ACTUATOR CALIBRATION - ATC AND MTC SYSTEMS
The Actuator Calibration function homes and repositions the air-door actuators, removes accumulated positioning
errors, and checks for air-door span faults. The Actuator Calibration function will either run automatically 10
minutes after turning the ignition off after a specified number of ignition cycles or upon turning the ignition on after
reconnecting the battery or it can be actuated manually. Once actuated, the calibration function will run to
completion for both systems, even if the ignition is turned off. The entire process takes approximately 90 seconds.
Upon completion, all air-door actuators should return to the position that the system is currently requesting.
Running the Actuator Calibration function is the only way to detect air-door travel too large and air-door travel too
small faults. Always check for DTCs in the A/C-heater control after performing an Actuator Calibration.

STARTING ACTUATOR CALIBRATION - ATC SYSTEM
Use a scan tool to start the Actuator Calibration function for the ATC system.

STARTING ACTUATOR CALIBRATION - MTC SYSTEM
To start the Actuator Calibration function for the MTC system, perform the following:

NOTE: An active DTC 34 will prevent the control from performing certain diagnostic functions and it will prevent
proper EBL mode switch and status indicator function. If this occurs, diagnose and repair DTC 34 before running
the Actuator Circuit Test/Door Calibration function.

1. Turn the ignition to the On position.
2. Turn the blower motor control (1) to the Off position.
Press the EBL mode switch (2) down for **five seconds** and release it.

**COOLDOWN TEST PREREQUISITES - ATC AND MTC SYSTEMS**

The Cooldown Test checks A/C system performance by measuring the system's ability to lower the evaporator temperature **11.11°C (20°F)** as measured by the evaporator temperature sensor. The following are prerequisites of the Cooldown Test. Verify each of the following before running the Cooldown Test:

- For the ATC system, the Cooldown Test will NOT start if DTC B1031, B1032, B1040, B1044, B1045, B1058, B105C, B105D, B1099, B109A, B10A2, B10A6, B10A7, B10A8, B10A9, B10AD, B10AE, B10AF, B222A, B2214, or U0141 is active. If active, diagnose and repair the DTC(s) before proceeding.
- For the MTC system, the Cooldown Test will NOT start if DTC 31 or 32 is active. In addition, DTC 11, 12, 13, 14, 15, 17, 18, 21, 22, or 23 should not be active. If active, diagnose and repair the DTC(s) before proceeding.
- For either system, verify that the **refrigerant** system has an adequate charge. Check and repair as necessary before proceeding.
- For either system, verify that the **blower motor** operates correctly in all speeds. Diagnose and repair all blower motor related faults before proceeding.
- For either system, verify that the ambient temperature of the work area is **above 16°C (60°F)** before proceeding. Move the vehicle to a warmer work area if necessary.
- For either system, verify that the evaporator temperature is **above 18.3°C (65°F)** before proceeding.
- For either system, verify that the A/C compressor is NOT running. If the A/C compressor is running, turn the A/C off and allow the evaporator to warm up before proceeding.

**COOLDOWN TEST - ATC SYSTEM**

Once all of the prerequisites have been met, the Cooldown Test for the ATC system can be actuated by sending a command with a scan tool. Once started, the ATC A/C-heater control automatically sets the blower speed and positions the air-doors for optimal A/C performance. It also sends a request for A/C operation on the CAN B bus. The Cooldown Test can take up to **two minutes** to run and, will stop running if any of the following occurs:

- The ignition is turned off.
- The A/C compressor is requested off.
- The **blower motor** control is moved to the Off position, unless the control was in the Off position when the Cooldown Test was started. In this case, moving the blower motor control out of the Off position and then returning it to the Off position will stop the test.
- DTC B1031 or B1032 sets during the Cooldown Test.
- The A/C-heater control receives a bus message to stop the Cooldown Test.

While the Cooldown Test is running, the EBL status indicator will flash. During this time the A/C-heater control will ignore most of its inputs. If the ATC system passes the test, the EBL status indicator will stop flashing. However, if the ATC system fails the test, both the A/C and EBL status indicators will flash alternately and an active DTC B10B2 will set. The status indicators will continue to flash until either a successful Cooldown Test is executed or until the vehicle is driven a specified number of miles. In addition, DTC B10B2 will remain active until a successful Cooldown Test is executed. Always check for DTCs in the A/C-heater control after running the Cooldown Test.

**COOLDOWN TEST - MTC SYSTEM**

Once all of the prerequisites have been met, the Cooldown Test for the MTC system can be actuated by performing the following:
NOTE: An active DTC 33 will prevent the control from entering diagnostic mode and performing certain diagnostic functions. It will also prevent proper A/C mode switch and status indicator function. If this occurs, refer to A/C HEATER CONTROL WILL NOT ENTER DIAGNOSTIC MODE (MTC) for the diagnostic test procedure.

1. Verify that the ignition is in the Off position.
2. Turn the blower motor control (1) to the Off position.
3. Start the engine.
4. Press the A/C mode switch (2) down and turn the blower motor control to the highest speed. Wait three seconds and then release the A/C mode switch.

Once actuated, the MTC A/C-heater control automatically positions the air-doors for optimal A/C performance and sends a request for A/C operation to the cluster (CCN) via hardwired circuits. The Cooldown Test can take up to two minutes to run. The test will stop running if any of the following occurs:

- The ignition is turned to the Off position.
- The blower motor control is turned to the Off position.
- DTC 31 or 32 sets during the Cooldown Test.

While the Cooldown Test is running, the EBL status indicator will flash. During this time the A/C-heater control will ignore most of its inputs. If the MTC system passes the test, the EBL status indicator will stop flashing. However, if the MTC system fails the test, both the A/C and EBL status indicators will flash alternately and an active DTC 35 will set. The status indicators will continue to flash until either a successful Cooldown Test is executed or until the vehicle’s ignition on time has exceeded a specified value. In addition, DTC 35 will remain active until a successful Cooldown Test is executed. Always check for and diagnose DTCs present in the A/C-heater control after running the Cooldown Test. If the Cooldown Test fails, service the heating-A/C system as required.