

How to Perform a Compression Test

Posted by dan_ep82 - 2010/08/11 21:13

A compression test is a good indicator if your pistons/rings are damaged or if your HG is lifting/Blown. There are other symptoms of the above but if you have too low of compression in a cylinder there's something wrong with or without the other symptoms.

I'll add pictures when I take them, for now I'll just have to use text.

- 1) Get the engine to normal running temperature.
- 2) Remove the Spark plug leads.
- 3) Remove the king (not the distributor end)
- 4) Remove Spark Plug 1 (doesn't matter which order)
- 5) Screw the Compression Tester into the spark plug hole.
- 6) While you are looking at the compression tester get someone to start turning the engine over via the key while holding their foot firmly on the accelerator all the way down.
- 7) Let the compression build until it stops and then stop the person from turning the engine over.
- 8) Write down the Compression results/Remove Compression Tester/Replace Plug
- 9) Repeat step 4 - 8
- 10) Compare results, they should all be within %10 of each other across the board. If not you have a problem and this could be the problem for the loss of power etc

Personally I do the test twice to be 100% sure.

Also to eliminate ringland failure, drop a bit of oil into the cylinder where the compression is low and redo the test, if compression goes back up it's pointing towards ringland failure.

I'll be editing this with what a 3S-GTE (TURBO) and 3S-GE (NA) good compression figures.

[Link to Compression Tester I use - Compression Tester](#)

Dan

*If anyone thinks there is more to add or I made a mistake just reply here :)

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Re: How to Perform a Compression Test

Posted by SleepMethod - 2010/08/11 21:44

I just read this part in the MR 2 Performance book :D

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Re: How to Perform a Compression Test

Posted by dan_ep82 - 2010/08/11 21:46

SleepMethod wrote:

I just read this part in the MR 2 Performance book :D

lol,never heard of that book,this is just something i do every now and then to make sure alls ok

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Re: How to Perform a Compression Test

Posted by SleepMethod - 2010/08/11 21:50

It's a pretty cool book, got it from a recommendation from this site. I'm pretty much a newbie when it comes to moding and maintaining a car so I've a lot to learn

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Re: How to Perform a Compression Test

Posted by dan_ep82 - 2010/08/11 21:51

SleepMethod wrote:

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not the only one,ive still to get an MR2 lmao

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Re:How to Perform a Compression Test

Posted by SWAGGER - 2010/08/11 22:50

Excellent write up Dan, nice one. Was always curious as to how this is done. I actually think my head gasket is blowing. Gonna get it checked before it does damage. Maybe tomorrow actually, its pissing me off.

The link to the compression tester brings you to Halfords but no result. Ah, no matter.

KC+1 for you for the write up. Cheers! ;)

Re:How to Perform a Compression Test

Posted by dan_ep82 - 2010/08/11 22:57

SWAGGER wrote:

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KC+1 for you for the write up. Cheers! ;)

Check your oil cap for white smudgy stuff.Sometimes your water reservoir can have gunk in it too.Check to make sure you have heat.Check to see if it is drinking water. You could always whip of the head aswell for a look see,shouldn't take long but you'd need new head bolts (unless the MR2 doesn't use stretch bolts?) and the torque specs and order.If it is gone id do the timing belt etc aswell,or at the very least check it for cracks and corrosion.

Link is fixed,that's the second time my links didn't work on here,wonder if its the forum software?

Cheers

I'll do a few more once i get the 2 to see if i can fill the tutorials up a wee bit :)

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Re:How to Perform a Compression Test

Posted by SWAGGER - 2010/08/11 23:54

Oil cap is clean. Wouldn't mind taking the head off at some point anyway. Want to replace with a custom one. I am not 100% but I think they do use stretch bolts so would have to have a new of ARP ARP bolts and a steel HG on standby, maybe HKS or similar. I have a brand new timing belt ready to go already. Kinda want to have the internals inspected anyway to see whether or not they are forged. Then I would be more comfortable with higher boost etc.

Thanks for your input mate!

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Re:How to Perform a Compression Test

Posted by dan_ep82 - 2010/08/12 01:53

SWAGGER wrote:

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Thanks for your input mate!

Before choosing what HG you want (especially if your going forged) work out what compression your pistons (size and dish) and HG width will give you and then have a look at a couple of compressor maps of different turbo's you want to run and see which suits your compression best.Or the other way around,picking a turbo and using the right combo of HG and Pistons to get the compression you want to make peak power from your turbo/engine.Now im not great at working any of that out but a decent tuner will do it for you,especially if they are mapping the car.

Not so sure on MR2's but on the 4efte the standard head bolts are good for 1.4-1.5 bar of boost and the ARP up to 2.0bar,you mightn't need them.

If you want to see yourself if you have forged internals whip off the sump.Putting it back on will involve sealing it with sump sealer,handy. Then just look for manufacturer marks on the con-rods and the bottom of the pistons (obviously the top will be hidden from view)

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Re:How to Perform a Compression Test

Posted by SWAGGER - 2010/08/12 10:33

Cheers Dan. Was just on the phone to Couture, they are pretty sure it sounds like an exhaust gasket by the symptoms. They will replace the whole set of exhaust gaskets as a kit, exhaust, manifold, turbo and downpipe. There are a few other jobs they are going to do for me at the same time. It's booked in for Thursday 19th, soonest I could get.

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Re:How to Perform a Compression Test

Posted by dan_ep82 - 2010/08/12 10:57

SWAGGER wrote:

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Not so bad so :)

Couture ARE dear though,even compared to other tuning companies but they are good at what they do,im probably just tight :D

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Re:How to Perform a Compression Test

Posted by SWAGGER - 2010/08/12 11:49

Who else are good with Toyota that you know?

Icelectronix are a Honda house, TDP is miles away. Couture are like 25 mins from me, handy enough.

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Re:How to Perform a Compression Test

Posted by dan_ep82 - 2010/08/12 22:39

Martin Tracey, Triple 7 and East Coast Customs

Dont like robbie (TDP), very bad attitude problem

Re:How to Perform a Compression Test

Posted by SWAGGER - 2010/08/13 01:35

Agreed, I thought he was an ignorant ***** had no time to talk, was way too important for his own good. I tried to ask him a question and was disgusted with his attitude. Would never spend a penny there again. :angry:

Re:How to Perform a Compression Test

Posted by dan_ep82 - 2010/08/13 03:36

SWAGGER wrote:

Agreed, I thought he was an ignorant ***** had no time to talk, was way too important for his own good. I tried to ask him a question and was disgusted with his attitude. Would never spend a penny there again. :angry:

A point of view I hold to as well, alas after his claim of if he entered time attack he would win...well his standings say it all in my opinion. I've no doubt he's very good at what he does but personally that's not enough :)

Re:How to Perform a Compression Test

Posted by Quandry - 2010/08/13 16:43

I've not had that experience with Robbie. Maybe you guys got him on a bad day..

They went well out of their way to fix Spidey's car one night - for free!

Re:How to Perform a Compression Test

Posted by SWAGGER - 2010/08/13 16:51

That was on our Dyno day....ill talk to you in person when you see you again.

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Re:How to Perform a Compression Test

Posted by slipsliderg - 2010/08/14 22:33

Good write u Dan well worthy of a KC and +1 on Westward (Martin Treacy). I will sticky this thread when you get the picture into it.

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Re:How to Perform a Compression Test

Posted by dan_ep82 - 2010/08/14 22:36

slipsliderg wrote:

Good write u Dan well worthy of a KC and +1 on Westward (Martin Treacy). I will sticky this thread when you get the picture into it.

Thanks :)

I done a compression test on it since but didnt have the camera with me,ill have the pictures up by the middle of the week.

Oh,and my compression test came up 180-183 across the board :)

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