POWER WINDOW SYSTEM

■ DESCRIPTION

The power window system has the following functions:

Function	Outline
Power Up-and-down (All Doors)	This function causes the window to open or close while the power window regulator master switch assembly or power window regulator switch assembly is being pulled halfway up or pushed halfway down. The window stops as soon as the switch is released.
One-touch Auto Up-and-down (Driver's Door)	The one-touch auto up-and-down function enables the window to be fully opened or closed at a touch of the power window regulator master switch assembly.
Jam Protection (Driver's Door)	A jam protection function automatically stops the power window and moves it downward if a foreign object gets jammed in the window during one-touch auto-up operation.
Remote Control (All Doors)	The power window regulator master switch assembly can control the up-and-down operations of windows.
Window Lock	Operation of 3 passenger windows is disabled when the window lock switch is pressed.
Key Off Operation	This function makes it possible to operate the power windows for approximately 43 seconds after the power source is turned off, if either front door is not opened.
Diagnosis	When the Power Window ECU detects the following conditions, diagnosis switches it to a fail-safe mode. The power window illumination (LED) flashes to inform the user. • An abnormality in the hall IC that detects the position, speed and direction of the window. • An error in the window detection position and the upper limit position recorded in the power window regulator master switch assembly.
Fail-safe	If the hall IC in the power window motor malfunctions, the some power window functions will be prohibited for the fail-safe mode: • Driver's door one-touch auto up-and-down function and the remote control functions are prohibited. • Manual operation is possible by using each power window regulator master switch assembly or power window regulator switch assembly.

Service Tip

The Power Window ECU stores the initial position of each door window. The memory is not cleared if battery terminals, fuses or Power Window ECU connector are disconnected. However, after the power window regulator sub-assembly or power window regulator motor assembly is replaced, the stored initial position data must be cleared and the initialization of the Power Window ECU must be performed. When necessary, perform the initialization as follows:

Initial Position Memory Erasure Procedure

- Turn the power supply off (for example, remove a power window motor connector or fuse) while the power window motor is operating.
- Check that the power window illumination blinks after the power source is turned on.

Initialization Procedure

- Pull up the power window regulator master switch assembly to the AUTO UP position and hold it until the window is fully closed.
- Hold the power window regulator master switch assembly in the AUTO UP position for at least 1 second after the window is fully closed.
- Make sure that the window opens and closes automatically using the one-touch function.

For details, see the HIGHLANDER Repair Manual (RM06K0E).