

XENON TIMING/WORK LIGHT OPERATING INSTRUCTIONS

INSTRUCTION

Congratulations, you are now the owner of one of the finest Timing/Work Lights on the market today. If you will take a few moments to read through the following information we are sure that you will enjoy many years of service from your Timing Light and through its use increase the efficiency of your car's engine.

The special "Xenon" bulb used in these lights will provide the ultrabright flash needed to see engine timing marks under most bright lighting conditions, even during normal daylight. In several models the bulb can be replaced by the user when needed reducing the need to return the light to the factory for service.

WHAT IS TIMING?

In order for an automobile engine to function, three things are necessary: air, fuel and a spark to ignite the air/fuel mixture and create an explosion. The precise instant of that explosion must be such that the maximum power is delivered to the engine piston, this is "Timing". Each engine manufacturer determines at the factory the exact timing necessary for various engines so that each ounce of power is obtained from every gallon of fuel. Due to normal engine and ignition system wear, the timing can change and will reduce both power and mileage. With the Xenon timing light, the car owner can reset the timing to the new car standards and regain lost power and increase mileage.

Timing is given in degrees Before Top Dead Center (BTDC) or After Top Dead Center (ATDC) in the manufacturer's specifications. In order to completely burn the air/fuel mixture in the car's engine cylinders, most timing is such that the spark occurs at a point several degrees before top dead center (for example, 4 BTDC) to assure that full power of the explosion is obtained. See Figure 1.

Two additional terms the engine manufacturers use when describing timing are "Advanced" and "Retarded". As shown in Figure 1, when the timing is advanced the spark will occur before the piston reaches the top of the engine cylinder (BTDC). On some late model cars equipped with various emission control devices, the timing is retarded so that the spark occurs after the piston has started down in the cylinder (ATDC). Engine timing is changed by adjustment of the ignition distributor.

In order to allow setting and adjustment of the engine timing, special "Timing Marks" are provided on each engine during assembly. In most cases, these marks appear on the engine vibration damper or fan pulley at the lower front of the engine. See Figure 1. On some early engines, this mark was shown at the rear of the engine on the flywheel.

WHEN TO CHECK TIMING

The instant of spark plug firing is determined by the opening of the distributor ignition breaker points and will change any time the point gap or Dwell angle is changed. In addition, normal wear on the breaker point rubbing block will change the dwell and affect the timing. While cars equipped with the new "breakerless Electronic Ignition Systems" will not normally change timing since there are no breaker points, the timing light can still be used to note changes in timing caused by troubles in the ignition system as well as for resetting timing when components are changed.

OPERATION MANUAL

Please read all the instructions carefully for correct usage.

Preparation:

1. Remove the battery cover in back and put Dry Battery SUM-1 or "D" size or Ni-Cr. Battery x 2 pcs. Check batteries which are connected correctly to the strobe circuit.
2. As depressing the T/L switch, the indicator lamp lights ON, which means battery power is sufficient. If it fails to illuminate or is very weak, battery power is insufficient. Replace the battery in set.

Note: Do not use a used battery with new one together.

Operation for timing:

1. With engine stopped, clear dirt from timing marks.
2. Start and warm up engine to normal operation temperature.
3. Set engine at idle speed specified by manufacturer.
4. Connect inductive pick-up clip onto the #1 cylinder spark plug wire and make sure that the arrow mark of the inductive pick-up clip to point at the spark plug side.

5. On depressing the T/L switch, the Timing Light flashes. Aim it at the timing mark of flywheel or crank-pulley.
 - (1). If the timing mark does not coincide with the pointer along the direction of engine rotation, the Ignition timing is retarded.
 - (2). If the timing mark does not coincide with the pointer against the direction of engine rotation, the Ignition timing is advanced.

Note: Do not place the timing light on hot engine surfaces. Keep timing light and connecting wire clear from engine fan, fan belt and battery to avoid damage and possible injury.

Timing adjustment:

Ignition timing is affected by dwell or the period of time that the distributor points are closed. Before adjusting timing, always check that the dwell is set to the manufacturer's specification.

1. Loosen the distributor clamp bolt. The distributor body can be rotated back or forth.
2. Start and run engine.
3. Direct timing light flash at timing marks and slowly rotate distributor body until timing marks are aligned with pointer.
4. Stop engine. Tighten distributor clamp bolt carefully.
5. Start engine and recheck timing.
6. Readjust if necessary.

REMARKS:

1. XENON LAMP REPLACEMENT
Before replace Xenon tube, be sure to take out batteries to prevent electric shock.
Remove the front rubber nose and replace the defective Xenon tube with new one. Install back the rubber nose. (As figure shown)
2. DETACHABLE INDUCTIVE PICK-UP
Inductive pick-up can be detached from housing. Take off the plug of pick-up for store and install the plug correctly into housing for applying.
3. REPLACEMENT PARTS NO:
Xenon tube TL-020
Detachable inductive clamp TL-002
Work lamp TL-050

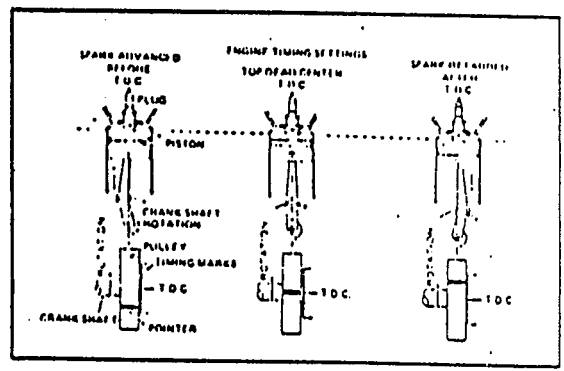


Figure 1

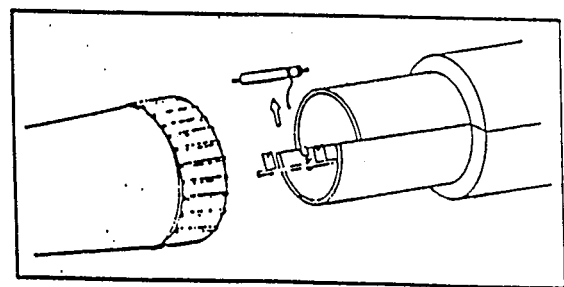


Figure 2

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