means to view summarized data.

LINK designs and manufactures these portable data acquisition systems for both vehicle and laboratory bench testing applications.



Testing Support

Along with design and manufacturing, LINK also offers engineering and testing support through its global test operations. With headquarters in North America and strategically placed facilities across four continents, LINK offers expertise on all aspects of test execution and data reporting for both laboratory and full vehicle testing.

Are you ready to Test Smarter?

Contact us today.
www.linkeng.com



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