

■ Fault symptom

The rear mirror cannot be folded sometime in cold weather.

■ Fault diagnosis process

1. Confirmed the problem.



2. Drove the car to the workshop, the problem didn't occur.
3. At first, we thought the rearview mirror may have some water inside, then it froze in cold weather. However, after opening it and checking the wiring harness, everything is good. We tried to replace a new outside rearview mirror, the problem still occurred sometimes. And we also found that not just in snowy weather, but in cold weather (temperature more than 0°C).
4. We took a video of the problem and then discovered some details: the problem was not "cannot be folded", but "cannot be folded completely". One side just folded a little and then stopped, the other side folded completely.



5. Since the part is good, we thought that the cause maybe the software and confirmed with R&D. The reason is that, if the running current is greater than 70% of the starting current and the duration is greater than 300ms, the module will determine the stop position and then power off. The fault mainly occurs in winter. Due to the increase in motor operating current at low temperatures, the

folding process of the rearview mirror triggers a stop condition, and the control module loses power in advance, causing the folding to not be in place.

■ Fault solution

Upgrade the software of PDM and DDM on GLDS.

The screenshot shows a diagnostic software interface for a 2022 KIA Niro EV. The interface is divided into two main sections: 'Find New Software' and 'Selected Software'. In the 'Find New Software' section, a table lists various ECUs with their full names, notes, sizes, and flashing times. The 'DDM' (Driver Door Module) and 'PDM' (Passenger Door Module) rows are highlighted with red boxes. In the 'Selected Software' section, the 'DDM' and 'PDM' rows are also highlighted with red boxes. Below the 'Selected Software' table, there are three buttons: 'Flash', 'Refresh', and 'Cancel'. The 'Flash' button is highlighted with a red box. At the bottom of the interface, there is a 'Done' button, also highlighted with a red box.

ECU abbreviation	ECU Full Name	Notes	Size(KB)	Flashing time (minutes)
DDM	Driver Door Module	Use BSS software in SUL	294.2	0
SCDS	Side Obstacle Det.	Use BSS software in SUL	1788.6	0.1
FLS	Forward Looking	Use BSS software in SUL	907.5	0
AUD	Audio Control Sys	Use BSS software in SUL	1382.9	0
DIS/ISS	Driver Information	Use BSS software in SUL	147.4	0
CSO	Climate control sk	Use BSS software in SUL	235.9	0
SBS	Supplemental Br	Use BSS software in SUL	731.6	0
PDM	Passenger Door	Use BSS software in SUL	275.3	0
PA51/SS2	Parking Assist Sy	Use BSS software in SUL	30246.1	0.6
MSM/MS	Microcontroller	Use BSS software in SUL	1.4	0

■ Quality inspection & repair confirmation

Recheck again and confirm problem is solved.