

INSTALLATION GUIDE**TB09**

VAG EPS RACKS INSTALLATION GUIDE - TB09

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VAG Generation 2 & 3 - Installation Guide

REPLACEMENT

After replacing this Control Module several steps have to be performed in the following order:

1. Check/Update Steering Aid Adaptation Channels 002-009.
2. Perform Basic Setting for Steering Angle Sensor (G85) (See process 2A, 2B, 2C – dependent upon ABS type).
3. Perform Steering Limit Stop Adaptation.

Additional Information - Characteristic curves need to be uploaded with the factory tool which has the latest brand version installed as well as access to the latest flash updates. Unless you have a factory tool which meets these requirements the only solution to accomplish this step is to take the car to the dealer and have them perform this.

CODING

Coding for this control module is normally done via Software Version Management (SVM). If the old Control Module is still accessible to read/copy it's coding to the new module. In case this is not possible, please contact us directly and we will assist you with the coding process.

Every enquiry on this topic has to include a full auto-scan as well as which parts have been replaced and why, also make sure the auto-scan includes the complete VIN of the vehicle in question.



SECURITY ACCESS:

40168 = Basic Setting Enabling.

50403 = Adaptation Enabling.

Adaptation - Section 1

CHANNEL 001 **CHARACTERISTIC CURVE**

Depending on the Steering Aid Generation/Software Version this channel may or may not be active. Generation 1 and early Generation 2 still allowed switching between up to 16 different predefined Characteristic Curves, while later/updated Generation 2 and 3 do not and the adaptation channel is being inactive/unavailable.

The Control Module identification lists the currently selected Characteristic Curve. The first example shows an early Generation 2 with a currently active Curve #9 indicated by Kl. 9 in the Component field, while the second example shows a Generation 3 which cannot be altered. As a rule of thumb, if the number of current settings is larger than 20 this setting/channel cannot be altered directly.

Address 44: Steering Assist
Part No: **1K1 909 144 F**
Component: **EPS_ZFLS Kl.9 1301**

Address 44: Steering Assist
Part No: **1K0 909 144 P**
Component: **EPS_ZFLS Kl. 74 3305**

If the identification shows 000 as current setting it means that no Characteristic Curve has been uploaded and the system is working with a Linear Curve instead.

This is a common situation after the steering rack has been replaced, for further details please see Steering Aid (J500) Control Module Replacement.

Address 44: Steering Assist
Part No: **1K0 909 144 J**
Component: **EPS_ZFLS Kl. 000 3001**

CHANNEL 002

MALFUNCTION INDICATOR LAMP (MIL)

Possible Settings:

- 2-Colour Lamp (Standard).
- 1-Colour Lamp.

CHANNEL 003

DRIVER STEERING RECOMMENDATION (DSR)

Possible Settings:

- Driver Steering Recommendation (DSR) active (only ESP MK60 & MK60-AT).
- Driver Steering Recommendation (DSR) inactive (only ASR MK70).
- Driver Steering Recommendation (DSR) active (only ESP MK60EC1 & MK60 AWD/4X4).

INSTALLATION GUIDE**TB09****Adaptation - Section 1 (Continued)****CHANNEL 004 INSTALLATION PARK STEER ASSIST****Possible Settings:**

- Park Steer Assist (PR-7X5/7X6) installed (< MY 2009).
- Park Steer Assist (PR-7X5/7X6) installed (MY 2010 >).
- Park Steer Assist (PR-7X0/7X1/7X2) NOT installed.

CHANNEL 005 TORQUE STEER COMPENSATION (TSC)

The Torque Steer Compensation (TSC) is only being activated for Front-Wheel-Drive (FWD) models which have a high powered engine. This function prevents the car from leaning into one direction while accelerating in combination with powerful engines and unequal lengths drive shafts.

Possible Settings:

- Torque Steer Compensation (TSC) inactive (Standard).
- Torque Steer Compensation (TSC) active.

**CHANNEL 006
INSTALLATION LANE ASSIST****Possible Settings:**

- Lane Assist (PR-7Y0) NOT installed.
- Lane Assist (PR-7Y2/7Y4) installed.

**CHANNEL 007
INSTALLATION ADAPTIVE/DYNAMIC
CHASSIS CONTROL (DCC)****Possible Settings:**

- Adaptive/Dynamic Chassis Control (PR-2H0) NOT installed.
- Adaptive/Dynamic Chassis Control (PR-2H1) installed.

**CHANNEL 008
STEERING ANGLE SENSOR**

The adaptation channel determined the functionality of the internal steering angle sensor.

Depending on the combination of steering aid and brake electronics the internal steering angle sensor needs to be deactivated.

Possible Settings:

- Internal Steering Angle Sensor active.
- Internal Steering Angle Sensor inactive.
- Internal Steering Angle Sensor inactive (only ASR MK70).

INSTALLATION GUIDE**TB09****Basic Setting - Section 2A****SENSOR FOR STEERING ANGLE (G85)****IMPORTANT NOTE:**

THIS PROCEDURE ONLY APPLIES TO MODELS WITH CONTI/TEVES MK70 ABS/ASR.

This Procedure does NOT apply to Conti/Teves MK60, MK60CE, MK60EC1 and similar ABS/ASR/ESP systems. Check the vehicle specific diagnostic procedures pages for each ABS system page with documentation.

Prerequisites:

1. Start the vehicle.
2. Turn the steering wheel one turn to the right and one turn to the left.
3. Drive in a short distance straight line on a level surface at a speed not higher than 20 km/h.

If the steering wheel is straight during the test drive then stop the vehicle with the wheels pointed straight.

4. Ensure that the steering wheel is not moved again.
5. Keep the engine running and do not switch off the ignition.
6. System voltage at least 12.0 V.

SELECT:

[Select]
[44 - Steering Assist]
[Coding-II - 11] or if that function is not available then use [Sec. Access - 16]

instead
Enter 40168, to enable the basic setting.
[Do it!]
[Basic Settings - 04]
Group 060
[Go!]
Activate the Basic Setting.
[ON/OFF/Next]

After a successful basic setting, field 1 should say "OK".
[Done, Go Back]

To make sure the basic setting was successful, check the sensor again.
[Measuring Blocks - 08]
Group 007
[Go!]

Check field 1, the value has to be between -1.5 and +1.5 °.
[Done, Go Back]

[Close Controller, Go Back - 06]
Note: After successful basic setting, the steering limit stop needs to be adapted too.

INSTALLATION GUIDE**TB09****Basic Setting - Section 2B****SENSOR FOR STEERING ANGLE (G85)****IMPORTANT NOTE:**

THIS PROCEDURE ONLY APPLIES TO MODELS WITH CONTI/TEVES MK70 ABS/ASR.

This Procedure does NOT apply to Conti/Teves MK60, MK60CE, MK60EC1 and similar ABS/ASR/ESP systems. Check the vehicle specific diagnostic procedures pages for each ABS system page with documentation.

Prerequisites:

1. Start the vehicle.
2. Turn the steering wheel one turn to the right and one turn to the left.
3. Drive in a short distance straight line on a level surface at a speed not higher than 20 km/h.

If the steering wheel is straight during the test drive then stop the vehicle with the wheels pointed straight.

4. Ensure that the steering wheel is not moved again.
5. Keep the engine running and do not switch off the ignition.
6. System voltage at least 12.0 V.

SELECT:

[Select]
[03 - Brake Electronics]
[Measuring Blocks - 08]
Group 004
[Go!]

Check field 1, the value has to be between -1.5 and +1.5 °.
[Done, Go Back]
[Coding-II - 11]

OR (if Coding-II is not available)
[Security Access - 16]
Enter 40168, to enable the basic setting.
[Do it!]

[Basic Settings - 04]
Group 060
[Go!]

After a successful basic setting, field 2 should say "OK".
[Done, Go Back]

[Close Controller, Go Back - 06]
Note: After successful basic setting, the steering limit stop needs to be adapted too.

INSTALLATION GUIDE**TB09****Basic Setting - Section 2C****SENSOR FOR STEERING ANGLE (G85)****IMPORTANT NOTE:**

THIS PROCEDURE ONLY APPLIES TO MODELS WITH CONTI/TEVES MK70 ABS/ASR.

This Procedure does NOT apply to Conti/Teves MK60, MK60CE, MK60EC1 and similar ABS/ASR/ESP systems. Check the vehicle specific diagnostic procedures pages for each ABS system page with documentation.

Prerequisites:

1. Start the vehicle.
2. Drive in a short distance straight line on a level surface at a speed not higher than 20 km/h.
3. While driving turn the steering wheel one turn to the right and one turn to the left.
4. When having the steering wheel straight again stop the vehicle with the wheels pointed straight.
5. Ensure that the steering wheel is not moved again.
6. Keep the engine running and do not switch off the ignition.
7. System voltage at least 12.0 V.

SELECT:

[Select]
[03 - Brake Electronics]
[Security Access - 16]

Enter 40168, to enable the basic setting.

[Do it!]

[Basic Settings - 04]
Group 060
[Go!]

Activate the Basic Setting.
[ON/OFF/Next]

After a successful basic setting, field 2 should say "OK".

[Done, Go Back]

To make sure the basic setting was successful, check the sensor again.

[Measuring Blocks - 08]

Group 004
[Go!]

Check field 1, the value has to be between -1.5 and +1.5 °.

[Done, Go Back]

[Close Controller, Go Back - 06]

Note: After successful basic setting, the Steering Limit Stop needs to be adapted too.

INSTALLATION GUIDE**TB09****SPECIAL PROCEDURES****SENSOR FOR STEERING ANGLE (G85)****STEERING LIMIT STOP ADAPTATION**

(Engine still running)

1. Centre steering wheel ($\pm 10^\circ$) and hold it centred for 5 seconds.
2. Turn steering wheel completely to the left and hold it there for 10 seconds.
3. Turn steering wheel completely to the right and hold it there for 10 seconds.
4. Centre steering wheel ($\pm 10^\circ$).
5. Switch OFF engine and ignition.
6. Switch ON ignition.
7. Wait 5 seconds.
8. Steering assist warning lamp should turn OFF. If it doesn't, perform a short test drive.

Notes:

If the 02546 - Steering Limit Stop 005 - No or Incorrect Basic Setting / Adaptation fault will not clear after driving the vehicle and completing the VW Golf (1K) Steering

Assist procedure:

- Increase the time in-between key cycles to 30 seconds or more.
- Check all adaptation values in the #44 Steering Assist controller.

Verify all of the WSS (Wheel Speed Sensor) values are plausible in the 03-ABS controller. We received feedback from both MK70 equipped and MK60 ESP equipped (1K) Golf models with 02546 and 00778 DTCs that would not clear due to a faulty WSS. Even if a WSS DTC is not stored it would be advised to log or graph MVB 001 while driving.

CHECKING STEERING TORQUE SENSOR (G269) - ADDITIONAL INFORMATION**Prerequisites:**

- Ignition ON.
- Engine ON (Idle).
- System voltage at least 11.0 V.

[Select]

[44 - Steering Assist]

[Meas. Blocks - 08]

Group 001

[Go!]

Field 2: Steering Torque Sensor (G269)

Turn the Steering Wheel multiple times completely to the left and right. The Torque Values should change. If the Torque Values do change, it's most likely an intermittent Fault in the Wiring/Connectors.

If the Torque Values do NOT change, the Sensor itself or the Power Supply (Terminal 15) might be faulty. Group 004

[Go!]

Field 2: Power Supply (Terminal 15), Specification: "Term. 15 ON"

[Done, Go Back]

[Close Controller, Go Back - 06]