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E60 545i Spark Plug Replacement

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Andrew Rolland [Topic: E60 545i Spark Plug Replacement](#) [Post Options](#) [Thanks\(0\)](#) [Quote](#) [Reply](#)
 Moderator Group [Posted: 28-March-2011 at 10:20](#)



Go away rain

Joined:
19-August-2004
Location: Scotland
Status: Offline
Points: 5675

After 62,000 miles and nearly 7 years the iDrive told me it want the spark plugs changing. The last time the spark plugs saw light of day was on the assembly line in Bavaria in May 2004.

Bought 8 plugs and an air filter from BMW Harry Fairbairn in Glasgow, who very kindly came me about 15% discount.

You will need to following

E6 TX Star 3/8" drive
 3/8" drive flexi stuby ratchet
 T25 TX Star bit
 T30 TX Star bit
 Flat screwdrivers
 10 mm spark plug socket 1/2" drive
 2 universal joints 1/2" drive
 3" extension bar 1/2" drive
 10" extension bar 1/2" drive
 1/2" drive ratchet
 1/2" drive torque wrench that can measure 30Nm
 10 mm socket 1/4" drive
 1/4" drive ratchet.

and my dad to help....

For reference, cylinders #1 to #4 are on the offside of the car and cylinders #5 to #8 are on the nearside of the car.

I was worried about cross threading the new plugs putting them back in the bores but following a poke around under the bonnet on Friday night I was more worried about how to access the back two plugs. Following a search on line, there appears to be a real issue in accessing spark plugs for cylinders #4 and #8 which are right back at the bulkhead where the chassis rails/legs start to narrow making access tricky at best!

I removed the pollen filters and splash shelf that sits at the rear of the engine bay. [To remove this follow instructions here](#)

Remove the engine acoustic cover and the two plastic cylinder head over covers. This now exposes the tops of the ignition coils and the clips that hold them in place.

To improve access to cylinders #5 to #8 I also removed the air box. I slackened the jubilee clip on the inlet manifold and pulled off the air duct. I then sat this duct still attached to the top of the air box on the inlet manifold.



A collection of just some of the bits I removed!

I placed a rag along side each cylinder head below the coils in the gap between the engine and the chassis rails to catch any small components if I dropped them. It would fall under the engine making recovery difficult.

I also removed the black plastic housing that retains one of the positive battery leads. This is all to get access to get the rather long HT coil out from cylinder #8 right at the back, under the main engine electrical cables, the fuel line and the strut brace.



Undoing the plastic nut holding the cable housing



..and the cable housing removed



Engine bay in the process of stripping out.

So now you can get in with the 3/8" drive ratchet and E6 TX star socket to remove the clip that holds the HT coils for cylinders #7 and #8. I had to go and buy this ratchet as there isn't enough room for my 1/2" drive ratchet plus the 1/2" to 3/8" converter.



Clip retaining HT coils #7 and #8. At the bottom of the photo you can see the top of HT coil #6, I had already removed its clip.

The HT coils have a clip that retains the cables. This clip may need to be prised upwards with a flat screwdriver. When the clip is

lifted up it moves out the connector plug. Nice bit of design that.

The HT coil was difficult to remove from cylinder #8 but we got there. The coils are quite firmly held in place over the spark plugs and took a bit of work to remove. The coils are really quite long which makes them tricky to remove.



In order to get to the spark plugs I needed to make up the socket drive arrangement shown below



10 mm spark plug socket, universal joint, 3" extension bar, another universal joint followed by a 10" extension. This flexible arrangement could be fed into the bores quite easily.



Cylinder #5 spark plug in bore



Looking into the engine, cylinder #5



You can see the wear on the old plugs.



Old plugs were NGK, new BMW plugs are Bosch.

In order to access the plug on cylinder #4,



you have to remove the two 10 mm nuts that secure the air conditioning lines to the chassis rail. There are two bushes that sit over the studs to protect the rubber mounts.



I was able to recover one of the bushes and the other stayed within the rubber mount. You then have to pull the air conditioning lines from the chassis leg and then once free of the studs push in down. I also had to persuade the brake lines to move a bit to give a bit more room to withdraw the HT coil.

The new spark plugs are torqued to 30Nm with no grease.



All eight old spark plugs removed.



Put it all back together and test, then re-set the iDrive.

Including head scratching time (working out how to access cylinders #4 and #8) and a bit of stripping out work the day before, it probably took me and my dad about 4 hours to do. But we were being extra careful and having to stop and figure out access etc.

Parts cost me £95 inc VAT, labour cost a few beers.

What would BMW have charged me labour for that, £100? £150? Plus parts at full price £10.20 per plug and £29.92 for the air filter.

Andrew

I don't leave carbon footprints, I leave two 9" wide carbon tyre marks!

Current

'04 04 E60 545i SE Steptronic and Leather

Also in the family

'07 07 E90 325i SE Steptronic and Leather

Previous

'03 53 E60 545i SE Steptronic and Leather (Stolen)

'98 S E39 523i SE Steptronic and Leather

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UweM3 ▾

Moderator Group



Posted: 28-March-2011 at 10:26



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It's mad what you have to do these days for just replacing the spark plugs.

Or a head light bulb on some cars.



Joined: 11-February-2003
Location: United Kingdom
Status: Offline
Points: 5356

But I don't think it's that much wear on the plugs as you may think in your comparison picture. These are two different designs of plugs from two different manufacturers.

E46 320d, 50mpg+ happiness

ThosH

Advanced Newbie
★☆☆☆☆

Joined: 08-July-2010
Status: Offline
Points: 20

Posted: 28-March-2011 at 10:40

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Hi Andrew, wonderful description & photos -- you won't be idle if you decide to turn to photography!
I recall exchanging messages with you some time ago re a suggestion of using a piece of hose pipe to put plug in place, which would guard against cross-threading. Did ye use anything like that?

ThosH

Sporty1

Really Senior Member II
★★★★★



Joined: 18-October-2006
Location: Hertfordshire, United Kingdom
Status: Offline
Points: 2268

Posted: 28-March-2011 at 13:16

Post Options Thanks(0) Quote Reply

UweM3 wrote:

It's mad what you have to do these days for just replacing the spark plugs.

Or a head light bulb on some cars.

But I don't think it's that much wear on the plugs as you may think in your comparison picture. These are two different designs of plugs from two different manufacturers.

Agreed.



Sport Evolution Schwarz #043

Andrew Rolland

Moderator Group
★★★★★



Go away rain

Joined: 19-August-2004
Location: Scotland
Status: Offline
Points: 5675

Posted: 28-March-2011 at 22:28

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ThosH wrote:

Hi Andrew, wonderful description & photos -- you won't be idle if you decide to turn to photography!
I recall exchanging messages with you some time ago re a suggestion of using a piece of hose pipe to put plug in place, which would guard against cross-threading. Did ye use anything like that?

ThosH

Thanks and No

My first worry was about cross threading the plugs, hence the previous post where you advised, but on investigation on Saturday afternoon, fears of cross threading left my train of thought and my thoughts then turned to 'how the chuff am I going to get to the two back plugs!'

The plugs all went in fine, one didn't quite feel right when hand turning it in so I turned the socket set adapters back a turn or so and tried again and I felt a positive engagement in the thread. Spark plug was put in the spark plug socket then the whole socket, universal joints and extension bars were fed into the recess and turned by hand. It's the access that was a killer on this job, but it was most satisfying to have done the job myself.

Now driven about 40 miles since the change and the engine just somehow feels fresher, might even have a slight improvment in mpg too. Will keep you posted.

Andrew

I don't leave carbon footprints, I leave two 9" wide carbon tyre marks!

Current

'04 04 E60 545i SE Steptronic and Leather

Also in the family

'07 07 E90 325i SE Steptronic and Leather

Previous

'03 53 E60 545i SE Steptronic and Leather (Stolen)

'98 S E39 523i SE Steptronic and Leather

ThosH

Advanced Newbie



Joined: 08-July-2010

Status: Offline

Points: 20

Posted: 28-March-2011 at 22:48



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Thanks(0)



Quote



Reply

Andrew,

Ye did very well & it's so satisfying to be able to identify access to awkward spots.

For a newbie like me, this is the real value of this forum -- thanks!

ThosH

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