

RELAY BOX**RELAY BOX MAINTENANCE CHECK**

- Remove the cover and carry out a visual inspection
- Use an air-line to remove any dust or dirt
- Check all terminals are tight and free from corrosion, especially the main feed positive terminal.
- Check the condition and security of the Relay Box earth connections to vehicle earth system:

A poor earth connection will cause damage to the protection diodes and consequently the contacts will burn and pit at a faster rate due to excessive arcing; damaged diodes may result in damage to other control system components if not replaced.
- Check the free movement of the moving contacts of the relay

Replace the tension spring if the opening of the contacts is sluggish
- Check the contact faces

Contact faces become pitted in normal use. They should not be filed or polished. It is only necessary to replace the contacts when their condition causes a drop in retarder current draw from that shown in the specifications. Current draw measurement should be made when the retarder is at 20°C.

If the contacts are changed, the diodes should be checked as below and replaced if necessary.
- Check the contact gap is 2.7mm and adjust if necessary to ensure both contact faces close simultaneously
- Check condition of fusible link on the right-hand fixed contact
- Carry out a functional check of the relay units

Operate the control circuit and check each relay closes correctly in turn, and opens on deactivating the control circuit.
- Check function of stop light circuit

Connect a test bulb or meter between terminals **M** and **S** on the relay box, and close the contacts on relay one; the stop light circuit should now be energised.
- Check function of panel light circuit

Connect a test bulb or meter between terminals **M** and **V** on the relay box, and close the contacts on each relay in turn; the panel light circuit should be energised on closing the contacts on each relay.
- Replace the Relay Box cover

Ensure all cable entries and the cover are correctly sealed and secured. Ensure the cover fasteners are in good condition and replace if necessary.

The diodes can be tested with the relay box remaining in the vehicle as follows :

- All diodes should show readings as follows:

Forward Voltage Drop:	0.45 - 0.6 Volts
Reverse Voltage Drop:	Open Circuit or 0.L
- Remove all the cables from the relay box terminals, and set a digital test meter to Diode Check.
- Check the back-flash diodes

Connect the positive lead of the meter to the **M** terminal and the negative lead to each of the four retarder power supply terminals (marked **I - IV**) in turn. Reverse the leads and repeat the test to check the reverse voltage drop.
- Check the stop-light diodes

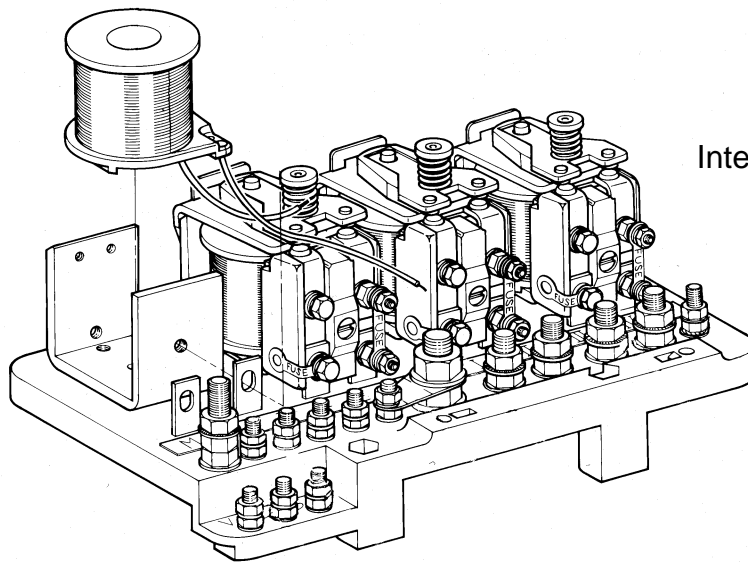
Connect the positive lead of the meter to Stage One retarder power supply terminal (marked **I**) and the negative to terminal **S**. Reverse the leads and repeat the test to check the reverse voltage drop.
- Check the panel light diodes

Connect the negative lead of the meter to terminal **V** and the positive lead to each of the four retarder power supply terminals (marked **I - IV**) in turn. Reverse the leads and repeat the test to check the reverse voltage drop.

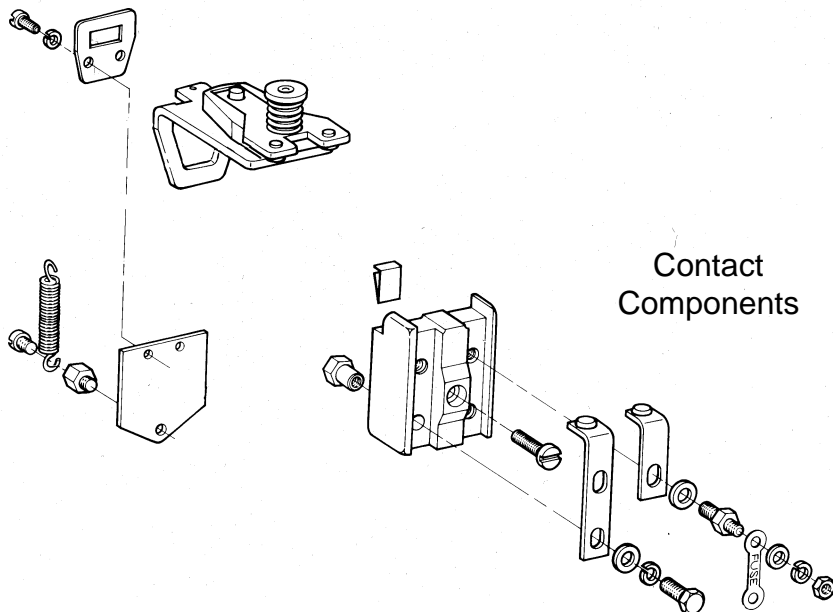
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- Check the coil protection diodes

Connect the negative lead of the meter to the soldered joint between the two diodes and the positive lead to the soldered joint forward of each diode in turn. Reverse the leads and repeat the test to check the reverse voltage drop.



Relay Box
Internal Components



Contact
Components