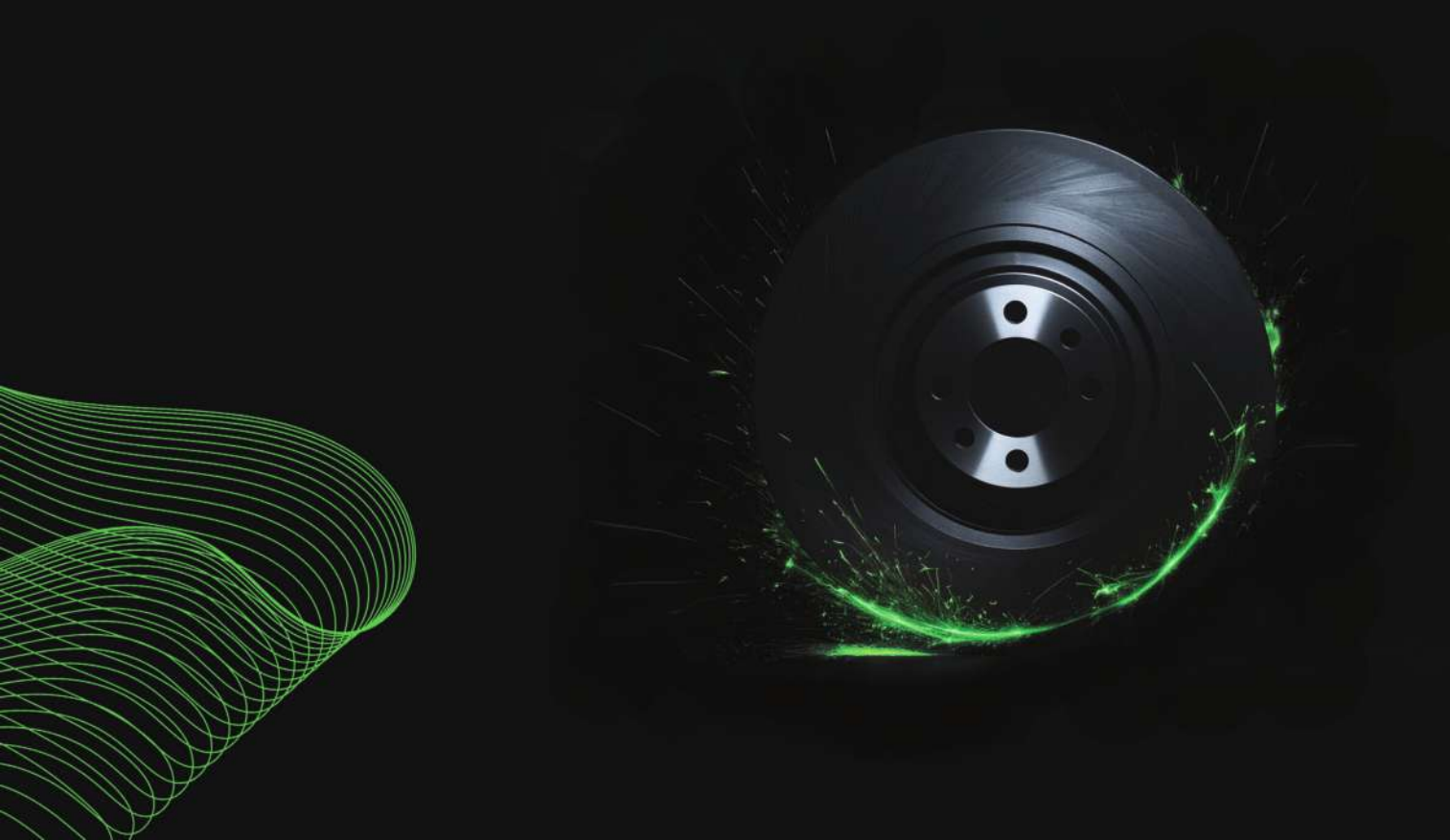
Łukasiewicz
PIMOT

BRAKING SYSTEM TESTS



ABOUT US

The history of the Institute dates back to 1972, when the Automotive Industry Institute – PIMOT was established as the central unit of the scientific and research base of the Polish automotive industry. For many years, the Institute has been the main design and research base for the Polish automotive industry.

Since April 1, 2019, it has been a tests institute co-creating the Łukasiewicz Research Network – one of the largest research networks in Europe, which provides competitive and complete technical solutions. Institute is a technical unit also authorized to conduct research for the purposes of homologation of parts, vehicle equipment and whole-vehicle homologation.

AREAS OF EXPERTISE

- Type Approval/Certification
- Mechanical Testing
- Electromobility
- Road Infrastructure Testing
- Vehicle Dynamics Testing
- Defense and Security
- Vehicle Structural Integrity Testing
- Braking System Testing
- Electromagnetic Compatibility
- Environmental Testing
- Special-purpose Vehicle Testing
- Transport Automation
- Construction and Numerical Analyses
- Bioeconomy/ Circular Economy

IN THE AREA OF THE BRAKING SYSTEMS, WE PERFORM:

Traction tests on vehicles regarding:

- UN Regulation No. 13 for vehicles in categories: **N, M_2, M_3, O,**
- UN Regulation No. 13-H for vehicles in categories: **N_1, M_1,**
- UN Regulation No. 78 (EU Commission Delegated Regulation 3/2014) for vehicles in categories: **L,**
- UN Regulation No. 140 for vehicles in categories: **N_1, M_1,**
- UN Regulation No. 141 for vehicles in categories: **N, M, O.**

Inertia dynamometer tests of brake system components regarding:

- UN Regulation No. 13 for vehicles in categories: **N, M_2, M_3, O,**
- UN Regulation No. 13-H for vehicles in categories: **N_1, M_1,**
- UN Regulation No. 90 for vehicles in categories: **N, M, O, L.**

Also depending on the Customers' needs, tests in the scope of:

- Performance tests within the scope of selected standards, e.g.: ISO26867, SAE-J 2522 (AK Master), AMS, UIC 541, JASO C406,
- NVH test within normal range, e.g.: SAE-J 2521,
- Tests in climatization system,
- Electric hand brake (park brake) test/electric brake test,
- Regenerative brake application test.



The Vehicle test Laboratory of the Industrial Automotive Institute has two

BASIC DATA OF STATION #1:

Maximum rotation speed	2 800 rpm
Maximum braking torque	7 000 Nm
Maximum hydraulic pressure	250 bar

INERTIAL MASS SET CONSISTING OF THREE FLYWHEELS

Base	15 kgm^2
First flywheel	30 kgm^2
Second flywheel	60 kgm^2
Third flywheel	120 kgm^2
Modulated ventilation with maximum capacity	4 000 m^3/h
Modulated suction with maximum capacity	4 000 m^3/h

MAIN ENGINE DRIVING FLYWHEELS WITH CHARACTERISTICS

Power	450 kW
Maximum speed	3 500 rpm
Type	torque/constant power
Torque 2614 Nm	from 0 to 1 645 rpm
In the case of constant speed braking ("drag test"), the maximum braking torque is equal to the torque that can be delivered by the engine	2 614 Nm

inertial dynamometer machines with the following technical characteristics:

BASIC DATA OF STATION #2:

Maximum rotation speed	1 500 rpm
Maximum braking torque	40 000 Nm
Maximum hydraulic pressure	10 bar

INERTIAL MASS SET CONSISTING OF THREE FLYWHEELS

Base	100 kgm^2
First flywheel	300 kgm^2
Second flywheel	600 kgm^2
Third flywheel	1 200 kgm^2
Modulated ventilation with maximum capacity	8 000 m^3/h
Modulated suction with maximum capacity	8 000 m^3/h

MAIN ENGINE DRIVING FLYWHEELS WITH CHARACTERISTICS

Power	448 kW
Maximum speed	2 200 rpm
Type	torque/constant power
Torque 2614 Nm	from 0 to 750 rpm
In the case of constant speed braking ("drag test"), the maximum braking torque is equal to the torque that can be delivered by the engine	5 707 Nm

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LET'S STAY IN CONTACT

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