Tested for professional users

DLG APPROVED PowerMix

Tractor power, efficiency and fuel economy

www.DLG.org

DLG PowerMix – the practice test

Engine power, driveline efficiency and fuel economy are the key points of interest of potential tractor buyers when making investment decisions and comparing these parameters across the power classes is very important for them. Therefore, any test procedure must generate reproducible and comparable results on power output, efficiency and fuel consumption as they are obtained in typical field scenarios that are simulated in the DLG PowerMix test cycle.

The DLG PowerMix test cycle was developed by the DLG test engineers and sets the international benchmark in measuring tractor output and fuel economy.

A DLG PowerMix test measures primarily the specific fuel and AdBlue consumption of a tractor or a truck and expresses these rates in gram per kilowatt hour (g/kWh). This information allows buyers to compare the results of the tested tractors across all power classes. In addition, by referencing the results with fuel and AdBlue prices that were entered to the system, it is possible to compute the specific operating costs in euro per kilowatt hour. Furthermore, using such data like scaled work widths of the simulated implements or trailer loads and the mean ground speed, the PowerMix application translates the measurements into area output or transport efficiency (hectares or tonne kilometres per hour) and into consumption rate per hectare and tonne kilometre. These data as obtained in the practice-driven DLG PowerMix test provides farmers with further and very relevant information.

The DLG APPROVED mark which is also available for the PowerMix provides buyers with important and relevant guidance when they make a purchase decision.


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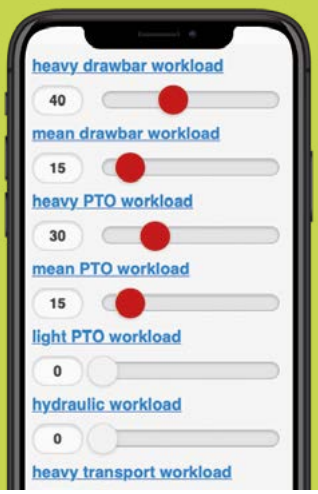
The DLG PowerMix app: Tractor efficiencies at a glance

This app finds tractors by specific loads and performance profiles.

- Users enter the tractor's work profile by setting the percentage at which it is typically used:
  - Heavy and medium drawbar work
  - Heavy, medium and light pto work
  - Hydraulic work
  - Heavy and light transport work
- Define the tractor's power range
- Define diesel and AdBlue costs

Try it out yourself at **www.DLG.org/PowerMix**



Tractor profile settings in the PowerMix app, for field work for example

Simulating typical field and road work

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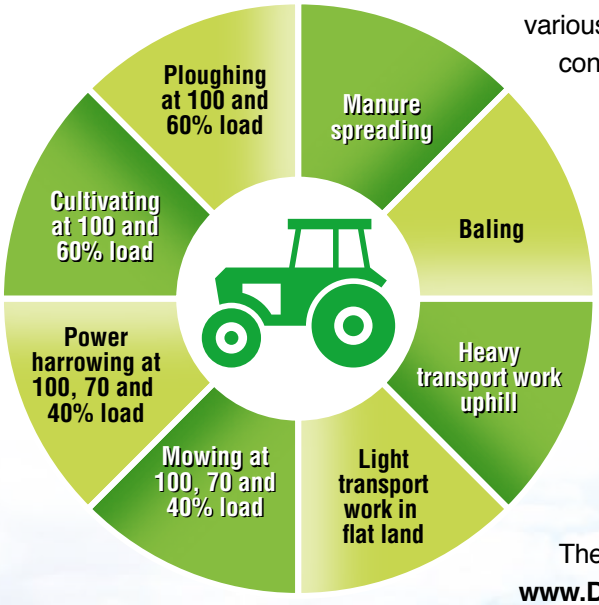

The PowerMix test is made up of 14 test cycles which simulate various loads on the tractor while measuring its fuel and AdBlue consumption, power output and efficiency.

The individual test cycles simulate typical field and transport work at part and full load, such as exclusive pulling work (e.g. ploughing or cultivating) or mixed work with load placed on the powertrain, the power take-off and the hydraulic system (e.g. operating a power harrow, a mower, a manure spreader or a baler). As a last step, the test simulates heavy and light transport work, testing the tractor's transport efficiency on the road. This way, we obtain an overall profile of its efficiency in reproducible working conditions.

The data sheets of all tractors tested up to now are available at **www.DLG.org/TractorTests**

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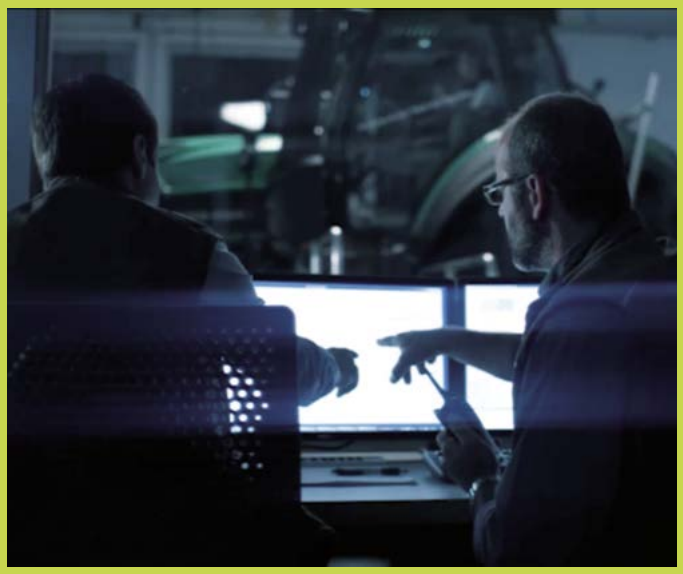
The DLG chassis dynamometer – the international benchmark for testing farm machinery and commercial vehicles

The DLG chassis dynamometer is the most powerful test stand that is available to the public for testing farm machinery and commercial vehicles. Meeting the highest standards in terms of functionality, flexibility and precision, this technology is able to test even extremely high-power machines and vehicles. All inputs and outputs measured can be recorded. The recordings comprise fuel input, actual wheel payload, power take-off and hydraulic output as well as exhaust emissions on up to 700kW (≈ 1,000hp) vehicles. The chassis dyno also measures the efficiency of electric powertrains on electric and hybrid vehicles.

Technical specification

- **Dimensions and weights:**
  - Wheelbase: 2,050 – 6,000 mm
  - Max. machine width: 4,500 mm
  - Max. wheel load: 15 t
  - Max. total mass: 60 t
- **Powertrain testing unit:**
  - Max. power input: 700 kW
  - Max. force: 135 kN/roll
  - Max. speed: 105 km/h
  - Engine driven and generator driven
  - Roll diameter: 2,000 mm
  - Direct-drive rolls
  - Supports tandem axles
- **Power take-off testing unit:**
  - Induction motor
  - Max. power input: 700 kW
  - Max. Torque: 7,000 Nm
  - Engine driven and generator driven
- **Hydraulic testing unit:**
  - Load applied by combining a hydromotor & induction motor
  - Max. power input: 150 kW
  - Max. flow: 500 l/min.
  - Max. pressure: 300 bar
- **Air conditioning:**
  - Standard temperature: 25 ± 2 °C
  - Supported temperature range: 15 - 45 °C
  - Flow rate: 10 or 20 km/h
  - Face area: 3,000 x 3,000 mm
- **Measurements supported:**
  - Fuel consumption
  - AdBlue consumption
  - Exhaust gas incl. mass flow with PEMS



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