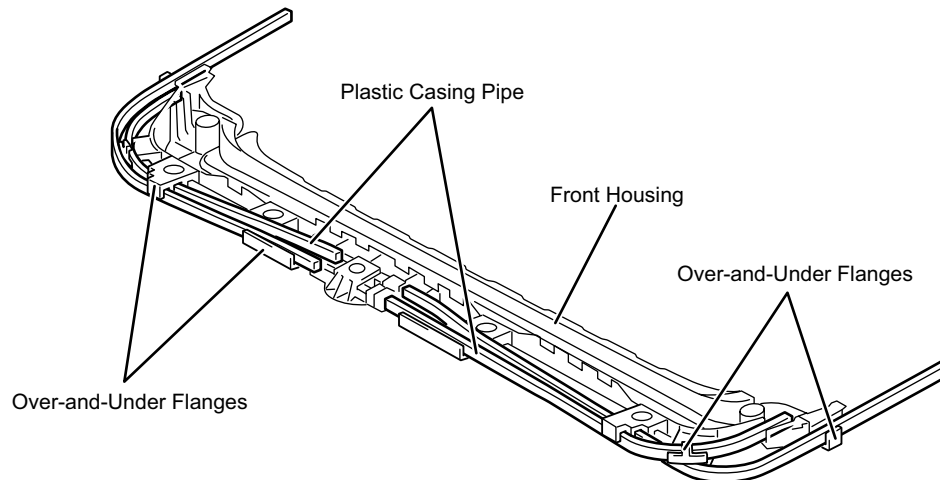


Casing Pipe

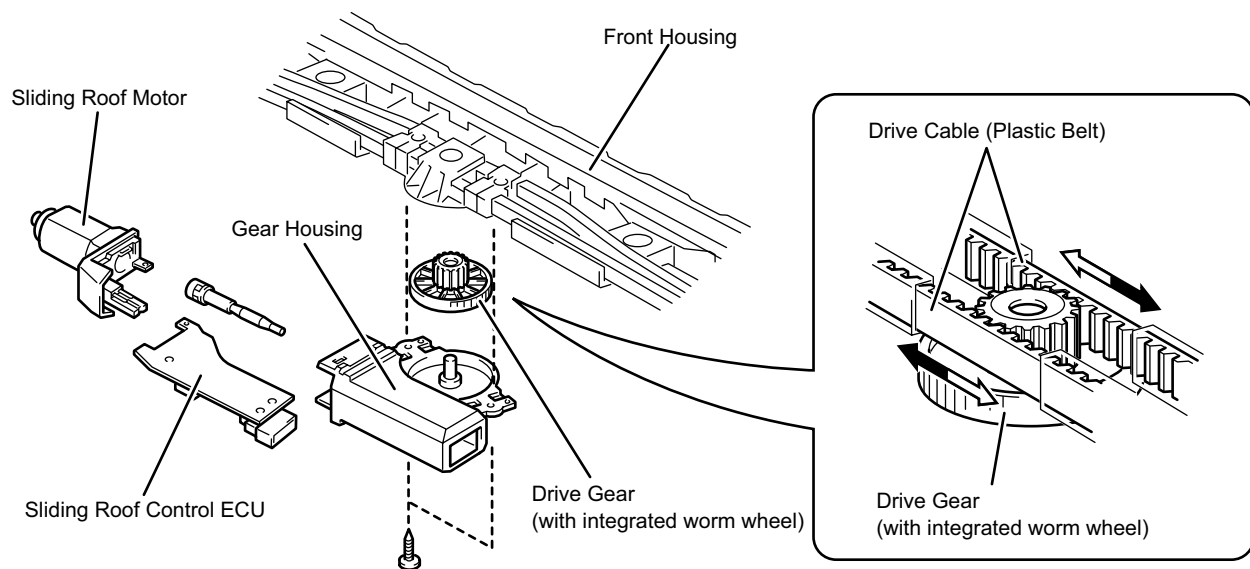
- A casing pipe made of plastic is used for the drive cable for weight reduction.
- The casing pipe is fitted in flanges that form an over-and-under zigzag construction in the front housing to simplify assembly.



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Roof Motor & Drive Cable

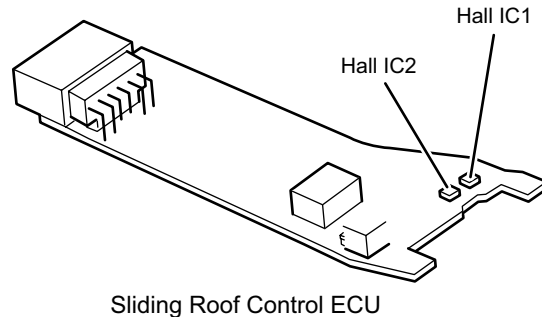
- The sliding roof motor assembly consists of a sliding roof motor, drive gear (with integrated worm wheel), sliding roof control ECU, etc.
- A plastic belt is used for the drive cable to improve sliding performance, and to reduce sliding resistance and operating sound. In addition, the use of a compact motor with a lower torque has been made possible by improving the torque transmission efficiency.
- The construction of the sliding roof motor assembly has been simplified by integrating the cover for the gear with the front housing, as well as integrating the drive gear with the worm wheel.



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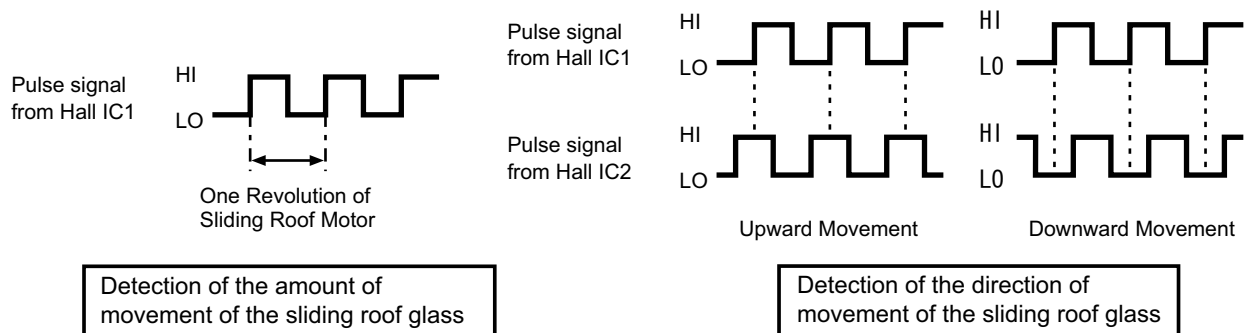
Hall IC

- The two Hall ICs output pulse signals, which are synchronized to the rotational movement of the sliding roof motor, to the CPU in the sliding roof control ECU.



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- The CPU counts one cycle of pulse per rotation of the axis of rotation of the motor that is output by Hall IC1, in order to detect the amount of movement of the sliding roof glass. In addition, the ECU detects the HI/LO cycles of pulses, which are output by Hall IC2, that vary in accordance with the direction of the motor. Thus, it detects the direction of the movement of the sliding roof glass. The ECU memorizes these pieces of information in order to recognize the present position of the sliding roof glass. *Based on the position information that is obtained from these two Hall ICs, the ECU controls various types of functions.

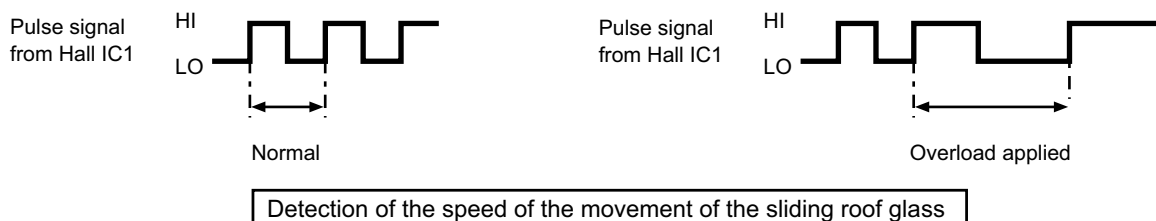


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❖REFERENCE❖

*The position information of the sliding roof glass is backed up by the +B power supply. Therefore, if the +B power supply to the sliding roof control ECU is cut off, the system must be initialized.

- At the same time, the CPU detects the changes in the rotational speed of the motor based on the intervals of the pulses that are output by Hall IC1. Thus, it detects the changes in the movement speed of the sliding roof glass. As a result, it recognizes the load that acts on the sliding roof glass, in order to control the jam protection mechanism and the overload stop function.



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