BMW OIL CONSUMPTION CHECKLIST PART 1

Complete part 1 only with a valid customer complaint of oil consumption.

All engines normally consume a certain amount of engine oil. This is necessary in order to properly lubricate the cylinder walls, pistons, piston rings etc. In addition, engines with less than 10,

000 miles will generally consume additional engine oil because the internal engine components are not fully seated. Therefore, engine oil consumption complaints received prior to 10,000 miles cannot be considered. Once a new or remanufactured engine has accumulated 10,000 miles this procedure should be used if there is a drastic change in the engine oil consumption rate (i.e. the engine oil consumption rate triples) under similar driving conditions

Dealer Name:			Vin Number:	
Technician:			Mileage:	
Date:			Engine Number:	
			Sale Date:	
Customer complaint (estimated oil consumption):				
Last engine oil service: Type of oil and viscosity used:				
BMW engine oil filter:	Yes No		If no, supply manufacture and part number:	
Last air filter replacement:				
BMW air filter:	Yes No		If no, supply manufacture and part number:	
Previous engine repairs (i.e. overheating, fuel injection failures, etc.):				
General engine condition, leaks, damage (circle one)				
Valve cover gasket: Front crankshaft seal: Rear crankshaft seal: Oil pan: Oil Cooler: Cylinder head gasket: Oil plugs: Oil supply and return lines: Turbo: Vacuum pump:	OK Not OK OK Not OK OK Not OK OK Not OK OK Not OK OK Not OK OK Not OK OK Not OK OK Not OK OK Not OK		Intake air tract connected properly: Oil in intake tract: Crankcase Ventilation System Non approved engine or induction system modifications: (explain below)	OK Not OK OK Not OK OK Not OK

Does the vehicle have smoke emitting from the tail pipe when idling or increasing and decreasing rpm?

MEASURING OIL CONSUMPTION

These measurements should only be considered after all of the points above have been reviewed.

Vehicles with N63TU – Measuring oil level electronically using the Oil Level Test Plan in ISTA/D

Applicable models and I-levels:

- F01 and F02 with the N63T engine, produced from 3/2013 and later with I-Level F001-13-03-501 or higher
- F06, F07, F12 and F13 with the N63T engine, produced from 3/2013 and later with I-Level F010-13-03-501 or higher
- F10 with the N63T engine produced from 7/2013 and later with I-Level F010-13-07-501 or higher
- F15 and F16, all I-Levels

Test plan path:

1. The engine will need to be at operating temperature before starting test plan.
2. Select “Service Function.”
3. Select “Drive.”
4. Select “Motor Electronics.”
5. Select “Motor Oil.”
6. Select “Oil Level.”
7. Select “Continue.”
8. Follow the steps as directed in the test plan to complete the measurement.

The test plan will identify the actual oil level, and will advise the amount of engine oil needed to correctly fill the engine when conducting an oil consumption test. After topping up the engine oil, perform the test plan one more time to ensure the oil level is correct. The vehicle must be driven 1,000 miles or until the next low engine oil message appears (whichever comes first). The oil level test plan must be performed again to identify the consumption level in the distance driven.

Vehicles with and without an engine oil dipstick (manual oil consumption measurement):

When a customer complaint of engine oil consumption is received, the engine oil must be drained, measured and the engine oil refilled. The vehicle must be driven 1,000 miles or until the next low engine oil message appears (whichever comes first). The oil must be drained again and measured to identify consumption level.

Do not complete part 2 at this time.

Oil Consumption Test Results:

Date:	
Oil Consumed:	
Miles Driven:	

DIAGNOSIS AFTER PART 1 OIL CONSUMPTION TEST

If the vehicle does not exceed the oil consumption specification for the engine then take no further action.

Or

If the result of the oil consumption test exceeds the specification for the engine then proceed to part 2 of this worksheet.

COMPRESSION TESTING AND CYLINDER LEAK DOWN PART 2

IMPORTANT! Complete part 2 only after exceeding the oil consumption specification during a valid oil consumption test as directed in the part 1. The compression test should be performed after the engine has reached operating temperature. When performing the test count the rotation of the engine crankshaft. The crankshaft shaft rotations for a valid test need to equal 4. Refer to ISTA/D for proper procedures.

1.	2.	3.	4.
5.	6.	7.	8.
9.	10.	11.	12.

When comparing the values of all cylinders the compression results should not vary by more than 2 bar. If the difference is greater than 2 bar then proceed to section B. Cylinder Leakage Test. Do not allow the engine to cool, perform the cylinder leakage test immediately.

A. Cylinder Leakage Test Results:

1.	2.	3.	4.
5.	6.	7.	8.
9.	10.	11.	12.

The cylinder leakage shall not exceed 15% for any individual cylinder. If the value exceeds this limit then the location of leakage needs to be identified before continuing (i.e. rings, intake valves, exhaust valves head gasket, etc.)

BORESCOPE INSPECTION

Piston Top Condition:

1.	2.	3.	4.
5.	6.	7.	8.
9.	10.	11.	12.

Cylinder Wall Condition:

1.	2.	3.	4.
5.	6.	7.	8.
9.	10.	11.	12.

Can any wear or damage be seen detected (scoring, cranks, etc.)? _____

_____

Do any of the cylinders have excessive carbon buildup or are any abnormally clean? _____

_____

Intake Valve Condition:

1.	2.	3.	4.
5.	6.	7.	8.
9.	10.	11.	12.

Exhaust Valve Condition:

1.	2.	3.	4.
5.	6.	7.	8.
9.	10.	11.	12.

Do any of the valves have excessive carbonization? _____

_____

Are any of the valves abnormally clean when compared to the others? _____

DIAGNOSIS TIPS TO CONSIDER

Carbonization in a direct injection engine is normal and does not have any detectable effect on drivability.

Excessive carbonization can be attributed to oil consumption.

When visually comparing the pistons, combustion chambers, intake valves or exhaust valves, signs of abnormally clean areas with less carbon deposits or oil soaked carbon deposits is an indication of oil consumption.