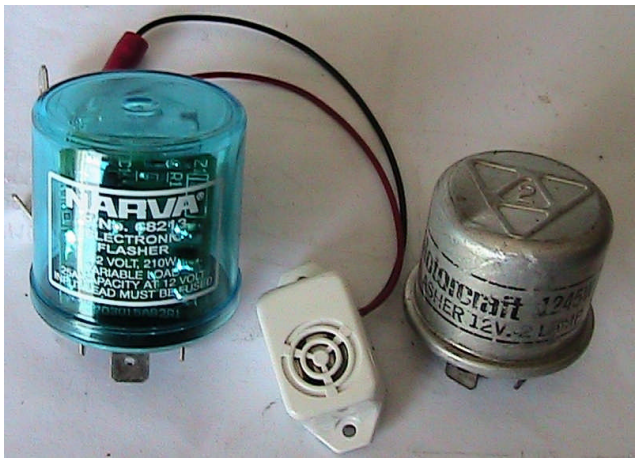
ADDING AN AUDIBLE SIGNAL TO A CLASSIC CAR'S INDICATOR CIRCUIT:



The following pages set out methods for adding a mechanical or piezoelectric buzzer, to the indicator circuit of a classic car in order to warn the driver that the indicators are (still) operating. It is a simple fact of life that self-canceling indicators sometimes don't. Wiring diagrams provided have been developed for use on Triumph cars but will apply to any vehicle, though wire colours may differ.

Points to note:

- ***All wiring diagrams are drawn as negative earth.*** Notes with each diagram set out the minimal changes required to use in a positive earth vehicle.
- The wiring diagram presented as Case 1 is typical of many older cars. Later cars mostly use a two terminal flasher unit, which may be round or rectangular. These mechanical (thermal) flasher units are not polarity sensitive but a piezoelectric buzzer **is** polarity sensitive so take care with connections to the buzzer itself.
- The wiring diagram presented as Case 2 works for any car fitted with 2- or 3-pin thermal flasher units. It has been successfully bench tested with a "generic" 2-pin electronic flasher. ***Interference with the operation of one type of 3-pin electronic flasher, when connected this way, has been reported. If the flasher you have is a 3-pin with a pilot light connection ("P") then use the wiring diagram presented in Case 1 which will avoid any such issues.***

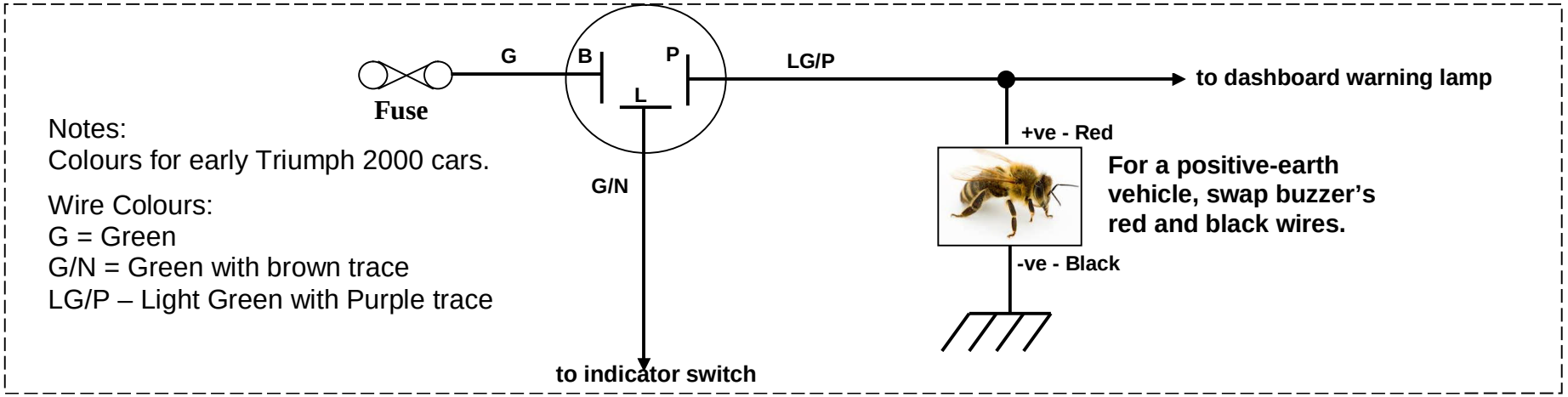
DO NOT USE THIS CASE 2 CIRCUIT IF LED BULBS ARE FITTED.
USE A 3-PIN ELECTRONIC FLASHER AND CONNECT AS IN CASE 1.

- The wiring diagram in Case 2 requires a low power device drawing tens of milliamps at the most. Any sounding device drawing more than about 50mA wired this way may interfere with the operation of the indicators. The mechanical buzzer used for in-car and bench testing had an operating current of c24mA.
- Any buzzer rated for 12V operation can be used. Piezoelectric devices tend to be high-pitched and loud. A muffler, such as a foam plastic cover, may be needed with these. A small 12V mechanical buzzer (shown in above photograph), of much lower frequency and intensity, may be a better bet. These too are readily available at reasonable cost and one of these was used for bench testing.

Alex Miller
2024

Fitting a warning buzzer to a car indicator circuit.

Case 1:- Piezoelectric or mechanical buzzer in cars with single warning light and 3-pin flasher unit:

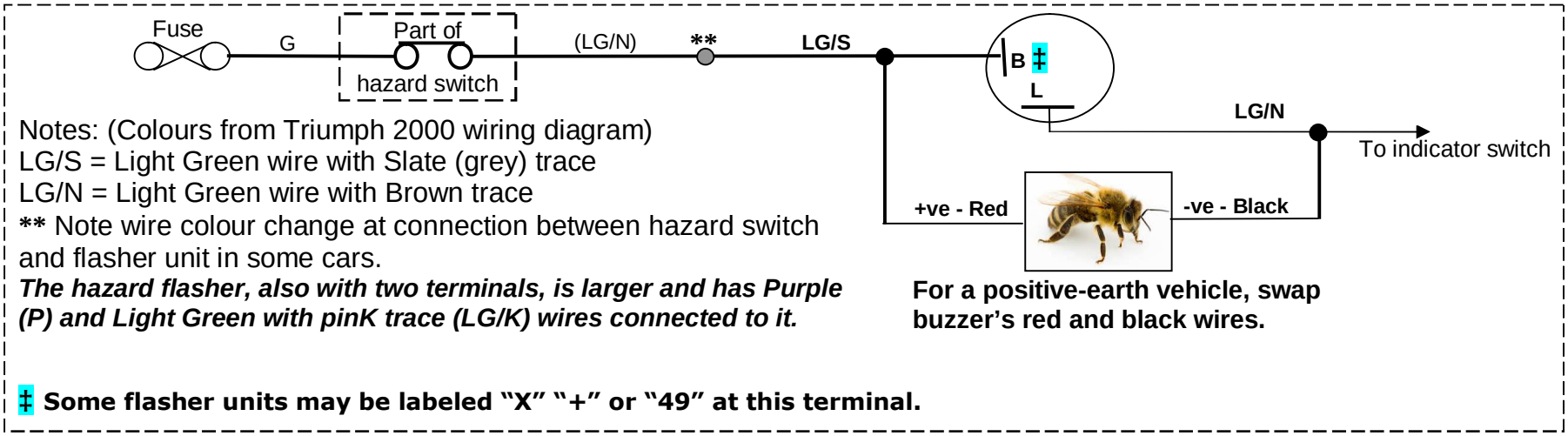


If replacing incandescent bulbs with LEDs in a vehicle, a thermal flasher will need to be replaced with an electronic unit, suitable for use with LEDs, so replace the original flasher with a 3-pin electronic flasher and you are good to go.

(Refer also to document "Fitting LED bulbs to classic cars" on this website.)

Case 2:- Piezoelectric or mechanical buzzer with two-pin flasher unit – with or without hazard warning system:

A thermal type flasher breaks the circuit when sufficient current passes through it. Thus a buzzer connected between the flasher's L terminal and earth will always be on except when indicators are operating! In the wiring diagram below, the buzzer is activated only when the flasher relay opens. Earth return is via the filaments of the indicator bulbs themselves. ***The Buzzer will not operate when the hazard switch is activated.***



Notes: (Colours from Triumph 2000 wiring diagram)
LG/S = Light Green wire with Slate (grey) trace
LG/N = Light Green wire with Brown trace
** Note wire colour change at connection between hazard switch and flasher unit in some cars.
The hazard flasher, also with two terminals, is larger and has Purple (P) and Light Green with pinK trace (LG/K) wires connected to it.

For a positive-earth vehicle, swap buzzer's red and black wires.

‡ **Some flasher units may be labeled "X" "+" or "49" at this terminal.**

DO NOT USE THIS CASE 2 CIRCUIT WHEN LED INDICATOR BULBS ARE FITTED!

Comment:

If LED bulbs are fitted to the external indicators, then this circuit will cause the indicators to "flash" between full on and somewhat dimmer. The difference may not be noticeable so the indicator bulbs will not noticeably flash but appear to be continuously lit. This is due to the much lower current required by LED bulbs, the working current of the buzzer being sufficient to keep LEDs lit.

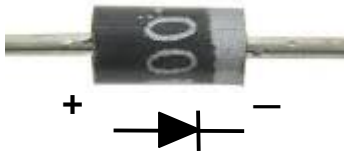
Case 3:- Connect buzzer to operate when indicating and on hazard warning:

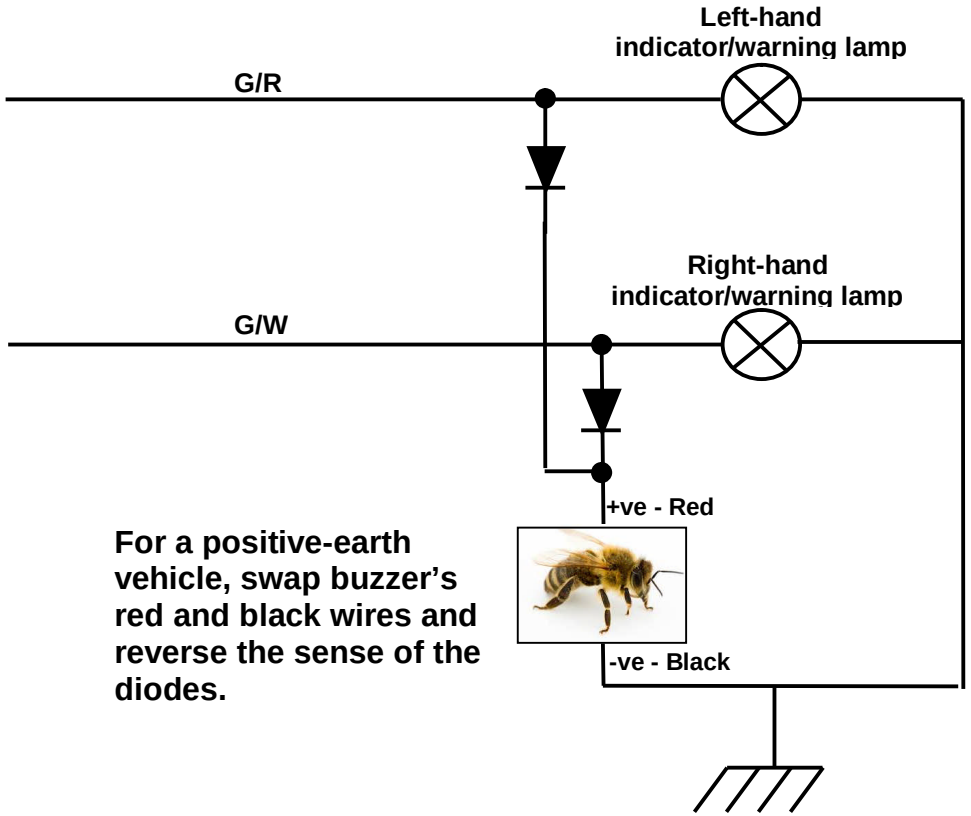
Buzzer will operate when either indicating or hazard warning system is active. If the wiring diagram in either Case 1 or Case 2 is used instead, then the buzzer will not operate when Hazard lights are on.

Requires two 1N400x diodes (where "x" is a number from 1 to 7) to operate on both left and right turn signals.

A diode is a non-return valve for electricity. Current can flow from positive to negative – the direction indicated by the arrowhead in the symbol – but not in the opposite direction.

Picture and symbol below show a diode and symbol. The band marked on one end of the diode case corresponds to the bar of the diode symbol.





For a positive-earth vehicle, swap buzzer's red and black wires and reverse the sense of the diodes.

If you require a buzzer to work with the hazard lights operating then you must use this circuit, or add a second buzzer connected across the hazard lights flasher as for Case 2 above.