

Upper engine knock after head...



[Daniel Connolly](#) 8 posts since Oct 16, 2020

Upper engine knock after head replacement Nov 27, 2020 1:48 PM

After installing a new cylinder head on a DD15 we had come in the shop the unit has an upper engine knocking. verified camshaft timing and overhead adjustment. unit initially came in for an overhead adjustment and another tech found the #2 forward intake valve adjustment screw laying in the head. I checked cylinder exhaust temps and found cylinder 1 to be 30 degrees lower. moved cylinder 1 injector to cylinder 3 and temp deviation followed. just wanted to get opinions on it but im leaning towards an injector failure even though there is no fuel in the hot pipe.

Tags: dd15



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Re: Upper engine knock after head replacement Nov 27, 2020 2:54 PM

****EDIT****

This units #2 forward intake valve was seized in the valve guide as well. The valve would not move at all. Upon further inspection and removal from the cylinder head the valve visually appeared to NOT be bent and measures at 240mm overall length. The camshafts had no visual indicators of damage however with the valve not moving in the guide im also concerned of a lobe slip. The camshafts when timing verified are in line.



[Jon Cecil](#) 902 posts since Nov 25, 2014

Re: Upper engine knock after head replacement Nov 27, 2020 6:49 PM

Sounds like the popping or "knocking" you were hearing was from the intake valve. I wouldn't suspect a faulty injector at this point. I don't think the injector on #2 would be causing an issue on another cylinder. I would inspect the top of the piston. If the valve was getting stuck in the guide, the cam would have opened the valve and the piston would have pushed it back in.



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Re: Upper engine knock after head replacement Dec 1, 2020 4:02 PM

Jon, I did inspect the piston when i had the head off. it looked visually ok. Detroit CSC is recommending to replace the other 5 injectors so I'm waiting to verify if we are doing that. Will report back once we have that done if we do it.



[Jon Cecil](#) 902 posts since Nov 25, 2014

Re: Upper engine knock after head replacement Dec 1, 2020 4:34 PM

Could you post a log file of this happening? I am kind of curious about a parameter that can be charted.

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[Daniel Connolly](#) 8 posts since Oct 16, 2020

Re: Upper engine knock after head replacement Dec 1, 2020 6:36 PM

[Jon Cecil](#) it is attached here. this is a short run of the unit with a slight application of throttle.

- [\(1FUJGLD52GLGZ4282\) 11-25-2020 1720.27.DrumrollLog](#) 237.4 KB



[Daniel Connolly](#) 8 posts since Oct 16, 2020

Re: Upper engine knock after head replacement Dec 1, 2020 7:39 PM

Also I think there might be a misinterpretation. The unit initially came in for a valve adjustment. a previous tech went to do that and found the adjustment screw laying in the head. We found the valve stuck and removed the head. replaced the head and have this knock after head replacement. The unit did not come in with this.



[Jon Cecil](#) 902 posts since Nov 25, 2014

Re: Upper engine knock after head replacement Dec 1, 2020 9:06 PM

Have you gotten it warm enough to run the idle speed balance test? Its possible it could be an injector. Was the fuel system pretreatment procedure done?



[Daniel Connolly](#) 8 posts since Oct 16, 2020

Re: Upper engine knock after head replacement Dec 1, 2020 10:00 PM

We have not gotten it warm enough for an idle speed balance test. We were just discussing this and were going to do that in the morning. The fuel system pretreatment procedure was not done. The unit was given to me in what was said to be non running condition.



[Jon Cecil](#) 902 posts since Nov 25, 2014

Re: Upper engine knock after head replacement Dec 1, 2020 10:16 PM

Possible clean care was not exercised and debris got into the rail. Has the engine been run with the rocker cover off to see if any of the engine brake pistons were extended.



[Daniel Connolly](#) 8 posts since Oct 16, 2020

Re: Upper engine knock after head replacement Dec 2, 2020 12:50 AM

Yes I have ran the engine with the rocker cover off and currently have it off. I did check for extension on the pistons and none were extended. The fuel system was capped off including the rail and high pressure ports on the high pressure pump. High pressure rail feed lines were replaced with new and not uncapped until installation. I am concerned about the issue of not running pretreatment possibly seizing an injector or injectors with the variance in temperatures I have between cylinders.

Upper engine knock after head...



[Jon Cecil](#) 902 posts since Nov 25, 2014

Re: Upper engine knock after head replacement Dec 2, 2020 3:20 AM

Or a fuel injector was accidentally dropped or mishandled.



[Jacob Cassidy](#) 20 posts since Nov 12, 2015

Re: Upper engine knock after head replacement Nov 27, 2020 6:55 PM

I would pull a DDEC report. Check for engine overspeed. Check the intake temp sensor and see if it's melted. Second, Run a relative compression test. Third, Perform a cutout test 5 sec between each cutout, cutting out 1-6, then 2-5, then 3-4, then 123, then 456. Screen shot the results of the compression and cutout test for us.



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Re: Upper engine knock after head replacement Dec 1, 2020 7:35 PM

Jacob, I did fail to mention I pulled DDEC report on the unit. life to date peak rpm was 2390. Also ran a relative compression test and lowest was cylinder 2 with 93.7 percent. Did not check the intake temp sensor, will do that. Detroit CSC is recommending replacement of the other 5 injectors currently. waiting to verify if we are doing that but in the mean time I will check what you recommend.