

Mercedes Transmission Optimize - Adaptation Procedure 722.6

Transmission Control Module N15/3 of transmission series 722.6 has the capability to variations in shift member clearances, filling pressures and friction characteristics in maintaining optimal functions

Transmission adaptation must be performed after:

- 1.) Replacement of transmission assembly
- 2.) Replacement of Transmission Control Module N15/3
- 3.) If shifting characteristics seem unfavorable
- 4.) If shift quality has decreased after repairs or battery supply interrupted
- 5.) Components have been replaced in transmission

General Information Concerning 722.6 Adaptation Process:

- 1.) Each shift and each shift member has control module requirements
- 2.) Adaptation values are established during shifting with extreme light loads. The transmission then functions correctly in all other driving conditions
- 3.) Approximately eight shifts *per shift member* must take place within the permissible engine torque, engine speed and transmission oil temperature allowances to effectively improve adaptation values.
 - a.) *Upshifting using transmission selector lever is an effective method to achieve upshifts with such light engine torque*
- 4.) Engine must continue to run for at least 10 minutes after transmission adaptation is performed. This will allow control module to record and store the new adaptation values into memory. (This is conducted in Park / Idle condition)

Note! If engine is turned off prior to the required 10 minutes time interval, all new adaptation values will NOT be stored. Transmission control module will default to previous values!

Adaptation Procedure as follows:

- 1.) Transmission oil temperature at 80° to 90° C optimally
- 2.) Connect scanner to indicate RPM and Speed
- 3.) Climate Control (A/C System) in OFF condition
- 4.) Drive on *level* road condition with *light* throttle
- 5.) Do NOT exceed the maximum RPM value during shift process (1800 to 2400 RPM)

Take notice of the following Shift Adaptation Chart below:

Adaptation Torque Requirements chart for Shift Time M104 - M111 - and OM606

Shift	Torque M104.941	Torque M111.973	Torque M111.974	Torque OM606.912
1 - 2	14 - 36 Nm	15 - 36 Nm	15 - 28 Nm	14 - 27 Nm
2 - 3	20 - 59 Nm	20 - 59 Nm	20 - 59 Nm	20 - 55 Nm
3 - 4	20 - 45 Nm	20 - 45 Nm	20 - 46 Nm	15 - 54 Nm
4 - 5	0 - 121 Nm	0 - 121 Nm	0 - 82 Nm	0 - 81 Nm
Maximum RPM	2400 RPM	2400 RPM	2400 RPM	1800 RPM

Adaptation Torque Requirements chart for Shift Time M119 and M120

Shift Member	Upshift Very Light Throttle	Downshift Idle Throtle (w/o Shifter)	Permissable Engine Torque During the shift process (M119 4.2ltr.)	Permissable Engine Torque During the shift process (M119 5.0ltr. & M120)
K1	1 - 2	-	20 to 40 Nm	20 to 50 Nm
K2	2 - 3	-	20 to 70 Nm	20 to 80 Nm
K3	3 - 4	-	0 to 60 Nm	1 to 140 Nm
B1	4 - 5	-	0 to 110 Nm	0 to 140 Nm
B2	-	4 - 3	0 to -50 Nm	0 to 50 Nm
K1	-	5 - 4	0 to -50 Nm	0 to -50 Nm

To assure proper shift adaptation effectiveness, shift members must apply and release during adaptation.

Shift Adaptation procedure must be performed:

Eight times on M119 and M120 Engines

Four times on M104, M111, M112, M113 and OM606 Engines

There are no ideal numbers to achieve, however a zero (0) indicates that a shift member does not require adaptation or the shift member has not yet adapted. If an adaptation value is at the maximum value, and the shift is unacceptable, repair work may be required.

As for field experience to adapt the 722.6:

Place transmission shift lever in lowest gear, lightly accelerate to the 2400 RPM limit and back to idle condition. Perform this 3 to 4 times.

Place shift lever in next gear position and perform the same procedure as above.

After the last gear selected position is performed, bring vehicle to a stop and allow to idle in PARK position for at least 10 minutes.

Once this has been performed, shut off engine, restart, place into DRIVE and check for proper shift adaptation to have been stored.

If not, repeat the above procedure. This may take a few times as I have experienced.