The majority of these tips have appeared in club newsletters over the years. Please note that you use them at your own risk as neither the Bristol Austin 7 Club nor the authors can be responsible for the results of trying to follow the instructions given.

Starter motor switch - Lucas S2 - Ian Moorcraft

There were three different versions of starter switch fitted to the “bacon slicer” cars. The first Sevens with electric start had a CAV switch followed by a Lucas S2 late in 1926, the S2 was improved for the 1929 season to design out inherent problems mostly with the insulation. Also the brass cover plate was changed to steel and the button was now cast iron with a cross hatch pattern for grip.

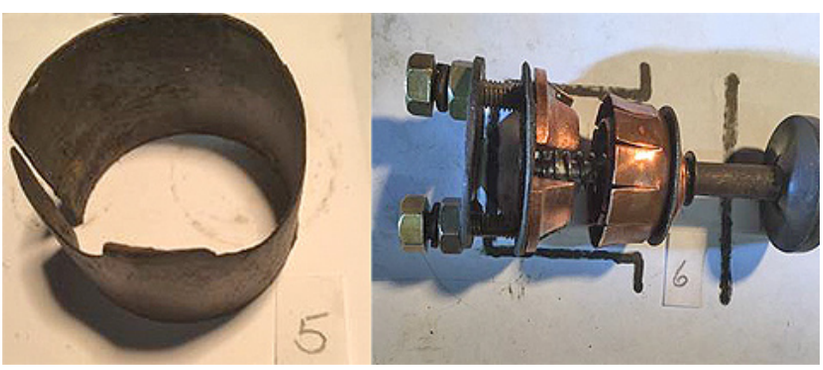
It’s the middle one with the Bakelite button we are looking at here marked S2 that has the issues.

The main issue to look for is the thin brass switch cover plate wears (pic1) this results in the copper contacts of the switch not meeting squarely. The switch button copper contact becomes damaged giving a poor electrical connection with possible overheating or even a short circuit. Picture 2 shows one that has had this event and melted a hole in the steel switch body !

Disconnect the battery, remove the two bolts that hold the bacon slicer, be aware that a small locating dowel (part no. BG55) is next to the off side bolt, this can, if loose in the crankcase drop into the bell housing as the bacon slicer is lifted off it. If not noticed can result in locking the flywheel and seizing the engine.

With the switch removed it's a simple matter to bend back the tags from the rear of the three brass eyelets, don't try to drill them out as they will only lock on the drill and spin. With the cover removed, it will become obvious how simple the switch is and how the copper contacts can be bent if not presented squarely to each other. Pictures 3&4 show two switch button contacts, the one on the left is from the worn switch in picture 2 above, notice how the inner ring has overlapping segments much like fish scales, while the outer ring has spread to a larger diameter as the segments flattened. Also note the ends of the outer copper segments have melted. The contact on the right from another switch is how a serviceable one will look with no overlapping or deformed contacts.

Remove the double nuts, flat and spring washers and outside insulation washer. Tap out the two half round triangular copper contacts, carefully remove the thin insulating strip wound inside the switch body sides which is .023 thick followed by the insulator in the bottom of the switch body.
Clean everything up and inspect, probability is the tubular insulating strip (pic 5) will be broken or burnt near the bottom like this one, and needs to be replaced. This is the major cause of a short circuit allowing the half round contacts which must be insulated from the switch body to touch, resulting in picture 2.



If your switch contact is like the one on the right of pic3 leave as an assembly on the button shaft and give it a good clean to bright copper. If it's badly out of

shape like the one on the left, I suggest you remove it from the shaft by removing the split pin and screw it to a solid piece of wood held in your vice. Draw a circle of 1 3/8” from the screw centre on the wood, and use as big a flat washer as you can get in under the screw head to stop distortion. You will need to reform the fingers as best you can to an outside diameter of the outer ring to 1 3/8” (in line with your diameter mark on the wood) the hole in the inner ring of fingers should be about 7/8”after readjusting. Suggest using a punch instead of pointy nose plies as the fingers are fairly stiff. See what your fit is like using the half round bottom triangular contacts as a guide, making sure that the fingers don’t bottom on the ridge of the triangle Pic 7.

The left hand contact in my pictures has been so hot it melted, copper melts at 1084°C and is now too soft to be any use other than to flatten it out for a pattern to make a new one. No spare contacts are available as far as I know. The worn switch cover can be recovered by soldering a flat washer inside to cover the elongated hole.

The two switch triangular contacts are insulated from the switch body by a fibre disc inside the body and another similar disc on the outside. The holes for the contact bolts are one size in the insulator discs while the holes in the body which is sandwiched between them are larger avoiding any metal to metal contact.

Be careful that the half round copper contacts don’t turn when tightening the brass nuts and cut through the new tubular side insulator material shorting them to the switch body. The button copper switch contact has integral fibre washers top and bottom insulating it from the operating rod and also from the top and bottom springs.

The complete assembly is shown (pic 6).The relative position of the switch body and top cover to the parts is represented in black pen.

Temporarily bolt the switch body and cover together and see that it works.

If all is well fit the three new brass eyelets, these can be obtained from a shoe repairer.