



## Engine Control Module (EMS) Software (MSW) Information - Improvement List, Through June 2023 - US21+OBD2020 Emissions



Vehicles equipped with Variable Geometry Turbocharger will be referred to as VGT. Vehicles equipped with Turbo Compound will be referred to as TC.

### Software Release Table (Latest information at top)

Date Available Via PTT	VGT MSW Part #	TC MSW Part #
June 2023 (Current)	24419463	24419468 – Gen 1 24419471 – Gen 2
November 2021	23958948	23958968
August 2020	23783118	23783119
January 2020	23820138	23841271

### EMS software improvements with MSW Part Number 24419463 / 24419468 / 24419471 Available from June 2023.

#### All Vehicles

#### VGT and TC EMS Software

#### Reduces fault frequency of following fault codes

- P02FA00 - Intake Throttle Valve Calibration error
- P220164 - NOx Sensor Bank 1 Sensor 1
- P04DB00 - Crankcase Ventilation System Disconnected
- P205B00 - Reductant Tank Temperature Sensor Circuit Range/Performance
- P009400 - Fuel System Leak Detected - Small Leak

Live UI **MS Software Only**

**Improved 2589-08-03-18, Exhaust aftertreatment system analysis test, to include evaluation of SCR Efficiency.**

### **13L VGT EMS Software Only**

**Improve Engine Misfire Detection. Reduction of following misfire faults.**

- P030000 - Random Misfire Detected

### **TC EMS Software Only**

**Reduces fault frequency of following fault codes**

- P047164 - Engine Exhaust Back Pressure Circuit Range/Performance
- P055B64 - Piston Cooling Oil Pressure Sensor Range/Performance

**Added 2589-08-03-18, Exhaust aftertreatment system analysis test, to evaluate NOx sensors and DEF dosing valve (no capability to evaluate SCR efficiency).**

## **EMS software improvements with MSW Part Number 23958948/23958968.**

Available from November 2021.

### **All Vehicles**

#### **VGT and TC EMS Software**

**The diagnostic for small fuel system leak (P009400) will not cause Malfunction Indicator lamp (MIL) after this update.**

- P009400 - Fuel System Leak Detected - Small Leak

**Reduction of false faults on the following NOx Sensor faults:**

- P225C00 - NOx Sensor Performance - Signal Stuck High Bank 1 Sensor 1
- P225E00 - NOx Sensor Performance - Signal Stuck High Bank 1 Sensor 2

**Improved diagnostic function routines for EGR System Checks**



- 2939-08-03-01 Exhaust Gas Recirculation Function has been replaced with 2939-08-03-03 Exhaust Gas Recirculation System Analysis.
- New diagnostic is more capable in detecting issues with EGR system.
- Use TT2.8.51 or newer and update product information to run this operation with new engine ECU software.

### **Improved diagnostic function routines for Exhaust Aftertreatment System Checks**

- 2549-08-03-03 NOx Conversion has been replaced by 2589-08-03-18 Exhaust Aftertreatment System Analysis (only NOx sensor and DEF dosing valve tests available before update).
- 2589-08-03-05 Aftertreatment Selective Catalytic Reduction (SCR) System, Test B, Option 4 is improved to run as expected. This test when run heals P103B fault codes, after the repair.

### **Reduction of intake throttle ice formation in extreme cold weather (less than 20 degrees Celsius Ambient) and extended idling.**

#### **Reduction of faults**

- P040100 - Engine Exhaust Gas Recirculation 1 Valve Position Flow Insufficient Detected

#### **New fault code has been added to detect EGR temperature pin fretting.**

- P040B00 - Exhaust Gas Recirculation Temperature Sensor "A" Circuit Range/Performance

#### **Reduction of false faults**

- P026B00 - Injection Timing Performance
- P042000 - Catalyst System Efficiency Below Threshold
- P260900 - Intake Air Heater System Performance
- P20DC00 - Exhaust Aftertreatment Fuel Supply Control Stuck Closed
- P008A00 - Low Pressure Fuel System Pressure - Too Low
- P20D000 - Exhaust Aftertreatment Fuel Injector "A" Stuck Closed
- P20CF7A - Exhaust Aftertreatment Fuel Injector "A" Stuck Open
- P20DE00 - Exhaust Aftertreatment Fuel Pressure Sensor Circuit Range/Performance

#### **Reduction of faults in cold ambient temperatures**

 Live UI C00 - Cold Start Engine Coolant Temperature Performance

# EMS software improvements with MSW Part Number 23783113/23783119.

Available from August 2020.

## All Vehicles

### VGT and TC EMS Software

**Add Dedicated Fuel Filter Pressure Sensor. Reintroducing dedicated fuel pressure sensor and improved diagnostic to allow for early dash cluster warning of fuel filter clogging.**

**Two Non-MIL fault codes added for pressure sensor electrical faults.**

- [P253913 - Low Pressure Fuel System Circuit](#)
- [P254200 - Low Pressure Fuel System Sensor Circuit High](#)


### Performance Bonus Broadcasting Fix

- [Driver gets a road speed limit increase upon meeting idle speed and fuel efficiency targets. Function corrected so that trophy indicator, fuel efficiency, and sweet spot are properly displayed on the instrument cluster. Requires cluster software to complete corrections.](#)

**The diagnostic for small fuel system leak (P009400) will not cause Malfunction Indicator lamp (MIL) after this update.**

- [P009400 - Fuel System Leak Detected – Small Leak](#)

 Tags

- [p253913](#)
- [p254200](#)
- [p009400](#)
- [p0401-00](#)
- [intake throttle ice](#)
- [volvo](#)
- [mack](#)
- [ems software](#)
- [p0094-00](#)
- [p225c-00](#)
- [p225e-00](#)
- [p0420-00](#)
-  Live UI
- [9-00](#)
- [p008a-00](#)
- [p20cf-7a](#)
- [p02fa-00](#)

<a href="#">p02fa</a>	<a href="#">p2201</a>	<a href="#">p2201-64</a>	<a href="#">p04db</a>	<a href="#">p04db-00</a>
<a href="#">p205b</a>	<a href="#">p205b-00</a>	<a href="#">p0094</a>	<a href="#">p0300</a>	<a href="#">p0300-00</a>
<a href="#">p0471</a>	<a href="#">p0471-64</a>	<a href="#">p055b</a>	<a href="#">p055b-64</a>	<a href="#">p04db00</a>

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[Make and Model > Volvo > VNL](#)

[Make and Model > Volvo > VNR](#)

[Make and Model > Volvo > VNX](#)

[Make and Model > Volvo > VAH](#)

[Make and Model > Volvo > VHD](#)

[Emission Standard > US21 > US21+OBD20](#)

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