

Checking electronic engine power control (electronic throttle)

Performing adaption of throttle valve control part

The adaption process enables the engine control unit to learn the various positions of the throttle valve with the ignition switched on and the engine not running. These positions are stored in the control unit. The feedback signal indicating the position of the throttle valve comes from the two throttle valve actuator angle senders.

If the throttle valve unit -J338 or the engine control unit are removed, installed or replaced or if the voltage supply from the engine control unit is interrupted, adaption must always be performed.

The learning process (adaption process) is performed:

- ◆ By initiating the basic setting (Function 04) of display group 60 with ignition switched on.
- ◆ Automatically if the ignition is switched on once for at least 6 seconds without actuating the starter or the accelerator pedal and the engine control unit recognises "adaption requirement". In this case, however, it is not obvious whether the adaption process was successful or not. Adaption requirement is recognised if stored voltage values from the angle senders do not coincide with current measured voltage values in a certain tolerance band.

Test conditions for adaption of the throttle valve control part

- No fault stored in fault memory
 - Engine stopped, ignition switched on
 - Accelerator not depressed.
 - Coolant temperature greater than 5 °C but less than 105 °C.
 - Intake air temperature above 5 °C.
 - Voltage supply to engine control unit greater than 11 V, Testing =>Page 24-61.
- Connect the vehicle diagnostic, testing and information system VAS 5051 or fault reader V.A.G 1551 and select engine electronics control unit with "Address word" 01 => Page 01-15.
For this purpose, the ignition must be switched on.

→ Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 0 and 4 for the function "Initiate basic setting" and confirm entry with Q key.

→ Indicated on display:

Basic setting
Enter display group number XXX

- Press keys 0, 6 and 0 for "display group number 60" and confirm entry with Q key.

→ Indicated on display:

System in basic setting 60	⇒
1 2 3 4	

After the Q key is pressed, the throttle valve actuator is first disconnected from the electricity supply.

In this condition, the throttle valve is pulled into an emergency running position by a mechanical spring which is located in the throttle valve control part. The values supplied by the two angle senders in this emergency running position are stored in the engine control unit.

The throttle valve is then opened by a predetermined amount. When this value is reached, the throttle valve actuator is again disconnected from the electricity supply. The mechanical spring should then close the throttle valve to the previously learnt emergency running position within a specified period of time (spring test).

The throttle valve actuator then closes the throttle valve; the values supplied by the angle senders in the throttle valve control part are stored in the engine control unit.

If the engine control unit disconnects the throttle valve actuator from the electricity supply while the vehicle is being

driven, the result will be an increased and fluctuating idling speed and a very poor throttle response.

- Check specified value for throttle valve control part (display zones 3 and 4).

	Display zones			
	1	2	3	4
Display group 60: Adaption of throttle valve control part with ignition on				
Display	xxx %	xxx %	---	---
Display	Throttle valve angle (angle sender 1)	Throttle valve angle (angle sender 2)	Adaption stage counter	Adaption status
Range	min.: 0 % max.: 100 %	min.: 0 % max.: 100 %	0 to 8	ADP process running ADP process OK ERROR
Specified value	xxx %	xxx %	During the adaption process, the adaption stage counter should run up from 0 to 8. (Some of the numbers may not appear). If specified value is not attained: Notes =>Page 24-177.	ADP process running
Note				

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	Display zones			
	1	2	3	4
Display group 60: Adaption of throttle valve control part with ignition on				
Display	xxx %	xxx %	---	---
Display	Throttle valve angle (angle sender 1)	Throttle valve angle (angle sender 2)	Adaption stage counter	Adaption status
Range	min.: 0 % max.: 100%	min.: 0 % max.: 100%	0 to 8	ADP process running ADP process OK ERROR
Specified value	xxx %	xxx %	8	ADP process OK
Note			If specified value is not attained: Notes	

			=>Page 24-177.
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Note:

If the adaption process is interrupted by the control unit and the tester display indicates "Function is unknown or cannot be carried out at the moment" the cause could be one of the following:

- ◆ All test conditions must be met
=>Page 24-172.
 - ◆ Engine was started or accelerator was actuated during the adaption process.
 - ◆ The throttle valve cannot close completely (e.g. dirt).
 - ◆ Connector (6-pin connector) at throttle valve control part not engaged.
 - ◆ Wiring connections defective.
 - ◆ Distortion of throttle valve housing (check screw connection).
 - ◆ The throttle valve control part is defective.
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- End the engine basic setting by pressing the ⇒key.
 - Press keys 0 and 6 for the function "End data transfer" and confirm entry with the Q key.