

Please read these instruction thoroughly before fitting the amplifier as they will answer all of your questions.



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Fitting Instructions for RPi's Exclusive LPG Dual timing Power Amp

**Firstly a checkup and Overview of the most common Rover V8 ignition system types.
Ignition check list.**

- ▲ Being sure of the TDC position with regards to crank-indicated timing mark is a must.
- ▲ First remove the vacuum advance pipe from intake and check for positive vacuum when throttle is applied.
- ▲ Check if (fitted) that the vacuum delay module is not blocked.
- ▲ Check the positive vacuum will pull distributor advance whilst also checking vacuum module is not holed. (When sucking the pipe, the base plate of the distributor should rotate anti-clockwise about 15 deg.)
- ▲ Check the condition of the rotor arm for signs of damage or arcing, also check the cap and clean contacts (better still fit a new one)
- ▲ Check the rotor for free play, there should be none, both rotationally and side to side.
- ▲ Check the rotor will turn clockwise through about 20 deg, and smartly retract back to it's home position under good spring tension.
- ▲ Replace your plug leads, preferably with Magnecor. Use good quality Plugs such as NGK BP6ES, avoid fancy plugs, as they don't normally last long.

Notes:

It is possible for the transistor to fail inside our unit. This is always due to the coil drawing to much power from the amplifier. Unlike the original Rover amp you can replace the transistor at a DIY level in our amp and a repair kit is available. Because of this standard Lucas coils should only be used.

If this does, or has, happen to your amp please ensure that a new standard coil is fitted when fitting the amp.

We have found on some returns that the reason for total failure to work is due to the small red spade input crimps (that plug into the distributor) having been put on so tight they have cut through the wire itself and are only holding together on the insulation.

A GENTLE tug will usually cause a bad one to come away if the central conductor has been cut through by the crimp.

Ignition Amplifier with Automatic Retard for Combined Gas/Petrol Systems

Operating Principles

When the selected fuel is gas, it is usually beneficial to employ rather more ignition advance than would be used with petrol to achieve best efficiency. The unit addresses this requirement by allowing the timing to be set up optimally for gas and then automatically retarding the ignition (by an adjustable amount of degrees) when petrol is selected. The automatic retard is activated only when engine revs are greater than 1500rpm, since the unit's accurate operation relies heavily on engine flywheel effect. A diagnostic indicator LED lights when the automatic retard is active. As revs fall below 1500rpm, the retard does not cut out until below approximately 1200rpm. This overlap ensures that the unit cannot "hunt" near the switching threshold.

Thus it is possible to have optimum setup for gas while avoiding problems associated with over-advanced timing when switching back to petrol.

The unit contains its own integrated power output stage employing a low-saturation IGBT power transistor for low loss, minimal self-heating, and maximum reliability. The internal circuits are protected against accidental battery reversal. The input circuits allow configuration to suit most types of points and sensor types of distributors. Finally, internal links allow the automatic retard sensitivity to be set to suit 4, 6, or 8-cylinder engines.

Wiring and Installation Details

We normally mount the amplifier on the inner rear wing beside the coil with double sided sticky tape.

The group of four wires is allocated as follows:

RED : +12V (ignition-controlled) from vehicle loom. Power supply for the unit itself.

BLUE : Retard control input from gas solenoid on vapouriser. Will need to be piggy-backed with existing connection from gas/petrol switch. This point should be at +12V with gas selected and at 0V with petrol selected.

BROWN : Amplifier output to ignition coil negative.

BLACK : Chassis earth.

The brown and black wires carry high-current ignition pulses and it is best to mount the unit such that their length is kept as short as is practically possible to minimise radiated interference and ohmic losses. The red and blue wires carry only small steady-state currents and their length and routing are non-critical.

The other grey cable is the input signal from the distributor sensor or points.

See the diagrams for Rover V8 connection details regarding this input cable.

The distributor connections are relatively sensitive inputs to the unit and, to minimise the possibility of undesirable feedback or interference, they should be routed well away from the HT system.

Rover V8 Installation - IMPORTANT

You will need to reset the static ignition timing after fitting. This is due to all amplifiers having a different computing time. Even if you were replacing your Rover amp with another Original Equipment amplifier the ignition timing should be reset due to possible differences in the processing time between both amps.

Ignition Amplifier with Automatic Retard for Combined Gas/Petrol Systems

Retard Adjustment

The adjustment pot is visible beneath the blanking plug. The range of adjustment is from approximately 3 degrees to 13 degrees. Clockwise advances the timing, anticlockwise retards. Use only a tool which fits the slot snugly to avoid damage. Remember that the effect of adjustments will only be seen when the diagnostic LED is lit, i.e. on petrol and at revs of over 1500rpm.

Points-type Distributors

"Points" input is achieved by connecting only the red core of the input cable to the distributor points connector. The black core should be allowed to float. It must not be grounded. The input cable should be routed well away from the HT system.

Link "P" must be made inside the unit - i.e. the small blue jumper link, normally 'parked' on just one of the pins, should be plugged onto both of the vertical pins, shorting them together. This has the effect of connecting a dummy resistor load (internal to the unit) for the points. This provides a small working current for the points, necessary both for keeping them clean and for correct operation of the unit. The distributor points capacitor should be retained as it is beneficial in reducing the effects of contact bounce, although it is no longer a necessary part of the spark-producing mechanism.

Retard Sensitivity Setting

This setting maintains the range of retard adjustment at 3 to 13 degrees across 4, 6, and 8-cylinder engines, compensating for the fact that there are different numbers of ignition pulses per engine revolution.

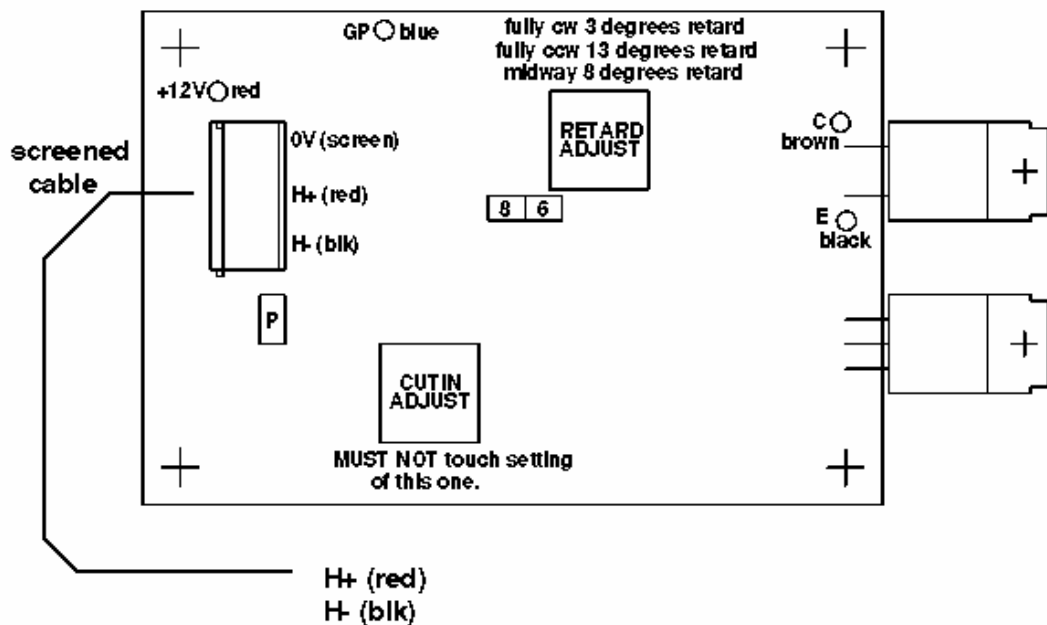
For an 8-cylinder engine the link marked "8" should be made.

For a 6-cylinder engine the link marked "6" should be made.

For a 4-cylinder engine neither link "6" or "8" should be made. (The connector can be 'parked' on just one pin to prevent it getting lost).

Opening the Case for Access to Links

Remove only the four corner-most M3.5 screws. Do not remove any of the others as they hold the internals of the unit to the base. On opening you will see there is a small packet inside. This packet should be replaced inside when screwed back together as it is there to help prevent damp from effecting the unit.



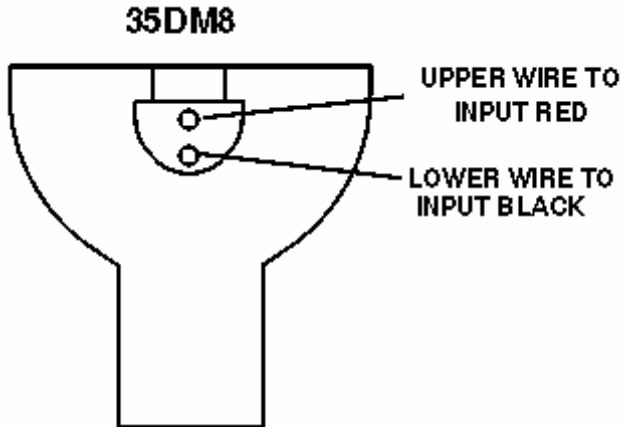
Rover V8 Distributor Variants - Wiring Details.

Remote Amplifier Type 35DM8 – 2 Types

Late type is Identified by having a small black socket on a bracket attached to distributor body.

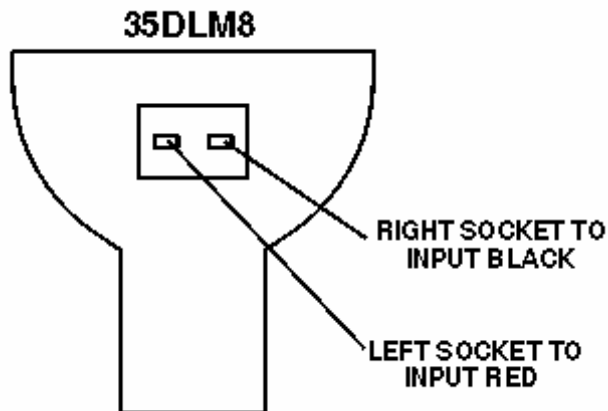
The two black wires should be cut close to the socket and stripped back for fitting of appropriate one of each to the black and red amplifier inputs. It will then not be possible to get them wrong in future. The polarity must be as shown in the drawing below, otherwise there will be problems achieving the static setting and also a likelihood of increased timing scatter.

Early type identified by having purple (connects to the red input wire) & orange (connects to the black input wire) wires and a larger amplifier mounted on the inner wing.



Bolt-On Amplifier type 35DLM8

Identified by small amplifier module bolted to distributor body - this should be removed to reveal a small blue socket to which connections need to be made with the flat spade terminals supplied. The input wires from the sheilded wire on our amplifier should be crimped to the spade terminals and then soldered to ensure proper connection. See the diagram for polarity which must be observed as for 35DM8 type also.



Once fitted you will need to now set your ignition timing. If you are using this amplifier for LPG/petrol then you should set the timing at about 14 or 15 degree BTDC.