

How to use the NOx sensor emulator NOXEM 129 | 130. Part 1

1. Replace the existing NOx sensor to NOx emulator
 2. Encode replacement of NOx sensor, using ISTA D/+
 3. Encode replacement of NOx catalytic converter, using ISTA D/+
 4. Delete error messages, using ISTA D/+ or INPA (option)
 5. Re-adaptation of the engine using ISTA D/+ or INPA (recommended)
- delete old adaptations
 - create new adaptations

Notes

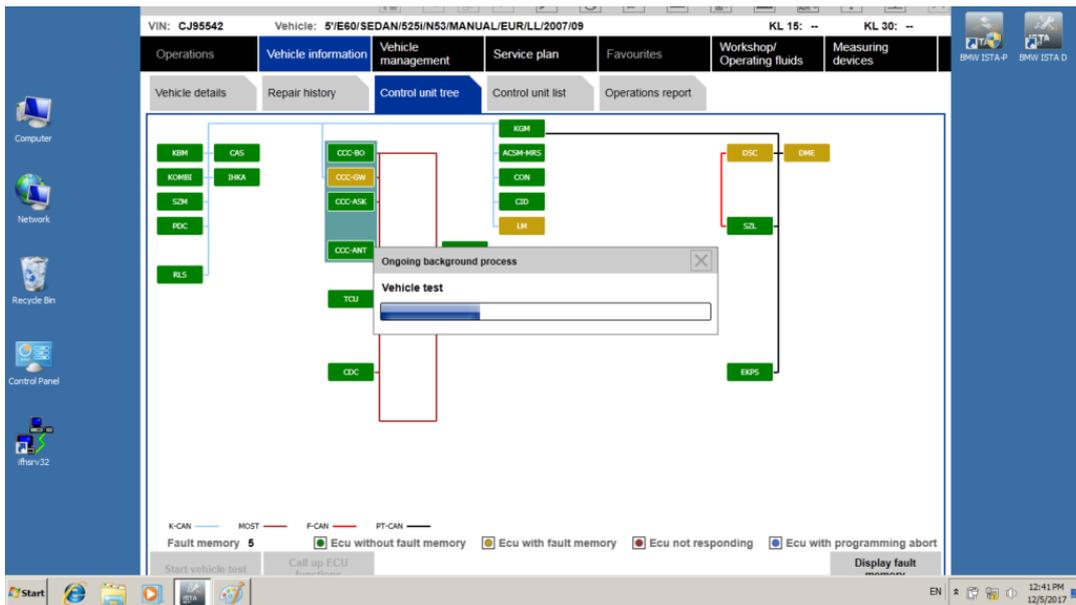
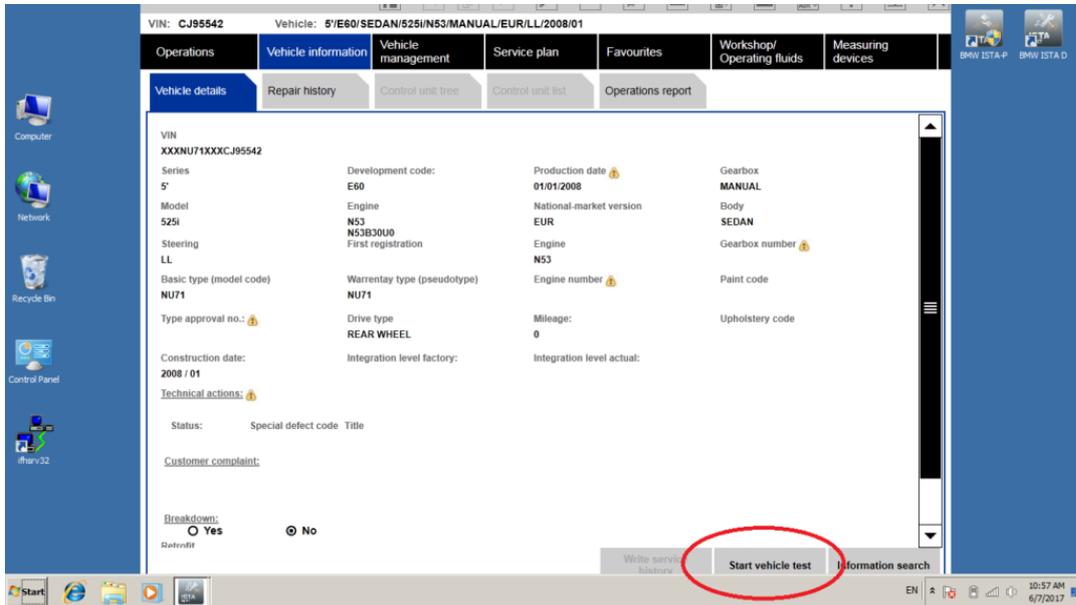
- After installing, encoding of NOXEM and clearing of old adaptations, the positive effect is not reached immediately – it takes some time. First driving sessions after replacing the sensor will be with increased engine unevenness – the engine will measure the performance of each cylinder in different driving conditions: it will restore correct adaptations.
- Some specific adaptations are performed only in conditions of even load and RPM. That's why it is so important (after installing and coding of NOXEM), in first driving sessions (after creating the initial adaptations, as described in Part 2) to allow the engine warm up in idle, drive as smooth as possible and with longer driving sessions. In such way, the engine will reach even performance as quickly as possible.
- Immediate symptom, that the installation and encoding of NOXEM was successful: after new adaptations are completed as described [here](#), the engine (again) runs in Stratified charge when driving evenly – fuel consumption is decreasing.
- In the initial stage, after installing NOXEM the engine will intensively create adaptations for exact driving conditions: most often it will switch to Homogeneous mode. It is normal and very typical for this engine - adaptations (also smoothness measurements of cylinders) are performed for each mode - Homogeneous, Homogeneous lean, Stratified charge – separately.
- If in any of performance modes the engine runs with increased vibration (it feels like a diesel engine) – allow the engine run in this mode for some time (5 .. 10 min). MSD80/81 will identify unevenness and will immediately start to eliminate it.

Replacement of NOx sensor

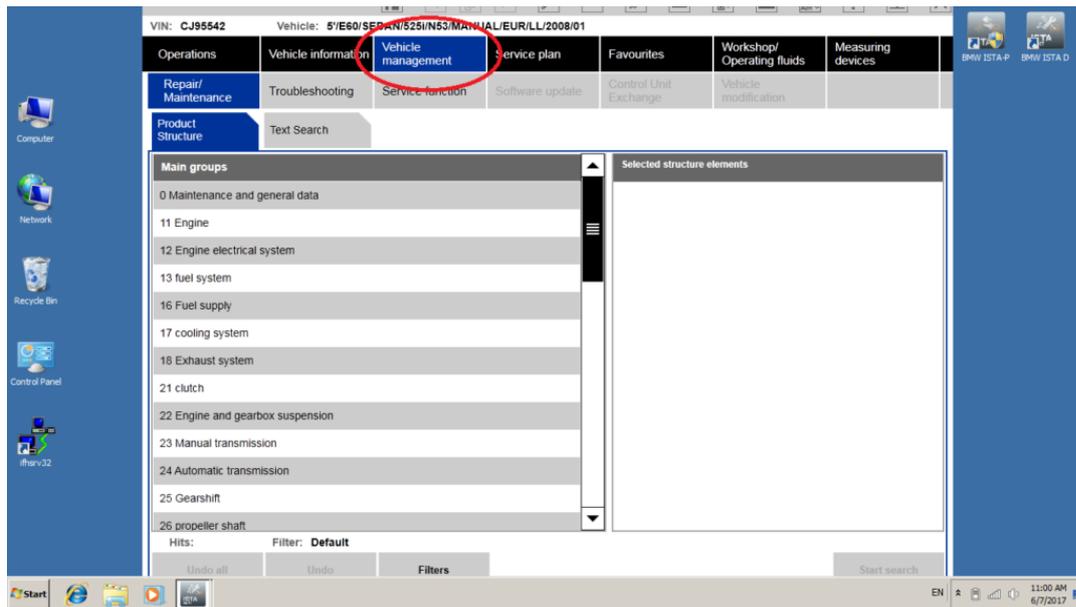
1. Take off the plastic shields in the middle area of passenger side floor (for E6X) or exhaust heat protection cover (for E9X);
2. Disconnect the NOx sensor data cable;
3. Unscrew two M6 screws;
4. Unscrew the probe of NOx sensor, using 22 mm tool;
5. Screw in the probe of NOx emulator;
6. Fix NOx emulator, using two M6 screws;
7. Draw the NOx emulator probe, using 22 mm tool with force 10 .. 30 Nm;
8. Connect the NOx emulator data cable;
9. Secure the plastic shields (protection cover) back in place.

Encoding of NOx sensor replacement, using ISTA D/+

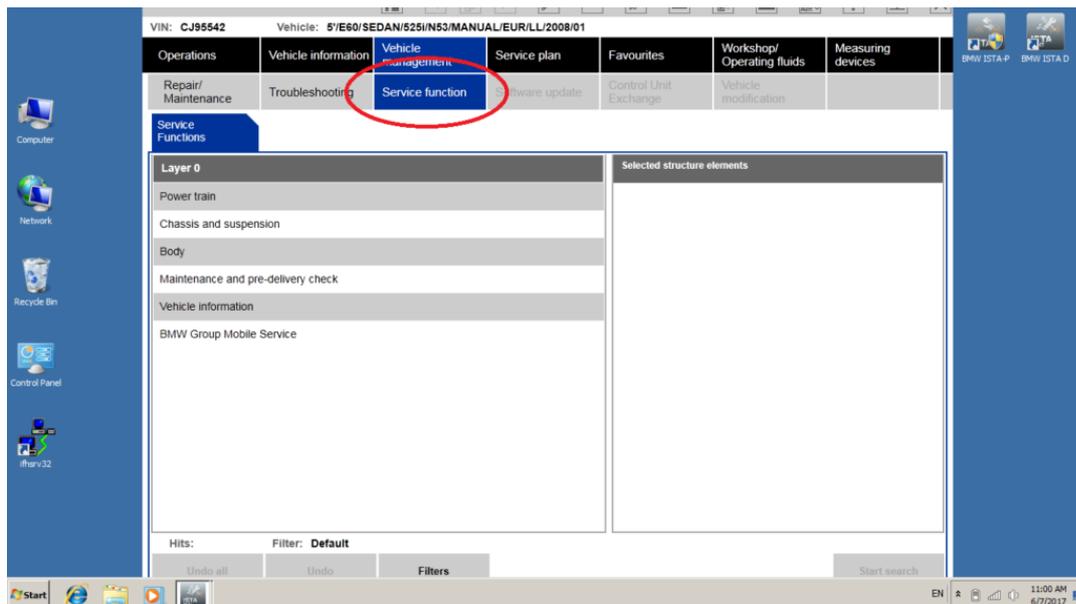
1. Start new session in ISTA D/+, perform the identification of vehicle and a test:



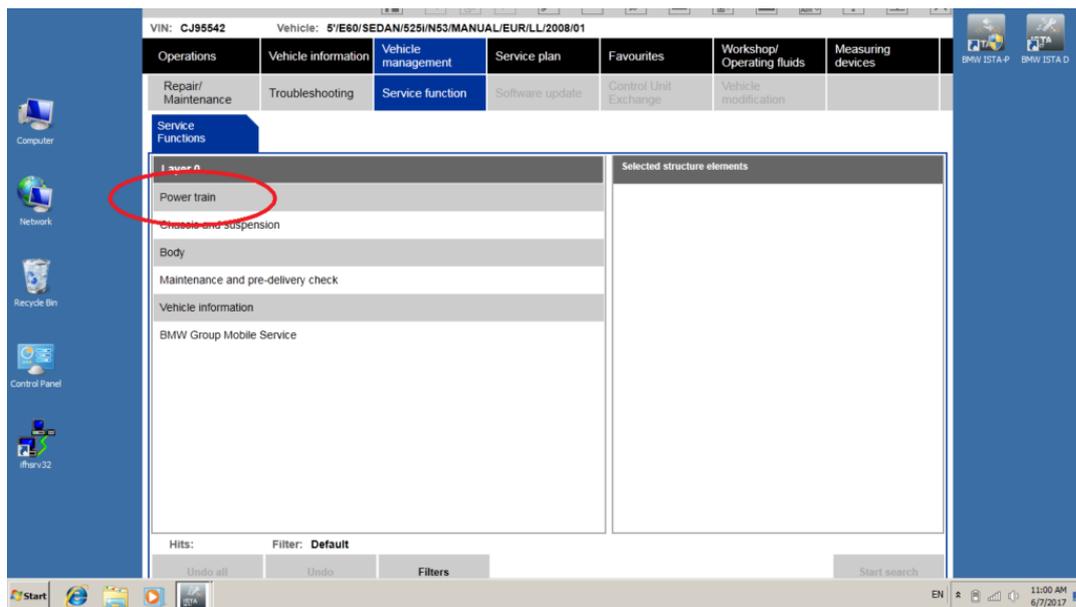
2. open menu *Vehicle management*:



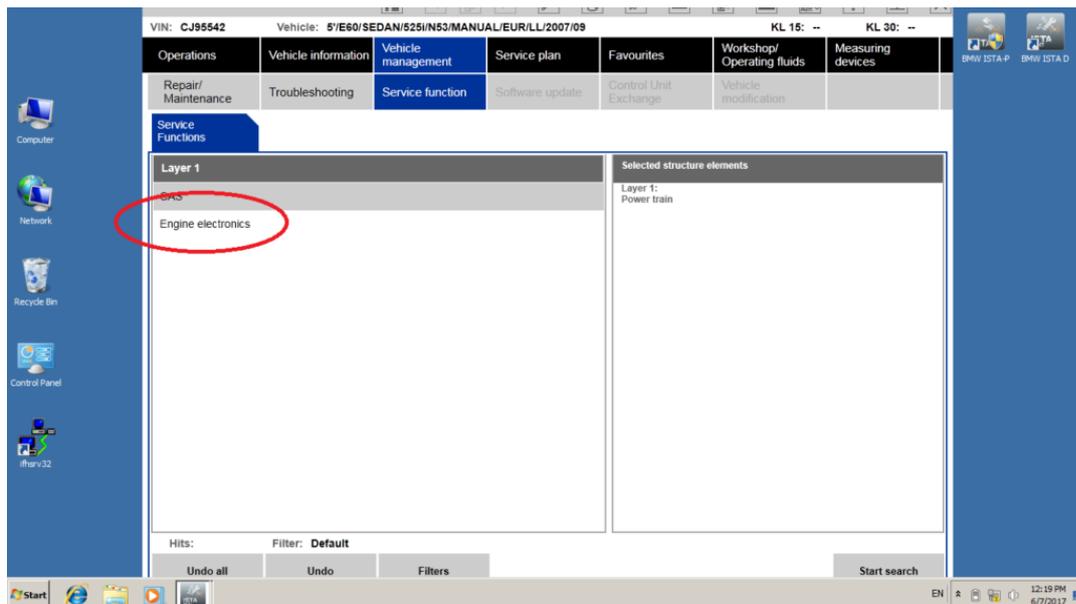
3. open menu *Service function*:



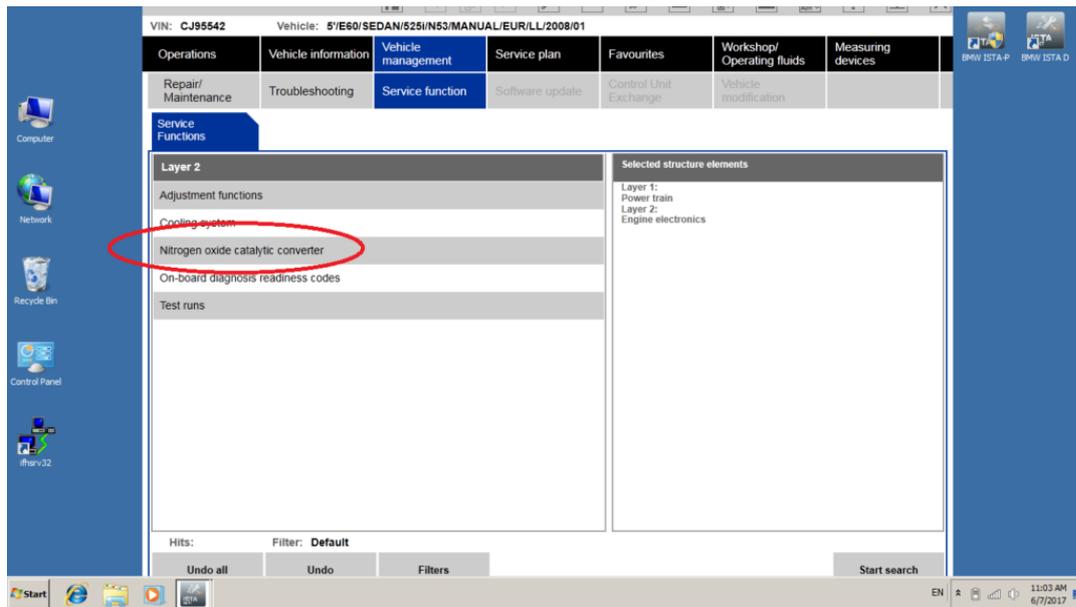
4. open sub-menu *Power train*, press *Start search*:



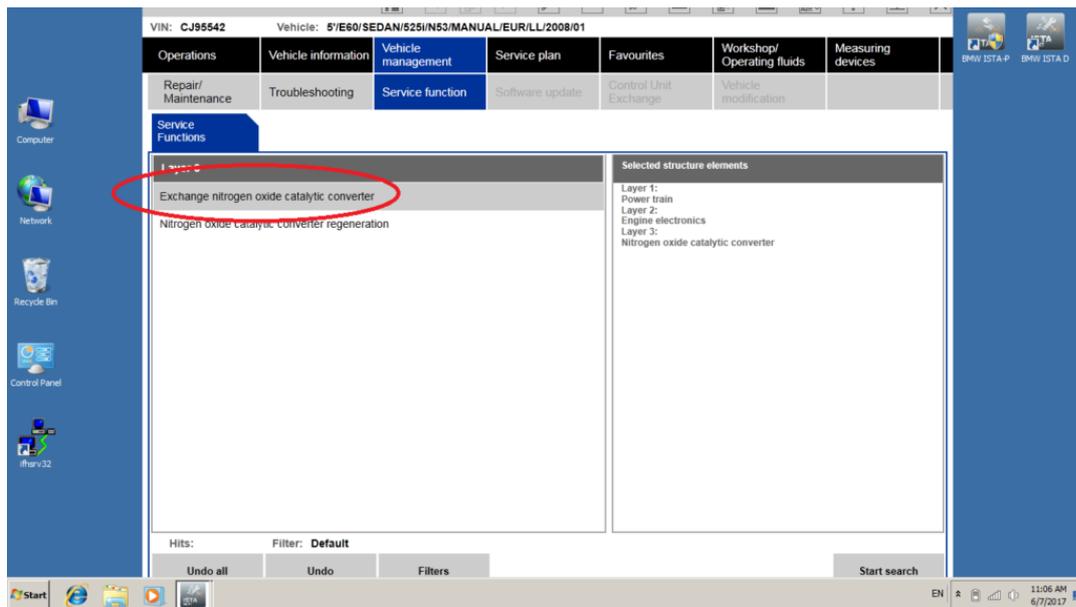
5. open sub-menu *Engine Electronics*:

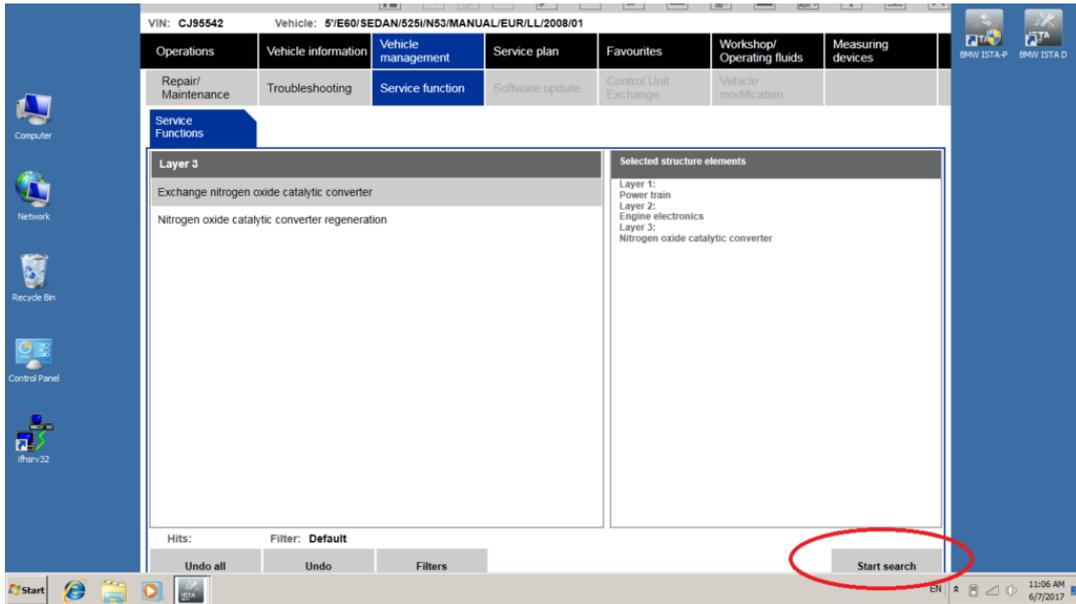


6. open sub-menu *Nitrogen oxide catalytic converter*:

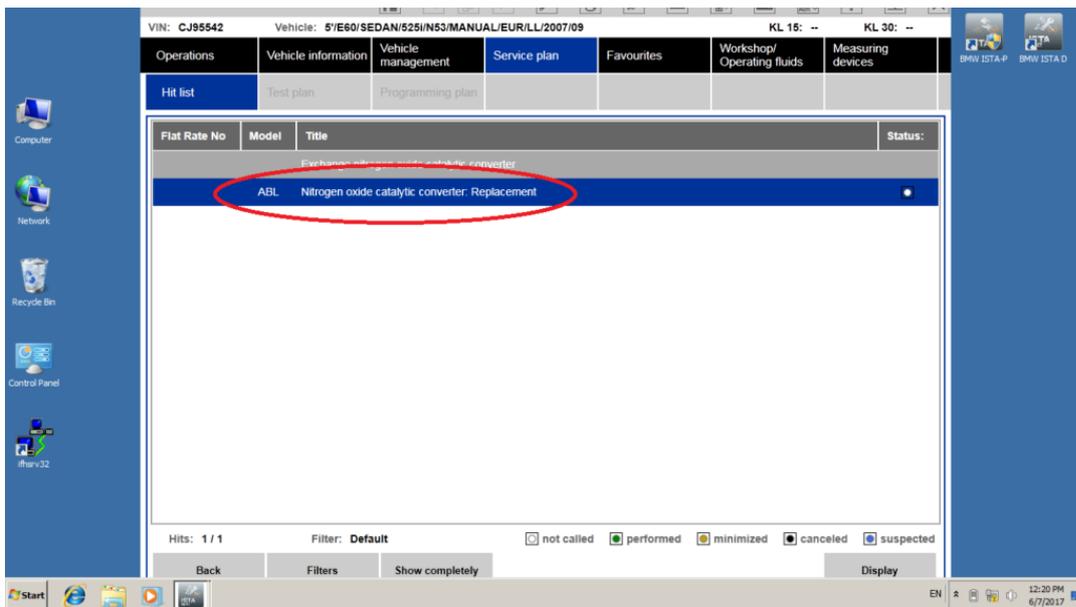


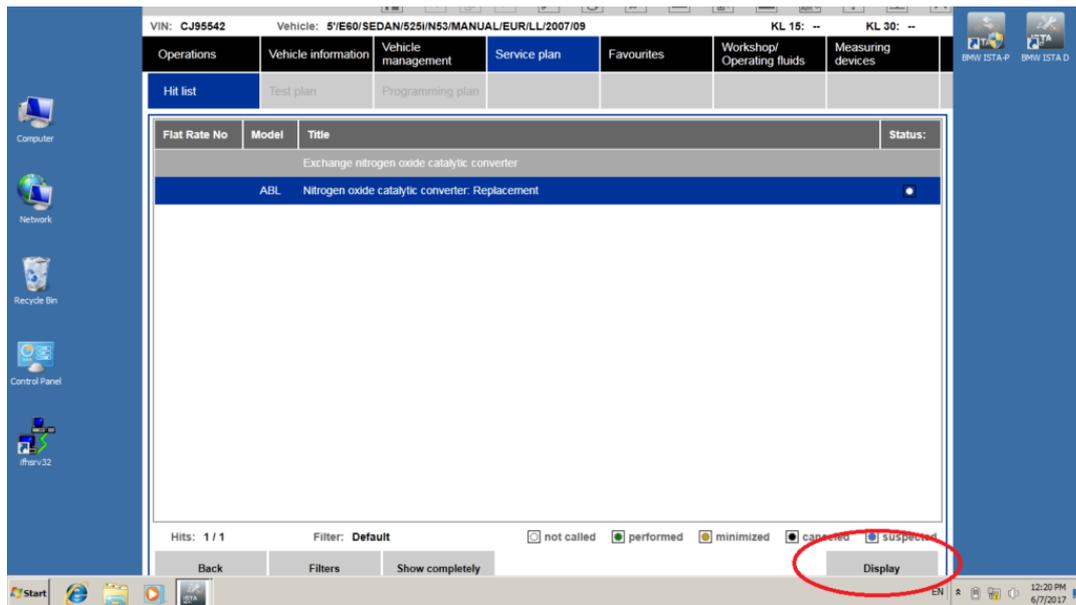
7. choose the option *Exchange nitrogen oxide catalytic converter*, press *Start Search*:



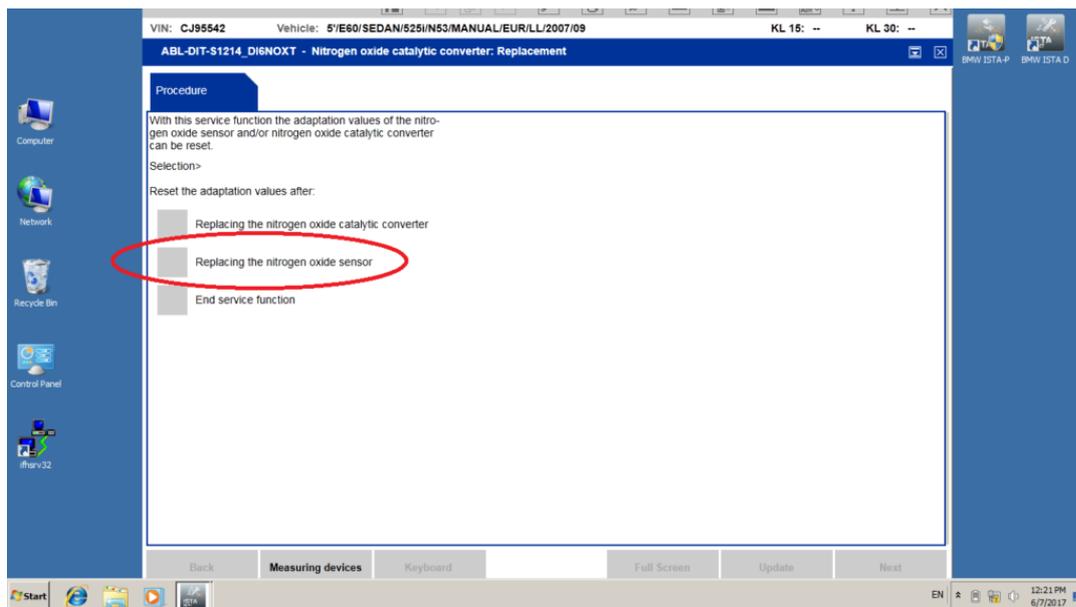


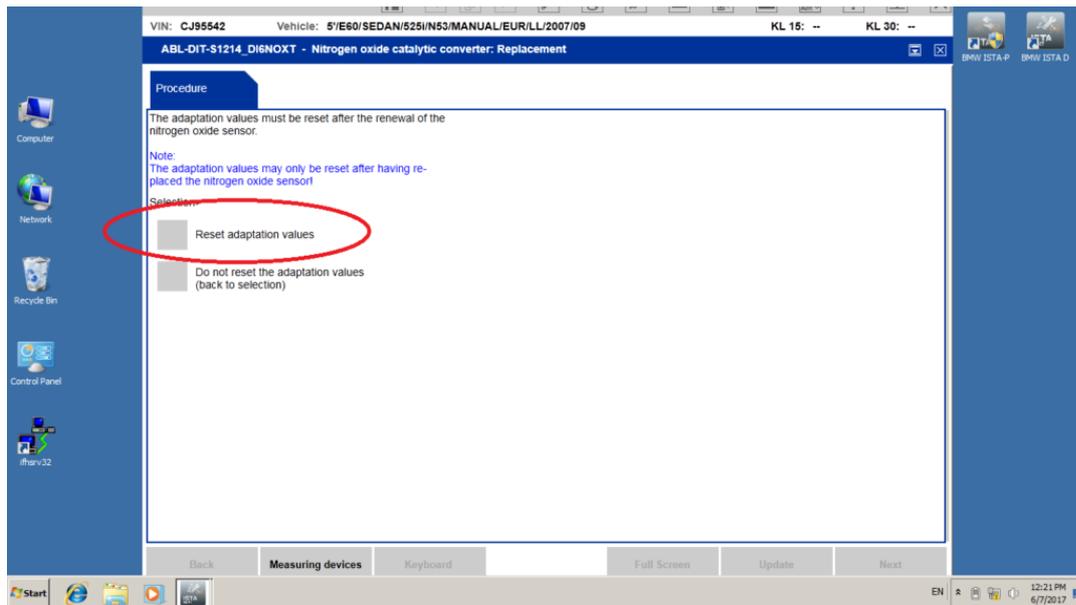
8. choose the option *Nitrogen oxide catalytic converter: Replacement*, press *Display*:





9. choose *Replacing the nitrogen oxide sensor*, press *Next*, follow the instructions (confirm deleting of adaptations and encoding of new NOx sensor):

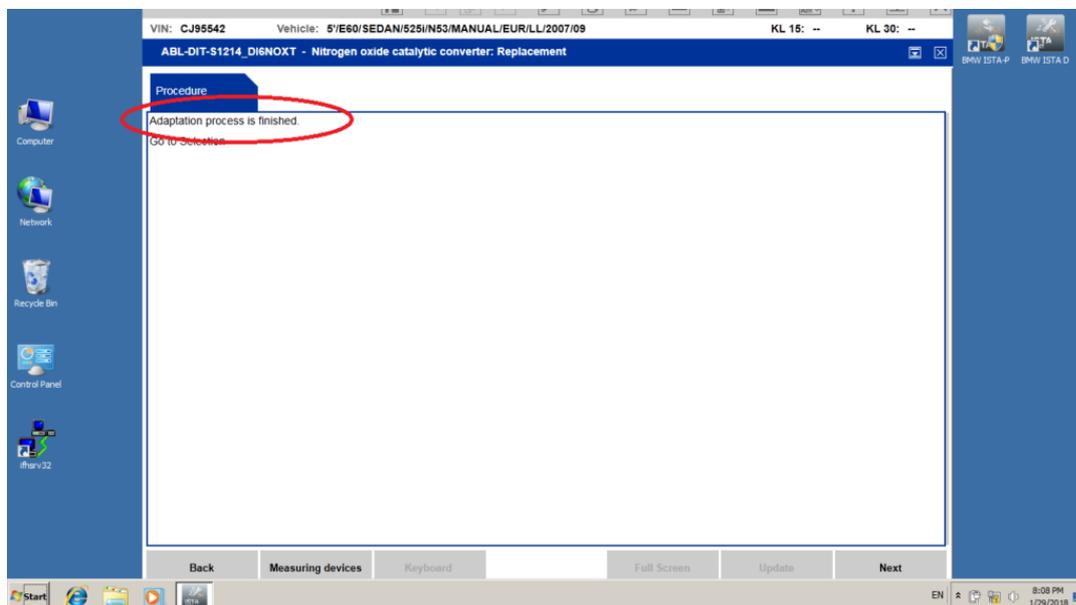




Follow instructions on the screen.

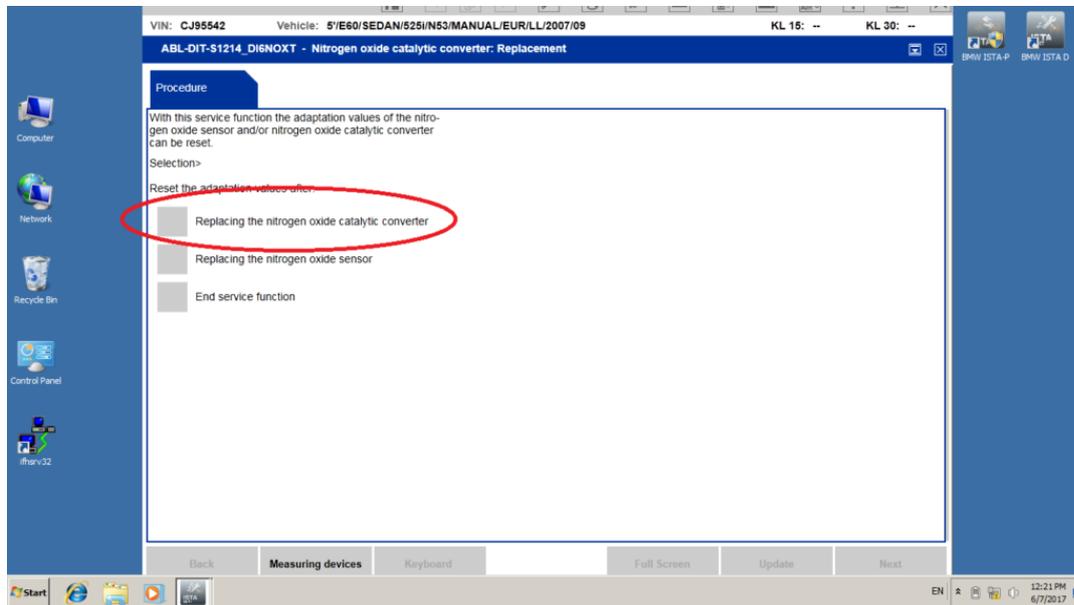
Important!

Follow the instructions very carefully! If deleting of adaptations was successful, you will see notice "Adaptation process is finished". If ISTA D/+ does not displays notice "Adaptation process is finished" after the attempt to delete the adaptations, **repeat the procedure once again.**

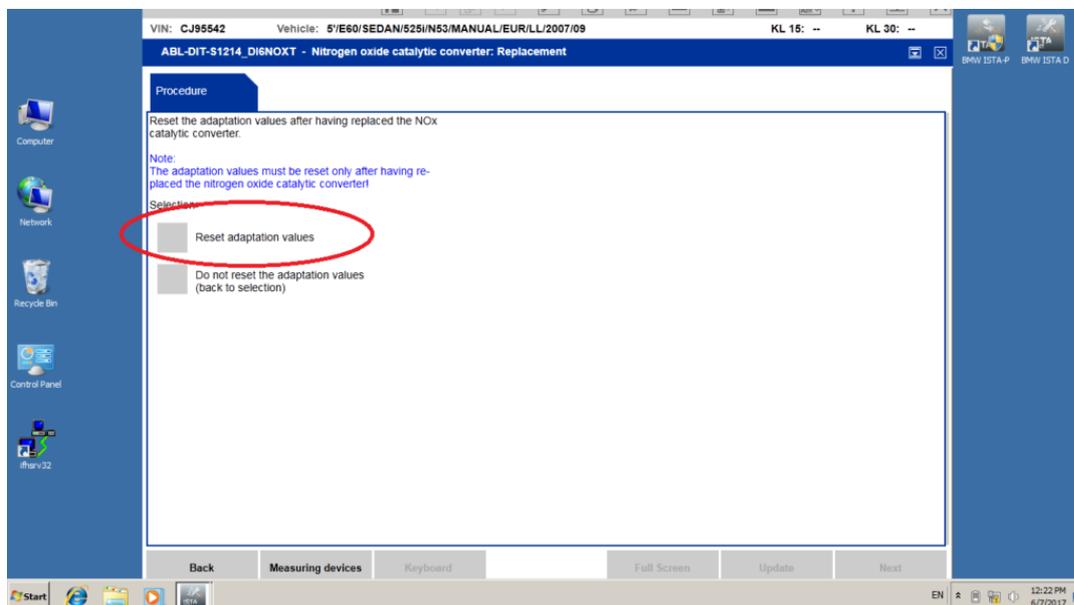


Encoding of replacement of NOx catalytic converter, using ISTA D/+

1. open sub-menu *Replacing the nitrogen oxide catalytic converter*:



2. choose the option *Replacing the nitrogen oxide catalytic converter*, follow the directions of ISTA D/+ (confirm deleting of adaptations and encoding of new NOx catalytic converter):

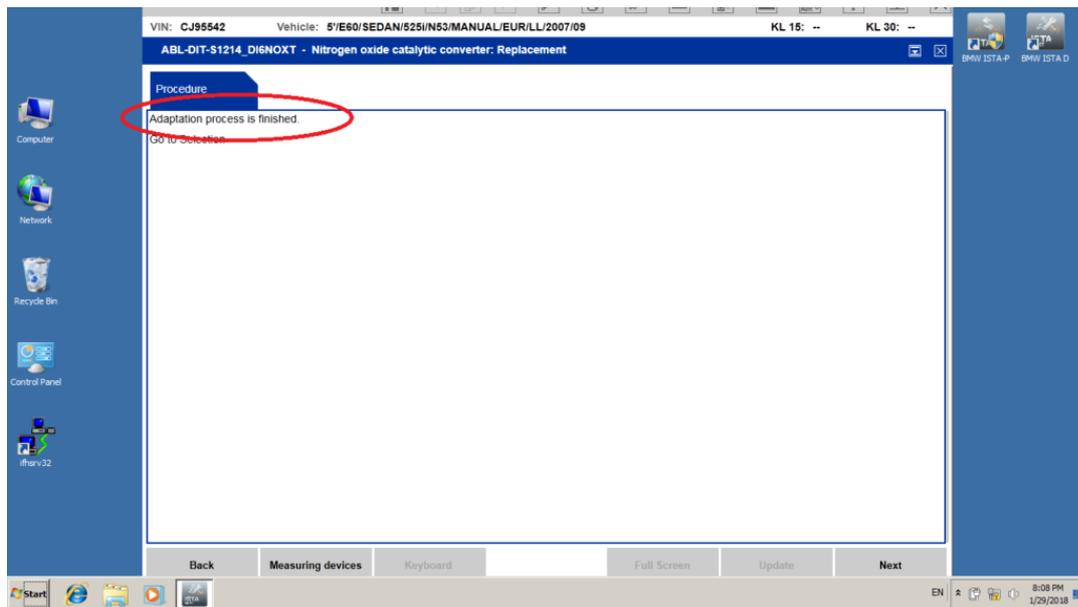


Follow instructions on the screen.

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Follow the instructions very carefully! If deleting of adaptations was successful, you will see notice "Adaptation process is finished". If ISTA D/+ does not displays notice "Adaptation

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Delete error messages, using ISTA D/+

From main menu select *Display Fault memory*, then press *Delete Fault memory*:

The screenshot shows the ISTA D/+ software interface. The top bar displays the VIN: CJ95542 and Vehicle: 5/IE60/SEDAN/525i/N53/MANUAL/EUR/LL/2007/09. The main menu includes Operations, Vehicle information, Vehicle management, Service plan, Favourites, Workshop/Operating fluids, and Measuring devices. The 'Fault memory' section is active, showing a table of fault codes and descriptions. The 'Delete fault memory' button is circled in red.

Code	Description	Mileage	Class
002FA3	DME: No coding	302104	
003104	DME: Smooth running, stratified-charge operation	303696	
005F56	5F56 - CAS_CAS sendet Signal KI_15 ungueltig oder Signal KI_R ungueltig oder	296296	
009CC5	LM: No message, LIN (RLS)	304088	
00E18E	Zentrale Registry stimmt nicht mit der Sollkonfiguration ueberein (Error_Registr_1	304088	

Number of fault memories: 5 / 5 No. fault patterns: 0 Filter: Default

Show fault memories Delete fault memory Filter fault memory Delete filter Show completely PuMA measures Calculate test plan

Troubleshooting

1. When starting a session with ISTA D/+, basic data of car does not appear on the computer screen, they must be entered manually. Menus relating NOx sensor and NOx converter are not accessible.

The reason: communication problems between ISTA D/+ and the car. Typical problems with OBD / USB host or ICOM IP address and port settings. Contact interface vendors to resolve the issue. If communication between the car and ISTA D/+ is established, the car's basic data will be read from the car.

2. After confirmation of deleting the adaptations (by pressing 'Continue' after the warning 'Adaptation values will now be reset'), the message '**Could NOT reset adaptation values**' appears.

The reason: the condition 'Ignition ON' is not met, see p.3

3. How to comply with '**Ignition ON**'? – my car does not have an ignition key, it is equipped with the Start / Stop button.

To activate 'Ignition ON' mode:

- insert the key into the slot;
- do not press any pedal (no clutch, no brake pedal);
- press the 'Start / Stop' button several times while all the indicators (ABS/DTC, SRS, etc.) light up in the KOMBI.

4. After confirmation of deleting the adaptations (by pressing 'Continue' after the warning 'Adaptation values will now be reset'), the message '**Switch off Terminal 15 and terminal R**' appears.

Action required:

- switch off the ignition;
- remove the key from the slot;
- wait for further instructions.