Product overview

Dynamometer

Dynamometer 300 kW
PTO shaft power brake PT 170 E / SE

The compactness of the EGGERS PT 170 dynamometer is impressive and allows it to be accommodate even in the most confined workplaces. This dynamometer can be supplied as both a mobile workshop version as well as on an 80 km/h chassis.

Boasting a performance range of up to 300 kW for a rapid test and 170 kW for a full-load curve, the PT 170 dynamometer already covers the majority of tractors on the market.
Naturally, the PT 170 E/SE can also be adapted to customer requests and we are happy to include this in the delivery.

Dynamometer 300 kW

Technical Data	**PT 170 E / SE**
Modell versions:	PT 170 E: workshoptype, mobile PT 170 SE: road type, on trailer 80 Km/h
Breaksystem:	1 Retarder (eddy current, wear free)
Collant:	Air with highpower electric fan
Measurement range at 1000 min-1 and 20°C: (*Measurement time depending upon tractor size and local conditions.)	300 KW 1 min* 275 KW 2 min* 250 KW 2,5 min* 225 KW 3,5 min* 200 KW 4,5 min* 160 KW 7,5 min* 140 KW 9 min* 110 KW 40 min*
max. revolutions permissible:	1300 1/min optional up to 3600 1/min
max. torque:	3600 Nm
Precision:	< 1
Display:	digital display, Indiction revolutions, torque, power (KW), power (PS)
DMS Sensor:	standard
Direction of rotation:	both
Electrical Power supply:	240V, 16A slow
Frame:	Zinc plated
Housing:	GRP
Measure and weights:	PT 170 E: L 900; W 1000; H 1500; Gew. 525 Kg PT 170 SE: L 2350; W 1600; H 1350; Gew. 550 Kg
Standard delivery items:	Instruction manual, CEE plug 3X16 A
Against additional charge:	Spezial cardan shaft 1 3/4" 6Z – 1 3/8 " Cardan half shaft 1 3/8" 21T Cardan half shaft 1 3/4" 20T Cardan half shaft 1 3/4" 6T Cable remote control radio control Software „Eggers PowerControl" Large protective hood

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ENGINE TECHNOLOGIES

Dynamometer 600 kW
PTO shaft power brake
PT 301 MEM / MEW / MES / K

Numerous available versions of the EGGERS dynamometer PT 301 allow customers to select the model optimally suited for their business. The PT 301 dynamometer is our top-seller, while the PT 301 MEW is permanently installed in a fixed location as a stationary model, e.g. in a test room.

While the PT 301 MEM model is intended for use in mobile workshops, the PT 301 MES & K can be approved for use on public roads, allowing journeys to customers or the nearest branch. With 600 kW for the rapid test and 340 kW for the full-load curve, the PT 301 covers all types of tractors released on the market to date as well as much of the harvesters.

Dynamometer 600 kW

Technical Data	PT 301 MEW / MEM / MES / K
Modell versions:	PT301MEW : workshop type, fixed to floor PT301MEM : workshop type, mobile PT301MES : road type, on trailer 80 km/h PT 301 K: Street version in the trailers
Breaksystem:	2 Retarder (eddy current, wear free)
Collant:	Air with highpower electric fan
Measurement range at 1000 min-1 and 20°C: (*Measurement time depending upon tractor size and local conditions.)	600 KW 1 min* 550 KW 2 min* 500 KW 2,5 min* 450 KW 3,5 min* 400 KW 4,5 min* 320 KW 7,5 min* 280 KW 9 min* 220 KW 40 min*
max. revolutions permissible: max. torque:	3.600 min-1 7200 Nm
Precision:	< 1
Display:	digital display, Indiction revolutions, torque, power (KW), power (PS)
DMS Sensor:	standard
Direction of rotation:	both
Electrical Power supply:	400V/230V, 16A tr
Frame / Housing:	Zinc plated / Fibre glass reinforced plastics material
Measure and weights:	PT301MEW: L 1810mm; B 730mm; H 1540mm; 1098 Kg PT301MEM: L 1830mm; B 1060mm; H 1500mm; 1150 Kg PT301MES: L 3100mm ; B 1800mm; H 1580mm; 1300 Kg permissible total weight 1800 Kg PT301K: 1600 Kg, permissible total weight 2000 Kg
Standard delivery items:	CEE plug 5x16A and machine manual (large dust cover at 301 MES)
Against additional charge:	Cardan half shaft 1 3/8" 21T Cardan half shaft 1 3/4" 20T Cardan half shaft 1 3/4" 6T Cable remote control bluetooth control Software "Eggers PowerControl" Large protective hood

Dynamometer 900 kW
PTO shaft power brake
PT 1000 / 3 K / W

When it comes to service dynamometers, the PT 1000 K / W covers the complete spectrum, including all performance categories. Whether the PT 1000 W (workshop version) or PT 1000 K (mobile in van trailers), performance is the key here.

With performance of 900 kW for the rapid test and 510 kW for a full-load curve, it can handle any engine and also achieves unrivalled precision, thanks to the inclusion of a torque measuring device in the drive train. This dynamometer provides all you need for the future. Given the ever-bigger agricultural machinery and related performance requirements, forward-looking businesses should look no further than EGGERS dynamometers.

Dynamometer 900 kW

new for 2009

Technical Data	PT 1000 / 3 K / W
Modell versions:	PT 1000/3 W: workshop design, stationary PT 1000/3 K: road works, based on chassis 80 Km / h (optional 100 km / h)
Breaksystem:	3 Retarder (Eddy current brake wear)
Collant:	Air over electric high-performance blower 8000 m³ / h and a fan
Measurement range at 1000 min-1 and 20°C: (*Measurement time depending upon tractor size and local conditions.)	900 Kw 1 min* 825 KW 2 min* 750 KW 2,5 min* 675 KW 3,5 min* 600 KW 4,5 min* 480 KW 7,5 min* 420 KW 9 min* 330 KW 40 min* 300 kW open end
max. revolutions permissible: max. torque:	Optional 1300 1/min to 3600 1/min 9000 Nm
Precision:	0.5% of reading
Display:	digital display, speed, torque, power (kW, hp)
DMS Sensor:	Measuring hub, standard temperature compensated
Direction of rotation:	both
Electrical Power supply:	400V, 32A tr
Frame / Housing:	galvanized / walls of multiplex
Chassis:	Tandem VIN (BPW) with auto-reverse, 2-leaf rear door, complete. galvanized welded frame, folding automatic jockey, 2 grab handles, fender supports, lockable stainless steel lock, storage space for drive shaft and drive shaft halves
Measure and weights:	PT 1000/3 K: L 3300, B 1750, H 2000, weight 2000 kg, Gross vehicle weight: 2700 kg, only construction: L 2050 W 1330 H 1550
Standard delivery items:	Manual, connector Standard colors: white, light gray or dark gray
Against additional charge:	Specific joint shaft 1 ¾ "6Z - 1 3/8" PTO shaft 1 3/8 "21T PTO shaft 1 3/4 "20T PTO shaft 1 3/4 "6Z Bluetooth remote control Software "Eggers Power Control" Colors at additional cost: all RAL colors

Fuel consumption meters

The toughest test for a product is to ensure it delivers entirely uniform precision and reliability every day, month and year.

We have consistently continued our researching efforts and invested our many years of experience in further development. The result? A fuel consumption meter offering impressive precision, handling and efficiency, boasting exceptionally accurate operation on all tractor models currently on the market.

FM 3 – 100 Fuel consumption meter

More and more new-generation engines that comply with the increasingly stringent exhaust emission regulations are coming onto the market. Here, new high-pressure injection systems tend to prevail and customers are increasingly reconsidering their options, not least due to the hike in diesel prices.

Measuring the fuel consumption of new common rail, pump-injector and pump-line-nozzle high-pressure injection systems and new generations of distributor pumps is problematic when using conventional fuel consumption meters on the test stand. In response, we have developed a fuel consumption meter that meets all requirements..

FCM – 100 Fuel consumption meter

Measurement of fuel consumption for mobile automotive measurement technology – For billing to the nearest litre, training sessions, driver training, vehicle comparison tests etc.The FCM - 100 is a fuel consumption meter developed to be installed in vehicles and stationary engines, and is the product of many years of experience spent developing semi- mobile fuel consumption meters for our performance test stands. It is also usable with all injection systems currently available on the market.

FM 3 – 100 Fuel consumption meter

Specifications	
Voltage supply:	230V / 50Hz
Fr. the tank inlet to t. device	sucking in
Form from the equipment to the test specimen:	adjustably of 0,3 – 7 bar
Pressure indication:	0-10 bar
Diesel radiator:	integrated
Pulse suppression:	by balance diaphragm
Exhaust procedure:	by bypass valve and sediment bowl
Extents:	L = 570mm, W = 460mm, H = 585mm
Weight	40 Kg
Options	Announcement Fuel-Control Announcement by push of a button callably Total consumption, Momentary consumption, Fuel temperature InterfaceRS232

FCM – 100 Fuel consumption meter

Dimensions of measurement device:	130 x 130 x 40 mm
Dimensions of display:	around 100 x 100 x 60 mm
Weight of measurement device:	around 1.5 kg
Weight of display:	around 0.7 kg
Protection class:	IP 54
Temperature range:	-20° - 80° C
Media:	Diesel, biodiesel, RME, other media on request
Impulses:	2000 / l (optional 4000 / l)
Measurement range:	1 – 100 l/h (optional 15 – 500 l/h)
Measuring accuracy:	1% from actual value
Reproducibility:	0.03 %
Working pressure:	max. 5 bar
Power supply:	8 – 30 V DC
Outputs:	RS232, USB
Inputs:	Consumption signal, temperature (PT100), speed (square-wave signal)
Display:	Current consumption, total consumption (optionally available with memory card, to enable consumption within a specific period to be determined)

Software

For all test stands, we provide a special software program that allows an automatic test sequence and all but eliminates human error. This software runs on all current Windows-based PCs and Laptops, and since free updates can be downloaded online, there are also no hidden follow-up costs.

The data transfer from the test stand to the computer is via the RS 232 interface, USB or Bluetooth. No special measurement card is required. Bluetooth transmission is a very secure connection that, unlike radio transmission, does not impact on any other devices..

New App available!

- PTO Break control
- measurement recording
- view data

Download now!

POWER CONTROL

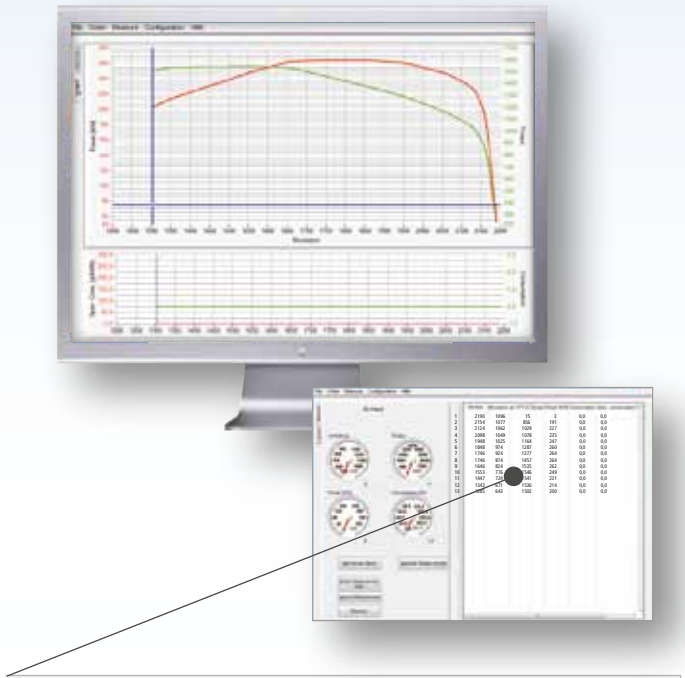
The standard POWERCONTROL software is mainly deployed for the EGGERS dynamometer. Manually inputting the current weather data allows the measured PTO shaft power to be automatically adapted to the relevant standards.

This means a 100 kW tractor only delivers its rated performance at an air intake temperature of 20°C and air pressure of 1013 mbar. If the same tractor is measured at a temperature of 5°C, its performance will be higher, since air density is higher at lower temperatures. In this case, the software back-calculates the performance based on the input data.

This makes it possible to compare two measurements from a single tractor, the first of which could be in summer and the second in winter. Moreover, adjustment allows the measurement to be compared with the manufacturer's data, since these always based on the standard values.

All measurements are saved on hard disk and can thus be recalled at any time. E-mailing data from previous measurements is also easily done.

There is also the option of programming customer-specific test software, e.g. to be able to implement statutory cycle measurement or endurance tests with constantly fluctuating load parameters. Customer-specific solutions may involve other measurement devices being connected, to measure e.g. temperatures, pressures or exhaust emissions.



Number	Revolution	rev. P.T.O.	Torque	Power(kW)	Consumption	Spec. Consumption
1	2190	1096	15	3	0,0	0,0
2	2154	1077	856	191	0,0	0,0
3	2124	1062	1029	227	0,0	0,0
4	2098	1049	1078	235	0,0	0,0
5	1948	1025	1164	247	0,0	0,0
6	1848	974	1287	260	0,0	0,0
7	1746	924	1377	264	0,0	0,0
8	1746	874	1457	264	0,0	0,0
9	1646	824	1535	262	0,0	0,0
10	1553	776	1546	249	0,0	0,0
11	1447	724	1541	231	0,0	0,0
12	1343	671	1536	214	0,0	0,0
13	1285	643	1502	200	0,0	0,0

Dynamometers

For direct measurement on dismantled engines, we manufacture dynamometers with tried and tested air-cooled electric eddy current brakes and based on a hydraulic retarder.

The power level can be varied between 1 and 1200 kW with 500 – 5000 min-1 (or more in special cases).

Give us the basic information of the engines you wish to check and we will create a quote specially customised to your requirements. The design of the dynamometer can range from a simple test stand right up to an "all-inclusive hassle-free package". This may include a complete clamping system for the engines, cooling systems and engine monitoring.

Special test stands

We also manufacture individual performance, function and endurance test stands of all kinds for shredders, combine harvesters, engines, drives, components, accessory devices, wheel loaders, motorised devices, rotary cultivators and other machines.

Compact Stands

Specifications	PT 301 K	PT 1000/3 K
brake system	2 electr. Eddy current brakes	3 electr. Eddy current brakes
cooling medium	Air over electric high-performance blower 8000 m³ / h and a fan	
power range at 1000 min-1 and 20 ° C	600 kW 1 min* 550 kW 2 min* 500 kW 2,5 min* 450 kW 3,5 min* 400 kW 4,5 min* 320 kW 7,5 min* 280 kW 9 min* 220 kW 40 min* 200 kW open end	900 kW 1 min* 825 kW 2 min* 750 kW 2,5 min* 675 kW 3,5 min* 600 kW 4,5 min* 480 kW 7,5 min* 420 kW 9 min* 330 kW 40 min* 300 kW open end
max. number of revolutions	3500 1/min	3000 1/min
max. torque	7200 Nm	9000 Nm
accuracy	< 1%	
minutes. range	15 kW at 1000 1/min	
rotation	in both directions, standard	
display	Speed, torque, power (kW), power (hp) digital	
interfaces	RS 232 signal input consumption, Bluetooth (optional)	
operation	via hand control unit with display, with PC and software (optional)	
electrical supply	400 V, 16A tr, 50-60 Hz	
Overall dimensions in mm Case Dimensions in mm	L 3300; B 1750; H 2000 L 2050; B 1330; H 1550	
GVWR	PT 301 K: 2000 kg	PT 1000/3 K: 2700 kg
chassis	Tandem VIN (BPW)	
other equipment the trailer		Storage space for drive shaft and drive shaft halves
	Walls made of plywood, two-leaf rear door, automatic reverse, rubber torsion axle, fully welded frame, galvanized, folding automatic jockey, fender supports, 2 grab handles, lockable stainless steel closure	

* Based on data: The respective power is on from the first second, it will never be the case with an auto-tune.

All measured values are optionally printed and recorded the examination of the specimen when required. All functions can be performed with a remote control.

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ENGINE TECHNOLOGIES

KL-Maschinenbau GmbH & Co. KG

KL Maschinenbau GmbH & Co. KG is a Europe-wide leader in the development and manufacture of dynamometers for agricultural machinery and engines as well as specialising in the construction and distribution of the internationally renowned mobile PTO shaft power brake EGGERS dynamometer. Our products are used by virtually all tractor manufacturers of note in final assembly, training and development – worldwide!

We provide fuel consumption meters with impressive precision, handling and efficiency, which operate with all tractor engines currently available on the market.

Our Rendsburg production facility is where highly qualified and experienced specialists work in the field of conventional mechanical engineering and make use of the latest methods and products. The cumulative experience of 25 years of development and implementation as well as the integration of experienced tractor and engine-maker specialists promotes continual adaptation to technical advances. Customised test stand designs are implemented in close consultation with customers and in line with their requirements.

Customers of KL Maschinenbau GmbH & Co. KG – agricultural and construction machinery dealers, tractor and engine manufacturers, farmers and builders as well as schools and training centres – are won over by the high product quality and the way projects are executed on-time and transparently. To ensure optimal effectiveness, regular software updates and support are also made available.

All dimensions, weights and technical data in this brochure are subject to revision and should thus not be considered as binding. We reserve the right to make technical modifications for reasons of progress.

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