



If an exchange engine control module is installed for test purposes, up to 40 start attempts can be performed before the engine and DAS control modules "marry" to one another. Prior to performing the first start, the engine control module must be version coded using the HHT. Additionally, the code number and VIN must be entered (see HHT nominal values "DAS", menu selection 3/7).

**Note regarding version coding:**

The engine control module is equipped with a version coding feature. The coding must be performed with the Hand-Held Tester (automatically or manually, see Notes for HHT "Version coding" □ 11 /5) upon installation of a new control module.

The following vehicle version data must be determined for coding:

- Vehicle model,
- Engine,
- Manual/automatic transmission
- Non-catalytic converter (non-TWC),
- Country version,
- 30 km/h limitation

**Notes regarding automatic recognition of the mechanical end stop and wide open position of the throttle valve from the actuator:**

The end stops of the throttle valve is determined by the actuator and stored in the engine control module.

After replacing the control module or actuator, the mechanical end stop and wide open position must again be determined and recorded.

Thereby allowing learned data to be erased with the HHT and new data to be learned. When the new engine control module is connected for the first time to circuit 30 (B+), the engine control module performs a self-adaptation of the actuator with the ignition "ON" (lower mechanical end stop and wide open position of the throttle valve).

**Requirements for learning process:**

- Selector lever in position P/N,
- Vehicle standing still,
- Engine off,
- Engine coolant temperature between 5°C and 100°C ,
- Accelerator pedal not applied.

When all requirements are met, turn **ignition ON for at least 60 seconds** , then turn **ignition OFF for at least 10 seconds** .

The learned value is stored in memory, only after the first 10 start cycles, provided the voltage supply has not been interrupted. Should the battery be disconnected after the 9th start cycle, the re-learning process must be performed again.

**Notes regarding VSS sensor adaption for rough running engine test:**

After the replacement of the ME-SFI control module, CKP sensor (L5), starter ring gear or motor mount, a sensor adaption must be performed:

- Engine coolant temperature approx. > 70 oC,
- Drive vehicle on road.

**Vehicles up to 01/98:**

- With selector lever in position 4: Increase engine rpm to approx. 2,500 rpm and then coast until engine rpm is approx. < 1,500 rpm.
- With selector lever in position 2: Increase engine rpm to approx. 6,100 rpm and then coast until engine rpm is approx. < 4,100 rpm.

Again increase engine rpm to approx. 6,100 rpm and then coast until engine rpm is approx. < 3,000 rpm.

- Using the HHT, determine if VSS sensor adaption has taken place.

**Vehicles as of 02/98:**

- With selector lever in position 3: Increase engine rpm to approx. 2,100 rpm and then hold a 50% engine load for approx. 30 seconds.
- Using the HHT, determine if VSS sensor adaption has taken place.

**Notes regarding performance/speedometer test:**

Disconnecting the ESP/ASR/ETS/ABS control modules is not allowed. The engine control module and transmission control module rely on these modules to supply the VSS data via the CAN bus.

To disable the brake and engine regulation function of the ESP/ASR/ETS/ABS control modules:

(continued on 11/7)

**Notes for HHT**

**A. Working without HHT**

- Ignition: OFF .