SIB 01 21 18 2021-06-10

N63: OIL CONSUMPTION CLASS ACTION SETTLEMENT DIAGNOSIS/REPAIRS (VERSION 13.0)

MODELS

Certain of the following US-specification BMW vehicles sold or leased in the United States and Puerto Rico are included:

E70 (X5 xDrive50i Sports Activity Vehicle) (N63) Model Years (MY) 2010, 2011, 2012 and 2013	E71 (X6 xDrive50i sports Activity Coupe) (N63) MY 2009, 2010, 2012, 2013 and 2014	E72 (ActiveHybrid X6 SAC) (N63) MY 2009, 2010 and 2011	F01 (750i Sedan and ALPINA B7) (N63) MY 2009, 2010, 2011 and 2012
F01 (750i xDrive Sedan and ALPINA B7) (N63) MY 2010, 2011 and 2012	F02 (750Li Sedan and ALPINA B7) (N63) MY 2009, 2010, 2011 and 2012	F02 (750Li xDrive Sedan and ALPINA B7) (N63) MY 2010, 2011 and 2012	F04 (ActiveHybrid 750i Sedan) (N63) MY 2010 (one VIN), 2011, 2012 and 2013
F07 (550i Gran Turismo) (N63) MY 2010, 2011 and 2012	F07 (550i x Drive Gran Turismo) (N63) MY 2010, 2011 and 2012	F10 (550i Sedan) (N63) MY 2010, 2011, 2012 and 2013	F10 (550i xDrive Sedan) (N63) MY 2010, 2011, 2012 and 2013
F12 (650i, 650i xDrive Convertible) (N63) MY 2011 and 2012	F13 (650i, 650i xDrive Coupe) (N63) MY 2011 and 2012		

INFORMATION

This Service Information bulletin applies to:

- Class vehicles in operation on the road (applicable N63 engine model vehicles); by
- Class members (Class Vehicle owners on the date this settlement became effective)

Additionally, it provides diagnostic/repairs instructions, as well as Warranty Information for performed remedies.

Also, please familiarize yourself with other important Service Bulletins pertaining to the N63 Class Action Settlement:

- SI B01 29 18 - N63 Engine Vehicles: Class Action Settlement For Engine Oil Consumption/Battery Drain / OVERVIEW
- SI B01 22 18 - N63 Engine Class Action Settlement: Battery Service Benefit
- SI B01 23 18 - N63 Engine Oil Consumption/Battery Drain Class Action Law Suit Settlement: Future Engine Oil Service Benefit
- SI B01 28 18 - N63 Engine Repairs: RENTAL CARS for OUT OF SERVICE VEHICLES

Important Note

The service (repair) benefit that is provided by this settlement is subject to the same vehicle eligibility requirements, limitations, and exclusions that apply to the BMW New Vehicle Limited Warranty.

Specifically, the coverage shall be null and void because the:

- **Vehicle has been declared a total loss or sold for salvage purposes, the true mileage cannot be determined, the Vehicle Identification Number (VIN) has been altered and cannot be determined, and/or the**
- **Applicable covered vehicle components were previously replaced with used or salvaged automobile parts.**

The BMW DCSnet Warranty Vehicle Inquiry (WVI) may not contain a corresponding Vehicle Comment that identifies that one or more of the above non-eligible vehicle situations apply. In these cases, please use any other resources that are available at your center to confirm the vehicle's eligibility (for example, CARFAX®).

If it is determined the vehicle is non-eligible, or if you are uncertain of the vehicle's eligibility, or you do not have access to any other resources; please create a TSARA TeileClearing Hotline case that includes or identifies the issues that could affect the vehicle's eligibility and wait for a response before proceeding.

SITUATION

While engine oil consumption may create a customer inconvenience, in the short term it should not cause any drivability problems that would prevent normal day-to-day operational use of the vehicle.

Some Class Vehicles will pass the oil consumption test (no repair necessary) even though a Low Oil Level indicator/message is displayed between required engine oil services.

It is important that the engine oil level stays at and is maintained above the minimum, so that the Low Oil Level indicator/message is not displaying.

Refer to the Attachment B012118 for Procedure on diagnosing the oil consumption issue, Parts, and Warranty Information.

Supporting Materials
picture_as_pdf B012118 N63 Oil Consumption (OC) Claim Info 10_18_19.pdf
picture_as_pdf B012118 N63 Blue Smoke (BS) Checklist_10_18_19.pdf
picture_as_pdf B01_21_18_N63_Smoke_Instructions_06_21_19.pdf
picture_as_pdf B012118Procedure.pdf
picture_as_pdf B012118 N63 Blue Smoke (BS) Claim Info 10_18_19.pdf
picture_as_pdf B01_21_18_N63_Oil_Consumption_Instructions_06_21_19.pdf
picture_as_pdf B012118 N63 Oil Consumption (OC) Checklist_10_18_19.pdf
picture_as_pdf B012118.pdf

CLAIM SUBMISSION INFORMATION

Set up oil consumption tests for 1, 2, or 3 as applicable (Close the RO and submit)

Defect Code:	**1100900100**	**E7x F0x F1x N63 Set up engine oil consumption test**
Labor Operation	**Description**	**Labor Allowance**
00 66 283	Engine oil consumption test set-up (includes connecting an approved battery charger/power supply and performing a vehicle test, use ISTA/D Motor Oil Quantity Test Plan, mark the oil pan drain plug and the filter cap) (Main work)	Refer to AIR
00 66 979	Engine oil consumption test set-up (includes connecting an approved battery charger/power supply and performing a vehicle test, use ISTA/D Motor Oil Quantity Test Plan, mark the oil pan drain plug and the filter cap) (Plus work)	Refer to AIR

After the first set up for oil consumption test (DC 11 00 90 01 00 and applicable labor on a prior separate repair order):

Measure engine oil consumption (New Repair Order) - Passes the first (1st) time

Defect Code:	**1100900200**	**E7x F0x F1x N63 Measure engine oil consumption, no oil consumption found (1st completed test)**
Labor Operation	**Description**	**Labor Allowance**
00 66 284	Vehicle returns: perform a vehicle test (includes connecting an approved battery charger/power supply and performing a vehicle test, use ISTA/D Motor Oil Quantity Test Plan, mark the oil pan drain plug and the filter cap) (Main work)	Refer to AIR
Or:		
00 66 983	Vehicle returns: perform a vehicle test (includes connecting an approved battery charger/power supply and performing a vehicle test, use ISTA/D Motor Oil Quantity Test Plan, mark the oil pan drain plug and the filter cap) (Plus work)	Refer to AIR

And again, after the second set up for oil consumption test (DC 11 00 90 01 00 and applicable labor on a prior separate repair order):

SI B01 21 18: Engine Oil Consumption (OC) Set up and Measure (No Visible Smoke from Tailpipes)

Measure engine oil consumption (New Repair Order) - Passes the second (2nd) time

Defect Code:	**1100900300**	**E7x F0x F1x N63 Measure engine oil consumption, no oil consumption found (2nd completed test)**
Labor Operation	**Description**	**Labor Allowance**
00 66 285	Vehicle returns: perform a vehicle test (includes connecting an approved battery charger/power supply and performing a vehicle test, use ISTA/D Motor Oil Quantity Test Plan, mark the oil pan drain plug and the filter cap) (Main work)	Refer to AIR
Or:		
00 66 985	Vehicle returns: perform a vehicle test (includes connecting an approved battery charger/power supply and performing a vehicle test, use ISTA/D Motor Oil Quantity Test Plan, mark the oil pan drain plug and the filter cap) (Plus work)	Refer to AIR

And again, after the third set up for oil consumption test (DC 11 00 90 01 00 and applicable labor on a prior separate repair order):

Measure engine oil consumption (New Repair Order) - Passes the third (3rd) time

Defect Code:	**1100900400**	**E7x F0x F1x N63 Measure engine oil consumption, no oil consumption found (3rd completed test)**
Labor Operation	**Description**	**Labor Allowance**
00 66 286	Vehicle returns: perform a vehicle test (includes connecting an approved battery charger/power supply and performing a vehicle test, use ISTA/D Motor Oil Quantity Test Plan, mark the oil pan drain plug and the filter cap) (Main work)	Refer to AIR
Or:		
00 66 987	Vehicle returns: perform a vehicle test (includes connecting an approved battery charger/power supply and performing a vehicle test, use ISTA/D Motor Oil Quantity Test Plan, mark the oil pan drain plug and the filter cap) (Plus work)	Refer to AIR

Or, when the:

Measure Engine Oil Consumption Does not Pass/Fails

New Repair Order for 1, 2 or 3 as applicable

Labor Operation	**Description**	**Labor Allowance**
00 66 284; 00 66 285; or 00 66 286	Vehicle returns: perform a vehicle test (includes connecting an approved battery charger/power supply and performing a vehicle test, use ISTA/D Motor Oil Quantity Test Plan, mark the oil pan drain plug and the filter cap) (Main work)	Refer to AIR
Or:		
00 66 983; 00 66 985; or 00 66 987	Vehicle returns: perform a vehicle test (includes connecting an approved battery charger/power supply and performing a vehicle test, use ISTA/D Motor Oil Quantity Test Plan, mark the oil pan drain plug and the filter cap) (Plus work)	Refer to AIR

SI B01 21 18: Engine Oil Consumption (OC) Set up and Measure (No Visible Smoke from Tailpipes)

Then, work through the following diagnosis as needed:

Labor Operation	Description	Labor Allowance
00 66 989	Remove and install clean air pipes, underbody paneling/visual inspection of the: • exhaust turbochargers and both turbochargers/oil return lines and return line cover; and the • front cover, upper oil pan; and the • engine backside (Transmission) for oil leakage; and • borescope inspect the engine valley as necessary	Refer to AIR
Or:		
00 66 990	Remove and install clean air pipes, underbody paneling/ visual inspection of the: • exhaust turbochargers and both turbochargers/oil return lines and return line cover; and the • front cover, upper oil pan; and the • engine backside (Transmission) for oil leakage; • perform the timing chain test plan; and • borescope inspect the engine valley as necessary	Refer to AIR
Or:		
00 66 991	Remove and install clean air pipes, underbody paneling/ visual inspection of: • exhaust turbocharger both turbochargers/oil return lines and return line cover; • front cover, upper oil pan; • engine backside (Transmission) for oil leakage; • perform the timing chain test plan; and • cylinder compression test; and • borescope inspect the engine valley as necessary	Refer to AIR
And:		
00 58 677	TeileClearing, lump-sum fee (SI B01 01 07)	1 FRU

N63 Replacement Engine Assembly Part Supply

The replacement N63 engine assembly part supply has stabilized, this will significantly reduce the number of vehicles that are diagnosed and awaiting (pending) engine (assembly) replacements due to insufficient part availability.

Accordingly, in place of using "DC 11 00 90 16 00," select the corresponding diagnosis with engine replacement Defect Code below that applies for these claim submissions.

SI B01 21 18: Engine Oil Consumption (OC) Set up and Measure (No Visible Smoke from Tailpipes)

Based on the results of above:

Engine Replacement is Necessary - Engine Fails One of the Inspections/Test Procedures

Qualifying engine (assembly) replacement can be performed during the current workshop visit

Claim and submit for the applicable diagnosis above and the N63 engine replacement using the Defect Code below that applies.

Defect Code:	**1100900700**	**E7x F0x F1x N63 Measured engine oil consumption excessive, diagnosis and replace engine**
Or:		
Defect Code:	**1100900800**	**E7x F0x F1x N63 Measured engine oil consumption excessive, diagnosis, replace engine and both turbochargers**

Labor Operation	**Description**	**Labor Allowance**
00 66 992	**Replace the engine** (includes remove and install the old turbochargers or replacing both turbochargers)	Refer to AIR

Or:

If the Class Member "rejects" a N63 engine replacement procedure that qualifies.

Claim the applicable diagnosis labor operations above and submit using the Defect Code below.

Defect Code:	**1100901800**	**E7x F0x F1x N63 Engine diagnosis, engine replacement rejected by customer**

Or:

The Class Member "approves" the repair, however, the qualifying N63 engine replacement repair is pending due to awaiting parts to become available from BMW.

Claim the applicable diagnosis labor operations above and submit using the Defect Code below.

Defect Code:	**1100901600**	**E7x F0x F1x N63 Measured engine oil consumption excessive, diagnosis, engine replacement pending (see above)**

Or, if the vehicles **does not fail** one of the above inspections/test procedures, then:

SI B01 21 18: Engine Oil Consumption (OC) Set up and Measure (No Visible Smoke from Tailpipes)

Engine Replacement is Not Necessary - Measure Engine Oil Consumption Does not Pass but the Engine Does Not Fail One of the Inspections/Test Procedures

Measure Engine Oil Consumption 1, 2 or 3 and Diagnosis

Labor Operation	Description	Labor Allowance
00 66 284; 00 66 285; or 00 66 286	Vehicle returns: perform a vehicle test (includes connecting an approved battery charger/power supply and performing a vehicle test, drain and measure the engine oil, mark the oil pan drain plug and the filter cap) (Main work)	Refer to AIR
Or:		
00 66 983; 00 66 985; or 00 66 987	Vehicle returns: perform a vehicle test (includes connecting an approved battery charger/power supply and performing a vehicle test, drain and measure the engine oil, mark the oil pan drain plug and the filter cap) (Plus work)	Refer to AIR
And:		
00 66 991	Remove and install clean air pipes, underbody paneling/ visual inspection of: • exhaust turbocharger both turbochargers/oil return lines and return line cover; • front cover, upper oil pan; • engine backside (Transmission) for oil leakage; • perform the timing chain test plan; and • cylinder compression test; and • borescope inspect the engine valley as necessary	Refer to AIR
And:		
00 58 677	TeileClearing, lump-sum fee (B01 01 07)	1 FRU

And, with the applicable labor above together with the engine repair performed:

Defect Code:	**1100900500**	**E7x F0x F1x N63 Measured engine oil consumption excessive, diagnosis, replace engine valve stem seals and replace cylinder head cover oil separators**

Labor Operation	Description	Labor Allowance
00 66 993	Perform additional diagnosis, replace the: • valve stem seals; and the • cylinder head covers oil separators	Refer to AIR

Or, **with** turbocharger-related repairs

SI B01 21 18: Engine Oil Consumption (OC) Set up and Measure (No Visible Smoke from Tailpipes)

Defect Code:	**1100900600**	**E7x F0x F1x N63 Measured engine oil consumption excessive, diagnosis, replace the engine valve stem seals, replace cylinder head cover oil separators and replace both turbochargers**

Labor Operation	**Description**	**Labor Allowance**
00 66 994	Perform additional diagnosis, replace the: • valve stem seals; • cylinder head cover oil separators; and • replace both turbochargers and/or the oil return line seals and return line cover	Refer to AIR

Or:

Defect Code:	**1100902000**	**E7x F0x F1x N63 Excessive oil consumption, diagnose engine, replace valve seals, cylinder head cover, turbos, repair oil leaks**

Labor Operation	**Description**	**Labor Allowance**
00 67 682	Perform additional diagnosis, replace the: • valve stem seals; • cylinder head cover oil separators; • rear crankshaft and rear engine cover seals; • lower oil pan gasket; and • replace both turbochargers; and/or the oil return line seals and return line cover	Refer to AIR
Or:		
00 67 683	Perform additional diagnosis, replace the: • valve stem seals; • cylinder head cover oil separators; • rear crankshaft and rear engine cover seals; and • replace both turbochargers; and/or the oil return line seals and return line cover	Refer to AIR
Or:		
00 67 684	Perform additional diagnosis, replace the: • valve stem seals; • cylinder head cover oil separators; and the • lower oil pan gasket; and • replace both turbochargers; and/or the oil return line seals and return line cover	Refer to AIR

Or, **without** turbocharger-related repairs

SI B01 21 18: Engine Oil Consumption (OC) Set up and Measure (No Visible Smoke from Tailpipes)

Defect Code:	**1100901900**	**E7x F0x F1x N63 Excessive oil consumption, diagnose engine, replace valve seals, cylinder head cover, repair leaks**

Labor Operation	Description	Labor Allowance
00 67 685	Perform additional diagnosis, replace the: • valve stem seals; and the • cylinder head cover oil separators; and the • rear crankshaft and rear engine cover seals; • lower oil pan gasket	Refer to AIR
Or:		
00 67 686	Perform additional diagnosis, replace the: • valve stem seals; and the • cylinder head cover oil separators; and the • rear crankshaft and rear engine cover seals	Refer to AIR
Or:		
00 67 687	Perform additional diagnosis, replace the: • valve stem seals; and the • cylinder head cover oil separators; and the • lower oil pan gasket	Refer to AIR

And, applicable:

Sublet – Materials

Sublet Code 4	See sublet reimbursement calculation below	Reimbursement for used quantities of required operating fluids, including engine oil only when it is not claimed under the BMW Maintenance Program (applicable BMW part numbers). Please do not use these part numbers for claim submission.

Sublet reimbursement calculation for claiming the applicable repair-related bulk materials (BMW part numbers) is at the dealer net price amount for the quantities used plus your center's handling.

Enter this material cost in sublet and itemize the amount on the repair order and in claim comment section.

N63 ENGINE BLUE SMOKE CHECKLIST

Date:		**Record the results of the vehicle's engine inspection and measurements below.** **Use this checklist for "blue smoke" complaints only.**
Dealer Number:	**VIN (7)**	
RO number	**Engine Serial Number**	

✓	Concern is "blue smoke" for tailpipes.	Visual inspection for the exhaust tailpipes for blue smoke	Labor operations	00 66 287 (995)

1.	Is there blue smoke emitting from the tailpipes (Running engine to operating temperature) as described in B01 21 18? YES or No (No further repair)

Five Point Check and Results: Only provide the answers to the applicable questions in steps 2 through 9, unless otherwise directed.

2.	Is the front engine cover leaking?	YES or NO
3.	Is the upper engine oil pan leaking?	YES or NO
4.	Is the engine oil leaking from the lower bell housing area?	YES or NO
5.	Only if 2 or 3 or 4 are answered with "YES". Use the bore scope (10). Is the oil return cover or oil return line gaskets leaking oil? Provide photo in the case using the borescope regardless if it is found wet or	YES or NO If **YES**, do not replace the engine for oil leakage and proceed to step 6.
6.	Are the turbochargers leaking engine oil?	YES or NO
7.	Did the vehicle fail the timing chain test plan?	YES or NO
8.	Was a cylinder compression test performed?	YES or NO

Attachment to B01 21 18

Note: The cylinder compression test should be performed after the engine has reached operating temperature. When performing this test, count the rotations of the engine crankshaft and apply the same rotations to each additional cylinder of the compression test. The industry standard is four (4) rotations per cylinder.

9.	Test Plan Compression Test Results: Did the cylinders exceed the specification	YES or NO

When comparing the values of all cylinders, the compression results should not vary by more than 2.5 bar or 36.25 PSI. If the difference is greater than 2.5 bar or 36.25 PSI, then the complete engine will need to be replaced.

If the test plan was not used, then document the compression test results by cylinder in the table below

1.	2.	3.	4.
5.	6.	7.	8.

Vehicles that FAIL any of tests: Take a photo of only page 1 and submit a case with the other required pictures for authorization to the TSARA TeileClearing Hotline and wait for a response. Weekend and holiday submissions must wait for a response on the following business day before starting any repairs.
Vehicles that PASS all of the tests: Do not require any engine repairs and do not need a TSARA TeileClearing authorization.

N63 ENGINE BLUE SMOKE CHECKLIST

✓	The diagnosis scenarios are listed below, check the one that best describes the diagnosis result.	Recommended Repair Procedures	Labor Op Main (Plus) Code	Defect Code
	Vehicle fails engine oil consumption measure test/inspections		Plus (see above):	
	Engine oil leakage (2 and/or 3) found	Replace the engine	00 66 997 & 00 67 500	**1100901100**
	Engine oil leakage (2 and/or 3) and turbochargers found leaking oil (6)	Replace the engine and turbochargers		**1100901200**
	Only the timing chain test fails (7)	Replace engine	00 66 998 & 00 67 500	**1100901100**
	Timing chain test fails (7), and turbochargers (5) are leaking oil.	Replace engine and turbochargers		**1100901200**
	Only the cylinder compression test fails (8)	Replace engine	00 66 999 & 00 67 500	**1100901100**
	Cylinder compression test (8) fails and turbochargers (5) are leaking oil	Replace engine and turbochargers		**1100901200**
	Class Member **rejects** replacement engine, claim applicable diagnosis labor operations with this defect code		See B01 21 18 and above	**1100901800**
	(Part availability has stabilized): Replacement engine not available, claim applicable diagnosis labor operations with this defect code		See B01 21 18 and above	**1100901700**
	Steps 2, 3, 7 and 9 – OK, engine replacement is not necessary: performed additional diagnosis and found:			
	All other items ok	(A) Replace the valve stem seals and cylinder head covers oil separators	00 66 999 & 00 67 501	**1100900900**
	Turbos and/or lines (6) leaking	With (A), replace both turbochargers and/or the oil return line seals/return line cover seals	00 66 999 & 00 67 502	**1100901000**
	Rear oil leak (4), found valley dry (10) and the lower oil pan and turbos and/or lines (6) leaking	With (A), replace rear crankshaft and rear engine cover seals; lower oil pan gasket; replace both turbochargers; and/or the oil return line seals/return line cover seals	00 66 999 & 00 67 688	**1100902200**
	Found Step (10) ok, found rear oil leak (4), and turbos and/or lines (6) leaking	With (A) replace; rear crankshaft and rear engine cover seals; replace both turbochargers; and/or the oil return line seals/return line cover seals	00 66 999 & 00 67 689	
	Found Step (4 and 10) ok, found the lower oil pan and turbos and/or lines (6) leaking	With (A) replace the lower oil pan gasket; replace both turbochargers; and/or the oil return line seals/return line cover seals	00 66 999 & 00 67 690	
	Rear oil leak (4), found valley dry (10) and a lower oil pan leak	With (A). replace the rear crankshaft and rear engine cover seals and lower oil pan gasket	00 66 999 & 00 67 691	**1100902100**
	Found Step (10) ok, found rear oil leak (4)	With (A) replace the rear crankshaft and rear engine cover seals	00 66 999 & 00 67 692	
	Found Step (4 and 10) ok, found lower oil pan leak	With (A) replace the lower oil pan gasket	00 66 999 & 00 67 693	

Retain copy of this checklist (both pages) in the vehicle file. Provide copy of page 2 to your booker/warranty admin for claims processing.

B01_21_18_N63_Smoke_Instructions June 2019

Changes are highlighted with UPDATE!.

1. Start the vehicle and allow it to reach operating temperature, approximately 15 minutes or less.

2. Quickly push-and-release the accelerator pedal from idle position to between 2,000 and 3,000 RPM, then immediately allow the engine to return to idle and observe the exhaust tail pipes for smoke.

   If smoke is present continue to step 3.

   If smoke is **NOT** present then refer to the "N63 Oil Consumption Instructions" attached to SI B01 21 18.

IMPORTANT! UPDATE!

- **If the vehicle is smoking from the exhaust then a clear video or picture of the smoke must be submitted with the TSARA TeileClearing Hotline case. The video or picture must include the license plate.**

3. Inspect or measure the following 5 items in order. Note the inspection results on the attached "N63 Smoke Checklist."

   - Engine front cover
   - Engine upper oil pan
   - Lower bell housing/cylinder heads valley area
   - Perform the timing chain test plan
   - Perform a compression test

IMPORTANT!

- **If the engine is leaking engine oil, the oil leak must be an active major engine oil leak, not seepage or wetness.**

All components or measurements that are found to be outside the specification need to be documented with pictures and submitted for authorization via a TSARA TeileClearing Hotline case at the end of this procedure.

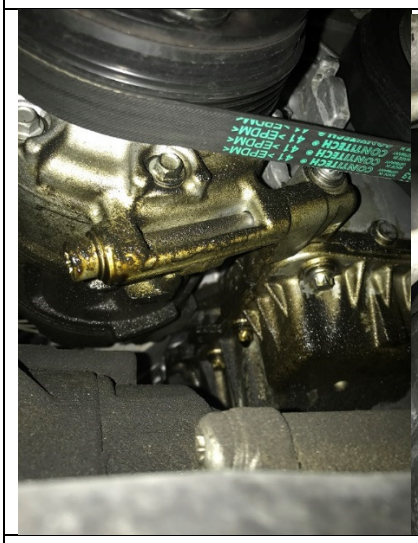
Vehicles that are not smoking or do not require any repairs do not need authorization.

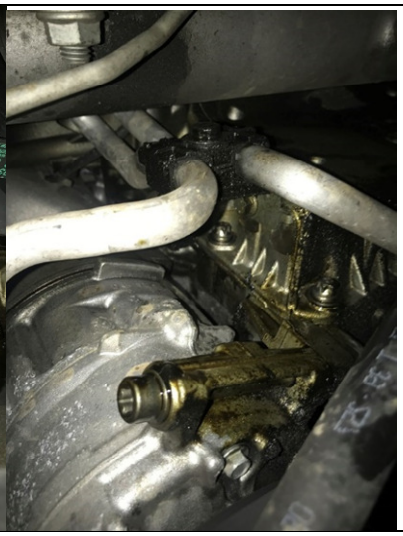
GENERAL NOTES REGARDING ENGINE OIL LEAKS:

"Oil Leaks" are being defined as clearly visible oil presence (like oil drops) at the engine components (e.g. area of oil pan, front cover, etc.), and in their vicinity. Also, large visible oil stains (or oil accumulation) on the underbody panels are indication of oil leaks, causing a substantial oil capacity loss.

The black (dirt stained) "wetness" marks on the engine components, DO NOT qualify as oil leaks.

4. Inspect the front engine cover for engine oil leakage.





Front cover is **not** leaking. Go to step 5.

Front cover is leaking. Go to step 7.

5. Inspect the upper engine oil pan for engine oil leakage.

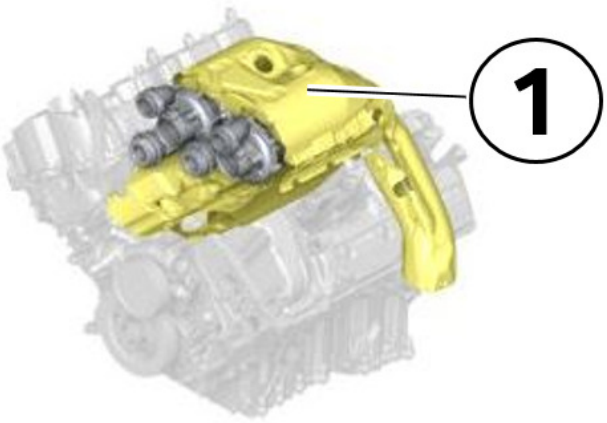
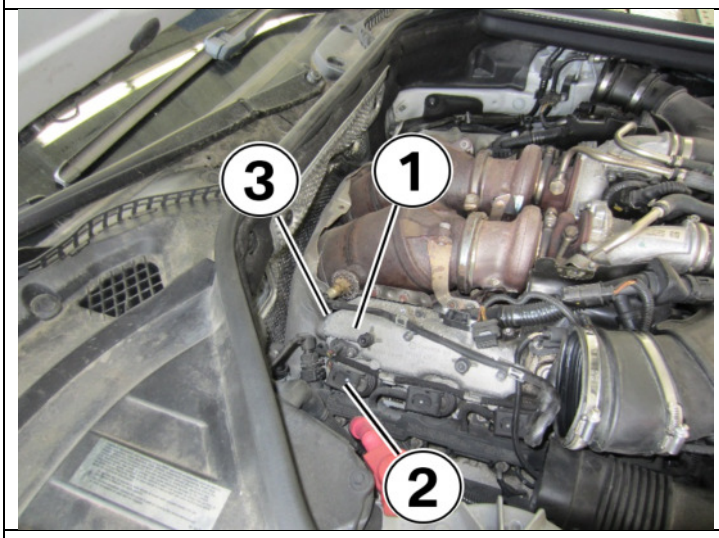
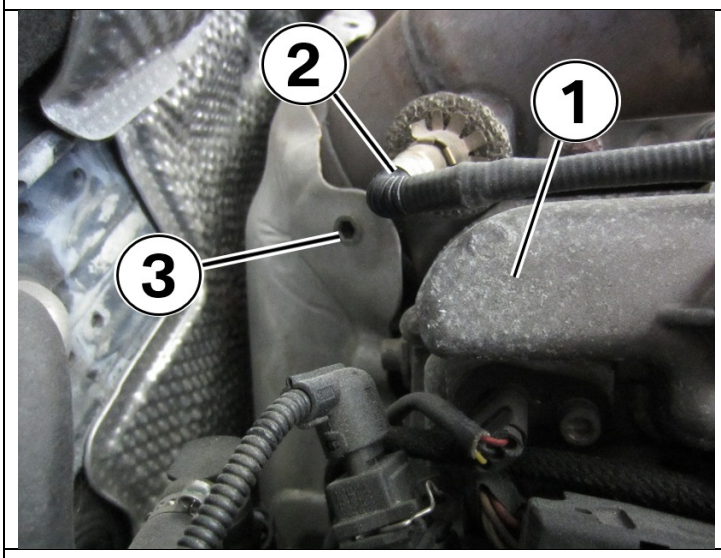
The upper engine oil pan is **not** leaking. Go to step 6.

The upper engine oil pan is leaking. Go to step 7.

6. Inspect the lower bell housing for engine oil leakage

The lower bell housing is **not** leaking. Go to step 8.

The lower bell housing is leaking. Go to step 7.

7. Turbocharger oil line diagnosis.	
	Remove the heat shield (1) to diagnose the engine oil leak. Refer to Repair Instruction 11 65 180 Removing and installing/replacing heat shield at top.
	The illustration shows an overview of the components found on cylinder bank 1. Cylinder head cover (1) Cylinder # 4 (2) Inspection location (3)
	The illustration shows an overview of the components frond on cylinder bank 1. Cylinder head cover (1) Bank 1 post O2 sensor (2) Heat shield mounting hole (3)

Preparing for the inspection:

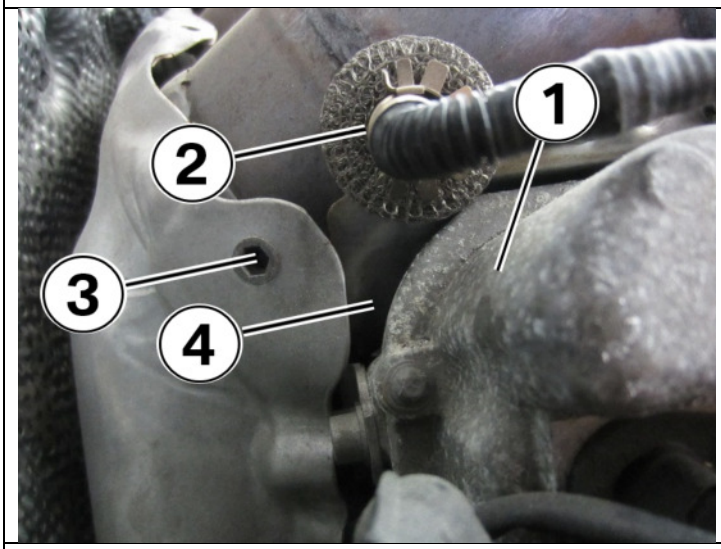
Bore scope specifications:

The recommended diameter of the fiber optic cable (imager) should not be greater than 5.5 mm. The 8 mm fiber optic cable (imager) will work but it is very tight and damage may occur to the larger cable and imager.
The recommended borescope and imager can be found at www.centersolutions.com or refer to SI B04 19 15 for more information about the BMW Equipment Program.

Equipment Program Part Numbers:

107 - BK5000 - SNAP ON Video Scope

107- BK8000 – 5.5 mm Dual View Side Imager



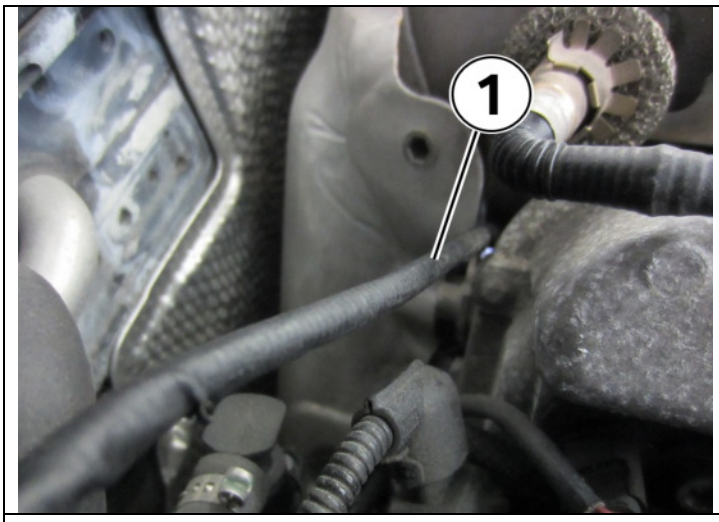
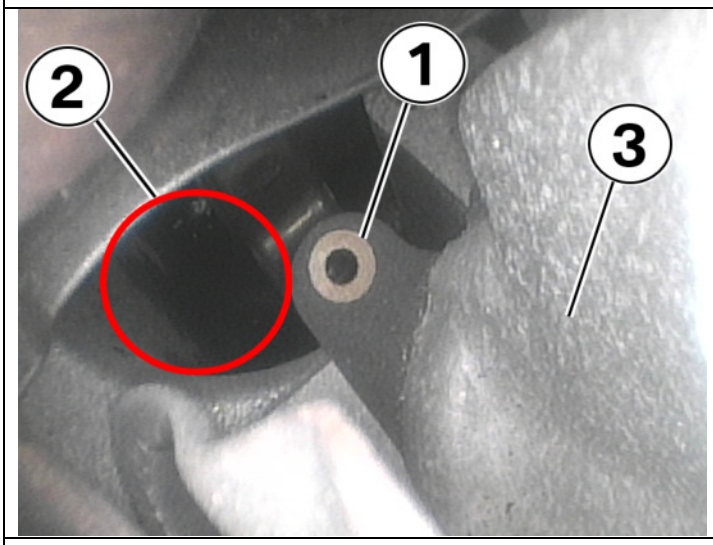
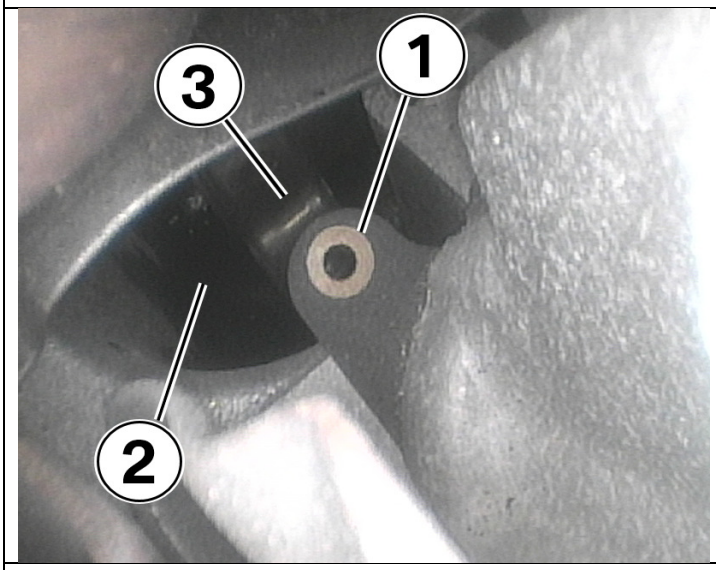
The illustration shows an overview of the components frond on cylinder bank 1.

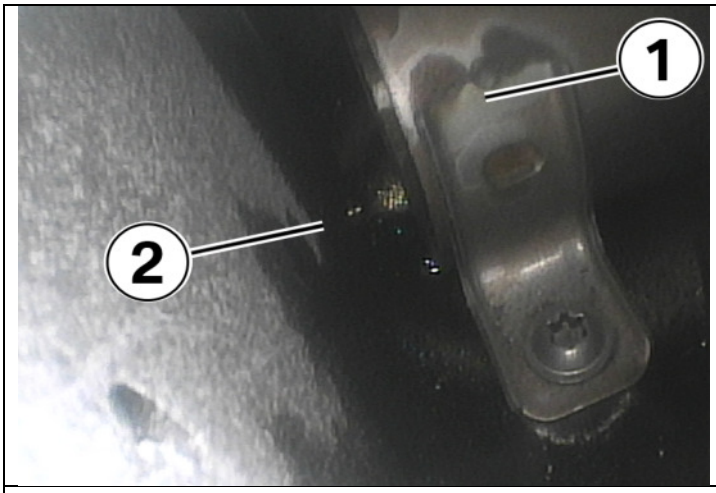
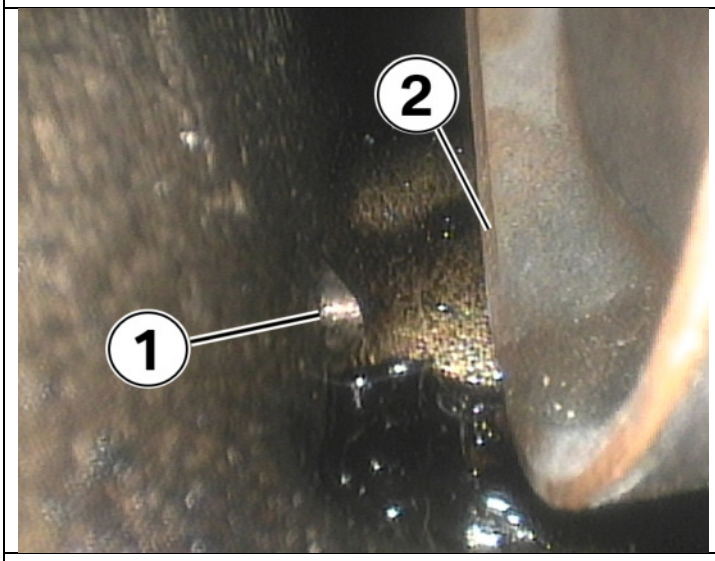
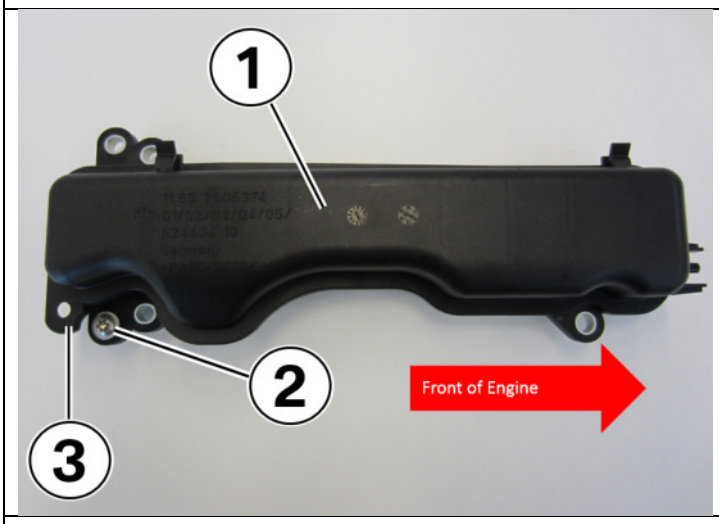
Cylinder head cover (1)

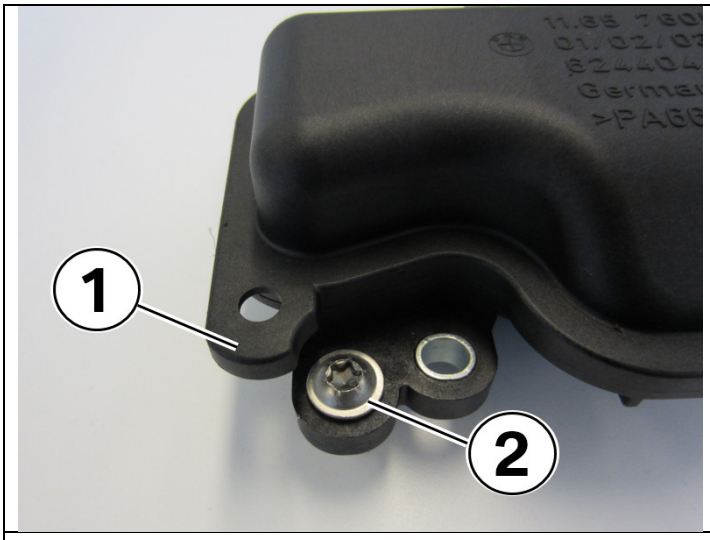
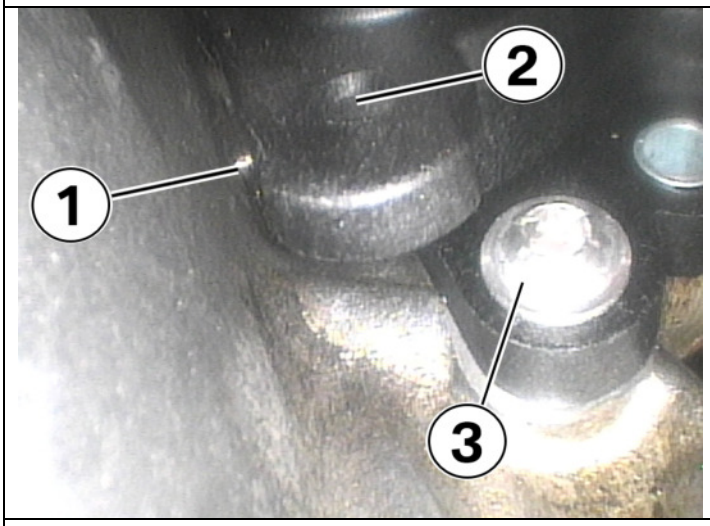
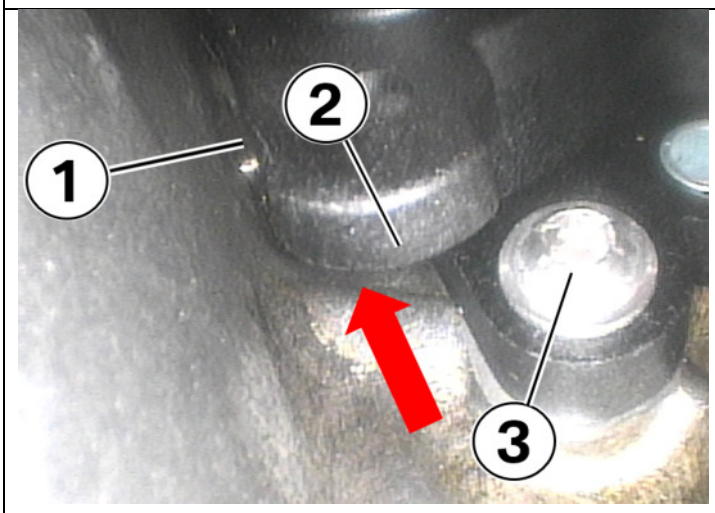
Bank 1 post O2 sensor (2)

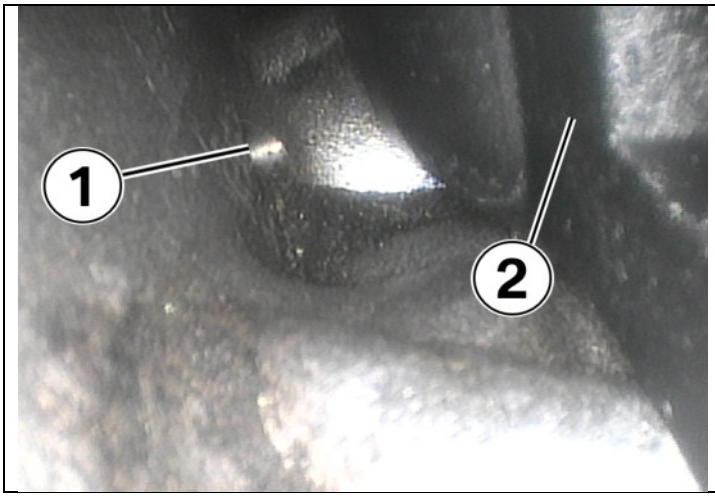
Heat shield mounting hole (3)

Insert bore scope here (4) on an angle downward.

	Approach angle of the bore scope (1) is approximately 45 degrees.
	After inserting the bore scope you must locate the cylinder head gasket tab. (1). The tab is approximately 135 mm strait down from original entry point. Cylinder head gasket tab (1) Gap in heat shields (2) Cylinder head (3)
	Feed the bore scope past the left side (1) of the cylinder head gasket tab (2) towards the vacuum reservoir (3).

	Continue to push the bore scope towards the vacuum reservoir (1). The engine valley drain hole is location is just to the left of the vacuum reservoir (2). Metal vacuum reservoir shown in photo. As the bore scope approaches the drain hole it will become more apparent.
	Inspect the surrounding area of the engine valley drain hole (1). Engine valley drain hole (1) Metal vacuum reservoir (2) shown. This is a clean picture. No oil can be seen in the oil drain hole (1). The dark material at the bottom of the photo is dust and dirt. This material appears to be reflective but it is dry
	It is possible that a black plastic vacuum reservoir (1) is installed. This illustration provides an overview of the entire component and specific points of the component. Reservoir (1) Reservoir mounting screw (2) Plastic vacuum reservoir tab (3)

	Plastic vacuum reservoir tab (1) Mounting screw (2)
	Diagnosis in the vehicle: It may be more difficult to position the bore scope but it will only take a few minutes more to make the diagnosis. Engine valley drain hole (1) Plastic vacuum reservoir tab (2) Reservoir mounting screw (3)
	Continue to push bore scope down ward towards the plastic vacuum reservoir tab (2). The bore scope needs to be moved towards the direction of the red arrow and under the tab (2) to have the best viewing angle of the engine valley drain hole (1). Engine valley drain hole (1) Plastic vacuum reservoir tab (2) Reservoir mounting screw (3)

	Once the bore scope has gone under the plastic reservoir tab then the engine valley drain hole (1) and surrounding area can be clearly inspected. The dark material at the bottom of the photo is dust and dirt. This material appears to be reflective but it is dry. Engine valley drain hole (1) Plastic vacuum reservoir (2)

If engine oil is found in the valley area, then the root cause of the engine oil leak resides in the components on top of the engine i.e. turbocharger oil lines cover, turbo charger, etc. Further basic diagnosis will be needed to find the root cause this engine oil leak. Do not remove the transmission from the vehicle. Go to Step 8.

If NO engine oil residue is found at the engine valley drain hole, but an original visual inspection indicated leak in the bell housing area, the root cause of the engine leak resides in the rear main seal and rear engine cover. Do not remove transmission from the vehicle. Go to step 8.

If NO engine oil residue is found at the engine valley drain hole, then the root cause of the engine oil leak will be related to the original visual inspection of front cover, or oil pan. Go to step 12.

Using the borescope, provide a picture of the engine valley drain hole regardless if oil is present or not.

8. Perform the timing chain test plan.

All Models: Timing Chains Test Plan path:

1. Select “Vehicle management”
2. Select “Troubleshooting”
3. Select “Function structure”
4. Select “Powertrain”
5. Select “Engine electronics, quality control valve (MSV)”
6. Select “Valve gear”
7. Select “Start Search”
8. From the list of available test plans, select “VANOS solenoid valve, exhaust” or “Exhaust Camshaft Sensor”
9. Select “Continue”
10. Select “VANOS Solenoid Valve”
11. Select “Display”
12. Select “Continue test module” and “Next”
13. Select “Timing chain test” and follow the steps to complete the test plan.
14. If the test plan asks “Solenoid valves ok?” Select “Yes”.
15. Follow the test plan steps to check the timing chain.
16. Test plan will conclude with the statement “Timing chain is OK” or “Timing chain is not OK”.

If the test plan results indicate the timing chains are not stretched (“OK”), then go to step 9.

Or

If the test plan results indicate the timing chains are stretched (“not OK”), then go to step 14.

9. Preform the compression test.

Test Plan path:

1. Select “Vehicle management”
2. Select “Service functions”
3. Select “Powertrain”
4. Select “Engine Electronics quality control (MSV)”
5. Select “Compression test”
6. The compression test plan and the compression test repair instructions will be shown on the screen. Review the compression test repair instruction to become more familiar with the tools and the procedure before starting the compression test plan.
7. Select “ABL Compression test”
8. Follow the test plan steps to complete the compression tests.

For reference the compression test procedure instructions can also be found in Repair Instruction 11 00 039 “Checking compression of all cylinders”

For the compression test procedure instructions refer to Repair Instruction 11 00 039 “Checking compression of all cylinders”

The compression test should be performed after the engine has reached operating temperature. When performing the test count the rotations of the engine crankshaft and apply the same rotations to each cylinder compression test. The industry standard is 4 rotations per cylinder.

When comparing the values of all cylinders the compression results should not vary by more than 2.5 bar or 36.25 psi. If the difference is greater than 2.5 bar or 36.25 psi then proceed to step 14.

The test plan will record the measurements but you will have to determine if they are within specification or not.

If the BMW special tools are not available at the dealer then a manual gauge procedure can be substituted, record all values in the oil consumption checklist. Use the limit values listed above to determine if the values are within specification.

If the engine passes the compression test then proceed to step 10.

10. Inspect the turbochargers for engine oil leakage.	
	The turbocharger is OK. No engine oil can be seen around the turbocharger impeller.

	The turbocharger is OK. No engine oil can be seen around the turbocharger impeller.
	The turbocharger is not OK. The turbocharger impeller seals are leaking engine oil.
	The turbocharger is not OK. The turbocharger impeller seals are leaking engine oil.

If the turbocharger inspection is “OK”, then go to step 11.

Or

If the turbocharger inspection is “NOT OK”, then replace the turbochargers in conjunction with the recommendations in step 11. Go to step 11.

11. Replace the intake and exhaust valve seals using the N63 Valve Seal Replacement Tool Kit P/N 83 30 2 408 268 as per SI B11 08 15 or Repair Instruction 11 34 570 “Replace all valve stem seals using special tool 83 30 2 408 268 (N63)”.

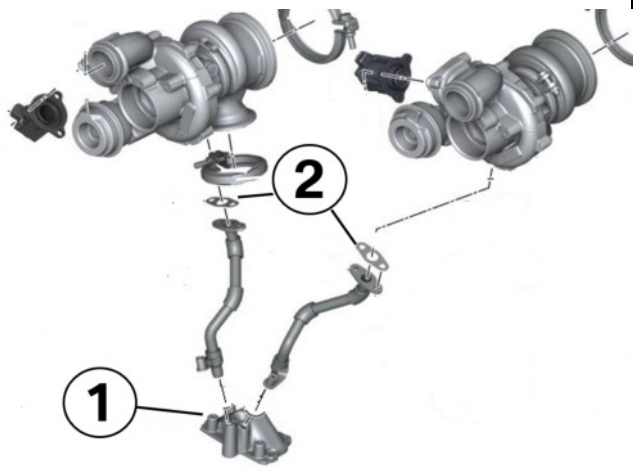
    Refer to SI B04 15 15 for additional ordering information.

    NOTE:
    Prior to proceeding with VANOS units removal, and after removing the valve covers, make sure that the timing chain guides are intact (not broken).
    Specifically, turn the engine manually 2-3 times over, while listening for any unusual noises coming from the timing chains area.
    Using borescope, run the probe down the chains on both banks, to inspect for possible guides breakage/cracks.
    If any chain guide(s) damage is found, supplement your TSARA TC case with additional information and pictures, and wait for response before proceeding further.

    Replace the cylinder head cover oil separators as per Repair Instruction 11 15 140 “ Replace oil separator”

    If the turbocharger inspection is “not OK” then replace the turbochargers. Refer to repair instruction 11 65 025 “Removing and installing exhaust turbocharger, cylinders 1-4” and Repair Instruction 11 65 030 “Removing and installing exhaust turbocharger, cylinders 5-8”

    Do not replace the turbo chargers if they are not leaking.



If engine oil is found under the turbos using a borescope then the oil return line cover (1) or the oil return line gaskets (2) are leaking engine oil.

(1) The oil return cover comes with all 3 O-rings. Use P/N 11 42 7 935 572.

Gasket asbestos free. Use P/N 11 42 8 624 158.

If the bell housing area shows a major oil leak, but engine valley area is dry (no oil puddle present), then also replace the rear main oil seal (find the correct PN in the ETK), with the rear engine cover (PN 11 14 2 446 298). Follow repair instructions from SI B11 09 16.

12. Complete the “B01_21_18_N63_Smoke_Checklist”.

    All components or measurements that are found to be outside the specification need to be documented with pictures and submitted for authorization via a TSARA TeileClearing Hotline case and wait for a response. Weekend and holiday submissions must wait for a response on the following business day before starting any repairs.

    Vehicles that are not smoking or do not require any repairs do not need authorization.

13. **Only continue if one of the 5 inspections above have failed in steps 3 – 8 and there is no engine oil found under the turbo chargers using the borescope.**

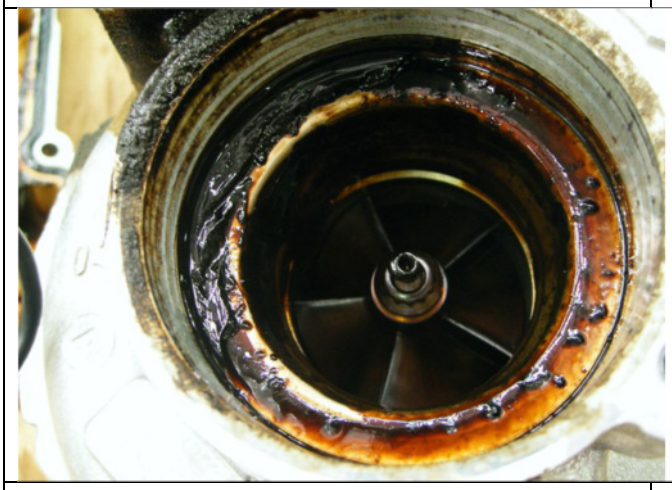
    Inspect the turbochargers for engine oil leakage.

The turbocharger is OK.

No engine oil can be seen around the turbocharger impeller.

The turbocharger is OK.

No engine oil can be seen around the turbocharger impeller.



The turbocharger is not OK.

The turbocharger impeller seals are leaking engine oil.

The turbocharger is not OK.

The turbocharger impeller seals are leaking engine oil.

If the turbocharger inspection is “OK”, then go to step 14.

Or

If the turbocharger inspection is “NOT OK”, then replace the turbochargers in conjunction with the recommendations in step 14. Go to step 14.
14. Replace the engine. If the turbocharger inspection is “not OK” then replace the turbochargers. Refer to repair instruction 11 65 025 “Removing and installing exhaust turbocharger, cylinders 1-4” and Repair Instruction 11 65 030 “Removing and installing exhaust turbocharger, cylinders 5-8” Do not replace the turbo chargers if they are not leaking. Complete the “B01_21_18_N63_Smoke_Checklist All components or measurements that are found to be outside the specification need to be documented with pictures and submitted for authorization via a TSARA TeileClearing Hotline case and wait for a response. Weekend and holiday submissions must wait for a response on the following business day before starting any repairs. Vehicles that are not smoking or do not require any repairs do not need authorization.

Engine Repairs and Replacements:

Replacement engine assemblies are **NOT pre-filled** with engine oil.

After replacing an engine with a new or remanufactured engine assembly, the engine oil level must be verified as outlined in the procedure below first, before starting the engine for the first time.

If the replacement engine is started to determine electronically if the engine is filled with the appropriate amount of engine oil, damage to the replacement engine can occur immediately.

The engine may have some residual engine oil from assembly, but this is **not enough** engine oil to properly lubricate the engine to measure the engine oil level electronically when it is started for the first time.

Further, the electronic engine oil measurement is only operational when the engine is running at its full operating temperature. Checking the engine oil without the engine running at operating temperature will lead to an incorrect or incomplete measurement. After replacing the engine or making engine repairs that require the replacement or removal of the engine bearings, VANOS gears, camshafts, bed plate resealing, engine oil pump, engine oil filter housing, cylinder head, engine oil cooler or anything that interrupts the engine oil supply circuit of the engine requires a short oil pump and oil supply circuit priming procedure.

Refer to SI B11 09 15 for the detailed bleeding procedure.

After engine repair or replacement, pay attention to a proper installation of all engine ground connections. In particular, follow the recommendations from SI B12 24 14 (N63: Proper Ignition Harness Installation and Ground Connections) for the ignition harness grounding. Any consequential damage to DME, alternator, or QLT sensor resulted from a loose ground (causing BSD communication faults), is not covered under N63 Class Settlement.

If the engine malfunction warning is illuminated and lean mixture faults are stored in the DME: UPDATE!

1. Double check all basic induction system connections, ensue no leaks are present.

2. Adaptation Procedure: Disconnect the tank ventilation valve (purge valve) electrical connector and allow the engine to idle for 15 minutes. This procedure will allow the DME to readapt. After 15 minutes of idling reconnect the tank ventilation valve (purge valve) electrical connector and clear the fault memory. Test drive the vehicle to ensure all faults do not reoccur.

Workshop Cleanliness: UPDATE!

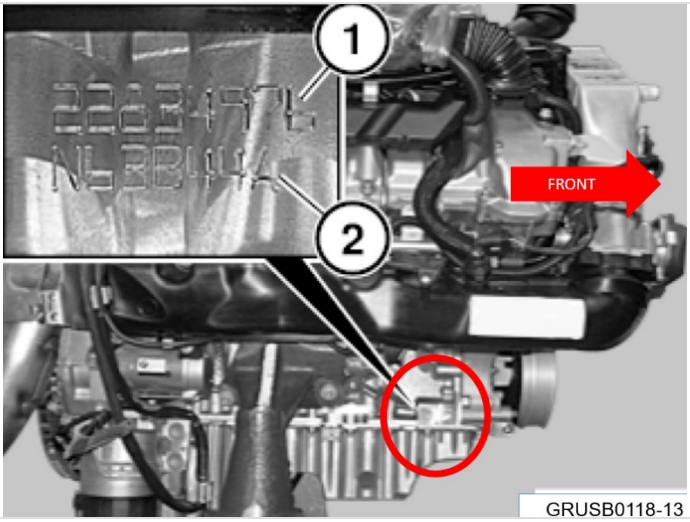
Always ensure the high pressure fuel system parts are properly stored in a clean location. Use caps or bags to keep contamination from occurring. It is good practice to immediately cap the high pressure pumps and store them in the upright position so that the plunger does not dry out. The appropriate caps can be found in the N63 Valve Seal Replacement Tool Kit P/N 83 30 2 408 268.

PROCEDURE

Engine serial number verification (Included in the engine diagnosis labor operations):

Verify the proper engine serial number is installed in the vehicle before starting any diagnosis or repairs.

NOTE: Only vehicles equipped with the original engines (engine serial number matching the serial number in Air), or with BMW Replacement Engine (purchased from BMW PDCs, and replaced under Warranty, or customer pay) are eligible to participate in this Class Action Settlement.



The engine serial number is located at the lower fron

Engine serial number (1)

Engine type Number (2)

Regardless if you are requesting an engine repair or an engine replacement each TSARA case requires a picture of the engine serial number.

To reduce processing time also state the engine serial number in the case comments before submitting.

All engine serial numbers will be verified at the Warranty Part Return Center.

IMPORTANT NOTE:

Only a Shop Foreman is authorized to approve the final results of N63 Class Action diagnosis and repair.
The complete N63 Oil Consumption Checklist, or N63 Smoke Checklist, along with the relevant photographs have to be submitted via a TSARA TeileClearing Hotline case titled N63 Class_Action.

IMPORTANT NOTE:
Do not attach photographs which are not relevant, vague, not clear, and which are not providing a clear evidence/source of an observed major leak. A TC case with an excessive number of poor quality photographs requires more time to process, resulting in a delayed response.

Please specify in the case details the photograph description. Renaming the photograph is not necessary.
For example:

- **Front engine cover = X1234.jpg**
- **Turbo inspection = X5678.jpg**

The TSARA TeileClearing N63 Class Action process has started on November 1st, 2018. Weekend and holiday submissions will be accepted, but must wait for a response on the first business day before starting any repairs.

The AutoStamp submission process has been deactivated as of 11/01/2018.

It is the Shop Forman's responsibility to provide a complete and accurate diagnosis documentation, as described below.

Including follow-up/updates to the original TSARA TeileClearing case prior to performing any additional related work that is found needed during the repair process.

Incomplete, missing, or misleading N63 Class Settlement engine diagnosis and repairs will result in debiting of the Warranty claim.

Refer to the section that applies to the vehicle situation.

IMPORTANT: Do not drain and measure the engine oil. Follow the applicable instructions to use the electronic oil level measurement.

When the customer's complaint is smoke from the exhaust system, proceed to Section 1, Step 1 below. If the customer complains only about frequent engine oil top-offs, go to Step 2.

Section 1 – Visually diagnose the vehicle for smoke from the exhaust tail pipes:

- Start the vehicle and allow it to reach to reach operating temperature, approximately 15 minutes or less. Quickly push-and-release the accelerator pedal from idle position to between 2,000 and 3,000 RPM, then immediately allow the engine to return to idle and observe the exhaust tail pipes for smoke.
    - If the vehicle is smoking, refer to the following two attachments
    - If the vehicle is not smoking, proceed to step 2.
        - N63 Smoke Instructions
        - N63 Smoke Checklist

Note: Document all results in the attachment B01_21_18_N63 Smoke Checklist simultaneously while following the instructions.

IMPORTANT: Take a photograph of a smoke emitted from the exhaust pipes during this test, and attach it to a TSARA TeileClearing Hotline case.

- If the vehicles does not exhibit any smoke from the tailpipes, then an oil consumption test will need to be started using the following attachment.
    - N63 Oil Consumption Instructions (only perform steps 1 and 2 in this document until the vehicle returns for the measurement described in section 2)

IMPORTANT: Apply tamper-proof markings to the engine oil drain plug, engine oil filter and engine oil fill cap. Ensure these have not been tampered with when the vehicle returns for the oil consumption measurement.

Section 2 – The vehicle has returned for the oil consumption measurement:
Measure the oil consumption. Refer to the following attachments.

- N63 OC Instructions (Resume the procedure at step 3 in this document)
- N63 Oil Consumption Checklist

Note: Document all results in the N63 Oil Consumption Checklist simultaneously while following the instructions.

Section 3 – Documenting the results of the visual inspection, failed oil consumption test and or vehicle inspection steps.

1. The "N63 Oil Consumption Checklist", or "N63 Smoke Checklist" must be completed and photographed (both pages side by side in one photo).

2. Capture photos of the failed or leaking components.

3. Document the inspection/test results in a TSARA TeileClearing Hotline case, describe in the case what repair you are requesting, submit the case and wait for a response before continuing with repairs.

If the vehicle is not smoking or the vehicle passes the oil consumption test or the vehicle does not require any repairs then do not enter a TSARA TeileClearing Hotline case.

Calculating Oil Consumption by Milliliters

If the customer has driven much further than recommended, then the result of the test plan and the miles driven can be determined using a calculator. The calculation below will determine the exact oil consumption level of the engine.

Calculation:

Milliliters of oil consumed ÷ miles driven = X.XXX milliliters (ml) per mile driven

The oil consumption specification of this calculation is 1.333 milliliters (ml) per mile driven.

For example, 1000ml ÷ 750 miles = **1.333 ml per mile**, this is the 1 liter per 750 miles specification.

If the result of the calculation is 1.333 ml per mile and greater, then you must continue with the diagnosis and address the customer complaint.

If the result of the calculation is less than or equal to 1.332 ml per mile, then the customers complaint does not exceed the allowable engine oil consumption specification. Take no further action.

Example:

900 ml consumed ÷ 750 miles driven = **1.2 ml per mile** – Take no further action and release the vehicle.

Engine Repairs and Replacements:

Replacement engine assemblies are **NOT pre-filled** with engine oil.

After replacing an engine with a new or remanufactured engine assembly, the engine oil level must be verified as outlined in the procedure below first, before starting the engine for the first time.

If the replacement engine is started to determine electronically if the engine is filled with the appropriate amount of engine oil, damage to the replacement engine can occur immediately.
The engine may have some residual engine oil from assembly, but this is **not enough** engine oil to properly lubricate the engine to measure the engine oil level electronically when it is started for the first time.

Furthermore, the electronic engine oil measurement is only operational when the engine is running at its full operating temperature. Checking the engine oil without the engine running at operating temperature will lead to an incorrect or incomplete measurement.

After replacing the engine or making engine repairs that require the replacement or removal of the engine bearings, VANOS gears, camshafts, bed plate resealing, engine oil pump, engine oil filter housing, cylinder head, engine oil cooler or anything that interrupts the engine oil supply circuit of the engine requires a brief oil pump and oil supply circuit priming procedure.

Refer to SI B11 09 15 for the detailed bleeding procedure.

- **The time to perform this procedure is included in the applicable special repair labor operations that are provided in the attachments to this Service Information bulletin**

After engine repairs or replacement, pay attention to a proper installation of all engine ground connections. Mark the various ground connections with a small parts tag or colored tape.
In particular, follow the recommendations from SI B12 24 14 (N63: Proper Ignition Harness Installation and Ground Connections) for the ignition harness grounding. Any consequential damage to DME, alternator, or QLT sensor resulting from a loose ground (causing BSD communication faults), **is not covered** under N63 Class Settlement.

If the engine malfunction warning is illuminated and lean mixture faults are stored in the DME:

1. Double check all basic induction system connections, ensue no leaks are present.
2. Adaptation Procedure:

    - Disconnect the tank ventilation valve (purge valve) electrical connector and allow the engine to idle for 15 minutes. This procedure will allow the DME to readapt.
    - After 15 minutes of idling, reconnect the tank ventilation valve (purge valve) electrical connector
    - Clear the fault memory
    - Test drive the vehicle to ensure all faults do not reoccur

Engine Timing Chain Guide Pre-Inspection (TeileClearing Approved Valve Seal Replacement)

When an eligible Class Member's Class Vehicle either fails the oil consumption or visible smoke test, prior to performing the TeileClearing approved valve seal replacement, first inspect for broken timing chain guides (even if the Class Vehicle's engine passed the timing chain test plan).

To confirm that the timing chain guides are not broken (fully intact), remove the valve covers without removal of the VANOS units:

- Turn the engine manually 2-3 revolutions while listening for any unusual noises coming from the timing chains area; and/or
- Using a borescope, run the probe down the chain on both banks to inspect for guide breakage/cracks.

If any timing chain guide damage is found, supplement your TC case with this additional information and photographs and wait for response before proceeding any further.

Workshop Cleanliness:

Always ensure the high pressure fuel system parts are properly stored in a clean location. Use caps or bags to keep contamination from occurring. It is good practice to immediately cap the high pressure pumps and store them in the upright position so that the plunger does not dry out.

The appropriate caps can be found in the N63 Valve Seal Replacement Tool Kit P/N 83 30 2 408 268.

CLAIM SUBMISSION INFORMATION

Labor Operation	Description	Labor Allowance
00 66 287	Visual inspection for the exhaust tailpipes for blue smoke (includes running engine to operating temperature) (Main work)	Refer to AIR
Or		
00 66 995	Visual inspection for the exhaust tailpipes for blue smoke (includes running engine to operating temperature) (Plus work)	Refer to AIR

And:

Labor Operation	Description:	Labor Allowance
00 66 997	Remove and install clean air pipes, underbody paneling/visual inspection of the: • exhaust turbochargers and both turbochargers/oil return lines and return line cover; and the • front cover, upper oil pan; and the • engine backside (Transmission) for oil leakage; and • borescope inspect the engine valley as necessary	Refer to AIR
Or:		
00 66 998	Remove and install clean air pipes, underbody paneling/ visual inspection of the: • exhaust turbochargers and both turbochargers/oil return lines and return line cover; and the • front cover, upper oil pan; and the • engine backside (Transmission) for oil leakage; • perform the timing chain test plan; and • borescope inspect the engine valley as necessary	Refer to AIR
Or:		
00 66 999	Remove and install clean air pipes, underbody paneling/ visual inspection of: • exhaust turbocharger both turbochargers/oil return lines and return line cover; • front cover, upper oil pan; • engine backside (Transmission) for oil leakage; • perform the timing chain test plan; and • cylinder compression test; and • borescope inspect the engine valley as necessary	Refer to AIR
And:		
00 58 677	TeileClearing, lump-sum fee (B01 01 07)	1 FRU

N63 Replacement Engine Assembly Part Supply

The replacement N63 engine assembly part supply has stabilized, this will significantly reduce the number of vehicles that are diagnosed and awaiting (pending) engine (assembly) replacements due to insufficient part availability.

Accordingly, in place of using "DC 11 00 90 17 00," select the corresponding diagnosis with engine replacement Defect Code below that applies for these claim submissions.

Based on the results of above:

Engine Replacement is Necessary - Engine Fails One of the Inspections/Test Procedures

Qualifying engine (assembly) replacement can be performed during the current workshop visit

Claim and submit for the applicable diagnosis above and the N63 engine replacement using the Defect Code below that applies.

Defect Code:	**1100901100**	**E7x F0x F1x N63 Additional diagnosis leads to engine replacement**
Or:		
Defect Code:	**1100901200**	**E7x F0x F1x N63 Additional diagnosis leads to engine and turbocharger replacement**

Labor Operation	**Description**	**Labor Allowance**
00 67 500	**Replace the engine** (includes remove and install the old turbochargers or replace both turbochargers)	Refer to AIR

Or:

If the Class Member "rejects" a N63 engine replacement procedure that qualifies.

Claim the applicable diagnosis labor operations above and submit using the Defect Code below.

Defect Code:	**1100901800**	**E7x F0x F1x N63 Engine diagnosis, engine replacement rejected by customer**

Or:

The Class Member "approves" the repair, however, the qualifying N63 engine replacement repair is pending due to awaiting parts to become available from BMW.

Claim the applicable diagnosis labor operations above and submit using the Defect Code below.

Defect Code:	**1100901700**	**E7x F0x F1x N63 Measured engine oil consumption excessive, diagnosis, engine replacement pending (see above)**

Or, if the vehicle's engine **does not fail** one of the above inspections/test procedures, then:

SI B01 21 18: Engine has Visible (Blue) Smoke from the Exhaust Tailpipes

Blue Smoke - Engine Replacement is Not Necessary: Engine Does Not Fail One of the Inspections/Test Procedures

Labor Operation	Description	Labor Allowance
00 66 287	Visual inspection for the exhaust tailpipes for blue smoke (includes running engine to operating temperature) (Main work)	Refer to AIR
Or		
00 66 995	Visual inspection for the exhaust tailpipes for blue smoke (includes running engine to operating temperature) (Plus work)	Refer to AIR
And:		
00 66 999	Remove and install clean air pipes, underbody paneling/ visual inspection of: • exhaust turbocharger both turbochargers/oil return lines and return line cover; • front cover, upper oil pan; • engine backside (Transmission) for oil leakage; • perform the timing chain test plan; and • cylinder compression test; and • borescope inspect the engine valley as necessary	Refer to AIR
And:		
00 58 677	TeileClearing, lump-sum fee (B01 01 07)	1 FRU

And, with the applicable labor above together with the engine repair performed:

Defect Code:	**1100900900**	**E7x F0x F1x N63 Additional diagnosis leads to engine repairs (valve seals, cylinder head cover oil separators)**

Labor Operation	Description	Labor Allowance
00 67 501	Perform additional diagnosis, replace the: • valve stem seals; and the • cylinder head covers oil separators	Refer to AIR

Or, **with** turbocharger-related repairs

Defect Code:	**1100901000**	**E7x F0x F1x N63 Additional diagnosis leads to engine repairs (valve seals, cylinder head cover oil separators, turbochargers)**

Labor Operation	Description	Labor Allowance
00 67 502	Perform additional diagnosis, replace the: • valve stem seals; • cylinder head cover oil separators; and • replace both turbochargers and/or the oil return line seals and return line cover	Refer to AIR

Or:

SI B01 21 18: Engine has Visible (Blue) Smoke from the Exhaust Tailpipes

Defect Code:	**1100902200**	**E7x F0x F1x N63 Additional diagnosis, replace valve seals, cylinder head covers, turbos, repair oil leaks**

Labor Operation	**Description**	**Labor Allowance**
00 67 688	Perform additional diagnosis, replace the: • valve stem seals; • cylinder head cover oil separators; • rear crankshaft and rear engine cover seals; • lower oil pan gasket; and • replace both turbochargers; and/or the oil return line seals and return line cover	Refer to AIR
Or:		
00 67 689	Perform additional diagnosis, replace the: • valve stem seals; • cylinder head cover oil separators; • rear crankshaft and rear engine cover seals; and • replace both turbochargers; and/or the oil return line seals and return line cover	Refer to AIR
Or:		
00 67 690	Perform additional diagnosis, replace the: • valve stem seals; • cylinder head cover oil separators; and the • lower oil pan gasket; and • replace both turbochargers; and/or the oil return line seals and return line cover	Refer to AIR

Or, **without** turbocharger-related repairs

Defect Code:	**1100902100**	**E7x F0x F1x N63 Additional diagnosis, replace valve seals, cylinder. head covers, repair leaks**

Labor Operation	**Description**	**Labor Allowance**
00 67 691	Perform additional diagnosis, replace the: • valve stem seals; and the • cylinder head cover oil separators; and the • rear crankshaft and rear engine cover seals; • lower oil pan gasket	Refer to AIR
Or:		
00 67 692	Perform additional diagnosis, replace the: • valve stem seals; and the • cylinder head cover oil separators; and the • rear crankshaft and rear engine cover seals	Refer to AIR
Or:		
00 67 693	Perform additional diagnosis, replace the: • valve stem seals; and the • cylinder head cover oil separators; and the • lower oil pan gasket	Refer to AIR

And, applicable:

Sublet – Materials

Sublet Code 4	See sublet reimbursement calculation below	Reimbursement for used quantities of required operating fluids, including engine oil only when it is not claimed under the BMW Maintenance Program (applicable BMW part numbers). Please do not use these part numbers for claim submission.

Sublet reimbursement calculation for claiming the applicable repair-related bulk materials (BMW part numbers) is at the dealer net price amount for the quantities used plus your center's handling.

Enter this material cost in sublet and itemize the amount on the repair order and in claim comment section.

Changes are highlighted with UPDATE!.

1. **Do not drain and measure the engine oil. Follow the applicable instructions to use the electronic oil level measurement.**

Do not reprogram the vehicle.

The engine oil must be measured using the electronic measurement test plan called “Motor Oil Quantity” found in ISTA/D 4.14.XX or higher.

Test Plan Path:

Select “Vehicle management”
Select “Powertrain”
Select “Engine electronics, quality control valve (MSV)
Select “Engine oil”
Select “ABL Motor oil quantity”
Select “Display”

Follow the onscreen prompts. The test plan will measure the engine oil in 100 ml increments.

Top the engine oil accordingly and perform the test plan a second time (after topping) to ensure the proper full engine oil level is reached.

The vehicle must be driven by the customer roughly 750 to 1,000 miles or until the next low engine oil message appears (whichever comes first). After the customer returns the engine oil must be measured again using the electronic measurement test plan called “Motor Oil Quantity” found in ISTA/D 4.14.XX or higher (see test plan path above).

If the oil consumption is not greater than 1 liter per 750 miles then top the engine oil and return the vehicle to the customer.

OR

If the engine oil consumption is greater than 1 liter per 750 miles then proceed to step 2.

For additional information on oil consumption refer to B11 03 13.

2. Inspect or measure the following 5 items in order. Note the inspection results on the attached “B01_21_18_N63_Oil_Consumption_Checklist.”

   - Engine front cover
   - Engine upper oil pan
   - Lower bell housing
   - Perform the timing chain test plan
   - Perform a compression test.

   All components or measurements that are found to be outside the specification need to be documented with pictures and submitted for authorization via a TSARA TeileClearing Hotline case at the end of this procedure.

Vehicles that require an oil consumption test, have passed the oil consumption test or do not require any repairs do not need authorization.

IMPORTANT!

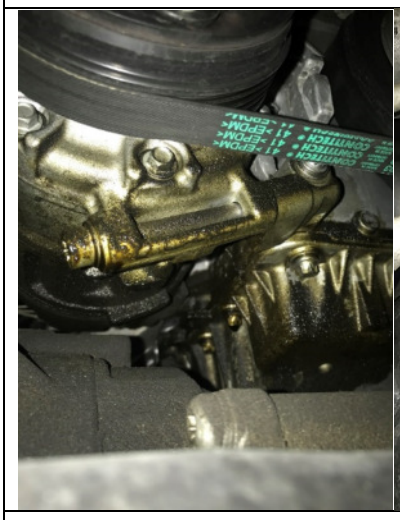
If the engine is leaking engine oil, the oil leak must be an active major engine oil leak, not seepage or wetness.

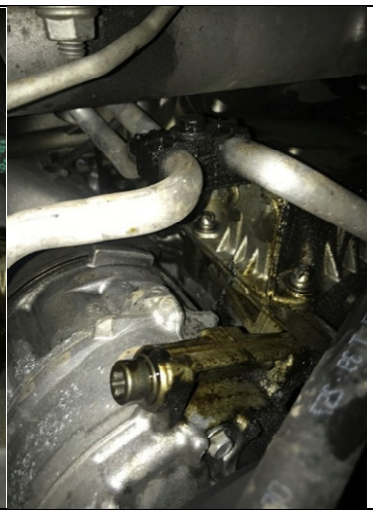
GENERAL NOTES REGARDING ENGINE OIL LEAKS:

"Oil Leaks" are being defined as clearly visible oil presence (like oil drops) at the engine components (e.g. area of oil pan, front cover, etc.), and in their vicinity. Also, a large visible oil stains (or oil accumulation) on the underbody panels are indication of oil leaks, causing a substantial oil capacity loss.

The black (dirt stained) "wetness" marks on the engine components, DO NOT qualify as oil leaks.

3. Inspect the front engine cover for engine oil leakage.

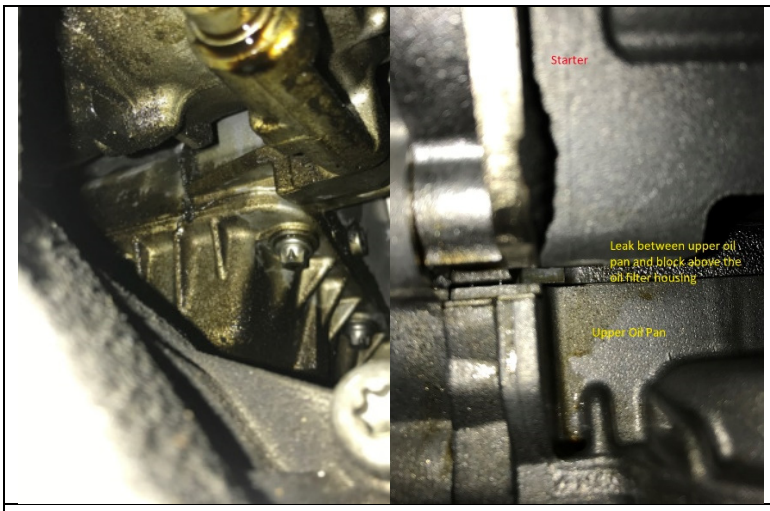


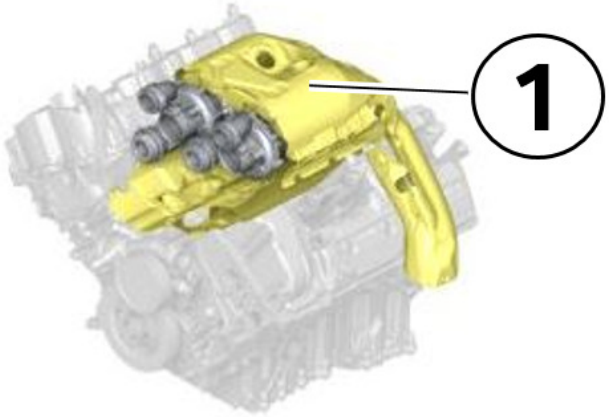
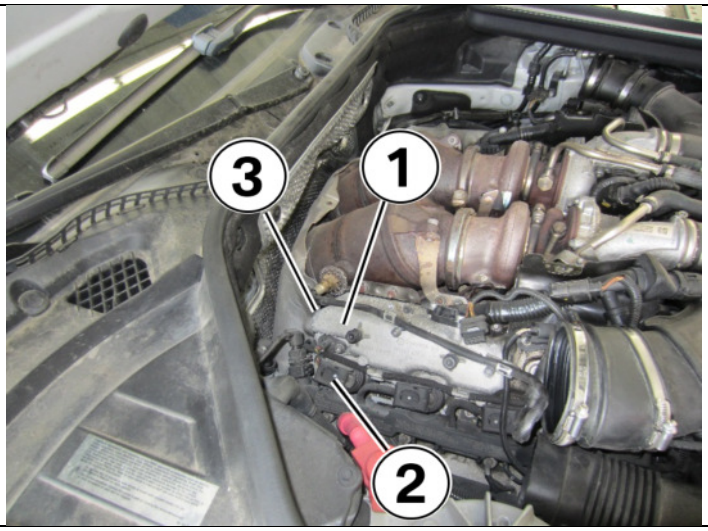
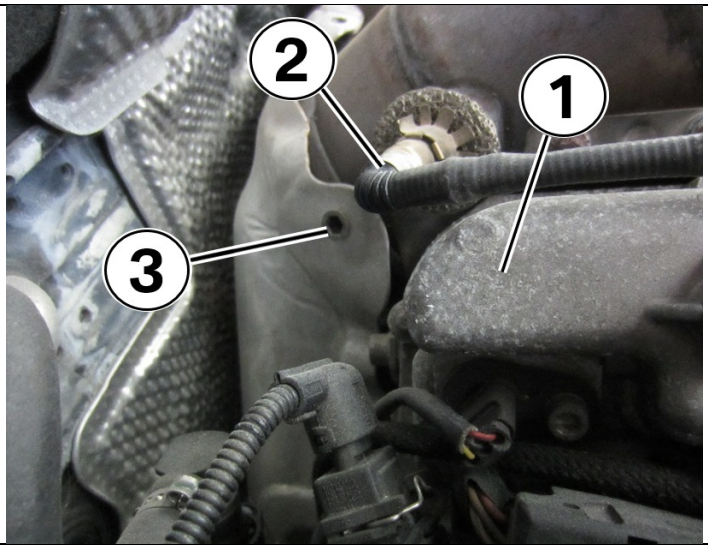


If the front timing cover is not leaking. Go to step 4.

If the front timing cover is leaking. Go to step 6.

4. Inspect the upper engine oil pan for engine oil leakage.

	If the upper engine oil pan is not leaking. Go to step 5. If the upper engine oil pan is leaking. Go to step 6.
5. Inspect the lower bell housing for engine oil leakage	
	The lower bell housing is not leaking. Go to step 7. The lower bell housing is leaking. Go to step 6.
6. Turbocharger oil line diagnosis.	

	Remove the heat shield (1) to diagnose the engine oil leak. Refer to Repair Instruction 11 65 180 Removing and installing/replacing heat shield at top.
	The illustration shows an overview of the components found on cylinder bank 1. Cylinder head cover (1) Cylinder # 4 (2) Inspection location (3)
	The illustration shows an overview of the components frond on cylinder bank 1. Cylinder head cover (1) Bank 1 post O2 sensor (2) Heat shield mounting hole (3)

Preparing for the inspection:

Bore scope specifications:

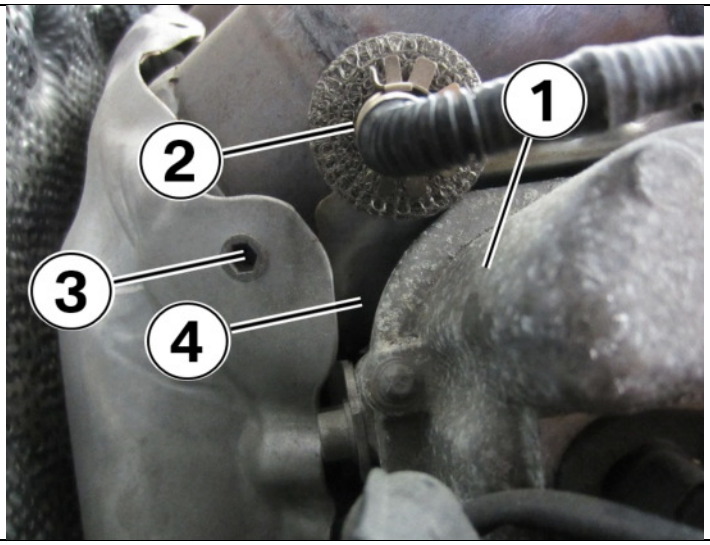
The recommended diameter of the fiber optic cable (imager) should not be greater than 5.5 mm. The 8 mm fiber optic cable (imager) will work but it is very tight and damage may occur to the larger cable and imager.

The recommended borescope and imager can be found at www.centersolutions.com or refer to SI B04 19 15 for more information about the BMW Equipment Program.

Equipment Program Part Numbers:

107 - BK5000 - SNAP ON Video Scope

107- BK8000 – 5.5 mm Dual View Side Imager



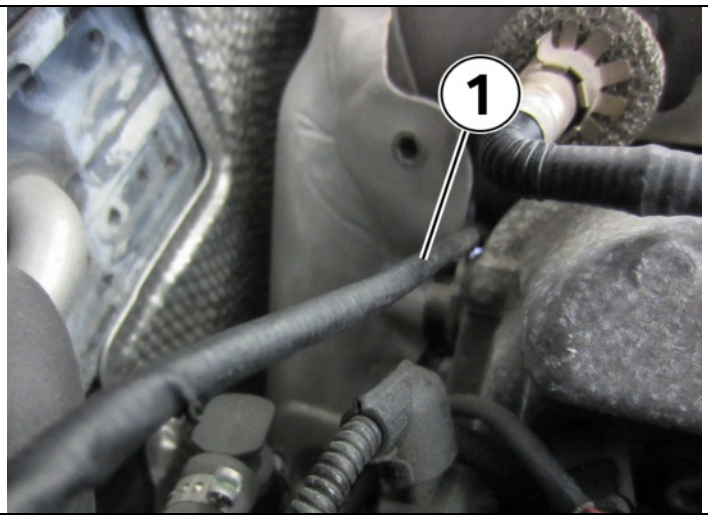
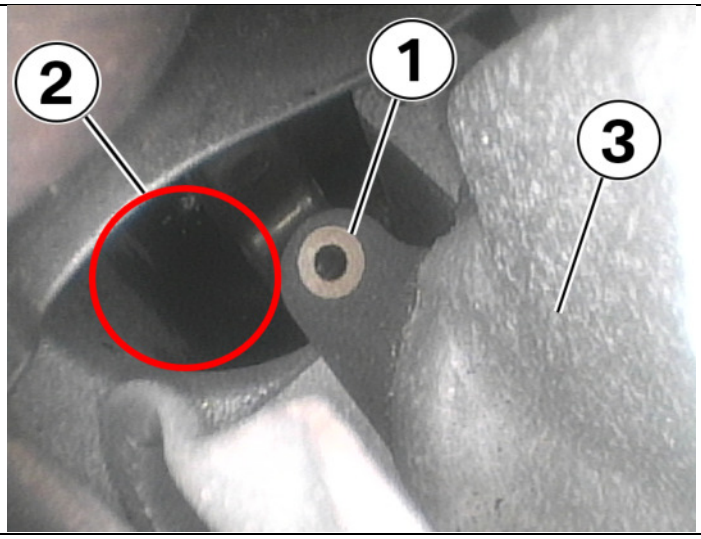
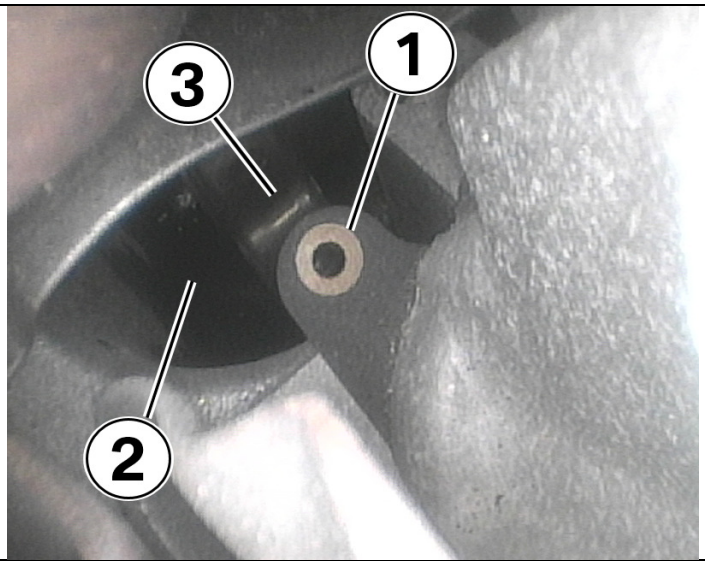
The illustration shows an overview of the components frond on cylinder bank 1.

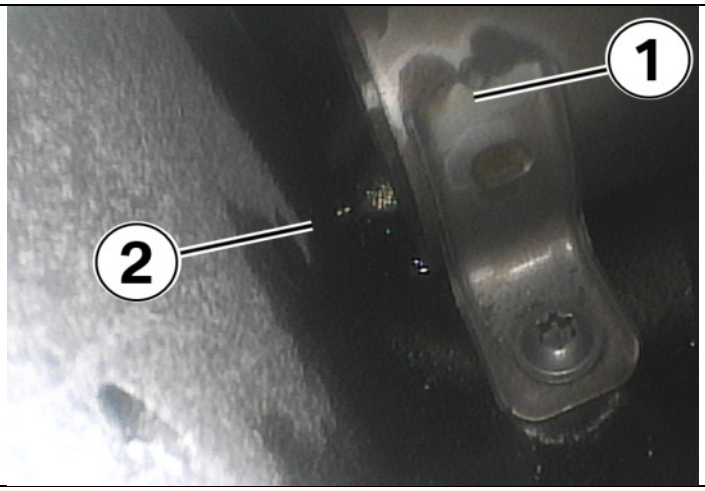
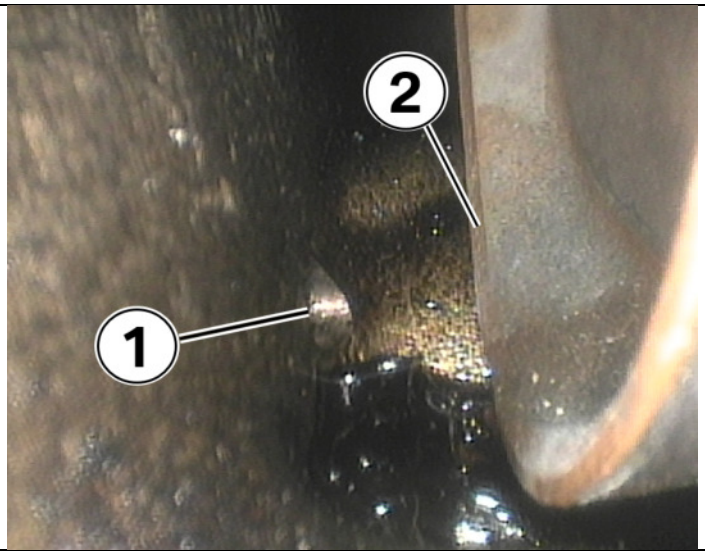
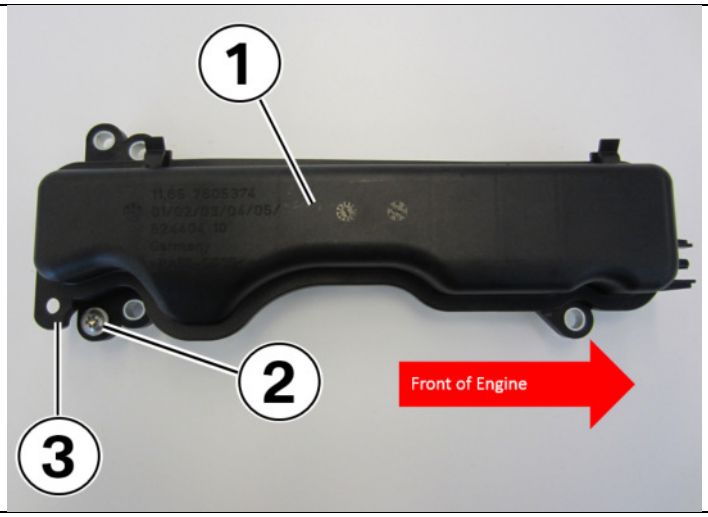
Cylinder head cover (1)

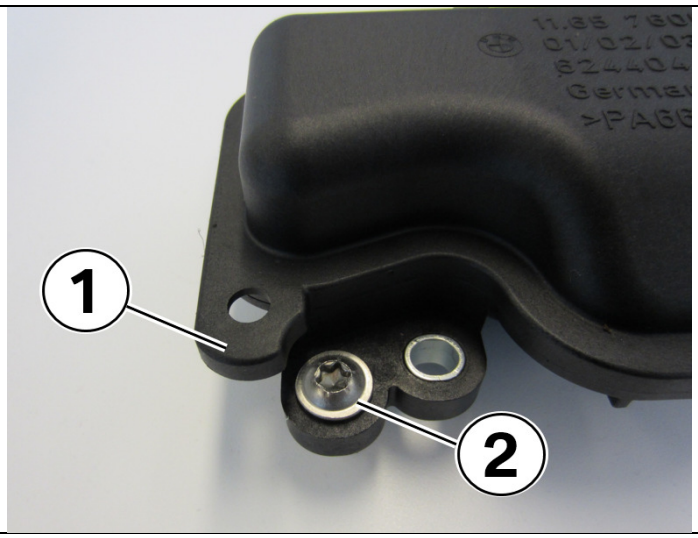
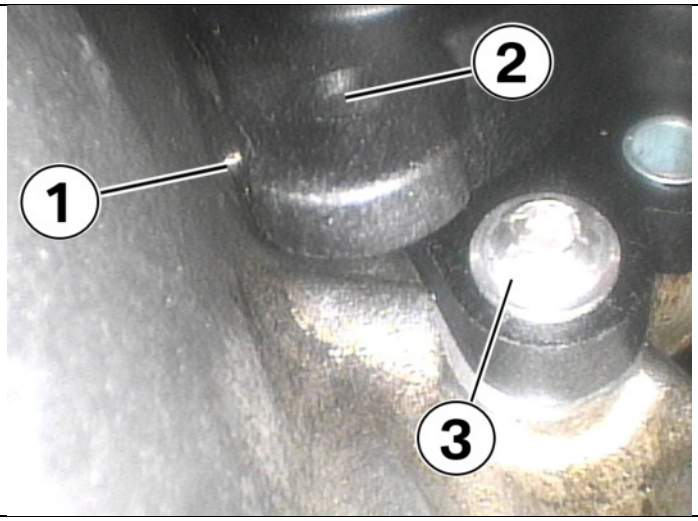
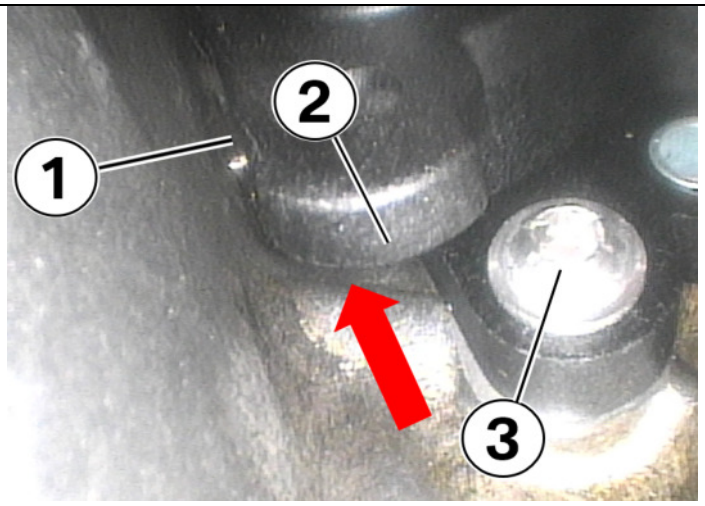
Bank 1 post O2 sensor (2)

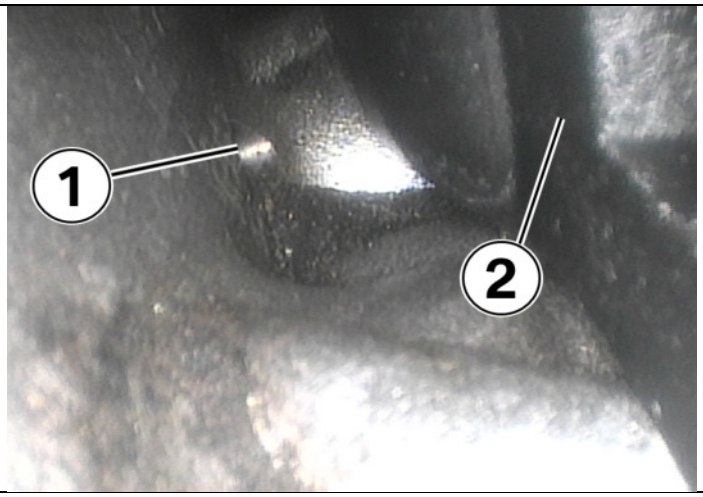
Heat shield mounting hole (3)

Insert bore scope here (4) on an angle downward.

	Approach angle of the bore scope (1) is approximately 45 degrees.
	After inserting the bore scope you must locate the cylinder head gasket tab. (1). The tab is approximately 135 mm strait down from original entry point. Cylinder head gasket tab (1) Gap in heat shields (2) Cylinder head (3)
	Feed the bore scope past the left side (1) of the cylinder head gasket tab (2) towards the vacuum reservoir (3).

	Continue to push the bore scope towards the vacuum reservoir (1). The engine valley drain hole is location is just to the left of the vacuum reservoir (2). Metal vacuum reservoir shown in photo. As the bore scope approaches the drain hole it will become more apparent.
	Inspect the surrounding area of the engine valley drain hole (1). Engine valley drain hole (1) Metal vacuum reservoir (2) shown. This is a clean picture. No oil can be seen in the oil drain hole (1). The dark material at the bottom of the photo is dust and dirt. This material appears to be reflective but it is dry
	It is possible that a black plastic vacuum reservoir (1) is installed. This illustration provides an overview of the entire component and specific points of the component. Reservoir (1) Reservoir mounting screw (2) Plastic vacuum reservoir tab (3)

	Plastic vacuum reservoir tab (1) Mounting screw (2)
	Diagnosis in the vehicle: It may be more difficult to position the bore scope but it will only take a few minutes more to make the diagnosis. Engine valley drain hole (1) Plastic vacuum reservoir tab (2) Reservoir mounting screw (3)
	Continue to push bore scope down ward towards the plastic vacuum reservoir tab (2). The bore scope needs to be moved towards the direction of the red arrow and under the tab (2) to have the best viewing angle of the engine valley drain hole (1). Engine valley drain hole (1) Plastic vacuum reservoir tab (2) Reservoir mounting screw (3)



Once the bore scope has gone under the plastic reservoir tab then the engine valley drain hole (1) and surrounding area can be clearly inspected.

The dark material at the bottom of the photo is dust and dirt. This material appears to be reflective but it is dry.

Engine valley drain hole (1)

Plastic vacuum reservoir (2)

If engine oil is found in the valley area, then the root cause of the engine oil leak resides in the components on top of the engine i.e. turbocharger oil line cover, turbo charger, etc. Further basic diagnosis will be needed to find the root cause this engine oil leak. Do not remove the transmission from the vehicle. Go to Step 7.

If NO engine oil residue is found at the engine valley drain hole, but an original visual inspection indicated leak in the bell housing area, the root cause of the engine leak resides in the rear main seal and rear engine cover. Do not remove transmission from the vehicle. Go to step 7.

If NO engine oil residue is found at the engine valley drain hole, then the root cause of the engine oil leak will be related to the original visual inspection of front cover, or oil pan. Go to step 12.

Using the borescope, provide a picture of the engine valley drain hole regardless if oil is present or not.

7. Perform the timing chain test plan.

All Models: Timing Chains Test Plan path:

1. Select “Vehicle management”
2. Select “Troubleshooting”
3. Select “Function structure”
4. Select “Powertrain”
5. Select “Engine electronics, quality control valve (MSV)”
6. Select “Valve gear”
7. Select “Start search”
8. From the list of available test plans, select “VANOS solenoid valve, exhaust” or “Exhaust Camshaft Sensor”

9. Select “Continue”
10. Select “VANOS Solenoid Valve”
11. Select “Display”
12. Select “Continue test module” and “Next”
13. Select “Timing chain test” and follow the steps to complete the test plan.
14. If the test plan asks “Solenoid valves ok?” Select “Yes”.
15. Follow the test plan steps to check the timing chain.
16. Test plan will conclude with the statement “Timing chain is OK” or “Timing chain is not OK”.

If the test plan results indicate the timing chains are not stretched (“OK”), then go to step 8.

Or

If the test plan results indicate the timing chains are stretched (“not OK”), then go to step 12.

8. Preform the compression test.

Test Plan Path:

1. Select “Vehicle management”
2. Select “Service functions”
3. Select “Powertrain”
4. Select “Engine Electronics quality control (MSV)”
5. Select “Compression test”
6. The compression test plan and the compression test repair instructions will be shown on the screen. Review the compression test repair instruction to become more familiar with the tools and the procedure before starting the compression test plan.
7. Select “ABL Compression test”
8. Follow the test plan steps to complete the compression tests.

For reference the compression test procedure instructions can also be found in Repair Instruction 11 00 039 “Checking compression of all cylinders”

The compression test should be performed after the engine has reached operating temperature. When performing the test count the rotations of the engine crankshaft and apply the same rotations to each cylinder compression test. The industry standard is 4 rotations per cylinder.

When comparing the values of all cylinders the compression results should not vary by more than 2.5 bar or 36.25 psi. If the difference is greater than 2.5 bar or 36.25 psi then proceed to step 11.

The test plan will record the measurements but you will have to determine if they are within specification or not.

If the BMW special tools are not available at the dealer then a manual gauge procedure can be substituted, record all values in the oil consumption checklist. Use the limit values listed above to determine if the values are within specification.

If the engine passes the compression test then proceed to step 9.

9. Inspect the turbochargers for engine oil leakage.	
	The turbocharger is OK. No engine oil can be seen around the turbocharger impeller.
	The turbocharger is OK. No engine oil can be seen around the turbocharger impeller.
	The turbocharger is not OK. The turbocharger impeller seals are leaking engine oil.

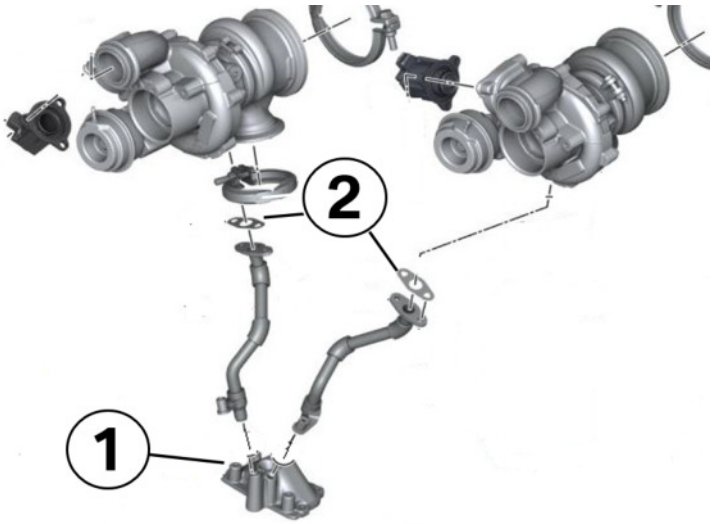
	The turbocharger is not OK. The turbocharger impeller seals are leaking engine oil.

If the turbocharger inspection is “OK”, then go to step 10.

Or

If the turbocharger inspection is “NOT OK”, then replace the turbochargers in conjunction with the recommendations in step 10. Go to step 10.

	10. Replace the intake and exhaust valve seals using the N63 Valve Seal Replacement Tool Kit P/N 83 30 2 408 268 as per SI B11 08 15 or Repair Instruction 11 34 570 “Replace all valve stem seals using special tool 83 30 2 408 268 (N63)”. Refer to SI B04 15 15 for additional ordering information. NOTE: Prior to proceeding with VANOS units removal, and after removing the valve covers, make sure that the timing chain guides are intact (not broken). Specifically, turn the engine manually 2-3 times over, while listening for any unusual noises coming from the timing chains area. Using borescope, run the probe down the chains on both banks, to inspect for possible guides breakage/cracks. If any chain guide(s) damage is found, supplement your TSARA TC case with additional information and pictures, and wait for response before proceeding further. Replace the cylinder head cover oil separators as per Repair Instruction 11 15 140 “ Replace oil separator”



If the turbocharger inspection is “not OK” then replace the turbochargers. Refer to repair instruction 11 65 025 “Removing and installing exhaust turbocharger, cylinders 1-4” and Repair Instruction 11 65 030 “Removing and installing exhaust turbocharger, cylinders 5-8”

Do not replace the turbo chargers if they are not leaking.

If engine oil is found under the turbos using a borescope then the oil return line cover (1) or the oil return line gaskets (2) are leaking engine oil.

(1) The oil return cover comes with all 3 O-rings. Use P/N 11 42 7 935 572.

(2) Gasket asbestos free. Use P/N 11 42 8 624 158.

If the bell housing area shows a major oil leak, but engine valley area is dry (no oil puddle present), then also replace the rear main oil seal (find the correct PN in the ETK), with the rear engine cover (PN 11 14 2 446 298). Follow repair instructions found in SI B11 09 16.

11. Complete the “B01_21_18_N63_Oil_Consumption_Checklist”

    All components or measurements that are found to be outside the specification need to be documented with pictures and submitted for authorization via a TSARA TeileClearing Hotline case and wait for a response. Weekend and holiday submissions must wait for a response on the following business day before starting any repairs.

    Vehicles that require an oil consumption test, have passed the oil consumption test or do not require any repairs do not need authorization.

12. Only continue if one of the 5 inspections above have failed in steps 3 – 8 and there is no engine oil found under the turbo chargers using the borescope.

    Inspect the turbochargers for engine oil leakage.

	The turbocharger is OK. No engine oil can be seen around the turbocharger impeller.
	The turbocharger is OK. No engine oil can be seen around the turbocharger impeller.
	The turbocharger is not OK. The turbocharger impeller seals are leaking engine oil.

	The turbocharger is not OK. The turbocharger impeller seals are leaking engine oil.

If the turbocharger inspection is “OK”, then go to step 13.
Or,
If the turbocharger inspection is “NOT OK”, then replace the turbochargers in conjunction with the recommendations in step 12. Go to step 13.

13. Replace the engine.

If the turbocharger inspection is “not OK” then replace the turbochargers. Refer to repair instruction 11 65 025 “Removing and installing exhaust turbocharger, cylinders 1-4” and Repair Instruction 11 65 030 “Removing and installing exhaust turbocharger, cylinders 5-8”

Do not replace the turbo chargers if they are not leaking.

Complete the “B01_21_18_N63_Oil_Consumption_Checklist”

All components or measurements that are found to be outside the specification need to be documented with pictures and submitted for authorization via a TSARA TeileClearing Hotline case and wait for a response. Weekend and holiday submissions must wait for a response on the following business day before starting any repairs.

Vehicles that require an oil consumption test, have passed the oil consumption test or do not require any repairs do not need authorization.

Engine Repairs and Replacements:

Replacement engine assemblies are **NOT pre-filled** with engine oil.

After replacing an engine with a new or remanufactured engine assembly, the engine oil level must be verified as outlined in the procedure below first, before starting the engine for the first time.

If the replacement engine is started to determine electronically if the engine is filled with the appropriate amount of engine oil, damage to the replacement engine can occur immediately.

The engine may have some residual engine oil from assembly, but this is **not enough** engine oil to properly lubricate the engine to measure the engine oil level electronically when it is started for the first time.

Further, the electronic engine oil measurement is only operational when the engine is running at its full operating temperature. Checking the engine oil without the engine running at operating temperature will lead to an incorrect or incomplete measurement.

After replacing the engine or making engine repairs that require the replacement or removal of the engine bearings, VANOS gears, camshafts, bed plate resealing, engine oil pump, engine oil filter housing, cylinder head, engine oil cooler or anything that interrupts the engine oil supply circuit of the engine requires a short oil pump and oil supply circuit priming procedure.

Refer to SI B11 09 15 for the detailed bleeding procedure.

After engine repair or replacement, pay attention to a proper installation of all engine ground connections.

In particular, follow the recommendations from SI B12 24 14 (N63: Proper Ignition Harness Installation and Ground Connections) for the ignition harness grounding. Any consequential damage to DME, alternator, or QLT sensor resulted from a loose ground (causing BSD communication faults), is not covered under N63 Class Settlement.

If the engine malfunction warning is illuminated and lean mixture faults are stored in the DME: 

1. Double check all basic induction system connections, ensue no leaks are present.

2. Adaptation Procedure: Disconnect the tank ventilation valve (purge valve) electrical connector and allow the engine to idle for 15 minutes. This procedure will allow the DME to readapt. After 15 minutes of idling reconnect the tank ventilation valve (purge valve) electrical connector and clear the fault memory. Test drive the vehicle to ensure all faults do not reoccur.

Workshop Cleanliness: 

Always ensure the high pressure fuel system parts are properly stored in a clean location. Use caps or bags to keep contamination from occurring. It is good practice to immediately cap the high pressure pumps and store them in the upright position so that the plunger does not dry out. The appropriate caps can be found in the N63 Valve Seal Replacement Tool Kit P/N 83 30 2 408 268.

N63 ENGINE OIL CONSUMPTION CHECKLIST

Date:		**Record the results of the vehicle's engine inspection and measurements below.** **Use this checklist for "oil consumption" complaints only.**
Dealer Number:	**VIN (7)**	
RO number	**Engine Serial Number**	

✓	Concern is "oil consumption."	Perform Consumption Test	Labor Operations:	00 66 284 (983); or 00 66 285 (985); or 00 66 286 (987)

1. Was an engine oil consumption test started and measured (Completed)? YES or No (No further repair)

   If yes, what was the level of engine oil consumption? _____

   Did the vehicle fail the oil consumption test? YES or NO (If yes, proceed to the five point check)

Five Point Check and Results: Only provide the answers to the applicable questions in steps 2 through 9, unless otherwise directed.

2.	Is the front engine cover leaking?	YES or NO
3.	Is the upper engine oil pan leaking?	YES or NO
4.	Is the engine oil leaking from the lower bell housing area?	YES or NO
5.	Only if 2, 3 and/or 4 are answered with "YES," then use the borescope: Is the oil return cover and/or oil return line gaskets leaking (10) oil? Provide photo in the case using the borescope regardless if it is found wet or dry.	YES or NO If **YES**, **do not replace the engine for oil leakage**, proceed to step 6.
6.	Are the turbochargers leaking engine oil?	YES or NO
7.	Did the vehicle fail the timing chain test plan?	YES or NO
8.	Was a cylinder compression test performed?	YES or NO

Note: The cylinder compression test should be performed after the engine has reached operating temperature. When performing this test, count the rotations of the engine crankshaft and apply the same rotations to each additional cylinder of the compression test. The industry standard is four (4) rotations per cylinder.

9.	Test Plan Compression Test Results: Did the cylinders exceed the specification	YES or NO

When comparing the values of all cylinders, the compression results should not vary by more than 2.5 bar or 36.25 PSI. If the difference is greater than 2.5 bar or 36.25 PSI, then the complete engine will need to be replaced.

If the test plan was not used, then document the compression test results by cylinder in the table below

1.	2.	3.	4.
5.	6.	7.	8.

Vehicles that FAIL the oil consumption test: Take a photo of only page 1 and submit a case with the other required pictures for authorization to the TSARA TeileClearing Hotline and wait for a response. Weekend and holiday submissions must wait for a response on the following business day before starting any repairs.
Vehicles that PASS the oil consumption test: Do not require any engine repairs and do not need a TSARA TeileClearing authorization.
Retain copy of this checklist in the vehicle file. Provide copy to your booker/warranty admin for claim processing.

N63 ENGINE OIL CONSUMPTION CHECKLIST

✓	The diagnosis scenarios are listed below, check the one that best describes the diagnosis result.	Recommended Repair Procedures	Labor Op Main (Plus) Code	Defect Code
	Vehicle fails engine oil consumption measure test/inspections		Plus (see above):	
	Engine oil leakage (2 and/or 3) found	Replace the engine	00 66 989 & 00 66 992	**1100900700**
	Engine oil leakage (2 and/or 3) and turbochargers found leaking oil (6)	Replace the engine and turbochargers		**1100900800**
	Only the timing chain test fails (7)	Replace engine	00 66 990 & 00 66 992	**1100900700**
	Timing chain test fails (7), and turbochargers (5) are leaking oil	Replace engine and turbochargers		**1100900800**
	Only the cylinder compression test fails (8).	Replace engine	00 66 991 & 00 66 992	**1100900700**
	Cylinder compression test (8) fails and turbochargers (5) are leaking oil	Replace engine and turbochargers		**1100900800**
	Class Member **rejects** replacement engine, claim applicable diagnosis labor operations with this defect code		See B01 21 18 and above	**1100901800**
	(Part availability has stabilized): Replacement engine is not available, claim applicable diagnosis labor operations with this defect code		See B01 21 18 and above	**1100901600**
	Steps 2, 3, 7 and 9 – OK, engine replacement is not necessary: performed additional diagnosis and found:			
	All other items ok	(A) Replace the valve stem seals and cylinder head covers oil separators	00 66 991 & 00 66 993	**1100900500**
	Turbos and/or lines (6) leaking	With (A), replace both turbochargers and/or the oil return line seals/return line cover seals	00 66 991 & 00 66 994	**1100900600**
	Rear oil leak (4), found valley dry (10) and the lower oil pan and turbos and/or lines (6) leaking	With (A), replace rear crankshaft and rear engine cover seals; lower oil pan gasket; replace both turbochargers; and/or the oil return line seals/return line cover seals	00 66 991 & 00 67 682	**1100902000**
	Found Step (10) ok, found rear oil leak (4), and turbos and/or lines (6) leaking	With (A) replace; rear crankshaft and rear engine cover seals; replace both turbochargers; and/or the oil return line seals/return line cover seals	00 66 991 & 00 67 683	
	Found Step (4 and 10) ok, found the lower oil pan and turbos and/or lines (6) leaking	With (A) replace the lower oil pan gasket; replace both turbochargers; and/or the oil return line seals/return line cover seals	00 66 991 & 00 67 684	
	Rear oil leak (4), found valley dry (10) and a lower oil pan leak	With (A). replace the rear crankshaft and rear engine cover seals and lower oil pan gasket	00 66 991 & 00 67 685	**1100901900**
	Found Step (10) ok, found rear oil leak (4)	With (A) replace the rear crankshaft and rear engine cover seals	00 66 991 & 00 67 686	
	Found Step (4 and 10) ok, found lower oil pan leak	With (A) replace the lower oil pan gasket	00 66 991 & 00 67 687	

Retain copy of this checklist (both pages) in the vehicle file. Provide copy of page 2 to your booker/warranty admin for claims processing.

Service Information Bulletin

June 10,2021

Choose a Group Description

B01 21 18

N63: OIL CONSUMPTION CLASS ACTION SETTLEMENT DIAGNOSIS/REPAIRS (VERSION 13.0)

MODELS

Certain of the following US-specification BMW vehicles sold or leased in the United States and Puerto Rico are included:

E70 (X5 xDrive50i Sports Activity Vehicle) (N63) Model Years (MY) 2010, 2011, 2012 and 2013	E71 (X6 xDrive50i sports Activity Coupe) (N63) MY 2009, 2010, 2012, 2013 and 2014	E72 (ActiveHybrid X6 SAC) (N63) MY 2009, 2010 and 2011	F01 (750i Sedan and ALPINA B7) (N63) MY 2009, 2010, 2011 and 2012
F01 (750i xDrive Sedan and ALPINA B7) (N63) MY 2010, 2011 and 2012	F02 (750Li Sedan and ALPINA B7) (N63) MY 2009, 2010, 2011 and 2012	F02 (750Li xDrive Sedan and ALPINA B7) (N63) MY 2010, 2011 and 2012	F04 (ActiveHybrid 750i Sedan) (N63) MY 2010 (one VIN), 2011, 2012 and 2013
F07 (550i Gran Turismo) (N63) MY 2010, 2011 and 2012	F07 (550i x Drive Gran Turismo) (N63) MY 2010, 2011 and 2012	F10 (550i Sedan) (N63) MY 2010, 2011, 2012 and 2013	F10 (550i xDrive Sedan) (N63) MY 2010, 2011, 2012 and 2013
F12 (650i, 650i xDrive Convertible) (N63) MY 2011 and 2012	F13 (650i, 650i xDrive Coupe) (N63) MY 2011 and 2012		

INFORMATION

This Service Information bulletin applies to:

- Class vehicles in operation on the road (applicable N63 engine model vehicles); by
- Class members (Class Vehicle owners on the date this settlement became effective)

Additionally, it provides diagnostic/repairs instructions, as well as Warranty Information for performed remedies.

Also, please familiarize yourself with other important Service Bulletins pertaining to the N63 Class Action Settlement:

- SI B01 29 18 - N63 Engine Vehicles: Class Action Settlement For Engine Oil Consumption/Battery Drain / OVERVIEW
- SI B01 22 18 - N63 Engine Class Action Settlement: BATTERY SERVICE BENEFIT
- SI B01 23 18 - N63 Engine Oil Consumption/Battery Drain Class Action Law Suit Settlement: FUTURE ENGINE OIL SERVICE BENEFIT
- SI B01 28 18 - N63 Engine Repairs: RENTAL CARS for OUT OF SERVICE VEHICLES

Important Note

The service (repair) benefit that is provided by this settlement is subject to the same vehicle eligibility requirements, limitations, and exclusions that apply to the BMW New Vehicle Limited Warranty.

Specifically, the coverage shall be null and void because the:

- **Vehicle has been declared a total loss or sold for salvage purposes, the true mileage cannot be determined, the Vehicle Identification Number (VIN) has been altered and cannot be determined, and/or the**
- **Applicable covered vehicle components were previously replaced with used or salvaged automobile parts.**

The BMW DCSnet Warranty Vehicle Inquiry (WVI) may not contain a corresponding Vehicle Comment that identifies that one or more of the above non-eligible vehicle situations apply. In these cases, please use any other resources that are available at your center to confirm the vehicle's eligibility (for example, CARFAX®).

If it is determined the vehicle is non-eligible, or if you are uncertain of the vehicle's eligibility, or you do not have access to any other resources; please create a TSARA TeileClearing Hotline case that includes or identifies the issues that could affect the vehicle's eligibility and wait for a response before proceeding.

SITUATION

While engine oil consumption may create a customer inconvenience, in the short term it should not cause any drivability problems that would prevent normal day-to-day operational use of the vehicle.

Some Class Vehicles will pass the oil consumption test (no repair necessary) even though a Low Oil Level indicator/message is displayed between required engine oil services.

It is important that the engine oil level stays at and is maintained above the minimum, so that the Low Oil Level indicator/message is not displaying.

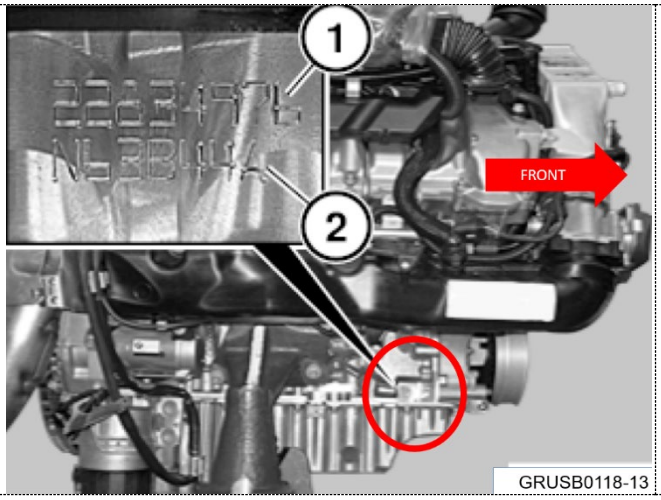
Refer to the Procedure section for information on diagnosing the oil consumption issue.

PROCEDURE

Engine serial number verification (included in the engine diagnosis labor operations):

Verify that the proper engine serial number is installed in the vehicle before starting any diagnosis or repairs.

NOTE: Only vehicles equipped with the original engines (engine serial number matching the serial number in AIR), or with a BMW Replacement Engine (purchased from BMW PDCs, and replaced under Warranty; or customer pay) are eligible to participate in this Class Action Settlement.



The engine serial number is located at the lower front right corner of the engine block.

- Engine serial number (1)
- Engine type Number (2)

Regardless if you are requesting an engine repair or an engine replacement, each TSARA case requires enclosing a photograph of the engine serial number.

To reduce processing time, also state the engine serial number in the case comments before submitting.

All engine serial numbers will be verified at the Warranty Part Return Center.

IMPORTANT NOTES:

1. **Only a Shop Foreman is authorized to approve the final results of N63 Class Action diagnosis and repair.**

2. **The complete N63 Oil Consumption Checklist, or N63 Smoke Checklist, along with the relevant photographs have to be submitted via a TSARA TeileClearing Hotline case titled N63 Class_Action.**

3. **Do not attach photographs which are not relevant, vague, not clear, and which are not providing a clear evidence/source of an observed major leak. A TC case with an excessive number of poor quality photographs requires more time to process, resulting in a delayed response.**

   Please specify in the case details the photograph description. Renaming the photograph is not necessary.

   For example:
   - **Front engine cover = X1234.jpg**
   - **Turbo inspection = X5678.jpg**

4. **The TSARA TeileClearing N63 Class Action process has started on November 1st, 2018. Weekend and holiday submissions will be accepted, but must wait for a response on the first business day before starting any repairs.**

5. **The AutoStamp submission process has been deactivated as of 11/01/2018.**

6. **It is the Shop Forman's responsibility to provide a complete and accurate diagnosis documentation, as described below.**

   Including follow-up/updates to the original TSARA TeileClearing case prior to performing any additional related work that is found needed during the repair process.

Incomplete, missing, or misleading N63 Class Settlement engine diagnosis and repairs will result in debiting of the Warranty claim.

Refer to the section that applies to the vehicle situation.

7. **Do not drain and measure the engine oil. Follow the applicable instructions to use the electronic oil level measurement.**

8. **When the customer's complaint is smoke from the exhaust system, proceed to Section 1, Step 1 below. If the customer complains only about frequent engine oil top-offs, go to Step 2.**

Section 1 – Visually diagnose the vehicle for smoke from the exhaust tail pipes:

- Start the vehicle and allow it to reach to reach operating temperature, approximately 15 minutes or less. Quickly push-and-release the accelerator pedal from idle position to between 2,000 and 3,000 RPM, then immediately allow the engine to return to idle and observe the exhaust tail pipes for smoke.
    - If the vehicle is smoking, refer to the following two attachments
    - If the vehicle is not smoking, proceed to step 2.

        - N63 Smoke Instructions
        - N63 Smoke Checklist

Note: Document all results in the attachment B01_21_18_N63 Smoke Checklist simultaneously while following the instructions.

IMPORTANT: Take a photograph of a smoke emitted from the exhaust pipes during this test, and attach it to a TSARA TeileClearing Hotline case.

- If the vehicles does not exhibit any smoke from the tailpipes, then an oil consumption test will need to be started using the following attachment.

    - N63 Oil Consumption Instructions (only perform steps 1 and 2 in this document until the vehicle returns for the measurement described in section 2)

IMPORTANT: Apply tamper-proof markings to the engine oil drain plug, engine oil filter and engine oil fill cap. Ensure these have not been tampered with when the vehicle returns for the oil consumption measurement.

Section 2 – The vehicle has returned for the oil consumption measurement:

Measure the oil consumption. Refer to the following attachments.

- N63 OC Instructions (Resume the procedure at step 3 in this document)
- N63 Oil Consumption Checklist

Note: Document all results in the N63 Oil Consumption Checklist simultaneously while following the instructions.

Section 3 – Documenting the results of the visual inspection, failed oil consumption test and or vehicle inspection steps.

1. The "N63 Oil Consumption Checklist", or "N63 Smoke Checklist" must be completed and photographed (both pages side by side in one photo).
2. Capture photos of the failed or leaking components.

3. Document the inspection/test results in a TSARA TeileClearing Hotline case, describe in the case what repair you are requesting, submit the case and wait for a response before continuing with repairs.

If the vehicle is not smoking or the vehicle passes the oil consumption test or the vehicle does not require any repairs then do not enter a TSARA TeileClearing Hotline case.

Calculating Oil Consumption by Milliliters

If the customer has driven much further than recommended, then the result of the test plan and the miles driven can be determined using a calculator. The calculation below will determine the exact oil consumption level of the engine.

Calculation:

Milliliters of oil consumed ÷ miles driven = X.XXX milliliters (ml) per mile driven

The oil consumption specification of this calculation is 1.333 milliliters (ml) per mile driven.

For example, 1000ml ÷ 750 miles = **1.333 ml per mile**, this is the 1 liter per 750 miles specification.

If the result of the calculation is 1.333 ml per mile and greater, then you must continue with the diagnosis and address the customer complaint.

If the result of the calculation is less than or equal to 1.332 ml per mile, then the customers complaint does not exceed the allowable engine oil consumption specification. Take no further action.

Example:

900 ml consumed ÷ 750 miles driven = **1.2 ml per mile** – Take no further action and release the vehicle.

Engine Repairs and Replacements:

Replacement engine assemblies are **NOT pre-filled** with engine oil.

After replacing an engine with a new or remanufactured engine assembly, the engine oil level must be verified as outlined in the procedure below first, before starting the engine for the first time.

If the replacement engine is started to determine electronically if the engine is filled with the appropriate amount of engine oil, damage to the replacement engine can occur immediately.
The engine may have some residual engine oil from assembly, but this is **not enough** engine oil to properly lubricate the engine to measure the engine oil level electronically when it is started for the first time.

Furthermore, the electronic engine oil measurement is only operational when the engine is running at its full operating temperature. Checking the engine oil without the engine running at operating temperature will lead to an incorrect or incomplete measurement.

After replacing the engine or making engine repairs that require the replacement or removal of the engine bearings, VANOS gears, camshafts, bed plate resealing, engine oil pump, engine oil filter housing, cylinder head, engine oil cooler or anything that interrupts the engine oil supply circuit of the engine requires a brief oil pump and oil supply circuit priming procedure.

Refer to SI B11 09 15 for the detailed bleeding procedure.

- **The time to perform this procedure is included in the applicable special repair labor operations that are provided in the attachments to this Service Information bulletin**

After engine repairs or replacement, pay attention to a proper installation of all engine ground connections. Mark the various ground connections with a small parts tag or colored tape.
In particular, follow the recommendations from SI B12 24 14 (N63: Proper Ignition Harness Installation and Ground Connections) for the ignition harness grounding. Any consequential damage to DME, alternator, or QLT sensor resulting from a loose ground (causing BSD communication faults), **is not covered** under N63 Class Settlement.

If the engine malfunction warning is illuminated and lean mixture faults are stored in the DME:

1. Double check all basic induction system connections, ensue no leaks are present.

2. Adaptation Procedure:

    - Disconnect the tank ventilation valve (purge valve) electrical connector and allow the engine to idle for 15 minutes. This procedure will allow the DME to readapt.
    - After 15 minutes of idling, reconnect the tank ventilation valve (purge valve) electrical connector
    - Clear the fault memory
    - Test drive the vehicle to ensure all faults do not reoccur

Engine Timing Chain Guide Pre-Inspection (TeileClearing Approved Valve Seal Replacement)

When an eligible Class Member's Class Vehicle either fails the oil consumption or visible smoke test, prior to performing the TeileClearing approved valve seal replacement, first inspect for broken timing chain guides (even if the Class Vehicle's engine passed the timing chain test plan).

To confirm that the timing chain guides are not broken (fully intact), remove the valve covers without removal of the VANOS units:

- Turn the engine manually 2-3 revolutions while listening for any unusual noises coming from the timing chains area; and/or
- Using a borescope, run the probe down the chain on both banks to inspect for guide breakage/cracks.

If any timing chain guide damage is found, supplement your TC case with this additional information and photographs and wait for response before proceeding any further.

Workshop Cleanliness:

Always ensure the high pressure fuel system parts are properly stored in a clean location. Use caps or bags to keep contamination from occurring. It is good practice to immediately cap the high pressure pumps and store them in the upright position so that the plunger does not dry out.

The appropriate caps can be found in the N63 Valve Seal Replacement Tool Kit P/N 83 30 2 408 268.

PARTS INFORMATION

Based on the results from the inspections and testing, select the appropriate parts to repair the vehicle.

The replacement N63 engine assembly part supply has stabilized, this will significantly reduce the number of vehicles that are diagnosed and awaiting (pending) engine (assembly) replacements due to insufficient part availability.

Engine replacement only if the vehicle is found smoking or the measured oil consumption is too high and failing any one of the 5 point checks.

The vehicle's mileage to determine Customer's Contribution will be based on the mileage the vehicle had on the date the final 5-step diagnosis was completed.

Part Number	Description	Quantity
Refer to ETK using the vin number of the vehicle	Exchange engine	1
07 12 9 904 707	ISA screw with washer	1
11 42 7 634 679	Oil pipe	1

Valve seal and engine oil separator replacement- Only if the vehicle is found smoking or the measured oil consumption is too high, and all 5 point checks are found to be good:

Part Number	Description	Quantity
11 34 0 054 492	Valve seal repair kit	2
11 15 8 636 540	Oil separators, set (kit with bolts)	1
11 12 7 566 281	Timing chain tensioner cover gasket	2
11 12 8 636 401	High-pressure pump profile gasket	2
11 36 7 564 346	VANOS central screws	4
11 42 7 583 220	Engine oil filter	1
13 53 7 584 315	Injector gasket ring seal	8
13 53 7 564 751	Injector decoupling element	8

Also, if found defective (cracked, leaking), the following crankcase ventilation hoses need to be replaced:

Part Number	Description	Quantity
11 15 7 575 640	Vent pipe	1
11 15 7 575 641	Vent pipe	1
11 15 7 646 086	Connecting line	1
11 15 7 646 087	Connecting line	1

Also, if found leaking, turbocharger oil return pipes, return cover and gaskets:

Part Number	Description	Quantity
11 65 7 577 016	Oil return cover	1
11 42 8 624 158	Gasket, asbestos free	2
11 42 7 577 010	Oil return pipe, cylinder 1-4	1
11 42 7 577 011	Oil return pipe, cylinder 5-8	1

Turbo replacement, only if found to be leaking:

Part Number	Description	Quantity
11 65 7 646 092	Turbocharger	2

Rear cover and rear crankshaft seal replacement, only if found to be leaking:

Part Number	Description	Quantity
11 14 2 446 298	Updated end cover rear kit	1

Refer to ETK	Cap with rear seal (rear crankshaft seal)	1

Refer to the ETK and the applicable repair instructions for one-time use fasteners and/or component information regarding additional, in-conjunction parts/kits or replacement screws, gaskets, seals and clamps that need to be installed and claimed.

All repairs (as needed):

Bulk Materials – Sublet

Part Number	Description	Quantity
83 21 2 466 454 Or 83 21 2 365 950	5W-30 BMW Engine Oil 1 liter Or 0W-30 BMW engine oil 1 liter	Up to 9.6 liters
		(E72, F04 8.5)
82 14 1 467 704	Antifreeze	See Sublet (1 Gallon)
83 29 0 429 576	Hydraulic fluid CHF 11 S (F01, F02, F04, F07)	See Sublet (up to 1)

1 Gallon Antifreeze = 2 Gallons at a 50/50 mixture solution.

WARRANTY INFORMATION

Note: The short-term extension window of one (1) year/12,000 miles from date of the settlement (October 12, 2018) to perform the applicable engine testing and qualifying repairs on Class Members' Class Vehicles that were beyond 10 years/120,000 miles has expired.

With repair/claim dates as of October 12, 2019, the Class Member's Class Vehicle engine's coverage period for diagnosis and to perform the qualifying repairs outlined in this Service Information Bulletin is now solely the remainder of the first 10 years or 120,000 miles, whichever occurs first, as determined by the original in-service date.

The settlement terms, conditions and customer contribution percentage matrix for applicable engine assembly replacement repairs apply.

Should an eligible Class Member return for another oil consumption-related issue with their Class Vehicle, qualifying diagnosis and repairs (full or the Contribution Matrix as applicable) are covered under the remaining portion of the first 10 years or 120,000 miles, whichever occurs first.

Parts replaced to perform settlement-related repairs that fail for non- oil consumption-related issues are cover under the BMW Limited Parts Warranty for 24 month without mileage limitation.

Engine diagnosis:

A. Up to three (3) engine oil consumption (two-part setup/test) diagnosis procedures may be eligible to be performed or upon verification of blue smoke from the exhaust pipes is reimbursement is at 100%.

Based on the results of the engine diagnosis, when applicable:

B. Eligible "**engine repairs"** are reimbursed at 100%.
C. Eligible "**complete engine assembly replacements"** (including supplemental/in conjunction repairs) are reimbursed according to the customer contribution percentage matrix.

Engine Assembly Replacement - Customer Contribution Percentage Matrix (Item C)			
Odometer Miles*		**Customer's Contribution**	**BMW's Contribution**
Up to	50,000	0% (None)	100%
50,001	60,000	5%	95%
60,001	70,000	15%	85%
70,001	80,000	30%	70%
80,001	90,000	45%	55%
90,001	100,000	60%	40%
100,001	110,000	75%	25%
110,001	120,000	90%	10%
120,001	And higher	100%	0% (None)

Applying the Contribution Matrix*

When an eligible vehicle returns to a BMW authorized center for an oil consumption issue and the vehicle's engine either:

- Fails the oil consumption measure test (part two); or there is-
- Visible blue smoke from the exhaust pipes; **and** the-
- Vehicle's engine fails the one of the other required inspections (5 point checks); then

Use the vehicle's "odometer miles" when the **above occurred** to determine the customer's contribution. This documented odometer mileage is to be also used when the **qualifying engine replacement** is delayed due to awaiting parts from BMW.

Please ensure to document this information on the repair order and in the claim comments.

BMW Certified Pre-owned (CPO) Vehicles

Qualifying N63 engine "replacements" are covered under the terms of the applicable CPO coverage.

Should the CPO covered component fail again, this component is covered by the remaining portion of the CPO coverage period.

Consequential Repairs

When additional work and/or parts are required as a "direct result" of performing an eligible repair that is outlined in this Service Information bulletin:

- Claim these items under the applicable Defect Code;
- Including prior TeileClearing (TC) approval (when required); together with
- The corresponding labor operations and FRU allowances listed in the AIR.

Please explain the reason for this consequential repair work (the why and what) on the repair order and in the claim comments section.

Attachments for Defect Code and Labor Operation information for Repair Invoicing and Claim Submission.

For oil consumption diagnosis and repair-related defect codes and labor operations, see the attachment:

- B01 21 18 N63 Oil Consumption (OC) Claim Info 10_18_19; or

Or:

For visible blue smoke diagnosis and repair-related defect codes and labor operations, see the attachment:

- B01 21 18 N63 Blue Smoke (BS) Claim Info 10_18_19; and

Refer to AIR for the corresponding flat rate unit (FRU) allowances.

Overlapping Labor Procedure – Other Repairs

If invoicing the AIR flat rate labor operation codes for other repair work results in overlapping labor, for those flat rate labor operations that are affected, you are able to:

- Replace the stated AIR “FRU allowance” with a “reduced FRU value” to eliminate the overlapping labor.

For help in identifying the overlapping labor, please refer to the AIR FRU Plausibility Check (Overlapping Labor Tool) that is located in the AIR Client.

Eligible other repair work being claimed under a different defect code will require separate punch times.

On the repair order and in the claim comment section, please identify and itemize those labor operations being claimed with a “reduced FRU value.”

QUESTIONS REGARDING THIS BULLETIN

Technical inquiries	Submit feedback at the top of this bulletin
Warranty inquiries	Submit an IDS ticket to the Warranty Department or use the chat available in the Warranty Documentation Portal
Parts inquiries	Submit an IDS ticket to the Parts Department