



Over the last 8 years of being a certified Nissan/Infiniti master technician and 3 years as a Nissan/Infiniti master tuner on this platform, I have noticed a trend in engines randomly failing. It does not matter whether the car is bone stock on pump gas or fully modded with big turbos on ethanol. This one comes without warning. There will be no check engine light or warnings on the dash or any heads up at all..just a red oil light/low oil pressure warning and a blown engine. I have spoken with other prominent tuners(like RACEBOX, RS ENTHALPY, and a few others) on this platform who have also noticed it as well as a few dealer master techs who are not on the forums. If I had to guess(which I hate doing) I would say that 75% or more of the VR30s that spin a bearing or completely lose oil pressure are due to this solenoid failing alone.

To start, the oil pressure control solenoid is a simple OPEN/CLOSED solenoid that is in the path of oil flow directly beside the oil pump. It is meant to reduce oil pressure at low speeds by opening a bypass in the oil pump to allow a controlled "leak" and reducing oil drag on the engine from higher pressures at low speeds. This is meant to squeeze just a little bit of extra fuel economy along with the watered down 0w20 to try and meet the EPAs ever increasing and nearly impossible requirements. The issue is, when this solenoid sticks OPEN, this leak will be present at all RPMS and will starve the engine bearings of oil resulting in a spun bearing and blown engine. If the rod bearings spin, the block can be saved but you will need a completely

new rotating assembly. If the crank bearings spin, the engine is not repairable. This is so common that I see it at least once a month. So far, every customer who has had low oil pressure who has caught it early in the logs has been able to successfully and easily replaced this solenoid and had the oil pressure return. This won't be the case every time though. If the car is beat on often before or after tuning and this solenoid goes, the engine will fail.

This is from a post I made a while back lightly touching on this as it is very common
" While tuning a customer, I immediately noticed the oil pressure was VERY low at wide open throttle on his basemap. The Infiniti manual tells you that anything over around 25-28psi is normal at full throttle and I can tell you that not only is that wrong, but it's very unsafe for an engine—especially boosted at 7,000 rpm's. At idle, it's normal to see around 15-20psi. At full throttle, 99/100 cars I tune have around 55psi of oil pressure steady across the board. In my opinion, that is still TOO low as I'd prefer to see at least 10psi per 1,000rpms, but 55 seems to be okay with these engines.

Proper oil pressure is EXTREMELY important to the VR30 and any other engine. Low oil pressure can be an indication of imminent engine failure and can be due to too many things to list. I explained the situation to the customer and after consulting a few people, she replaced the ***OIL PUMP CONTROL SOLENOID***(pictured in the diagram above) and it not only resolved the issue, but more than likely prevented an engine failure.

This won't be the case for everyone though. If you've been beating on the car for an extended period of time with low oil pressure or a part is failing due to something else like a like oil sludging or just bad luck, replacing this part will not solve the issue. Also, if you have a bad oil pressure sensor, replacing this item will not fix it and I always recommend the pressure sensor be replaced at the same time.

As you can see from the log above, the top graph shows a nice steady oil pressure line with 3.65 bar(53psi) at 6,850 rpm's. The graph below was done on the exact same tune with zero changes before the solenoid was replaced. As you can see, not only was the oil pressure dangerously low at 2.06 bar(29psi), 6,912 rpm's but it was all over the place. This would have eventually lead to an engine failure."

If you are tuned, one way you can avoid a failure from this is to constantly monitor oil pressure when racing the car or revving it at high RPMs. It is very unlikely to cause a bearing failure while normal driving as 25-28PSI is completely acceptable for daily driving. Ecutek has the ability to create custom parameters and if the oil pressure is low, you can get the app to flash or the parameter to light up red. If you are not tuned and have no way to monitor oil pressure, unfortunately there is no way to avoid the failure in the event of a solenoid stuck open.