Bosch ESI[truck] Heavy Duty Off-Highway Software Update – Q1 2019
Ver 2019/1

Bosch ESI[truck] software release version 2019/1 is full of valuable and timesaving coverage features that you don’t want to miss. Included are the details on new coverage additions.

In addition, the new Off-Highway Software package is now available, which gives users the ability to diagnose construction and agricultural vehicles.

Update your Bosch ESI[truck] Diagnostic Scan Tool to software version 2019/1 today to maximize the power of your Bosch ESI[truck] Diagnostic Scan Tool.

Newly Available Software Feature

Off-Highway Software

- Off-Highway coverage was first available with the last revision (2018/3)
- Includes diagnostic coverage for construction, agricultural, stationary engines, street sweepers, and more
- NOTE – these features are only available if you have purchased the ESI[truck] Off-Highway Upgrade Cable Kit and Introductory Software. Learn more about Bosch Off-Highway Software at https://www.boschdiagnostics.com/pro/products/esitruck-highway-upgrade-cable-kit-introductory-software-license
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1. Agricultural Vehicles 2019/1

Introduction

The new software version once again offers more improvements and innovations that consolidate this tool as a benchmark in multibrand diagnosis for agricultural tractors, combine harvesters, forage harvesters, telescopic handlers, and much more...

Below is a summary of the version update, which includes, among others, the following innovations:

- New ISOBUS (ISO 11783) function
- New specific harvest systems for Claas Harvesters
- New checks and maintenance functions, Deutz Final Tier 4 engines
- New functions for Mercedes Benz Final Tier 4 engines
- New parameters in John Deere systems
- New maintenance system in Massey Ferguson 700 Series Final Tier 4 with DCC
- New parameters in Valtra transmissions
- New specific functions for ZF transmissions

Take into account that this document is only a summary of the most relevant information of this new version.
2. Main new functionalities by brand – AGRICULTURAL VEHICLES

2.1 ISOBUS

- New ISOBUS (ISO 11783) function. Available for all compatible AGV vehicles.

- Advanced diagnosis functions for all systems.
- Specific **actual values selection** for all systems.
<table>
<thead>
<tr>
<th>Name</th>
<th>Actual Value</th>
<th>Min Value</th>
<th>Max Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta Altitude, Time</td>
<td>30 s</td>
<td>0</td>
<td>125</td>
</tr>
<tr>
<td>Delta Altitude</td>
<td>8303,704 ft</td>
<td>-26247</td>
<td>26247</td>
</tr>
<tr>
<td>Delta Position, Length</td>
<td>8°</td>
<td>-90</td>
<td>90</td>
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<tr>
<td>Delta Position, Time</td>
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<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Delta Position, Width</td>
<td>20°</td>
<td>-90</td>
<td>90</td>
</tr>
<tr>
<td>Deviation, Magnetic North</td>
<td>527 rad</td>
<td>-1000</td>
<td>1000</td>
</tr>
</tbody>
</table>

- **Tractor ECU (TECU) compatibility check**

- **ISOBUS functionality check** for all systems.
2.2 CLAAS

- **New functions** in MCM, Mercedes Benz **Final Tier 4** engine. **Forage** and **combine** harvesters
- Parameters
  - Injector coding

- Actuations
  - Boost Pressure Actuator
  - Exhaust Gas Recirculation actuator

- System checks
  - Cylinder compression
  - Quantity correction at idle
  - Exhaust Gas Recirculation actuator

- Calibration
  - Exhaust Gas Recirculation actuator

- New functions in ACM, Mercedes Benz Final Tier 4, exhaust gas treatment system, forage and combine harvesters

- System checks
  - Metered quantity measurement, AdBlue/DEF
  - AdBlue/DEF pump
  - Sealing of the AdBlue/DEF dosing unit
- **New specific harvest systems**: combine harvesters
  - CMF - Fan Drive Module
  - EHS - Electro-Hydraulic gear Shift module
  - ACU - Advanced Control Unit
  - ACU 2 - Advanced Control Unit 2
  - RSM - Radial Spreader Module (Includes calibration)
  - HPA – Header tilt control system
  - GUA - Grain tank Unloading Aid module
Available in models:

- Lexion Series (C4x)
- Lexion Series (C5x)
- Lexion Series (C6x)
- Lexion Series (C7x)

New specific harvest systems: **forage** harvesters

- OPM – Operating Panel Module
- SBM – Shear Bar adjustment Module
- ACU - Advanced Control Unit
Available in models:

- Jaguar Series (494)
- Jaguar Series (496)
- Jaguar Series (497)
- Jaguar Series (498)
- **New air conditioning** systems for **tractors**
  - ACM - Automatic air Conditioner Module (includes calibration)
  - ACC - Automatic Climate Control

![Image of ACM calibration](image1.png)

- **New** manual diagnosis for **ACC, Climate control**

![Image of ACC diagnosis](image2.png)

- Available in models:
- Arion 4X0 (A32 / A43)
- Arion 5X0 (A18 / A34 / A35)
- Arion 6X0 (A19 / A36 / A37)
- Axion 8X0 (A09 / A30 / A31 / A40 / A41)
- Axion 9x0 (A23 / B06)

- **New** calibration for TR1, Quadrishift/Hexashift transmission

![Calibrating the transmission](image)

- **Available in models:**
  - Arion 4X0 (A21)
  - Arion 5X0 – Hexashift (A34 / A35)
  - Arion 6X0 – Hexashift (A36 / A37)
  - Axion 8X0 – Hexashift (A40)

- **New** calibration for REH, Rear Electronic Hitch
Available in models:
- Arion 4X0 (A32 / A43)
- Arion 5X0 (A34 / A35)
- Arion 6X0 (A36 / A37)
- Axion 8X0 (A40 / A41)
- Axion 9x0 (A23 / B06)

- **New** calibration for **TCU**, Transmission Cmatic

Available in models:
- Arion 5X0 – Cmatic (A34 / A35)
- Arion 6X0 – Cmatic (A36 / A37)

- **New** wiring diagrams and system **technical data** in **combine harvesters**
  - ACU - Advanced Control Unit
  - ACU 2 - Advanced Control Unit
- GDM - Ground Drive Module
- RTR - Rotor cover plate regulation system
- MCM - Motor Control Module (Final Tier 4)
- ACM - Aftertreatment Control Module (Final Tier 4)
- MR – Engine management (Interim Tier 4)
- SCR Bluetec (Interim Tier 4)
Available in models:
- Lexion Series (C4x)
- Lexion Series (C5x)
- Lexion Series (C6x)
- Lexion Series (C7x)
- Lexion Series (5xx)
- Medion Series
- Mega Series
- Tucano Series (Lxx)
- Tucano Series (C0x)
- Tucano Series (C24 /C26 / C28)
- Tucano Series (C30 / C34 / C38)
- Tucano Series (C20 / C21 / C22)

- New wiring diagrams and system technical data in forage harvesters
- VBM - Vehicle Base Module
- GDM - Ground Drive Module
- ACU - Advanced Control Unit
- MCM - Motor Control Module (Final Tier 4)
- ACM - Aftertreatment Control Module (Final Tier 4)
- MR – Engine management (Interim Tier 4)
- SCR Bluetec (Interim Tier 4)
- Available in models:
  - Jaguar Series (492)
  - Jaguar Series (493)
  - Jaguar Series (495)
  - Jaguar Series (494)
  - Jaguar Series (496)
  - Jaguar Series (497)
  - Jaguar Series (498)

- **New** vehicle **technical data** in all Claas **tractors**

- Available in models:
  - Ares 5X6-6X6
  - Ares 5X7-6X7
  - Arion 5X0 Cebis
  - Arion 5X0 Cis
• Arion 6X0 Cebis
• Arion 6X0 Cis
• Atles 9X5-9X6
• Atles 9X5-9X6
• Axion 8X0 Cebis
• Axion 8X0 Cis
• Celtis
• Arion 6X0 C
• Axos
• Ceres
• Elios
• Arion 4X0
• Arion 5X0 - Hexashift
• Arion 5X0 - Cmatic
• Arion 6X0 - Hexashift
• Arion 6X0 - Cmatic
• Axion 8X0 - Hexashift
• Axion 8X0 - Cmatic
• Axion 8X0
• Axion 9X0
• Ares 836

– New vehicle service data in all Claas tractors

➢ Available in models:
  • Ares 5X6-6X6
  • Ares 5X7-6X7
  • Arion 5X0 Cebis
  • Arion 5X0 Cis
  • Arion 6X0 Cebis
  • Arion 6X0 Cis
  • Atles 9X5-9X6
  • Atles 9X5-9X6
  • Axion 8X0 Cebis
  • Axion 8X0 Cis
  • Celtis
  • Arion 6X0 C
- **Axos**
- **Ceres**
- **Elios**
- **Arion 4X0**
- **Arion 5X0 - Hexashift**
- **Arion 5X0 - Cmatic**
- **Arion 6X0 - Hexashift**
- **Arion 6X0 - Cmatic**
- **Axion 8X0 - Hexashift**
- **Axion 8X0 - Cmatic**
- **Axion 8X0**
- **Axion 9X0**
- **Ares 836**

### 2.3 DEUTZ-FAHR

- **New functions** in Deutz **EMR4 EDC 17 CV52** engines
  - System checks
    - EGR system test
    - EGR valve opening control
    - Intake throttle valve
    - Diesel particulate filter

- **Maintenance**
  - EGR (Exhaust Gas Recirculation) system reset
  - Particulate filter replacement
  - Soot content on the particulate filter
  - Replacement of the Diesel Oxidation Catalyst (DOC)
Special functions
- COMPRESSION TEST
- CYLINDER DEACTIVATION
- EGR SYSTEM TEST
- EGR VALVE OPENING CONTROL
- INTAKE THROTTLE VALVE
- DIESEL PARTICULATE FILTER

Adjustments / settings
- PARAMETER
  - INJECTOR CODE
    - ACCELERATOR PEDAL POSITION
- SERVICE
  - PARTICULATE FILTER REGENERATION
  - OIL CHANGE
  - EGR (EXHAUST GAS RECIRCULATION) SYSTEM RESET
  - PARTICULATE FILTER REPLACEMENT
  - SOOT CONTENT OF PARTICULATE FILTER
  - REPLACEMENT OF THE DIESEL OXIDATION CATALYTIC CONVERTER (DOC)
- CALIBRATION
  - ACCELERATOR PEDAL POSITION
Available in models:
- 6 Series
- 6 TTV Series
- 7 Series
- 7 ST Series
- 7 TTV Series
- 9 Series

- **Display System Scan**, increase in the number of models with manual diagnosis

- New models and expansion of the fault code list:
  - 5 Series
  - 5 C Series
- **Display System Scan**, increase in the number of manual calibrations
  - Clutch pedal calibration
  - Calibration of manual accelerator
  - Calibration of the accelerator pedal
  - Rear lift calibration
  - Steering angle sensor calibration process
  - Climate control calibration
  - Transmission calibration
  - Calibration of the power take-off solenoid valve
  - Calibration of the front axle speed sensor
  - Cabin suspension calibration
  - Spool valves joystick calibration

- New models with calibration or programming:
  - 5 TTV Series
  - 7 TTV Series
  - Agrotron M Series
  - Agrotron X Series
  - Agrotron K Series
- **New functions** in ZF transmissions, PowerShuttle T7000 Series

  - New calibrations
    - Oil pressure of the clutch engagement
    - Clutch pedal potentiometer

  ➤ Available in models:
  - Agrotron 210/215/235/265
  - Agrotron K Series
  - Agrotron L Series
  - Agrotron M Series
  - Agrotron MK3 Series
  - Agrotron Series
  - Agrotron X Series
2.4 FENDT

- **New functions** in Deutz EMR4 EDC 17 CV52 engines
  - System checks
    - EGR system test
    - EGR valve opening control
    - Intake throttle valve
    - Diesel particulate filter
  - Maintenance
    - EGR (Exhaust Gas Recirculation) system reset
    - Particulate filter replacement
    - Soot content on the particulate filter
    - Replacement of the Diesel Oxidation Catalyst (DOC)
Available in models:

- 500 Vario Series Final Tier 4
- 700 Vario Series Interim Tier 4
- 700 Vario Series Final Tier 4
- 800 Vario Series Interim Tier 4
- 800 Vario Series Final Tier 4
- 900 Vario Series Interim Tier 4
- 900 Vario Series Final Tier 4
2.5 HÜRLIMANN

- **Display System Scan**, increase in the number of models with manual diagnosis

- New models and expansion of the fault code list:
  - XM T4 V-Drive Series
  - XB Max Series
  - XB Series
  - XA Series
  - XM Series
  - XL DCR Series
  - XM T4 Series
- **Display System Scan**, increase in the number of manual calibrations

  - New models with calibration or programming:
    - XM T4 V-Drive Series
    - XM Series
    - XL DCR Series

- **New functions** in ZF transmissions, PowerShuttle T7000 Series

  - New calibrations
    - Oil pressure of the clutch engagement
    - Clutch pedal potentiometer

  - Available in model:
    - XL DCR Series
2.6 JOHN DEERE

- New PTA system, Autopower IVT transmission

- PTA, advanced functions available: transmission calibration and hydrostatic unit check
- New parameters in PTQ transmissions, PowerQuad (Semi PowerShift)
  - New parameters
    - Forward valve, filling pressure adjustment
    - Forward valve, filling time adjustment
    - Reverse valve, filling pressure adjustment
    - Reverse valve, filling time adjustment
    - Hydraulic oil type setting
    - Temperature factor for oils other than J20C

- New parameters in PTP e23 transmissions (Full PowerShift)
• New parameters
  o Clutch "High", filling pressure
  o Clutch "High", filling time
  o Clutch "Low", filling pressure
  o Clutch "Low", filling time
  o Reverse clutch, filling pressure
  o Reverse clutch, filling time
  o Clutch "S1", filling pressure
  o Clutch "S1", filling time
  o Clutch "S2", filling pressure
  o Clutch "S2", filling time
  o Clutch "S3", filling pressure
  o Clutch "S3", filling time
  o Clutch "S4", filling pressure
  o Clutch "S4", filling time
  o Clutch "R1", filling pressure
  o Clutch "R1", filling time
  o Clutch "R2", filling pressure
  o Clutch "R2", filling time
  o Clutch "R3", filling pressure
  o Clutch "R3", filling time

➢ Available in models:
  • 8R Series
- **New vehicle configuration** in John Deere Tractors
  - BIF, Basic Informator
    - Front power take-off configuration
    - Language
    - Units setting
  - UIC, User Interface
    - Rolling radius
    - Units setting

- Available in models:
  - 5000 RN Series
  - 5R Series
  - 6030 Series
  - 7030 Series

- DTI, Multifunction Display
  - Front power take-off configuration
  - Rotating lights
  - Working lights on the front part of the cab roof
  - Working lights on the rear part of the cab roof
  - Working lights mounted at the front of the tractor
  - Working lights on the upper part of the cab pillar
  - Working lights on the lower part of the cab pillar
  - Working lights on the rear mudguards
Available in models:
- 6030 Series
- 7030 Series

- New wiring diagrams and system technical data in tractors
  - RPT – Rear Power Take-off
  - SFA – Suspension management system in the front axle
  - FCC – Control unit, front module

Available in models:
- 6R Series
- 6M Series
2.7 LAMBORGHINI

- **New functions** in Deutz **EMR4 EDC 17 CV52** engines
  - System checks
    - EGR system test
    - EGR valve opening control
    - Intake throttle valve
    - Diesel particulate filter
  - Maintenance
    - EGR (Exhaust Gas Recirculation) system reset
    - Particulate filter replacement
    - Soot content on the particulate filter
    - Replacement of the Diesel Oxidation Catalyst (DOC)

- Available in models:
  - Match Series
  - R6 100 Series (IT4)
  - R6 200 VRT Series

- **Display System Scan**, increase in the number of models with manual diagnosis

- New models and expansion of the fault code list:
  - Nitro VRT Series
  - R6 200 VRT Series
  - R3 Series
  - R3 Evo Series
  - R2 Series
  - R2 Series
  - R6 VRT Series
  - R6 150/170/190 VRT
  - R6 Series
  - R7 DCR Series
  - R6 DCR Series
- **Display System Scan**, increase in the number of manual calibrations

  - New models with calibration or programming:
    - Nitro VRT Series
    - R6 200 VRT Series
    - R6 DCR Series
    - R8 DCR Series
    - R6 Series

- **New functions** in ZF transmissions, PowerShuttle T7000 Series
  - New calibrations
    - Oil pressure of the clutch engagement
    - Clutch pedal potentiometer

  - Available in models:
    - R6 DCR Series
    - R6 Series
    - R8 210/215/235/265
    - R8 DCR Series

2.8  **MASSEY FERGUSON**
- **New maintenance system**, models with DCC Instrument Cluster

- Available in models:
  - 4700
  - 5700
- 6700 Series

- New **wiring diagrams** and system **technical data** in X600 Series
  - DCC3 – Instrument cluster
  - MFA – Armrest control
  - Autotronic 5 – TECU, suspension management system in the front axle

- New **wiring diagrams** and system **technical data** in X700 Series
  - DCC3 – Instrument cluster
  - EEM4F – EDC 17 CV41, Electronic Diesel Control, Common Rail

### 2.9 SAME

- **New functions** in Deutz **EMR4 EDC 17 CV52** engines
  - System checks
    - EGR system test
    - EGR valve opening control
    - Intake throttle valve
    - Diesel particulate filter
  - Maintenance
    - EGR (Exhaust Gas Recirculation) system reset
    - Particulate filter replacement
    - Soot content on the particulate filter
    - Replacement of the Diesel Oxidation Catalyst (DOC)

- **Available in models:**
  - Audax
  - Fortis 100 Series

- **Display System Scan**, increase in the number of models with manual diagnosis
- **New models and expansion of the fault code list:**
  - Diamond DCR Series
  - Dorado 3 Series
  - Dorado 3 Series
  - Explorer 3 Series
  - Fortis 100 Series
  - Fortis 100.4 Series
  - Fortis Infinity Line 100 Series
  - Iron 115/125/135 Continuo
  - Iron 135-185 DCR
  - Iron 150/170/190 Continuo
  - Iron 3 Series
  - Iron DCR Series
  - Iron Series
  - Virtus J Series
  - Virtus Series

- **Display System Scan**, increase in the number of manual calibrations

- **New models with calibration or programming:**
  - Iron 130-185 DCR
  - Diamond DCR Series
  - Iron DCR Series
  - Iron Series

- **New functions** in ZF transmissions, PowerShuttle T7000 Series
  - New calibrations
    - Oil pressure of the clutch engagement
    - Clutch pedal potentiometer

- Available in models:
  - Diamond 210/215/235/265
  - Diamond DCR Series
  - Iron 100/110/120
  - Iron 130-185 DCR
- Iron DCR Series

2.10 VALTRA

- **New parameters** in CVT Transmissions
  - PowerShuttle module
    - Behaviour of the PowerShuttle module during the transition from stopped to forward gear
    - Behaviour of the PowerShuttle module during the transition from stopped to reverse gear
    - Behaviour of the PowerShuttle module during the transition from reverse gear to forward gear
    - Behaviour of the PowerShuttle module during the transition from forward gear to reverse gear
    - Behaviour of the PowerShuttle module during the re-engagement of the forward gear
    - Behaviour of the PowerShuttle module during the re-engagement of the reverse gear
    - Behaviour of the PowerShuttle module during the transition from stopped to forward gear (automatic mode)
    - Behaviour of the PowerShuttle module during the transition from stopped to reverse gear (automatic mode)
    - Behaviour of the PowerShuttle module during the transition from stopped to forward gear (clutch pedal)
    - Behaviour of the PowerShuttle module during the transition from stopped to reverse gear (clutch pedal)

- Clutch pedal
  - Behaviour of the PowerShuttle module during the transition from stopped to forward gear
  - Behaviour of the PowerShuttle module during the transition from stopped to reverse gear
Available in models with the following AC codes:

- AC 14.2
- AC 14.22
- AC 14.3
- AC 14.31
- AC 14.32
- AC 14.33
- AC 24.5

- **New parameters** in PowerShift Transmissions
  - PowerShuttle module
    - Behaviour of the PowerShuttle module during the transition from stopped to forward gear
    - Behaviour of the PowerShuttle module during the transition from stopped to reverse gear
    - Behaviour of the PowerShuttle module during the transition from reverse gear to forward gear
    - Behaviour of the PowerShuttle module during the transition from forward gear to reverse gear
    - Behaviour of the PowerShuttle module during the re-engagement of the forward gear
    - Behaviour of the PowerShuttle module during the re-engagement of the reverse gear
    - Behaviour of the PowerShuttle module during the transition from stopped to forward gear (automatic mode)
- Behaviour of the PowerShuttle module during the transition from stopped to reverse gear (automatic mode)
- Behaviour of the PowerShuttle module during the transition from stopped to forward gear (clutch pedal)
- Behaviour of the PowerShuttle module during the transition from stopped to reverse gear (clutch pedal)

- Clutch pedal
  - Behaviour of the PowerShuttle module during the transition from stopped to forward gear
  - Behaviour of the PowerShuttle module during the transition from stopped to reverse gear

- PowerShift module
  - Behaviour of the powershift from gear 1 to gear 2
  - Behaviour of the powershift from gear 2 to gear 3
  - Behaviour of the powershift from gear 3 to gear 4
  - Behaviour of the powershift from gear 4 to gear 5
  - Behaviour of the powershift from gear 5 to gear 4
  - Behaviour of the powershift from gear 4 to gear 3
  - Behaviour of the powershift from gear 3 to gear 2
  - Behaviour of the powershift from gear 2 to gear 1
Available in models with the following AC codes:
- AC15.2
- AC15.22
- AC15.3
- AC15.31
- AC15.32
- AC15.33
- AC15.34
- AC15.35
- AC16.0
- AC16.2
- AC16.3
- AC16.31
- AC16.33
- AC16.34
- AC16.35
- AC17.2
- AC17.21
- AC18.0
- AC18.4
- AC19.3
- AC19.34
### 3. Construction Equipment 2019/1

#### 3.1 Introduction

The new software version once again offers more improvements and innovations that consolidate this tool as a benchmark in multibrand diagnosis for Off-Highway and Construction Equipment, Stationary Engine and Street Sweepers.

Below is a summary of the version update, which includes, among others, the following innovations:

- New diesel particulate filter regeneration available in Volvo CE.
- New diesel particulate filter regeneration available in Caterpillar.
- New calibrations in Caterpillar wheel loader.
- New John Deere brand in OHW and Construction Equipment.
- New maintenances in JCB.
- New OHW Vehicles & construction equipment brands.
- New transmission ZF ergopower.

Take into account that this document is only a summary of the most relevant information of this new version.
4. Main new functionalities by brand

4.1 CATERPILLAR

- New function, **implement calibration** available in 900 Series.

- Load bucket
- Unload bucket
- New function, **injector coding** in J1939 to C-7.1 and C-4.4 / C-6.6 engines

- New diesel particulate filter regeneration in J1939 to C-9.3, C-4.4 / C-6.6 and C-7.1
- New system, SCR / DEF – Exhaust gas treatment system

- Available in models:
  - 100 / 20 / 10 Series
  - 300 Series
  - 600/700/800 Series
  - 900 Series
4.2 JCB

- New maintenance reset, Cluster – Instrument cluster

- Available in models:
  - 500 Series (Tier 3 / Stage III)
  - 500 Series (Interim & Final Tier 4 / Stage IIIB & IV)
- New system, SCR – Exhaust gas treatment system

➢ Available in models:
  - 200 / 300 / 400 (FT4) / 500 (FT4) / 700 / 900 Series
  - CX / JS / JZ / TM / VM / Hydradig Series
4.3 John Deere

- New brand with new **229 models** classified in 27 families

- New systems
  - ECU John Deere – System identification
  - ECU EUI (Level 18 – Tier 3 / Stage III A)
  - HCU – Hydraulic system
  - EMU – Body Computer
  - TCU – Transmission
  - SDM – Instrument cluster
4.4 Komatsu

- New models and systems
4.5 Kubota

- New models and systems
- New functions in E-CDIS – Electronic Diesel Control
  - Injector coding
  - Particulate filter regeneration
  - Aftertreatment system resets

### 4.6 Transmission ZF

- New system
├ Available in Doosan, JCB, Hydrema, Terex, Hyundai

### 4.7 Volvo CE

- Improve Machine System Scan adding OBD connector and UDS communication protocol
- New particulate filter regeneration in EMS V3
- New **particulate filter regeneration** and injector code in EDC
- New systems
  - CCM – Climate Control
  - GPMECU 1 – Body Computer
  - GPMECU 2 – Body Computer 2
  - GPMECU 3 – Body Computer 3

4.8 New brands and models
- **Wacker Neuson**: New 31 models
- **Hydrema**: New 28 models
5. Main new functionalities by brand

Stationary engines

5.1 CATERPILLAR

- New function, **injector coding** in J1939 to C-7.1 and C-4.4 / C-6.6 engines.

- New **diesel particulate filter regeneration** in J1939 to C-9.3, C-4.4 / C-6.6 and C-7.1
- New system, SCR / DEF – Exhaust gas treatment system
Available in models:

- C-13
- C-15
- C-18
- C-7.1
- C-9.3

New system, C-13, C-18, J1939
5.2 DEUTZ

- New functions, EMR4 EDC 17 CV52
5.3 John Deere

- New system ECU EUI (Level 18 – Tier 3 / Stage III A)

5.4 Mercedes Benz

- New system CPC – Common Powertrain Controller
5.5 Perkins

- J1939 protocol developed in the following engines
  - 1204E
  - 1204F
  - 1206E
  - 1206F
  - 2206
  - 2806

5.6 Volvo Penta

- New particulate filter regeneration in EMS V3
- New particulate filter regeneration and injector code in EDC