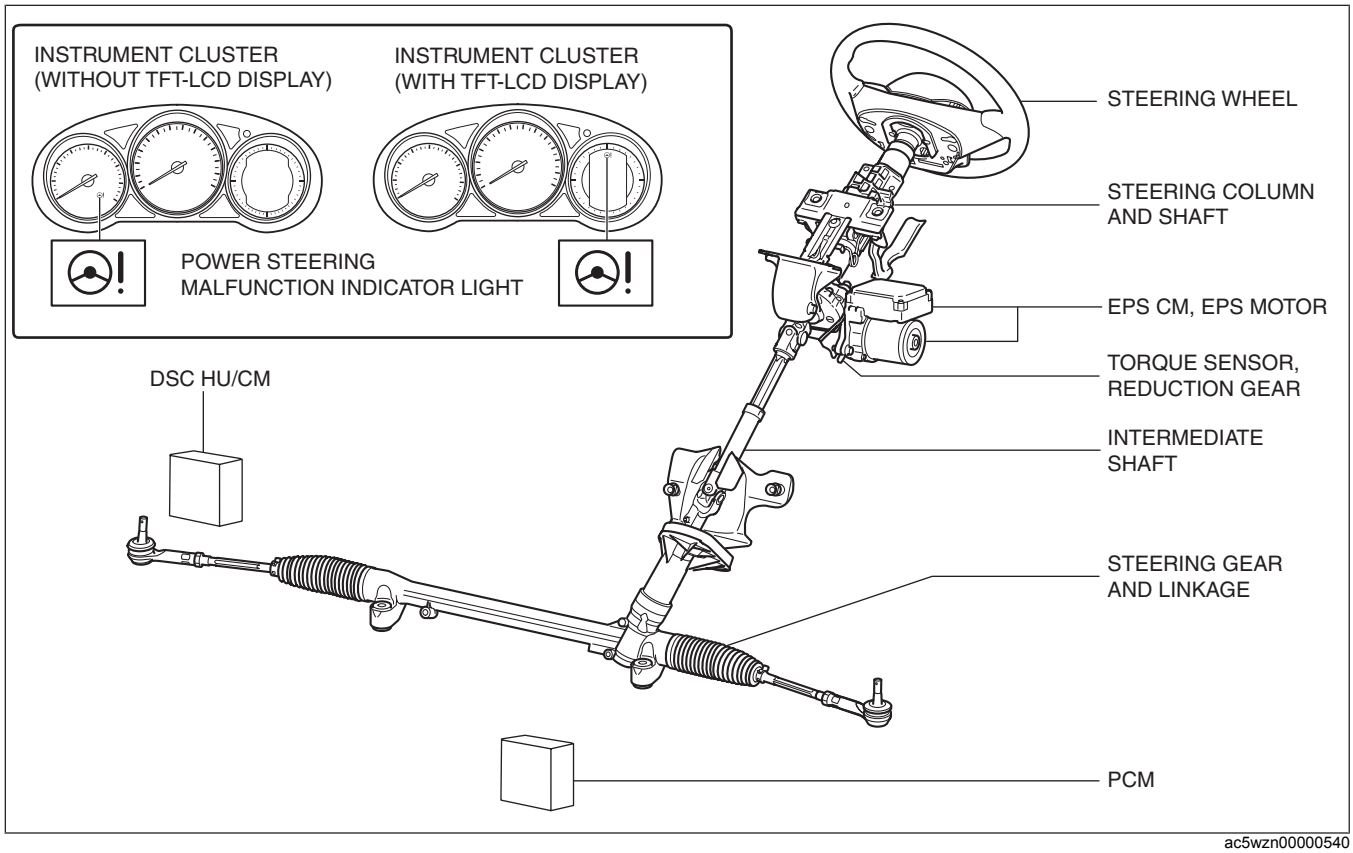
ELECTRIC POWER STEERING SYSTEM

id061300245900

Outline

- A column assist type EPS has been adopted for all models.
- EPS provides smooth handling from low to high speeds as a result of the excellent steering feel provided by the electronic control and the vehicle-speed responsive control.
- EPS does not require a power steering oil pump and generates assist force only when the steering wheel is steered. As a result, engine load is lowered and fuel efficiency is improved.
- Serviceability improved by the automatic configuration function and the steering angle neutral position auto-learning function.

Structural View
L.H.D.



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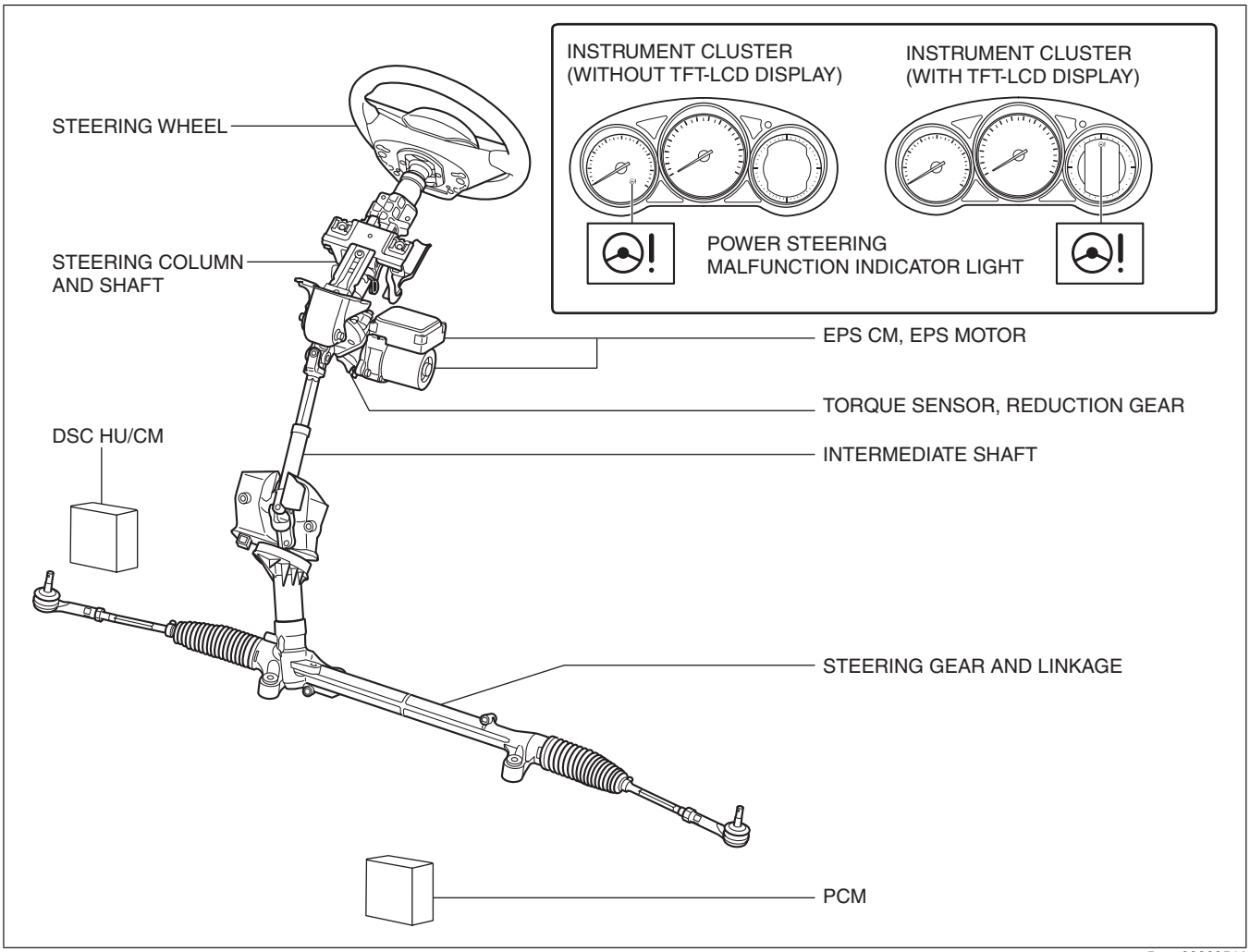
R.H.D.



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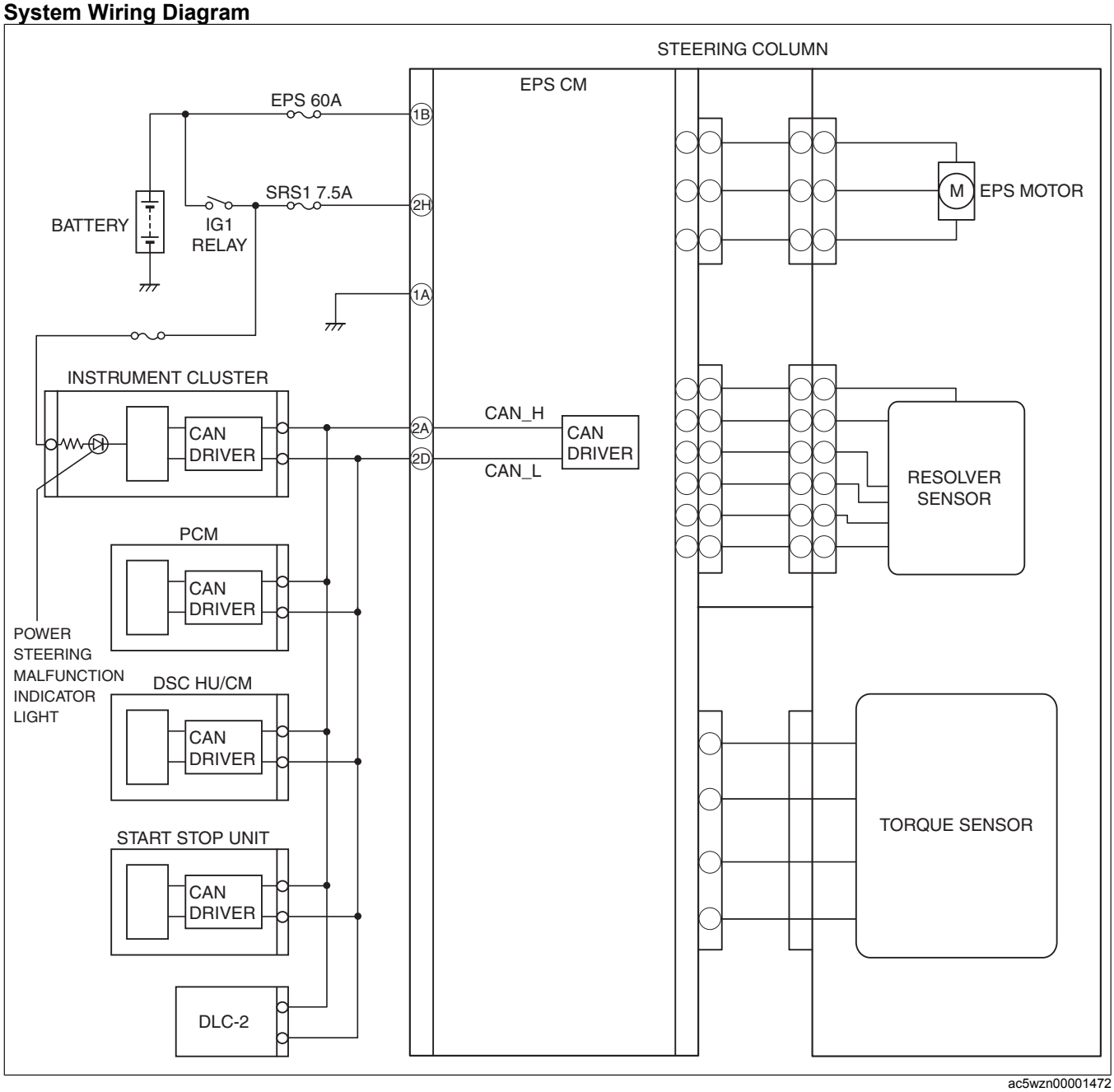
System Wiring Diagram



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Purpose/Function

- The EPS assists the manual steering mechanism operation using the EPS motor to provide supplemental manual power during steering operation, reducing the load on the driver.

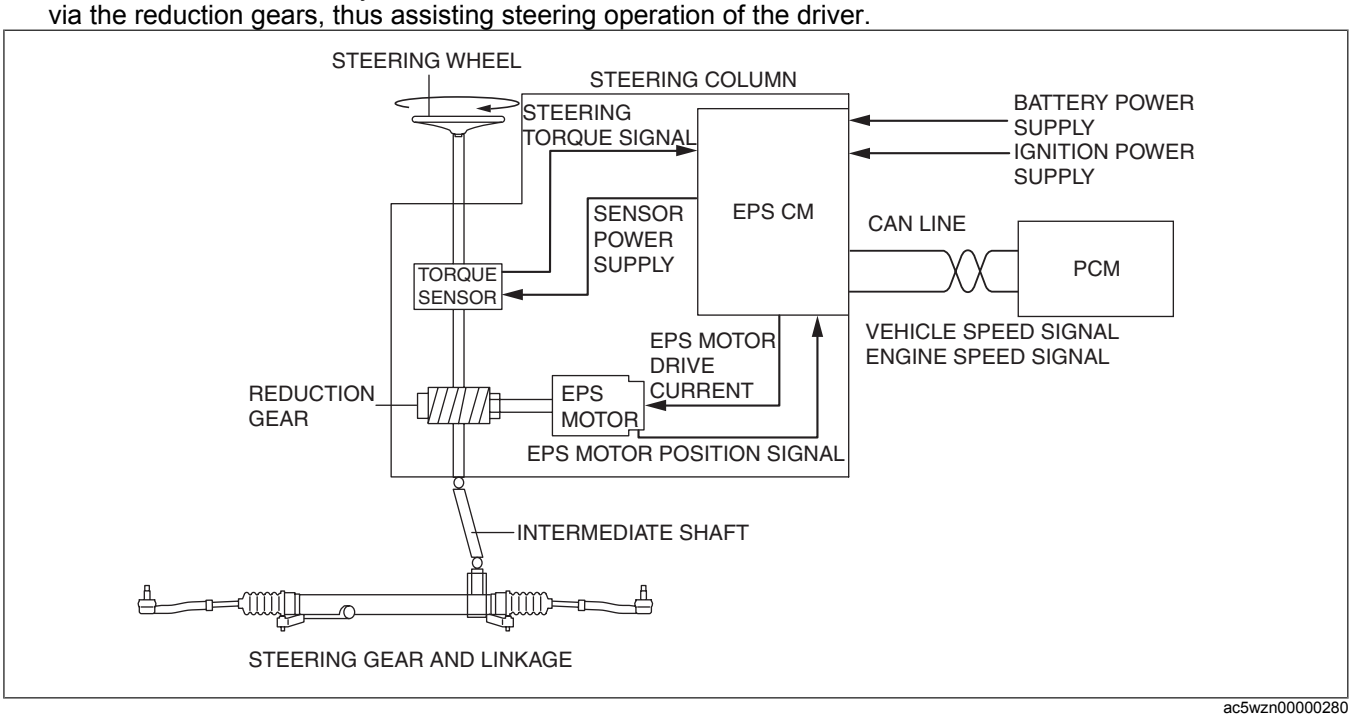
Construction

- The EPS consists of the following parts:
  - — Manual steering mechanism
    Consists of the steering wheel, steering column, steering column and shaft, steering gear and linkage.
  - — Electric assist mechanism
    Consists of the EPS CM (control module) built in the steering column, torque sensor, reduction gear, and EPS motor integrated in the EPS CM.
  - — Control system
    Controls based on the EPS CM, torque sensor, reduction gear, EPS motor, and vehicle speed and engine speed signals input from the PCM.

Operation

1. Steering force generated by the driver's steering wheel operation is detected by the torque sensor which is built in the steering column and shaft, and is output to the EPS CM as a steering torque signal.

2. The EPS CM calculates optimum assist force based on the steering torque signal from the torque sensor and the vehicle speed and engine speed signals from the PCM, and outputs electric current to drive the EPS motor.
3. The EPS motor is driven by the current from the EPS CM and the force is transmitted to the intermediate shaft via the reduction gears, thus assisting steering operation of the driver.



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