

3. Function

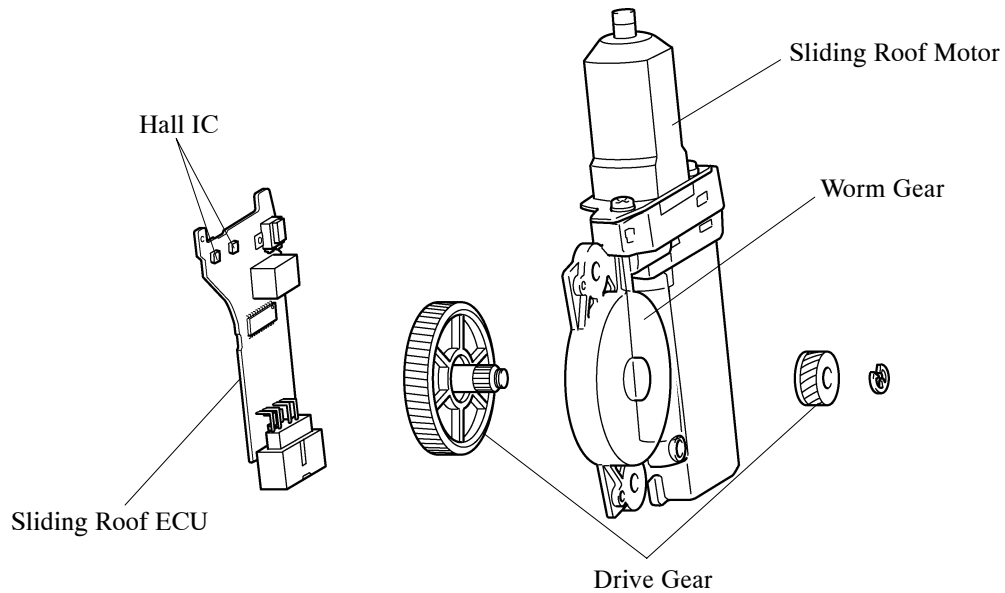
General

The sliding roof has following functions:

Function	Outline
Manual Open-and-close	This function causes the sliding roof to open/tilt down (or close/tilt up) when the SLIDE OPEN (or SLIDE CLOSE) switch is pressed for a maximum of 0.3 seconds. The sliding roof stops as soon as the switch is released.
One-touch Auto Open-and-close	<ul style="list-style-type: none"> • This function causes the sliding roof to fully open/tilt down (or close/tilt up) when the SLIDE OPEN (or SLIDE CLOSE) switch is pressed for 0.3 seconds or longer. However, when the sliding roof is in auto-open operation, the sliding roof will stop at a predetermined position. In this state, pressing the OPEN switch again causes the sliding roof to fully open. • While the sliding roof is moving, pressing the sliding roof switch again causes the sliding roof movement to stop.
Jam Protection	A “jam protection function” automatically stops the sliding roof and moves it open half way if a foreign object gets jammed in the sliding roof during one-touch auto-close or auto-tilt down operation.
Overload Stop	<ul style="list-style-type: none"> • If a load exceeding a predetermined level acts on the motor, while the sliding roof is being opened or tilted up, such as due to an obstacle coming in contact with the sliding roof glass, the sliding roof motor will stop automatically. An overload on the sliding roof motor is detected by a Hall IC that is integrated in the sliding roof ECU. • This function operates even if the sliding roof system has not been initialized.
Fail Safe	<p>If the Hall IC in the sliding roof ECU malfunctions, the sliding roof functions will be prohibited for the fail-safe:</p> <ul style="list-style-type: none"> • One-touch auto open-and-close and auto tilt up/down function is prohibited. • The manual operation is possible by sliding roof switch.

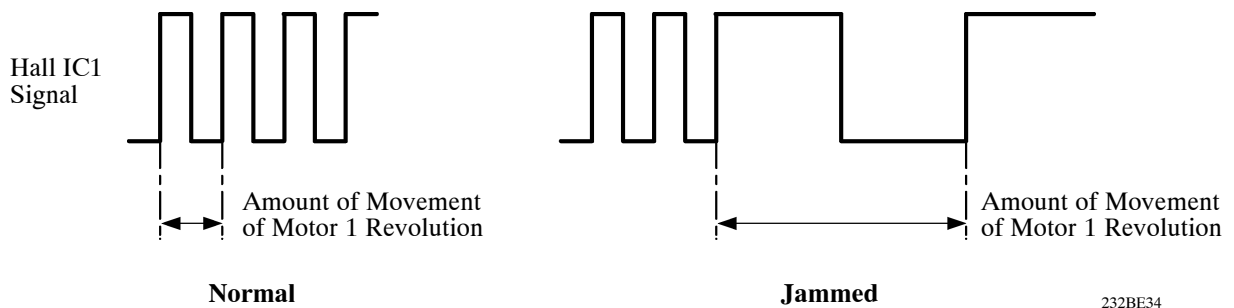
Jam Protection Function

- The Hall IC converts the changes in the magnetic flux that occur through the rotation of the worm gear into pulse signals and outputs them to the ECU.



- To control the jam protection function, the ECU determines the amount of movement and the jamming of the sliding roof from the pulse signals from the Hall IC1, and the moving direction of the sliding roof from the phase difference between the pulses from the Hall IC1 and Hall IC2.

► Judgment of Amount of Movement and Jamming ◀



► Judgment of Moving Direction ◀

