

2007 BMW 335i 6MT

Current Mileage: 103,000 miles

Document Last updated: 5/18/2019

Logs

- Cold start: <https://datazap.me/u/sriches/cold-start>
- Cold engine pedal down and car limping: <https://datazap.me/u/sriches/cold-pedal-down-limping>
- Warm 3rd gear WOT: <https://datazap.me/u/sriches/warm-3rd-gear-wot>

Summary of Issues

1. Cold start up is very rough, RPM goes high (1,900) then low (600) and then back up (1,300) upon a code 29F2 (High pressure pump / open loop set too high) being thrown with an engine malfunction screen. Radiator fans turn to max and idle remains at 800 RPM. Car runs very sluggish, but once warm if the car is turned off and back on it drives more normal, yet still has some performance loss (maybe due to bad turbos).
2. Turbo wastegates rattle like a nonstop maraca band.
3. Boost under target (code 30FF) typically when doing a 3rd gear WOT pull from 30-70 mph.
4. Since 98,000 miles (5,000 miles ago), engine has gotten low on oil needing a liter of oil every 2,000 miles.
5. Edit: Coolant was low and sludgy, black light showed it had oil in it.

Engine Codes Thrown

Since Jan 1, 2019

Code	Description	Freq of Occurrence	Date Last Thrown	Comment
29DC	Cylinder injection switch-off	Moderate	5/18/2019	With 29F2. After cold start up with very rough idle.
29F2	High pressure pump / open loop set too high	Moderate	5/18/2019	With 29DC. After cold start up with very rough idle.
30FF	Boost under target - possible boost leak	Common	5/18/2019	When WOT, code comes on around 5,500-6,500 RPM.
29E0	Fuel mixture control	Common	5/15/2019	With 29E1, commonly comes on randomly when cruising on the freeway. Sometimes comes on with 30FF.
29E1	Fuel mixture control 2	Common	5/15/2019	With 29E0, commonly comes on randomly when cruising on the freeway. Sometimes

				comes on with 30FF.
2F9E	Thermic oil level sensor	Rare	4/17/2019	For low oil level.
2D25	Manipulation cover, maximum air mass	Rare	4/3/2019	Came on with 29E1 and 30FF.
2A82	Inlet-Vanos variable cam control test	Rare	3/4/2019	Came on with 29E0 and 29E1.
3100	Low boost mode engaged - CEL displayed	Moderate	2/25/2019	Comes on with 30FF, though 30FF occurs much more and without this code.
30FC	Exhaust fume turbo charger, density	Rare	2/14/2019	Came on once when 29E0 and 29E1 were thrown.

Diagnostics Performed

- Logs. (don't know how to come to a conclusion on anything though...)
- After rough start up with codes 29DC and 29F2, high fuel pressure is a constant 2 on JB4 when driving (2 converts to 300 psi). Though after the car warms up and is turned off and on, the high fuel pressure goes between 4-11 (600-1,650 psi) with regular driving, and between 8-14 (1,200-2,100 psi) when WOT.
- Low fuel pressure seems to always be around 65-75 psi, and most often remains at about 66.
- Removed all spark plugs. All of them were dry, and no oil on the threads and generally looked good.
- Emptied oil catch can - very little amount of oil (9,000 miles since install)
- Also see Appendix for recent maintenance performed.
- **New Diagnostics Done:**
- Checked PCV valve and vent hose, both made noise when shaking back and forth (flapper/valve moving back and forth) and they appeared to be fine.
- Noticed coolant was low and was sludgy. Black light revealed it has oil in it (was slightly green from Liqui Moly Molygen oil). Also noticed small leak and sludge build up around small hose that goes from coolant reservoir to top radiator hose. Topped off coolant with distilled water.
- Removed charge pipe. Small pooling of oil but didn't look horrible.

Possible Problems

- HPFP or fuel injectors? Unsure if HPFP because pressure seems to hold after the car is warm. HPFP was replaced under warranty at least 3 yr ago with previous owner. Unsure if injectors because spark plugs look good with no wetness or oil.
- Turbos - Pretty sure they are the culprit of the boost issues. Would they be part of the rough cold start and idle? I wouldn't think so. Also, I'm thinking maybe they have oil blow by which is causing the low oil every 2,000 miles. When I installed my charge pipe, the stock charge pipe and intercooler had a ton of

oil in them. Could there be so much oil blow by that it causes the rough start and idle if there's too much oil getting in the cylinder??? Randomly I'll notice white smoke coming out the exhaust while driving (after the car is warm). But it seems random and I've not seen white smoke when idling and I'm looking at the exhaust, or even if I rev the engine. Excessive blow by may be clogging the injectors which would cause hard cold starts. Also heard (<https://www.youtube.com/watch?v=OQeFqAG9liq>) that bad crankcase ventilation could cause oil blow by. Maybe there's an issue because my OCC had just a very small amount of oil in it after 9,000 miles. How would I check this?? Do I have a bad PCV valve and should it be upgraded?

My Proposed Solutions (what I'm leaning toward)

1. Replace PCV valve with upgraded one in hopes to reduce oil blow by. (Edit: After inspecting them, they seem okay.)
2. Replace turbos.
- 3.

Appendix A - List of Performance Modifications

- JB4 G5 (typically run on Map 5)
- DCI (BMW Dual Cone Performance Intake)
- VRSF Charge Pipe
- Tial BOV
- VRSF Catless Downpipes
- Corsa Exhaust (catless - full exhaust from downpipes back)
- BMS Oil Catch Can

- Fuel: Always premium. Never had e85.

Appendix B - Relevant Maintenance History

Most recent at top

- Oil + filter changed (Liqui Moly Molygen 5w-40)
 - 3/23/2019
 - 100,741 miles
- Engine air filter washed and oiled (I did measure and use the correct amount of oil)
 - 3/17/2019
 - 100,538 miles
- Cleaned VANOS solenoids
 - 3/9/2018
 - 90,928 miles
- Installed silicone vacuum lines

- 12/2/2017
 - 88,500 miles
- Walnut blasting to remove intake carbon deposits
 - 11/18/2017
 - 88,062 miles
- New Spark Plugs (NGK Laser Iridium 95770 gapped to 0.022 in)
 - 11/18/2017
 - 88,062 miles

drain fastener - grade 3 bolt will be lower.

Feed - feed fitting in $\frac{1}{8}$ pipe thread. Snug it into the feed. Thread sealer will be good. Liquid sealer. Just snug it in.