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## VW Steering\_Angle\_Learning\_Operation\_Introduction

### CC\_2014

#### Applicable scenarios:

- Disassembly or replacement of ABS/EDL/ASR/ESP control unit (J104) needs to perform this function
- Disassembly or replacement of steering angle sensor G85 needs to perform this function
- Disassembly or replacement of the steering column needs to perform this function
- Disassembly or replacement of the steering gear assembly (including steering control unit J500) needs to perform this function
- Disassembly or replacement of the steering column switch assembly (including steering control unit J527) needs to perform this function

#### Cautions:

Start the engine and drive straight for a distance on a level road at a speed not higher than 20km/h;

Turn the steering wheel to the left and right to the limit position, and then return to the center position;

Keep the steering wheel stable and keep the engine running during the learning process;

After the steering angle learning is performed correctly, turn off the ignition switch and turn it on again. If the fault light is still on, drive for a certain distance, turn off the key, wait 5 seconds, and then turn it on again. If the light is still on, proceed as follows:

- a) Straighten the steering wheel-keep for 10s;
- b) Turn the steering wheel left to the extreme position and keep it until the car makes a sound (keep it up to 30s, the car will make a sound);
- c) Turn the steering wheel right to the extreme position and keep it until the car makes a sound (keep it for 30s at most, the car will make a sound);
- d) Straighten the steering wheel for 10s;
- e) Turn off the ignition switch, wait 5 seconds, and then turn on the ignition switch

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## Instructions::

1. Turn on the car ignition switch;
2. Choose Volkswagen V27.80 or above;
3. Select [Special Function];
4. Select [Steering Angle Learning];
5. In the listed systems [03 brake system] [16 steering system] [44 steering assist system], each model selects the corresponding system according to different configurations, here select [44 steering assist system];
6. Check the prompts carefully and operate according to the prompts to confirm whether the conditions are met before learning: start the car; drive a short distance in a straight line at a speed not higher than 20km/h on a horizontal road, rotate the steering wheel to the left and right, and return to the middle ; If the steering wheel remains in the right position during driving, keep the steering wheel position and stop; during the learning process, ensure that the steering wheel does not rotate, turn on the ignition switch and keep the engine running; the system voltage is not less than 12.0 V. Such as Figure 1:

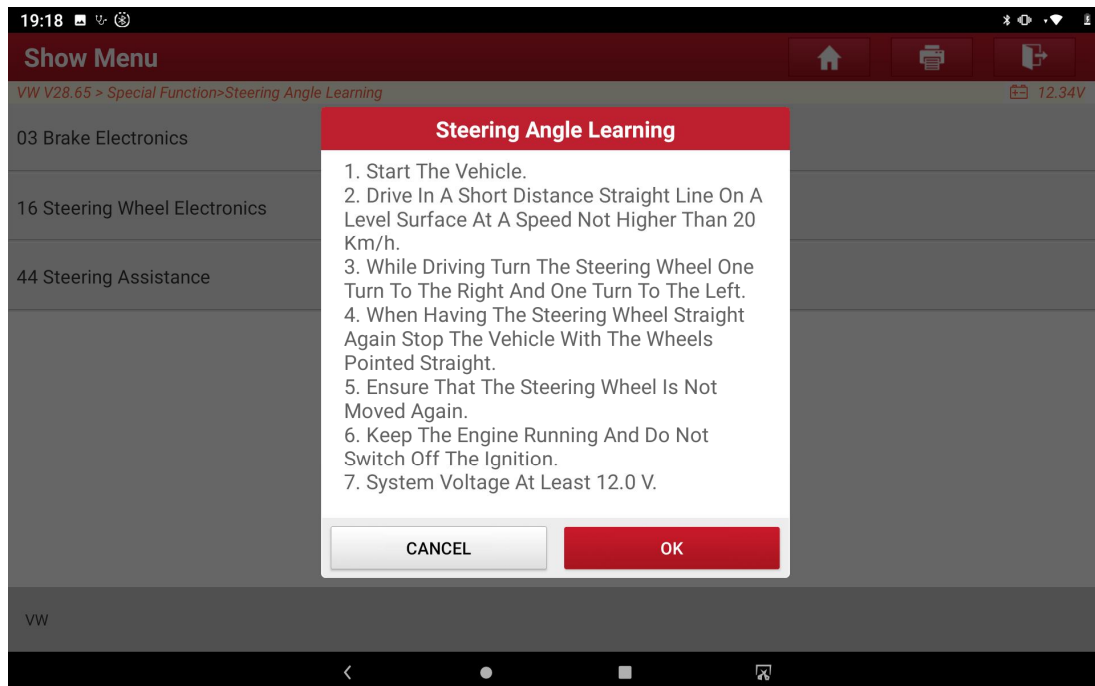


Figure1

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7. Read the fault code and clear the fault code to ensure that there is no fault code in the system. If there is a fault code, the steering angle learning will not be completed successfully. As shown in Figure 2:

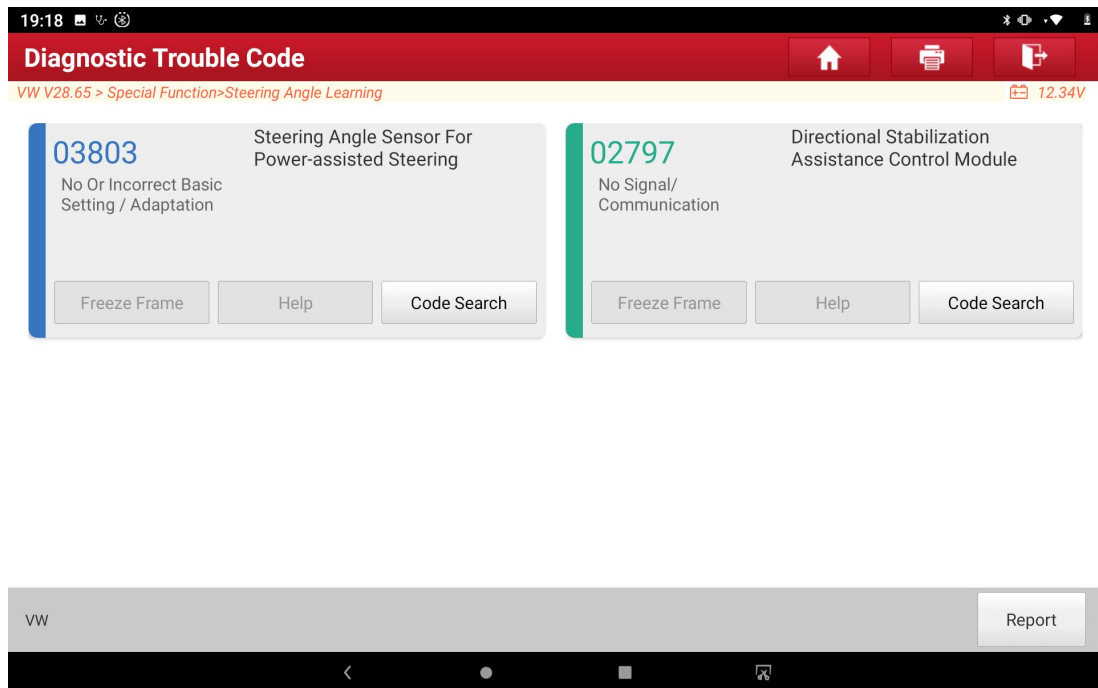


Figure2

8. After clearing the fault code, select [No] and proceed to the next step [Steering Angle Learning];
9. Perform [steering angle return to zero check];
10. Follow the prompts to enter the operation and make sure that all the conditions in the prompts are met: please rotate the steering wheel one circle to the right, then rotate it one circle to the left, and then return to the middle position. The angle value must be between  $-1.5^{\circ} \sim 1.5^{\circ}$ ; If the angle value is incorrect, please rotate the steering wheel to make the angle value within the range of  $-1.5^{\circ} \sim 1.5^{\circ}$ , as shown in Figure 3:

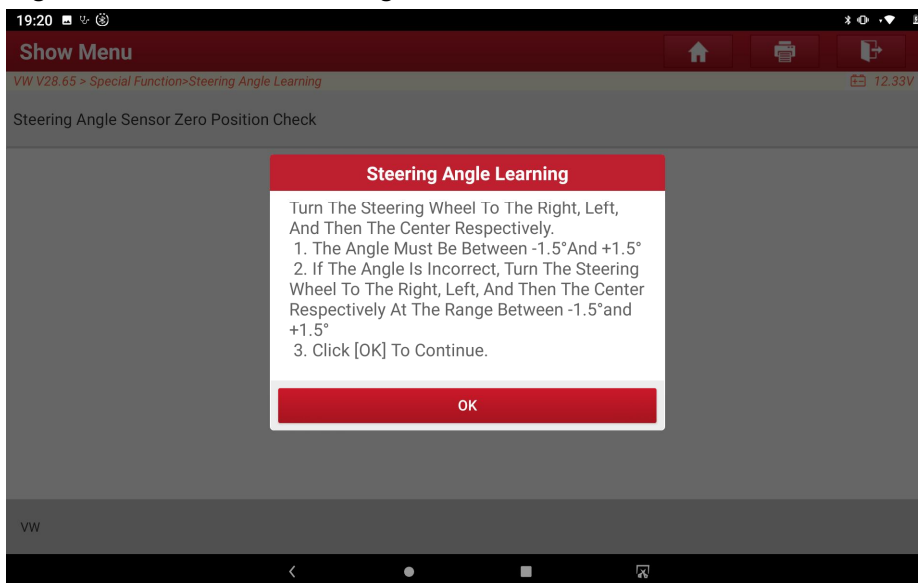
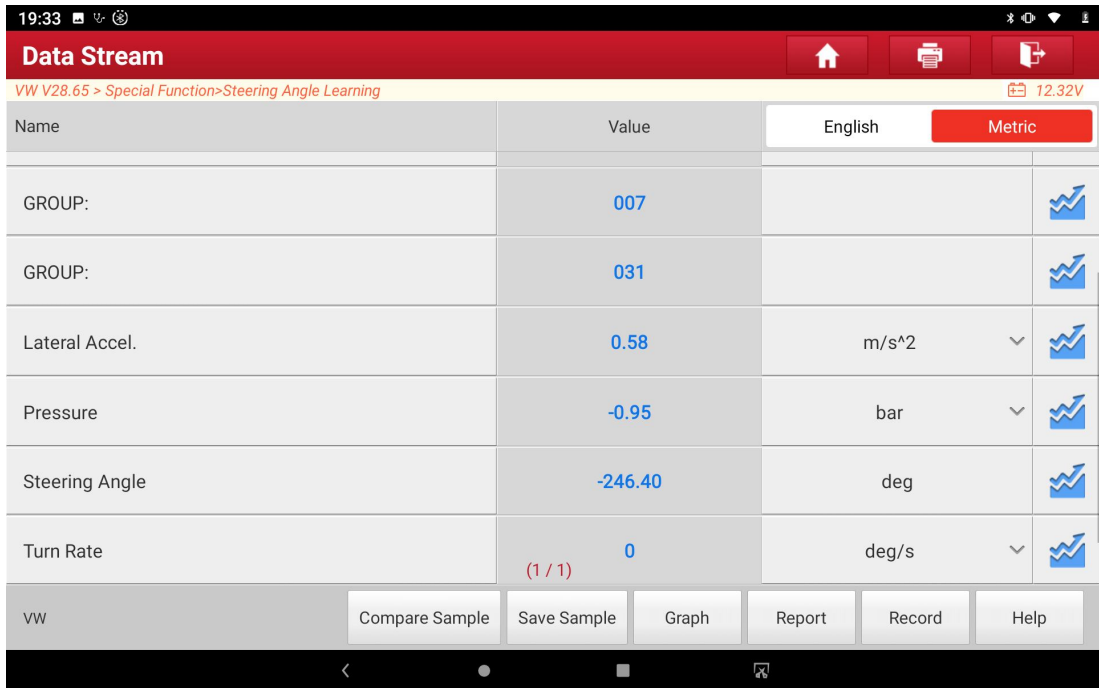


Figure3

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11. Check the steering angle value and confirm that the steering angle value is between  $-1.5^{\circ}$  and  $1.5^{\circ}$ . If the angle value is not correct, please adjust the steering wheel angle and turn off the ignition switch. After a while, perform the above steps again, as shown in Figure 4:



The screenshot shows a mobile application interface titled "Data Stream". At the top, there is a red header with the time "19:33" and various status icons. Below the header, a navigation bar shows "VW V28.65 > Special Function > Steering Angle Learning" and a battery level of "12.32V". The main content is a table with columns for "Name", "Value", "English", and "Metric". The table lists several parameters: "GROUP:" with values "007" and "031"; "Lateral Accel." with value "0.58" and unit "m/s^2"; "Pressure" with value "-0.95" and unit "bar"; "Steering Angle" with value "-246.40" and unit "deg"; and "Turn Rate" with value "0" and unit "deg/s". A "(1 / 1)" indicator is visible below the Turn Rate value. At the bottom, there is a "VW" label and a row of buttons: "Compare Sample", "Save Sample", "Graph", "Report", "Record", and "Help".

Name	Value	English	Metric
GROUP:	007		
GROUP:	031		
Lateral Accel.	0.58	m/s^2	
Pressure	-0.95	bar	
Steering Angle	-246.40	deg	
Turn Rate	0	deg/s	

Figure 4

12. Execute [Safe Login], and prompt login success. The traditional diagnostic instrument needs to enter the login password, but X431 has been processed by the software

13. Execute [Zero steering angle-start basic settings], select channel number 060 for Volkswagen Golf, GTI, Jetta and Audi TT models; select channel 001 for Volkswagen Passat and Audi A4/S4, A6/S6, and A8/S8 models, If you select [Type 1-Channel 001], as shown in Figure 5:

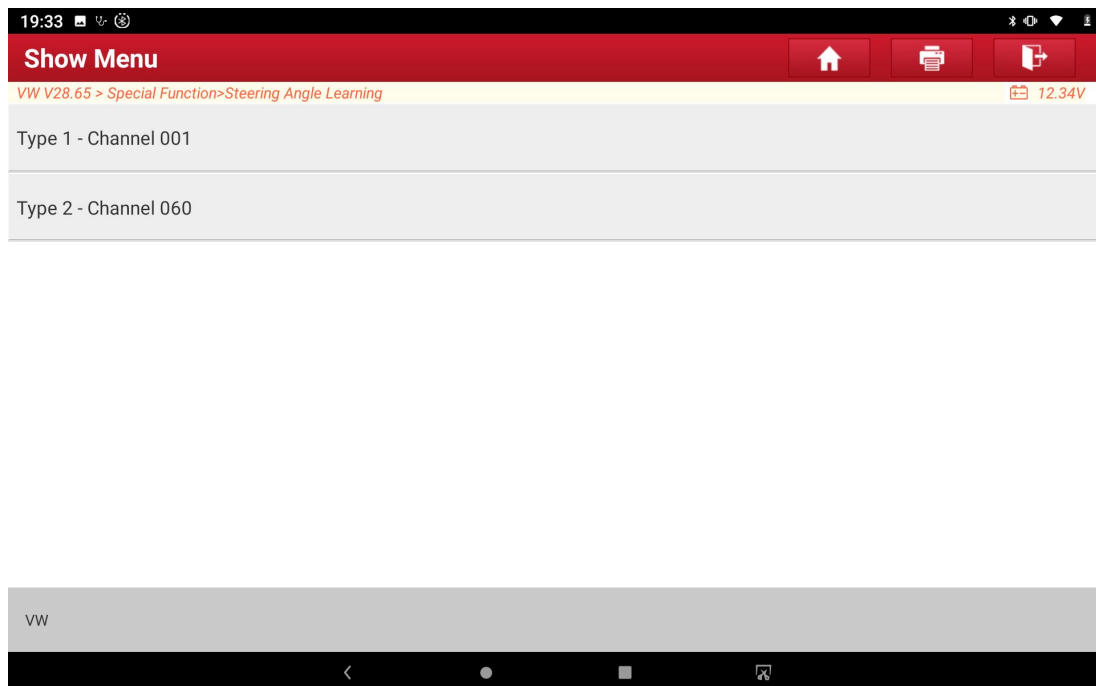


Figure 5

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14. Pay attention to the prompt "Please wait..." during the learning process, as shown in Figure 6:

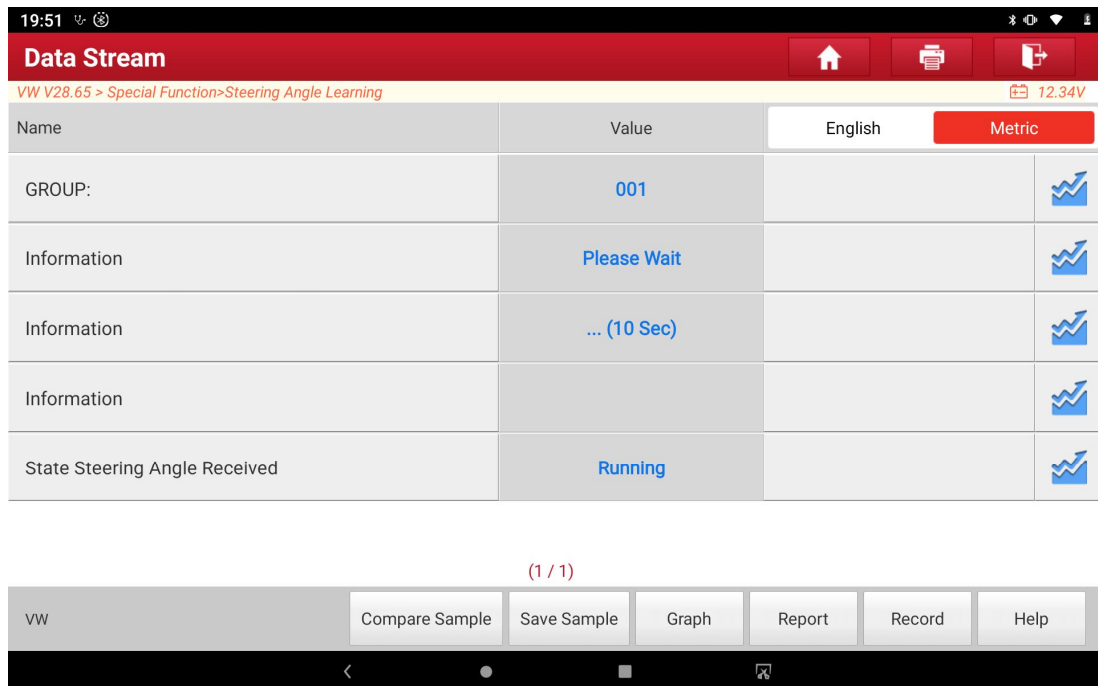


Figure 6

15. Pay attention to the display, the data stream value of "Received steering angle status" changed from "Running" to "Finished Correctly";

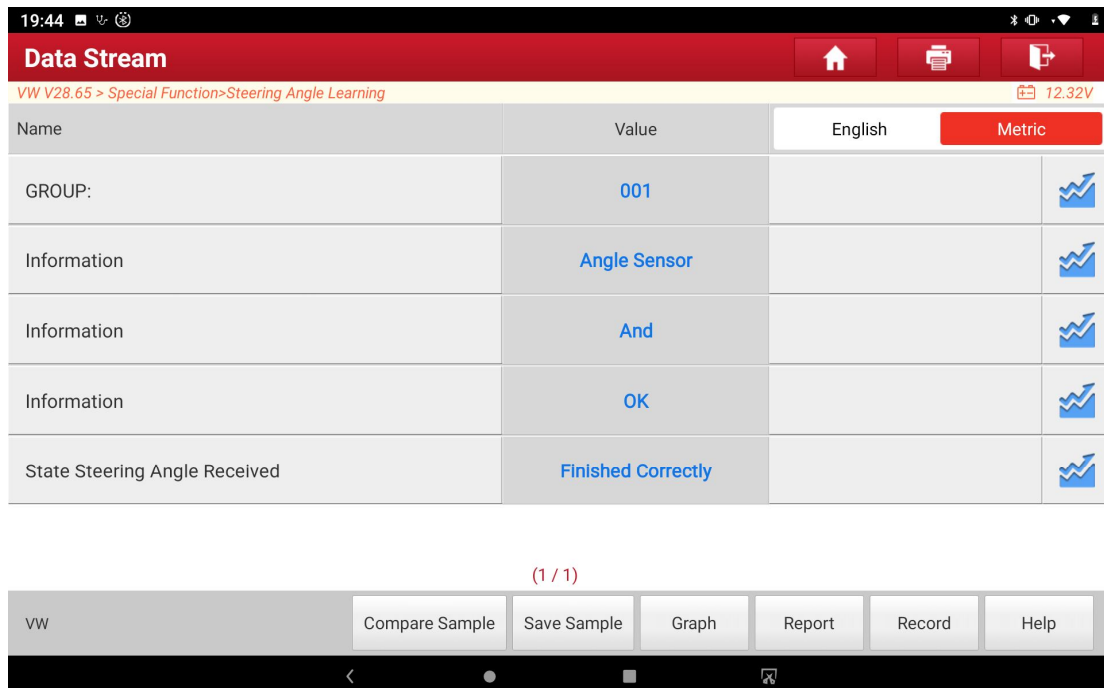


Figure 7

16. It prompts that the steering angle is returned to zero successfully.