■AUTOMATIC GLARE-RESISTANT EC MIRROR

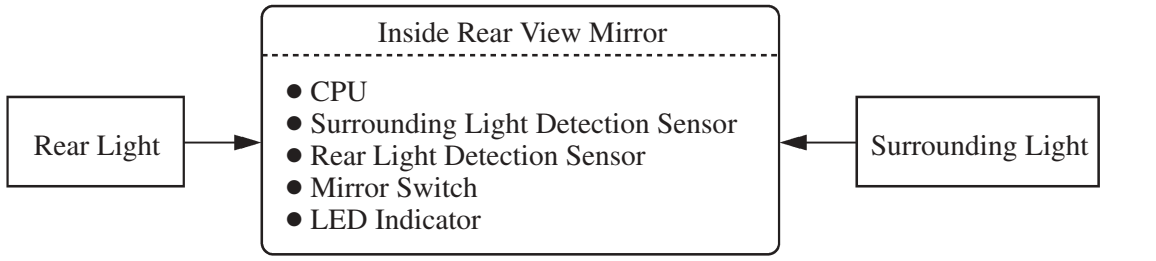
1. General

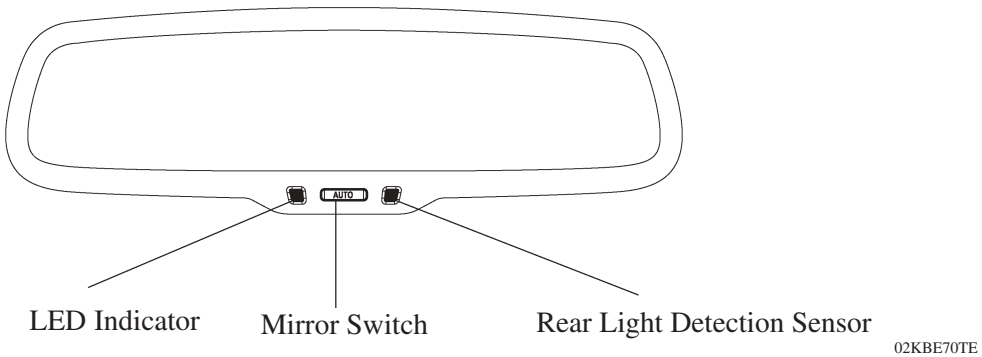
During nighttime driving, if a large difference in intensity exists between the surrounding light and the light reflected off the inside rear view mirror from the headlights behind, an automatic glare-resistant EC (Electro Chromic) mirror automatically reduces the reflection rate of the mirror and thus dampens the glare from the mirror.

- This system uses 2 sensors (surrounding light detection sensor and rear light detection sensor) that are present in the inside rear view mirror to detect the difference between the intensity of light in the environment, and the light that the inside rear view mirror receives from the rear of the vehicle.
- When the ignition*1/engine*2 switch is changed from OFF to IG-ON, this system defaults to AUTO mode.

*1: Models without smart entry and start system
*2: Models with smart entry and start system

▶ System Diagram ◀



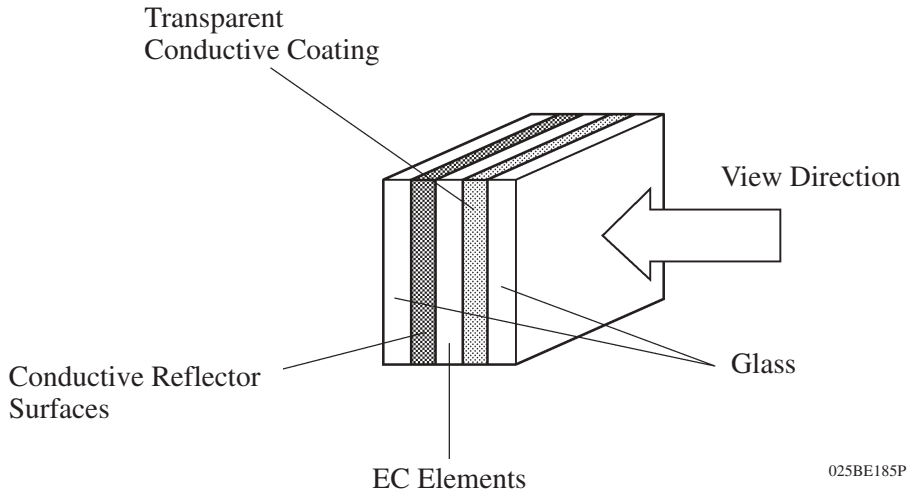


2. Function of Components

Component	Function
Surrounding Light Detection Sensor	Detects the intensity of the light surrounding the vehicle.
Rear Light Detection Sensor	Detects the intensity of the light that strikes the inside rear view mirror from behind the vehicle.
LED Indicator	Turns on to inform the driver when AUTO mode is operating.
Mirror Switch	Changes the mode between AUTO mode/AUTO OFF mode when the Switch pressed less 3 seconds.
EC Mirror Cell	Varies the refection rate of the mirror using the function of EC element.
CPU	Controls the reflections rate in accordance with the signals from the 2 sensors.

3. EC Mirror Cell

The gel type EC elements are placed between a layer of transparent conductive coating, and a layer of conductive reflector surfaces, which are placed between 2 sheets of glass. The EC elements have color coating characteristics. These characteristics are utilized to electronically very the mirrors reflection rate through the electro-chemical oxidation reduction reaction.



4. Reflection Rate Control

This CPU detects the surrounding light using its surrounding light detection sensor, the rear light using its rear light detection sensor, and determines whether it is day or night based on the intensity of the surrounding light. At the same time, the intensity of the glare from the rear is determined through the difference in intensity between the surrounding and rear light. In accordance with the intensity of the rear light, the reflection rate is varied steplessly.

