

Lining it all up with an
Allen Key socket

magnetic sump plug

There were two reasons for wanting a magnetic sump plug for my Chimaera:

- 1 - For diagnostic reasons
(there is a lot of information available on the internet about this).
- 2 - Something new and shiny for my car!

I came across a posting by Dave Byron on PistonHeads about how to make a homemade magnetic sump plug for a Chimaera. Therefore I ordered the relevant parts and set about building one. I ordered both from eBay, which came to less than £15 with postage. I received a good service from both suppliers, receiving both parts within a few days.

The parts consist of:-

a) - A Tractor sump plug
(DAVID BROWN SUMP PLUG 1/2" BSP - From MayHillTractorParts)

b) - A Magnet (1 Strong Neodymium rod magnet
10mm dia x 46mm N30H High Temp - From Guy's Magnets)

The only other thing that you will need is some glue.



I would rate the making of the magnetic sump as a Haynes two spanner job, more from the point of view of the equipment required, which consists of a pillar drill and reasonably accurate measuring equipment, than the skill required to carry it out. I think that it would be possible with a hand held drill if you could hold it steady.

It also helps if you are a home mechanic that does basic servicing yourself, as otherwise you are going to have to ask your normal servicing place to fit the finished plug.

We somehow feel drawn to take a look at Mike's sump plug

The next part was to put them together, which is simply a case of drilling a hole in the sump plug and putting the magnet in it.

What I did not want to happen was to end up with a catastrophic leak in the unlikely event of the magnet coming out of the plug. However, I think that the chances are very slim as the plug is metal so the magnet holds itself in very well.

Therefore what I did was to measure the depth of the Allen key hole and the sump plug, then drill so that I was not going to 'break on through to the other side' as it was once put.

I started by centre punching and drilling a pilot hole which was two millimetres less than the final depth that I wanted (which was the height of the sump plug minus the depth of the hole minus two millimetres). All the measurements were done with my digital callipers (which can also measure depth).

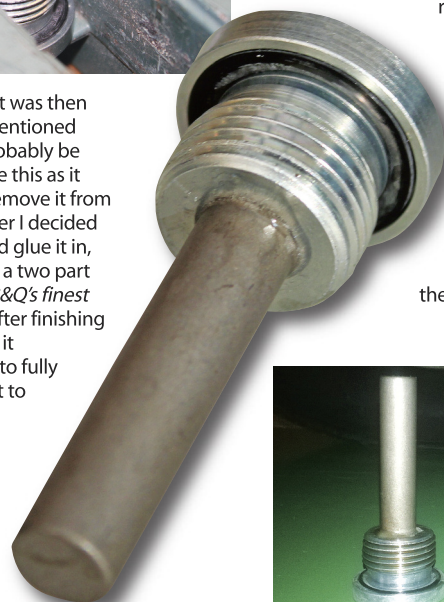
Once I was happy with the pilot hole I then used a 10mm drill to open up the pilot hole to the final size, and slowly the depth of the hole was increased until it was at the desired depth, which left one millimetre of metal between the bottom of the Allen key and drilled holes.



A trial fit of the magnet was then carried out. As Dave mentioned in his post, it would probably be possible to just fit it like this as it took a bit of a tug to remove it from the sump plug, however I decided to follow his advice and glue it in, which was done using a two part adhesive (in my case B&Q's finest Araldite alternative). After finishing doing this and leaving it overnight for the glue to fully cure, it was time to fit it to the Chimaera.

Please note that I would advise waiting until you do an oil change to fit it, as it would be very messy and result in the loss of quite a bit of oil if you tried to do this at any other time.

Almost five months later I was ready to do the oil change as part of the Chimaera's annual service (as it does not normally get close to 6,000 to warrant an intermediate oil change) and fitting it was very straightforward. Take the old one out, let the oil drain, then insert the new one.





Measuring the depth of the Allen key hole and the sump plug, so that I was not going to 'break on through to the other side' when drilling.

handywork...

 Courtesy of: **Mike Hardy**



As the annual service requires the exhaust to be removed to access other areas, I had ample room to insert the new plug, which as a result of the magnet is significantly longer. Looking at it after it had been fitted and the exhaust refitted, I think that it would be fine to change with the exhaust in place.



I should point out that fitting is not as easy as it would first seem, as the magnet wants to stick to everything, including the hole where the plug goes and the sump itself! The best way I found of getting it in and lined up was to use an Allen key socket.



Since the service, and fitting the new magnetic sump plug, the Chimaera has done over three hundred miles (*most of which was to Burghley Horse Power and back*) and the seal has been fine. The next annual service is due in about 10 months' time. I wonder what will be stuck to it? (*Hopefully nothing*).

A big thank you to Dave Byron from the PistonHeads forum for the inspiration, and permission to write about this, and parts list to make this.

PS. As the tractor sump plug has the advantage of having an 'O' ring seal it may even be an advantage to fit it without modifying it into a magnetic variant.

Mike Hardy