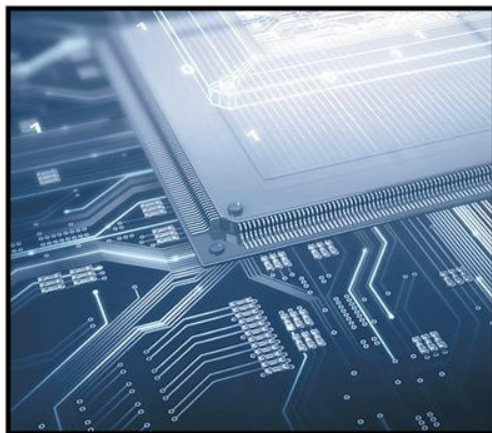




www.actia.com



**EUROPEAN
GARAGE EQUIPMENT
ASSOCIATION**

EMISSION TEST UNDER LOAD

NOVEMBER 2016



Vehicle Combustion Engine Emissions

Periodic Inspections in the EU – present situation

Gasoline engines

- ✓ **Static measurements on the unloaded engine, usually in two RPM levels**
- ✓ **The emission level is measured like relative gas concentrations (in %) by using an exhaust gas analyzers**
- ✓ Emission limits are officially based on long term experience and car manufacturers agreements

Diesel engines

- ✓ **Acceleration tests on the „unloaded engine“**
- ✓ Emission level is determined by the optical attenuation of light that passes through a defined sample of exhaust gas (opacity)
- ✓ Emission limits are officially based on K coming from vehicle type approval

Vehicle Combustion Engine Emissions

Periodic Inspections in the EU – present situation


HANDICAPS

1. Emission engine systems operate at idle or higher idle conditions only
2. Measurement results are very far from the real emissions of vehicles in use
3. Engine emission system is „automatically informed“ so that emissions are measured
4. Emission of some pollutants are very low in some cases, measured value is on the resolution limit (DPF - Opacity)
5. Important pollutants produced by the engine in operation are during this limited test almost hidden (e.g. NO_x)
6. The method is not able to assess the actual amount of pollutants, but their % representation in exhaust gas only
7. There isn't transparent relation between Emission Limits for periodical emission test and vehicle type approval Emission Limits

Vehicle Combustion Engine Emissions

Periodic Inspections in the EU – **new solutions**

HANDICAPS

- 
1. Emission engine systems operate at idle or higher idle conditions only
 2. Measurement results are very far from the real emissions of vehicles in use
 3. Engine emission system is automatically informed so that emissions are measured
 4. Emission of some pollutants are very low in some cases, **measured value is on the resolution limit** (DPF - **Opacity**)
 5. Important pollutants produced by the engine in operation are during this limited test **almost** hidden (e.g. **NOx**)

6.

How to eliminate these handicaps?

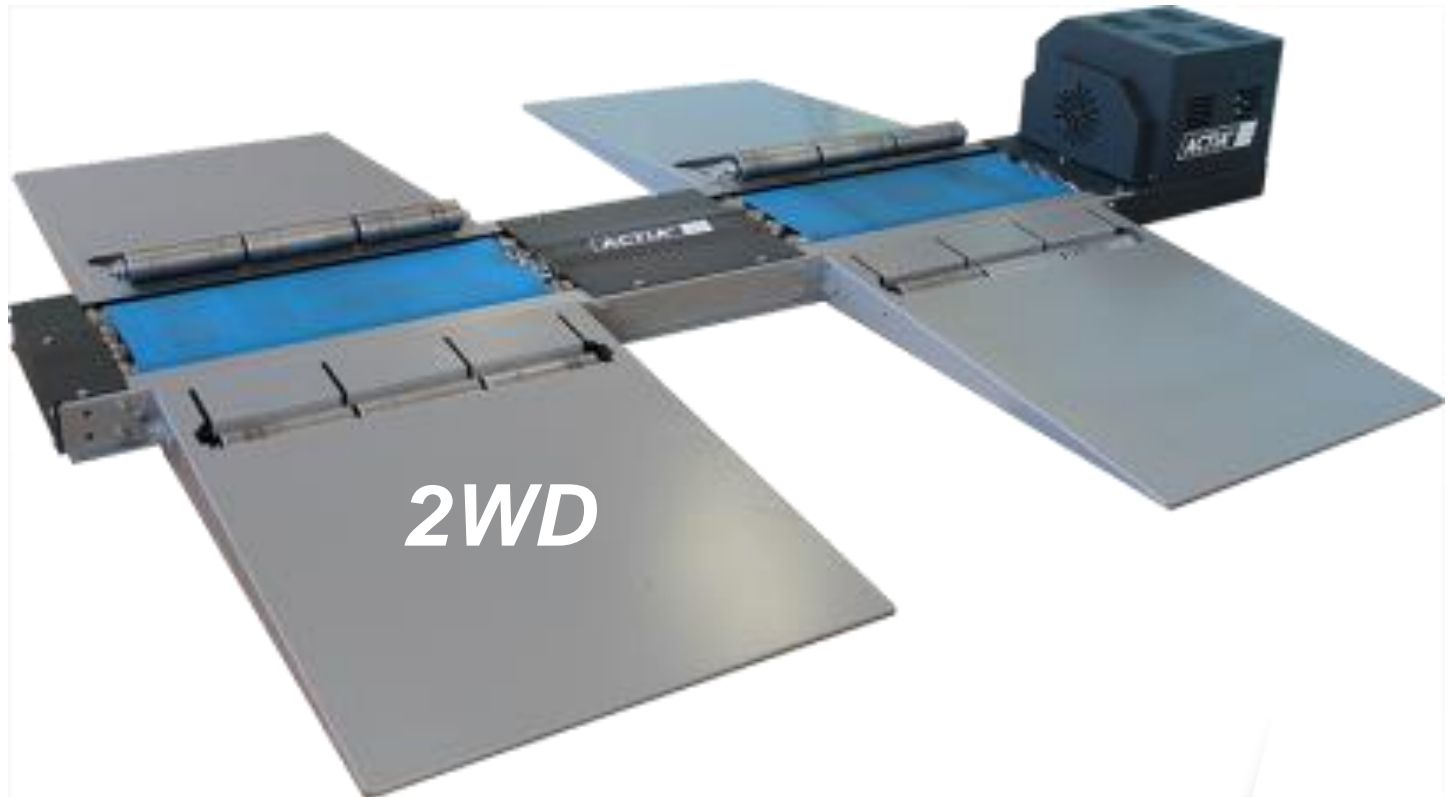
7.

Use emission measurements under load!

periodical emission test and vehicle type approval Emission Limits

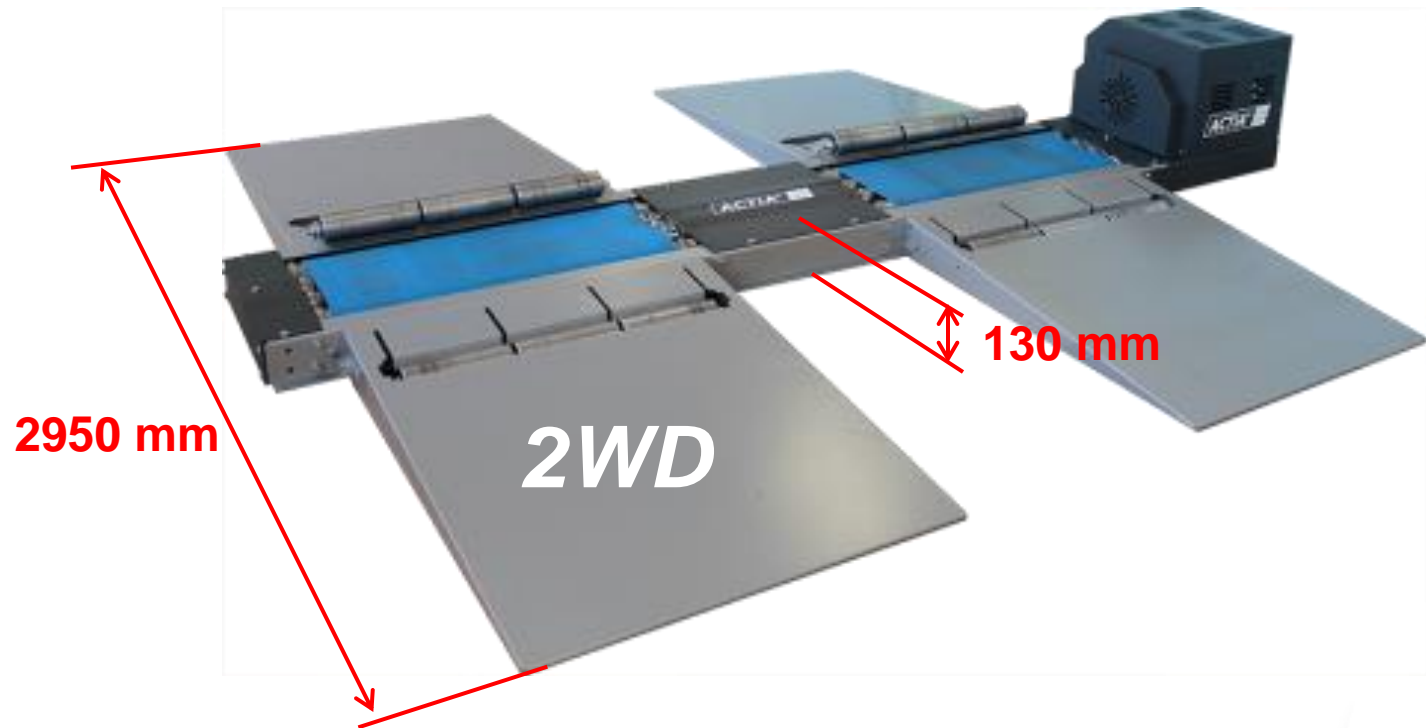
ACTIA LOADING STATION – March 2016

ACTIA LPPB **2WD (Low Profile Power Bench)**



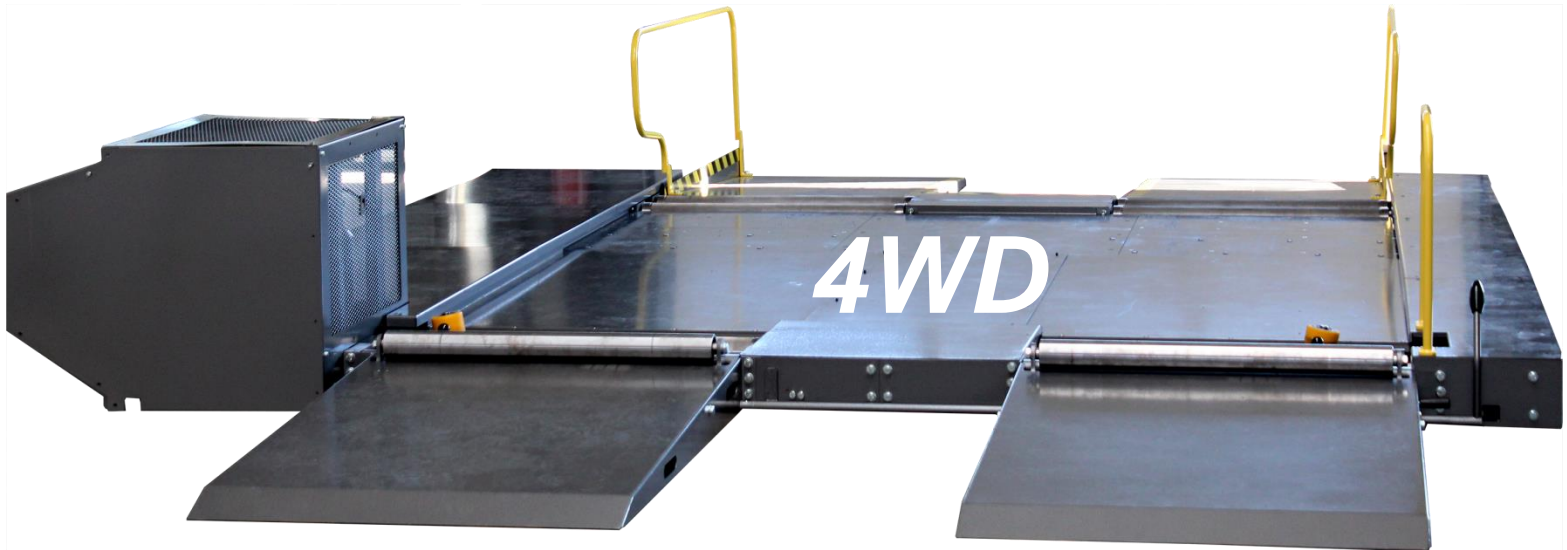
ACTIA LOADING STATION – March 2016

ACTIA LPPB **2WD** (Low Profile Power Bench)



ACTIA LOADING STATION – October 2016

ACTIA LPPB (Low Profile Power Bench) – 4WD








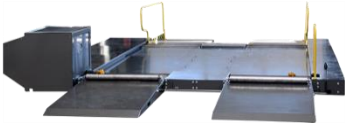
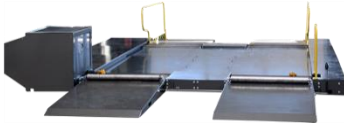
Vehicle Combustion Engine Emissions

Periodical Inspections in the EU – new solutions

Level 0	Level 1 Stable measurement modes	Level 2 Dynamic measurement modes
Standard Emission Devices	Standard Emission Devices	Standard Emission Devices
	Expansion Module for NO & NO ₂	Expansion Module for NO & NO ₂
	Loading Station	Loading Station
	ASM Test 25/40	Dynamic Test Management System
Emission Limits Setting		
Limits are already specified but different in EU countries	Softened vehicle approval emission limits can be reused	Softened vehicle approval emission limits can be reused




Vehicle Combustion Engine Emissions

Periodic Inspections in the EU – new ACTIA solutions

Level 0	Level 1 Stable measurement modes	Level 2 Dynamic measurement modes
ACTIGAS ST. (+EOBD) 	ACTIGAS ST. (+EOBD) 	ACTIGAS ST. (+EOBD) 
	ACTIGAS OPTIONS NO+NO ₂ 	ACTIGAS OPTIONS NO+NO ₂ 
	ACTIA LPPB 4WD 	ACTIA LPPB 4WD 

Vehicle Combustion Engine Emissions

Periodic Inspections in the EU – **Emission devices**

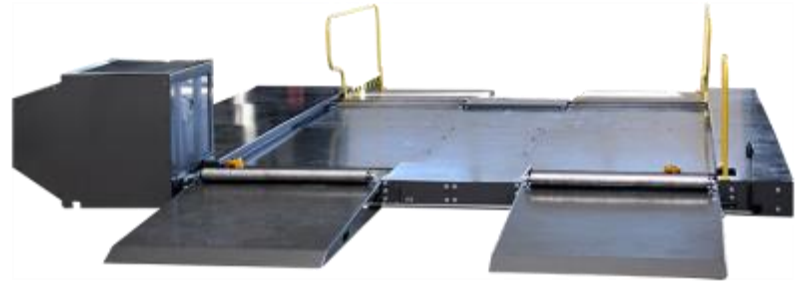
<p>ACTIGAS STATION</p> 	<p>OIML Class 0</p> <p>ISO 11614</p>	<p>CO HC CO₂ O₂ Lambda</p> <p>Opacity</p>
<p>NO+NO₂ Module 1</p> 	<p>Range</p> <p>Response time</p> <p>Range</p> <p>Response Time</p>	<p>NO 0-5000 ppm</p> <p>NO < 8 s (t₉₀)</p> <p>NO₂ 0-300 ppm</p> <p>NO₂ < 35 s (t₉₀)</p>
<p>NO+NO₂ Module 2</p> 	<p>Range</p> <p>Response Time</p> <p>Range</p> <p>Response Time</p>	<p>NO 0-5000 ppm</p> <p>NO < 8 s (t₉₀)</p> <p>NO₂ 0-500 ppm</p> <p>NO₂ < 8 s (t₉₀)</p>

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ACTIA LPPB 4 WD (Low Profile Power Bench)

Basic Technical Specification 4WD

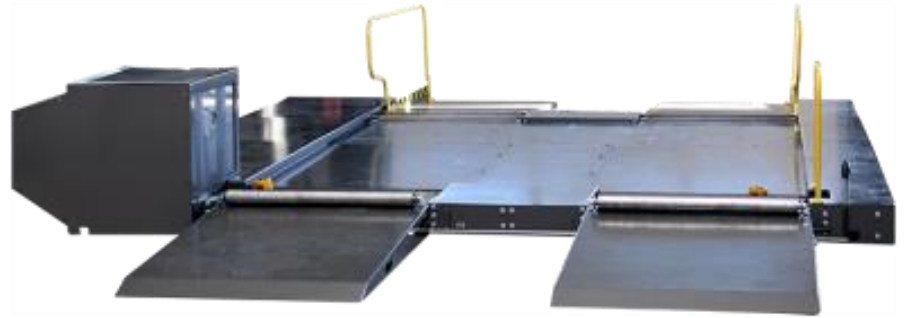
Diameter of rollers:	100 mm
Height of profile:	130 mm
Maximum length:	6510 mm (including ramps)
Inner track width:	700 mm
Outer track width:	2500 mm
Axle weight:	up to 2500 kg
Wheelbase:	1900 – 3300 mm (adjustable by operator)
Maximum speed:	50 km/h (60 km/h)
Maximum Loading:	30 kW



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ACTIA LPPB 4 WD (Low Profile Power Bench)

Basic Technical Specification - INSTALLATION



Power requirements:

- ***3x400V 50Hz 20 Amps (maximum)***
- ***No other energy source is required***

Quick and Easy Installation

Low cost installation

- ***Bench don't need pit***
- ***Bench don't need any modification of Building***

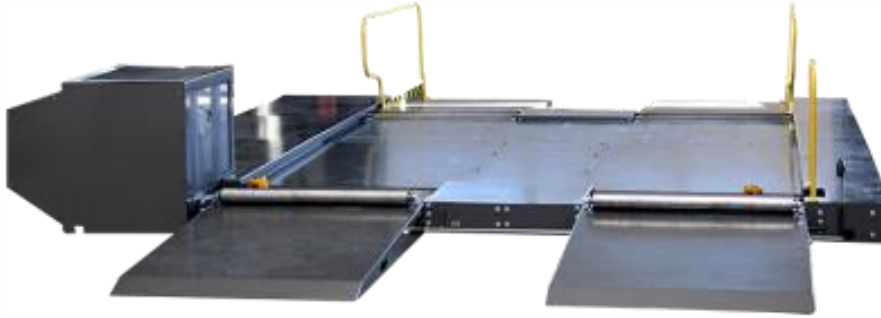
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ACTIA LPPB 4 WD (Low Profile Power Bench)



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ACTIA LPPB 4 WD (Low Profile Power Bench)



TESTING in France

Testing is required by Ministry of Environment

Testing period should be 6 months

LPPB installations

- SGS Network – PTI Station in Amiens - October
- UTAC – December



***Thanks for your
attention***