



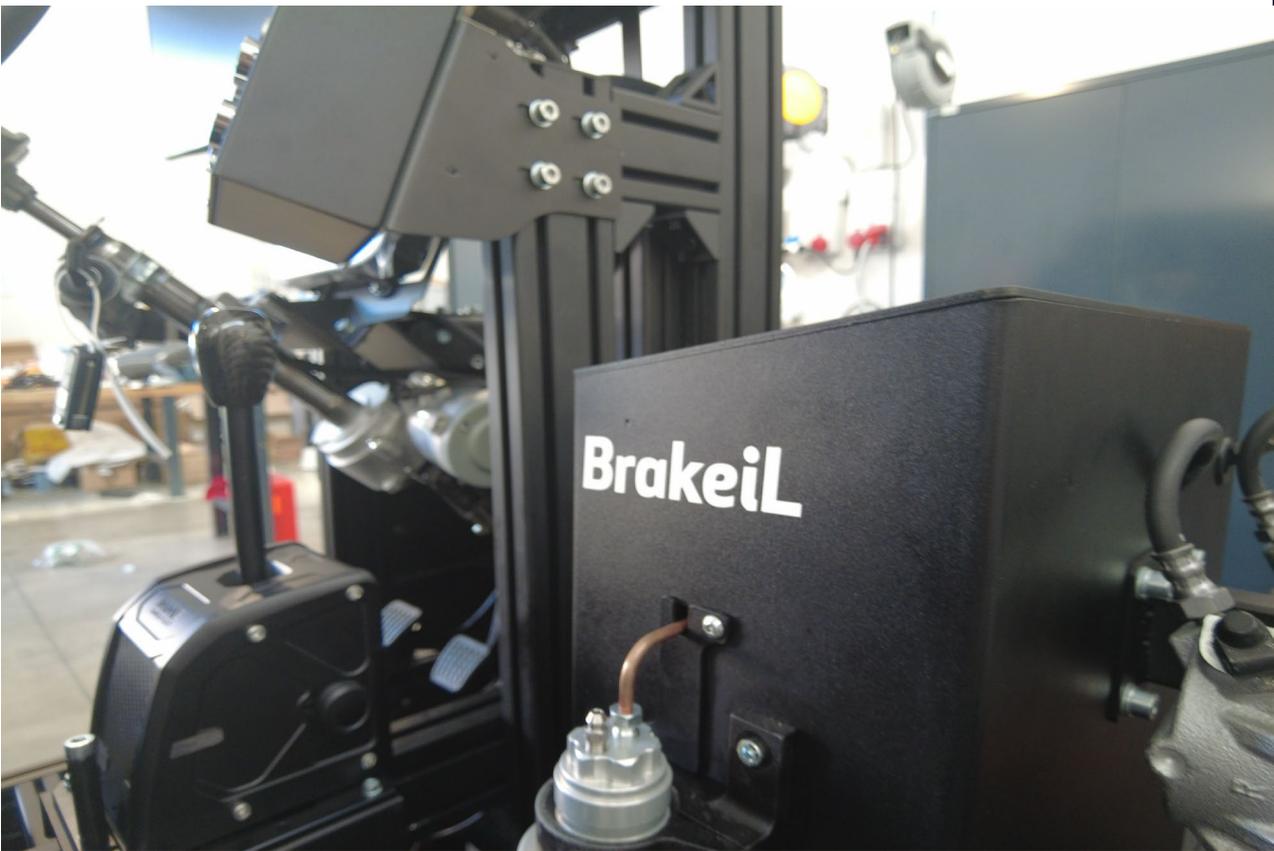
**MECCANICA 42**

# **BrakeiL – Brake System in the Loop**

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Brochure

# AGENDA



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# Introducing BrakeiL: real-time rig for testing complete brake systems.

The brake pressure is built up with a pedal actuator and all the braking functions (ABS, ESC, etc.) are physically performed by the devices under test.

With BrakeiL you can test complete brake system including depending on the vehicle under test):



✓ Brake pedal

✓ Master cylinder

✓ Brake-by-wire

✓ Brake booster  
(pneumatic, electric, electromechanical, etc)

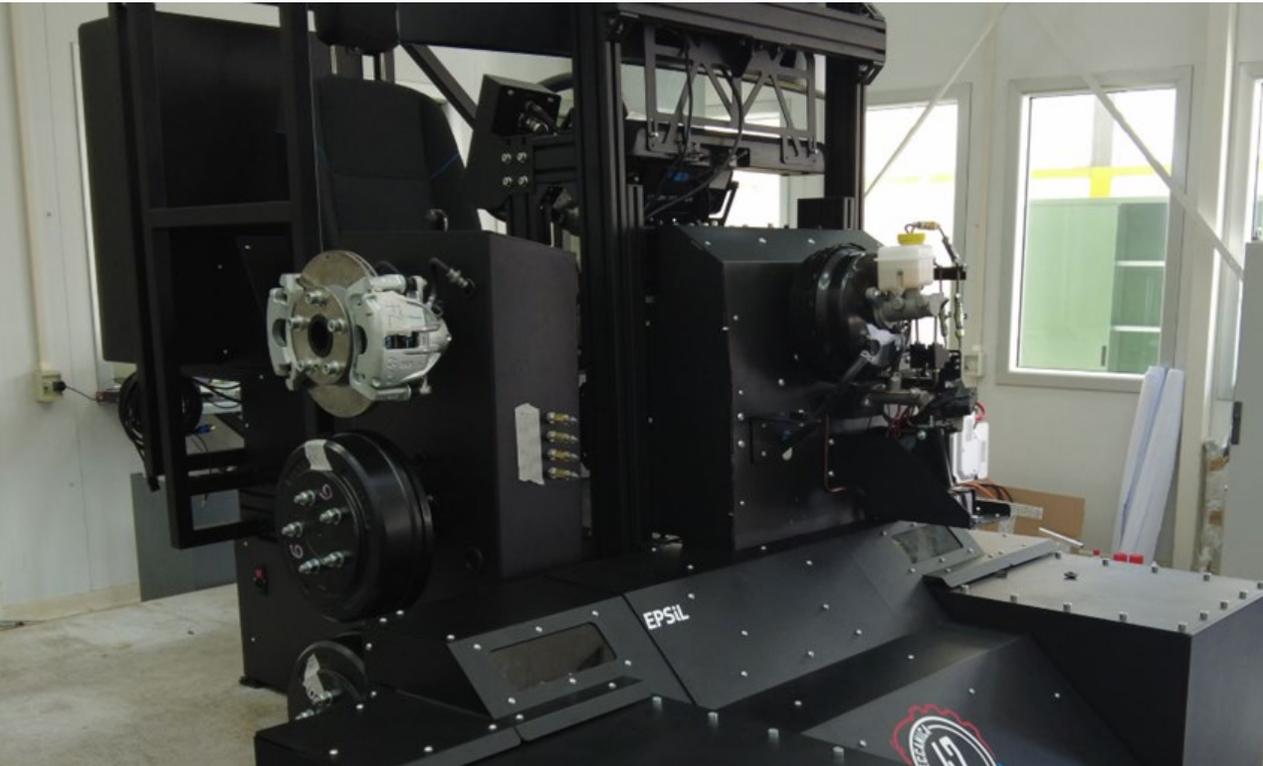
✓ One-box brake system

✓ ESC module

✓ Hoses, calipers, pads, discs

# What can you do with BrakeiL?

BrakeiL enables automated tests or real-time testing with driving simulators and it is suitable to develop, tune and validate braking functions.



 FuSa  
Fault injection

 SOTIF  
Management of predictable risks

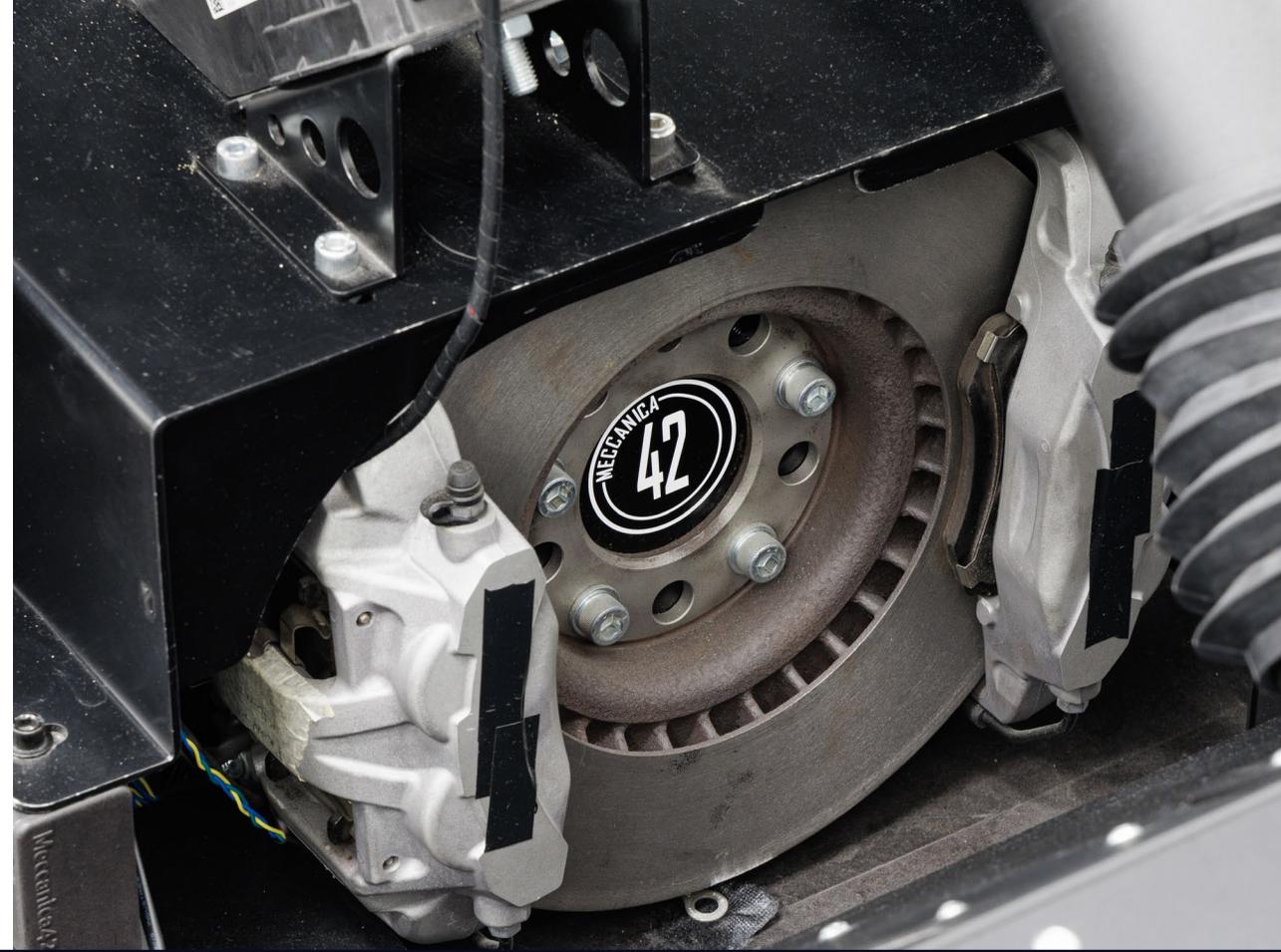
 Subjective Evaluations  
Brake pedal feel

 Vehicle Dynamics  
ABS/ESC

# Key performances of BrakeiL

BrakeiL is designed for easy integration and precise performance.

With real-time testing capabilities and accurate reproduction of wheel speed signals, BrakeiL ensures reliable results.



 Communication latency  
< 3 ms

 Max linear velocity of robotized pedal  
1.1 m/s

 Max force of robotized pedal  
2000 N

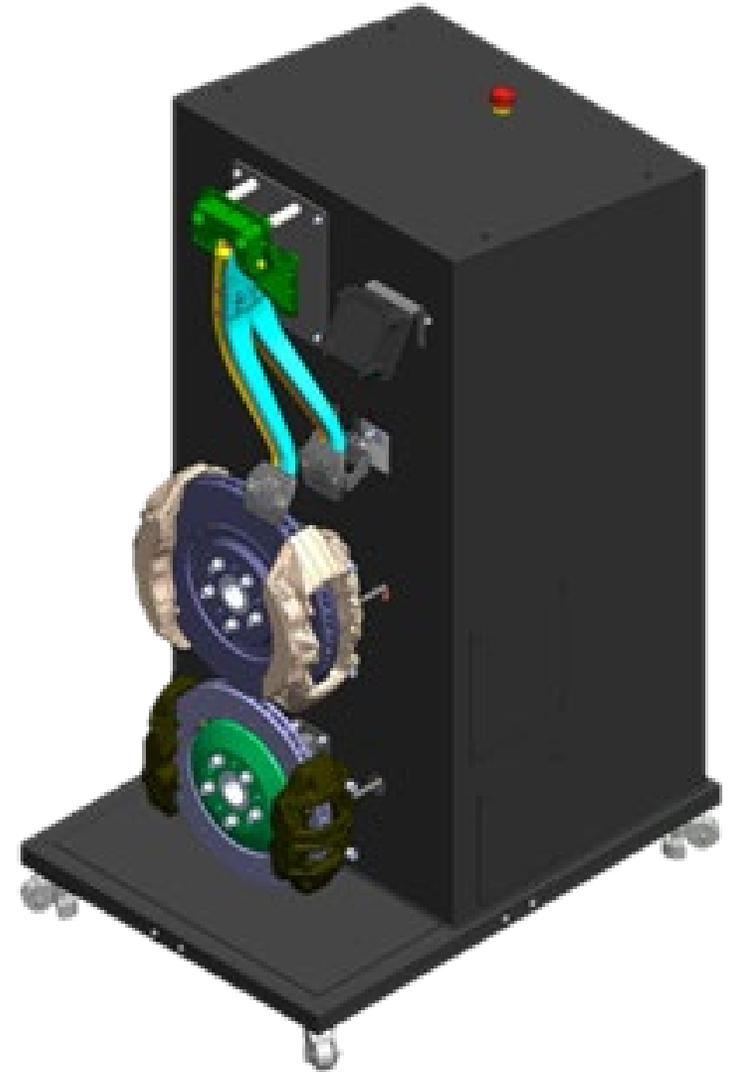
 Max linear travel of robotized pedal  
150 mm

 Communication protocol with the real-time machine  
EtherCAT

# BrakeiL

BrakeiL integrates brake system components into simulation loops.

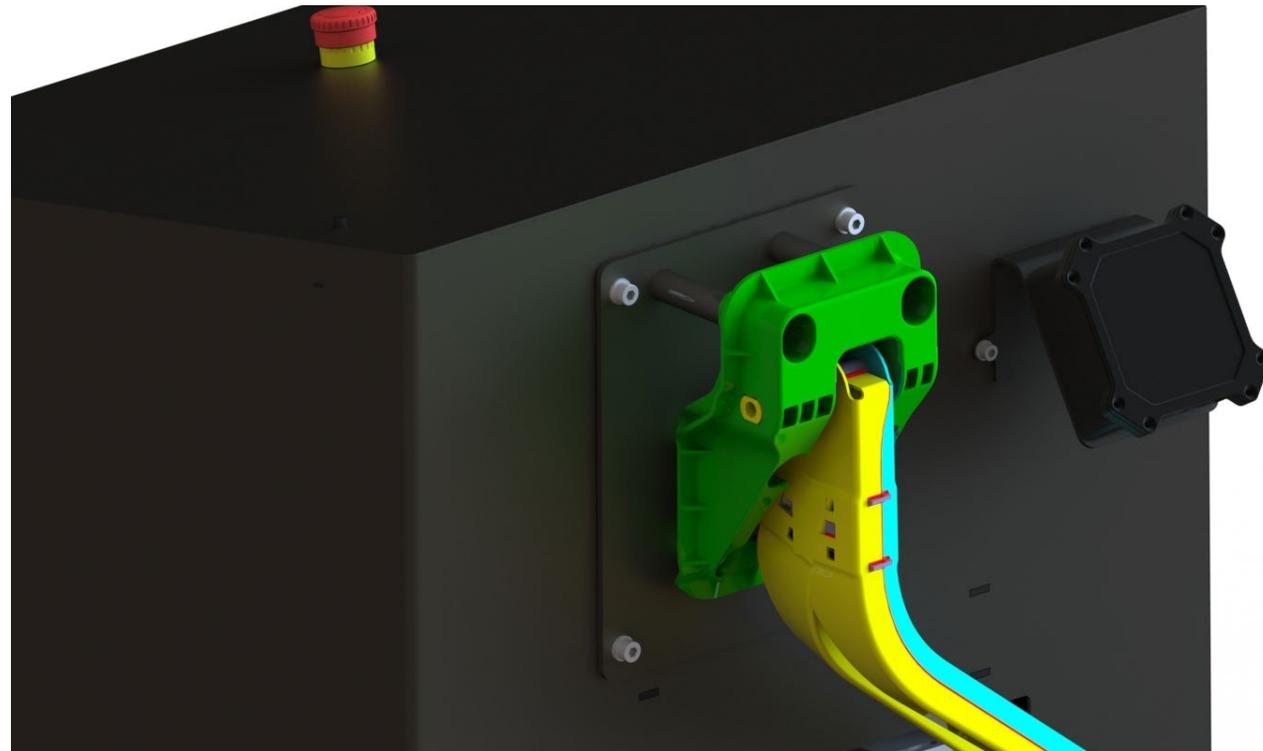
BrakeiL also allows the bench to be mounted in a location other than the cockpit, enabling the braking system to be controlled remotely.



# BrakeiL optionals

Complete your BrakeiL bench with our products: you can use the bench with all its functions.

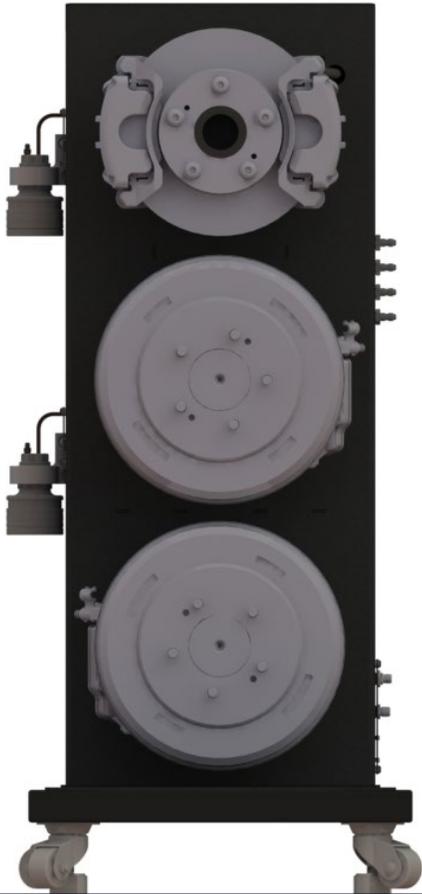
## WSE – Wheel Speed Emulator



## Valve systems for adjusting system compliance



# BrakeiL options



Compatible with disc and drum systems

# BrakeiL can be a built-on-you product

Imagine a product that feels like it was made just for you - because it was.

 Braking element links

 Cable management

 Tuning controls and interfaces

 Pipe routing

 Connectors/wiring





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