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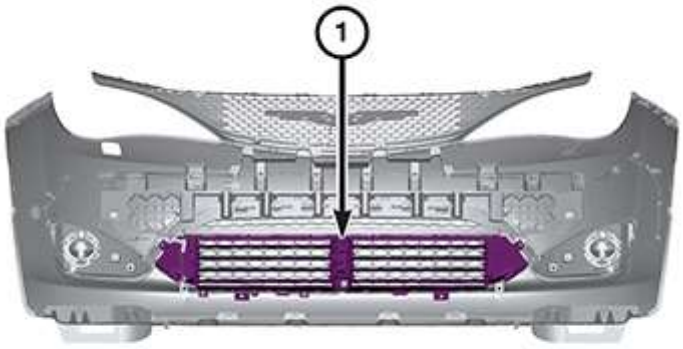
YOUR CURRENT VEHICLE

**2018 Chrysler Pacifica**

# Description & Operation

## DESCRIPTION AND OPERATION

### DESCRIPTION

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This vehicle features an Active Grill Shutter (AGS) system. The AGS (1) is located behind the lower grill and in front of the radiator.

The AGS system consist of an electric motor (actuator), shutter vanes, linkage retainer, and frame that are mounted to the front fascia.

Aerodynamics plays an important role in regards to fuel efficiency. Aerodynamic drag increases as vehicle speed increases. With the vehicle traveling at highway speeds, engine power requirements increase in order to overcome wind drag across the front of the vehicle. Reducing the wind drag coefficient across the front of the vehicle is directly proportional to an improvement in fuel efficiency.

### OPERATION

#### ACTIVE GRILL SHUTTER OPERATION

- The AGS assembly contains an integral smart module

- The module receives a command position signal from the Powertrain Control Module (PCM) to properly position the shutter vanes
- The AGS module reports the position to the PCM on the Local Interface Network (LIN) bus
- The AGS module four-pin connector contains a battery voltage, ignition voltage, and a ground circuit
- Controlled by the PCM over a dedicated network LIN bus
- When the ambient air and engine coolant temperatures are below a specified threshold, airflow across the radiator is not required
- When airflow across the radiator is not required and vehicle speeds reach a calibrated threshold, the PCM will command the shutter vanes to close
- Closing the grill shutter vanes creates an improved drag coefficient across the front of the vehicle
- If additional cooling is required due to increasing engine coolant temperatures, the PCM commands the grill shutter vanes to open
- In cold climates, the active grill shutter system may be used to improve engine coolant warm-up times, further increasing fuel economy
- To aid with diagnosis, the grill shutter vanes can be commanded to the open or closed positions with a scan tool

**Initialization**

- Performed each time the vehicle is started
- Can be used as a quick way to validate the operation of the AGS

**AGS validation**

- Start the engine and observe the grill shutters
- Depending on the position at key on, the AGS will cycle to the full open and the full closed positions to initialize and learn the hard stops on the grill shutter frame for that key cycle
- If the AGS module detects the grill shutters are jammed, it will attempt to free them by cycling the shutters from the open to close positions 3 times
- If this condition is detected when the ambient air temperature is greater than 4.4° C (40° F), the MIL will illuminate and a diagnostic trouble code (DTC) will set
- If the ambient air temperature is below 4° C (39.2° F) and a jammed condition is detected, the smart module will assume the shutters are frozen and will not illuminate the MIL or set a DTC