

If vacuum advance is operating at idle this may well be due to incorrect carburettor setting on Solex/Weber carburettors which have both throttle "bypass" and "throttle stop" adjustment; or this may be due to incorrect air balance on twin carburettors.

VACUUM RETARD

(Fitted for emission control - only operates at idle and during deceleration).

- (1) Observe the timing mark with the engine running at idle.
- (2) Re-connect the vacuum retard connection.
- (3) Observe the difference in timing. The timing mark should move in the same direction as pulley/flywheel rotation.

2. DETECTION OF DISTRIBUTOR WEAR OR INACCURACY

Most engines are timed on No. 1 cylinder but other cylinders (No. 4 on a 4 cylinder engine) should also fire when the timing marks are aligned. By connecting to the opposite lead to No. 1 on the distributor cap the difference can be checked. Alternatively connection can be made to coil/distributor lead which will give flashes as each cylinder fires.

IMPORTANT

Use this connection at idle speed only.

The difference between various cylinders can then be observed. These methods can also be used to synchronise double points - stop the engine and adjust the position of the moveable points with the engine stationary, until the timing is consistent on appropriate cylinders.

To check other cylinders (2 & 3 on 4 cylinder engines) accurate marking of the pulley at 180° is required.

Excessive advance may cause audible 'pinking' or detonation and engine damage. Insufficient advance will affect economy and performance.

A regular error (of more than 2 - 3degrees) in the ignition timing between separate cylinders indicates points cam error or wear, bent distributor shaft or large error in points setting.

Erratic errors in ignition timing on all cylinders indicates wear in distributor drive, shaft or points base plate. A very erratic idle speed or pitted contact breaker points will also cause ignition timing 'scatter'.

3. FAULT FINDING

CENTRIFUGAL ADVANCE Excessive - usually due to wear or broken advance springs.
Sticking or insufficient - usually due to corrosion or wear at pivot point.

VACUUM ADVANCE OR RETARD

Insufficient - usually due to sticking contact breaker base plate, punctured diaphragm or blocked vacuum pipe.

Excessive advance - incorrect adjustment of some carburettors can cause errors as advance is controlled by the throttle plate.

General - some distributors are adjustable for vacuum advance (examine the area around the vacuum advance or retard operating rod).

If this timing light fails to operate correctly switch off the engine and check the following:

(1) (a) Battery leads are making a good connection and are the correct way round (red to positive).

(b) The inductive pick-up is clipped to the lead with the arrow pointing towards the plug correctly.

(2) Intermittent flashing - this may be caused by the plug gap being small (the tube will miss some flashes) or by pickup from other H.T. wires in the vicinity (extra flashes will occur).

This does not affect the accuracy of the indicated timing.

Do not use your Supastrobe if it is allowed to become wet. Return it to Gunson to be checked.

GENERAL WARNING

This equipment has been designed to operate in the harsh environment close to spark ignition engines but the user should be aware of the following:

1. Spark ignition engines and related electronics can emit high levels of interference which could affect test and maintenance equipment together with other electrical items such as radio or television receivers, computers etc.

2. Any interference emitted from the engine area could be increased by:

- (a) Opening the engine compartment cover.
- (b) Making electrical connections to the

vehicle wiring loom or the vehicle battery.

(c) Any faulty components particularly those associated with the ignition system.

3. If this equipment has any display which behaves in an erratic nature the user is advised to refer to the advice given in the detailed instructions to minimise the possibility of interference. In cases of difficulty the user is advised to check for the following.

(a) A faulty vehicle battery or poor connections to it.

(b) Poor ground connection to engine or other electrical equipment

(c) Faulty ignition components particularly rotor arms, ignition coils or HT leads with an internal break or with a resistance outside vehicle manufacturers limits.

The user is therefore advised, due to the potential emitting of interference, that vehicle maintenance and testing should be undertaken with due care and not in an area close to sensitive electronic equipment.

WARRANTY

Gunson have made every effort to ensure that this product is of the highest quality and value to the customer. However, Gunson accept no responsibility for any damage arising from the use of this product.

All technical enquiries regarding this product should be accompanied by a stamped self-addressed envelope. Telephone enquiries may be made on the Gunson Helpline 0181-592 1967. Please note that Gunson can not provide technical advice or information on motor cars.

This Warranty does not affect the Statutory Rights of the user.

If this product should require service or repair, it should be returned to Gunson Ltd (Service Dept), Coppen Road, Dagenham, Essex RM8 1NU

Postage may be refunded (UK only) and repairs will be completed free of charge for manufacturing defects within one year of purchase.

Defects due to other than manufacturing faults may be charged for.

When sending goods for service or repair, please give full details of faults requiring attention.

SSP-3

MADE IN TAIWAN

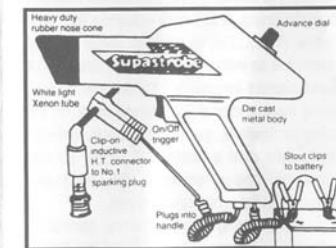
**Gunson Ltd, Coppen Road,
Dagenham, Essex, RM8 1NU**

Gunson's Supastrobe

**ADVANCE TIMING LIGHT
Heavy Duty Xenon Ignition Timing
Light with Advance Control and
Inductive HT Pick-up (12V d.c.)**

1. DESCRIPTION

This timing light is of robust construction, and is intended for heavy duty applications where it may be subjected to regular or continuous use.



1 THE BODY

It has a metal die cast body with a sturdy handgrip and trigger, and with a soft rubber nose cone which allows for inadvertent contact with moving parts such as the fan, fan belt or pulley. A generous length of supply lead is provided, which is of the extendable coiled type for convenience in use, and is terminated in high quality battery clips.

2. OPTICAL COMPONENTS

A Xenon discharge lamp of very high energy output is provided in Supastrobe, combined with a lens which gives a comparatively very wide beam of brilliant white light, enabling the timing marks to be readily seen even under conditions of high ambient light.

3. ADVANCE CONTROL

This feature allows ignition timing to be measured or set anywhere in the range of 0° to 60° advance, over the full speed range of the engine, while using only a single timing mark on the pulley or flywheel, such as the mark intended for static timing, or the mark indicating Top Dead Centre (TDC). This is a most useful feature, indeed it is an indispensable feature, since motor manufacturers commonly provide only a static timing mark and/or a TDC timing mark on the pulley or flywheel, yet usually specify detailed timing data over a wide RPM range, so that automatic ignition advance with RPM and vacuum can be accurately checked.

In a timing light, advance control is achieved by delaying the instant of the Xenon flash to correspond with the degrees of ignition advance. For accurate advance control this time delay must vary with engine speed. Supastrobe has the sophisticated electronic circuitry necessary to achieve this, a feature not found in all timing lights claiming to have advance control.

4. INDUCTIVE PICK-UP

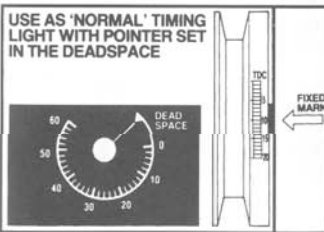
The inductive pick-up is of the ferrite type, and is removable from the timing light for safe keeping.

2. HOW TO USE ADVANCE CONTROL

The advance control can be used in 3 ways to measure ignition timing; i.e. the particular way to be used on a vehicle depending on the marks that are present on the pulley or flywheel.

1. WHEN AN ADEQUATE TIMING SCALE IS PRESENT

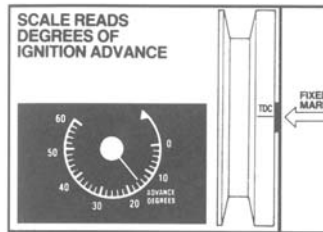
When an adequate timing scale is present on the pulley or flywheel, the Advance Control can be set to "zero" (or the pointer set in the "dead space" below zero). Supastrobe then works as a normal timing light, with no advance control; i.e. the flash occurs at the same instant as the ignition impulse. However, comparatively few cars have an adequate timing scale to check the ignition advance over the full RPM range of the engine, and in general it will be found necessary to use methods 2 or 3 below.



2. USING ADVANCE CONTROL WITH A TOP DEAD CENTRE (TDC) MARK

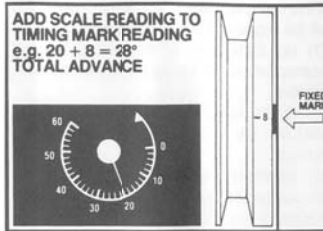
Many cars have a TDC indication on the pulley or flywheel, often together with a short timing scale or a static timing mark.

Using Supastrobe with a TDC mark, the other marks can be ignored. With the advance control adjusted so that the TDC mark is seen opposite the stationary mark, the dial on Supastrobe gives a direct indication of the degrees of ignition advance.



3. USING ADVANCE CONTROL WITH ANY OTHER MARK

Some cars have no TDC indication on the pulley or flywheel, but simply one or more timing marks for various degrees of advance. Many cars have only a single mark, indicating a particular degree of advance for use in static timing, or timing at a particular engine RPM. Using Supastrobe with such a mark, at any engine RPM, the Supastrobe knob is adjusted to bring the particular mark on the pulley or flywheel opposite the stationary mark. The degrees of advance indicated by this mark are then added to the indication on the Supastrobe dial to give the actual degrees of advance of the ignition system.



3. GENERAL INSTRUCTIONS FOR USE

1. To measure or check ignition advance at particular engine speeds, the user must provide a suitable tachometer. The tachometers incorporated in Gunson's Testune and Autoranger multimeters are suitable for this application.

2. Any maintenance required to the distributor points or electronic ignition system should be carried out prior to setting or checking ignition timing. Any subsequent alteration to the dwell angle or gap in a mechanical system will disturb the ignition timing.

3. In order to achieve a steady speed the engine should be at normal operating temperature.

4. When checking ignition timing against manufacturers data, or data contained in specialist trade manuals, ensure that the vacuum advance is connected or disconnected as indicated in the data.

5. Fit the inductive pick-up to Supastrobe (this is a simple plug/socket arrangement).

6. Connect Supastrobe to the car battery (or any other 12V battery supply), connecting the red clip to the + terminal and the black clip to the - terminal.

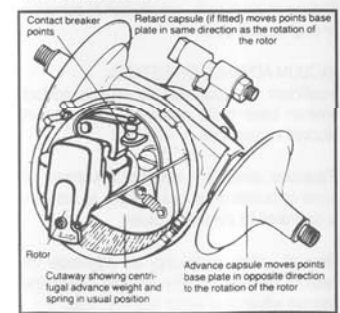
7. Connect the inductive pick-up clip to the ignition lead to the spark plug on No. 1 cylinder with the arrow marked on it pointing toward the plug. Test operation of the timing light by depressing the trigger.

8. Set engine RPM to the value indicated in the data manual.

9. Direct the timing light to the timing marks on the fan belt pulley or flywheel, taking care to ensure that the leads do not foul moving parts, and depress the trigger.

10. Measure ignition advance, using one or other of the methods described in 2 above.

4. OTHER USES



1. CENTRIFUGAL ADVANCE (increases with engine speed)

(1) Remove vacuum advance/retard connections.

(2) Observe the timing marks with the engine running at idle.

(3) Gradually increase the engine speed. The timing mark should remain aligned initially and then begin to move, in the opposite direction to the pulley/flywheel rotation, steadily until maximum advance is reached and then stop. (Advance usually begins between 500 & 1500 R.P.M. and ends between 4500 & 5500 R.P.M.).

VACUUM ADVANCE

(1) Re-connect vacuum advance connection only.

(2) Observe the timing marks with the engine running at idle.

(3) Gradually increase the engine speed. Vacuum advance should operate smoothly from around 1000 R.P.M., reaching a maximum at about 2500 R.P.M.

This will be in addition to the centrifugal advance figure.

(If the throttle is opened rapidly the vacuum advance will operate and return quickly as it is controlled by the position of the throttle as well as vacuum).

If the operation of the advance mechanism is suspect, an accurate tachometer can be used to test in more detail if the relevant data is available. This is best obtained from the manufacturer or from an official works manual and will require reference to the distributor code number stamped on the exterior of the distributor.