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Control Module References

Reference Information

- [Data Link References](#)
- [Diagnostic System Check - Vehicle](#)
- [Diagnostic Trouble Code \(DTC\) List - Vehicle](#)
- [Symptoms - Vehicle](#)

Control Module References

Code	Control Module/Scan Tool Information	Schematic	Repair Instruction	Programming and Setup
A11	Radio Scan Tool Information	Radio/Navigation System Schematics	Radio Replacement	Radio Programming and Setup
A20	Radio Controls Scan Tool Information	Radio/Navigation System Schematics	Radio Control Assembly Replacement	Radio Control Programming and Setup
A26	Heating, Ventilation, and Air Conditioning Controls Scan Tool Information	HVAC Schematics	Heater and Air Conditioning Control Replacement	HVAC Controls Programming and Setup
B218L/R	Side Object Sensing Alert Module Scan Tool Information	Object Detection Schematics	Side Object Sensing Alert Module Replacement	Side Object Sensor Programming and Setup
K9	Body Control Module Scan Tool Information	Body Control System Schematics	Body Control Module Replacement	Body Control Module Programming and Setup
K17	Electronic Brake Control Module Scan Tool Information	Antilock Brake System Schematics	Electronic Brake Control Module Replacement	Electronic Brake Control Module Programming and Setup
K19	Suspension Control Module	Electronic Suspension Control Schematics	Electronic Suspension Control Module Replacement	Electronic Suspension Control Module Programming and Setup
K20	K20 Engine Control Module:	Engine Controls Schematics - 2.8L,	Engine Control Module Replacement -	K20 Engine Control Module:

Code	Control Module/Scan Tool Information	Schematic	Repair Instruction	Programming and Setup
	Scan Tool Information	3.0L, 3.2L, or 3.6L engine or Engine Controls Schematics – 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L engine	2.8L, 3.0L, 3.2L, or 3.6L engine or Engine Control Module Replacement – 4.8L, 5.3L, 6.0L, 6.2L, or 7.0L engine	Programming and Setup
K26	Headlamp Control Module Scan Tool Information	Headlights/Daytime Running Lights (DRL) Schematics	Headlamp Control Module Replacement	Headlamp Control Module Programming and Setup
K29	Seat Heating Control Module	Heated/Cooled Seat Schematics	Front Seat Heater Control Module Replacement	Heated Seat Control Module Programming and Setup
K33	Heating, Ventilation and Air Conditioning Control Module Scan Tool Information	HVAC Schematics	Heater and Air Conditioning Remote Control Replacement	HVAC Control Module Programming and Setup
K36	Inflatable Restraint Sensing and Diagnostic Module Scan Tool Information	SIR Schematics	Airbag Sensing and Diagnostic Module Replacement	Inflatable Restraint Sensing and Diagnostic Module Programming and Setup
K38	Chassis Control Module Scan Tool Information	Engine Controls Schematics	Chassis Control Module Replacement	Chassis Control Module Programming and Setup
K39	Liftgate Close Actuator Motor Control Module Scan Tool Information	Release Systems Schematics	Accessory and Liftgate Control Module Replacement	Liftgate Control Module Programming and Setup
K40	Seat Memory Control Module Scan Tool Information	Driver Seat Schematics or Passenger Seat Schematics	Driver or Passenger Seat Adjuster Memory Module Replacement	Seat Memory Control Module Programming and Setup
K41	Front and Rear Parking Assist Control Module	Object Detection Schematics	Front Object Alarm Sensor Replacement	Front and Rear Parking Assist Control Module

Code	Control Module/Scan Tool Information	Schematic	Repair Instruction	Programming and Setup
	Scan Tool Information		or Rear Parking Assist Alarm Sensor Replacement	Programming and Setup
K43	Power Steering Control Module Scan Tool Information	Power Steering Schematics	Power Steering Control Module Replacement	Power Steering Control Module Programming and Setup
K60	Steering Column Lock Control Module Scan Tool Information	Column Lock Schematics	Steering Column Lock Control Module Replacement	Steering Column Lock Control Module Programming and Setup
K68	Trailer Lamp Control Module	Exterior Lights Schematics	Trailer Lamp Control Module Replacement	Trailer Lamp Control Module Programming and Setup
K71	Control Solenoid Valve and Transmission Control Module Assembly Transmission Control Module Scan Tool Information	Automatic Transmission Controls Schematics	Control Solenoid Valve and Transmission Control Module Assembly Replacement	Control Solenoid Valve and Transmission Control Module Assembly Programming and Setup
K77	Remote Control Door Lock Receiver	Remote Function Schematics	Remote Control Door Lock Receiver Replacement	Remote Control Door Lock Receiver Programming and Setup
K83	Electronic Parking Brake Control Module Scan Tool Information	Park Brake System Schematics	Electronic Parking Brake Control Module Replacement	Electronic Parking Brake Control Module Programming and Setup
K84	Keyless Entry Control Module Scan Tool Information	Remote Function Schematics	Keyless Entry Control Module Replacement	Keyless Entry Control Module Programming and Setup
K89	Immobilizer Control Module	Immobilizer Schematics	Theft Deterrent Module Replacement	Immobilizer Control Module Programming and Setup

Code	Control Module/Scan Tool Information	Schematic	Repair Instruction	Programming and Setup
K96L	Mirror Control Module – Left	Outside Rearview Mirror Schematics	Outside Rearview Mirror Folding Control Module Replacement	Outside Rearview Mirror Programming and Setup
K103	Fuel Injector Control Module Scan Tool Information	Engine Controls Schematics – 2.8L, 3.0L, 3.2L, or 3.6L engine	Fuel Injector Control Module Replacement – 2.8L, 3.0L, 3.2L, or 3.6L engine	Fuel Injector Control Module Programming and Setup
K109	Front View Camera Module Scan Tool Information	Object Detection Schematics	Front View Camera Replacement	Front View Camera Module Programming and Setup
P16	Instrument Cluster Scan Tool Information	Instrument Cluster Schematics	Instrument Cluster Replacement	Instrument Cluster Programming and Setup
P29	Head-Up Display Scan Tool Information	Head-Up Display Schematics	Head-Up Display Replacement	Head-Up Display Programming and Setup
T3	Audio Amplifier	Radio/Navigation System Schematics	Radio Speaker Amplifier Replacement	Audio Amplifier Programming and Setup

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Audio Amplifier Programming and Setup

[Replace and Program Control Module or Reprogram Control Module](#)

This control module does not require SPS programming or any setup procedures.

Body Control Module Programming and Setup

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required install the *EL-49642* SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Reference Information

Special Tools

- *EL-49642* SPS Programming Support Tool
- *EL-46079* Tire Pressure Monitor Diagnostic Tool

For equivalent regional tools, refer to [Special Tools](#).

Replace and Program Control Module

To program a replacement K9 Body Control Module (BCM), perform the following procedure:

1. Install *EL-49642* SPS programming support tool.

Note: Make sure the vehicle ignition switch state is in appropriate position for the following step.

- For Key Ignition System, begin with the ignition in the RUN position.
 - For Push Button Start System, begin with the vehicle in vehicle OFF power mode. The Service Programming System will power mode the vehicle.
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
 3. On the SPS Supported Controllers screen, select K9 Body Control Module - Programming and follow the on-screen instructions.
 4. Perform the following for the appropriate ignition type prior to proceeding with the next step:
 - Key Ignition System: Key in the ignition and any additional keys must be away from the vehicle at least 3 m.
 - Push Button Start System: Keyless entry transmitter must be in the programming pocket. Refer to the owner manual for the exact pocket location. All additional transmitters must be away from the vehicle at least 3 m.

Note: The following programming step may take between 10–12 min and progress will appear to have stopped during this process. This is a normal security timer response and a restart should not be performed. If the DTC B389A set immediately after

- programming a replacement BCM, the Immobilizer Learn procedure was not properly completed. The Immobilizer Learn procedure needs to be performed again.
5. On the SPS Supported Controllers screen, select IMMO Immobilizer Learn - Setup. On the next screen, select Body Control Module IMMO Learn with Existing Transponder or Remote Key and follow the on-screen instructions. When Immobilizer Learn is complete, press the Unlock button on the keyless entry transmitter to allow the keyless entry transmitter to exit the Immobilizer Learn mode.
Note: When performing the Tire Pressure Monitor Sensor Learn during BCM setup, the *EL-46079* tire pressure monitor diagnostic tool must be used to activate each tire pressure sensor for vehicles with UJM.
 - For Key Ignition System, begin with the ignition in the RUN position.
 - For Push Button Start System, begin with the vehicle in vehicle ON power mode.
 6. On the SPS Supported Controllers screen, select K9 Body Control Module - Setup (or K9 Body Control Module - Configuration & Setup) and follow the on-screen instructions.
 7. Check the driver information center display for additional messages regarding further calibration instructions. If there are no additional driver information center instructions present, programming is complete.
 8. At the end of programming, choose the "Clear DTCs" function on the SPS screen.
 9. If ABS, Traction Control and/or Stabilitrak indicators are ON and DTCC0161 is set in the K17 Electronic Brake Control Module after performing BCM programming and setup, do the following:
 - 9.1. Disconnect the scan tool from the X84 Data Link Connector.
 - 9.2. Ignition OFF, all access doors closed, all vehicle systems OFF, and all keys at least 3 m (9.8 ft) away from the vehicle. It may take up to 2 min to power down.
 - 9.3. Ignition ON, verify DTCC0161 is in history. If not, repeat the above step to make sure the vehicle is in sleep mode.
 - 9.4. Use the scan tool to clear the DTCs.

Reprogram Control Module

To program an existing K9 Body Control Module, perform the following procedure:

1. Install *EL-49642* SPS programming support tool.
Note: Make sure the vehicle ignition switch state is in appropriate position for the following step.
 - For Key Ignition System, begin with the ignition in the RUN position.
 - For Push Button Start System, begin with the vehicle in vehicle ON power mode.
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select K9 Body Control Module - Programming and follow the on-screen instructions.
Note: When performing the Tire Pressure Monitor Sensor Learn during BCM setup, the *EL-46079* tire pressure monitor diagnostic tool must be used to activate each tire pressure sensor for vehicles with UJM.
4. On the SPS Supported Controllers screen, select K9 Body Control Module - Setup (or K9 Body Control Module - Configuration & Setup) and follow the on-screen instructions.
5. Check the driver information center display for additional messages regarding further calibration instructions. If there are no additional driver information center instructions present, programming is complete.
6. At the end of programming, choose the "Clear DTCs" function on the SPS screen.
7. If ABS, Traction Control and/or Stabilitrak indicators are ON and DTCC0161 is set in the K17 Electronic Brake Control Module after performing BCM programming and setup, do the following:
 - 7.1. Disconnect the scan tool from the X84 Data Link Connector.
 - 7.2. Ignition OFF, all access doors closed, all vehicle systems OFF, and all keys at least 3 m (9.8 ft) away from the vehicle. It may take up to 2 min to power down.

7.3. Ignition ON, verify DTC C0161 is in history. If not, repeat the above step to make sure the vehicle is in sleep mode.

7.4. Use the scan tool to clear the DTCs.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. Ignition ON. Ensure the control module, DLC and programming tool connections are secure and the SPS software is up to date.
2. Verify the control module can be reprogrammed.
 - ⇒ **If the control module cannot be reprogrammed**
 - 2.1. Ignition OFF for one minute, ignition ON.
 - 2.2. Verify the control module can be reprogrammed.
 - ⇒ If the control module cannot be reprogrammed, replace the control module.
 - ⇓ If the control module can be reprogrammed.
 - 2.3. All OK.
 - ⇓ **If the control module can be reprogrammed**
3. All OK.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for Control Module replacement, programming and setup

Chassis Control Module Programming and Setup

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required install the *EL-49642* SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Reference Information

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

Replace and Program Control Module or Reprogram Control Module

To program a replacement or an existing control module, perform the following procedure:

1. Install *EL-49642* SPS Programming Support Tool.
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select K38 Chassis Control Module - Programming and follow the on-screen instructions.
4. At the end of programming, choose the "Clear All DTCs" function on the SPS screen.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. Ignition ON. Ensure the control module, DLC and programming tool connections are secure and the SPS software is up to date.
2. Verify the control module can be reprogrammed.
 - ⇒ **If the control module cannot be reprogrammed**
 - 2.1. Ignition OFF for one minute, ignition ON.
 - 2.2. Verify the control module can be reprogrammed.
 - ⇒ If the control module cannot be reprogrammed, replace the control module.
 - ⇓ If the control module can be reprogrammed.
 - 2.3. All OK.

↓ **If the control module can be reprogrammed**

3. All OK.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for Control Module replacement, programming and setup

Control Solenoid Valve and Transmission Control Module Assembly Programming and Setup (6L45/6L50/6L80/6L90)

The following service procedures require either a programming or a setup event be performed for a complete repair. The transmission control module (TCM) is part of the control solenoid (w/body and TCM) valve assembly, and is not serviced separately.

Transmission Control Module (TCM) Replacement

If the TCM is replaced, the following procedures must be performed:

1. TCM Reprogramming
2. The Reset Transmission Adapts — Refer to [Reset Transmission Adapts](#)

TCM Reprogramming

1. If the TCM needs to be reprogrammed, refer to [Service Programming System \(SPS\)](#).
2. Perform the Reset Transmission Adapts — Refer to [Reset Transmission Adapts](#).

Note: After programming, perform the following to avoid future misdiagnosis:

1. Turn the ignition OFF for 30 seconds.
2. Turn the ignition ON with the engine OFF.
3. Use the scan tool in order to retrieve history DTCs from all modules.
4. Clear all history DTCs.

Setup for Component Replacement

The replacement of some components will require a setup procedure for complete repair.

If any of the following components are replaced, the [Reset Transmission Adapts](#) procedure must be performed:

- Transmission replacement
- Any internal transmission repair
- Any speed sensor

Refer to [Reset Transmission Adapts](#).

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Document ID: 3800776

Electronic Brake Control Module Programming and Setup

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required install the *EL-49642* SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Reference Information

Special Tools

EL-49642 SPS Programming Support Tool

Replace and Program Control Module or Reprogram Control Module

To program a replacement or an existing control module, perform the following procedure:

1. Install *EL-49642* SPS Programming Support Tool.
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
Note: The Prepare Control Module for Removal function can only be performed when communication with the old control module is still possible.
3. Before removing the old control module, perform the SPS function Prepare Control Module for Removal, if available.
4. On the SPS Supported Controllers screen, select K17 Electronic Brake Control Module - Programming and follow the on-screen instructions.
5. On the SPS Supported Controllers screen, select K17 Electronic Brake Control Module - Configuration and Setup while following the on-screen instructions.
6. At the end of programming, choose the "Clear All DTCs" function on the SPS screen.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. Ignition ON. Ensure the control module, DLC and programming tool connections are secure and the SPS software is up to date.
 2. Verify the control module can be reprogrammed.
- ⇒ **If the control module cannot be reprogrammed**

- 2.1. Ignition OFF for one minute, ignition ON.
 - 2.2. Verify the control module can be reprogrammed.
 - ⇒ If the control module cannot be reprogrammed, replace the control module.
 - ↓ If the control module can be reprogrammed.
 - 2.3. All OK.
- ↓ **If the control module can be reprogrammed**
3. All OK.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for Control Module replacement, programming and setup

Electronic Parking Brake Control Module Programming and Setup

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required install the EL-49642 SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Replace and Program ECU or Reprogram ECU

To program a replacement or an existing ECU, perform the following procedure:

1. Install EL-49642 SPS programming support tool.
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select K43 Park Brake Control Module – Programming and follow the on-screen instructions.
4. On the SPS Supported Controllers screen, select K43 Park Brake Control Module – Setup (OR K43 Park Brake Control Module – Configuration and Setup) and follow the on-screen instructions.
5. At the end of programming, choose the “Clear All DTCs” function on the SPS screen.
6. With a scan tool, perform the Parking Brake Cable Adjuster Enabling procedure. Refer to [Parking Brake Cable Adjuster Enabling](#).

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. Ignition ON. Ensure the control module, DLC and programming tool connections are secure and the SPS software is up to date.
 2. Verify the control module can be reprogrammed.
- ⇒ **If the control module cannot be reprogrammed**

- 2.1. Ignition OFF for one minute, ignition ON.
 - 2.2. Verify the control module can be reprogrammed.
 - ⇒ If the control module cannot be reprogrammed, replace the control module.
 - ↓ If the control module can be reprogrammed.
 - 2.3. All OK.
- ↓ **If the control module can be reprogrammed**
3. All OK.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for park brake control module replacement, programming and setup.

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Electronic Suspension Control Module Programming and Setup

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the ECU is not properly configured with the correct calibration software, the ECU will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or ECU damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. Install the *EL-49642* SPS programming support tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Replace and Program ECU or Reprogram ECU

To program a replacement or an existing ECU, perform the following procedure:

1. Install *EL-49642* SPS programming support tool .
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select Suspension Control Module- Programming and follow the on-screen instructions.
4. On the SPS Supported Controllers screen, select Suspension Control Module- Configuration and Setup, and follow the on-screen instructions.
5. At the end of programming, choose the "Clear DTCs" function on the SPS screen.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. DO NOT turn the ignition OFF. Ensure that all ECU, DLC and programming tool connections are secure and the TIS terminal operating software is up to date.
2. Attempt to reprogram the ECU.
3. If the ECU can still not be programmed, turn the ignition OFF for at least one minute.
4. Turn the ignition ON and attempt to reprogram the ECU. The ECU should program.
⇒ If the ECU still cannot be programmed, replace the ECU.

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K20 Engine Control Module: Programming and Setup

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required install the EL-49642 SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.
- Note the engine oil life remaining percentage.

Replace and Program Control Module

To program a replacement K20 Engine Control Module (ECM), perform the following procedure:

1. Install EL-49642 SPS programming support tool.
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. Before removing the old control module, perform the SPS function Prepare Control Module for Removal, if available.

Note: The Prepare Control Module for Removal function can only be performed when communication with the old control module is still possible.

4. Replace the ECM.
5. Perform the SPS function K20 Engine Control Module - Programming and follow the on-screen instructions.
6. Clear the DTCs after completing the Programming procedure.
7. Perform the SPS function Immobilizer Learn and follow the on-screen instructions. Refer to [Immobilizer System Component Programming](#).
8. Perform the SPS function K20 Engine Control Module - Configuration & Setup and follow the on-screen instructions.
9. Clear DTCs after completing the Configuration & Setup procedure.

Reprogram Control Module

To reprogram an existing K20 Engine Control Module, perform the following procedure:

1. Install EL-49642 SPS programming support tool.

2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. Clear DTCs after completing the Programming procedure.
Note: If vehicle fails to start during Configuration and Setup, perform the SPS Function Immobilizer Learn and follow the on-screen instructions.
4. Perform the SPS function Engine Control Module - Configuration & Setup and follow the on-screen instructions, if available.
5. Clear DTCs after completing the Configuration & Setup procedure.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following:

1. Ignition ON. Ensure the control module, DLC, and programming tool connections are secure and the SPS software is up to date.
2. Verify the control module can be reprogrammed.
⇒ **If the control module cannot be reprogrammed**
 - 2.1. Ignition OFF for one minute, ignition ON.
 - 2.2. Verify the control module can be reprogrammed.
⇒ If the control module cannot be reprogrammed, replace the K20 Engine Control Module.
- ↓ **If the control module can be reprogrammed**
3. All OK.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for ECM replacement, programming and setup.

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Front and Rear Parking Assist Control Module Programming and Setup

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required install the *EL-49642* SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Reference Information

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

Replace and Program the Front and Rear Parking Assist Control Module

If the K41 Front and Rear Parking Assist Control Module needs to be replaced, the following procedures must be performed:

1. Connect a scan tool to the vehicle and access SPS. Refer to [Service Programming System \(SPS\)](#)
2. Perform the SPS function K41 Front and Rear Parking Assist Control Module Programming and follow the on-screen instructions.
3. Perform the SPS function K41 Front and Rear Parking Assist Control Module Configuration and follow the on-screen instructions.
4. Clear DTCs after completing the programming procedure.

Reprogram Front and Rear Parking Assist Control Module

Do not reprogram the K41 Front and Rear Parking Assist Control Module, unless directed by a service procedure, or a service bulletin.

1. Connect a scan tool to the vehicle and access SPS. Refer to [Service Programming System \(SPS\)](#)
2. Perform the SPS function K41 Front and Rear Parking Assist Control Module Programming and follow the on-screen instructions.
3. Clear DTCs after completing the programming procedure.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. Ignition ON. Ensure the K41 Front and Rear Parking Assist Control Module, DLC and programming tool connections are secure and the SPS software is up to date.
2. Verify the K41 Front and Rear Parking Assist Control Module can be reprogrammed.
⇒ **If the K41 Front and Rear Parking Assist Control Module cannot be reprogrammed**
 - 2.1. Ignition OFF for one minute, ignition ON.
 - 2.2. Verify the K41 Front and Rear Parking Assist Control Module can be reprogrammed.
⇒ If the K41 Front and Rear Parking Assist Control Module cannot be reprogrammed, replace the K41 Front and Rear Parking Assist Control Module.
↓ If the K41 Front and Rear Parking Assist Control Module can be reprogrammed.
 - 2.3. All OK.
- ↓ **If the K41 Front and Rear Parking Assist Control Module can be reprogrammed**
3. All OK.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for front and rear parking assist control module replacement, programming and setup.

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Document ID: 2692234

Front View Camera Module Programming and Setup

Front View Camera Module Replacement

If the Front View Camera Module needs to be replaced, the following procedures must be performed:

1. Connect a scan tool to the vehicle and access Service Programming System (SPS).
2. Perform the SPS function Front View Camera Module – Programming and follow the on-screen instructions.
3. Perform the SPS function Front View Camera Module – Configuration & Setup and follow the on-screen instructions.
4. Clear DTCs after completing the programming procedure.
5. Following programming, the module will require calibration. Refer to [Front View Camera Module Calibration](#).

Front View Camera Module Reprogramming

Do not reprogram the Front View Camera Module, unless directed by a service procedure, or a service bulletin.

1. Connect a scan tool to the vehicle and access Service Programming System (SPS).
2. Perform the SPS function Front View Camera Module – Programming and follow the on-screen instructions.
3. Clear DTCs after completing the programming procedure.
4. Following programming, the module will require calibration. Refer to [Front View Camera Module Calibration](#).

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Document ID: 1468087

Fuel Injector Control Module Programming and Setup

This module does not require that a programming event or a setup event is performed.

Headlamp Control Module Programming and Setup

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required install the *EL-49642* SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Reference Information

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

Replace and Program Control Module or Reprogram Control Module

1. Install *EL-49642* SPS programming support tool .
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select Headlamp Control Module- Programming and follow the on-screen instructions.
4. On the SPS Supported Controllers screen, select Headlamp Control Module- Configuration and Setup, and follow the on-screen instructions.
5. At the end of programming, choose the "Clear DTCs" function on the SPS screen.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. Ignition ON. Ensure the control module, DLC and programming tool connections are secure.
2. Verify the control module can be reprogrammed.
 - ⇒ **If the control module cannot be reprogrammed**
 - 2.1. Ignition OFF for one minute, ignition ON.
 - 2.2. Verify the control module can be reprogrammed.
 - ⇒ If the control module cannot be reprogrammed, replace the control module.
 - ⇓ If the control module can be reprogrammed.

2.3. All OK.

↓ **If the control module can be reprogrammed**

3. All OK.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for Control Module replacement, programming and setup

Head-Up Display Programming and Setup

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the ECU is not properly configured with the correct calibration software, the ECU will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or ECU damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. Install the EL-49642 SPS programming support tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Replace and Program ECU

To program a replacement or an existing ECU, perform the following procedure:

1. Install EL-49642 SPS programming support tool.
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select Head-Up Display Module – Programming and follow the on-screen instructions.
4. At the end of programming, choose the "Clear All DTCs" function on the SPS screen.

Reprogram ECU

To program a replacement or an existing ECU, perform the following procedure:

1. Install EL-49642 SPS programming support tool.
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select Head-Up Display Module – Programming and follow the on-screen instructions.
4. At the end of programming, choose the "Clear All DTCs" function on the SPS screen.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. DO NOT turn the ignition OFF. Ensure that all ECU, DLC and programming tool connections are secure and the TIS terminal operating software is up to date.
2. Attempt to reprogram the ECU.

3. If the ECU can still not be programmed, turn the ignition OFF for at least one minute.
4. Turn the ignition ON and attempt to reprogram the ECU. The ECU should program.
 - ⇒ If the ECU still cannot be programmed, replace the ECU.

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Document ID: 1576108

Heated Seat Control Module Programming and Setup

This device does not require programming or setup.

HVAC Controls Programming and Setup

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required install the *EL-49642* SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Reference Information

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

Replace and Program Control Module or Reprogram Control Module

This control module does not require SPS programming or any setup procedures.

This control module does not require SPS programming but does require the following setup procedures after a new control module is installed:

To program a replacement or an existing control module, perform the following procedure:

1. Install *EL-49642* SPS Programming Support Tool.
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select A26 HVAC Controls - Programming and follow the on-screen instructions.
4. At the end of programming, choose the "Clear All DTCs" function on the SPS screen.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. Ignition ON. Ensure the control module, DLC and programming tool connections are secure and the SPS software is up to date.
 2. Verify the control module can be reprogrammed.
- ⇒ **If the control module cannot be reprogrammed**
- 2.1. Ignition OFF for one minute, ignition ON.

2.2. Verify the control module can be reprogrammed.

⇒ If the control module cannot be reprogrammed, replace the control module.

⇓ If the control module can be reprogrammed.

2.3. All OK.

⇓ **If the control module can be reprogrammed**

3. All OK.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for Control Module replacement, programming and setup

HVAC Control Module Programming and Setup

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required install the *EL-49642* SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Reference Information

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

Replace and Program Control Module or Reprogram Control Module

To program a replacement or an existing control module, perform the following procedure:

1. Access the Service Programming System (SPS) and follow the on-screen instructions.
Note: The Prepare Control Module for Removal function can only be performed when communication with the old control module is still possible.
2. Before removing the old control module, on the SPS Supported Controllers screen, select K33 HVAC Control Module - Prepare for Removal and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select K33 HVAC Control Module - Programming and follow the on-screen instructions.
4. On the SPS Supported Controllers screen, select K33 HVAC Control Module - Configuration and Setup and follow the on-screen instructions.
5. At the end of programming, choose the "Clear All DTCs" function on the SPS screen.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. Ignition ON. Ensure the control module, DLC, and programming tool connections are secure and the SPS software is up to date.
2. Verify the control module can be reprogrammed.

⇒ **If the control module cannot be reprogrammed**

2.1. Ignition OFF for one minute, ignition ON.

2.2. Verify the control module can be reprogrammed.

⇒ If the control module cannot be reprogrammed, replace the control module.

⇓ If the control module can be reprogrammed.

2.3. All OK.

⇓ **If the control module can be reprogrammed**

3. All OK.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for control module replacement, programming and setup

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Document ID: 2644700

Immobilizer Control Module Programming and Setup

[Replace and Program ECU or Reprogram ECU](#)

This ECU does not require SPS programming or any setup procedures.

Inflatable Restraint Sensing and Diagnostic Module Programming and Setup

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required install the EL-49642 SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.
- The air bag indicator light may remain ON after the body control module (BCM), or Inflatable Restraint Sensing and Diagnostic Module is replaced, and during the programming procedure for the BCM until after the procedure is completed. When installing a new Inflatable Restraint Sensing and Diagnostic Module, there may be several DTCs set prior to programming. Once programmed, these DTCs should be in history and can be cleared.
- Failure to complete the following Setup procedure may cause DTC B1001 to be set in the Inflatable Restraint Sensing and Diagnostic Module.

Replace and Program Control Module or Reprogram Control Module

To program a replacement control module, perform the following procedure:

1. Access the Service Programming System (SPS) and follow the on-screen instructions.
2. On the SPS Supported Controllers screen, select K36 Inflatable Restraint Sensing and Diagnostic Module - Programming and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select K36 Inflatable Restraint Sensing and Diagnostic Module - Setup or Configuration and Setup and follow the on-screen instructions.
4. At the end of programming, choose the "Clear All DTCs" function on the SPS screen.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. Ignition ON. Ensure the control module, DLC and programming tool connections are secure and the SPS software is up to date.
2. Verify the control module can be reprogrammed.

⇒ **If the control module cannot be reprogrammed**

- 2.1. Ignition OFF for one minute, ignition ON.

2.2. Verify the control module can be reprogrammed.

⇒ If the control module cannot be reprogrammed, replace the control module.

⇓ If the control module can be reprogrammed.

2.3. All OK.

⇓ **If the control module can be reprogrammed**

3. All OK.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for Control Module replacement, programming and setup

Instrument Cluster Programming and Setup

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the ECU is not properly configured with the correct calibration software, the ECU will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or ECU damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. Install the *EL-49642* SPS programming support tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Replace and Program ECU (Except Europe and Australia)

To program a replacement ECU, perform the following procedure:

1. Install *EL-49642* SPS programming support tool .
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select Instrument Cluster - Programming and follow the on-screen instructions.
4. On the SPS Supported Controllers screen, select Instrument Cluster - Configuration and follow the on-screen instructions.
5. On the SPS Supported Controllers screen, select Instrument Cluster - Setup and follow the on-screen instructions.
6. At the end of programming, choose the "Clear All DTCs" function on the SPS screen.

Replace and Program ECU (Europe and Australia)

Prior to removing the old ECU, perform the following procedure:

1. Install *EL-49642* SPS programming support tool .
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select Instrument Cluster - Prepare ECU for Removal and follow the on-screen instructions.
4. On the SPS Supported Controllers screen, select Instrument Cluster - Programming and follow the on-screen instructions.
5. On the SPS Supported Controllers screen, select Instrument Cluster - Configuration and Setup and follow the on-screen instructions.

6. At the end of programming, choose the "Clear All DTCs" function on the SPS screen.

Reprogram ECU (Except Europe and Australia)

To program an existing ECU, perform the following procedure:

1. Install *EL-49642* SPS programming support tool .
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select Instrument Cluster - Programming and follow the on-screen instructions.
4. On the SPS Supported Controllers screen, select Instrument Cluster - Configuration and follow the on-screen instructions.
5. On the SPS Supported Controllers screen, select Instrument Cluster - Setup and follow the on-screen instructions.
6. At the end of programming, choose the "Clear All DTCs" function on the SPS screen.

Reprogram ECU (Europe and Australia)

To program an existing ECU, perform the following procedure:

1. Install *EL-49642* SPS programming support tool .
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select Instrument Cluster - Programming and follow the on-screen instructions.
4. On the SPS Supported Controllers screen, select Instrument Cluster - Configuration and Setup and follow the on-screen instructions.
5. At the end of programming, choose the "Clear All DTCs" function on the SPS screen.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. DO NOT turn the ignition OFF. Ensure that all ECU, DLC and programming tool connections are secure and the TIS terminal operating software is up to date.
2. Attempt to reprogram the ECU.
3. If the ECU can still not be programmed, turn the ignition OFF for at least one minute.
4. Turn the ignition ON and attempt to reprogram the ECU. The ECU should program.
⇒ If the ECU still cannot be programmed, replace the ECU.

Keyless Entry Control Module Programming and Setup

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the ECU is not properly configured with the correct calibration software, the ECU will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or ECU damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. Install the EL-49642 SPS programming support tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Replace and Program ECU or Reprogram ECU

To program a replacement or an existing ECU, perform the following procedure:

1. Install EL-49642 SPS programming support tool .
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select Keyless Entry Control Module – Programming and follow the on-screen instructions.
4. At the end of programming, choose the "Clear All DTCs" function on the SPS screen.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. DO NOT turn the ignition OFF. Ensure that all ECU, DLC and programming tool connections are secure and the TIS terminal operating software is up to date.
2. Attempt to reprogram the ECU.
3. If the ECU can still not be programmed, turn the ignition OFF for at least one minute.
4. Turn the ignition ON and attempt to reprogram the ECU. The ECU should program.
⇒ If the ECU still cannot be programmed, replace the ECU.

Liftgate Control Module Programming and Setup

Liftgate Control Module Replacement

If the liftgate control module is replaced, the following procedures must be performed.

1. Connect a scan tool to the vehicle and access SPS. Refer to [Service Programming System \(SPS\)](#).
2. Perform the SPS function Liftgate Control Module – Programming and follow the on-screen instructions.
3. Clear DTCs after completing the programming procedure.

Liftgate Control Module Reprogramming

Do not reprogram the liftgate control module unless directed by a service procedure or a service bulletin.

1. Connect a scan tool to the vehicle and access SPS. Refer to [Service Programming System \(SPS\)](#).
2. Perform the SPS function Liftgate Control Module – Programming and follow the on-screen instructions.
3. Clear DTCs after completing the programming procedure.

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Outside Rearview Mirror Programming and Setup

There is no setup procedure that needs to be performed for the left mirror control module on this vehicle.

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Document ID: 3415513

Power Steering Control Module Programming and Setup

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required install the EL-49642 SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Replace and Program Control Module or Reprogram Control Module

To program a replacement or an existing control module, perform the following procedure:

1. Install EL-49642 SPS programming support tool.
2. Ignition ON.
3. Access the Service Programming System (SPS) and follow the on-screen instructions.
4. On the SPS Supported Controllers screen, select K43 Power Steering Control Module - Programming and follow the on-screen instructions.
5. On the SPS Supported Controllers screen, select K43 Power Steering Control Module - Configuration & Setup and follow the on-screen instructions.
6. With a scan tool, Clear All DTCs.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. Ignition ON. Ensure the control module, DLC and programming tool connections are secure and the SPS software is up to date.
2. Verify the control module can be reprogrammed.
⇒ **If the control module cannot be reprogrammed**
 - 2.1. Ignition OFF for one minute, ignition ON.
 - 2.2. Verify the control module can be reprogrammed.
⇒ If the control module cannot be reprogrammed, replace the control module.

↓ If the control module can be reprogrammed.

2.3. All OK.

↓ **If the control module can be reprogrammed**

3. All OK.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for power steering control module replacement, programming and setup

Radio Control Programming and Setup

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required install the *EL-49642* SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Reference Information

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

Replace and Program Control Module or Reprogram Control Module

To program a replacement or an existing control module, perform the following procedure:

1. Install *EL-49642* SPS Programming Support Tool.
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select K48 Radio Controls - Programming and follow the on-screen instructions.
4. At the end of programming, choose the "Clear All DTCs" function on the SPS screen.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. Ignition ON. Ensure the control module, DLC and programming tool connections are secure and the SPS software is up to date.
2. Verify the control module can be reprogrammed.
 - ⇒ **If the control module cannot be reprogrammed**
 - 2.1. Ignition OFF for one minute, ignition ON.
 - 2.2. Verify the control module can be reprogrammed.
 - ⇒ If the control module cannot be reprogrammed, replace the control module.
 - ⇓ If the control module can be reprogrammed.
 - 2.3. All OK.

↓ **If the control module can be reprogrammed**

3. All OK.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for control module replacement, programming and setup

Radio Programming and Setup

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the ECU is not properly configured with the correct calibration software, the ECU will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or ECU damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. Install the *EL-49642* SPS programming support tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Diagnostic Aids

- If programming of the control module is being performed at the direction of a bulletin or PI, follow the instructions provided in that document.
- During audio system programming you may be required to select multiple calibrations dependent upon vehicle equipment. Have the vehicle build/RPO information available during the following procedure to ensure the correct calibrations are selected.
- Dependant upon vehicle equipment, the current software level of the module, or the release of updates, USB programming may not be required when replacing/reprogramming the control module. If USB files for the application are not available via SPS, or have not been received from General Motors in another manner of distribution, the USB update process will not need to be performed.
- The length of time for the USB programming to complete will vary depending on the number and size of the files in the update.
- All data will be erased from the USB device BEFORE the calibration is downloaded onto the device. To ensure important information is NOT erased, always verify that NO information is stored on the device BEFORE beginning the calibration download. If required, transfer important files to another storage device BEFORE beginning the calibration download.
- The XM satellite radio (if equipped) is integrated into the radio. If XM was activated in the previous radio, the replacement radio will require additional activation steps after programming to transfer customer subscription information.

Reference Information

Special Tools

- *EL-49642* SPS Programming Support Tool
- USB 2.0 flash drive with a minimum capacity of 4 GB.

For equivalent regional tools, refer to [Special Tools](#).

Replace and Program Control Module

To program a replacement control module, perform the following procedure:

1. Install the *EL-49642* SPS Programming Support Tool.
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select A11 Radio – Programming, and follow the on-screen instructions.
4. When programming is complete, access the Service Programming System (SPS) and follow the on-screen instructions.
5. Connect a USB drive to the computer.

Note: If using a pre-configured USB drive supplied by General Motors, proceed to step 8.

6. On the SPS Supported Controllers screen, select A11 Radio – USB Copy, and follow the on-screen instructions.

Note:

If there are no files available for USB transfer via SPS, proceed to step 14.

All existing files on the USB drive will be erased when the new files are copied.

7. Upon completion of the file transfer, remove the USB drive from the computer.
8. Ignition ON, radio ON.
9. Connect the USB drive to the USB port in the vehicle.
10. Using the radio controls, select the following: Config>Radio Settings>Software Versions Menu>Update Radio Software. Follow the infotainment display on-screen instructions and select Update when prompted. Programming will take several minutes.
11. When programming is complete, remove the USB device from the vehicle USB port.
12. Access the Service Programming System (SPS) and follow the on-screen instructions.
13. On the SPS Supported Controllers screen, select A11 Radio – Programming, and follow the on-screen instructions.
14. At the end of programming, choose the "Clear DTCs" function on the SPS screen.

Reprogram Control Module

To reprogram an existing control module, perform the following procedure:

1. Install the *EL-49642* SPS Programming Support Tool.
 2. Connect a USB drive to the computer.
- Note:** If using a pre-configured USB drive supplied by General Motors, proceed to step 6.
3. Access the Service Programming System (SPS) and follow the on-screen instructions.
 4. On the SPS Supported Controllers screen, select A11 Radio – USB Copy, and follow the on-screen instructions.

Note:

If there are no files available for USB transfer via SPS, proceed to step 11.

All existing files on the USB drive will be erased when the new files are copied.

5. Upon completion of the file transfer, remove the USB drive from the computer.
6. Ignition ON, radio ON.
7. Connect the USB drive to the USB port in the vehicle.
8. Using the radio controls, select the following: Config>Radio Settings>Software Versions Menu>Update Radio Software. Follow the infotainment display on-screen instructions and select Update when prompted. Programming will take several minutes.
9. When programming is complete, remove the USB device from the vehicle USB port.
10. Access the Service Programming System (SPS) and follow the on-screen instructions.
11. On the SPS Supported Controllers screen, select A11 Radio – Programming, and follow the on-screen instructions.
12. At the end of programming, choose the "Clear DTCs" function on the SPS screen.

XM Activation (If Equipped)

Important: After replacement of an XM receiver, call XM radio to deactivate the receiver that has been removed from the vehicle.

1. Turn the radio ON, tune to the XM channel 0, and record the radio ID. The radio ID will be needed for activation of the receiver.
2. From the USA, Call XM radio at 1-800-556-3600 to activate the receiver. From Canada, call 1-877-438-9677.
3. Park the vehicle outside in an area with an unobstructed view of the southern sky.
4. Leave the vehicle outside with the ignition switch in the ACC position and the radio on for 30 minutes to activate XM service.
5. Once activated, the radio will receive the remaining XM channels.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. Ignition ON. Ensure the control module, DLC and programming tool connections are secure and the SPS software is up to date.
2. Verify the control module can be reprogrammed.
 - ⇒ **If the control module cannot be reprogrammed**
 - 2.1. Ignition OFF for one minute, ignition ON.
 - 2.2. Verify the control module can be reprogrammed.
 - ⇒ If the control module cannot be reprogrammed, replace the control module.
 - ↓ If the control module can be reprogrammed.
 - 2.3. All OK.
 - ↓ **If the control module can be reprogrammed**
3. All OK.

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Remote Control Door Lock Receiver Programming and Setup

Diagnostic Aids

The remote control door lock receiver only functions as an antenna, receiving the signals sent by the keyless entry transmitter and forwarding them to the body control module (BCM). The keyless entry software is contained wholly within the BCM.

Replace and Program ECU or Reprogram ECU

This ECU does not require SPS programming or any setup procedures.

Seat Memory Control Module Programming and Setup

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required install the *EL-49642* SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Reference Information

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

Replace and Program Control Module or Reprogram Control Module

To program a replacement or an existing control module, perform the following procedure:

1. Install *EL-49642* SPS Programming Support Tool.
2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select K40 Seat Memory Control Module - Programming and follow the on-screen instructions.
4. At the end of programming, choose the "Clear All DTCs" function on the SPS screen.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. Ignition ON. Ensure the control module, DLC and programming tool connections are secure and the SPS software is up to date.
2. Verify the control module can be reprogrammed.
 - ⇒ **If the control module cannot be reprogrammed**
 - 2.1. Ignition OFF for one minute, ignition ON.
 - 2.2. Verify the control module can be reprogrammed.
 - ⇒ If the control module cannot be reprogrammed, replace the control module.
 - ⇓ If the control module can be reprogrammed.
 - 2.3. All OK.

↓ **If the control module can be reprogrammed**

3. All OK.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for Control Module replacement, programming and setup

Service Programming System (SPS)

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

For step-by-step control module programming instructions, please refer to the techline information system (TIS) terminal.

Review the information below to ensure proper programming protocol.

Note:

- DO NOT program a control module unless you are directed by a service procedure or you are directed by a General Motors service bulletin. Programming a control module at any other time will not permanently correct a customers concern.
- It is essential that the TIS terminal, MDI, and/or Scan Tool, is equipped with the latest software before performing service programming.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required, install the EL-49642 SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12V jumper or booster pack disconnected from the AC voltage supply.
- Some modules will require additional programming/setup events to be performed before or after programming.
- Some vehicles may require the use of a CANDi or MDI module for programming.
- Review the appropriate service information for these procedures.
- DTCs may set during programming. Clear DTCs after programming is complete.
- Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Ensure the following conditions are met before programming a control module:

- Vehicle system voltage:
 - There is not a charging system concern. All charging system concerns must be repaired before programming a control module.
 - Battery voltage is greater than 12 volts but less than 16 volts. The battery must be fully charged before programming the control module.
 - Turn OFF or disable any system that may put a load on the vehicles battery, such as the following components:
 - Interior lights
 - Exterior lights including daytime running lights (DRL)—Applying the parking brake, on most vehicles, disables the DRL system
 - Heating, ventilation, and air conditioning (HVAC) systems
 - Engine cooling fans
 - Radio, etc.
- The ignition switch must be in the proper position. SPS prompts you to turn ON the ignition, with the engine OFF. DO NOT change the position of the ignition switch during the programming procedure, unless instructed to do so.
- Make certain all tool connections are secure, including the following components and circuits:

- Scan Tool
 - The RS-232 communication cable port
 - The connection at the data link connector (DLC)
 - The voltage supply circuits
- MDI
 - The USB, Ethernet or Wireless communication port
 - The connection at the data link connector (DLC)
- DO NOT disturb the tool harnesses while programming. If an interruption occurs during the programming procedure, programming failure or control module damage may occur.

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. DO NOT turn the ignition OFF. Ensure that all control module and DLC connections are secure and the TIS terminal operating software is up to date.
2. Attempt to reprogram the control module.
3. If the control module can still not be programmed, turn the ignition OFF for at least one minute.
4. Turn the ignition ON and attempt to reprogram the control module. The control module should program.
 - ⇒ If the control module still cannot be programmed, replace the control module.

After successfully programming the control module, ensure that all post programming procedures are performed; refer to [Control Module References](#) for the appropriate control module Programming and Setup document for any required procedures.

Side Object Sensor Programming and Setup

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the ECU is not properly configured with the correct calibration software, the ECU will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or ECU damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. Install the *EL-49642* SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Replace and Program ECU or Reprogram ECU

To program a replacement or an existing ECU, perform the following procedure:

1. Access the Service Programming System (SPS) and follow the on-screen instructions.
2. On the SPS Supported Controllers screen, select B218R Right Side Object Sensor Module or B218L Left Side Object Detection - Programming and follow the on-screen instructions.
3. At the end of programming, choose the "Clear DTCs" function on the SPS screen.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. DO NOT turn the ignition OFF. Ensure that all ECU, DLC and programming tool connections are secure and the TIS terminal operating software is up to date.
2. Attempt to reprogram the ECU.
3. If the ECU can still not be programmed, turn the ignition OFF for at least one minute.
4. Turn the ignition ON and attempt to reprogram the ECU. The ECU should program.
⇒ If the ECU still cannot be programmed, replace the ECU.

Steering Column Lock Control Module Programming and Setup

Special Tools

EL-49642 SPS Programming Support Tool

For equivalent regional tools, refer to [Special Tools](#).

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required install the EL-49642 SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Replace and Program Steering Column Lock Control Module or Reprogram Steering Column Lock Control Module

Note: To ensure that the steering column lock password from the BCM is learned: turn ignition ON and then OFF, close all doors, and wait 5 minutes.

To program a replacement steering column lock control module or reprogram an existing steering column lock control module, perform the following procedure:

1. Install EL-49642 SPS programming support tool.
2. Ignition ON.
3. Access the Service Programming System (SPS) and follow the on-screen instructions.
4. On the SPS Supported Controllers screen, select Steering Column Lock Control Module – Programming and follow the on-screen instructions.
5. At the end of programming, choose the "Clear All DTCs" function on the SPS screen.

Unsuccessful Programming Recovery

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. Ignition ON. Ensure the control module, DLC and programming tool connections are secure and the SPS software is up to date.
 2. Verify the control module can be reprogrammed.
- ⇒ **If the control module cannot be reprogrammed**

- 2.1. Ignition OFF for one minute, ignition ON.
 - 2.2. Verify the control module can be reprogrammed.
 - ⇒ If the control module cannot be reprogrammed, replace the control module.
 - ↓ If the control module can be reprogrammed.
 - 2.3. All OK.
- ↓ **If the control module can be reprogrammed**
3. All OK.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for control module replacement, programming and setup

Sunroof Control Module Programming and Setup

Perform the Initialization/Teach Process any time a sunroof window motor actuator is installed in the vehicle.

Use only the slide button for the these steps.

"Manual" indicates the first switch detent.

"Express" indicates the second switch detent.

1. Ensure that the electrical harness on the headliner is connected to the sunroof motor.
 2. Put the ignition in the RUN position. (CAL file will be automatically downloaded by Body Control housing, BCM).
 3. Ensure that the sunroof window is in the fully closed position. This is Not required for a new motor.
 4. Press and hold the "Manual Close Switch. After 10 seconds the sunroof window will move to the vent and then slightly back. Do not release the switch until the sunroof window stops moving. A 10 second delay is not required for a new motor.
 5. Learn Process:
 - 5.1. Open the sunroof window using the express or manual open switch to the full open position then release the switch.
 - 5.2. Press and hold "Manual Open Switch. After 10 seconds, the window will move to the close position, vent and then close. Do not release the switch during the movement until the window stops in the fully closed position.
- Note:** The Initialization/Teach Process is not complete if any of the following actions take place before the initialization cycle is done.
6. Verify the operation of the sunroof window.
 - 6.1. The slide button is not held as instructed.
 - 6.2. The ignition and/or battery power has been removed.
 - 6.3. The window panel has not reached the closed position.

The Initialization/Teach Process must be restarted if the procedure is not carried out completely.

Trailer Lamp Control Module Programming and Setup

Ensure that the following conditions exist in order to prepare for trailer lighting control module programming or configuration:

1. The battery is fully charged.
2. The MDI data link connectors are secure.
3. The scan tool is loaded with the most current software version.
4. All disconnected modules and devices are reconnected securely.
5. This entire procedure has been reviewed before proceeding.

The following service instructions reflect either a re-programming or configuration event performed to complete a repair procedure.

Trailer Lighting Control Module Programming

Do not re-program the trailer lighting control module unless directed by a service procedure or a service bulletin.

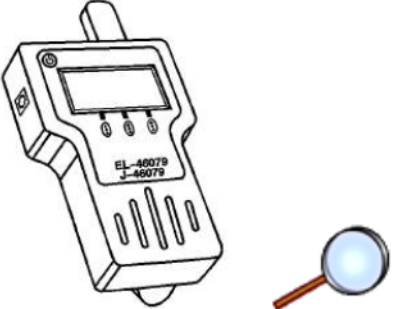
1. Access the Service Programming System (SPS) and follow the on-screen instructions. Refer to [Service Programming System \(SPS\)](#).
2. On the SPS Supported Controllers screen, select Trailer Interface (Control) Module – Programming and follow the on-screen instructions.
3. Clear DTCs after completing the programming procedure.

If the trailer lighting control module fails to accept the program, verify all scan tool and trailer lighting control module connections are secure.

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Document ID: 2223207

Special Tools

Illustration	Tool Number/ Description
	EL 46079 J 46079 Tire Pressure Monitor Diagnostic Tool
	EL 49642 EL 50113 Europe- Use recommended equivalent workshop equipment SPS Programming Support Tool