

**Document title** Torque coordination, function

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- ENGINE 276.8 in MODEL 207, 212  
as of model year 2014**
- ENGINE 276.8 in MODEL 218  
as of model year 2015**
- ENGINE 276.9 in MODEL 207, 212 (except 212.095), 218  
as of model year 2014**

#### Function requirements for torque coordination, general points

- Circuit 87M (engine management ON)
- Engine runs

#### Torque coordination, general

The torque interface in the ME-SFI [ME] control unit (N3/10) coordinates and prioritizes (according to drivability and determined priority) the requirements of all systems that make an engine torque requirement. It also determines how dynamically each request is to be implemented.

The following systems can make an engine torque request:

- The driver, through the accelerator pedal sensor (B37)
- Electronic Stability Program, via chassis CAN 1 (CAN E1) from the Electronic Stability Program control unit (N30/4) (except code 233 (DISTRONIC PLUS) or Electronic Stability Program Premium control unit (N30/7) (for code (233) DISTRONIC PLUS)
- CC, over the Electronic Stability Program control unit (except code 233 (DISTRONIC PLUS)
- Transmission control via drive train CAN (CAN C) from fully integrated transmission controller unit (Y3/8)
- DISTRONIC PLUS from radar sensors control unit (N62/1) (for model 207, 212 as of model year 2014 with code 23P (Driver Assistance Package Plus), model 218 as of model year 2015 with code 23P (Driver Assistance Package Plus) via chassis CAN 1

- DISTRONIC PLUS from video and radar sensor system control unit (N62/2) (for model 218 up to model year 2015 with code 233 (DISTRONIC PLUS), with code 237 (Active Blind Spot Assist), with code 238 (Active Lane Keeping Assist) via chassis CAN 1
- Engine speed limitation
- Maximum speed limit
- Maximum torque limitation

#### Function sequence for torque coordination

According to the dynamic requirements, the ME-SFI [ME] control unit varies the engine torque requirement, by:

- Extending or shortening the injection period of the fuel injectors (Y76)
- Advancing or retarding the ignition timing of the ignition angle of the ignition coils (T1) (this allows very rapid variation of the engine torque)
- A combination of adaptation of the injection period and adjustment of the ignition angle

#### Torque reserve

A torque reserve is achieved by extending the injection period, while simultaneously adjusting the ignition angle to "retarded". This enriches the fuel/air mixture while also preventing any premature increase in torque through retarding the ignition timing of the ignition angle. Finally, any required increase in engine torque is achieved if necessary by timing advance of the ignition angle. This enables a fast and comfortable increase in torque.

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|  | Electrical function schematic for torque coordination  | MODEL 207<br>MODEL 212<br>MODEL 218  | PE07.10-P-2713-97EAK<br><b>PE07.10-P-2713-97DAQ</b><br>PE07.10-P-2713-97XAI |
|  | Overview of system components for gasoline injection and ignition system with direct injection | ENGINE 276.9 in MODEL 207, 212 (except 212.095), 218<br>as of model year 2014<br>ENGINE 276.8 in MODEL 207, 212<br>as of model year 2014<br>ENGINE 276.8 in MODEL 218<br>as of model year 2015 | GF07.70-P-9998MM<br><b>GF07.70-P-9998MMP</b>                                |