

MGBGTV8 restoration project

As I am trying to get my TC to a rolling chassis state, I took a day out to get the damper cases and associated parts ready for spraying.



On with the V8. Today the starter motor. It was seized solid so before testing the solenoid time to strip and clean the rotor and pre-select assembly. After liberal coating with WD40 the casing screws started to move however the cable connection screws would not budge, used heat and eventually they came undone. Once undone I was able to remove the solenoid fixing bolts and remove it from the starter casing.

The pre-select was seized as was the starter cog. I covered the windings with duct tape to protect them and blasted with glass bead to remove corrosion from the shaft and operating mechanism.



The end cover came off with a little gentle persuasion, the brushes and rotor looked in good condition and the windings checked out showing good continuity and resistance.

After washing out the system with cleaner and blowing it dry with compressed air I immersed the mechanism in penetrating oil and gradually worked the pre engage mechanism which became free, I then did the same with the gear which also freed up but released in the correct direction to allow it to disengage from the flywheel when deenergized.

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I washed the mechanism out again, blew it dry and re applied oil. The pre-select now moves under gravity freely and the gear runs smoothly.

Next, I bead blasted the end covers in preparation for re assembly. I will not be polishing them clean is good enough although they will be pressure washed every time the car is cleaned. The cast iron casing will be painted maroon to match the rest of the engine steel components and brackets.



While cleaning the end cover I noticed that there were marks on the aluminum casing that indicated shorting had occurred between the main feed cable and the case where it connects on to the solenoid. Inspecting the rubber insulator showed that this had been worn through over time and the copper connector was protruding through the gaiter sufficient to short against the case whenever the starter was operated, this was a high resistance short so the starter would still have operated however eventually it would have become more serious and could have damaged the feed cable and welded the main contacts together in the solenoid causing a fire.



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I will build up the rubber insert using Liquid Tape which is an air-dry synthetic rubber coating that can be brushed on. It exhibits excellent moisture, acid, alkaline, abrasion, and dielectric resistance and I have used it before on industrial installations as well as car repairs. Much better than tape.

I will show this process in my next report.

Now on with the solenoid. The coil showed an open circuit so I unsoldered the connections and removed the cover, one of the coil connections fell off showing that the lead to the coil is broken. This cannot be repaired as it is imbedded in the solenoid casing and although many non consumer repair items can be repaired this is not one of them.



Replacement ordered £39.99 including postage so a relatively cheap repair in place of an exchange starter motor up in the £200 bracket. The solenoid arrived however it was the wrong one, the supplier accepted that it was their error and sent the correct one that night and a prepaid return shipment label.



The wrong one

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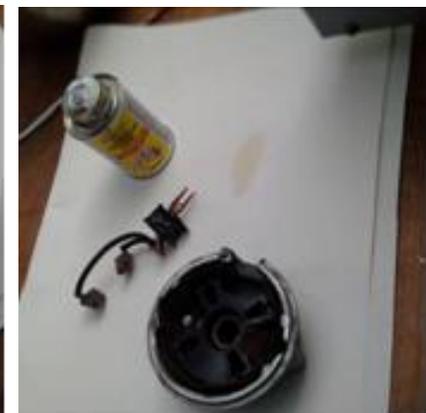
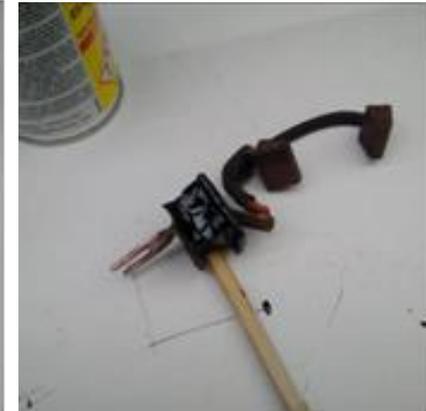


The old one and the right one

The insulator where the power feed passes through the starter motor casing requires repair by building up the rubber with Liquid Electrical Tape. First the grommet was cleaned and roughened so the new rubber would adhere



Layer after layer was added over a period of a few days to build it back up to the original size so it seals the casing completely when installed.



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It takes 24 hours to full cure and once cured the assembly of the starter motor could be carried out.

First the armature was put in the casing and the preselect pivot pin installed. New Starlock washers were used where required.



Next the solenoid armature was located on the pre select shaft and the coil was bolted on to the casing. At this stage I tested the solenoid, it operated correctly moving the drive cog to the meshed position and the return spring pushed it back to the disengage position



The outer iron case and field windings was then positioned over the armature and located on the peg that is fitted to the casing to ensure that the assembly is correctly orientated.

Next the brush casting was installed making sure that the cables that connect the windings via the brushes are correctly positioned and insulated from the casing. The two long screws that clamp the two aluminum casings to the iron casting to which the field coils are fixed were installed and tightened. The starter motor electrical connection was then connected to the solenoid and tightened.



Once the assembly was complete and all screws and bolts tight I tested that it operated correctly. As the starter motor is very powerful with a very high torque capability it was bolted on to the old V8 engine and power applied to the solenoid. The pre select engaged and engine turned over smoothly, when power was removed the cog disengaged and power was removed from the starter windings.



Starter now ready for installation on the new engine before it is dropped in to the car.