

# 2022 CHEVROLET CORVETTE SERVICE MANUAL

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## **K20 Engine 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 (DLC). 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 a battery maintainer or power supply that provides a steady and stable voltage. Do not use a battery charger, as charging voltage will often fluctuate when connected to the vehicle. This may interrupt programming. If a battery maintainer is 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 Incomplete.
- Note the engine oil life remaining percentage.
- If over 14k GVW, program the engine serial number with the scan tool.

## **Replace and Program Control Module**

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

Note:

Instances may occur where data is not transferred during the Prepare Control Module for Removal Function

1. Capture a GDS2 Report of the following scan tool parameters
2.
  - Air Cleaner Life Remaining
  - Engine Oil Life Remaining
  - Fuel Filter Life Remaining
  - Fuel injector flow identifiers
3. Access the Service Programming System (SPS) and follow the on-screen instructions.
4. Before removing the old control module, perform the SPS function Prepare Control Module for Removal, if available.
5. Note:

The Prepare Control Module for Removal function can only be performed when communication with the old control module is still possible.
6. Replace the ECM.
7. Perform one of the following SPS Programming functions:
8. Note:

If both controller options below are listed, select K20/K71 Engine and Transmission Control Modules.

9.
  - K20/K71 Engine and Transmission Control Modules and follow the on-screen instructions.
  - K20 Engine Control Module and follow on-screen instructions.
10. Clear the DTCs after completing the Programming procedure.
11. If equipped, perform the SPS function Immobilizer Learn and follow the on-screen instructions. Refer to Immobilizer System Component Programming
12. Perform the following SPS function:
13.
  1. Setup
  2. Note:

If both controller options below are listed, select K20 Engine Control Module.
  3.
    - K20/K71 Engine and Transmission Control Modules and follow the on-screen instructions.
    - K20 Engine Control Module and follow on-screen instructions.
  4. Configuration "If applicable"
14. Note:

Resetting of the engine air filter life using the Engine Air Filter Monitor Setup function in the scan tool may be required if it was not transferred during the prepare control module for removal process. Refer to: GM Air Filter Life System Resetting
15. If equipped, perform the Fuel Pressure Regulator Learn via GDS2, Engine Control Module, Configuration/Reset Functions, Learn Functions.
16. Clear DTCs.

## Reprogram Control Module

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

1. Access the Service Programming System (SPS) and follow the on-screen instructions.
2. Perform one of the following SPS Programming functions:
3.
  - Note:

If both controller options below are listed, select K20/K71 Engine and Transmission Control Modules.
  - K20/K71 Engine and Transmission Control Modules and follow the on-screen instructions.
  - K20 Engine Control Module and follow on-screen instructions.
4. Clear DTCs after completing the Programming procedure.
5. If equipped, perform the Fuel Pressure Regulator Learn via GDS2, Engine Control Module, Configuration/Reset Functions, Learn Functions.
6. Clear DTCs.

## Unsuccessful Programming Recovery

If programming a control module is not successful, perform the following procedure:

1. Verify the control module, data link connector and programming tool connections are secure and the tool software is up to date.

2. Ignition >> On / Vehicle >> In Service Mode
3. Perform one of the following SPS Programming functions:
4. Note:

If both controller options below are listed, select K20/K71 Engine and Transmission Control Modules.

5.
  - K20/K71 Engine and Transmission Control Modules and follow the on-screen instructions.
  - K20 Engine Control Module and follow on-screen instructions.
6. Verify the control module programming is successful.

7.
  - **If the programming is not successful**

8.
  1. Ignition/Vehicle >> Off - For greater than 1> min
  2. Ignition >> On / Vehicle >> In Service Mode
  3. Perform one of the following SPS Programming functions:
  4. Note:

If both controller options below are listed, select K20/K71 Engine and Transmission Control Modules.

5.
  - K20/K71 Engine and Transmission Control Modules and follow the on-screen instructions.
  - K20 Engine Control Module and follow on-screen instructions.
6.
  - If the programming is not successful Replace the appropriate component: K20 Engine Control Module or K71 Transmission Control Module
7.
  - If the programming is successful
8. All OK.

9.
  - **If the programming is successful**

10. All OK.

## Repair Instructions

Perform the Diagnostic Repair Verification after completing the repair.

Control Module References for control module replacement, programming and setup.