

Part No. 8004

# LASER<sup>®</sup>

## Fuel Identification Kit Biodiesel & Ethanol Content

### Instructions



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## Introduction

In recent years the increased use of biodiesel and ethanol petrol has started to cause running issues with some diesel and petrol engines. Some vehicles manufacturers have specifically forbidden the use of such fuels on some of their engines because they can cause running problems on an engine not designed specifically for them. The Laser Tools Fuel Identification Kit allows the user to quickly identify the presence of and percentage levels of biodiesel in diesel and ethanol in petrol by simply taking a 500ml sample of the fuel from the tank and placing the specially designed hydrometer into the fuel for analysis.

Tests biodiesel level in diesel and ethanol level in petrol. Can be used in the workshop or remotely. Ideal for agricultural and heavy goods vehicle testing. Applications applicable to car, truck, agricultural and marine engines. For accurate results measurements should be taken at an ambient temperature of 20°C. Made in Germany.

## Components

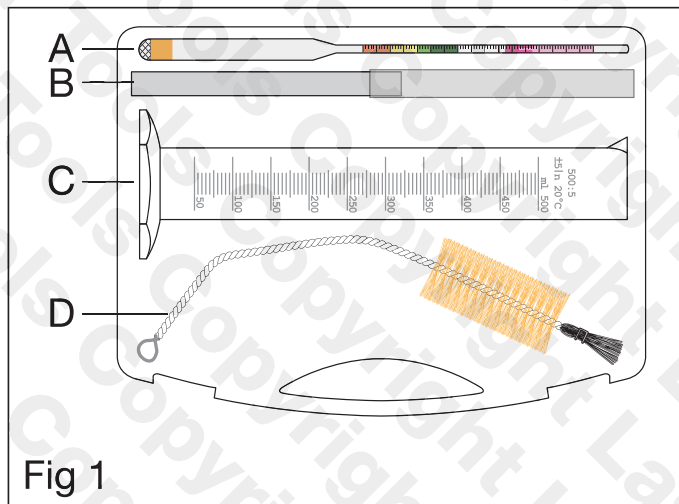


Fig 1

Ref.	Description
A	Fuel Identification Hydrometer
B	Hydrometer Case
C	Measuring Cylinder
D	Cleaning Brush

## Instructions

### Test Procedure:

- Before carrying out the test, ensure that the measuring cylinder and hydrometer are clean and dry. Contaminants may have an adverse effect on the test result.
- Test results are based on an ambient temperature of 20°C (68°F).
- Extract approximately 500ml of fuel from the vehicle fuel tank and pour into the measuring cylinder.
- Slowly immerse the hydrometer into the measuring cylinder. **Warning: If the hydrometer is immersed too quickly, it will be damaged beyond further use.**
- If necessary, top up fuel until the hydrometer floats.
- Read off the test result on the coloured scale on the hydrometer.
- On completing the test, dispose of fuel in accordance with local authority guidelines.

### Cleaning the measuring cylinder and hydrometer:

- Do not use abrasive cleaners or solvent cleaner (eg, brake cleaner).
- Clean both the measuring cylinder and hydrometer with a mixture of water (temperature 60°C) and a commercial degreaser with the pH value between 7 and 9.
- Use the supplied cleaning brush and clean completely and carefully moving the brush up and down inside the cylinder at least 20 times.
- Rinse thoroughly with clean water and leave the cylinder to drain and dry upside down.
- Similarly, clean the hydrometer carefully with the cleaning mixture, rinse with clean water and leave to air dry.
- Ensure that both components are completely dry before returning them to their cases.

# Instructions

## Interpretation of measurement results:

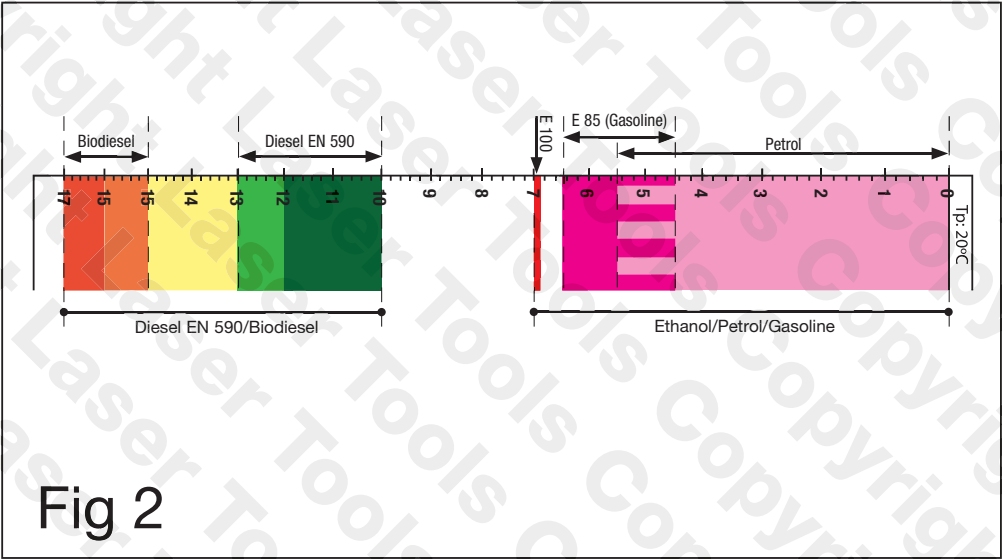


Fig 2

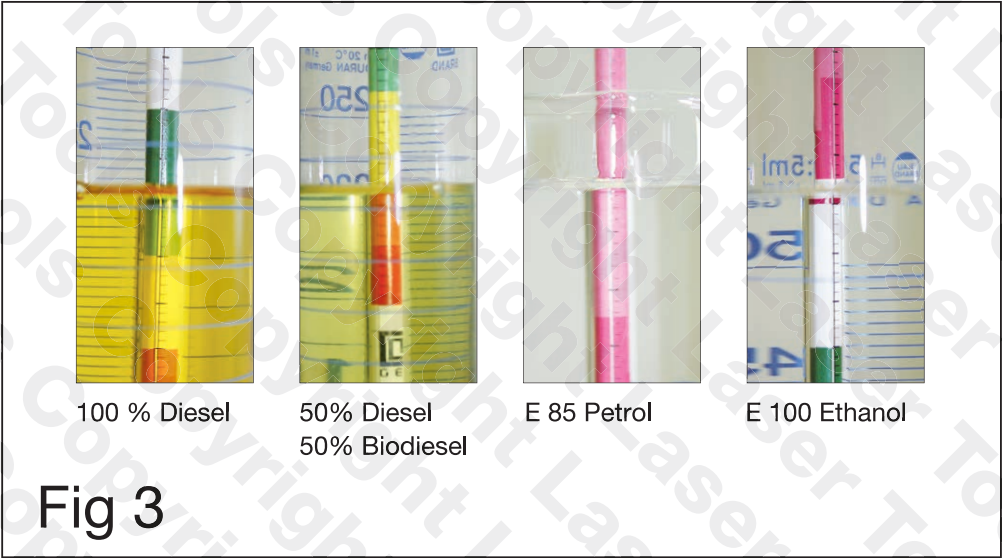


Fig 3

# Instructions

Hydrometer Reading	Type of Fuel
< 0	Laboratory figure (not petrol or diesel fuel).
0 - 5.5	Petrol / gasoline specified at EN 228.
4.5 – 6.5	E85 (85% ethanol / 15% petrol / gasoline).
7 (approx.)	E100 (unblended ethanol).
7.0 – 9.0	Laboratory figure (not petrol or diesel fuel).
9.0 – 11.0	Diesel fuel in Asia (Russia, India, etc).
10.0 – 13.0	Diesel fuel in Europe (specified at EN 590).
13.0 – 15.0	Laboratory figure.
15.0 – 17.0	Biodiesel — laboratory figure.
> 17	Laboratory figure.



## Precautions

- Always read and understand these instructions carefully before using the tool.
- Before carrying out the test, ensure that the measuring cylinder and hydrometer are clean and dry. Contaminants may have an adverse effect on the test result.
- When carrying out the test, slowly immerse the hydrometer into the measuring cylinder. **Warning: If the hydrometer is immersed too quickly, it will be damaged beyond further use.**
- Please observe all safety precautions when working with fuels.
- Wear suitable PPE (personal protective equipment).
- Drain fuel outdoors or in a well-ventilated area.
- Keep a foam or dry powder extinguisher nearby.
- Remove petrol via the filler tube where possible.
- Use adaptors provided by vehicle manufacturers when removing fuel from the fuel lines.
- Do not allow work that can produce a source of ignition, such as welding, electrical or other hot work, to be carried out while removing petrol.
- Do not use any electrical equipment on or near the vehicle while fuel draining is in progress. This includes the use of inspection lamps, cordless phone handsets, mobile phones and pagers.
- Do not allow smoking in the area.
- Do not store drained or contaminated fuel in the workplace unless it is to be returned to the vehicle immediately.
- Do not wear clothing on which petrol has been spilt — stop work and change into uncontaminated clothing before continuing to work.
- On completing the test, dispose of fuel in accordance with local authority guidelines.

**Note:** The hydrometer offers a visual guide for diagnostic purposes only — it cannot supply scientifically calibrated results that could be used as evidence in a legal dispute, for example. This would require laboratory testing.



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If applicable, the applications database and any instructional information provided has been designed to offer general guidance for a particular tool's use and while all attention is given to the accuracy of the data no project should be attempted without referring first to the manufacturer's technical documentation (workshop or instruction manual) or the use of a recognised authority such as Autodata.

It is our policy to continually improve our products and thus we reserve the right to alter specifications and components without prior notice. It is the responsibility of the user to ensure the suitability of the tools and information prior to their use.



**Safety First. Be Protected.**



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**Guarantee**



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