

Emma's Cooling System:

I recently described how I fitted a thermostatic sender unit to switch the power On/Off for the electric cooling fan; at the same time I mentioned I was overhauling the cooling system. This post is a follow up and describes the remaining work on the cooling system

The top radiator hose was renewed fairly early on in my ownership at a cost of £12.48 for a blue Silicone hose. I couldn't find a hose that was an exact match but purchased a 28mm ID hose with a 90 degree bend and 150mm long legs; after cutting the legs to size it fitted with just a very minor and hardly noticeable kink. Some two years before I purchased Emma she had been fitted with a new water pump and thermostat. It was now time to look at the rest of the system and do the other bits.

The first task was to remove the thermostat housing and modify it as previously mentioned in an earlier post; following that I removed the thermostat, bottom radiator hose and the heater hoses.

Early MGB's had a brass tap in the side of the block at the right hand rear, just below and slightly forward of the take off for the oil pressure gauge, this was for draining the coolant out of the block. On later engines it's worth fitting a brass coolant tap in the engine block. If you check out the price of a MGB tap you're looking at £20 upwards. I purchased a new 1/4" BSP brass drain tap for a Ford Tractor which cost £5.20 including postage.

My engine is fitted with a 1/4" BSP plug instead of a tap so that was removed. As usual no water came out so as per normal I prodded it with a pointy object but still no water. After a good flush including applying air pressure and an assortment of pointy tools I came to the conclusion that the block is either very badly blocked or faulty due to a poorly made casting.**

Note.

*** I'm not under any illusions about the quality of BMC and later British Leyland cars and parts. In 1985 I bought my daughter a new BL Mini for her 18th Birthday and it was a nightmare, I got rid of it for her after two years of grief. I suspect that the lack of water through the drain point is actually a fault rather than merely blocked and the fault was recognised by BL; but instead of rectifying the quality of their casting they just omitted the drain tap and blocked the hole with a 1/4" BSP plug. The worrying part is that there is an area around the bottom end of number four cylinder that is not receiving coolant and there is no provision to fully drain the block when doing a coolant change. There is a core plug in the vicinity and if I ever have to overhaul this engine I will remove it and have a good look inside to confirm, or otherwise, my theory.*

Core Plugs:

Changing core plugs is easy! I've changed loads over the years and never had a leak afterwards. I would never ever consider restoring/overhauling an engine without renewing all of the core plugs. There are two main types of core plug; a) a slightly domed circular disc and b) cup core plugs (the type that looks like a jam jar lid). The fitment method depends on the type.

Core plugs are in castings to enable removal of the sand used in the casting process and as many vehicle owners have found out they sometimes, but not always, pop out and save the engine if it has been left over winter without antifreeze. A few years ago I went to buy a boat with a Volvo Penta engine that had been unused for a couple of years. When I asked him to start the engine the seller casually mentioned that a core plug had popped out and just required putting back in. I walked away as a cracked block might only reveal itself once the engine was removed and the core plug was replaced!

Fitting the circular disc core plugs:

If you look at the core plug sideways on it is slightly domed. To fit it you scrupulously clean and degrease the block recess then smear some sealant around the edge of the cavity. I use a suitable Hylomar product (the latest is Hylosil), for jobs like this but other sealants are available/suitable and one of my friends swore by Red Hermatite. Put the core plug in the block with the dome shape outwards ensuring it is firmly seated. Place a large drift (a metal bar slightly less in diameter than the core plug), against the core plug and tap it with a hammer until the core plug is almost flat which expands it and wedges it in the recess. Don't go past the flat stage as it will lose its sealing ability.

Fitting the cup core plugs:

You need a piece of metal tube that just fits inside the core plug; I keep some old sockets for jobs like this. Do the cleaning and sealant preparation, although with this type it's better to put the sealant on the plug, then drift it in; stop when the edge of the core plug is level with the side of the engine block.

Removing a core plug:

To remove a core plug drill a 3/16" ish hole in the centre. If you have a slide hammer put a suitable self tapping screw in the slide hammer, screw it in the core plug and hammer it out, a couple of healthy taps is normally sufficient. If you haven't got a slide hammer then drill the hole. Put a longish self tapping screw in the core plug and using a piece of wood to protect the block pull the core plug out with a claw hammer pulling against the screw. If the core plug is heavily corroded then a self tapper won't hold but an old large screwdriver works well, sharpen the end and drive it through the plug (offset from centre), and lever it out. A corroded disc type core plug often benefits from first tapping the centre of the core plug with a hammer and drift until it bows inwards. Cup core plugs can also be removed by tapping one side until they swivel into the block then pull them out with pliers.

Next job was to go over all the hose points, radiator and heater unions/elbows etc. with a scotch pad and clean off any crud.

Sticking a hose pipe in the thermostat aperture I gave the engine block a good flush out followed by flushing the heater and the radiator. With everything nice and clean I could start on the assembly.

Prior to starting the work I had asked 'Dan L' (the previous owner), if he knew the origin of the bottom hose, he couldn't remember but thought it may have been supplied as part of his original kit. I then asked a Group question regarding the identity of the bottom hose and following the two suggestions of Mini and late model MGB I checked out both hose shapes on the Internet. The one that looked closest was for a Mini so I ordered one; as soon as it arrived I realised it was the wrong one and returned it. John Hoyle was the original supplier of the kit so I emailed him; John informed me that he had supplied the later MGB hoses (part number GRH-641), with some kits so I ordered one from Moss Europe Ltd. for £18.12 including postage, it was not a straight fit to my Landcrab radiator, but I could have modified it to fit. Unfortunately it is NOT a Silicone hose.

The annoying thing is that the bottom hose I removed is just about a perfect fit, but what was it originally fitted to? A brief conversation with Mark Sadler revealed all; it is the bottom hose from an Austin Morris Landcrab. The annoying thing was that initially I thought of trying a Landcrab hose but knew they had a transverse engine and my feeble mind had put the radiator in the front grill which meant a long and tortuously shaped hose. Immediately Mark mentioned that he had used a Landcrab hose my mind went back almost 50 years to my brother-in-laws Landcrab and in my minds eye I could clearly see the radiator, in its rightful position along the left hand inner mudguard. After Mark's suggestion I went straight on eBay and got a NOS AC Delco hose, part number 'RH1170' for £10 with free postage. Success at last it is slightly different from my original

hose (different after market supplier perhaps), it is a perfect fit without modification. "Thanks Mark!"

Note.

The Landcrab was, in my opinion, a very capable car. If you were lucky enough to get a Wednesday car they were very very good.

Postscript:

In all honesty I was not surprised with my little saga in respect of the bottom hose! Whilst the kits may be identical slight variations in assembly are possible; e.g. the abandoned kit I recently purchased from Mark Sadler looks like an identical basic kit to Emma yet the radiator is set a good 30mm further forward, which also means it must be higher to clear the steering column.

To enable renewal of all the hoses 2 metres of heater hose to specification EPDM SAE J20R3 was another £8.95. Six x 20mm, three x 32mm diameter and one 45mm diameter stainless steel jubilee clips (for heater and radiator hoses respectively), finished everything off nicely and added another £23.76

The thermostat housing gasket was renewed at a cost of £2.72 for a later improved gasket. I don't know why they supply the cork ones as IMHO they are rubbish for a thermostat gasket.

Last but not least to complete the job I treat Emma to some new antifreeze solution paying £19.99 for 5 litres of Bluecol Antifreeze, which is recommended for older engines. This was mixed 50/50 to give (according to the 'Bluecol Data Sheet'), optimum protection.

So for a total outlay of £89.90 (which includes £12 for the thermostatic sender unit described in an earlier post), I have improved the reliability of Emma's cooling system and helped protect it from corrosion. I still have to rewire the cooling fan and as I intend to eventually incorporate a relay that will add another £10 to £15.

Unfortunately I bought the last Landcrab hose from that particular eBay supplier, but as the only way to drain the coolant when it's due for a change in two years time is by removing the bottom hose I'll start looking for another Landcrab radiator hose now. "I don't like to refit an old hose that has been disturbed!"

In the photo below the original hose is on the left, the Landcrab hose is in the centre and the MGB hose is on the right. To the right of that is the slide hammer I made in the early seventies. It doesn't get a lot of use but it's very handy occasionally.

