

# Power Door Locks Description and Operation

## Door Lock System Components

The power door lock system consists of the following components:

- Driver door lock switch--Provides a switched voltage signal to the body control module (BCM) for both lock and unlock switch activations.
- Front passenger door lock switch--Provides a switched voltage signal to the BCM for both lock and unlock switch activations.
- Door lock relay--Located in the instrument panel (I/P) fuse block and controls the locking of all doors and liftgate.
- Door unlock relay--Located in the I/P fuse block and controls the unlocking of the passenger doors and liftgate.
- Driver door unlock relay--Located in the I/P fuse block and controls the unlocking of the driver door.
- BCM--Class 2 module which requires programming when replaced
- Reversible door lock actuators in each of the doors
- LOCK/MIRROR 10 A fuse--Located in the I/P fuse block, supplies power for the door lock switches and relays.
- DR LCK 20 A fuse--Located in the I/P fuse block, supplies power to the relays.

## Door Lock System Controls

The power door lock system can be controlled by any of the following:

- Power door lock switch activation
- Keyless entry lock or unlock command
- Delayed locking command
- Automatic door lock command
- Lockout prevention command
- An air bag deployment

## Door Lock and Unlock Operation

When a door lock switch is activated in the lock or unlock position the body control module (BCM) will receive a voltage signal on either the door lock switch lock or unlock signal circuits.

The BCM, upon receipt of a lock switch lock or unlock signal, will switch the appropriate lock relay control circuit(s) to battery positive voltage. This will energize the appropriate lock or unlock relay (s). The relay will supply voltage to the door lock actuator lock or unlock control circuits to one side of the lock actuator. Since the opposing side of the lock actuators are connected to ground through the other lock actuator control circuit and the normally closed contacts of the lock or unlock relay, the doors and liftgate will then lock or unlock appropriately.

Three relays are used to operate the lock. Driver door unlock, passenger door unlock and all door

lock. This is done to isolate the driver door lock actuator so it can be unlocked by itself using the keyless entry transmitter.

## Automatic Door Lock Operation

This body control module (BCM) controlled feature can be personalized to driver preference.

The BCM will automatically lock the vehicle doors if the following conditions exist:

- All vehicles doors are closed.
- The ignition is in the ON position.
- The vehicle is shifted out of PARK.

The BCM will then unlock the doors when the ignition is placed in the OFF position.

## Delayed Locking Operation

With any door open and a door lock switch is activated in the lock position, the body control module (BCM) will give three audible chimes. When the door is closed, the BCM will cycle the internal door lock relay to lock the doors after approximately five seconds. This feature can be overridden by activating the door lock switch a second time and the doors will lock even with a door open.

## Lockout Prevention Operation

The body control module (BCM) will lock all doors and unlock the driver door with a door lock switch lock activation if a vehicle door is open and the ignition key is fully inserted in the ignition. The lockout prevention feature can be overridden if a lock command is received from the keyless entry system.

## Unlock After Air Bag Deployment

This feature will unlock all of the vehicle doors 15 seconds after an air bag deployment.