POWER WINDOW SYSTEM

■ DESCRIPTION

The power window system has the following functions:

Function	Outline
Manual 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)	This 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)	This 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 or manual up operation.
Remote Control (All Doors)	The power window regulator master switch assembly can control the up-and-down operations of the window.
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 switch is turned off, if either front door is not opened.
Diagnosis	When power window ECU detects the following conditions, the self-diagnosis function switches the ECU to fail-safe mode. • 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 ECU.
Fail-safe	If the Hall IC in the power window motor malfunctions, some power window functions will be prohibited by fail-safe control: • The driver's door one-touch auto up-and-down and remote control functions are prohibited. • The driver's door power window operates when the power window regulator master switch assembly is fully pushed down or pulled up and held in that position.

Service Tip

The power window ECU stores the initial position of driver's door window. The memory is not cleared even if auxiliary battery terminals, fuses or power window ECU connectors are disconnected. However, the power window regulator motor assembly needs to be initialized if it is replaced with a new one or it is reinstalled with the power window regulator sub-assembly. When necessary, perform the initialization as follows:

Initialization after Reinstallation of the Power Window Regulator Motor Assembly

- Connect the auxiliary battery and turn the power source ON.
- 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 6 second after the window is fully closed.
- Push down the power window regulator master switch assembly until the window is fully opened.
- Hold the power window regulator master switch assembly for at least 1 second after the window is fully opened.
- Release the switch once, push down the power window regulator master switch assembly again and hold it for at least 4 seconds.
- 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.
- Check that the power window regulator master switch assembly illumination has changed from flashing to being illuminated.
- Make sure that the window opens and closes automatically using the one touch function.

Initialization after Replacement of the Power Window Regulator Motor Assembly

- Connect the auxiliary battery and turn the power source ON.
- Check that the power window regulator master switch assembly illumination blinks after the power source is turned on.
- Push down the power window regulator master switch assembly until the window is fully opened.
- Hold the power window regulator master switch assembly for at least 1 second after the window is fully opened.
- 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.
- Check that the power window regulator master switch assembly illumination has changed from flashing to being illuminated.
- Make sure that the window opens and closes automatically using the one touch function.

For details, see the 2008 HIGHLANDER HYBRID VEHICLE Repair Manual (RM07V0U).