User Manual

Pro. Level Ignition Timing Tool

TL123

Suitable for Operating Voltage of 9~16V

Contents

Note: Due to different product versions, there may be slight differences in some explanations, icon definitions, and illustrations in the manual. This is hereby explained.

Precautions and Safety Measures

To prevent personal injury, vehicle damage, or malfunction of the timing light, please read this user manual carefully and follow the safety precautions below when operating the vehicle.

1) Do not wear loose clothing, watches, rings, or other jewelry during testing. These items may get caught in moving parts, which may cause injury.

2) Do not attempt to operate or observe the tool while driving a vehicle. Operating or observing the tool can distract the driver's attention and may lead to fatal accidents.

3) Always wear ANSI-approved safety goggles to protect your eyes during operation.

4) Keep your clothing, hair, hands, tools, test equipment, etc., away from all moving or hot engine components.

5) Operate the vehicle in a well-ventilated work area. Exhaust fumes are toxic.

6) Place chocks in front of the drive wheels and do not leave the vehicle unattended during testing.

7) Avoid touching fan blades or any movable parts. When using a timing light, these parts may appear stationary or move slowly.

8) Shift the transmission to “P” (automatic) or “N” (manual), and make sure the parking brake is fully engaged.

9) Avoid contact with hot engine components. Exercise caution when working near high-voltage parts such as spark plugs or ignition coil terminals.

10) Vehicle batteries release explosive gases. Never smoke, and keep sparks or flames away from the battery.

11) Always turn off the vehicle ignition switch before connecting or disconnecting any test equipment. Be-fore performing any procedures, be sure to read the vehicle's service manual. Follow all safety precautions.

12) Our company is not liable for any damages caused by unintentional or intentional misuse of our products or tools.

Note:

Digital timing light Electromagnetic Interference (EMI) / Radio Frequency Interference (RFI) Issues:

If the timing light display malfunctions or freezes, reset the device by disconnecting and reconnecting the positive battery clamp.

2. Some aftermarket ignition systems and/or special spark plug wires (solid core wires, racing wires, off-road wires) may emit higher than normal levels of electromagnetic interference (EMI) and radio frequency interference (RFI), which could cause the test equipment to malfunction. Please contact these manufacturers to understand how to use the inductive pickup with their systems.

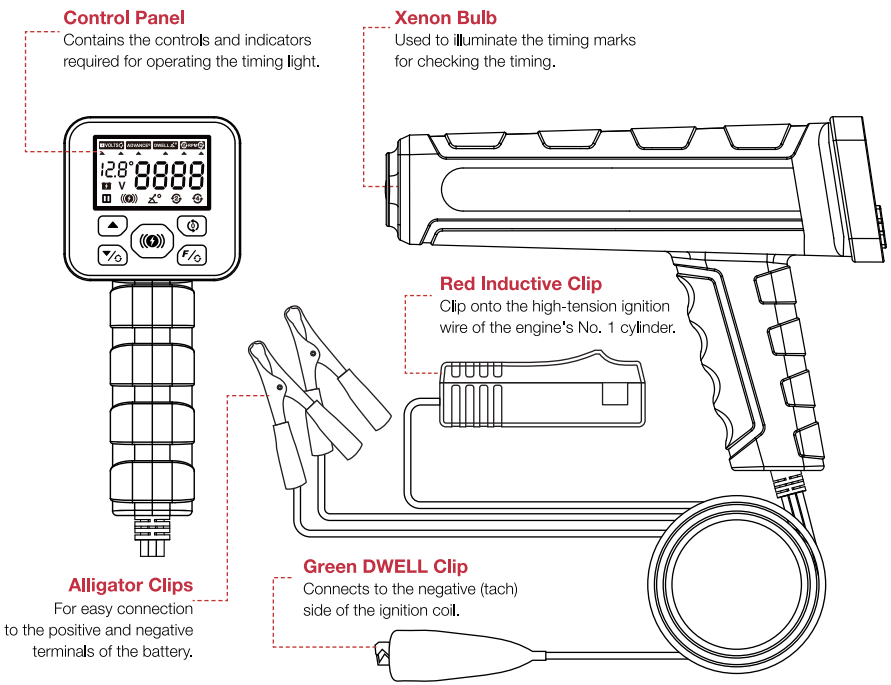
3. During testing, it may be necessary to replace the spark plug wire for cylinder 1 with an original factory-style spark plug wire.

1. Overview

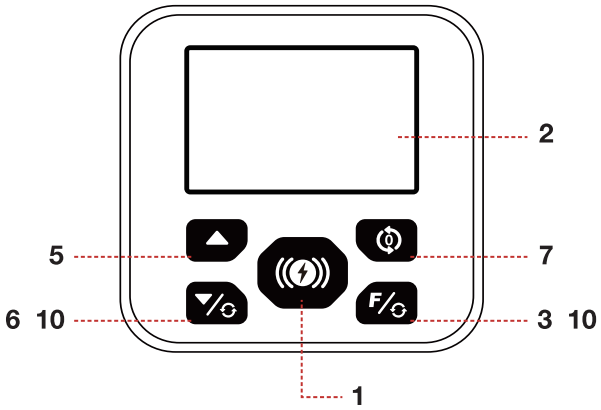
1-1. About the Product

The TL123 timing light is designed for vehicles with a negative ground system operating between 9 – 16V.It is also compatible with vehicles equipped with a Distributorless Ignition System (DIS).

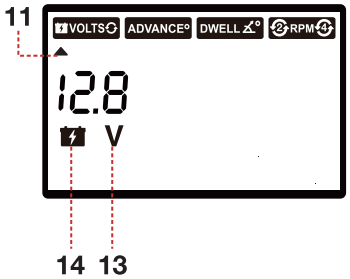
1-2. Product Introduction



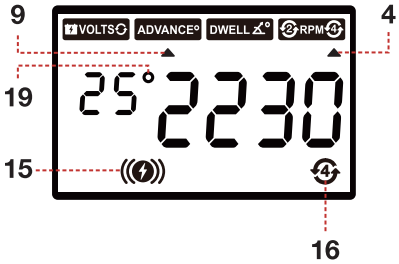
1-3. Panel Instructions



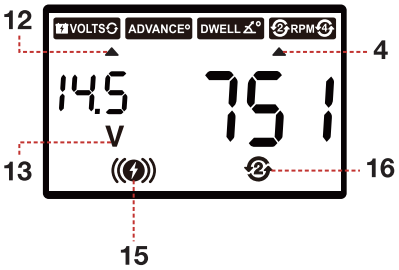
BATTERY VOLTAGE MODE



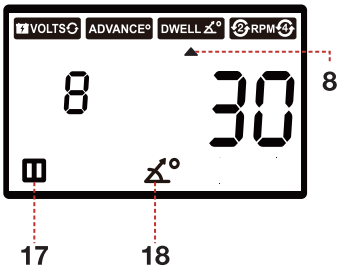
ADVANCE MODE

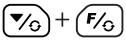


VOLTAGE/RPM MODE



DWELL MODE



					
Cylinder/Advance Increment Button	Cylinder/Advance Increment Button	Flash Mode Button	Function Toggle Button	Zeroing Button	Ignition System Selection Button

（1）Flash Switch —— Press once to turn the strobe light on or off.

（2）LCD Display —— Shows engine parameters such as RPM, advance angle (°), dwell angle (°), and battery/charging voltage. The soft blue backlight ensures readability in low-light conditions.

（3）Function (F) Switch —— Selects the timing light operating mode (Voltage/RPM, Advance Angle, or Dwell Angle).

（4）RPM Indicator —— Selects 2-stroke (DIS) or 4-stroke RPM mode.

（5）Cylinder/Advance Angle Increment Switch
Dwell Mode —— Activates when Dwell mode is selected, used to increment cylinder settings for dwell angle checks.
Advance Mode —— Activates when Advance mode is selected, used to increment the advance angle value.

（6）Cylinder/Advance Angle Decrement Switch
Dwell Mode —— Activates when Dwell mode is selected, used to decrement cylinder settings for dwell angle checks.
Advance Mode —— Activates when Advance mode is selected, used to decrement the advance angle value.

（7）Zeroing Switch —— Resets the advance angle value displayed on the LCD screen to zero. Activates when Advance mode is selected.

（8）Dwell（DWELL）Indicator —— Displays when Dwell mode is selected. The LCD shows the dwell angle and cylinder count.

（9）Advance（ADVANCE）Indicator —— Displays when Advance mode is selected. The LCD shows the advance angle value and engine speed.

（10）Ignition System Selection —— Selects the timing light operating mode (2-stroke (DIS) or 4-stroke) by simultaneously pressing the Function (F) switch and the Cylinder/Advance Angle Decrement switch.

（11）Battery Voltage Indicator —— Displays when Battery Voltage mode is selected. The LCD shows the battery voltage.

（12）Charging System Battery Voltage Indicator —— Displays when Voltage/RPM mode is selected. The LCD shows the charging system battery voltage and engine speed.

（13）Voltage Icon —— Displays when the voltage mode is selected.

（14）Battery Icon —— Displays when the battery voltage mode is selected.

（15）Flashlight Icon —— Flashes when the flashlight is in operation.

（16）Ignition System Icon —— Shows the selected ignition system.

（17）Cylinder Symbol —— Displays when the dwell angle mode is selected.

（18）Dwell Angle Icon —— Displays when the dwell angle mode is selected.

（19）Advance Angle Icon —— Displays when the advance angle mode is selected.

2. Function Usage and Instructions

2-1. Timing Light Connection

Warning: Always keep your hands, timing light, wires, and clips away from moving engine parts and hot surfaces. Do not smoke.

1. Always turn off the vehicle ignition switch before connecting or disconnecting the timing light. Never connect the tool while the engine is running.

2. Attach the induction pickup clip to the No. 1 spark plug wire (with the arrow pointing towards the spark plug).

3. Connect the red dwell angle (DWELL) clip to the negative side of the ignition coil (if applicable).

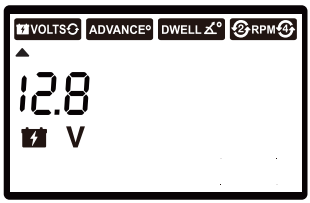
4. Connect the battery clips to the battery: attach the red clip to the positive (+) terminal of the battery. Attach the black clip to the negative (-) terminal of the battery or a suitable ground point on the vehicle chassis.

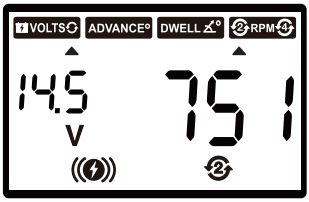
2-2. Voltmeter Operation

Note: Ensure that the timing light is correctly connected as described in the "timing light Connection" section. Always check the battery and charging system voltage before performing a timing check to ensure reliable results.

1. When the timing light is connected and the engine is off, the timing light will be in Battery Voltage mode; at this time, the Battery Voltage (VOLTS) indicator, voltage symbol, and battery symbol will be displayed. The LCD screen will show the battery voltage.

2. After the engine is started, the timing light enters Voltage/RPM mode; the Charging System Battery Voltage (VOLTS) indicator, voltage symbol, and ignition mode symbol (2-stroke (DIS) or 4-stroke) will be displayed. The LCD screen will show the charging system voltage and engine RPM.





2-3. Checking Dwell Angle

Note: The dwell angle check is suitable for vehicles equipped with either a conventional ignition system or an electronic ignition system. Ensure that the timing light is correctly connected as described in the "timing light connection" section.

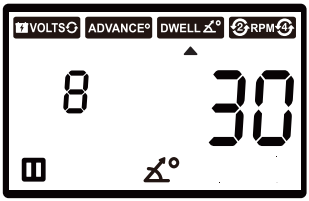
1. Start and run the engine until it reaches its normal operating temperature.

2. Press the Function (F) switch as needed to select the Dwell mode. When selecting the Dwell mode, the Dwell (DWELL) indicator, cylinder symbol, and dwell angle symbol will be displayed. Adjust the cylinder/advance angle increment and decrement switches as needed to select the appropriate number of cylinders for the vehicle being tested. The LCD screen will display the selected number of cylinders and the dwell angle.

3. Record the dwell angle and compare it with the manufacturer's specifications.

4. Refer to the vehicle service manual to understand the procedure for adjusting the dwell angle.

5. Turn off the ignition switch and disconnect the timing light from the engine.



2-4. Initial Timing Check (Using No. 1 Cylinder)

Note: When performing a timing check, always refer to the manufacturer's test procedu -res and specifications. The timing procedures for different vehicles may vary. Please consult the vehicle's emission control label or service manual.

* Some vehicles equipped with computerized engine control systems may be designated as "non-adjustable."

* Ensure that the timing light is correctly connected as described in the "timing light connection" section.

* Ensure that the correct operating mode (2-stroke (DIS) or 4-stroke) has been selected.

* If the vehicle is equipped with distributor points, perform the "Dwell Angle Check" procedure before conducting the timing check and adjust the dwell angle if necessary.

Note: After confirming the above operations, continue the test according to the following steps:

1. Start and run the engine until it reaches normal operating temperature. The flash indicator will light up, indicating that the timing light is functioning. Simultaneously press both ignition system selection switches to select either the 2-stroke (DIS) or 4-stroke mode. The ignition mode symbol will display the selected mode.

Press the Function (F) switch as needed to select the Voltage/RPM mode. When selecting the Voltage/RPM mode, the RPM indicator will be displayed. The LCD screen will show the engine speed. Adjust the engine speed as needed.

2. Adjust the angle of the timing light as needed to ensure that the timing mark is properly illuminated.

3. Refer to the vehicle service manual to check and adjust the timing. Follow all safety precautions.

4. Press the flash switch. The timing light will stop flashing.

5. Turn off the ignition switch and disconnect the timing light from the engine.

6. If disconnected, reconnect the distributor vacuum hose.

2-5. Advance/Delay Timing Control Check

Note: Advance and delay timing controls ensure that ignition occurs at the appropriate time during the compression stroke. These controls include mechanical advance, vacuum advance, vacuum retard, electronic advance, electronic retard, and electronic advance/delay. Depending on the vehicle model, it may be equipped with a single timing control device or a combination of two or more devices.

The advance/delay timing test procedures vary by vehicle. The following paragraphs provide general test procedures for checking mechanical advance, mechanical/vacuum advance, and vacuum retard. When checking the advance/delay timing, ensure that the initial timing and dwell angle are correct. Always refer to the service manual of the vehicle being tested to obtain the correct timing procedures and specifications. Follow all safety precautions.

2-6. Centrifugal/Mechanical Advance

* Ensure that the timing light is correctly connected as described in the "timing light connection" section.

* Ensure that the initial timing is correct. If necessary, prepare the engine for an advance timing check according to the manufacturer's instructions.

1. Align the timing light with the timing mark, paying attention to the position of the rotating timing mark relative to the reference pointer. The reading should match the initial timing specified in the manufacturer's specifications.

2. Adjust the engine speed to the RPM value specified for the advance test.

3. Press the Function (F) switch as needed to select the Advance mode. When selecting the Advance mode, the Advance Angle (ADVANCE) indicator and advance angle symbol will be displayed. The LCD screen will show a "0" degree advance angle and the engine speed.

4. Align the timing light with the timing mark again. Press the Cylinder/Advance Angle Increment switch as needed to realign the timing mark to the initial timing or align it according to the manufacturer's instructions. Note the advance angle value on the LCD screen and compare it with the manufacturer's specifications.

5. Turn off the ignition switch and disconnect the timing light from the engine.

2-7. Vacuum Advance

* Ensure that the timing light is correctly connected as described in the "timing light connection" section.

* Ensure that the initial timing is correct. If necessary, prepare the engine for an advance timing check according to the manufacturer's instructions. A vacuum pump equipped with a vacuum gauge is required to check the vacuum advance.

1. When the engine is off, disconnect the vacuum hose from the distributor's vacuum advance port and plug the vacuum hose.

2. Connect the vacuum pump to the distributor's vacuum advance port.

3. Start and run the engine until it reaches its normal operating temperature.

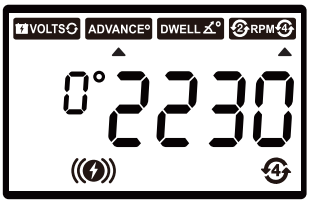
4. Press the Function (F) switch as needed to select the Advance mode. When selecting the Advance mode, the Advance Angle (ADVANCE) indicator and advance angle symbol will be displayed. The LCD screen will show a "0" degree advance angle and the engine speed.

5. Align the timing light with the timing mark, paying attention to the position of the rotating timing mark relative to the reference pointer. The reading should match the initial timing specified in the manufacturer's specifications.

6. Use the vacuum pump to apply the specified amount of vacuum to the distributor's vacuum port.

7. Align the timing light with the timing mark again. Press the Cylinder/Advance Angle Increment switch as needed to realign the timing mark to the initial timing. Note the advance angle value on the LCD screen and compare it with the manufacturer's specifications.

8. Turn off the ignition switch and disconnect the timing light from the engine. Remove the vacuum hose and reconnect it to the distributor's vacuum port.



2-8. Electronic Advance/Delay

Note: For procedures to check electronic advance/delay, refer to the manufacturer's instructions. For some systems, it may be necessary to set the timing light advance angle to "0" and read the timing from the vehicle's timing mark.

Timing Adjustment: Refer to the vehicle service manual for the procedure to adjust the timing. Do not attempt to adjust the timing without the manufacturer's specifications.

2-9. Troubleshooting

Note: If the timing light reading fails or freezes during use, disconnect and reconnect the positive battery clip of the timing light to reset the device.

If the timing light fails to operate, perform the following checks before seeking service:

1. Ensure that the battery clip is securely connected to the battery terminal.

2. Ensure that the polarity of the battery clip is correct (red clip to the positive terminal, black clip to the negative terminal).

3. Ensure that the magnetic core of the inductive pickup clamp is clean. Clean the inductive pickup clamp if necessary (refer to the maintenance steps below for details).

3-1. Ensure that the inductive pickup clamp is correctly connected to the No. 1 cylinder spark plug wire.

3-2. Ensure that the No. 1 cylinder spark plug is functioning properly: Connect the inductive pickup clamp to another spark plug wire. If the timing light flashes, inspect the No. 1 cylinder spark plug before continuing the operation.

3-3. Clean the inductive pickup clamp: Dirt or grease inside the inductive pickup clamp can cause unstable flashing or poor performance of the timing light. Regularly clean the contact surface inside the inductive pickup clamp with a soft cloth.

3-4. Replace the inductive pickup lead: The timing light is equipped with a detachable lead that can be disconnected from the timing light after use for easy storage. If the test lead or clamp is damaged, obtain a replacement kit from a distributor or directly from the service center.

2-10. Operating Specifications

Operating Voltage:	9 ~ 16V DC
RPM Measurement Range:	200 ~ 9999 RPM
Ignition Advance Range:	0° ~ 70°
Operating Temperature:	0°C ~ 60°C (32°F ~ 140°F)
Storage Temperature:	-20°C ~ 60°C (-4°F ~ 140°F)

3. Warranty and Service Statement

3-1. Warranty Card

Hello! Thank you for purchasing our product. To better serve you, please read carefully, fill out correctly, and keep this warranty card.

<table>
<tr><td>Name</td><td></td><td>E-mail</td><td></td></tr>
<tr><td>Purchase Date</td><td></td><td rowspan="2">Phone</td><td rowspan="2"></td></tr>
<tr><td>Order Number</td><td></td></tr>
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3-2. Warranty Statement

If there are any quality issues with the product that require repair, please send this warranty card along with the purchased product back to our company for after-sales service.

Manufacturer

OBDResource Electronics Co., Ltd
Email: info@obdresource.com
Tel: +86-755-29071623
Web: www.obdresource.cn
Add: Xinniu Community, Longhua District, Shenzhen, CN

UK	REP

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RoHS

FR ÉLÉMENTS D'EMBALLAGE À SÉPARER ET À DÉPOSER DANS LE BAC DE TRI

UK CA Made in China