



SIB 11 07 16

2020-04-15

Diesel Engine: Intake Manifold Damaged

This Service Information Bulletin (Revision 2) replaces SI B11 07 16 **dated August 2016**.

What's New (Specific text highlighted):

- All sections updated except Models

MODEL

F02 (7 Series Sedan)	F10 (5 Series Sedan)	F15 (X5 Sports Activity Vehicle)	F25 (X3 Sports Activity Vehicle)
F30 (3 Series Sedan)	F31 (3 Series Sports Wagon)	Models with the N47T or N57T diesel engine	

SITUATION

If Recall Campaign 18V-755: Exhaust Gas Recirculation (EGR) Cooler Inspection (and repair) (SI B11 17 18) applies and shows open on an Eligible Vehicle, then this bulletin does not apply.

The vehicle demonstrates a power loss while driving, and illuminated malfunction indicator lamp (MIL).

The following fault codes may be stored in the DDE:

- 24CE00 - Hot film air mass meter: Ratio of measured to calculated air mass too high
- 27F000 - Charge air hose monitoring in idle: Charge air hose fallen down
- 290900 - Air system, air to EGR air mass flow plausibility: Measured air mass compared to calculated air mass too high
- 290A00 - Air system, air to EGR air mass flow plausibility: measured air mass compared to calculated air mass too high and high charging pressure control deviation

Additionally, the customer may also state that from the engine compartment there is:

- A whistling noise;
- A diesel exhaust smell; and/or
- A smell of melted plastic.

The intake manifold (intake system) is found to have thermal deformation or damage. Melt-through may also be found in the area of the EGR inlet and randomly around the intake system.

CAUSE

The reasons for this SITUATION are:

1. Excessive thermal load from the EGR system on the intake components
2. Excessive unmetered air leaks on the intake/charge air system

CORRECTION

Follow the attachment below that applies to diagnose and repair the vehicle:

- For N47T engines – B110716 N47T; or
- For N57T engines – B110716 N57T

PARTS INFORMATION

Only for vehicles that are still within the standard New Vehicle Limited Warranty coverage that do not show Recall Campaign 18V-755 (SI B11 17 18) open:

Obtain and confirm the part numbers for your specific vehicle by entering the chassis number in either ETK or AIR which takes into account specific equipment and/or options.

Additionally, other small parts that are not specified above, such as one-time screws, nuts and seals, which must be replaced according to the ISTA repair instructions/ETK, must be selected from the Electronic Parts Catalogue according to the respective vehicle type and invoiced under the corresponding repair defect code below.

WARRANTY INFORMATION

For applicable vehicles where Recall Campaign 18V-755 ([SI B11 17 18](#)) does not show open and are also beyond the standard BMW New Vehicle Limited Warranty coverage period, please refer for [SI B01 05 20](#) for the component-specific extended limited warranty coverage that may apply along with the corresponding special claim submission information.

Claim submission only when the repair is still covered the the terms of the standard BMW New Vehicle Limited Warranty for Passenger Cars and Light Trucks, including Emissions when determined applicable.

There is overlapping labor contained within the flat rate labor operations provided below. Please use the FRU Plausibility check tool to identify the overlapping labor, and reduce the stated FRU allowances accordingly prior to claim submission.

Defect Code:	1171067600	Exhaust-gas recirculation cooler (including bypass flap)/exhaust cooler dirty / blocked
Labor Operation	Description	Labor Allowance
00 00 006	Performing vehicle test (with vehicle diagnosis system – checking faults) (Main work)	Refer to AIR
Or:		
00 00 556	Performing vehicle test (with vehicle diagnosis system – checking faults) (Plus work)	Refer to AIR
And:		
61 21 528	Connect an approved battery charger/power supply	Refer to AIR
And, as necessary:		
61 00 006	Performing vehicle diagnosis – test module	Work time (WT)
And:		
11 71 600	Removing and installing/replacing EGR cooler	Refer to AIR
And:		
11 99 000	Inspecting EGR valve, EGR valve removed and replace if necessary (with 11 71 600, EGR valve removed)	1 FRU

If you are using a Main labor code for another repair, use the Plus code labor operation 00 00 556 instead.

And, for the

N57T engine only-

Labor Operation	Description	Labor Allowance

11 71 704	Removing and inspecting/replacing high pressure auxiliary EGR cooler (EGR cooler's production date is before 15.02.20 (YY.MM.DD or February 20, 2015))	Refer to AIR
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And, as if necessary:

Labor Operation	Description	Labor Allowance
11 61 551	Replace intake manifold	Refer to AIR
And, if necessary:		
18 31 580	Removing and inspecting/replacing Diesel particulate filter (DPF)	Refer to AIR
And:		
18 31 900	Additional job while replacing particulate filter (Resetting adaptations values)	Refer to AIR

Refer to AIR for the corresponding flat rate unit (FRU) allowances and reduce as necessary.

Work time labor operation code 61 00 006 is not considered a Main labor operation; however; it does require an individual punch time to support the FRU amount claimed and an explanation on the repair order and in the claim comments section.

Work time labor operation code 11 99 000 is not considered a Main labor operation. Also, since the work time FRU allowance to be claimed is specified, a separate punch time is not required. However; it still requires an explanation on the repair order and in the claim comments section.

And, as needed:

Sublet – Bulk Materials (RO and Claim Comments Required)

Sublet Code 4	See the sublet reimbursement calculations below	Reimbursement for the repair-related bulk materials (Do not use the BMW part numbers for claim submission)
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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.

BMW Antifreeze/Coolant: Claim the corresponding sublet dollar amount for the quantity needed to replace what was drained with a 50/50 coolant/water solution.

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

Consequential Repair

When additional work and/or part replacements are required as a direct result of the issue described in this Service Information bulletin, claim these items under the under the defect code listed above together with the corresponding labor operations (including any additional diagnosis) listed in AIR if applicable.

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

Supporting Materials

[picture_as_pdf B110716 Attachment N47T.pdf](#)

[picture_as_pdf B110716 Attachment N57T.pdf](#)

N47T Engine EGR Cooler Diagnosis and Determining the Condition of the Intake System

1. Remove the engine cover and inspect the intake manifold and venturi pipe to the throttle for holes or cracks.



Are there visible signs, on the intake manifold and venturi pipe, of overheating, similar to the illustration (1)?

- YES – go to step 4.
- NO – continue with step 2.

2. Perform the air mass system test in ISTA (path Function Structure/Power train/Diesel fuel electronics/Air mass/Air mass system test).
 - a. Select test: Charge group functional check. The tests checks the integrity of the charge air and intake systems.
 - b. Listen and isolate any whistling in the charge air and intake systems while the test is running.
 - c. At the end of the test the throttle valve will close which causes the engine to shut off.

Did the engine shut down smoothly?

- YES- Check the results of the test plan and check the charge air circuit of the induction system (air flow before the throttle valve).
 - Repair as necessary.
 - **Do not** continue with the rest of this procedure.
- NO (engine stumbles or runs rough before shutting off) – there is a leak in the intake or EGR system (air system after the throttle valve). Continue to Step 3.

3. Check the EGR system.

Is the EGR system leaking (external exhaust leak)?

- YES- repair as necessary.
 - Repeat the test plan for the charge air system to confirm repairs.
 - **Do not** continue with the rest of this procedure.
- NO- continue to Step 4.

4. Check the intake manifold and venturi pipe for leaks.

Did you find any leaks?

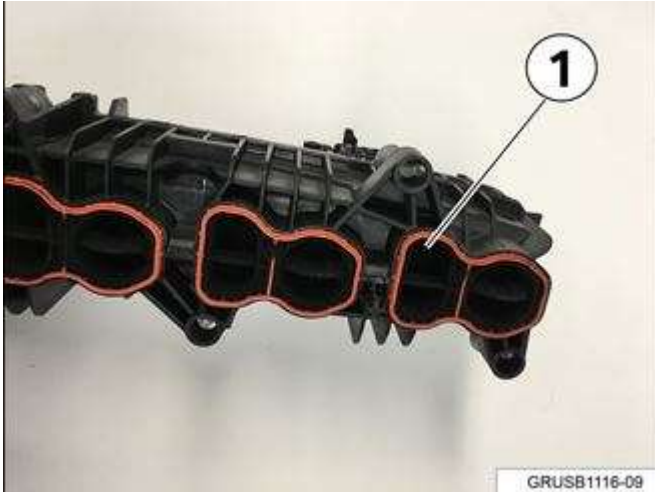
NO – go to step 8.

YES – determine cause of leak.

- A. If either component is damaged, continue to Step 5.
- B. If leaks are found with no damage (leaking gaskets or sealing rings)

- Repair as necessary.
- Repeat the test plan for the charge air system to confirm repairs.
- **Do not** continue with the rest of this procedure.

5. Remove the intake manifold (Refer to Repair Instruction RA 11 61 550 Removing and installing/renewing intake plenum).



6. Check all swirl flaps for damage or melted/missing parts (1).
Are any swirl flaps damaged?
YES- Continue to step 7.
NO - Go to step 8.

Note: N57T is pictured, N47T is similar.

7. Check compression of all cylinders (**Step 6 = Yes only**).

- Refer to Repair Instruction RA 11 00 540 Checking compression of all cylinders.
- The cylinders compression should be greater than 16 bar (232 psi).
- The compression test is to 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 other cylinder of the compression test. The industry standard is four (4) rotations per cylinder.
- When comparing the values of all cylinders, the compression results should not vary by more than 2 bar or 29.01 psi between the cylinders.

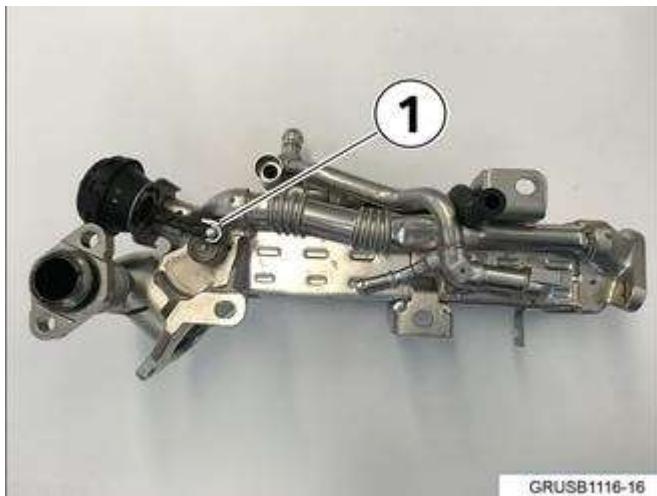
Is compression performance of one or more cylinders out of range?

YES– Submit a TC case to the TC Engine group for further repair assistance. Continue with step 8 to determine the cause of the damage to the intake system.

NO– continue to Step 8.



8. Remove the EGR valve and check for jamming (valve is normally sprung closed).
Is the EGR valve jammed or stuck open?
 YES- continue to step 10.
 NO – go to Step 9.



9. Check the bypass flap on the EGR cooler.
Is the flap binding?
 YES- Replace the cooler (with EGR valve).
 NO – Reinstall the EGR valve and continue to Step 11.

10. If the EGR valve is stuck open, check the valve for debris holding the valve open.
Is there debris jamming the valve open?

- YES (debris) - Replace the EGR cooler (with new EGR valve).
- NO (open, but no debris) - Continue to Step 11.

11. Check for faults after all repairs and re-run appropriate test plans to confirm diagnosis and repairs.

N57T Engine EGR Cooler Diagnosis and Determining the Condition of the Intake System

1. Remove the engine cover and inspect the intake manifold and venturi pipe to the throttle for holes or cracks.



Are there visible signs, on the intake manifold and venturi pipe, of overheating, similar to the illustration (1)?

- YES – go to step 5.
- NO – continue with step 2.

2. Perform the air mass system test in ISTA (path Function Structure/Power train/Diesel fuel electronics/Air mass/Air mass system test).
 - a. Select test: Charge group functional check. This test checks the integrity of the charge air and intake systems.
 - b. Listen and isolate any whistling in the charge air and intake systems while the test is running.
 - c. At the end of the test the throttle valve will close which causes the engine to shut off.

Did the engine shut down smoothly?

- YES- Check the results of the test plan and check the charge air circuit of the induction system (air flow before the throttle valve).
 - Repair as necessary.
 - **Do not** continue with the rest of this procedure.
- NO (engine stumbles or runs rough before shutting off) – there is a leak in the intake or EGR system (air system after the throttle valve). Continue to Step 3.

3. Check the EGR system.

Is the EGR system leaking (external leaks)?

- YES- repair as necessary.
 - Repeat the test plan for the charge air system to confirm repairs.
 - **Do not** continue with the rest of this procedure.
- NO- continue to Step 4.

4. Check the intake manifold and venturi pipe for leaks.

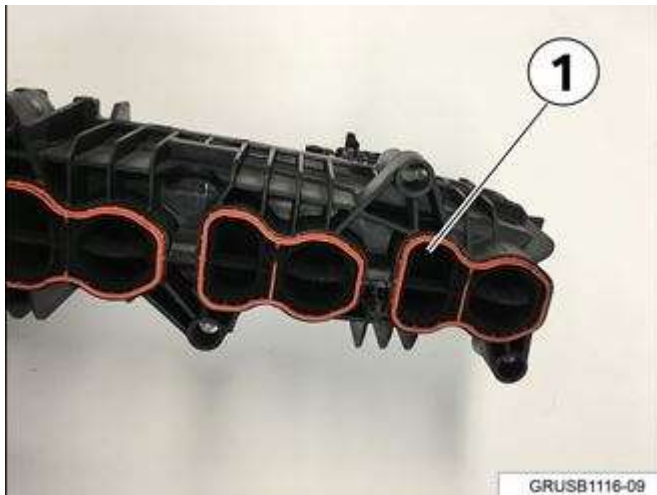
Did you find any leaks?

NO – go to step 8.

YES – determine cause of leak.

- A. If either component is damaged, continue to Step 5.
- B. If leaks are found with no damage (leaking gaskets or sealing rings)
 - Repair as necessary.
 - Repeat the test plan for the charge air system to confirm repairs.
 - **Do not** continue with the rest of this procedure.

5. Remove the intake manifold (Refer to Repair Instruction RA 11 61 550 Removing and installing/renewing intake plenum).



6. Check all swirl flaps for damage or melting/missing parts (1).

Are any swirl flaps damaged?

YES- Continue to step 7.

NO – Continue to step 8

7. Check compression of all cylinders (**Step 6 = Yes only**).

- Refer to Repair Instruction RA 11 00 540 Checking compression of all cylinders.
- The cylinders compression should be greater than 16 bar (232 psi).
- The compression test is to 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 other cylinder of the compression test. The industry standard is four (4) rotations per cylinder.
- When comparing the values of all cylinders, the compression results should not vary by more than 2 bar or 29.01 psi between the cylinders.

Is compression performance of one or more cylinders out of range?

YES– Submit a TC case to the TC Engine group for further repair assistance.

NOTE: Continue with step 8 to determine the cause of the damage to the intake system and insure no loose parts are still in the EGR or exhaust system.

NO– continue to Step 8.

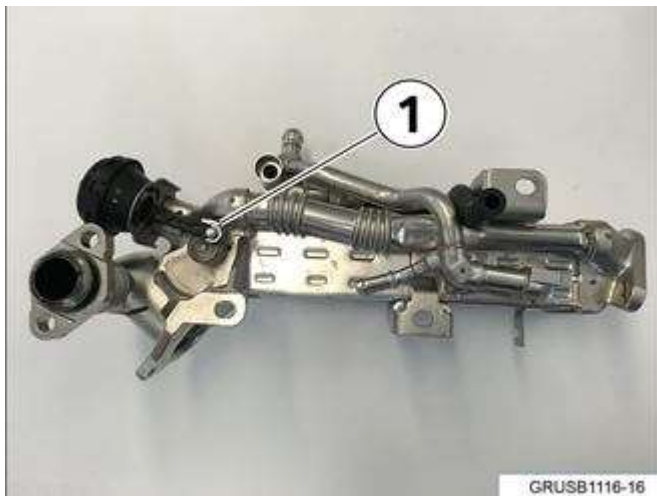


8. Remove the EGR valve and check for jamming (1) (valve is normally sprung closed).

Is the EGR valve jammed or stuck open?

YES- continue to step 10.

NO – go to Step 9.



9. Check the bypass flap on the EGR cooler.

Is the flap binding?

YES- Replace the cooler (with EGR valve).

NO – Reinstall the EGR valve and continue to Step 11.

10. If the EGR valve is stuck open, check the valve for debris holding the valve open.

Is there debris jamming the valve open?

- YES (debris) - Replace the EGR cooler (with new EGR valve). Continue to Step 11
- NO (open but no debris) - Continue to Step 11.

11. Remove the auxiliary EGR cooler. Refer to Repair Instruction 11 71 101 Removing and installing / replacing the exhaust-gas recirculation cooler at the diesel particulate filter (N57 D30 O1 with SCR).

12. Inspect the cooler by-pass flap (1).



Is the flap intact?

YES- Check the production date of the cooler (1). If the production date is before 15.02.20 (YY.MM.DD or February 20, 2015) replace the cooler. If the production date is newer – reinstall the cooler.

NO (flap missing or damaged) – Replace the cooler and continue to step 13.

13. The following steps are to check for damage due to the missing aux. EGR cooler flap.

- Remove the diesel particulate filter (DPF) and check for debris. Follow Repair Instruction 18 31 080 Removing and refitting/replacing diesel particulate filter (N57 D30 O 1 with SCR). Check integrity of the honeycomb of the DPF.
- Clean out or replace the DPF as necessary.
- Check the turbo impellor

Are the fins damaged?

- YES- repair as necessary.
- NO – reinstall the exhaust components

14. Check for faults after all repairs and re-run appropriate test plans to confirm diagnosis and repairs.