

# TEN

Automotive Equipment



Catalogue 2016/2017



Technology with the future in mind  
Since 1985

# TEN Automotive Equipment Company profile

Dear reader,

You will find our new catalogue just in front of you. This catalogue will provide you briefly an overview of our product range. It gives you an impression of our company.

TEN Automotive Equipment develops and manufactures a comprehensive range of MOT Testing Equipments for the automotive industry. As a member of the Andriessen Group the company has, within the last 35 years, experienced growth from a modest 3-man service utility into a multi-division 'high-tech' operation, exporting to a dealer network all over the world. Now, we intend to expand further afield!

TEN Automotive Equipment is based in the Netherlands, near our capital city Amsterdam and the main airport Schiphol. With a total of 25 employees, we can proudly say "Made in Holland"!

Throughout the years TEN Automotive Equipment have built on their reputation for reliability in design and quality in manufacturing of exhaust emission analyzers and MOT testing equipment. With environmental issues forever becoming more of consequence and vehicle emissions testing being mandatory in most countries, TEN Automotive Equipment have become a leading manufacturer and supplier of MOT testing equipments all over the world.

TEN Automotive Equipment continues to develop and supply MOT Testing Equipments to major car & equipment manufacturers under license, as OEM in addition to their own brand name. The current range of equipment is marked and is fully approved to MID and individual government legislative requirements in countries where vehicle Periodic Technical Inspection is mandatory. The company is ISO 9000: 2008 certified and meets the highest quality standards.

We distinguish ourselves by a no nonsense attitude and short communication lines. We always think along with the client, to find solutions to overcome the challenges provided by our industry.

I would be delighted if you took this opportunity to learn more about us.



Sincerely,  
Patrick Andriessen



# INNOVA 500

## Multigas analyser

The INNOVA 500 is a "State of the Art" exhaust emission analyser incorporating the latest microcontroller technology and is designed to meet the highest standards and demands for tomorrow. The fully digital infrared gas bench technology provides rapid analysis of a vehicles performance with pinpoint precision of the exhaust measurement.

Together with the clear LED displays, the built-in printer, the INNOVA 500 is the most user friendly analyser for mandatory vehicle emission testing and fault diagnosis of today.

The INNOVA 500 is equipped , as standard, with test features such as a RPM and Oiltemperature sensor, for a complete comprehensive diagnosis of petrol, LPG and CNG vehicle emissions. Test results can easily be analysed. The clear displays of the multigas analyser makes it simple to operate. Taking only a few minutes of the vehicle technicians time to complete a full emission test.

#### Standard features:

- 6 large LED displays
- 8 robust front keys
- Quick and easy operation
- Simple "step by step" test routines
- Integrated thermal printer
- RPM and Oil temperature measurement
- OIML Class 0 accuracy
- CE approved

#### Optional:

- NOx sensor kit

#### Specifications:

|              |                   |             |              |
|--------------|-------------------|-------------|--------------|
| CO           | :0-10%Vol         | Oiltemp.    | :0-150 C     |
| HC           | :0-20.000 ppm Vol | RPM         | :300-10.000  |
| Co2          | :0-20% Vol        | Power input | :AC 230 Volt |
| O2           | :0-25% Vol        | Frequency   | :50Hz        |
| Lambda Calc. | :0,500-9,999      | Max. Power  | :60 Watt     |



#### Key options:

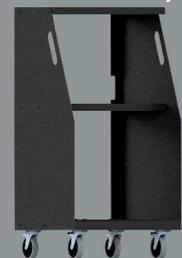
TEN EDA2 Smokemeter



TEN LPA Smokemeter



EASY Trolley



# INNOVA 2800

## Multigas analyser

The TEN INNOVA 2800 is a mid range exhaust emissions analyser incorporating the latest in digital technology and designed to meet the highest technical demands of tomorrow. The powerful PC system combined with „fully digital“ infrared gas measuring technology provides rapid analysis of a vehicle performance with pinpoint precision of exhaust measurement. Together with the high resolution full colour monitor, the qwerty keyboard and the A4 printer, the INNOVA 2800 is a very user friendly analyser for mandatory vehicle emissions testing of today.

The INNOVA 2800 is equipped, as standard, with test features such as an RPM and Oil-temperature sensor for a complete comprehensive diagnosis of petrol, LPG and CNG vehicle emissions.

The simple menu structured software and smart graphics presentation are among many features unique to this multi-gas exhaust emissions analyser, which makes it so simple to operate, taking just a few minutes of the vehicle technicians time to complete a full emissions test.

Fully approved to internationally recognized OIML R99 Class 0 specifications the INNOVA 2800 boasts several vehicle manufactures recommendations. From conventional vehicles to the most advanced technology which may not yet be on the market the INNOVA 2800 embraces the leading edge in technology for now and for the future.



### Specifications:

|              |                   |             |               |
|--------------|-------------------|-------------|---------------|
| CO           | :0-10%Vol         | Oiltemp.    | :0-150 C      |
| HC           | :0-20.000 ppm Vol | RPM         | : 300-10.000  |
| Co2          | :0-20% Vol        | Power input | : AC 230 Volt |
| O2           | :0-25% Vol        | Frequency   | : 50Hz        |
| Lampda Calc. | :0,500-9,999      | Max. Power  | : 60 Watt     |

Standard delivered with:

Monitor and keyboard\*



A4 Printer\*



PC system\*



\* may be different from image

# Black Box

## Multigas analyser

### Black Box configuration

The INNOVA 2800 are controlled by a computer, on page 4 we described the complete units with PC, keyboard, printer and trolley. There is also the possibility to purchase the multigas analyser without PC, see below the INNOVA 2800 black box configuration.

### INNOVA2800 Black Box

The TEN INNOVA 2800 Black Box is the most advanced emissions analyser module for testing all types of petrol vehicles, with or without catalyst. The INNOVA 2800 module ensures that emissions levels are measured quickly and accurately. The INNOVA 2800 is equipped, as standard, with test features such as an RPM and Oil-temperature sensor for a complete comprehensive diagnosis of petrol, LPG and CNG vehicle emissions. The simple menu structured software and "smart" graphics presentation are among many features unique to this "multi-gas" exhaust emissions analyser.

Fully approved to internationally recognized OIML R99 Class 0 specifications the INNOVA 2800 boasts several vehicle manufactures recommendations. From conventional vehicles to the most advanced technology which may not yet be on the market the INNOVA 2800 embraces the leading edge in technology for now and for the future.



### Specifications:

|              |                   |             |              |
|--------------|-------------------|-------------|--------------|
| CO           | :0-10%Vol         | Oiltemp.    | :0-150 C     |
| HC           | :0-20.000 ppm Vol | RPM         | :300-10.000  |
| Co2          | :0-20% Vol        | Power input | :AC 230 Volt |
| O2           | :0-25% Vol        | Frequency   | :50Hz        |
| Lampda Calc. | :0,500-9,999      | Max. Power  | :60 Watt     |

Opional delivered with:

Oil temperature



Sample probe



RPM clamp



# TMB 216

## Automotive Microbench

TEN Automotive Equipment introduce a new highly sophisticated Automotive Microbench, the TMB 216, uses Non-Dispersive Infra-Red(NDIR) technology to measure the levels of CO, CO2 and HC of exhaust gasses.

The Infrared Microbench meets the highest standards with the latest technologies available on the market. Designed to fulfill the latest standards, OIML R99 class 0. Due to the unique measuring principle, the TMB 216 operates extremely precise and accurate.

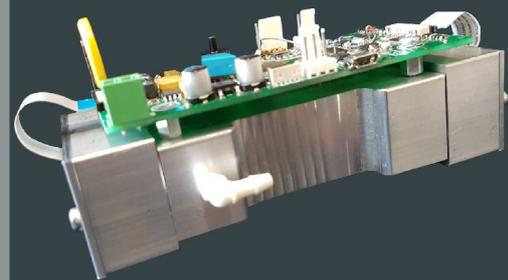
The microbench has been developed according to the latest requirement from the market. The unit is built as compact as possible, without losing its strengths. It is easy to use and flexible to integrate in existing gas analyzers.

Optional the analyzer can be equipped with the prepared NOx channel that offers a complete new functionality.

|     |                             |
|-----|-----------------------------|
| CO  | :0-10%Vol                   |
| HC  | :0-20.000 ppm Vol           |
| Co2 | :0-20% Vol                  |
| O2  | :0-25% Vol                  |
| Nox | :0-5.000 ppm Vol (optional) |

### Specifications:

Ambient operating temperature: 0°C to 50°C  
Storage temperature: -50°C to 70°C  
Sample flow rate: 0.5 - 1,5 L/M  
Sample rate: 2 Hz  
Response time: T90 = 5s  
Operating Pressure: 750 - 1100 mbar (1000mbar nominal)  
Power Requirements: 5 VDC  $\pm$ 0.25V, 3A max  
Communications: RS232, 9600 baud



Oxygen sensor



Sensor head



NOx Sensor



# EDA 500

## Smokemeter

The most advanced diesel engine analyser for testing passenger cars as well as commercial vehicles. Utilizing the very latest "fully digital" processing technology the EDA 500 ensures that smoke emissions levels are measured quickly and accurately.

The EDA 500 is a high performance diesel engine analyser incorporating the very latest fully digital processing technology for quick and accurate measurement of vehicle emissions. Approved for mandatory vehicle testing throughout Europe the EDA 500 utilises six clear LED displays and the integral thermal printer to provide a complete analysis of vehicle test results. The unique design and robust construction of the smoke chamber offers an opacity measurement facility which is 'virtually' maintenance free.

With a comprehensive range of measurement parameters available the vehicle technician can easily perform the following tests:

1. Official governmental mandatory testing.
2. Continuous data measurement.

Standard features:

- 6 clear LED display
- Integrated thermal printer
- Quick and easy operation
- Test passenger cars as well as commercial vehicles
- High quality, aluminium smoke cell for repeatability of measurement with the minimum of maintenance
- Fast warm up with automatic zero & weekly calibration check
- Complies with the latest standards
- CE approved

### Specifications:

|             |                    |              |                       |
|-------------|--------------------|--------------|-----------------------|
| Power input | : 220 / 240 Volt   | Oiltemp.     | : 0-150 °C            |
| Frequency   | : 50 Hz            | Cell temp.   | : 0-150 °C            |
| Max Power   | : 350 W            | Opacity      | : 0-99 % / 0-9,99 m-1 |
| Displays    | : LED              | Size display | : 580 / 760 / 1300 mm |
| Printer     | : Thermal          | Weight       | : ca. 10 kg           |
| RPM         | : 100 – 9990 1/min |              |                       |



Screenshot



Option: Remote terminal



Communication cable



# EDA 2

## Smokemeter

The EDA 2 is a multifunctional smoke meter, that can be connected to several exhaust gas analysers, computers and other test lane systems. In fact, every system equipped with a normal serial communication port can be extended with a smoke test, using the EDA 2.

With the EDA 2 it is possible to test passenger cars and HCV's without any problem.

The EDA 2 measures by the partial flow principle. This means that only a part of the exhaust gasses is led through the smoke chamber. Compared to a full-flow analyser this means that we were able to develop a more compact design. To get the utmost accuracy out of the smoke chamber, it's equipped with the following components;

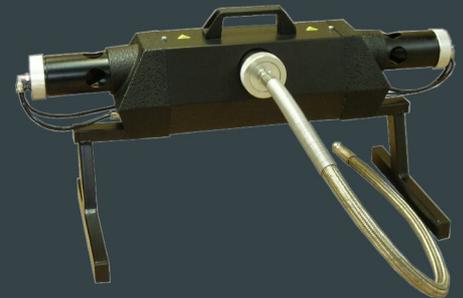
- A powerful self-regulating heating system keeps the smoke chamber constantly at 100 °C, to avoid moisture and decompression of the gasses.
- Sensors for the pressure, chamber- and gas temperature in the smoke chamber send important information to the processing-unit which controls and corrects the opacity measurement.

The smoke meter itself is completely made of aluminium to avoid corrosion and mechanical deformation, but to assure an optimal heat conduction. Together with the accurate and robust optical components, we guarantee a high quality and almost maintenance free smoke cell.

All information measured in the smoke cell is processed in the processing unit and can be presented through the RS232 port. The EDA 2 has a powerful command set, which offers you a large scale of possibilities. For example measuring in percentages or K, with or without low-pass filtering, with or without temperature compensating, etc.

### Specifications:

|                 |                     |             |             |
|-----------------|---------------------|-------------|-------------|
| Measure chamber | : Length 430mm, alu | Oil temp.   | : 0-150 C   |
| Weight          | : ca. 8 kg          | Power input | : 220/240 V |
| Opacity         | : 0-99%/0-9,99 m-1  | Frequency   | : 50Hz      |
| Cell temp.      | : 0-150 C           | Max. Power  | : 330 Watt  |



Can be connected with:

Innova 500



Innova 2800



PC or laptop



# LPA 565

## NEW Smokemeter

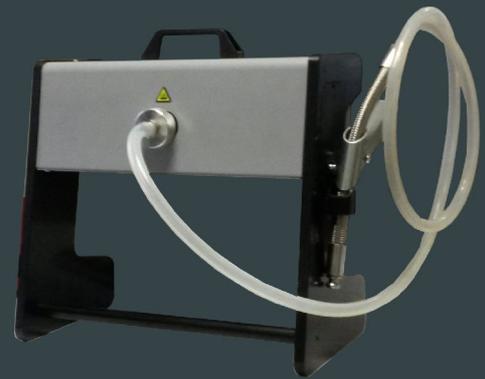
TEN Automotive Equipment presents a complete new high resolution diesel smoke meter, the TEN LPA. The European Commission requires that new diesel vehicles comply with the European EURO 5 and 6 norm to reduce smoke particulate emission in order to improve the air quality. Existing smoke meters have a low resolution, too low to measure the very low emission levels of EURO 5 and 6 diesel vehicles. The LPA is able to measure very low levels. Using the latest technology, the LPA is able to detect DPF malfunctioning or other engine systems failures that cause higher emissions.

Modern diesel vehicles have advanced exhaust systems that possess a DOC, wall-flow DPF and SRC to reduce up to 99.9% of the harmful emissions. To detect defects in one of these components, a measuring range of 0.5 m<sup>-1</sup> in high resolution is required. No problem for the LPA.

The TEN LPA is a partial flow smoke meter. Reliable, robust and dynamic, following each acceleration without any problem. The TEN LPA measures according to the light absorption principle. Equipped with an InGaN led, an accurate heating system to condition to smoke chamber and various sensors, the TEN LPA ensures a precise measurement. The full aluminium chamber and other A-quality components ensure a trouble free operation for passenger cars, light commercial vehicles and trucks.

### Specifications

|                          |   |
|--------------------------|---|
| Dimensions               | 420 x 250 x 450 mm (W x D x H)  |
| Weight                   | 8 kg  |
| Power                    | 90 - 250 Vac, 50 - 60 Hz, Max. 200 W  |
| Ambient temperature      | 0 - 40 °C   |
| Measuring range          | 0.00 - 99.9 % HSU<br>0.000 - 9.999 m <sup>-1</sup><br>0.0 - 849.9 mg/m <sup>3</sup> |
| Resolution               | 0.1 % HSU, 0.001 m <sup>-1</sup> , 0.1 mg/m <sup>3</sup>                            |
| Zero stability           | 0.003 m <sup>-1</sup>   |
| Static accuracy (filter) | 0.5 %   |
| Sample probe             | 2 mtr Ø10 mm (passenger cars)<br>3.5 mtr Ø27 mm (trucks)                            |
| Connectivity             | RS232, USB and Bluetooth  |



# UBT 3000

## RPM adapter

The UBT 3000 is the latest type of electronic RPM adapter in the UBT series. The UBT 3000 incorporates a vibration sensor counter and battery / alternator signal counter in one compact and modern device.

The UBT 3000 is modern in design, extremely easy to operate and uses advanced technology. In the UBT two different technologies are combined: the battery / alternator ripple voltage and the engine vibration technology. The UBT 3000 actually comprises two electronic RPM counters in a new, compact device.

The measured engine speed is displayed on the integrated LCD display. The UBT 3000 can therefore be used for stand-alone presentation of the engine speed and oil temperature. However, if you use the UBT in conjunction with TEN emission equipment, the information is redirected by the connection lead to your tester, the INNOVA or EDA smoke meter.

The UBT has two membrane keys. They allow you to control the UBT simply and fast. One key to select the measure mode (ripple or vibration) and a key to set the number of cylinders.



### Standard features:

- LCD display
- Two robust membrane keys
- Engine vibration sensor
- Battery clamps
- Cigarette lighter plug
- 12 volt dc adaptor
- Oil temperature sensor
- Connection lead for INNOVA or EDA smoke meter.

### Standard delivered with:

Engine vibration sensor



Battery clamps



Cigarette lighter plug



# NER-001

## Zero emission unit

The TEN NER is a portable zero emission unit to reduce diesel smoke emissions in the garage environment. Because of the smart design, the NER can be used for passenger and commercial (HTV) vehicles. The NER is used in combination with the TEN INNOVA / EDA emission combi testers and secures a quick, accurate and safe smoke test.

Because of new health regulations, more and more diesel smoke emissions must be reduced in the garage environment. This because of safety and serious diseases. With help of the NER, no diesel smoke particles will enter the garage environment; there is 'Zero Emission'.

Because of the unique design of the NER 0-emission system it is even possible to use the system as a combi unit for passenger cars as well as for trucks. At the front panel of the NER you will find two grips for the mechanical valves. With these valves you can easily select the passenger car inlet or the truck inlet, depending on the vehicle to test.

The NER 0-emission unit is an investment that saves money, time and health. Specially for technicians and inspectors in test centres where thousands and thousands of tests are performed every year, one can imagine how many pollution is generated inside these test centres. In a normal garage environment the Maximum Permitted Concentration (MPC) of black coal over 8 hours is 3.5 mg/m<sup>3</sup>. With the NER 0-emission system you can avoid this pollution and create a cleaner and healthy test environment.

### Technical information:

|  |                             |
|--|-----------------------------|
| Minimal flow extraction                | : 1000 m <sup>3</sup> /hour |
| Minimal flow truck version             | : 2000 m <sup>3</sup> /hour |
| Extraction system connection           | : ø 180 mm                  |
| Dimensions (l x w x h – excl. casters) | : 750 x 500 x 930 mm        |
| Weight (excl. sample hoses)            | : 30 kg.                    |

### Passenger car sample hose:

|                                     |            |
|-------------------------------------|------------|
| Diameter hose and connection funnel | : ø 125 mm |
| Hose length                         | : 2,5 m    |

### Truck sample hose:

|                                     |            |
|-------------------------------------|------------|
| Diameter hose and connection funnel | : ø 180 mm |
| Hose length                         | : 3,5 m    |



Also available:

Extraction fan 2100m<sup>3</sup>/hour



Thermal switch



Extraction hose



# PTL 5002

## Platform braketestester

The TEN PTL platform brake tester measures the brake force dynamically and individual for each wheel. These are the only values that represent the actual situation as it occurs in reality. Every TEN PTL brake tester operates with a fully automated test sequence, the remote control is not needed for testing. After each test, it is possible to print out the results. From here, a further analysis of the brake system can be made.

The PTL console incorporates large LED displays for a clear and quick presentation of the results and, as an option, an IR remote control and thermal printer are available. The platforms are made of solid steel and fully galvanised. Due to the unique slide system of the platforms with polyamide rollers, the PTL needs a minimum of maintenance. The TEN PTL can be supplied with two (TEN PTL 5002) or four platforms (TEN PTL 5004).

With the last software update, TEN included several new functions. The Automatic Test Sequence has been introduced. The front, rear and parking brakes are tested during 1 procedure, the brake efficiency will be calculated automatically after entering the vehicle weight. The results can be printed with the optional available integrated thermal printer. The Vehicle Weight Indication has been introduced for an optimized test performance. A special program has been implemented to test the Roll Resistance of a vehicle, brake failures can be detected in a split second. And last but not least the Automatic Transmission Detection.



### Specifications:

|                             |                   |
|-----------------------------|-------------------|
| Dimensions display:         | 55x30x7cm         |
| Max. vehicle weight:        | 5.000kg,          |
| Dimensions plates:          | 150x50cm          |
| Test speed:                 | 5-10km/h,         |
| Height brake plates:        | 46mm              |
| Measuring range brake force | 0 - 10.000 N      |
| Power supply:               | 90-250Vac-40-50Hz |
| Punched T-bar grid.         |                   |

### Key options:

Four platforms



Printer+Remote control



Pedal force sensor



# PTL moto

## Platform braketester

In line with the platform brake tester for passenger cars, TEN Automotive Equipment introduces a new Platform Brake Tester specially designed for motorcycles. The so called PTLm is a dynamic brake tester to measure real-time the brake force of the front and rear brake of a motorcycle. The PTLm is designed and produced with solid platforms, which are equipped with a special coating to reach the highest friction coefficient, also with wet tyres. The brake platform is extremely user friendly and is nearly free of any required service. The unique sliding construction with polyamide rollers will last for a long time.

The Platform Brake Tester for motorcycles is equipped with a weighing scale, which gives the operator the opportunity to correlate the brake force to the weight of the motor cycle. This will result the brake efficiency value.

The measured values will be presented on a digital display. Both brake forces of both the front and rear wheel will be presented. The display is equipped with the latest technology, realizing fast and a high accuracy of the measured values!

Installing the Platform Brake Tester is easy and can be done by one technician. A nice and flat workshop floor will increase the speed of installing the unit. The distance between the platform and the display unit can be chosen by the customer, as the cables have a length of 20 mtr.

### Specifications:

|                             |                   |
|-----------------------------|-------------------|
| Dimensions display:         | 55x30x7cm         |
| Max. bike weight:           | 500kg             |
| Dimension brake plate:      | 80x55cm           |
| Dimension Weight plate:     | 20x55cm           |
| Total dimensions:           | 172x55x4,6cm      |
| Test speed:                 | 5-10km/h          |
| Height weight/brake plate:  | 46mm              |
| Measuring range brake force | 0 - 10.000 N      |
| Power supply:               | 90-250Vac-40-50Hz |
| Cover brake plate:          | Epoxy grid.       |



# PTL 12002

## Platform braketester

New in the family is the Platform Brake Tester for agricultural tractors or trucks. Especially designed for vehicles above 3,5 tons with multiple axles. The number of axles can be selected in the software. The tekst report will show all results at a glance.

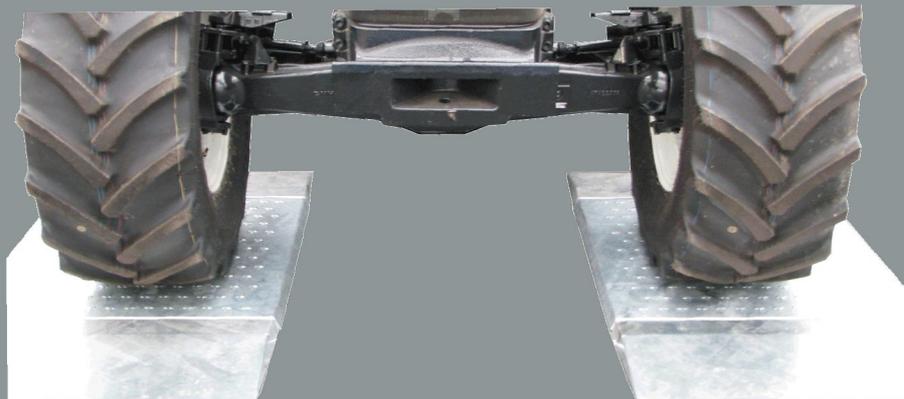
The PTL 12002 is designed and produced with high two solid platforms, which are equipped with a special metal T-grid to reach the highest brake efficiency, also with wet tyres. The brake platform is extremely user friendly and is nearly free of any required service. The unique sliding construction with polymic rollers will last for a long time.

The measured values will be presented on a digital display. The left and right brake forces of each axle will be presented. The digital display is equipped with the latest technology, realizing fast and a high accuracy of the measured values!

Installing the Platform Brake Tester is easy. A nice and flat workshop floor will increase the speed of installing the unit. The distance between the platform and the display unit can be chosen by the customer, as the cables have a length of 20 mtr.

### Specifications:

|                              |                    |
|------------------------------|--------------------|
| Dimensions display:          | 55x30x7cm          |
| Max. Axle load:              | 12.000kg           |
| Dimension brake plate:       | 100x100cm          |
| Total dimensions:            | 185x100x5cm        |
| Test speed:                  | 5-10km/h           |
| Height weight/brake plate:   | 50mm               |
| Measuring range brake force: | 0 - 40.000 N       |
| Power supply:                | 90-250Vac-40-50Hz  |
| Cover brake plate:           | Punched T-bar grid |



# MTL

## Mobile test lane

During the last years TEN Automotive Equipment have developed a new concept for Mobile Test Equipment to perform the periodic test inspections of automobiles. A concept that is extremely easy to use, operating with low power consumption and a competitive price compared to other available equipment!

A mobile road test that is fully operated by one person. The test platform is placed and transported in a closed trailer with tiltable floor. Rolling out the platform and ready to operate within 15 minutes, it allows the user to test vehicles in isolated areas or with a low vehicles density.

The integrated electrical generator supplies the necessary electrical power. With help of the built in electric winch, the platform can easily be loaded out and into the trailer. During the loading the platform uses movable transport wheels. The platform with a anti-slip layer underneath, will be put directly on the ground.

Power and signal leads can be easily connected by quick couplers. All measured test data is collected by a PC executing the TEN test lane software. A full test report will show all collected test results.

An official test can start with the vehicle headlight test before entering the platform. Then the vehicle moves forwards onto the platform to the brake tester. First the front brakes are tested, secondly the rear brakes and finally the parking brake. After the brake test the vehicle will have it's emission test with the gas analyser or the smoke meter.

### Key advantages:

1. Complete trailer and test lane is operated by one person.
2. Professional and state of art design.
3. Easy to drive trailer, less than 3.500 kg total vehicle weight.
4. Low power consumption of complete test lane, 220 Vac.
5. Fast test procedure, 10 vehicles / hour.
6. Long and low cost maintenance interval.
7. Acceptable investment ratio.

Optional available for the mobile test lane is a fully integrated hydraulic axle load detector, EOBD CobraScan and the WAT560.



### Possible configuration:

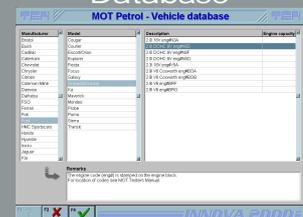
Multigas analyser



Platform braketester



Database



# TCT 3000

## Turning circle tester

Wheel alignment and steering adjustment are important parameters of modern vehicles that should be checked regularly during annual inspections. One of these parameters is the steering angle of the steering wheels. Especially in curves this parameter controls the behaviour of the vehicle.

Besides road behaviour also the turning circle of the vehicle is determined by the steering wheel angle adjustment. Wrong adjustment or damaged steering components can seriously influence the turning circle of the vehicle.

Specially for this kind of inspections TEN Automotive developed the TCT 3000. A universal Turning Circle Tester for checking the vehicles turning circle diameter and inspect the steering angle of both wheels at once. Fully electronic with and presented at two large LED display, the TCT 3000 is probably the most user friendly angle tester available.

The TCT 3000 consists out of two solid steering plate platforms with drive on and drive off ramps. Because of the sled construction of the ramps, each platform can be moved over a width of one meter. This makes the TCT suitable for testing light vehicles up to heavy trucks. Together with the industrial sensors, smart electronics and dedicated software, the TCT can test vehicles with an axle weight up to 12 tons.

The TCT operates with an IR remote control for quick testing and choosing various settings. For network transfer of the test results, the TCT 3000 is equipped with a communication protocol and a serial interface port. Wireless transmission is also optional available. For printing a full test report, the TCT 3000 can be supplied with the optional thermo printer.

### Specifications:

Dimensions display 55 x 30 x 7 cm (w x h x d)

Dimensions steering plate 50 x 50 cm (w x d)

Dimension ramps 100 x 30 cm (w x d)

Sensors Industrial 1- 9 mA

Material steering plate Galvanised steel

Display indication LED 75 mm ultrabright

Range steering angle 0.0 - 90.0 dgr / Range steering circle 0.00 - 49.99 m

High plate 45 mm

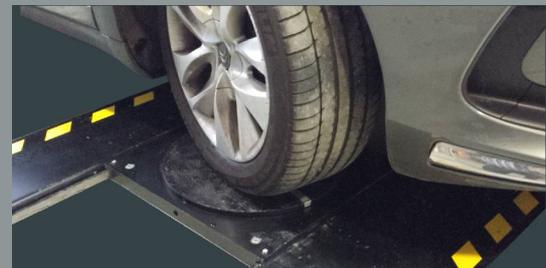
Power 90 - 250 Vac / 40-50 Hz

Resolution steering angle 0.1 dgr

Resolution steering circle 0.01 m

Max. axle weight 12 tons

Bearing Polyamide balls



### Images:

Display



Remote control



Optional printer



# WAT 560

## Window absorption tester

The WAT 560 is a tester for measuring the visible light absorption or transmission of vehicle windows. More and more often the side windows and even the front screen of vehicles are equipped with protective film that absorbs more than 50% of the visible light. During the night this can cause serious accidents due to poor visibility.

The WAT560 is a three piece absorption tester. A transmitter box placed at one side of the window, the receiver box placed at the other side and your PC to receive the test data by wireless BT connection.

No wires between the transmitter and receiver, everything wireless! The WAT560 is accurate and easy to handle. Due to vacuum cups and a magnetic field the placement and alignment of the WAT 560 is secure and possible at each location on the windows, side screens, front screens, private vehicles, trucks and tour buses. The WAT560 has a clear OLED display and is menu controlled. Specially for Vehicle inspection the WAT stores the test sequence results in memory and transmits all results at once to the PC by the bluetooth connection.

To ensure an accurate test result, the WAT560 is equipped with an automatic zero calibration and electronic calibration facility (0, 50 and 70% absorption). External optical filters can be used for certification. The WAT560 has a clear OLED display and is menu controlled. Specially for Vehicle Inspection the WAT stores the test sequence results (left side, right side and front screen) in memory and transmits all results at once to the PC by the bluetooth connection.



### Specifications:

|               |  |
|---------------|--|
| Power         | : 2 x 9 volt battery                         |
| Battery time  | : 5 hours / 12 hours                         |
| Low bat. ind. | : Yes  |
| Dimensions    | : 2x 190x100x40 mm                           |
| Light         | : Green led                                  |
| Spectral peak | : 560 nm                                     |
| Display       | : OLED 2x16 char.                            |
| Bluetooth     | : Class I, 100mtr.                           |
| Range         | : 0-100% absorption<br>: 100-0% transmission |

### Photos:

WAT 560 on window



Vacuum cups



OLED display



# 2066-2400

## Headlight Tester

To check whether headlights meet the legal requirements, they should be checked periodically during a visit to the workshop just as the oil level of the engine or other important issues. It is extremely important that the alignment of the headlights is correct and the declination is adjusted or maintained to the manufacturer specifications. Any deviation could mean the driver loses meters of sight or even blind other road users with incorrect adjusted headlights.

The TEN product range consist of three different types of headlight testers.

Starting with the 2066 basic model. This mechanical headlight beam setter is equipped with a graduated digital luxmeter, based on wheels, mirror and mechanical pointing system with telescopic base.

The model 2400 mechanical headlight beam setter is based on the above 2066 model, but equipped with a turning column. Both units are optional available with a set of rails to be mounted on the ground.

The Lyra Headlight tester is the TOP of range, equipped with new photocells technology electronic board enabling all headlights types reading. The unit is complete with LCD display and membrane keyboard guiding the operator with few easy and simple touches during the test.

### Structure features & Improvements

- The aluminum column is equipped with an ergonomic knob; operator could move the optical box setting right height simply releasing the knob
- The wide sized optical box is equipped with a 230 mm pure glass lens; thermoformed cover and a wide display complete with icons is guiding the operator through all operations
- Structure specifications enable a deviation check on light mechanical position of 1cm/10 meters
- Optical box has both RS232Port and USB Port
- The steel molded base is equipped with a adjustable wheel height feature to obtain a perfect floor leveling

### Software features & Improvements

- Available Reading: halogen, xenon, led, low beam, high beam, fog beam
- Available Languages: 5
- Port Connectivity: RS232 and optional WiFi, Bluetooth



Images:

Lux meter



Mirror



Pointing system



# COBRASCAN

## EOBD Scantool

The CobraScan is a digital EOBD adaptor, designed to use as a simple PC Scantool or as a diagnostic interface connected to your TEN Emission tester or smoke meter. The CobraScan simply plugs into the vehicle's standard 16 pin EOBD socket to provide a live reading of engine rpm, oil temperature during a emission test and simultaneously displays any standard DTC (Diagnostic Trouble Code) stored in the vehicles ECU memory

EOBD or European/Emission On Board Diagnosis is a standard form of vehicle diagnostics introduced in line with European Directive 98/69/EC to monitor and reduce emissions from cars. This means that through defined communication protocols the vehicle is able to send a comprehensive stream of vehicle data to external test equipment like fault code readers or exhaust emissions analysers.

The cobrascan is available in two different versions, one stand alone with display and a Cobrascan for connection with gas analyser, smoke meter or PC. Optional bluetooth.

### **CobraScan with cable or bluetooth**

The adapter can be easily connected with the TEN PC controlled multigas analyser or smokemeter. As standard delivered with cable and as option with bluetooth.

### **CobraScan HT**

The CobraScan HT is a handheld version and work without support from a PC, laptop or TEN emission tester. The scan tool grabs his power via the EOBD connector on the car, a power adapter is unnecessary. The CobraScan HT operate mainly use the arrow keys and the enter key, to make a choice which emission-related information must be clearly visible on the display.

The CobraScan supports the following communication protocols:

- ISO 15765-4 (CAN)
- ISO 14230-4 (Keyword Protocol 2000)
- ISO 9141-2
- SAE J1850 PWM
- SAE J1850 VPW



Available versions:

CobraScan HT



CobraScan with bluetooth



CobraScan with cable





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