

AGRISCAN

Agricultural Power take-off Test Bench



- Connects directly to the power take-off on agricultural machinery
- High performance technology
- 2 or 3 brakes (1000bhp) version
- Workshop or Road version.
- Safe and easy to use
- High precision digital driving system.
- Modern and user friendly software interface
- Customer data base
- 100 % made in France
- Can be driven in either direction

BENEFITS OF A TEST BENCH

In the world of modern agriculture, every piece of machinery needs to be well maintained to ensure maximum financial return, and to function efficiently without unexpected failures.

In order to optimise these important assets, a specialised and accurate method of measurement is needed - one which is precise and reliable, easy to use yet sophisticated enough to carry out all the tests required.



Rotronics offers its solution : AGRISCAN. The test bench is no longer a piece of equipment reserved for a few people its using is useful in the professionnals as well as the manufacturers, than in dealers shops - in the hands of a well-trained mechanic it is an impressive tool that reduces diagnostic time and will prove economicallty beneficial.

A Rotronics AGRISCAN will increase your reputation with your customers, deliver great results and increase your workshop's capabilities. It is also a fantastic teaching and training aid showing how different variables can affect performance.

ROTRONICS KNOW-HOW

Since more than twenty years, Rotronics has designed and manufactured engine test beds for professionals and technical teaching establishments. Since its creation, the company has always used technical innovations to answer the needs of its customers and today offers new and powerful solutions in many fields.

Rotronics has put all its know-how and effort into the AGRISCAN, resulting in a high quality instrument which has been designed to last.



HIGHLY QUALIFIED TECHNICAL STAFF

If you need information regarding the operation of the test bench or advice on specific measurements or actions as part of our After Sales Service, experienced technicians are there to help you.

You will be talking to people who took part in the design and production of AGRISCAN and who are perfectly competent to answer any question you may have.

AGRISCAN *R* - Mobile Version

AGRISCAN R consists of two (or three) eddy current brakes assembled inline on a common shaft. This layout allows a wide range of values in power and torque to be tested. With no belts to slip and cause problems the unit allows a high output to be absorbed whilst maintaining low noise in operation. The two mechanical connections, on both sides of the bench, make it possible to use the power take off, as well as the engines, in either direction.

The brakes are cooled by air. Various cooling flows are separated and channelled in order to optimise the dissipation of energy and thus to exploit the full capacity of the brakes. The two additional ventilators, in option, increase this capacity, in power and in duration.

The unit is assembled on a trailer built around two robust axles which ensure quick and easy set up before use.

Due to its low inertia, AgriScan is naturally very stable. Four stabilizers add to the sense of security and prevent any abrupt and unexpected movement being transmitted from the vehicle under test.



AGRISCAN A - Workshop Version

AGRISCAN A is the workshop version of the model R. This version offers the same characteristics and performance as the Agriscan R, but is intended to be used within a workshop environment. Robust wheels and grip handles allow easy movement of the bench. All the revolving or hot parts are inaccessible by the operator during use, which guarantees a high level of safety for your staff as well as the equipment.



SPECIAL DESIGN AND INTEGRATIONS

SPECIAL DESIGN:



As the designer, ROTRONICS can, upon request, manufacture a version with three load brakes designed for use in special conditions, such as long-lasting tests with development operations or endurance tests. It's also well suited to high power tractors or automotive-type harvesting devices such as combine harvesters and forage harvesters.

EXAMPLES FOR INTEGRATIONS OF POWER TEST BENCHES:



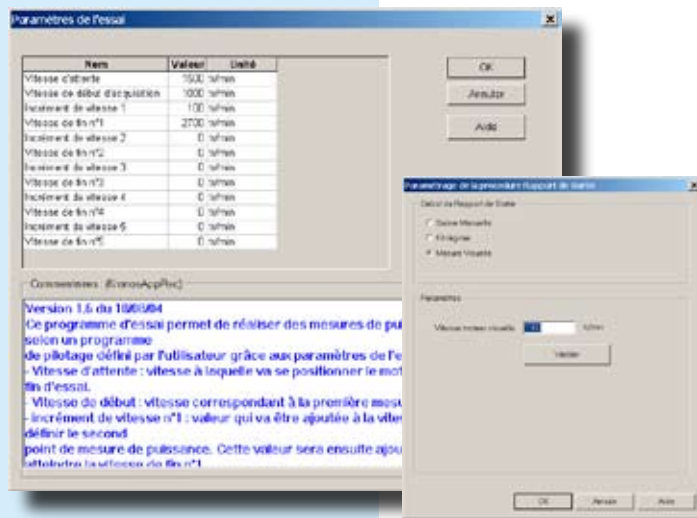
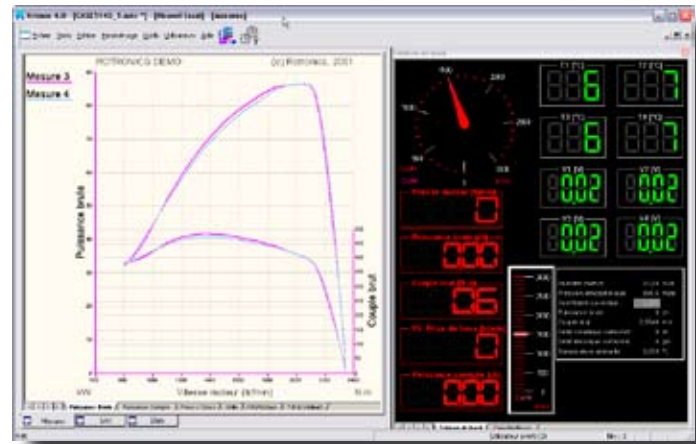
ACCURATE AND REPEATABLE MEASUREMENTS

AGRISCAN uses accurate sensors : 360 measurement points to each turn for the speed sensor and 0,02% error for the loadcell which measures the braking torque. Connected to data acquisition and brake control that is entirely digital, the unit constitutes an extremely accurate and stable measuring device : less than 0,1 % total error!

The operating software plays the role of interface between all this accuracy and the user by formatting the results in an easy and clear manner.

EASY, FULLY FEATURED SOFTWARE

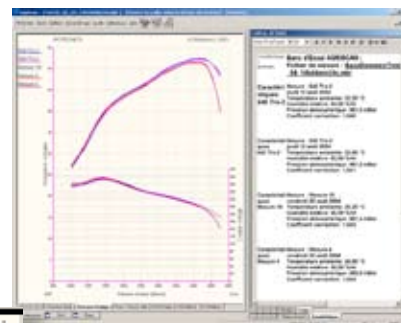
There is no need to be a computer specialist to control Agriscan. A few clicks of the mouse are enough to use the software. It has a user-friendly and simple design, but don't let the ease of use fool you - it's really powerful software. Real time data presentation, user definable output, and ease of saving your data are all features of the software.



The parameter setting of tests is carried out through simple dialog boxes. A few seconds are enough to prepare a test procedure.

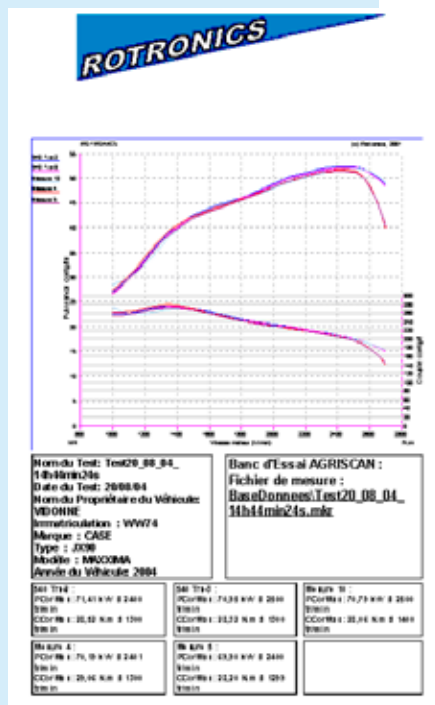
During the test, the curves are drawn on the screen in real time, allowing the user the ability to stop the test in case of an anomaly or to adapt the parameters to the tested vehicle.

Once the measurements are made, the results can be exploited in the form of curves, or tables of statistics. Various recent or old tests can be superimposed and easily compared. The data can be saved easily or fed into a valuable customers data base.



<Nom de la mesure>	Vitesse corrigée	Puissance corrigée	Vitesse de puissance corrigée
	tr/min	kW	tr/min
640 Trs-2	279,7	1300	52,52
640 Trs-3	277,8	1300	52,18
Mesure 1	275,2	1400	52,06
Mesure 4	285	1300	51,62
Mesure 5	276,6	1299	51,41

<<Vitesse moteur>>	Puissance brute	Puissance corrigée	Couple brut	Couple corrigé	Couple brut
tr/min	kW	kW	N.m	N.m	N.m
1000	25,57	26,72	244,2	255,1	244,2
1400	37,04	38,16	343,3	353,1	343,3



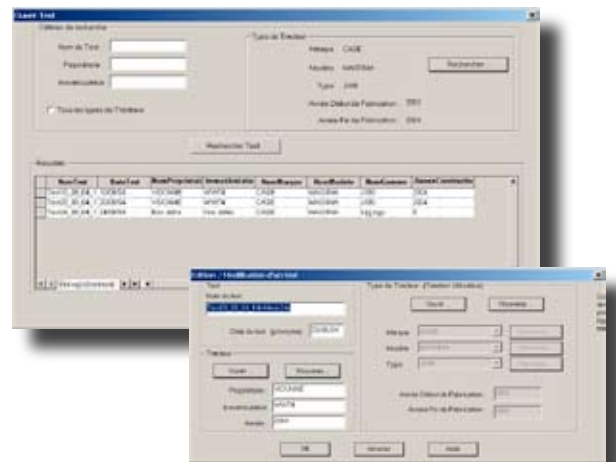
Customised results and comments can be added to every report. They can then be saved, printed or exported to other external systems.

INNOVATION AND PROFESSIONAL SERVICE

Customer data base

Pre-parameterised, the database gathers the identity of each customer, the model, the vehicle and its design features relevant to the test procedure. Its first role will be to archive this data and all measurements and comments that are associated with it.

Its second role is in the diagnosis process : It is possible to view the evolution of a vehicle in time, to compare results of different vehicles used by the same user or to compare the performance of the same model of vehicle used by different users, and within a larger framework, to view measurements of any vehicle tested to seek the explanation of a recurring breakdown, for example.



Several ways to carry out tests :

AGRISCAN allows several ways of using :

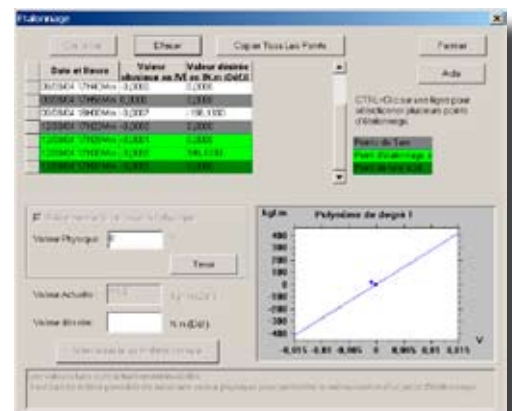
Manually : The operator has to adjust the regulation instructions by speed or by torque and then reads the data measured in real-time. This functioning mode is well suited to phases of regulation and to loading tests. (running-in for example)

Automatically : The operator prepares his test at first and then lets it run automatically point by point at a constant speed. Measured and calculated values are displayed constantly during the test and the curves are being mapped out step by step.

Software-aided calibration

The rating and calibration procedures are very fast and easy, thanks to a specific procedure of the software. It is thus very easy to keep accurate and repeatable a measuring tool over time.

The operation does not take more than 10 minutes, including the accessory installation time.



INNOVATIONS DEDICATED TO PROFESSIONALS

Fuel mass flow consumption measurement

Fuel mass flow rate is one of the most important measurements of the Test Bench. The information gathered on fuel consumption has a strategic value *per se*, but it also serves as a basis to calculate the specific consumption. The measurement of the fuel flow measurement must therefore be both accurate and reliable. This is the reason why AGRISCAN offers a measurement of mass, which is an entirely new process on this type of Test Bench. The operating principle ensures that it is compatible with the input system of all types of farming machines, including those that have a high slew rate. The mass measurement also provides reliable information; the energetic value of the measurement is direct and not the result of a calculation that can sometimes tend to be unreliable. The specific consumption calculation is also more accurate, which improves the efficiency of the analysis and the reliability of results. The absence of moving parts also considerably reduces the danger of failures and measurement drifts. The software reproduces the flow measurements in the form of curves, which are compared with the torque curves for an improved analysis.



Measurement of the engine's cooling fan's speed

This speed sensor with a laser sight, placed in front of the cooling fan, measures its revolution speed. The engine's cooling fan can absorb several kW, in the case of a vehicle equipped with a viscodrive-driven fan, and the power available at the power take-off (measured by the Test Bench) may therefore vary by a few kW, depending on whether the fan is in gear or not. In this case, it is very important to measure this speed in order to associate a possible power drop with the operation of the vehicle's cooling fan.



WIFI connection

All Test Bench control operations, as well as the display and analysis of the results are performed on a laptop computer that communicates with the Test Bench via a wireless connection. This, provides enhanced comfort of use for the operator in a cabin. He is thus totally free in terms of movements and position in relation to the Test Bench, in turn improving his safety, optimising his work time, and ensuring a privileged relationship with his customers, who can share the experience of the Test Bench.



EQUIPMENT AND ACCESSORIES IN OPTION

Optimisation of the brake ventilation (included) :

Complementary fans to the natural cooling system of the brakes ensure better operational safety during tests of high power machines. In less extreme cases, they make it possible to lengthen the duration of test, if necessary.

Environment monitor

Two models are available:

1. The Environment Monitor Light SML101 : Simple environment monitor measuring temperature, humidity and the atmospheric pressure with its three highly accurate sensors. It automatically transmits the data to the software which determines the corrections to the results.

2. The Environment Monitor SME301 : The SME 301 fulfills the same basic functions as the SML101, but also offers four acquisition inputs for temperature 'K' type thermocouple sensors and four analogue acquisition inputs 0-10V for complementary sensors (hydraulic pressure for example). The temperature measurement allows the control of the thermal configuration inside the engine. The sensors are directly connected to the Environment Monitor (SME 101). Several types of sensors are available : standard sensors (cylindrical sheath) length 100 mm with tight passage, cylindrical sheath length 600 mm, etc.

Transmission shafts:

A very wide variety of transmission shafts enables to connect AGRISCAN to any type of existing power take-off. ROTRONICS recommends the use of high-quality industrial transmission shafts that are specifically adapted to high torque and high speeds. (Shaft manufacturer's warrantee of universal joints until 2500 rpm).

Available with 6 and 21 grooves in 1" 3/8" connection and with 20 grooves in 1" 3/4" connection. At the Test Bench output, it is a 20 grooves in 1" 3/4" connection. A storage unit is included in the Test Bench chassis so that you can store your various transmission shafts.

Fuel mass flow consumption measurement:

Thanks to the fact that this system does not generate any load losses, these universal scales provide accurate measurements that are reliable and directly reflect the specific fuel consumption of a farming machine. agriculture machinery.

Measurement of the engine's cooling fan's speed:

this enables to measure the speed of the fan and to associate it with possible engine power drops.

WIFI:

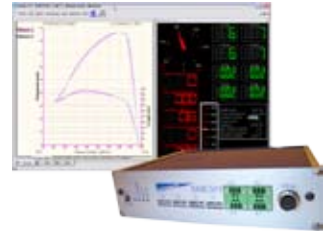
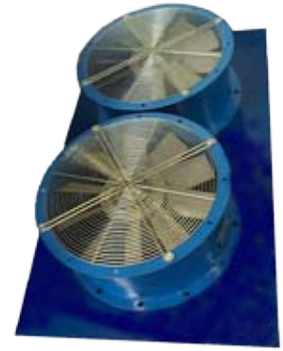
Use of a laptop computer with an integrated WIFI receiver. The radio receiver is located in the Test Bench's locker and transfers data between your Test Bench and the computer. The operator can work comfortably from his cabin and enjoys total freedom of movement. This option must be included in the design stages of the Power Test Bench.

Gas Analyser CO, CO2, HC et O2 :

Analysis of exhaust gases, calculates corrected CO content, Lambda, and the stoichiometric ratio (AFR), measures engine speed and oil temperature.

Opacimeter :

Analyser of the exhaust gas smoke opacity for the antipollution control of diesel engines.



TECHNICAL CHARACTERISTICS

	AGRISCAN 2F	AGRISCAN 3F
Maximum Power (at 600 rpm during 1 min)	270 kW (370 Bhp, 4350 Nm, 445 mkgf)	349kW (478Bhp ,5612Nm, 575mkgf)
Maximum Power (at 1000 rpm during 1 min)	400 kW (540 Bhp, 3900 Nm, 400 mkgf)	516kW (697Bhp ,5031Nm, 516mkgf)
Maximum Power (at 2000 tr/min during 1 min)	570 kW (775 Bhp, 2750 Nm, 280 mkgf)	736kW (1000Bhp ,3548Nm, 362mkgf)
Constant absorbtion capacity (at 600 rpm)	160 kW (220 Bhp, 2600 Nm, 265 mkgf) Max Capacity available beyond 25 minutes	207kW (284Bhp ,3354Nm, 342mkgf) Max Capacity available beyond 25 minutes
Constant absorbtion capacity (at 1000 rpm)	200 kW (270 Bhp, 1950 Nm, 200 mkgf) Max Capacity available beyond 10 minutes	258kW (349Bhp ,2516Nm, 258mkgf) Max Capacity available beyond 10 minutes
Constant absorbtion capacity (at 2000 rpm)	230 kW (320 Bhp, 1100 Nm, 115 mkgf) Max Capacity available beyond 6 minutes	297kW (413Bhp ,1419Nm, 149mkgf) Max Capacity available beyond 6 minutes
Max.speed at the power take-off	3600 rpm	3600 rpm
Inertia of rolling elements	7,5 m ² .kg	11,25 m ² .kg
Electrical power supplied	1) 220V P+N 32A (Brakes) + 380V 3P+N 16 A (Ventilation) 2) 380V 3P+N 16A (Brake + ventilation)	380 V 3P+N 32 A
Dimensions (overall)	Road : L 2270 x l 2160 x h 1850 mm (without arrowhead) Workshop : L 1380 x l 1260 x h 1520 mm	Road : L 3070 x l 2160 x h 1850 mm (without arrowhead) Workshop : L 2110 x l 1260 x h 1520 mm
Weight	Road : 1800 kg Workshop : 1350 kg	Road : 2500 kg Workshop : 2050 kg
Management software	Included	Included
Double power take-off Output	Included	Included
Brakes ventilation (needs a 380 V three phase power supply)	Included	Included
Standard computer	Option	Option
weather station Light SML or extended weather station SME 301	Option	Option
Fuel mass flow consumption measurement	Option	Option
Speed Measurement of the engine's cooling fan	Option	Option
Transmission shafts	Option	Option
WIFI connection	Option	Option
Gas Analyser	Option	Option

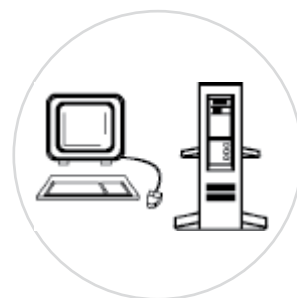
Minimal features required for computer type under WINDOWS XP or Seven in 32 bits with a network plug and an USB or serial plug.

The PC can be supplied by Rotronics as option.

The different measurement of the dynamometer are calibrated in our workshop before delivery.

Guarantee : 1 year (return to workshop).

Free technical assistance during the guarantee period : Fax and email.



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