

GEAR SHIFT INDICATOR [SKYACTIV-D 2.2]

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Purpose/Function

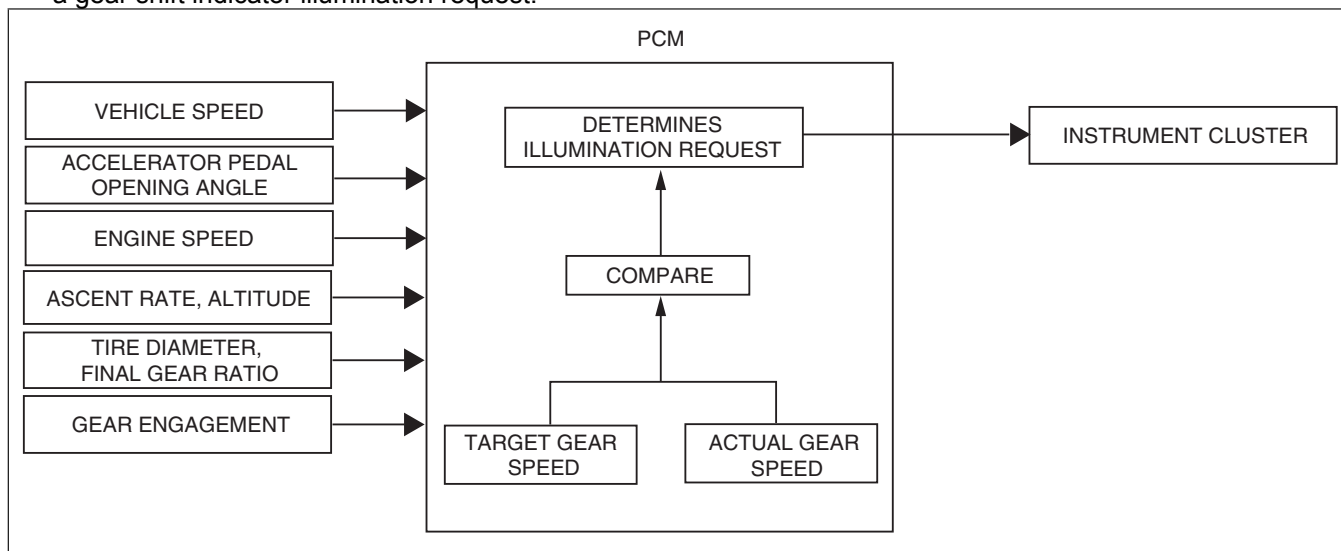
- The gear shift indicator, built into the instrument cluster, informs the driver that a gear position and shift up/down operation are recommended according to the driving conditions.
- The PCM sends a gear shift indicator illumination request to the instrument cluster via CAN communication.

Construction

- The gear shift indicator is built into the instrument cluster. (See INSTRUMENT CLUSTER.)

Operation

- The PCM compares the target gear speed calculated from each signal and the actual gear speed to determine a gear shift indicator illumination request.



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Target gear speed (recommended gear position)

- The target gear speed is determined by the vehicle speed, accelerator pedal opening angle, ascent rate, and altitude.

Actual gear speed (current gear position)

The actual gear speed is determined by the vehicle speed, engine speed, tire diameter, final gear ratio, and gear engagement.

- The gear shift indicator illumination/off conditions are as follows:

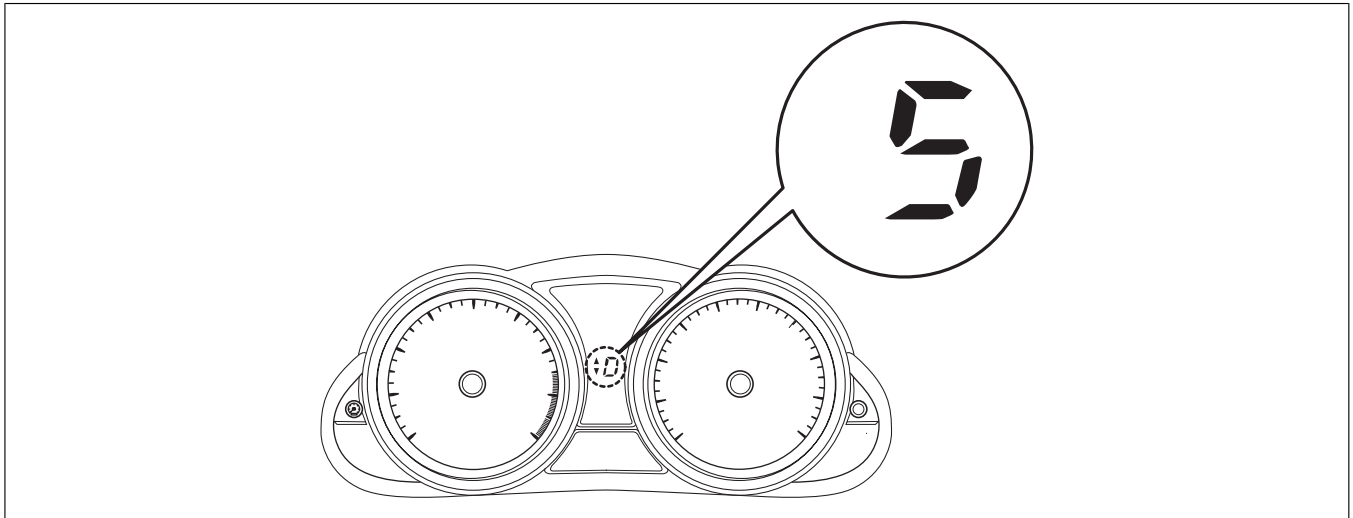
Gear Shift Indicator Illumination Condition

- There are three gear shift indicator illumination patterns; normal operation, shift-down recommended operation, and shift-up recommended operation.

Normal operation

- When the following condition is met, the currently selected gear position is indicated.
 - Target gear speed and actual gear speed are equal

Example: the following figure indicates that the currently selected gear position is 5th gear.



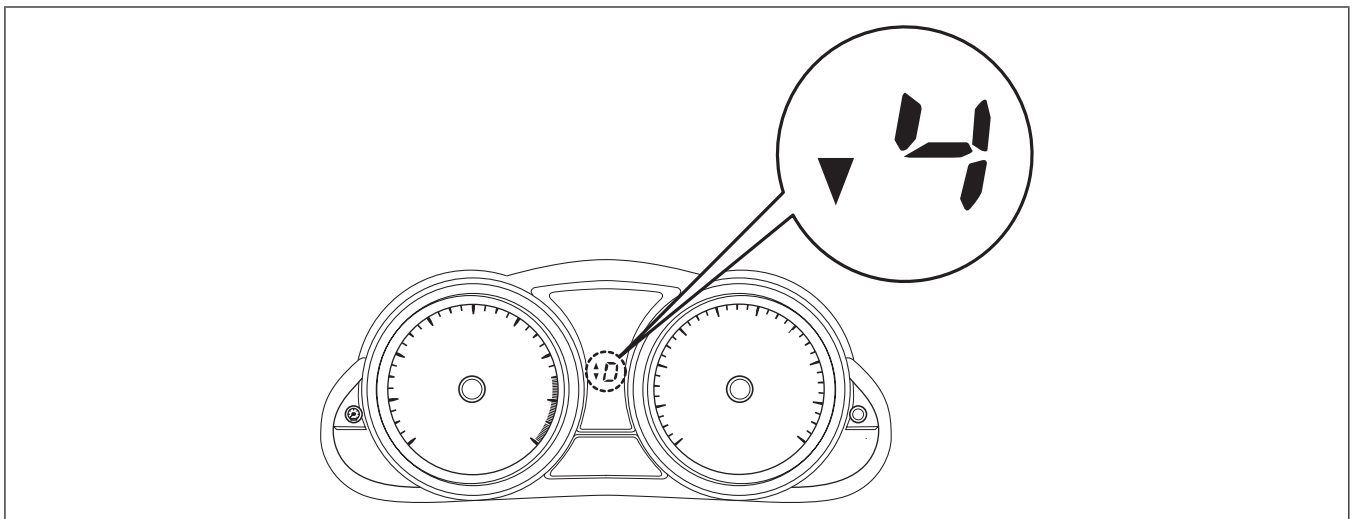
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Shift-down recommended operation

— If a shift-down operation is performed when the following condition is met (determines smooth driveability is difficult), the recommended gear position is indicated at the same time.

- Target gear speed is lower than actual gear speed

Example: The following figure indicates that a shift-down operation to 4th gear is recommended.



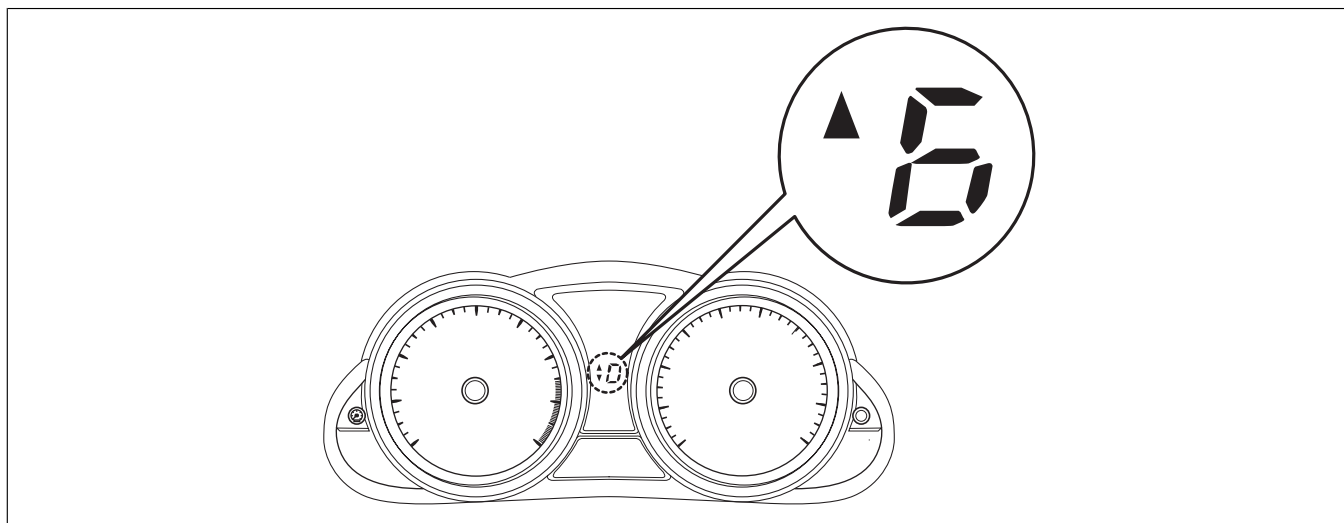
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Shift-up recommended operation

— If a shift-up operation is performed when the following condition is met (determines fuel economy worsens), the recommended gear position is indicated at the same time.

- Target gear speed is higher than actual gear speed

Example: The following figure indicates that a shift-down operation to 6th gear is recommended.



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Gear Shift Indicator Off Condition

- When any one of the following conditions is met, the gear shift indicator turns off.
 - Vehicle is stopped
 - Gear is in neutral position or reverse position
 - Until clutch is completely engaged when vehicle is started
 - Clutch pedal is depressed for 1.5 s or more while driving
- If the vehicle is driven with the gear not changed when a shift-down/up operation is recommended, the gear shift indicator may temporarily turn off