

Fitting a Battery Isolation Switch



Support bracket
for switch, made
from aluminium
sheet

51mm (2") U-
bolt (exhaust
clamp)

Battery
isolation
switch

Cable to
chassis

Cable to
battery
(negative
terminal)

Old cars, with wooden frames, floors and seats, are in danger of catching catch fire if there is an electrical fault. A friend of mine suffered a short circuit behind the dash of his pre-war classic while driving along a dual carriageway. So rapidly did the fire spread along the wood frame that he and his wife were lucky to be able to stop the car and escape in time. The car was a total write-off – even the aluminium body was consumed. Maybe, just maybe, an isolation switch located near the driver would have prevented the fire from taking hold.

Being able to isolate the battery easily is not just a safety feature; it is also convenient. Getting into the habit of turning the isolation switch off when parking improves security, and means there is absolutely no chance of the battery draining if a fault develops or a light, or the ignition, is mistakenly left on.

When I bought my 20hp it did have a battery switch, but rather bizarrely located inside the locking toolbox in the nearside valance! That was so inconvenient that I rarely used it, and it would have been totally useless in an emergency. Therefore I fitted a new isolation switch attached to the steering column where it is easy to use, yet is completely hidden from view. Putting it there, where it is easily accessible *while you are sitting in the driving seat*, makes good sense to me. I know that many 20hp and 20/25 cars have battery switches placed by the rear seat, or even next to the battery box, but these cannot be accessed in an emergency from the driving seat.

You will need to buy a length of *flexible* battery/starter cable rated 322/0.30, 25mm², 10mm, 170A (this indicates that the cable has 322 x 0.3mm diameter strands of copper, giving a cross sectional area of 25mm², the outside diameter of the cable including the insulation is 10.0mm and the current rating is 170A) together with suitable cable terminals and of course a battery switch. These can all be bought from, for example, Auto Electric Supplies Ltd. A 51 mm (2 inch) U-bolt (exhaust clamp) is also needed. Run the cable from the battery negative (earth) terminal, along the chassis, up between the front floorboard and the bulkhead and up the steering column. A small notch might need cutting in the front of the floorboard. A suitable bracket to hold the switch is easily cut from sheet aluminium and fixed to the U-bolt. The cable then returns down the column and can be attached to the chassis near the foot well via one of several existing bolts.

As a bonus, the *chassis cable* terminal on the isolation switch provides a convenient earth connection. Any auxiliary items having a switch near the dash board can be earthed here, eg overdrive, cigarette lighter, indicator lights etc.

The extra resistance of the longer cable is too small to affect the operation of the starter motor. Assume there are an extra 3 metres of cable, compared with a battery switch placed near the battery. The resistance of 25 mm² cable is 0.0008 ohm m⁻¹, so there is an extra 0.0024 ohm resistance in the starter motor circuit.

Even with a starter motor current of, say 100 amps, the voltage drop at the starting motor due to the extra length of cable will be:

$$100 \times 0.0024, \text{ or } 0.24 \text{ volt only.}$$