



How to Reset & Re-learn the 6HP19/21 Transmission Adaptations

When hard parts are replaced in a transmission or the fluid is changed, resetting the transmission's adaptations is necessary to restore shift quality. The ZF 6-speed automatic used in the E9X-based vehicles like the 335i and 135i (among many others) is an expensive transmission, especially if upgraded, and fluid replacement w/adaptation reset is absolutely necessary to ensure the transmission is operating optimally. This DIY applies to any E-series vehicle that uses the ZF 6HP19/21 transmission.

When should I reset adaptations?

- When the fluid is serviced
- When the software is updated (i.e. Custom Calibration or xHP)
- When hard parts are replaced inside the transmission (i.e. High Performance Clutches)

Warning: *If you have the capability of resetting transmission adaptations with INPA, I urge you not to do it unless you have the time and roadways to complete the relearn process **exactly** as described. This procedure will cause the transmission to shift poorly at a detriment to the gearbox if the relearn is not performed immediately and properly.*

Resetting Adaptations

Turn the vehicle's ignition on by pressing the start button twice but do not start the car. Plug in the K+DCAN adapter to the vehicle and laptop. Execute INPA. When INPA is loaded, the battery and ignition bubbles should be filled in to indicate it has established communication with the vehicle.

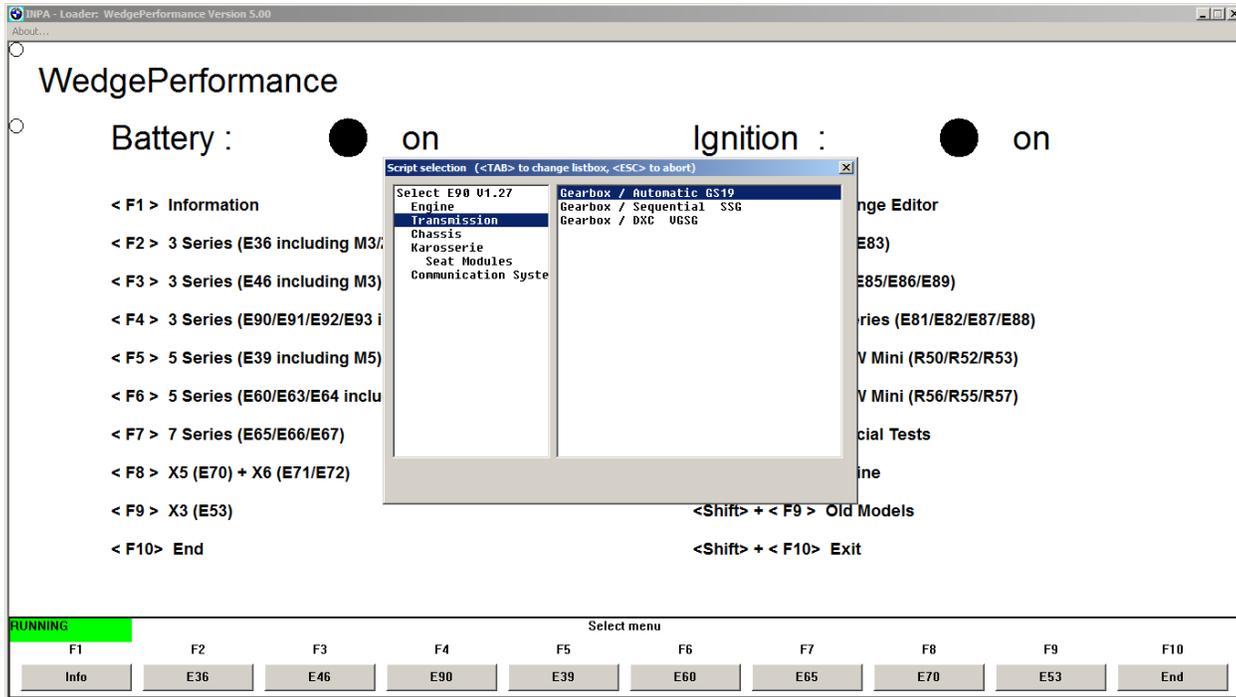
Press F4 to select E90.

The screenshot shows the INPA software interface. The title bar reads "INPA - Loader: WedgePerformance Version 5.00". The main window is titled "WedgePerformance" and displays the status of the vehicle's battery and ignition, both of which are "on". Below this, there are two columns of function key shortcuts (F1-F10) and their corresponding actions. At the bottom, there is a "Select menu" bar with buttons for F1 through F10, each labeled with a vehicle model or action.

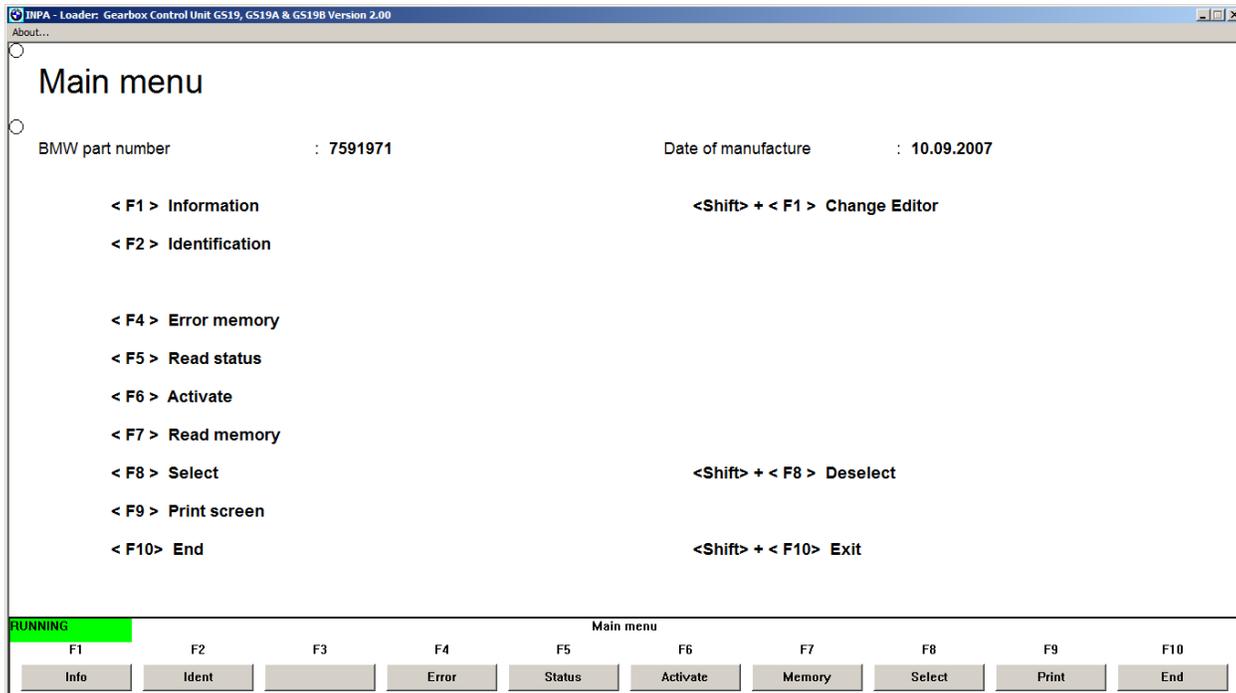
Function Key	Action
< F1 >	Information
< F2 >	3 Series (E36 including M3/Z3)
< F3 >	3 Series (E46 including M3)
< F4 >	3 Series (E90/E91/E92/E93 including M3)
< F5 >	5 Series (E39 including M5)
< F6 >	5 Series (E60/E63/E64 including M5)
< F7 >	7 Series (E65/E66/E67)
< F8 >	X5 (E70) + X6 (E71/E72)
< F9 >	X3 (E53)
< F10 >	End
< Shift > + < F1 >	Change Editor
< Shift > + < F2 >	X3 (E83)
< Shift > + < F3 >	Z4 (E85/E86/E89)
< Shift > + < F4 >	1 Series (E81/E82/E87/E88)
< Shift > + < F5 >	BMW Mini (R50/R52/R53)
< Shift > + < F6 >	BMW Mini (R56/R55/R57)
< Shift > + < F7 >	Special Tests
< Shift > + < F8 >	Engine
< Shift > + < F9 >	Old Models
< Shift > + < F10 >	Exit

At the bottom of the window, there is a "Select menu" bar with the following buttons: F1 (Info), F2 (E36), F3 (E46), F4 (E90), F5 (E39), F6 (E60), F7 (E65), F8 (E70), F9 (E53), and F10 (End). The "RUNNING" indicator is visible in the top left corner of the menu bar.

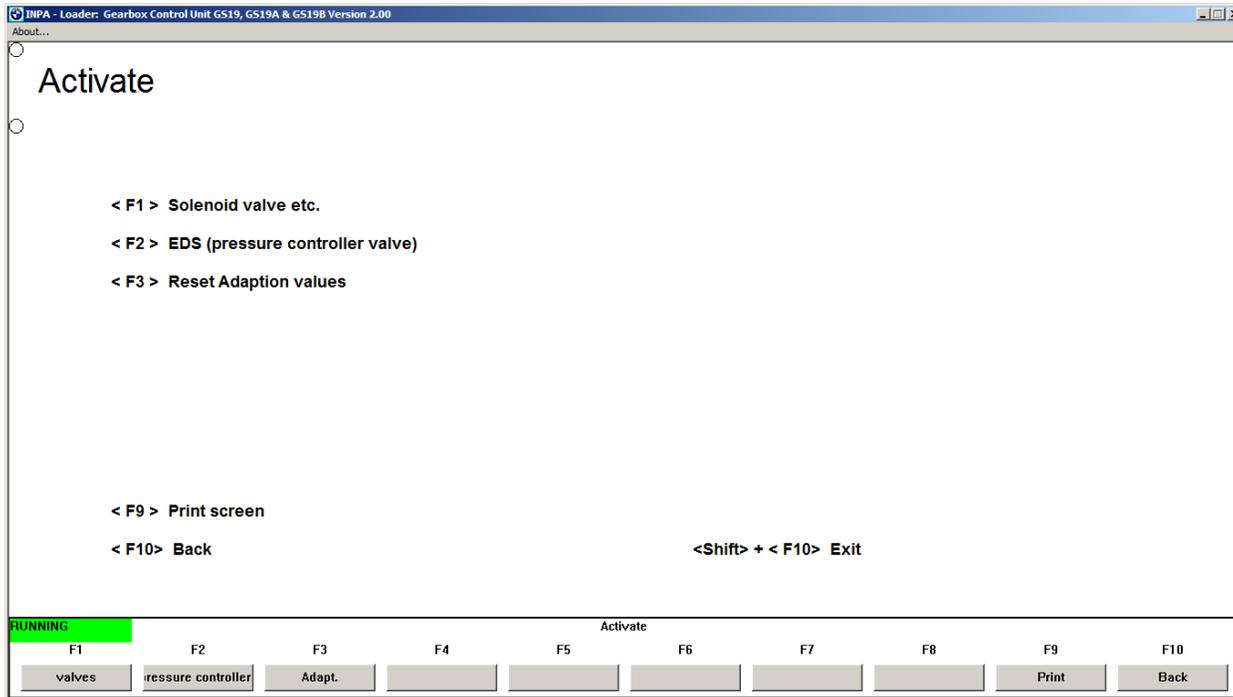
Select "Transmission" then "Gearbox / Automatic GS19".



Press F6 to select "Activate".



Press F3 to select “Adapt”. This resets the adaptations.



After pressing F3 to reset the adaptations, a confirmation message will appear.

Re-Learning the Adaptations

The most important part of resetting transmission adaptations is the re-learn process. Refer to the process below to see the re-learn procedure your vehicle needs after its transmission adaptations have been reset.

Before starting this procedure, ensure the following conditions have been satisfied;

- 1) The adaptation values have been cleared
- 2) The error memory codes, if any, have been read, recorded and cleared
- 3) ATF temperature is 122F or above (adaptations will not learn if not)

1. **Step 1 Adaptation Re-Learn Procedure (D-Mode)**

- 1) From a standstill, accelerate the vehicle in D Mode with very light throttle (15-25% if monitoring pedal angle with MHD) to 4th gear
- 2) Continue to accelerate with light throttle (20-40%) to 6th gear
- 3) Let the vehicle coast to ~25mph, then slow the vehicle to a standstill with light brake application
- 4) With the brakes applied and the vehicle at a standstill, wait for 10 seconds
- 5) Repeat steps 1-4 for 9 cycles, then proceed to Step 2 below (M-Mode)

2. Step 2 Adaptation Re-Learn Procedure (M-Mode)

- 1) With the shifter in M Mode, accelerate the vehicle to ~30mph and select 3rd gear
- 2) Continue driving for 2 miles
- 3) Accelerate the vehicle to ~45mph and select 5th gear
- 4) Using light throttle, accelerate to 50mph and then coast to ~40mph without applying the brakes, repeat for 4 cycles, then
- 5) Accelerate to 55mph and select 6th gear
- 6) With light throttle, accelerate to 65mph then coast to 50mph without applying the brakes, repeat for 4 cycles, then
- 7) Select 3rd gear and repeat steps 1-6 for 5 cycles, then coast to a standstill and proceed to Step 3 below

3. Step 3 (Shift Confirmation)

1. With the vehicle at a standstill, shift from "N" to "D", wait 5 seconds then shift back into "N"
2. Repeat this for 4 cycles, then
3. Shift from "N" to "R", wait 5 seconds then shift back into "N"
4. Repeat this for 4 cycles, then
5. Check error memory to ensure there are no codes

This concludes the basic procedure for re-learning the transmission adaptations. Please keep in mind that the transmission will continue to learn over the next few days to completely learn itself into the new parameters and shift quality will continue to improve. Drive the vehicle as normal.