

MGB V8 Roadster restoration project – Report 39

Thursday 18th June 2015 – Continued

Finished off the making the parts for the swirl pot for the fuel injection system.



These are the top and bottom of the pot roughly cut out from 16G mild steel sheet.



The swirl pot ready to weld up. Do I nickel bronze weld it or gas weld it? I took it down to the lower shed where my oxygen/acetylene welding equipment is. I put a section of exhaust pipe in the vice to try both types of welding to see which looked the neatest, as I had not carried out either types of welding for some time and needed some practice before I did the welding on the swirl pot. I opened the both gas bottles and found that one of the hoses had a leak at the torch end – Knickers! The hose had become porous, probably through lack of use. I had really wanted to try and get this bit finished today. I rang my usual welding equipment supplier and the answerphone was on, I left a message to ring me back, all to no avail. Jane had an appointment to collect Darcy at 5:10 after the operation to her rear suspension. I rang a welding supplier in North Walsham where the vets is and found they had a set of hoses in stock. I said to Jane that I would go with her and collect the hoses before we collected the dog. Hoses collected we arrived at the vets and the vet said she had been a very brave girl – Darcy that is – not Jane.

He explained that the problem had been the same as professional footballers get and that had she been a footballer she would have been out of action for this season. They had fitted a titanium bit into the leg bone and pinned it with a titanium staple. She is not to climb stairs or run about in the garden for at least 6-weeks. I asked the vet when she could play football again and he said it should be OK in about 14-weeks! Jane and the vet put Darcy in the back of the Zafira which left me to pay the bill – I now have a throbbing wallet and no money left to spend on Hoyle suspension!



A sad looking Darcy pretending to be a lying down lamp standard.

Friday 19th June 2015

Yet more problems - went to fit the new gas hoses on the welding equipment – wrong threads. The hoses were BSP (British Standard Pipe) threads and my equipment, which must be American is, I think called NP (National Pipe), but this name, may be the tapered type of thread. Anyway I took the new hoses back and no conversion parts or pipes were available so I asked for my old pipes back. I had left them yesterday for them to put in the bin. I will take the unions off both sets of pipes and fit the old unions to the new pipes. What a week - they say problems come in threes! Eventually I will get the fuel system working. The reason I am fitting the 'swirl pot' is twofold: first it may help get any air bubbles out of the fuel if the fuel tank is low during heavy cornering and secondly it gives the fuel system a little bit more fuel stored at 'high' pressure under hard acceleration. With the common rail fuel injection system on the RV8 engine it is probably not necessary, but when we were building racing BMW 2002tii's with the Kugelfischer mechanical fuel injection systems it was essential to have a 'swirl pot'. My car would probably work perfectly well without it – but what the heck – I enjoy making bits up. The rest of the day was also a nightmare. Jane was worried about Darcy's operation that was getting very red and so we had another visit to the vets. He said it was all OK, so that was a relief. We fitted the dog with a larger 'lamp shade' as she was able to get to the wound. In all it was a very stressful day.

Saturday 20th June 2015

No chance of getting to MG Live at Silverstone with the dog needing constant attention. In addition, John has asked me to bid for a car for him. It is at the H&H Burley House Auction today in Lincolnshire.

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Managed to overhaul my oxy acetylene welding torch and have a practise at gas welding and nickel bronze welding that I have not done much of since the 60s and 70s when I did a cut and shut on a Hillman Imp that we built for Autocross and the Jaymic 1200 space frame that I built for circuit racing. I was lucky enough to get some training from a couple of guys who took over Colin Chapman's Lotus workshop in North London, I believe, if my memory serves me right they were called Bradco Products and were making uprights for Lola cars at the time. My girlfriend, Jane, who is now my wife, used to deliver welding equipment to them for her father's company, A S Young, in Whetstone. After two seasons of the Players No.6 Autocross with the Hillman Imp, the manufacturer's spot welded seams were starting to break up, but the nickel bronze welds across the floor and the screen pillars were still fine.

I tried running a bead of weld along a scrap bit of the 2" diameter exhaust pipe that I am using for the swirl pot, and also a bead of nickel bronze weld. After all the time that has passed since I have done these sorts of welding I was extremely disappointed at my results. I am very embarrassed about showing you a photo. But I did say I would give you the lows and highs of this project in the reports.



How **not** to gas weld or nickel bronze weld!

I must have forgotten something about both these types of welding! I spent the afternoon watching videos of gas welding on You-Tube. They say that once you have ridden a bike you can always get on a bike and ride it – believe me – welding doesn't seem to be the same!

The thing I had forgotten with nickel bronze welding is that the acetylene should be turned on a little and the torch lit and the flame turned up until the black smoke disappears and the end of the flame is feather like. Then turn the oxygen on and the oxygen turned up until you have a neutral flame. That is the inner cone at the torch end should be rounded. For gas welding the inner cone should be just pointed, an oxidizing flame. With the bronze welding, you need to heat the metal up to cherry red before you start adding the nickel bronze filler rod to the flame. If you get it hotter than that the weld will be no good and if you get it not hot enough all you get is balls of nickel bronze on the metal you are trying to weld and these do not attach themselves properly to the metal and can be knocked off quite easily.

This is how it should look!



Sunday 21st June 2015

I have been having some practise with the bronze welding. Here is how the flame on the welding torch should look.



Firstly I cleaned out the nozzle of the torch and I tried nickel bronze welding two bits of tube together using different nickel bronze rods that I had.

Firstly I used a rod that was already coated with a blue flux. Secondly some rod that had been coated with some pink flux and lastly some un-fluxed rod that you had to heat up and dip into the SIF bronze flux. I was surprised at the difference in weld that the different fluxes made to the weld. Surprisingly the first rod with the blue flux coating worked the best as you can see from the photos below. Although I forgot to take a photo of the un-fluxed rod weld it was the same as the pink fluxed rod. Presumably the pink flux makes nickel bronze flow out more, like brazing. The problem is I can't remember where I got the blue coated rods!

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Cleaning the torch nozzle.



Weld with the blue fluxed rod.



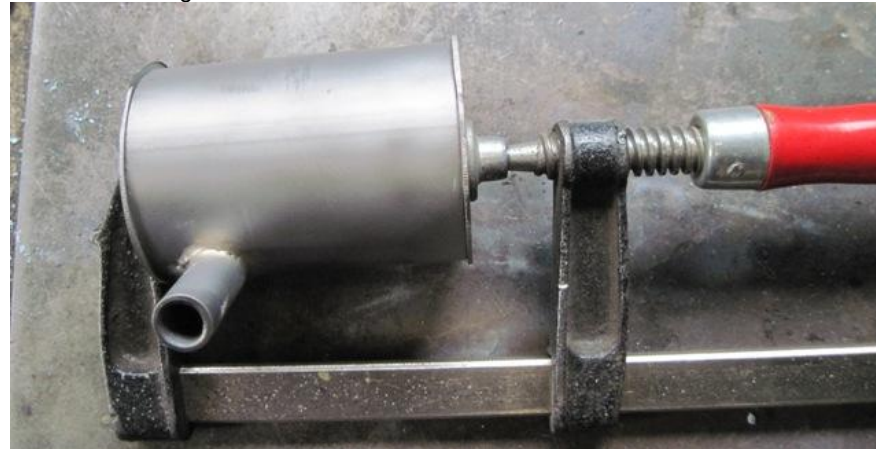
Weld with the pink fluxed rod.

I was, as they say, 'well pleased' with the results of the blue coated rod and decide it was time to attack the pipe unions on the 'swirl pot' with my re-found skills.

Monday 22nd June 2015

I seemed to get a bit done on the MG after taking Darcy back to the vets for a check up first thing in the morning. The vet said she was doing too well and we

needed to not let her be too active. She seems to be at the point that she wants to tear around the garden like she used to.



The swirl pot clamped up ready for 'gluing together'. Hopefully with no leaks.

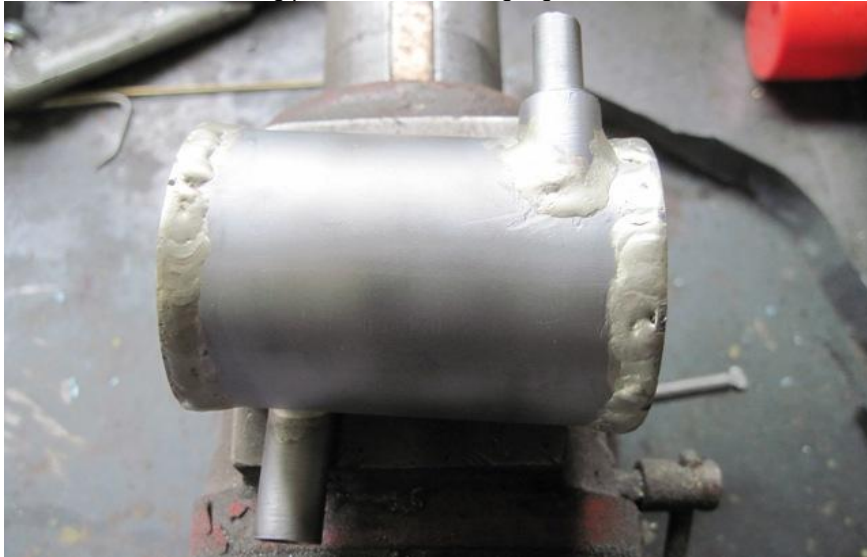


Top and bottoms stuck to the tube with the nickel bronze welding. 6 out 10, Mike could do better with more practise. Sounds like my school reports!

The pump should be delivering fuel at 34 to 48psi, which is Rover's specification, but the pump should be able to deliver fuel up to 60psi. I had better pressure test the 'swirl pot' to at least this pressure. The next photo is the 'swirl pot' after being put in the blast cabinet. It looks as if I definitely should pressure test it as it looks as if there maybe some pin holes in the welding. As long as I don't put petrol

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through it first I can heat it up, let the nickel bronze flow to seal up the hole, or holes. If I do it after having petrol in it then it might go B-A-N-G!

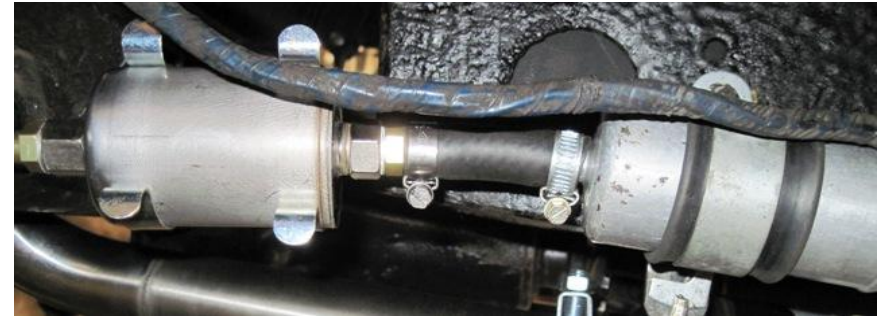


Swirl pot ready to try in position before making a mounting bracket.



The pump and swirl pot in position and ready for making a bracket for the pot. It looks as if it will line up nicely with the fuel line to the engine.

The photo in the next column shows the pre pump filter fitted to the fuel pump. I need to make another bracket for this filter. I shall mount it at about 45 degree to make the pipe work run to the fuel tank fairly straight so the pump does not have to suck the fuel up to a higher point than the fuel take off in the side of the fuel tank. I decided to pop up the pub for a beer in the evening to see how John was getting on as, yesterday lunchtime, he was talking about packing up the chemo as he felt so awful. Robert and I spent about an hour on Sunday trying to persuade him to keep on the chemotherapy course. Luckily, tonight, he felt a lot better and agreed that he should carry on with the chemo. They hope to stop the cancer growing with the chemo and then give him radiotherapy treatment.



Tuesday 23rd June 2015

First I need to have a good clear up of tools as yesterday I had problems finding stuff! More excuses coming up. Wrote my report first thing this morning and was just off out to the garage to start work and John turned up with his old front panel from his damaged VW Golf. Could I repair it as the headlamps don't fit on the pattern replacement front panel that he had bought? I Superglued the damaged areas back together and straightened the metal frame strengthening that was attached to it. That done, we had a cup of coffee and a mardle (old Norfolk word for a chat). John went home and I started back at work. Then a couple on holiday turned up to have a look at my collection of cars and motor bikes. Back to work again and then a villager turned up on an ancient butcher's bike with a loose pedal crank to weld up. I said that it did not need welding it needed a new cotter pin. It just so happened that I had one in my collection of bits. The pedal crank shaft was so worn that I had to shim the slope on the cotter pin with a slice of shim steel so that it would not pull through the pedal crank hole. Perhaps I should pack up going to the pub as that seems to be where people seem to hear about me and the equipment I have, the problem is I like a pint or two after working. Anyway after all the interruptions all I managed to do was clear up, and sketch out the brackets I needed to make for the fuel filter, swirl pot and decide that I need to fit some alloy plate at the bottom of the battery box to reflect and dissipate the heat from right hand exhaust box.



This photo is from the underneath of the car showing the angle it's at so that the petrol does not have to go up hill. **Note:** When replacing rubber petrol hose make sure it is suitable for ethanol fuel.

From now on I will try and send

my reports into Victor every Thursday? PS: By the way has anybody twigged yet that the day I say that I will send the reports to Victor changes each time I write a report! Sorry, it's my weird sense of humour! Depending on how many photos I have and how much rubbish I can write I tend to send in the reports every time I manage to get to 4, 6 or 8 pages. As usual; any comments, motivation, help, suggestions, abuse or encouragement to [-mikemacartney@btconnect.com](mailto:mikemacartney@btconnect.com)