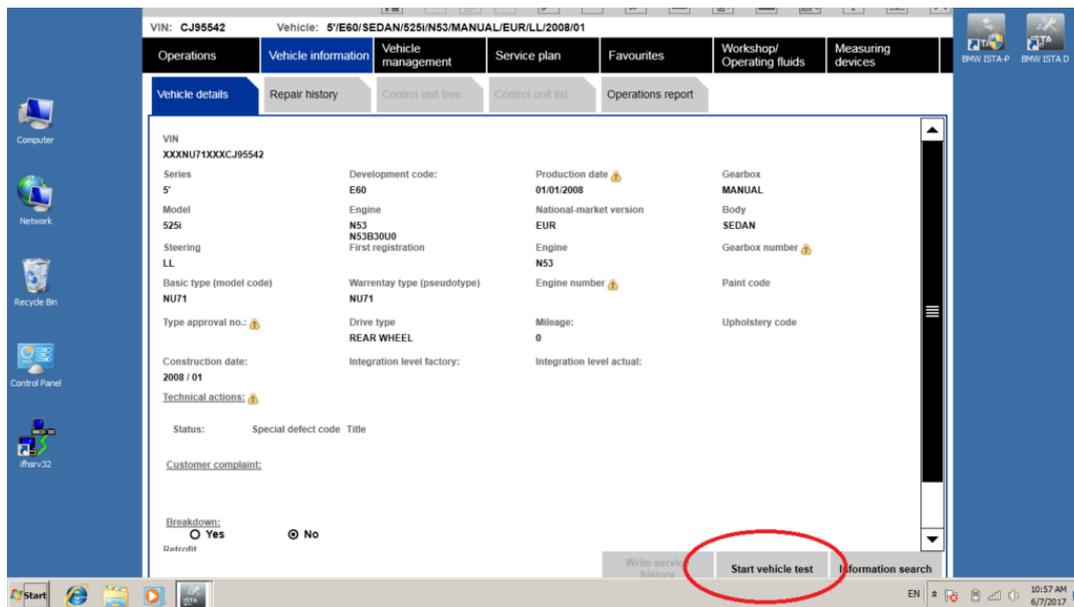


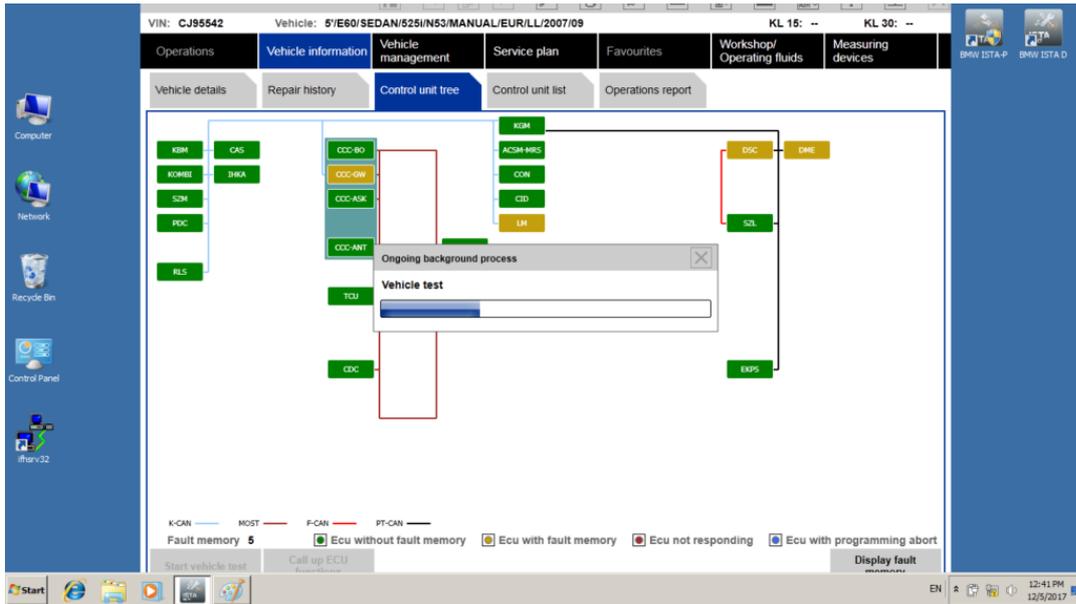
## How to use the NOx sensor emulator NOXEM 129 | 130. Part 2

Depending on your preferences you can proceed re-adaptation of the engine using ISTA D/+ or INPA.

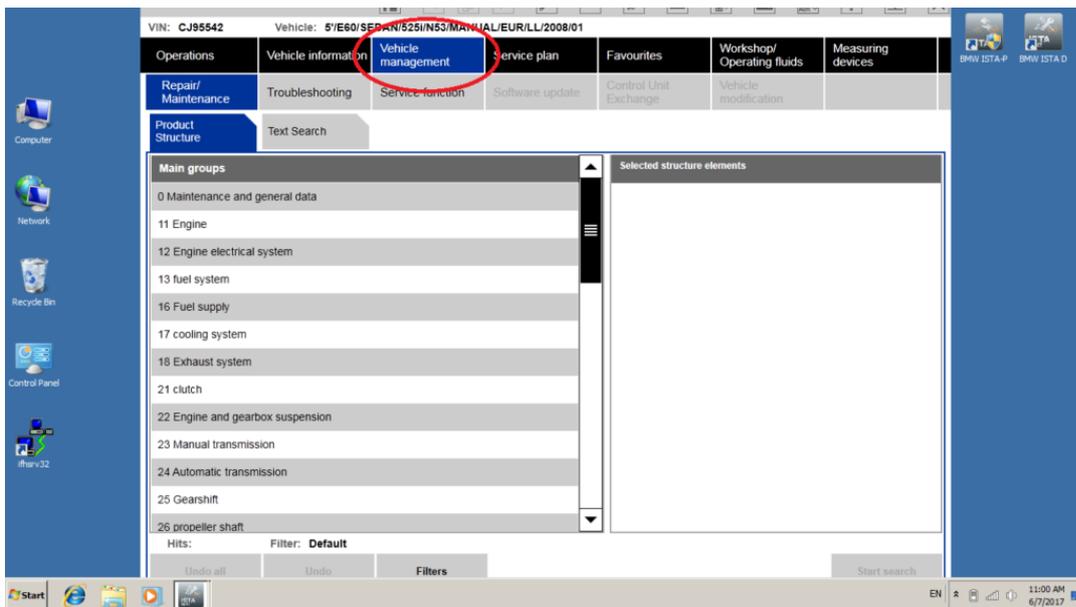
## Re-adaptation of the engine using ISTA D/+

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

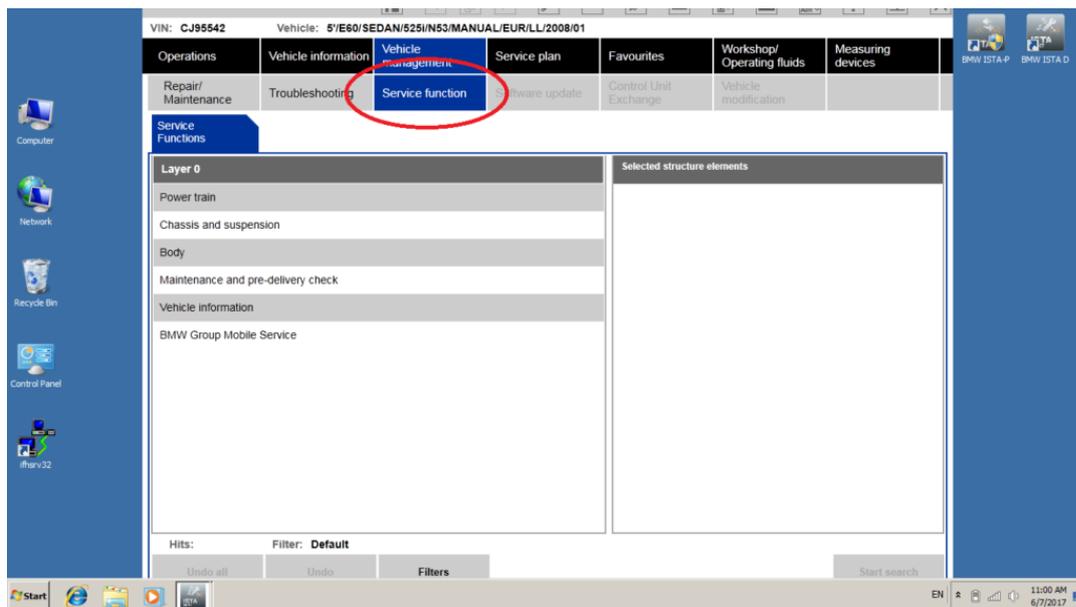




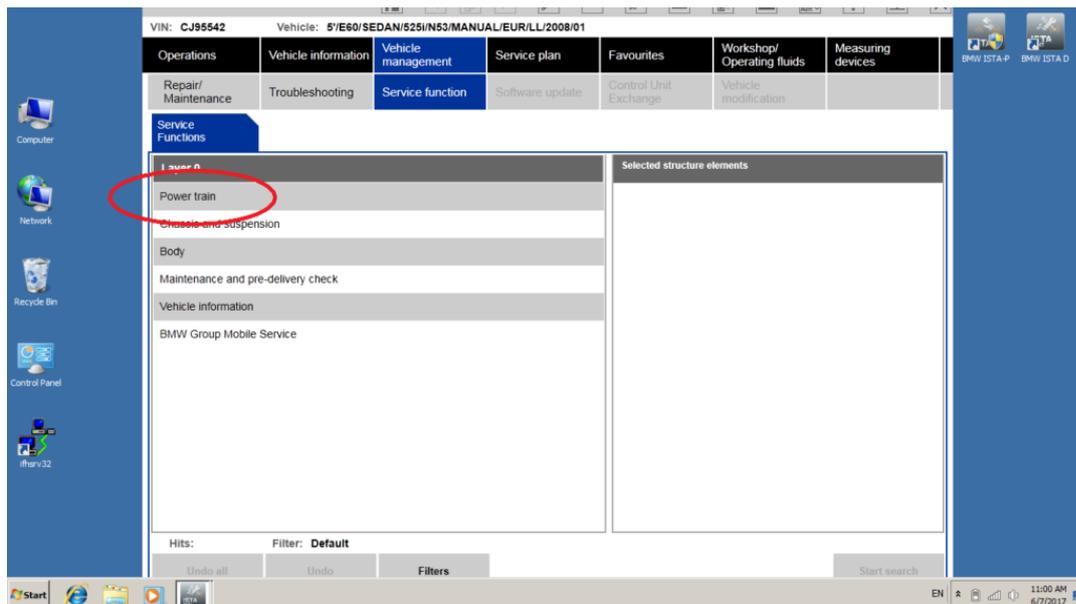
2. open menu *Vehicle management*:



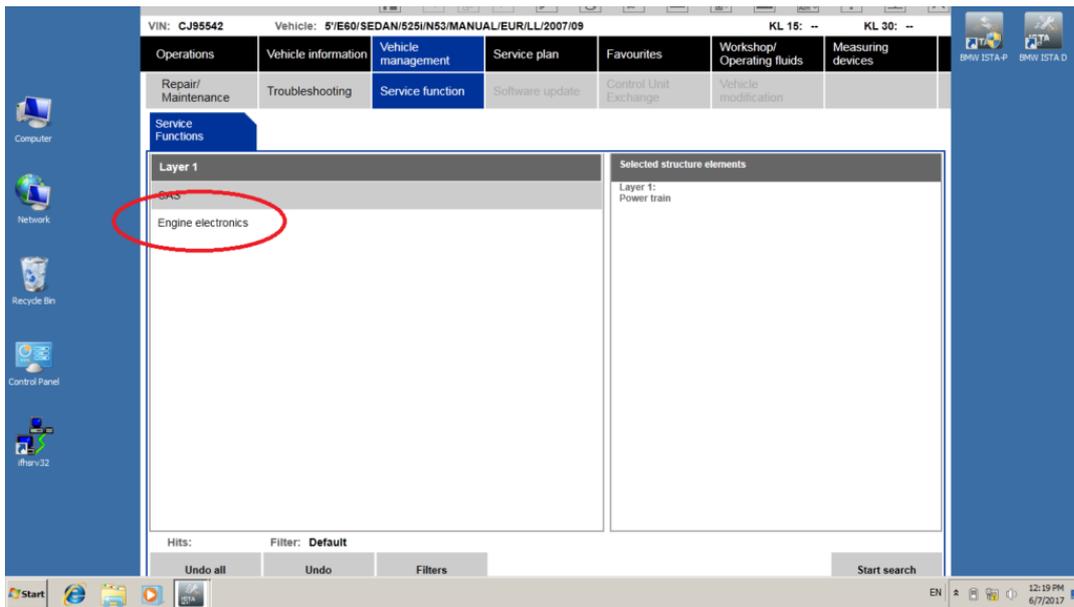
3. open menu *Service function*:



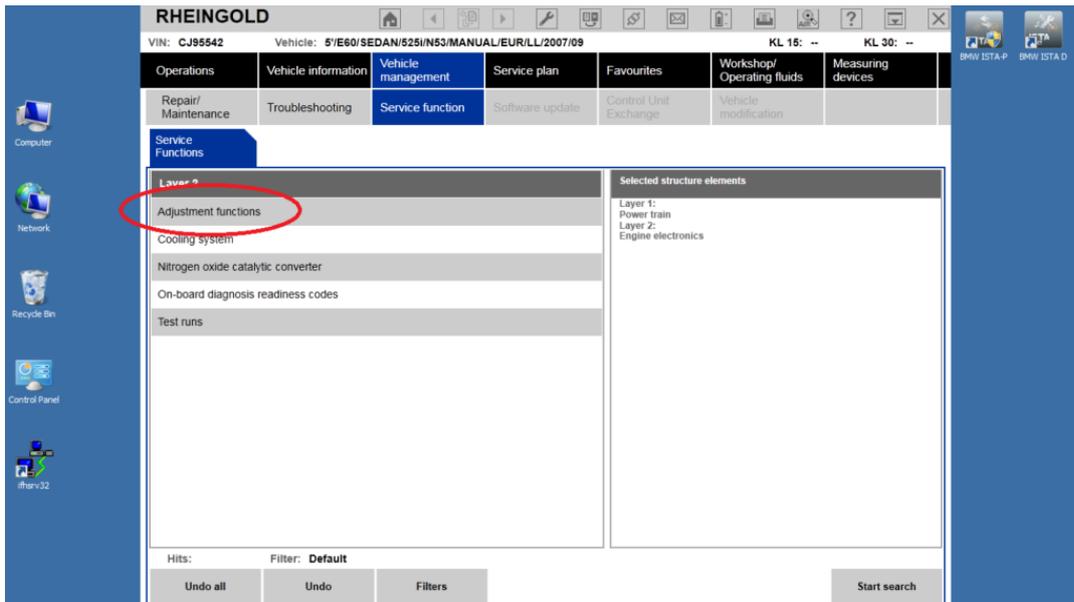
4. open sub-menu *Power train*, press *Start search*:



5. open sub-menu *Engine Electronics*:



6. open sub-menu *Adjustment functions*:



## 7. Select *Delete adaptations/variants*

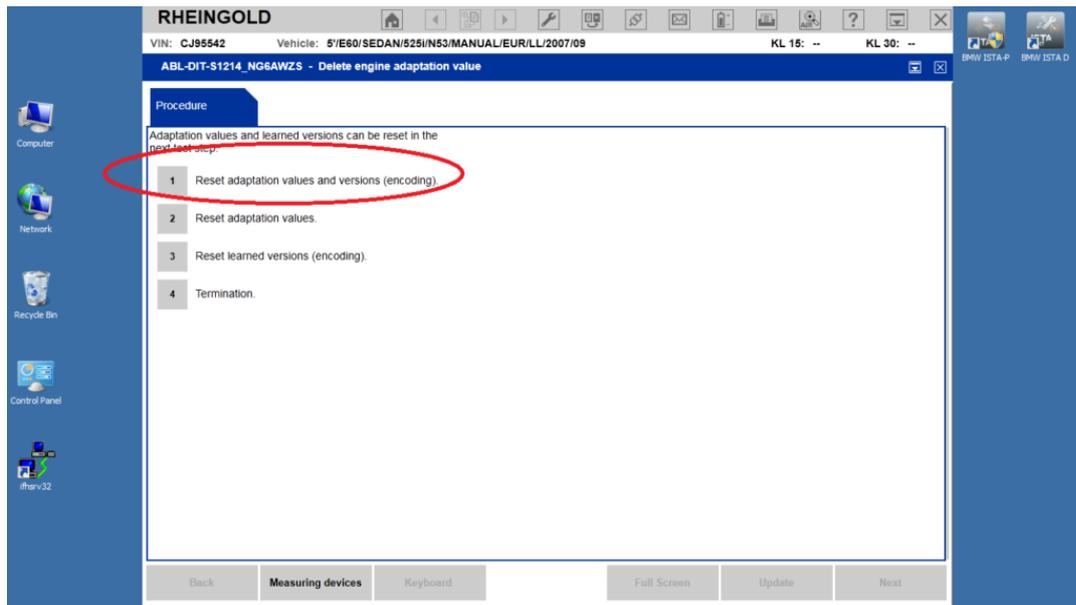
The screenshot shows the RHEINGOLD software interface. At the top, the VIN is CJ95542 and the vehicle is identified as 5/E60/SEDAN/525I/N53/MANUAL/EUR/LL/2007/09. The 'Service plan' tab is active. Under the 'Service Functions' section, the 'Delete adaptations/variants' option is highlighted with a red circle. The 'Selected structure elements' panel on the right lists: Layer 1: Power train, Layer 2: Engine electronics, Layer 3: Adjustment functions. The bottom of the interface shows 'Hits: 1 / 1' and a 'Start search' button.

## 8. Select *Delete engine adaptation value*, press *Display*

The screenshot shows the RHEINGOLD software interface with the search results displayed. The 'Hit list' tab is active. A table with the following columns is shown: Flat Rate No, Model, Title, and Status. One result is listed: Flat Rate No: ABL, Model: Delete engine adaptation value, Status: [icon]. The 'Delete engine adaptation value' text is circled in red. At the bottom, the interface shows 'Hits: 1 / 1', a 'Filter: Default' dropdown, and a 'Display' button.

Flat Rate No	Model	Title	Status
ABL	Delete engine adaptation value		[icon]

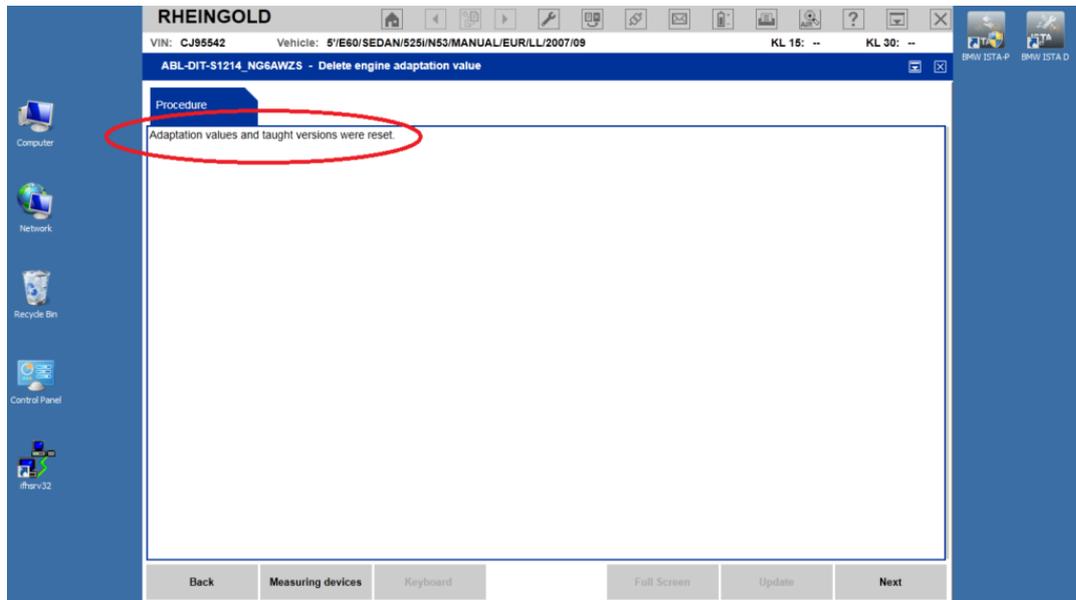
## 9. Select *Reset adaptation values and versions (encoding)*



Follow instructions on the screen.

### **Important!**

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



Disconnect the diagnostic cable when finished.

## 10. Adaptation of the flywheel

a) turn on the engine;

**Attention:** the car may run unevenly! If EML (check engine) symbol appears on KOMBI and increased/incorrect idle is observed:

- turn off the engine; turn on the ignition;
- slowly press and release accelerator pedal for three times;
- repeat this step from the beginning.

b) accelerate till 100 .. 110km/h on even road;

c) switch the 4th gear (for automatic transmission - in manual mode);

d) release the accelerator pedal, brake with the engine (don't press brake pedal) for 7 .. 10 seconds;

Repeat points b .. d three times;

e) stop the car, switch off the ignition, takeoff the key;

f) wait, till the lighting of start/stop button turns off.

## 11. Re-adaptation of the fuel mixture

a) turn on the engine;

b) allow the engine to run idle for 5 minutes;

c) perform the driving session with even speed 60 .. 90km/h; 5 .. 10min;

d) repeat points b .. c for several times;

e) stop the car, switch off the ignition, takeoff the key, disconnect the diagnostics cable;

f) wait, till the lighting of start/stop button turns off.

## 12. Next few times, when starting the cold engine:

a) allow the engine to run idle at least for 5 minutes;

b) drive with longer driving sessions with even RPM and torque when possible.

With this, the creating of initial adaptations can be considered as complete.

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**Note:** when adaptations are cleared, following error messages\* can appear immediately:

- error messages relating DSC. Solution: drive 10 .. 15 min, switch off/on ignition;
- error messages relating throttle. Solution: turn on ignition, press and release accelerator pedal for 3 times, then start engine.

During adaptation process (after old adaptations have been cleared) some error messages\* can appear:

- error messages relating fuel trim (bank and/or cylinders individually);
- insufficient performance of CO catalytic converters;
- Lambda probes (trim and/or signal);
- uneven run (Stratified charge and/or Homogeneous injection).

\*these error messages in the exact situation do not indicate any problems with the engine performance.

After new adaptations are completed (after 5 .. 8 driving sessions for cold/warm engine, at least 200 .. 300 km), check the new adaptations and clear error message memory using INPA or ISTA D/+, if necessary.

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## 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.

# Re-adaptation of the engine using INPA

Note: INPA [loader 2.023](#) required.

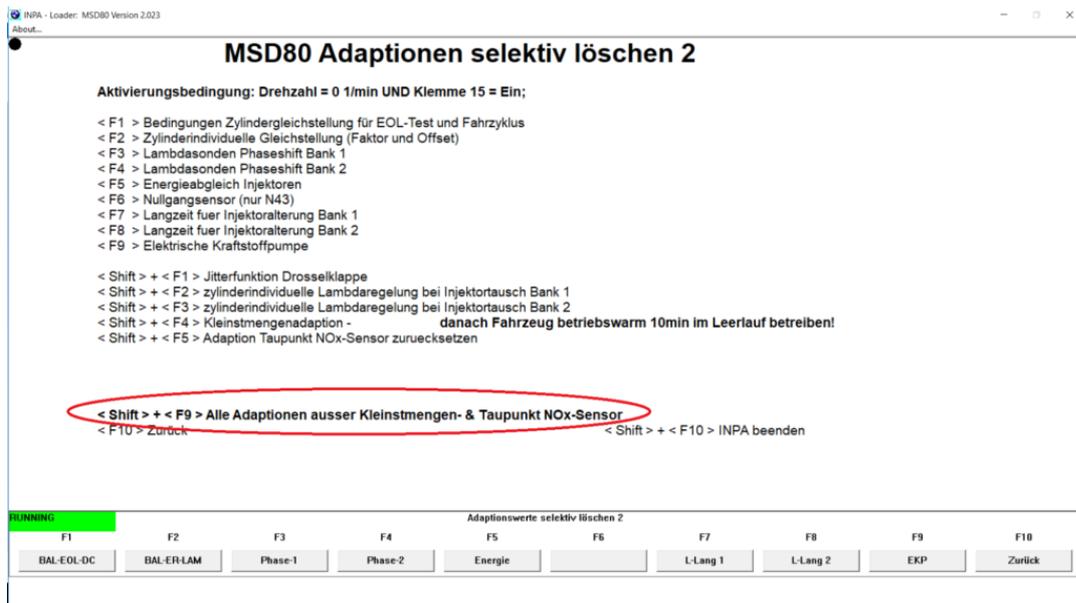
Switch on the ignition (engine off), connect OBD to USB connecting cable:

a) do not press any pedal (no clutch, no brake pedal);

b) press the 'Start / Stop' button several times while all the indicators (ABS/DTC, SRS, etc.) light up in the KOMBI;

c) using INPA select model, engine type (MSD80 for N43/53).

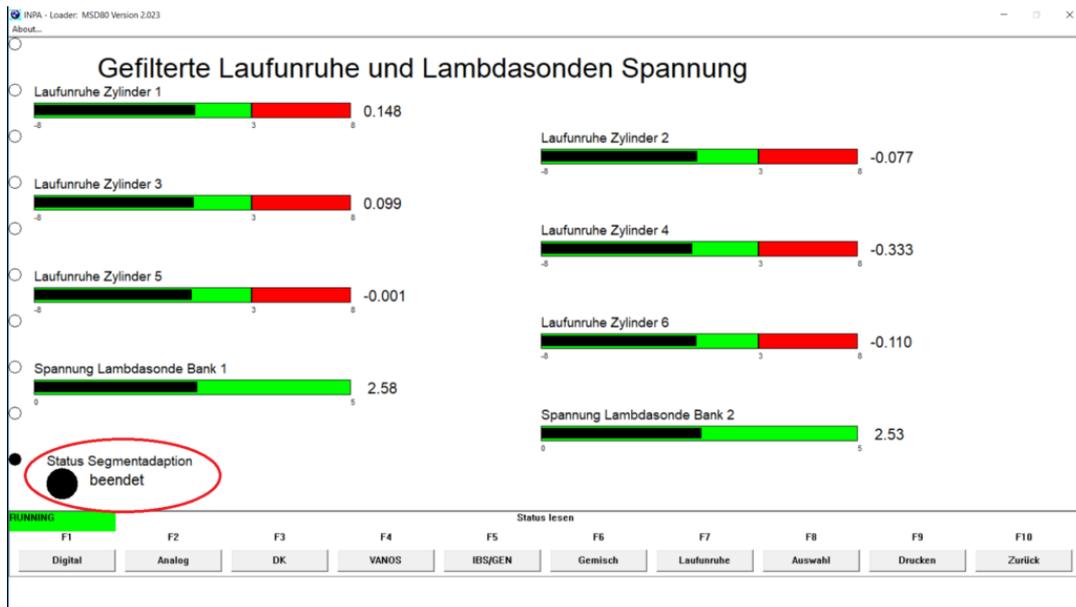
1. open INPA adaptation menu, 2nd group: ../F8/F2



a) delete the adaptations (status: ignition on; engine off), pressing Shift+F9;

b) switch off the ignition, remove the key from the slot.

2. Insert the key, turn on the ignition, open Rough run menu ../F5/F7



**Learnbit of flywheel adaptations has to be uncolored (white).** If learnbit of adaptations is colored, repeat point 1.

If the learnbit of flywheel adaptations is uncolored (white):

a) turn on the engine;

**Attention:** the car may run unevenly! If EML (check engine) symbol appears on KOMBI and increased/incorrect idle is observed:

- turn off the engine; turn on the ignition;
- slowly press and release accelerator pedal for three times;
- repeat this step from the beginning.

b) accelerate till 100 .. 110km/h on even road;

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d) release the accelerator pedal, brake with the engine (don't press brake pedal);

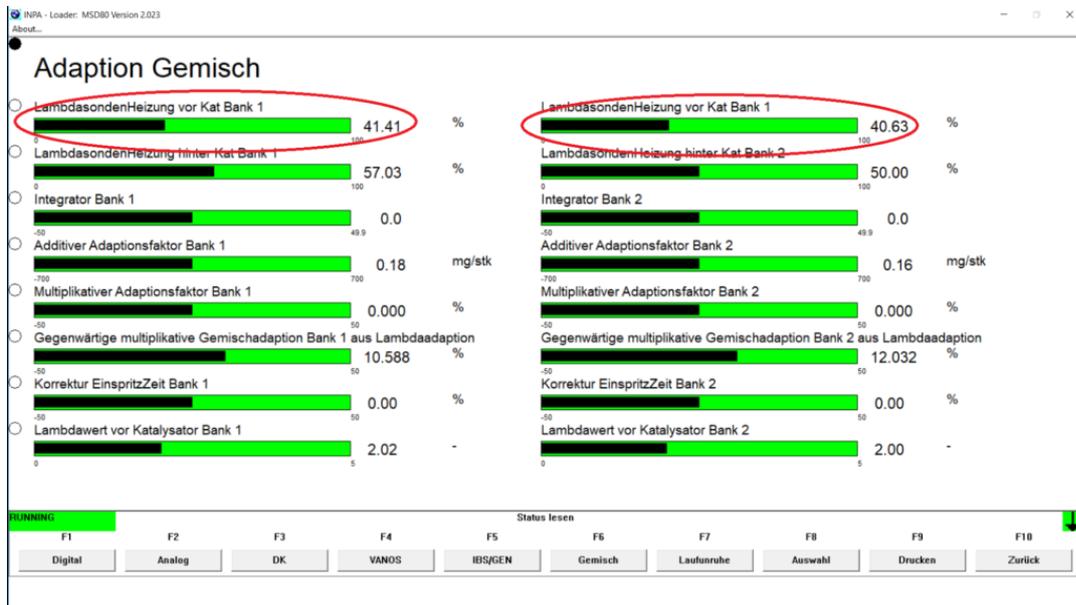
After 5 .. 10 seconds learnbit of flywheel adaptations has to be colored in black. If learnbit stays uncolored, repeat from point b.

e) stop the car, switch off the ignition, takeoff the key, disconnect the diagnostic cable;

f) wait, till the lighting of start/stop button turns off.

3. start the engine, connect INPA

a) open INPA fuel mixture menu ../F5/F6;



b) after a little while the MSD80 has to start to warm up the wide-band probes, PWM of them has to increase to 30 .. 60%;

c) allow the engine to run idle for 5 minutes;

d) perform the driving session with even speed 60 .. 90km/h; 5 .. 10min;

e) repeat points c & d for several times;

f) stop the car, switch off the ignition, takeoff the key, disconnect the diagnostics cable;

g) wait, till the lighting of start/stop button turns off.

4. start the engine, connect INPA

a) open INPA fuel mixture menu ../F5/F6;



b) after a little while the MSD80 has to start to warm up the control probes, PWM of them has to increase to 30 .. 60%;

c) allow the engine to run idle for 5 minutes;

d) perform the driving session with even speed 60 .. 90km/h; 5 .. 10min;

e) repeat points c & d for several times.

5. Next few times, when starting the cold engine:

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To activate ‘Ignition ON’ mode:

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- press the ‘Start / Stop’ button several times while all the indicators (ABS/DTC, SRS, etc.) light up in the KOMBI.

2. Communication with INPA breaks regularly. Cause: Incorrect latency setting.  
Solution:

1. Connect OBD/USB cable
2. Open: Control panel / Device manager
3. Select: Ports (LPT and COM)
4. Select: USB serial Port (COM X)
5. Enter sub-menu: Port settings / Advanced
6. Set Latency time to: 1 msec\*
7. Press OK, confirm changes

\*(default value: 16 msec)

