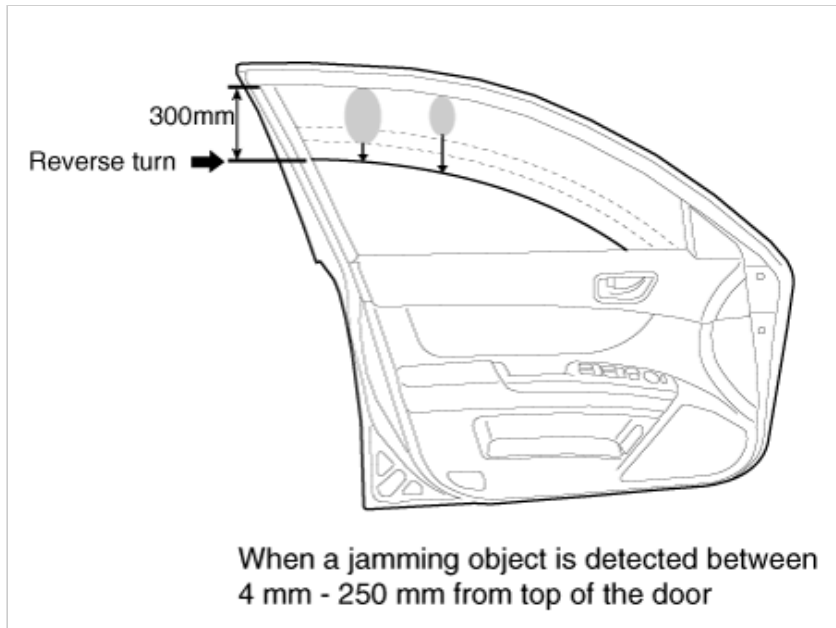## Safety Function of Power Window

When driver door power window auto-up switch is operated, safety function is activated.
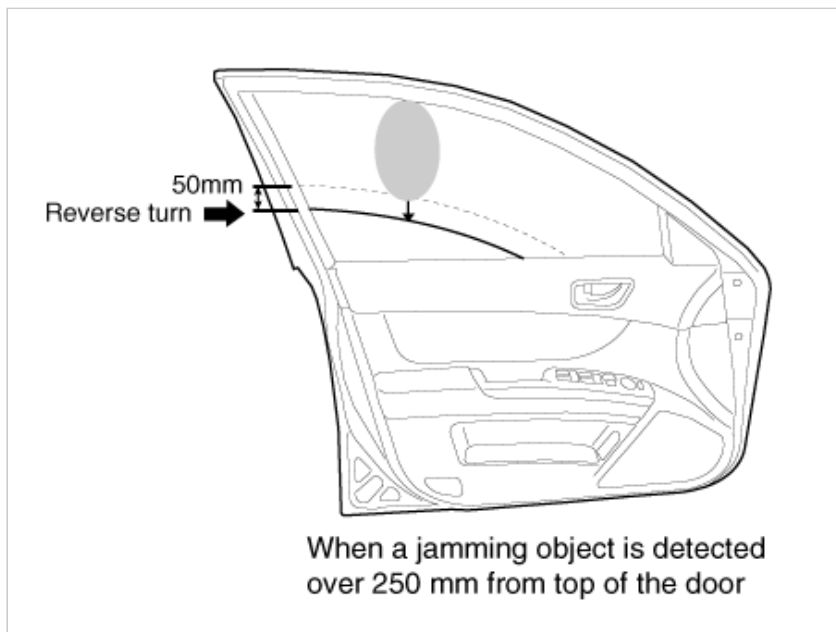
1. Safety function condition
   When the force of 100N (using the 10N/mm spring) is detected while the window is rising, the window is pulled down.

2. Length of window reversing (except holding the auto-up switch)
   – When jamming is detected within the range between 4mm and 250mm from the top of the B pillar
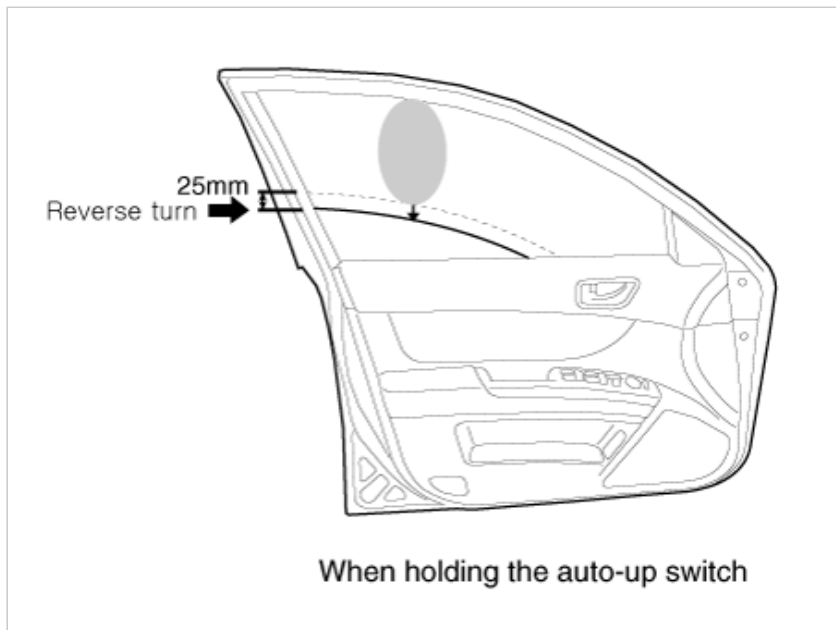   → the window is pulled down to 300mm from the top of the B pillar.

When a jamming object is detected between
4 mm - 250 mm from top of the door

   – When jamming is detected within the range of over 250mm from the top of the B pillar.
     → the window is pulled down to the lowest position if the total length of jammed object plus 50mm is below the window's lowest position.

When a jamming object is detected
over 250 mm from top of the door

3. The length of window moving downward (holding the auto-up switch)
   – When jamming is detected while pulling the auto-up switch.
     → Window moves downward by 25mm from jamming position
   – Auto-up function is not available for 5 seconds after the above operation.
     → When pulling the auto-up switch, the manual-up function is activated (no safety function).

When holding the auto-up switch

4. The area with the safety function not applied
   Safety function is not available within the 4mm range from the top of the window frame.

How to initialize the safety power window

1. Initializing of Battery Connection
   When the battery power is removed for over 5 minutes, safety power window switch needs the initializing.
   (1) Power window operation before initializing
      – Manual-Up/Down function is available
      – Auto-Up/Down function is not available
        (If the Auto-up/down switch is being pushed, the manual up/down function is operated.)

   (2) Initialization
      Close the window in window open position, and holding the switch in window full close position over the 0.2 second.
      (If start the closing the window in window full close position, initializing could be failed.)

   (3) If initialize the safety power window in jamming status, could occur below conditions.
      – Safety function is not available

   (4) Window position memorizing hall sensor is used to identify the window position and motor operation direction. ECU detects the uppermost
      position of the window and sets the position as '0'

   (5) Deinitialization
      ECU is deinitialized if the following conditions are met. After deinitialization process, Auto-up and safety function are not activated.
      Deinitialization conditions
      a. Repeating window downward movement 15 times in a row.
      b. Power supply is suspended while the motor is in operation.
      c. Driver seat door opens, IGN Off with the window glass positioned in Hard Stop -> IGN On within 2 seconds -> within 5 seconds with IGN
         On, entering manual down switch signal 3 times -> Deinitialization completed (if power is not on in 2 seconds, or the operation to be
         performed in 5 seconds, the deinitialization process shall be repeated from the beginning.)

2. Initializing of fail safe mode
   Prevention of overheated motorSoftware overheating prevention function is used to prevent the motor from overheating (but, EEPROM data shall
   be saved in ECU).
   (1) If the window moved by compulsion and motor have a problem, power window switch could be entering the fail safe mode for user's safety.

   (2) Power window operation in fail mode
      – Auto/Manual-Down function is available
      – Auto/Manual-Up function is not available
        (When Auto/Manual-up is operated, window is rising by 20mm and stops moving.)