

Thank you for purchasing a Sealey product. Manufactured to a high standard this product will, if used according to these instructions and properly maintained, give you years of trouble free performance.



IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. PLEASE KEEP INSTRUCTIONS SAFE FOR FUTURE USE.

1. SAFETY INSTRUCTIONS



DANGER! - BE AWARE, LEAD-ACID BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON IT IS VERY IMPORTANT TO READ AND FOLLOW THESE INSTRUCTIONS CAREFULLY, EACH TIME YOU USE THE TIMING LIGHT. Follow these instructions and those published by the battery manufacturer and the maker of any equipment you intend to use in the vicinity of the battery. Remember to review warning marks on all products and on engines.

1.1. PERSONAL PRECAUTIONS

- ✓ Ensure there is another person within hearing range of your voice and close enough to come to your aid should a problem arise when working near a lead-acid battery.
- ✓ Wear safety eye protection and protective clothing. Avoid touching eyes while working near battery.
- ✓ Have fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
- ✓ Wash immediately with soap and water if battery acid contacts skin or clothing. If acid enters eye, flush eye immediately with cool, clean running water for at least 15 minutes and seek immediate medical attention.
- ✓ Remove personal metallic items such as rings, bracelets, necklaces and watches. A lead-acid battery can produce a short-circuit current high enough to weld a ring or the like to metal and may cause severe burns.
- ✓ Ensure hands, clothing (especially belts) are clear of fan blades and other moving or hot parts of engine, remove ties and contain long hair.
- x **DO NOT** smoke or allow a spark, or flame, in the vicinity of battery or engine.
- ✓ Remember that a flashing timing light 'freezes' rotating components. **DO NOT** be tempted to touch an apparently stationary component which is, in fact, rotating.
- **WARNING! When ignition is on DO NOT touch any ignition components - very high voltages are present.**



1.2. GENERAL SAFETY INSTRUCTIONS

- **WARNING! When running an engine in an enclosed space ensure adequate ventilation or ducted exhaust. Exhaust gases kill.**
- ✓ Keep children and unauthorised persons away from the working area.
- ✓ Ensure vehicle transmission is in 'Neutral' (manual) or 'Park' (automatic) and the parking brake is applied.
- ✓ Ensure the ignition is switched off before attaching the power clamps to the battery.
- ✓ Keep tools and other items away from the engine and ensure that you can see the battery and working parts of engine clearly.
- ✓ If the battery terminals are corroded or dirty, clean them before attaching the timing light clamps.
- x **DO NOT** dis-assemble the timing light for any reason. The timing light must only be checked by qualified service personnel.
- **WARNING! DO NOT allow metal tools or equipment to accidentally touch battery terminals since this may produce sparks or a short circuit resulting in an explosion.**
- x **DO NOT** cross-connect leads from the timing light to the battery. Ensure positive (+) (RED) is to positive and negative (-) BLACK is to negative. If symbols cannot be distinguished, negative terminal is normally the one directly connected to the vehicle bodywork (check vehicle hand-book).
- x **DO NOT** allow inductive pick-up, or leads, to contact exhaust or other engine parts as the heat will cause damage.
- x **DO NOT** pull the cables or clamps from the battery terminals.
- x **DO NOT** use the timing light outdoors, or in damp, or wet locations, and **DO NOT** operate within the vicinity of flammable liquids or gases.
- x **DO NOT** use the timing light for a task for which it is not designed.
- ✓ When not in use, store the timing light in a safe, dry, childproof location.

2. INTRODUCTION & SPECIFICATIONS

The TL2000 and TL2001 Timing Lights have an ABS/polycarbonate shockproof housing with a protective hand guard and, to facilitate aiming, an adjustable light housing. Both are supplied with detachable battery leads and inductive pick-up.

The TL2000 has a digital display showing engine speed and ignition advance while the TL2001 indicates advance on a dial. Both units are suitable for mechanical, electronic and computerised ignition systems.

Specifications

	TL2000	TL2001
Ignition Advance	0° - 90° ± 1°	0° - 60° ± 2%
Tachometer	249 - 9990rpm	-
Operating Voltage	12V	12V

3. CONTENT & ASSEMBLY

- 3.1. Both units consist of a timing light (fig.1.A) and a pick-up and battery leads harness (fig.1.B).
- 3.2. The plug of the harness fits into the socket (fig.1.C) in the grip of the timing light.

4. OPERATION

4.1. Preparation

- 4.1.1. Prior to checking ignition timing the engine and associated systems must be in good working order. Special attention should be paid to the following: Air filter, spark plugs and HT leads, engine bay electrical wiring and connections, vacuum lines, drive belts, coolant.
- 4.1.2. Confirm the vehicle manufacturer's procedure for checking timing and the acceptable results.
- 4.1.3. Locate timing marks and reference point. These are usually on the crankshaft pulley or the flywheel. See fig.2 for typical examples. Clean timing marks and, if necessary, highlight with chalk to ensure good visibility.
- 4.1.4. Run engine until it reaches normal operating temperature. **DO NOT** connect timing light while engine is running.

4.2. Operation

☐ **WARNING! Read, understand and apply the safety instructions in Section 1.**

4.2.1. Timing

4.2.1.1. **Switch off ignition** before connecting timing light.

4.2.1.2. Connect clamps (fig.1.1) to battery terminals, red clamp to positive (+) terminal and black clamp to negative (-) terminal.

4.2.1.3. Clip inductive pick-up (fig.1.2) around plug lead of no.1 cylinder. See fig.3.

4.2.1.4. Carry out any preparation required by vehicle manufacturer's timing check instructions.

4.2.1.5. Start engine and adjust speed to that specified by manufacturer for timing check. TL2000 will show engine speed (rpm) on display (fig.1.3).

4.2.1.6. Press the On/Off switch (fig.1.4) to turn on the timing light. Note that on TL2000 the 'On' indicator (fig.1.5) will blink to show that light is on.

4.2.1.7. TL2000 - Check that advance display (fig.1.6) reads 0°. If necessary press zeroing button (fig.1.7)

TL2001 - Check that advance dial (fig.1.8) reads 0°.

4.2.1.8. Illuminate timing marks with timing light. Note position of timing marks in relation to reference mark or pointer.

4.2.1.9. If timing mark alignment does not correspond with vehicle specification refer to manufacturer's instructions for details of adjustment and/or component replacement.

4.2.2. Advance

4.2.2.1. Having determined and noted basic timing, check advance as follows.

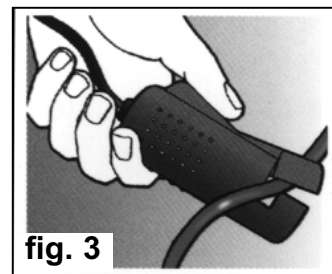
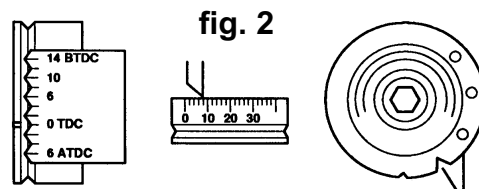
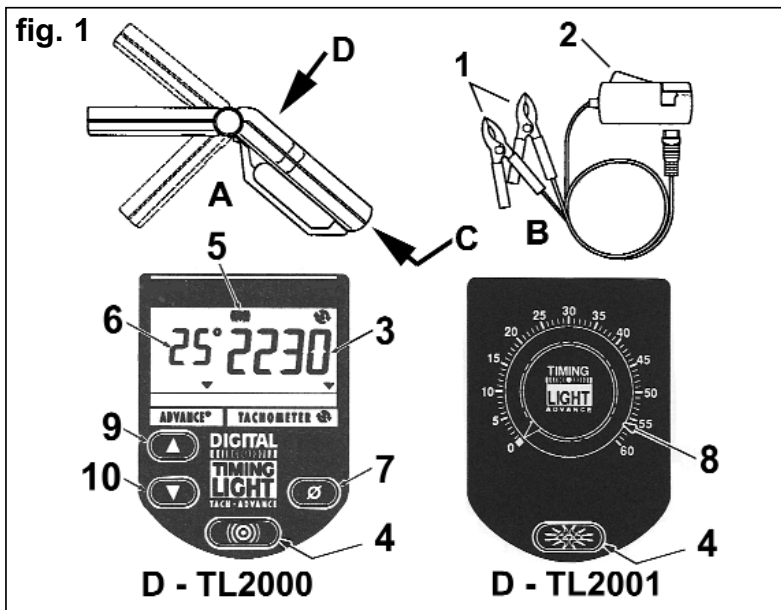
4.2.2.2. Illuminate timing marks with timing light and gradually increase engine speed to the figure specified by manufacturer for advance control test. Watch movement of timing marks relative to reference mark/pointer as speed increases. Movement should be smooth. No movement, or jerky movement, indicates faulty advance control.

4.2.2.3. When test speed is reached adjust timing light, TL2000 - by pressing advance increase/decrease buttons (fig.1.9/10), TL2001- by turning advance dial (fig.1.8), until timing mark appears to be in the basic timing position as determined in para.4.2.1.

4.2.2.4. The reading, digital on TL2000, dial on TL2001, is the ignition advance at that engine speed. Compare with manufacturer's specification.

Note: The above procedure, in conjunction with the manufacturer's instructions, can be used for checking mechanical advance and vacuum and electronic advance and retard.

4.2.2.5. When advance check is completed **switch off ignition** and then disconnect timing light. **DO NOT** disconnect with engine running.



5. MAINTENANCE & PARTS

5.1. Regularly clean the aperture surfaces of the inductive pick-up with a soft cloth. Dirt and grease in this area can cause erratic operation.

5.2. The following spare parts are available from your Sealey agent:

TL2000/B - Xenon Bulb

TL2000/L - Inductive Pick-up (including battery clamps and cables)

6. TROUBLESHOOTING

THE PROBLEM	THE CAUSE	THE SOLUTION
Timing light fails to operate or operates erratically.	1) Poor connection 2) Cross-connected clamps on battery terminals 3) Inductive pick-up dirty 4) Faulty No.1 spark plug or HT lead 5) Low HT voltage	1) Clean battery terminals. Ensure clamps make good contact. 2) Check and correct. 3) Clean with soft cloth. 4) Rectify or replace. 5) Move inductive pick-up to different positions on plug lead.

Note: Some ignition systems and/or plug leads radiate above normal electromagnetic and radio frequency fields which can cause improper operation of timing light (this equipment will normally only be found on vehicles not intended for road use). Contact the manufacturers of such equipment for instructions on how to use the inductive pick-up with their components.

NOTE: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

IMPORTANT: No liability is accepted for incorrect use of product.

WARRANTY: Guarantee is 12 months from purchase date, proof of which will be required for any claim.

INFORMATION: For a copy of our latest catalogue and promotions call us on 01284 757525 and leave your full name and address, including postcode.



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