

Mac Tools Heavy Duty Off-Highway Software Update – Q1 2019

Ver 2019/1

Mac Tools 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 Mac Tools Diagnostic Scan Tool to software version 2019/1 today to maximize the power of your Mac Tools 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 Mac Tool ET8200-HD or upgraded your ET8100-HD with the OHW upgrade kit. Learn more about Mac Tools Off-Highway Software at <https://www.mactools.com/en-us/Diagnostics-and-Testing/Scan-Tools-and-Accessories/0da71bd5-4fca-4436-8aba-a8b9012dbb08/Heavy-Duty-Scan-Tool/ET8200-HD/Expert-Heavy-Duty-Tablet-Scan-Tool-with-Off-Highway-Coverage>



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.1.

Agricultural Vehicles 2019/I

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

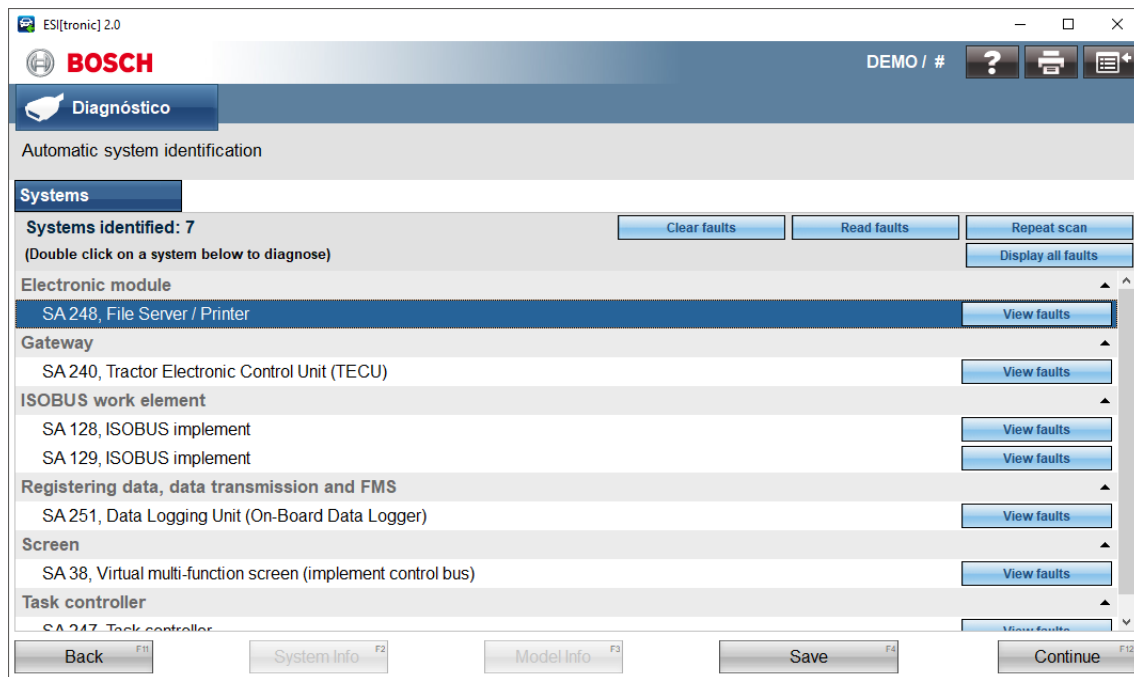
Take into account that this document is only a summary of the most relevant information of this new version.

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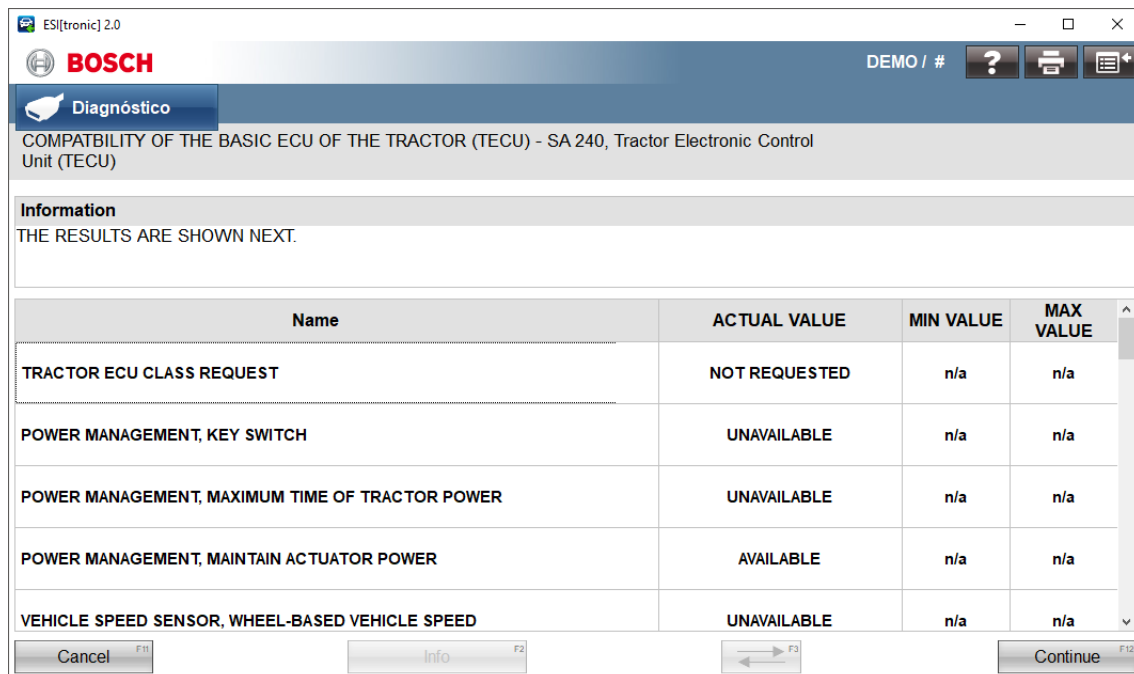
Main new functionalities by brand – AGRICULTURAL VEHICLES

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.

ES[tronic] 2.0

BOSCH DEMO / # ?

Diagnóstico

ACTUAL VALUES SELECTION - SA 240, Tractor Electronic Control Unit (TECU) 8 / 107

Name	ACTUAL VALUE	MIN VALUE	MAX VALUE
DELTA ALTITUDE, TIME	30 s	0	125
DELTA ALTITUDE	8303,704 ft	-26247	26247
DELTA POSITION, LENGTH	8 °	-90	90
DELTA POSITION, TIME	2 s	0	10
DELTA POSITION, WIDTH	20 °	-90	90
DEVIATION, MAGNETIC NORTH	527 rad	-1000	1000

Back F11 Info F2 Save F4

- Tractor ECU (TECU) compatibility check

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BOSCH DEMO / # ?

Diagnóstico

ISOBUS FUNCTION - SA 240, Tractor Electronic Control Unit (TECU)

THE RESULTS ARE SHOWN NEXT...

MINIMUM CONTROL FUNCTION

FUNCTIONALITY OF THE CONTROLLER OF GEO-LOCATION TASKS (TC-GEO) (CLIENT)

BASIC TRACTOR CONTROL UNIT WITH IMPLEMENT CONFIGURATION (CLIENT)

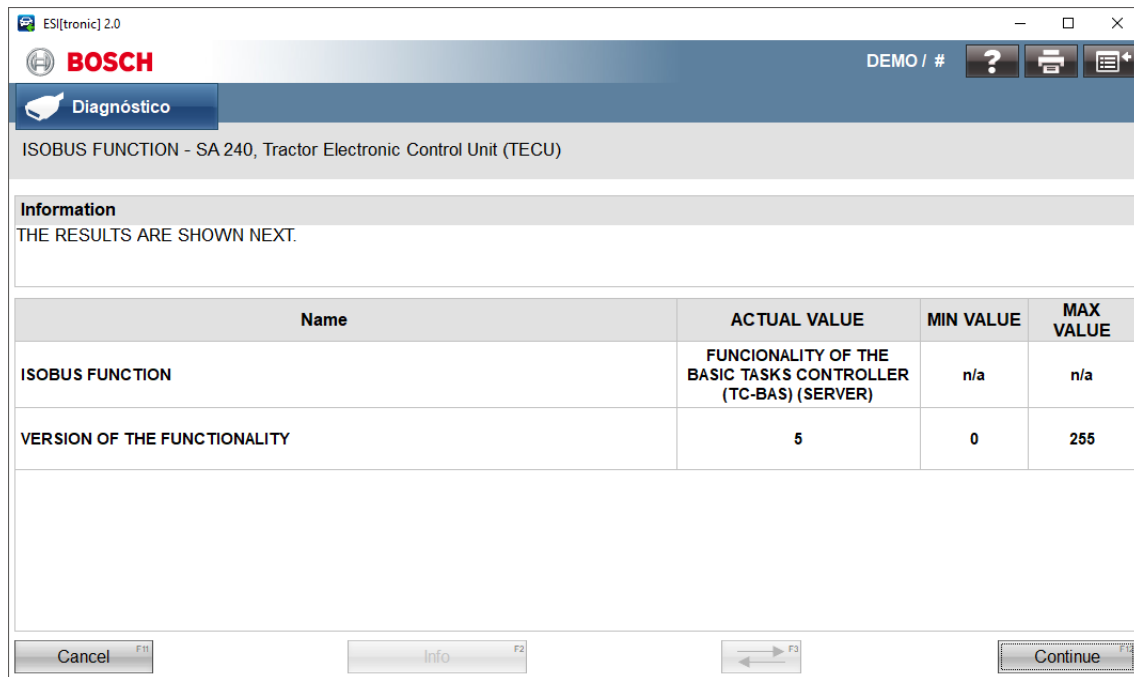
UNIVERSAL TERMINAL (CLIENT)

AUX-N FUNCTIONS

FUNCTIONALITY OF THE BASIC TASKS CONTROLLER (TC-BAS) (CLIENT)

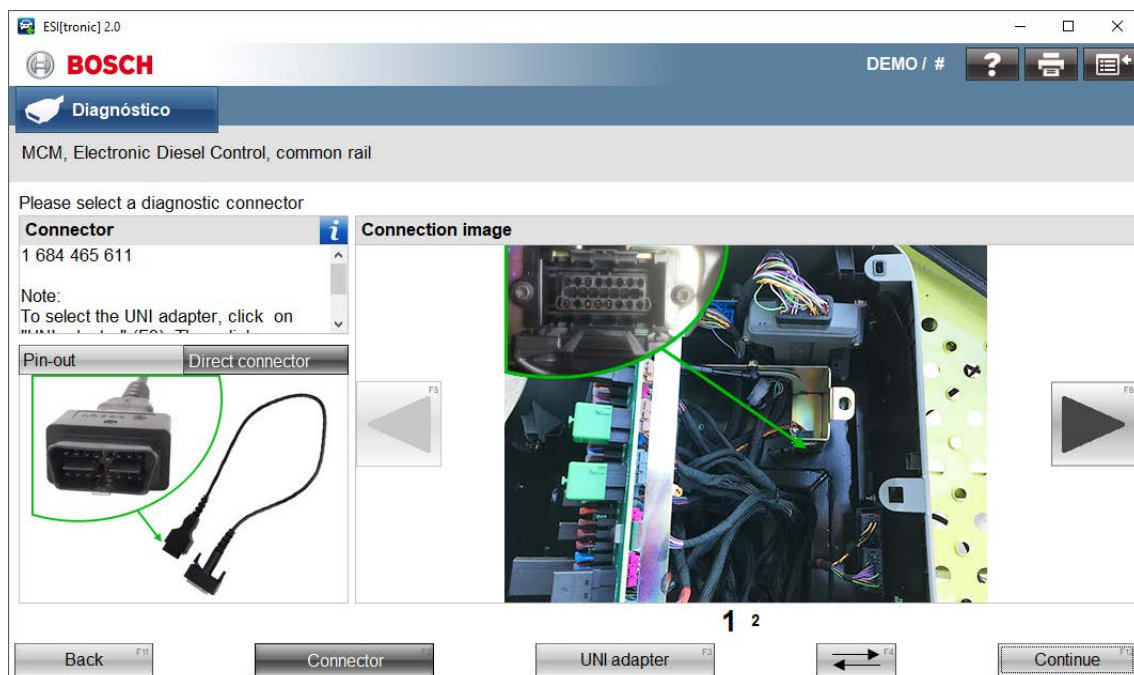
Cancel F11 Info F2 Continue F12

- 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

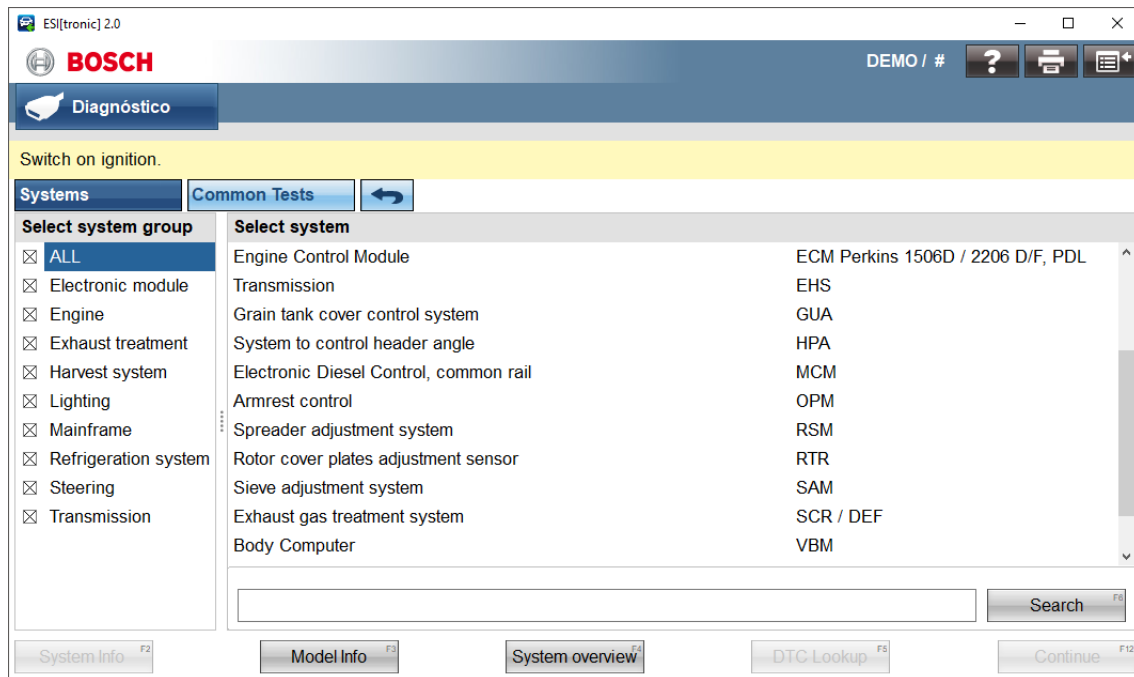
 - Actuators
 - Boost Pressure Actuator
 - Exhaust Gas Recirculation actuator

 - 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

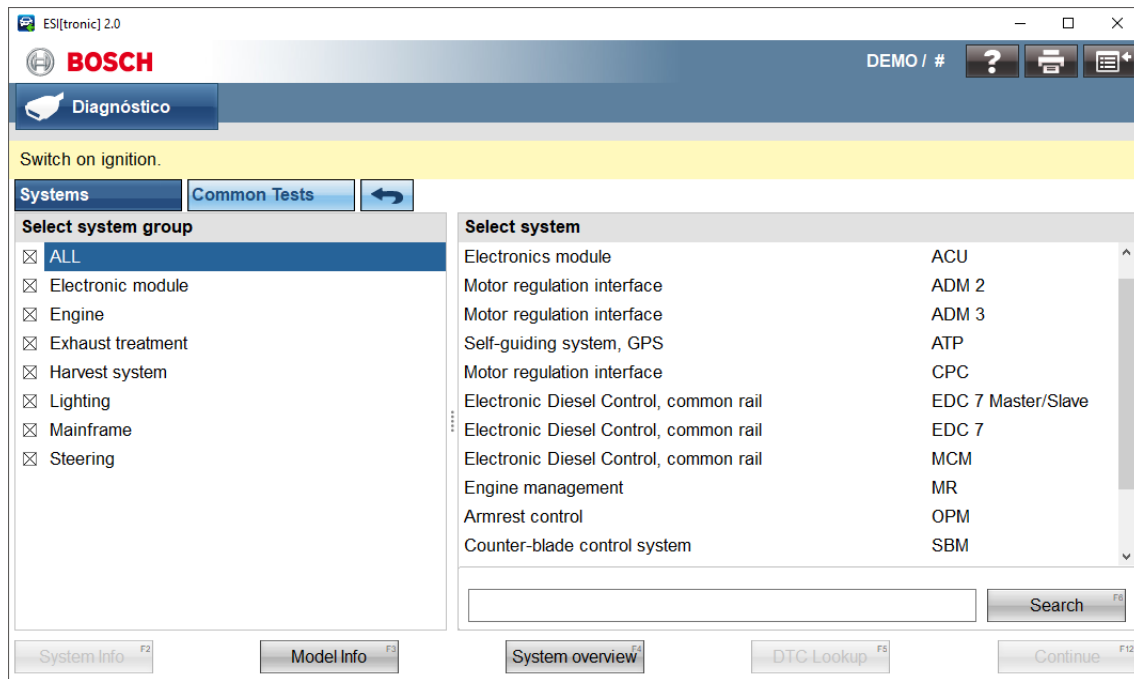


➤ Available in models:

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

– **New specific harvest systems: forage harvesters**

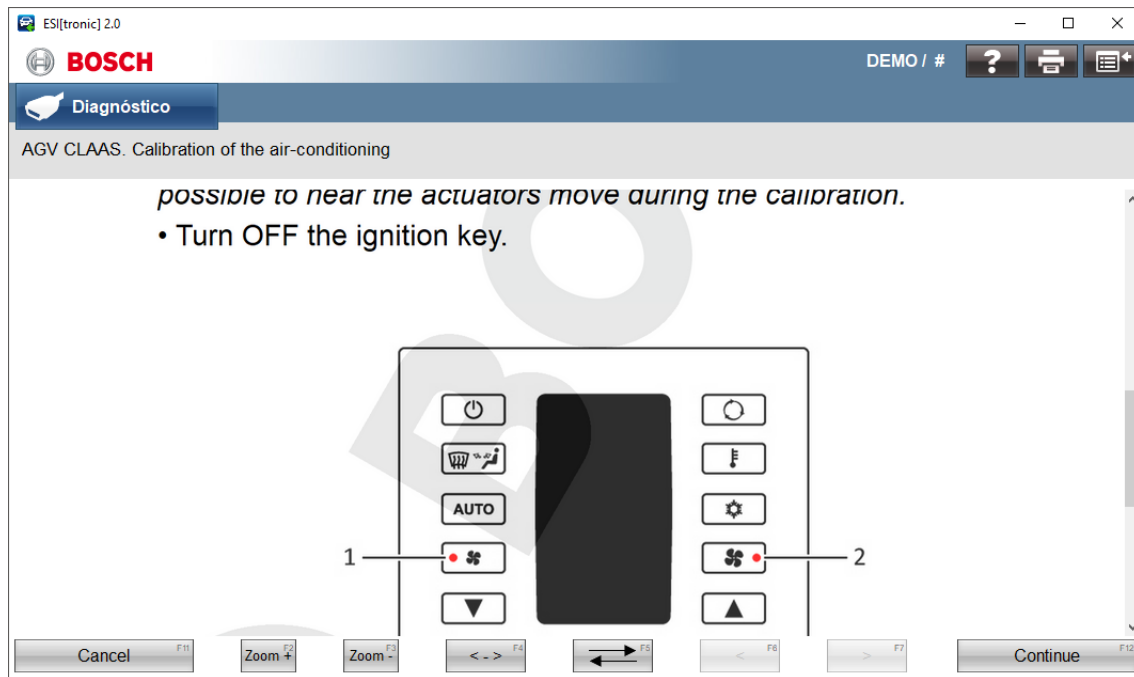
- OPM – Operating Panel Module
- SBM – Shear Bar adjustment Module
- ACU - Advanced Control Unit



➤ 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



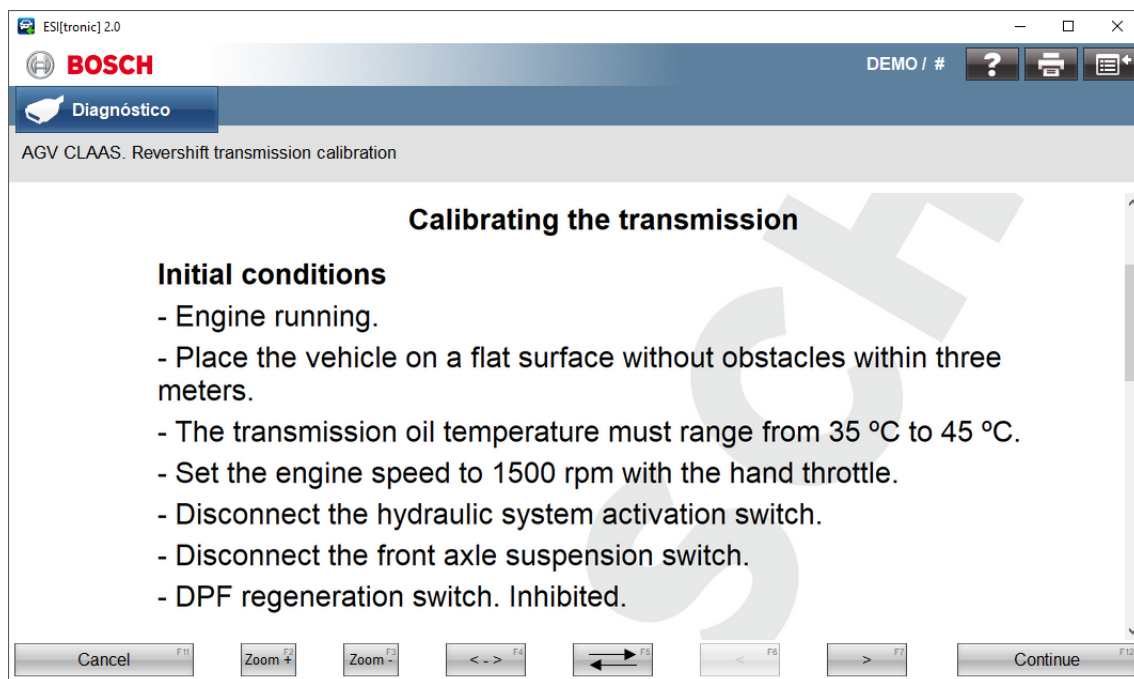
- **New manual diagnosis for ACC, Climate control**



- 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)

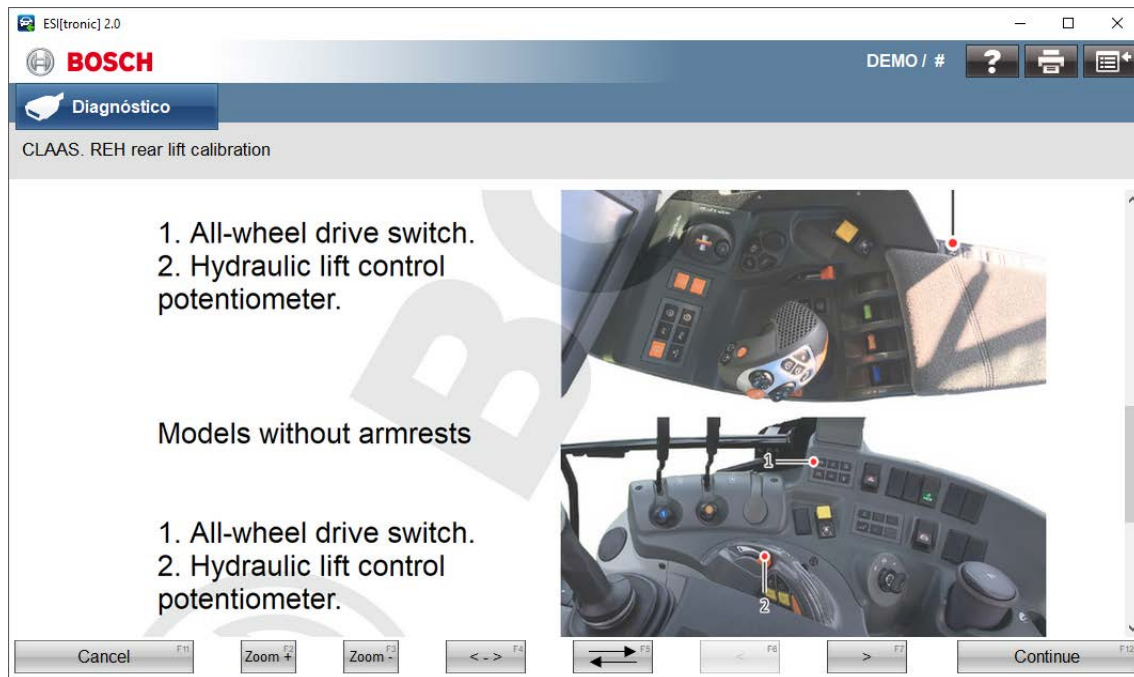
- **New** calibration for **TR1**, Quadrishift/Hexashift transmission



➤ 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)

ES[tronic] 2.0

BOSCH DEMO / # ? [Print] [List]

Diagnóstico

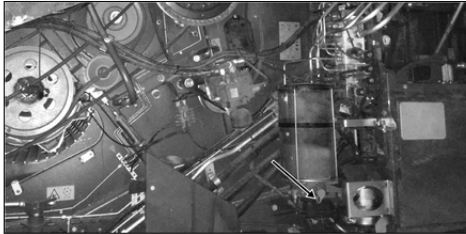
ACU 2, Electronics module A18-b, Central computer

Components

Search [FS]

- A18-b, Central computer
- B4.444, Exhaust pipe position sensor
- B4.81, Lubricating pump piston displ...
- M20, Central lubrication pump**
- Y10.142, Security solenoid valve for t...
- Y10.143, Security solenoid valve for t...
- Y10.242c, Solenoid valve to close the...
- Y10.242o, Solenoid valve to open the...

M20, Central lubrication pump



Back

ES[tronic] 2.0

BOSCH DEMO / # ? [Print] [List]

Diagnóstico

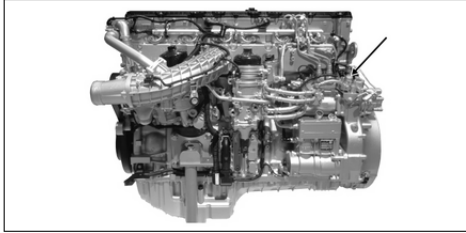
MCM, Electronic Diesel Control, common rail

Components

Search [FS]

- Y10.30, Engine brake 1 solenoid v...
- Y10.61, Engine brake 2 solenoid v...
- Y17, Water pump solenoid valve, c...
- Y2.1, Cylinder 1 injector
- Y2.2, Cylinder 2 injector
- Y2.3, Cylinder 3 injector
- Y2.4, Cylinder 4 injector
- Y2.5, Cylinder 5 injector
- Y2.6, Cylinder 6 injector
- Y4.47, AdBlue / DEF tank heating ...
- Y49.6, Aftertreatment solenoid fuel...**
- Y5.20, Boost pressure actuator
- Y5.2, Exhaust gas recirculation act...

Y49.6, Aftertreatment solenoid fuel shut-off valve

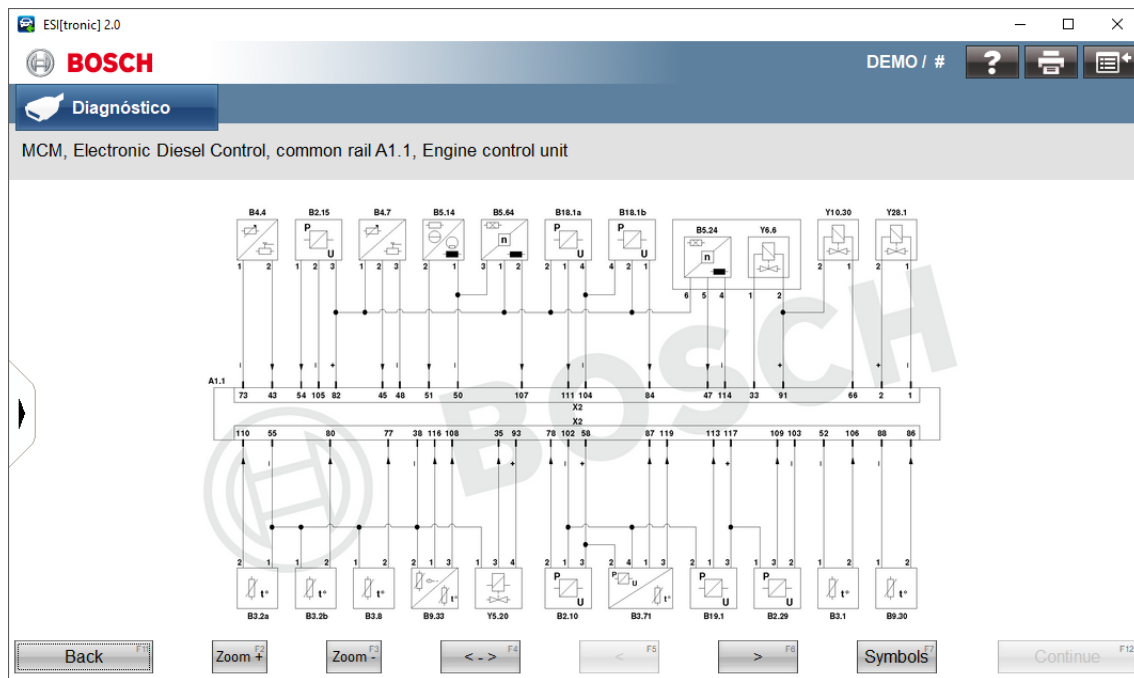


System components

Aftertreatment solenoid fuel shut-off valve

Supply voltage (pin 2): 24 V

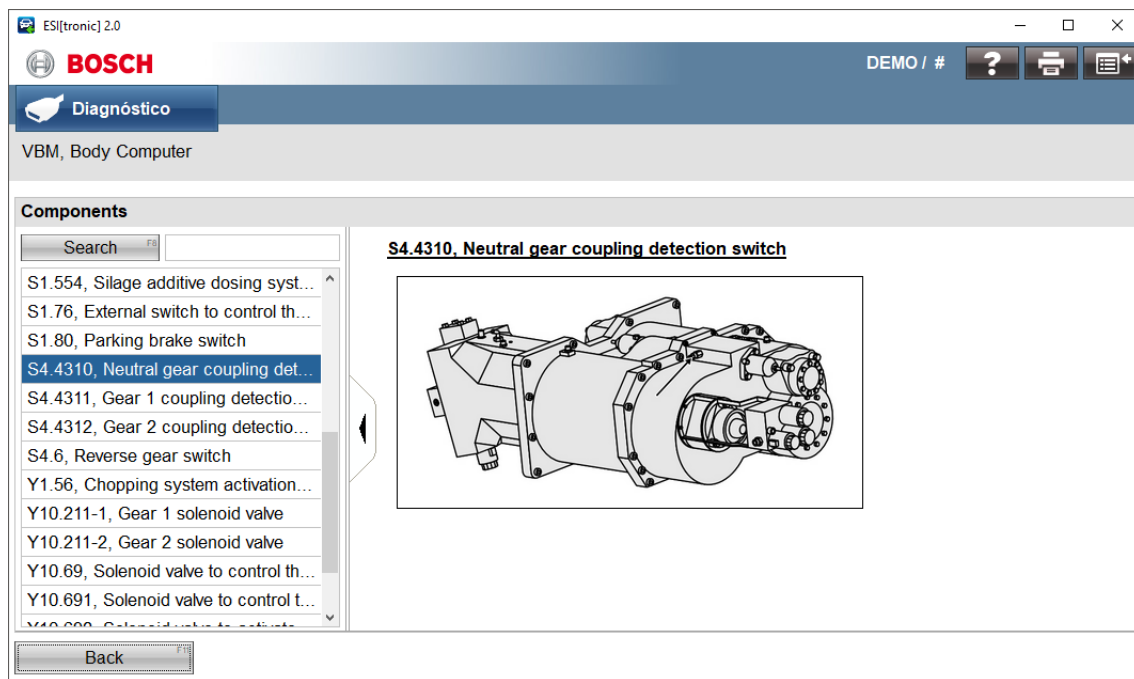
Back

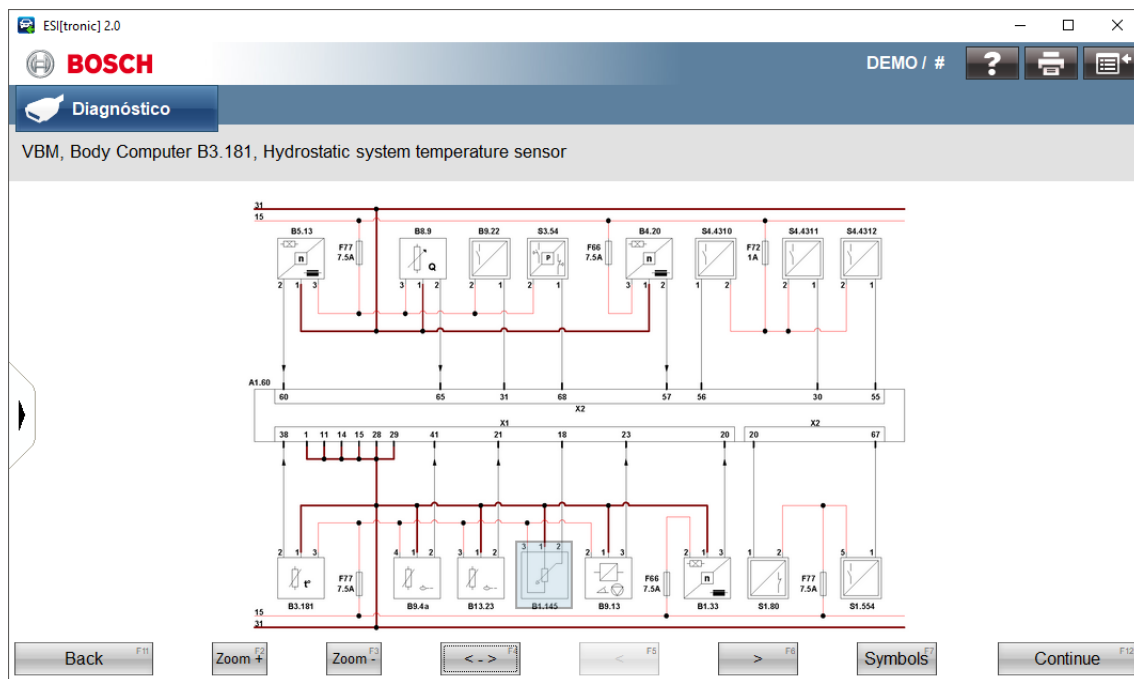


- Available in models:
 - Lexion Series (C4x)
 - Lexion Series (C5x)
 - Lexion Series (C6x)
 - Lexion Series (C7x)
 - Lexion Series (5xx)
 - Medion Series
 - Mega Series
 - Tucano Series (Lxx)
 - Tucano Series (C0x)
 - Tucano Series (C24 / C26 / C28)
 - Tucano Series (C30 / C34 / C38)
 - Tucano Series (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**

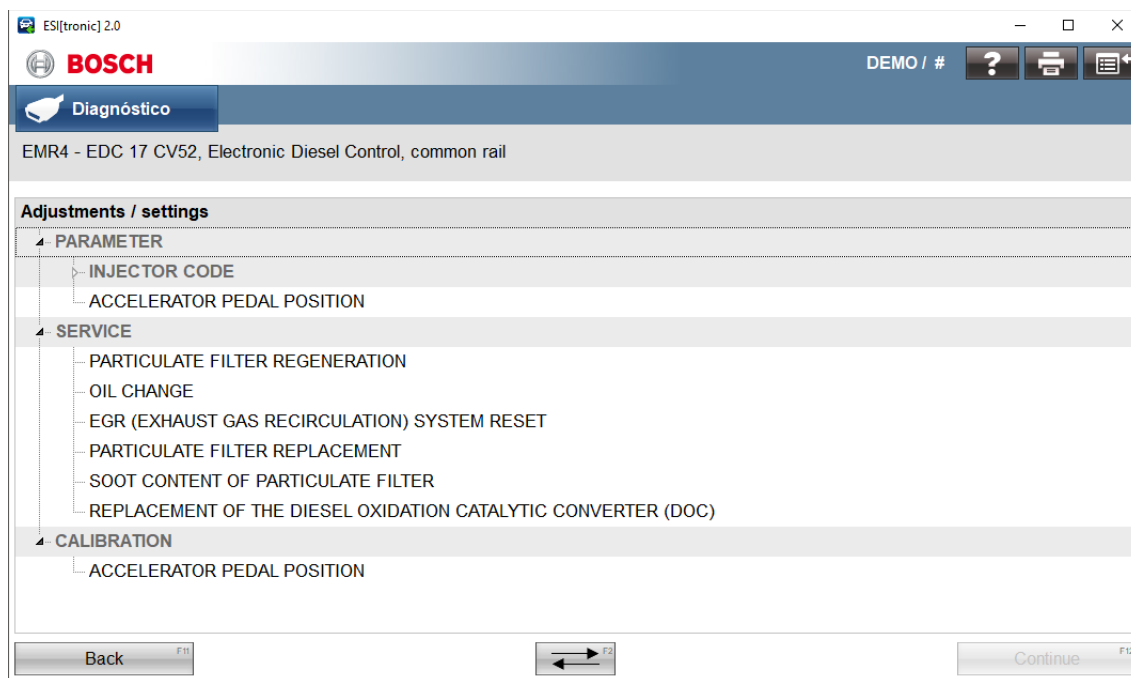
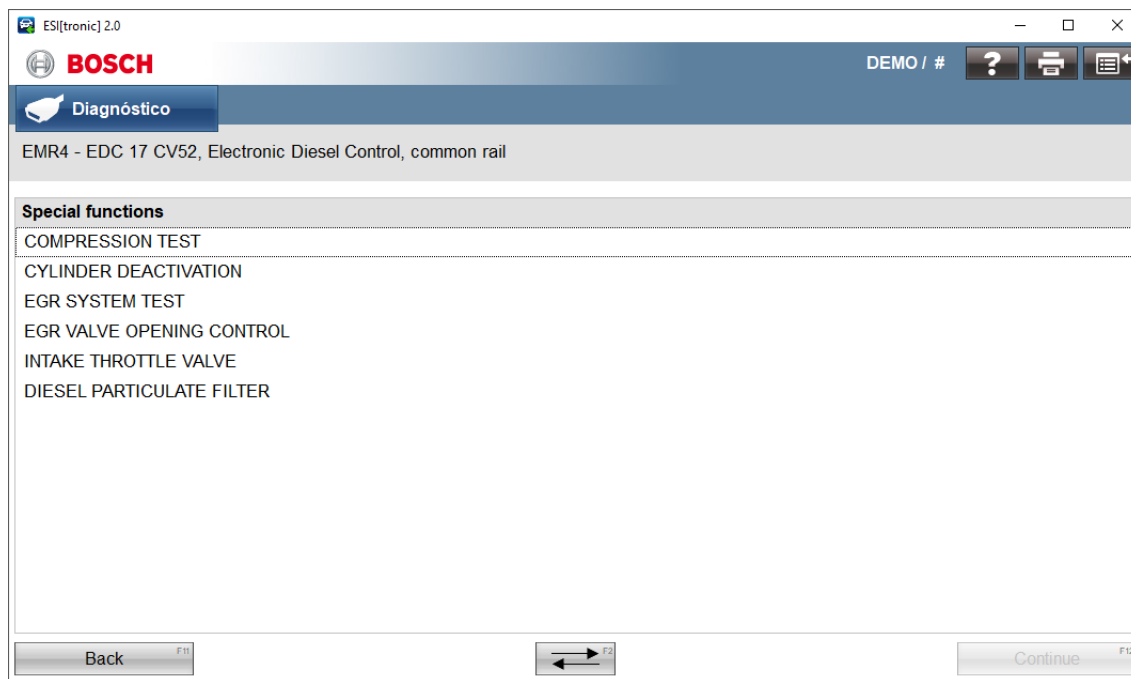
➤ Available in models:

- 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

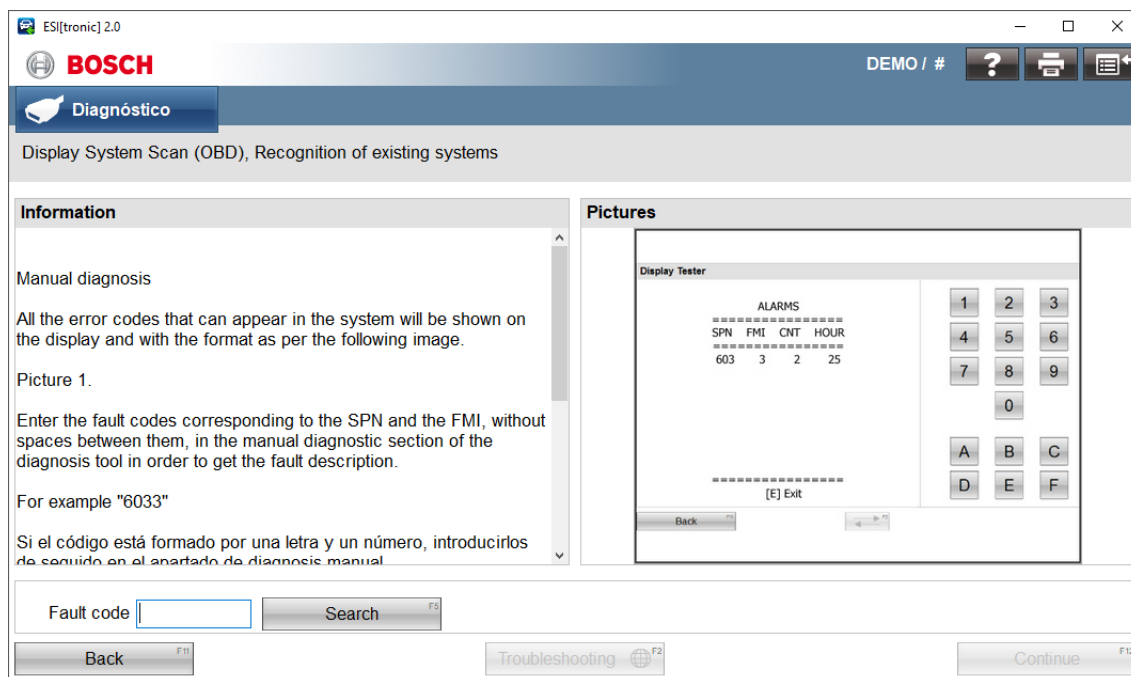
- **New functions** in Deutz **EMR4 EDC 17 CV52** engines
 - System checks
 - EGR system test
 - EGR valve opening control
 - Intake throttle valve
 - Diesel particulate filter
 - Maintenance
 - EGR (Exhaust Gas Recirculation) system reset
 - Particulate filter replacement
 - Soot content on the particulate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



➤ 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

- 5 TTV Series
- 6 Series
- 6 P Series
- 6 TTV Series
- 6.4 Series
- 7 TTV Series
- Agrofarm Series
- Agroplus Ecoline Series
- Agroplus Series
- Agrotron 400 TTV Series
- Agrotron 600 TTV Series
- Agrotron K Series
- Agrotron L Series
- Agrotron M Series
- Agrotron X 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

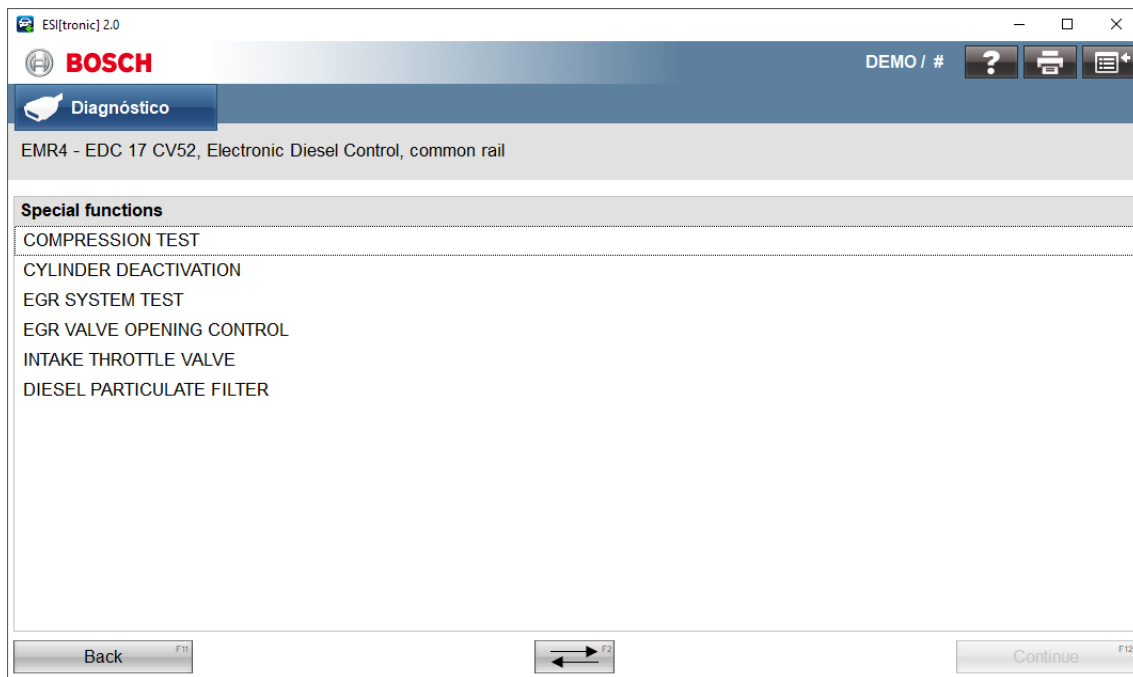
- New calibrations
 - Oil pressure of the clutch engagement
 - Clutch pedal potentiometer

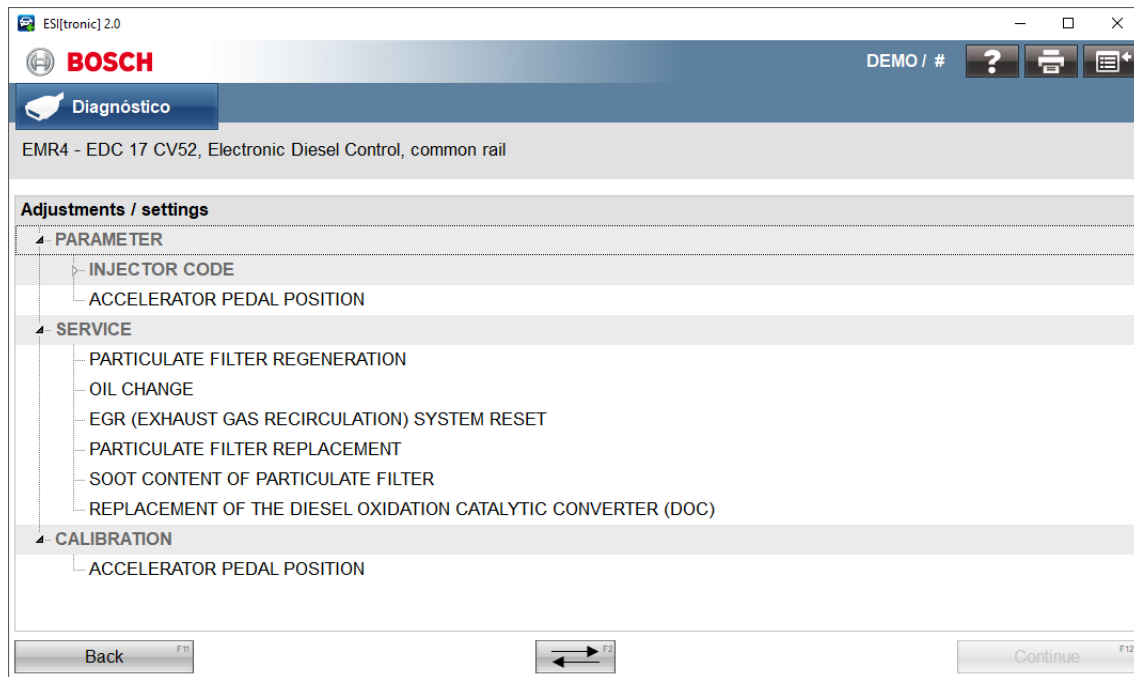


- Available in models:
- Agrottron 210/215/235/265
 - Agrottron K Series
 - Agrottron L Series
 - Agrottron M Series
 - Agrottron MK3 Series
 - Agrottron Series
 - Agrottron X Series

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)



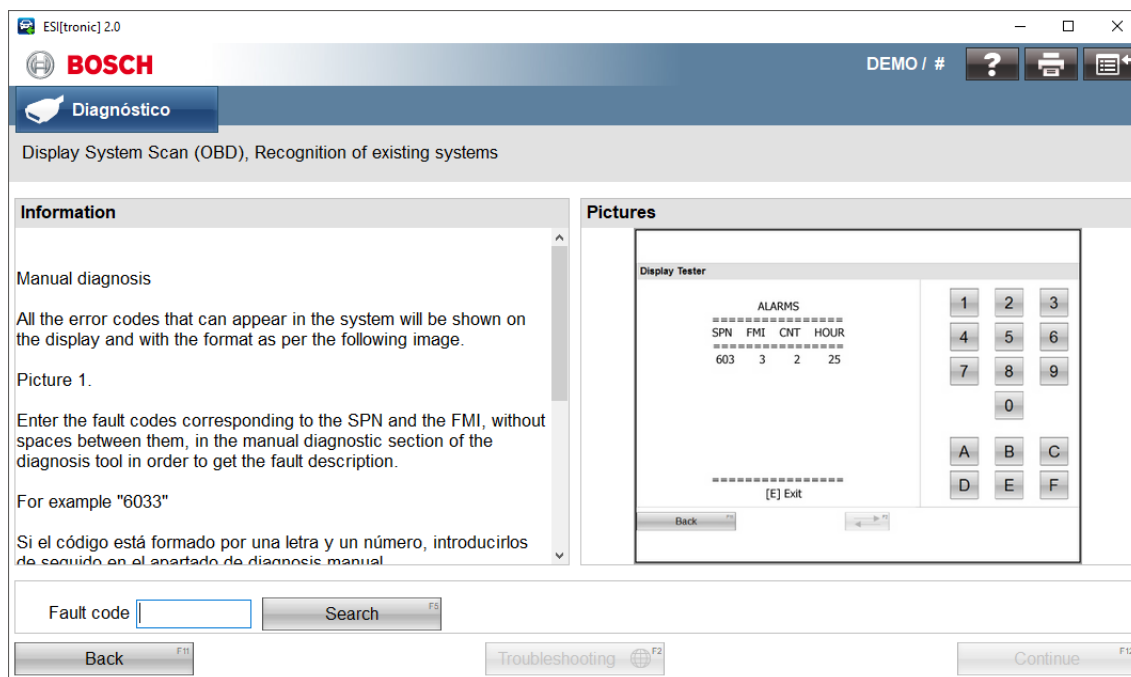


➤ Available in models:

- 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

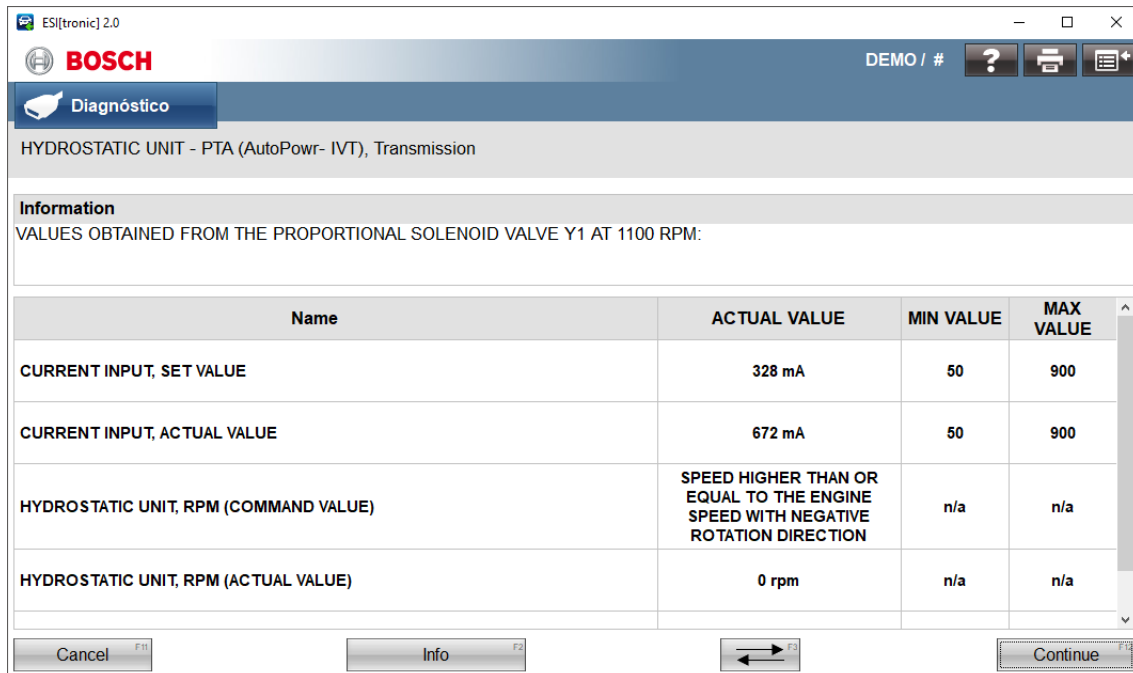
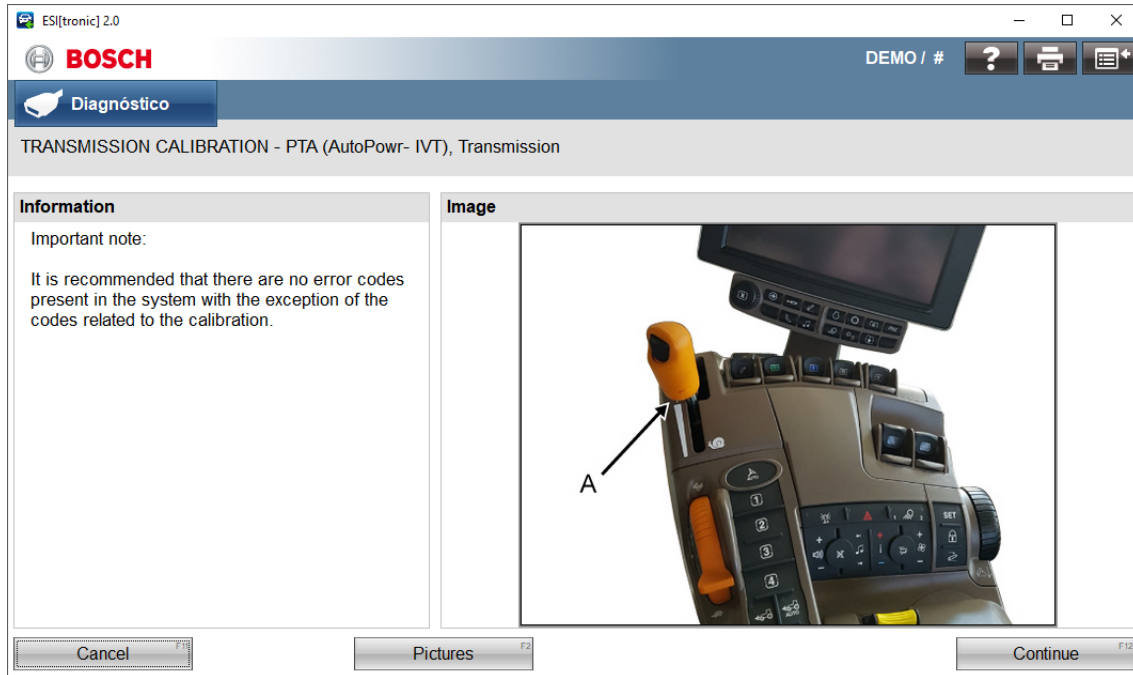


➤ Available in model:

- XL DCR Series

2.6 JOHN DEERE

- New **PTA system**, Autopower IVT transmission
- PTA, advanced functions available: transmission calibration and hydrostatic unit check

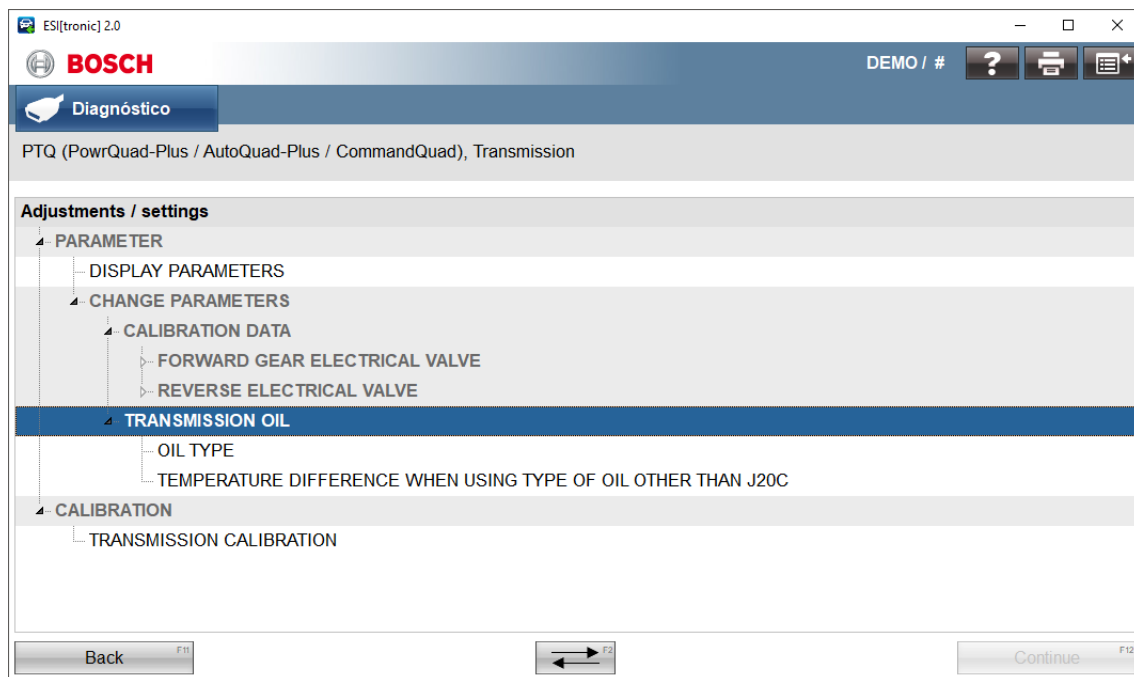


➤ Available in models:

- 6R Series

– **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

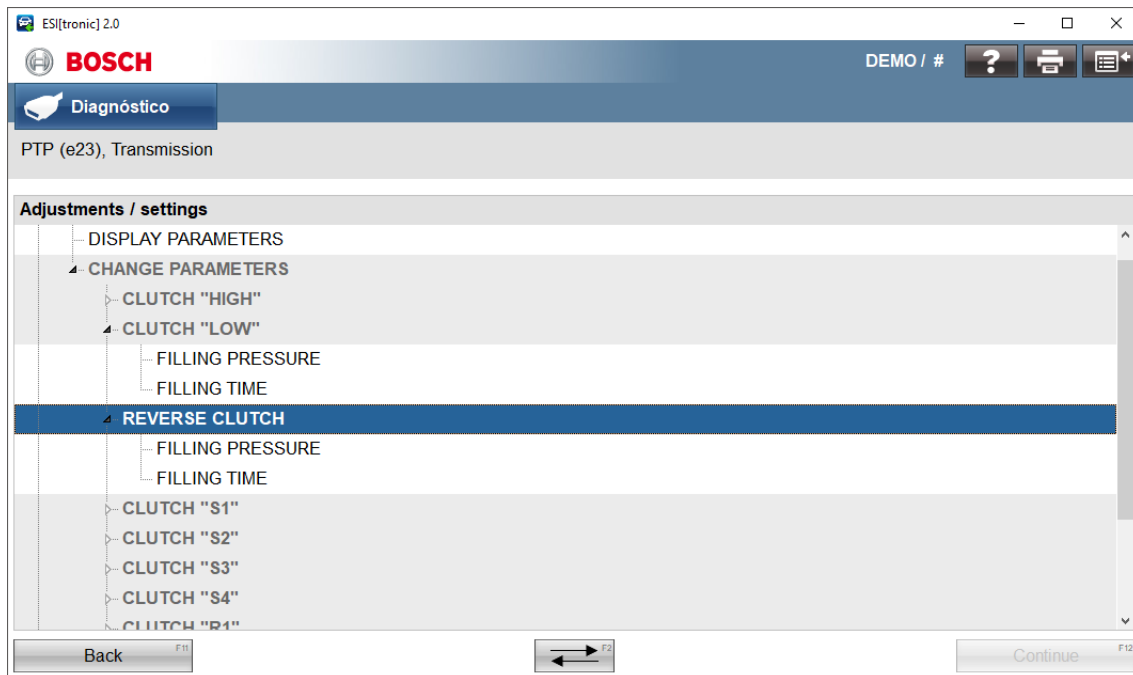


➤ Available in models:

- 7020 Series
- 7030 Series
- 7R Series

– **New parameters** in PTP e23 transmissions (Full PowerShift)

- New parameters
 - Clutch "High", filling pressure
 - Clutch "High", filling time
 - Clutch "Low", filling pressure
 - Clutch "Low", filling time
 - Reverse clutch, filling pressure
 - Reverse clutch, filling time
 - Clutch "S1", filling pressure
 - Clutch "S1", filling time
 - Clutch "S2", filling pressure
 - Clutch "S2", filling time
 - Clutch "S3", filling pressure
 - Clutch "S3", filling time
 - Clutch "S4", filling pressure
 - Clutch "S4", filling time
 - Clutch "R1", filling pressure
 - Clutch "R1", filling time
 - Clutch "R2", filling pressure
 - Clutch "R2", filling time
 - Clutch "R3", filling pressure
 - Clutch "R3", filling time



- Available in models:
 - 8R Series

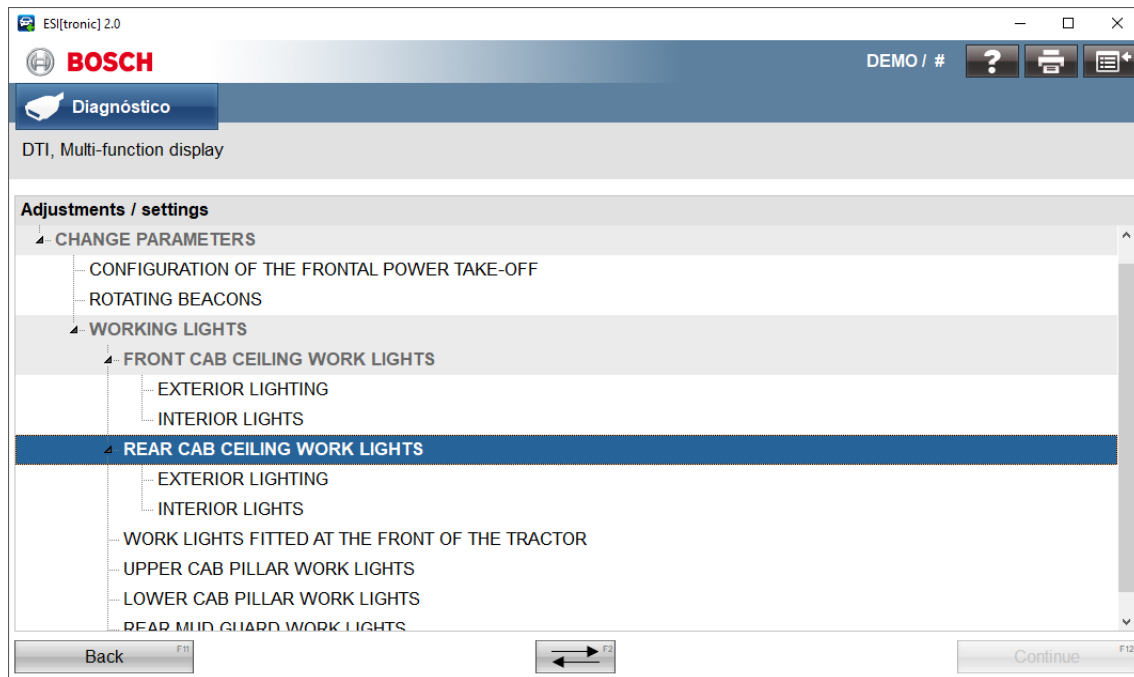
- 7R Series

- **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

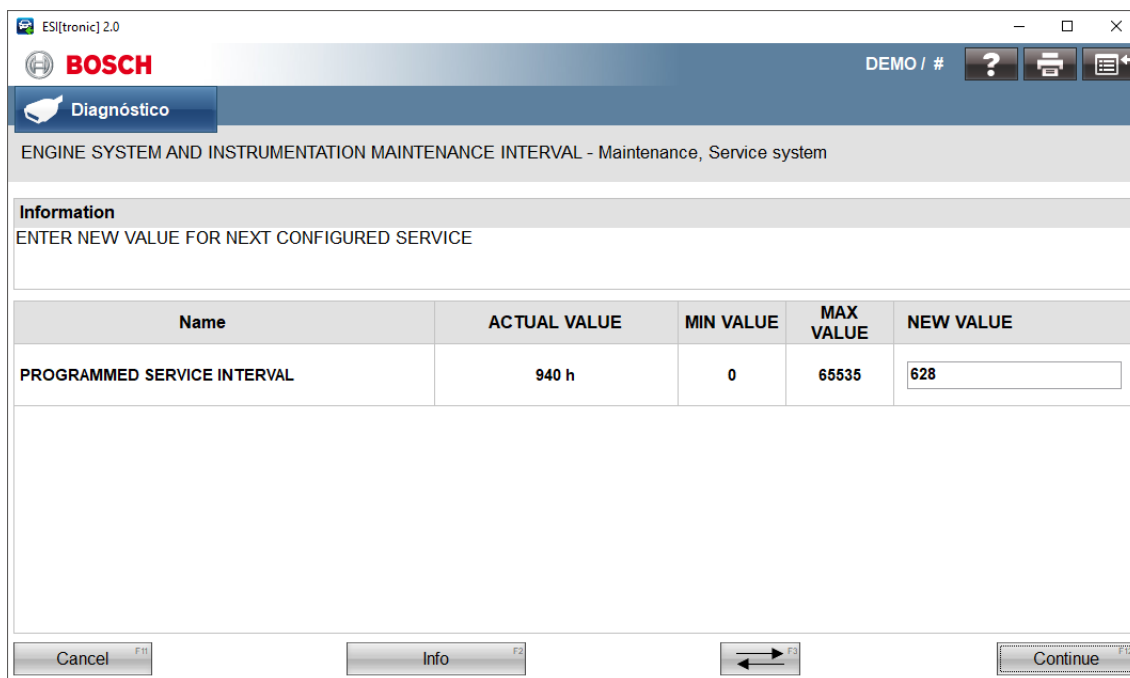
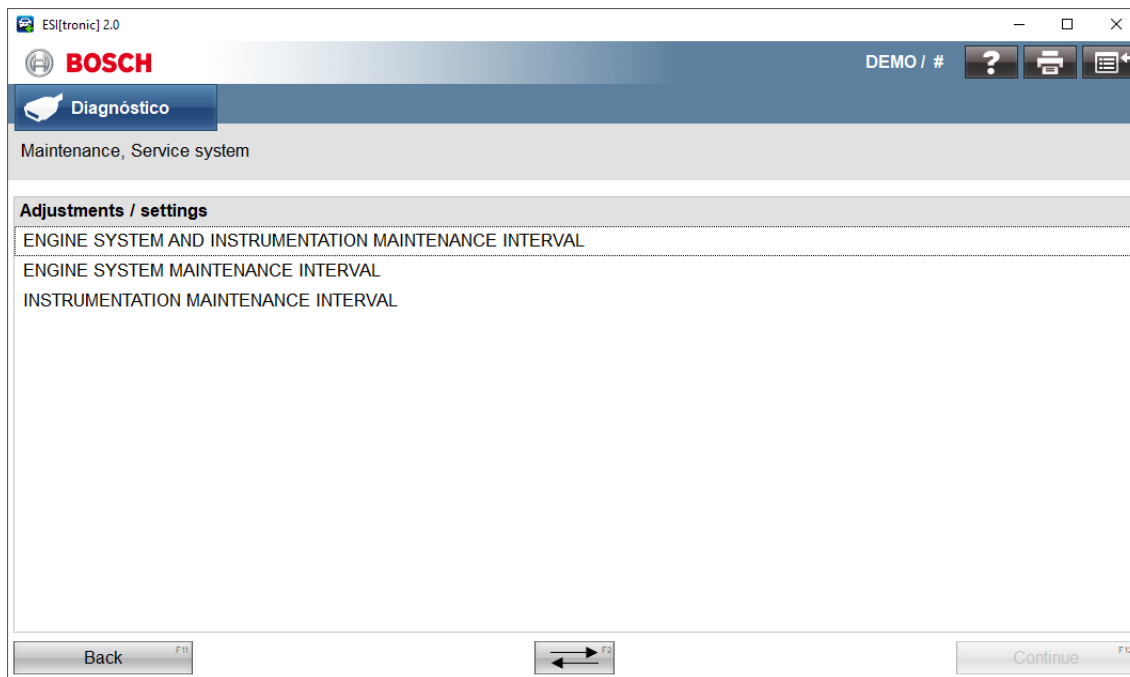
- New models and expansion of the fault code list:
 - Nitro VRT Series
 - R6 200 VRT Series
 - R3 Series
 - R3 Evo Series
 - R2 Series
 - R2 Series
 - R6 VRT Series
 - R6 150/170/190 VRT
 - R6 Series
 - R7 DCR Series
 - R6 DCR Series

- R8 DCR Series
 - Nitro R Series
 - Nitro Series
 - R6 100 Series (IT4)
 - R6 100 VRT Series
 - R6 100.4 VRT Series
 - R6 100 Hi-Profil Series
 - R6 100.4 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:

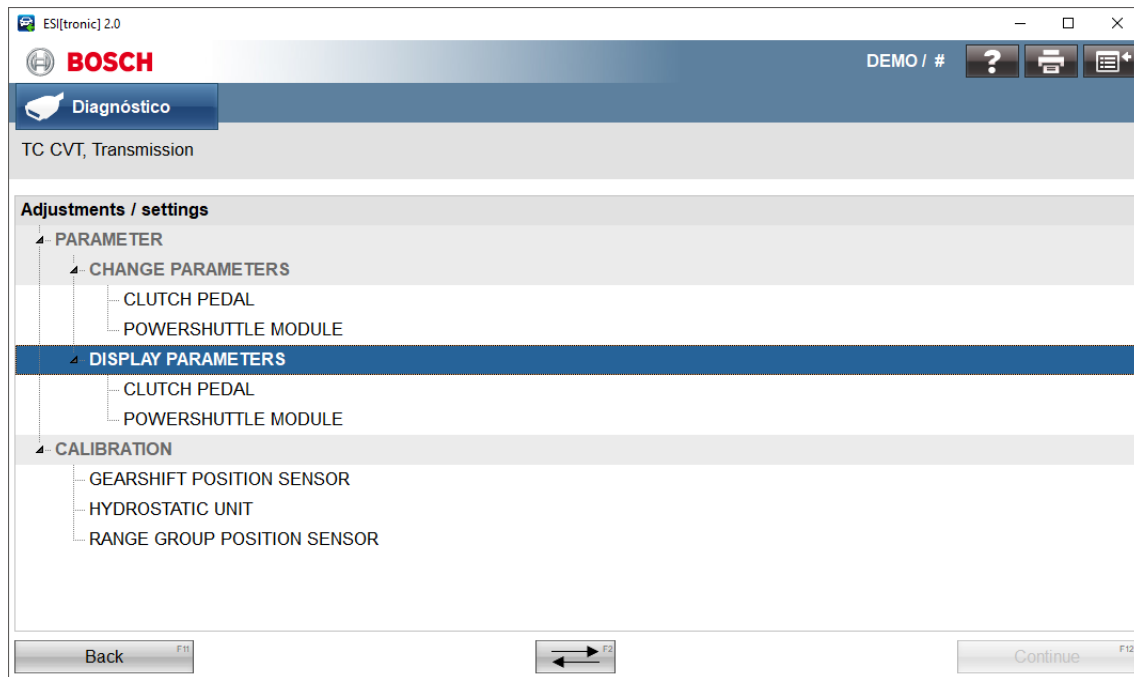
- Diamond 210/215/235/265
- Diamond DCR Series
- Iron 100/110/120
- Iron 130-185 DCR

- 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






ES[tronic] 2.0


BOSCH DEMO / # ? [Print] [List]

Diagnóstico

POWERSHIFT MODULE - TC PS, Transmission

Information
THE CONFIGURATION DATA ARE SHOWN NEXT.

Name	ACTUAL VALUE	MIN VALUE	MAX VALUE
POWERSHIFT TRANSMISSION BEHAVIOR FROM GEAR 1 TO GEAR 2, PRE-FILL PRESSURE 	-7	-10	10
POWERSHIFT TRANSMISSION BEHAVIOR FROM GEAR 1 TO GEAR 2, INITIAL PRESSURE 	-247	-2000	3850
POWERSHIFT TRANSMISSION BEHAVIOR FROM GEAR 1 TO GEAR 2, PRESSURE RATIO 	-98	-100	100
POWERSHIFT TRANSMISSION BEHAVIOR FROM GEAR 2 TO GEAR 3, PRE-FILL PRESSURE 	4	-10	10
POWERSHIFT TRANSMISSION BEHAVIOR FROM GEAR 2 TO GEAR 3, INITIAL PRESSURE 	-740	-2000	4000

Cancel F11 Info F2  F3 Continue F12

➤ 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

- AC19.4
- AC25.5
- AC26.5
- AC26.51
- AC27.5
- AC27.5

. 3 .

Construction Equipment 2019/I

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.

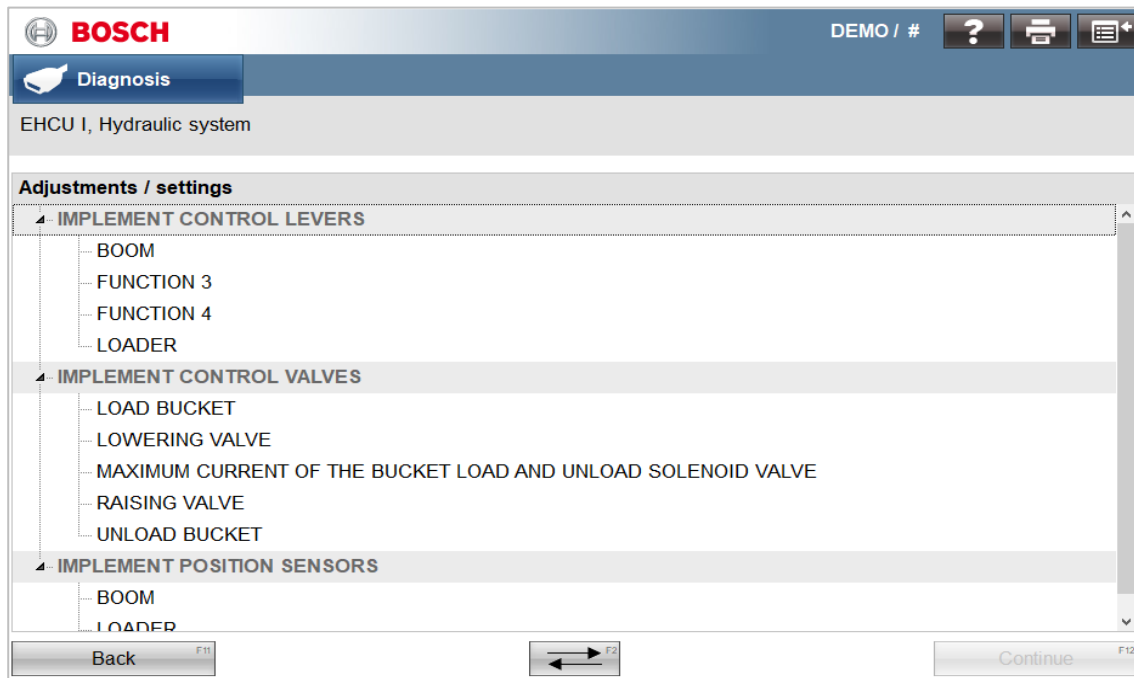
Take into account that this document is only a summary of the most relevant information of this new version.

. 4 .

Main new functionalities by brand Construction Vehicles

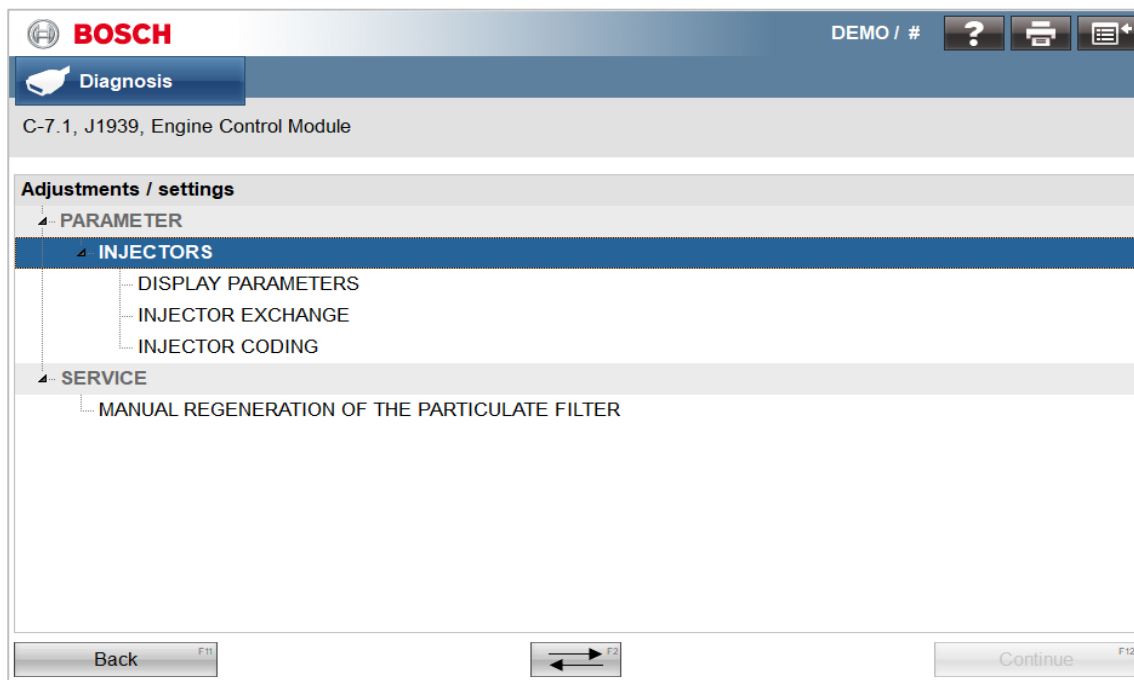
4.1 CATERPILLAR

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

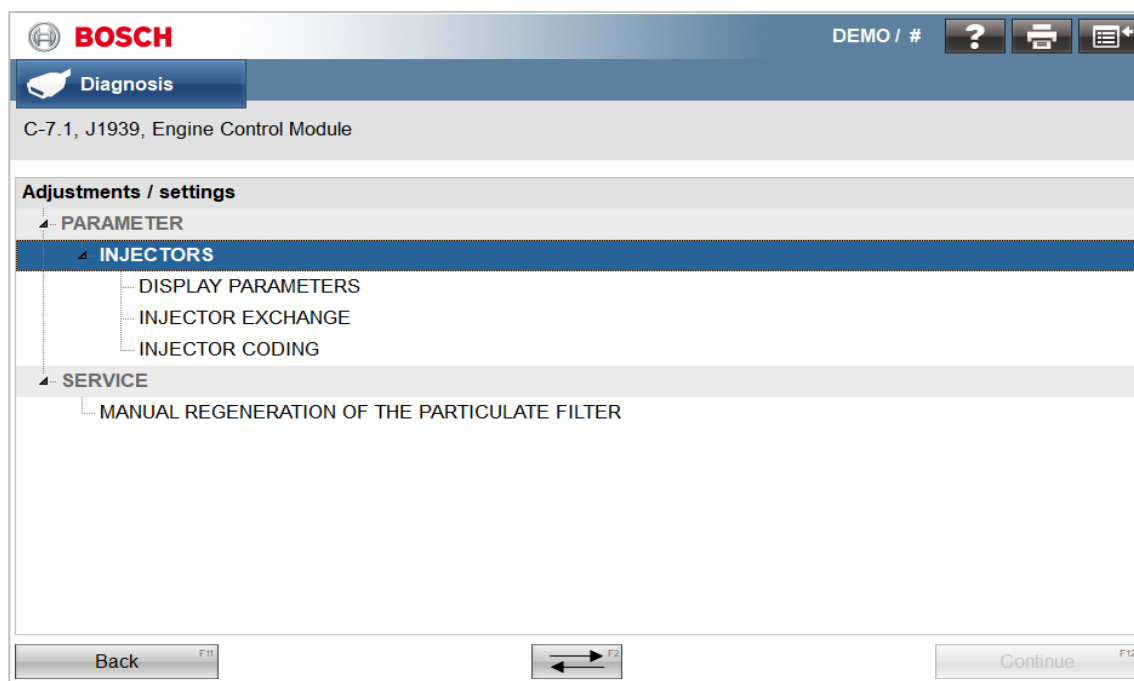


- Load bucket
- Unload bucket

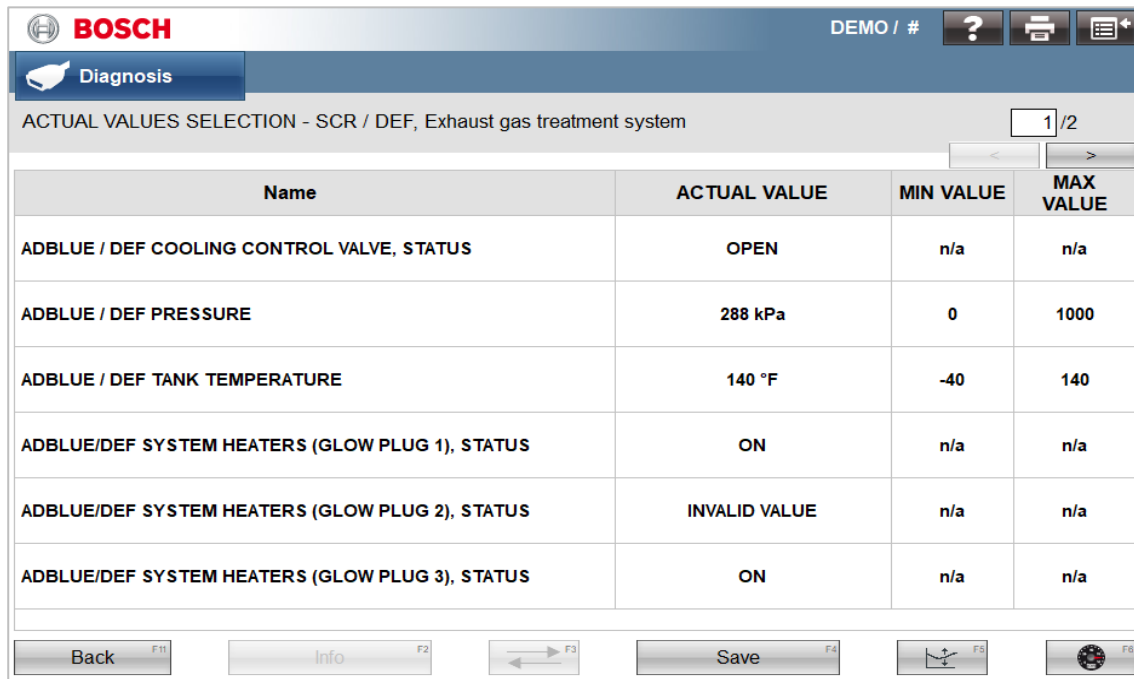
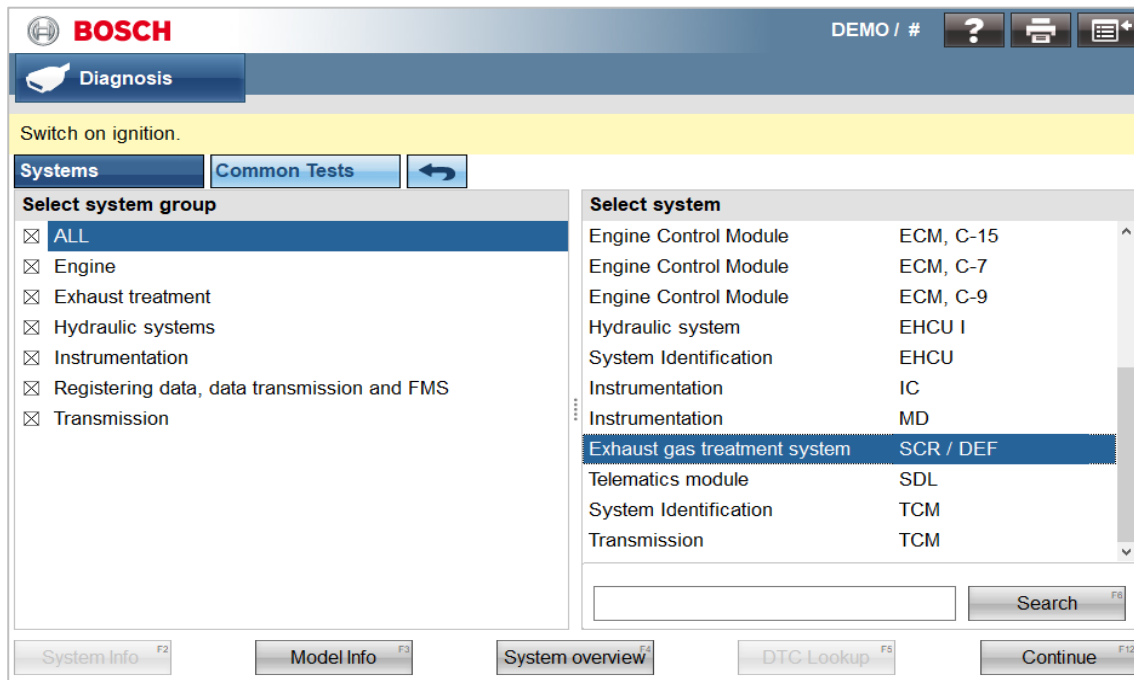
- New function, **injector coding** in J1939 to C-7.1 and C-4.4 / C-6.6 engines



- 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

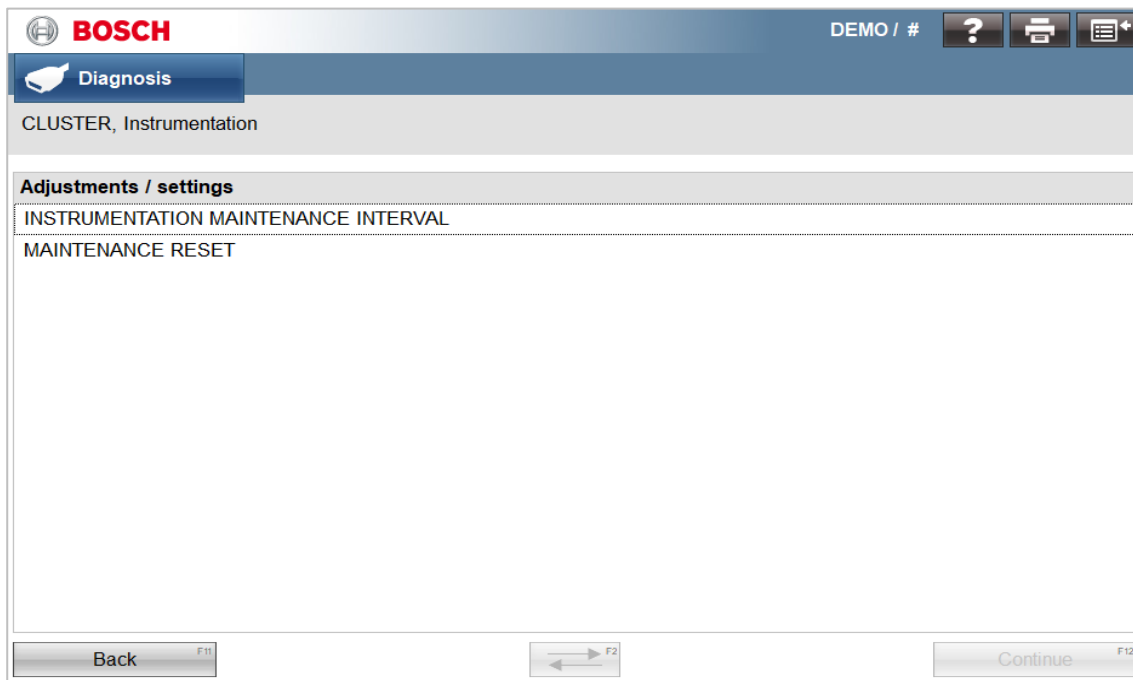
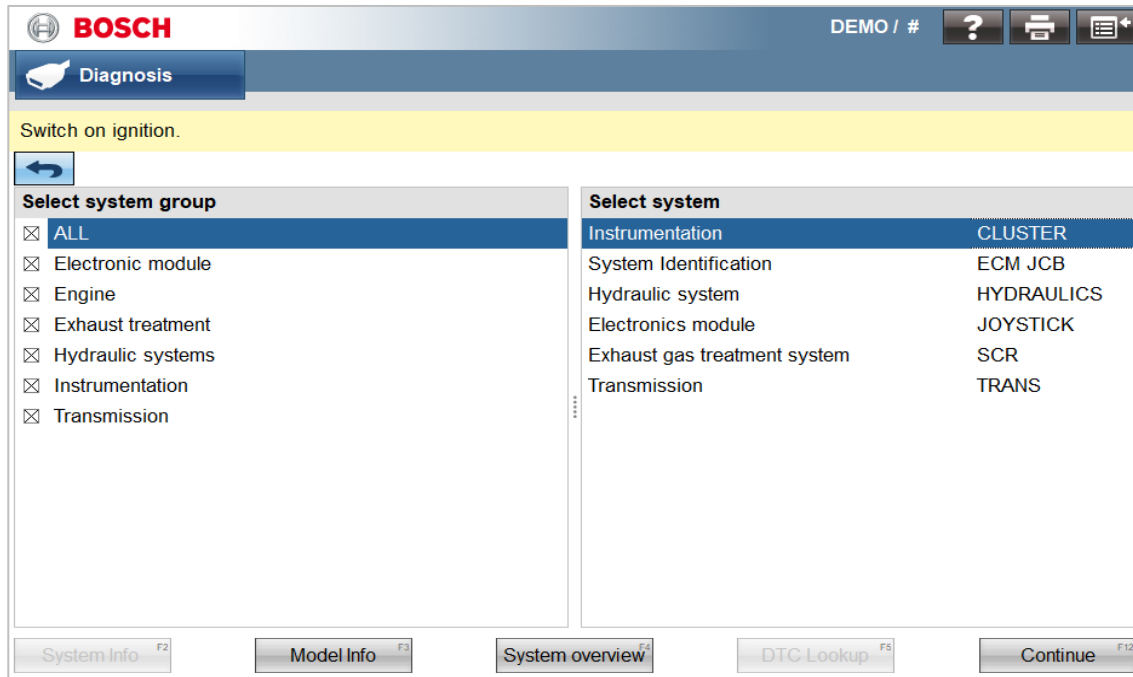


➤ Available in models:

- 100 / 20 / 10 Series
- 300 Series
- 600/700/800 Series
- 900 Series

4.2 JCB

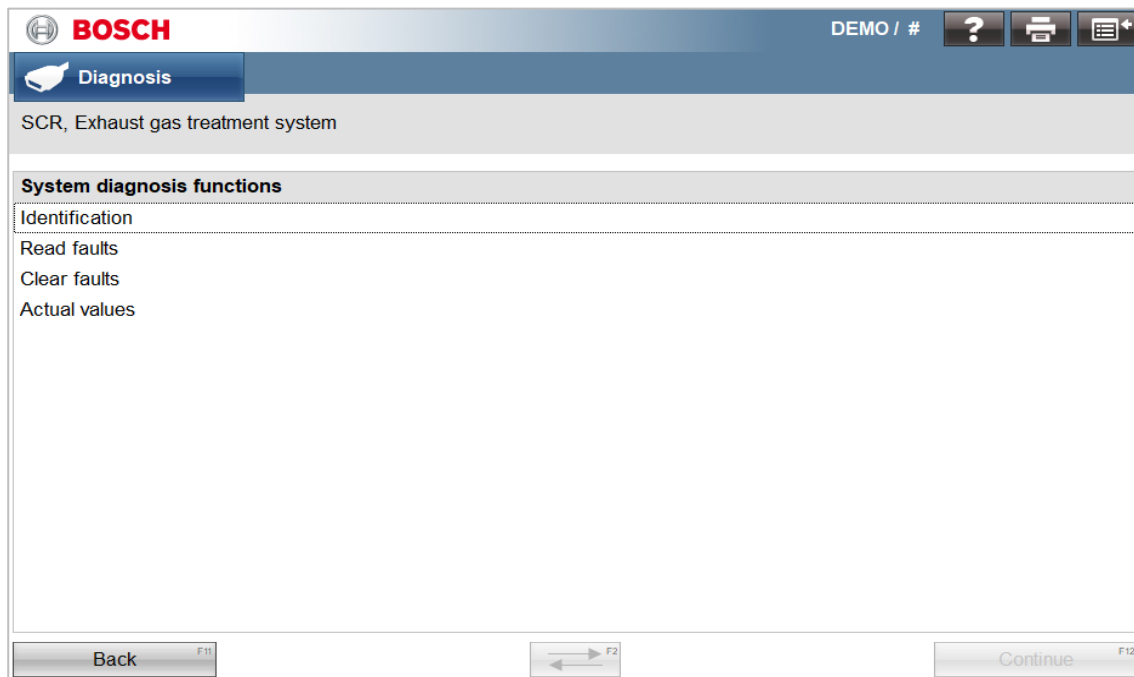
- New maintenance reset, Cluster – Instrument cluster



➤ 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

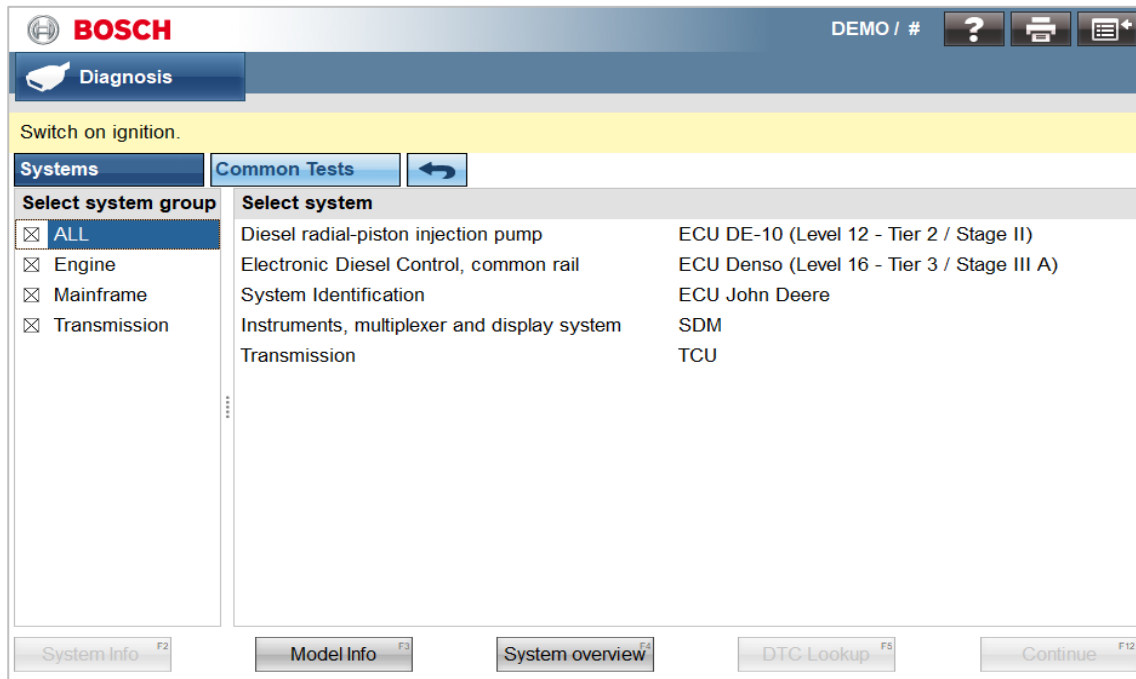
- New brand with new **229 models** classified in 27 families

The screenshot shows the BOSCH Diagnosis software interface. At the top, there is a header with the BOSCH logo and the text "Diagnosis". Below this is a "Vehicle Identification" section. It contains three columns of selection options:

- Select a make:** A list of manufacturers including COMETTO, CVS FERRARI, DOOSAN, FIAT KOBELCO, GROVE, HAMM, HITACHI, HYDREMA, HYSTER, HYUNDAI CE, JCB, **JOHN DEERE** (highlighted), KALMAR, and KOBELCO.
- Select a model family:** A list of model families including ALL (highlighted), 300 Series, 700 Series, C Series, CH Series, CT Series, D Series, E Series, EP Series, G Series, GP Series, GR Series, GW Series, and H Series.
- Select a model:** A list of specific models including 1050K (highlighted), 120C, 120D, 130G, 135G, 160C LC, 160D LC, 160G LC, 17D, 17G, 180G LC, and 190GW.

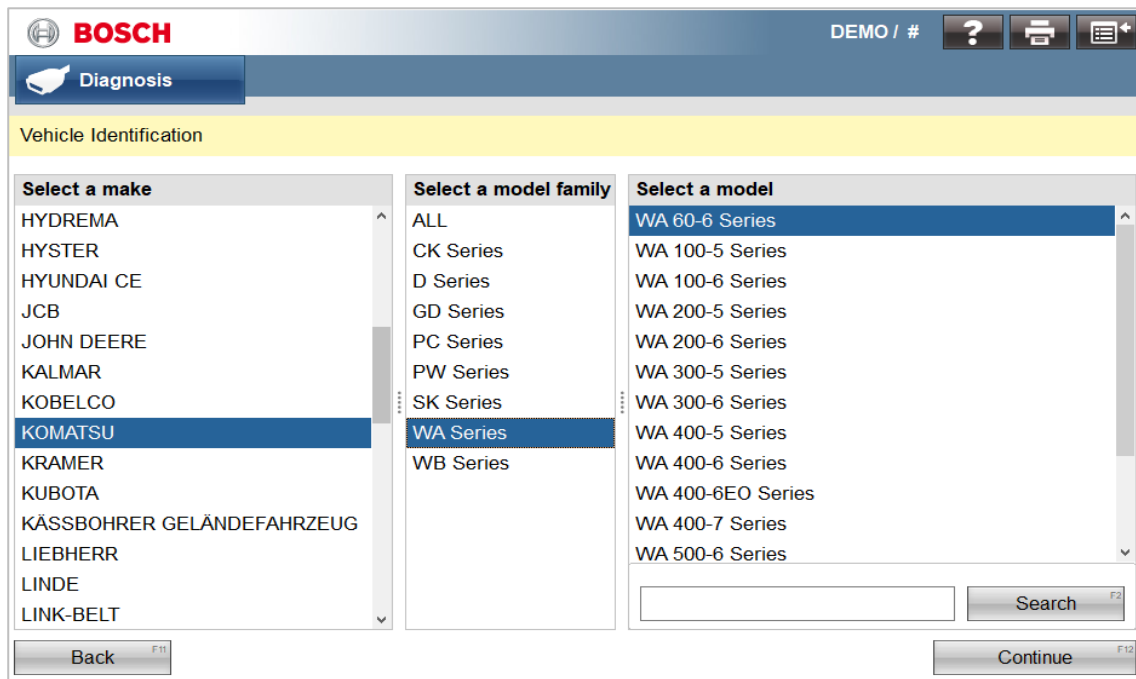
At the bottom of the interface, there are two buttons: "Back" (F11) and "Continue" (F12). A "Search" button (F2) is also present at the bottom right of the model selection list.

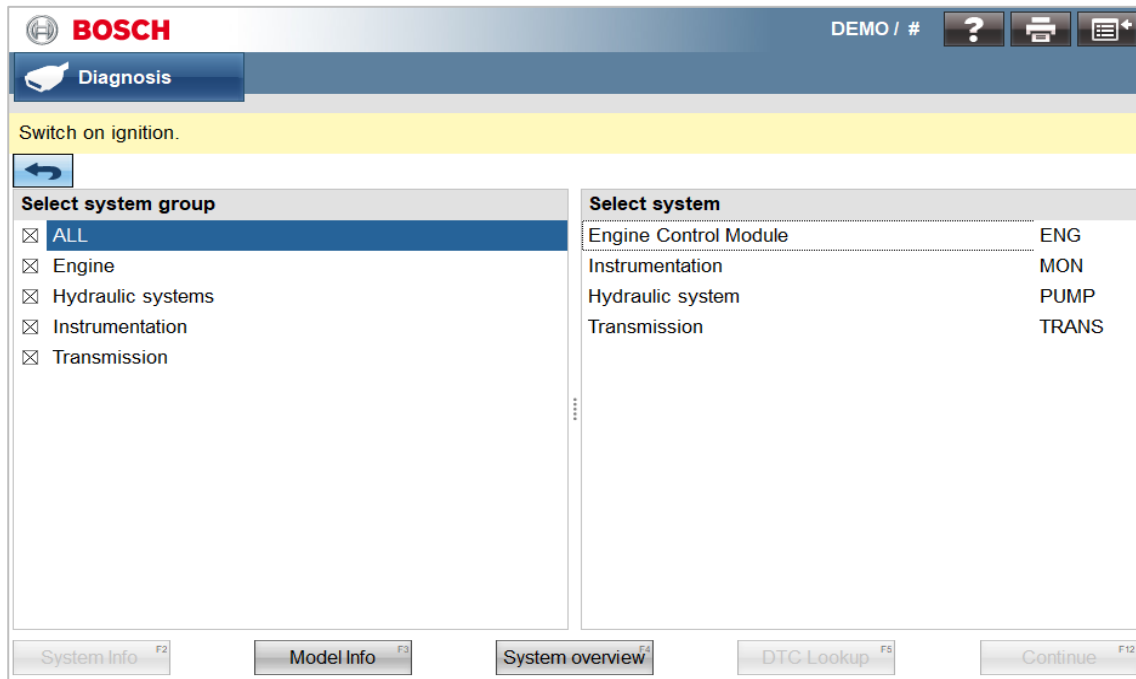
- New systems
 - ECU John Deere – System identification
 - ECU EUI (Level 18 – Tier 3 / Stage III A)
 - HCU – Hydraulic system
 - EMU – Body Computer
 - TCU – Transmission
 - SDM – Instrument cluster



4.4 Komatsu

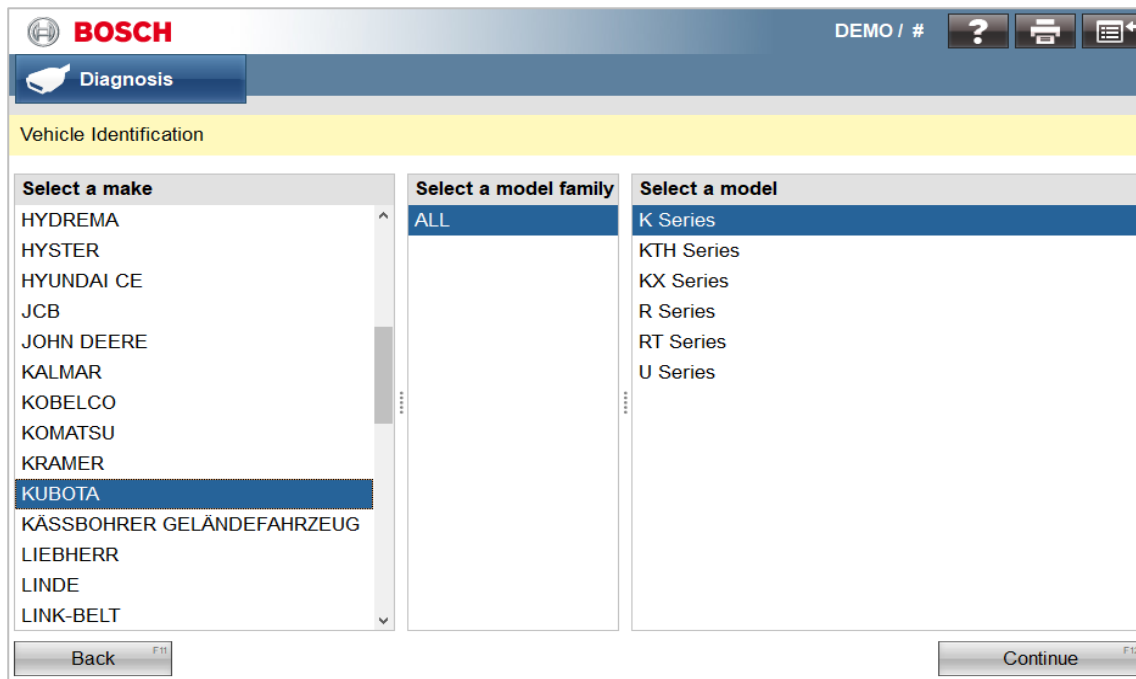
- New models and systems



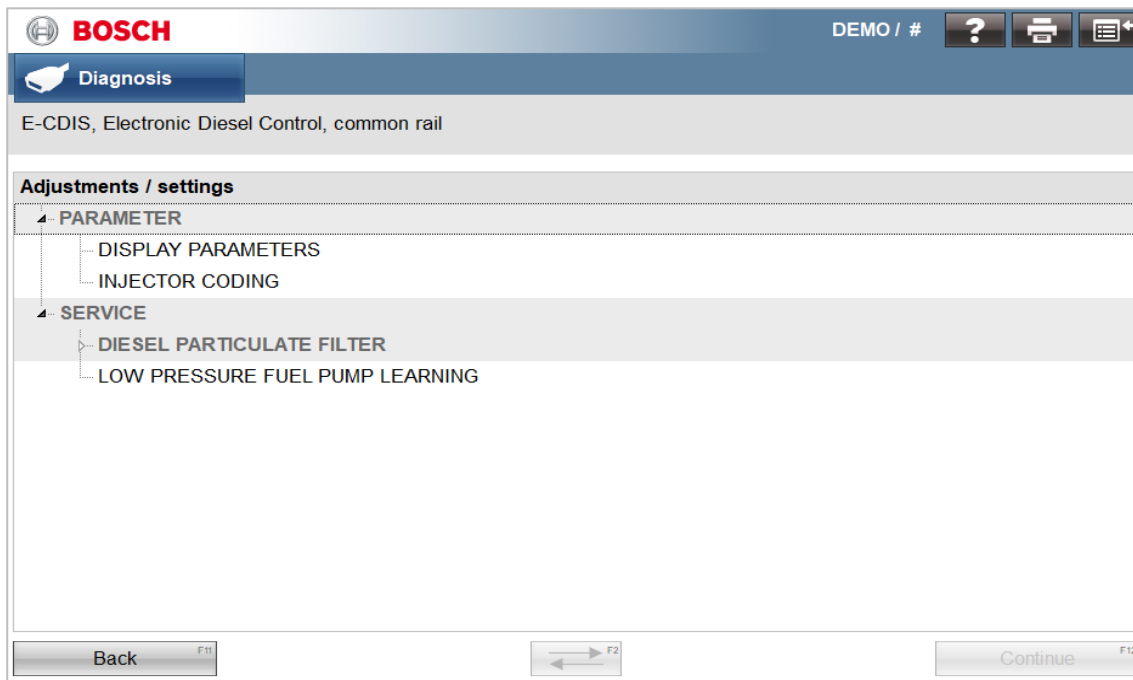


4.5 Kubota

- New models and systems

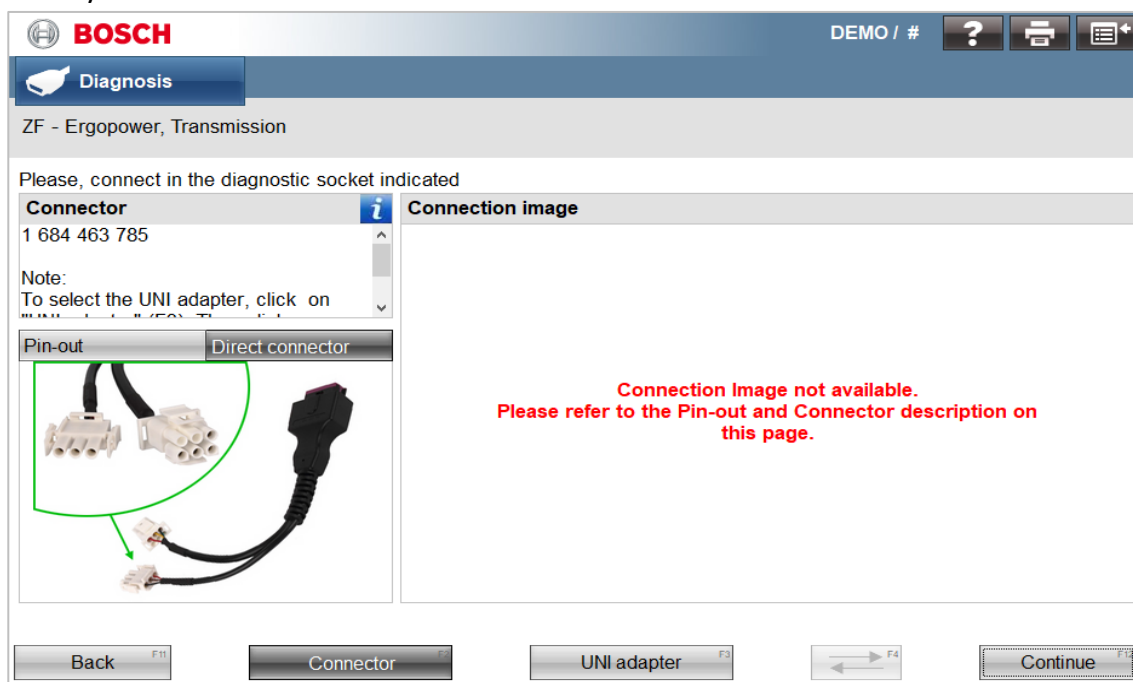


- New functions in E-CDIS – Electronic Diesel Control
 - Injector coding
 - Particulate filter regeneration
 - Aftertreatment system resets



4.6 Transmission ZF

- New system



BOSCH DEMO / # ? [Print] [List]

Diagnosis

ACTUAL VALUES SELECTION - ZF - Ergopower, Transmission 1/2

Name	ACTUAL VALUE	MIN VALUE	MAX VALUE
CLUTCH K1 SOLENOID VALVE	425 mA	0	600
CLUTCH K2 SOLENOID VALVE	250 mA	0	600
CLUTCH K3 SOLENOID VALVE	438 mA	0	600
CLUTCH K4 SOLENOID VALVE	44 mA	0	600
CLUTCH KR SOLENOID VALVE	346 mA	0	600
CLUTCH KV SOLENOID VALVE	500 mA	0	600

Back F11 Info F2 F3 Save F4 F5 F6

➤ Available in Doosan, JCB, Hydrema, Terex, Hyundai

4.7 Volvo CE

- Improve Machine System Scan adding OBD connector and UDS communication protocol

BOSCH DEMO / # ? [Print] [List]

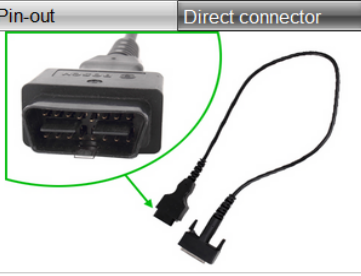
Diagnosis

System overview

Please select a diagnostic connector

Connector	Connection image
1 684 465 611	

Pin-out Direct connector



Connection Image not available.
Please refer to the Pin-out and Connector description on this page.

1 2 3

Back F11 Continue F12

BOSCH DEMO / # ? [Print] [List]

Diagnosis

Automatic system identification

Systems

Systems identified: 5 [Clear faults] [Read faults] [Repeat scan]
 (Double click on a system below to diagnose) [Hide all faults]

EDC, Electronic Diesel Control [Hide faults]

PSID:115	Level of the AdBlue/DEF (diesel exhaust fluid) tank. Tank empty [Long term error, even after repair this fault can't be cleared for a minimum of 400 days or 9600 engine operating hours.]	DEMO	1
PPID:273	AdBlue / DEF pressure.	DEMO	1
PSID:201	SAE J1939 Circuit break during data linking, vehicle control unit.	DEMO	1

Exhaust treatment

SA 17, Exhaust treatment [Hide faults]

CODE:P229F	Nitrogen oxide sensor.	DEMO	1
CODE:P0658	AdBlue / DEF heating resistor. Supply.	DEMO	1

Instrumentation

IC, Instrumentation [Hide faults]

CODE:1563278 FMI:9	Internal error in control unit. Device fault.	DEMO	1
--------------------	---	------	---

Mainframe

[Back F11] [System Info F2] [Model Info F3] [Save F4] [Troubleshooting F10]

- New particulate filter regeneration in EMS V3

BOSCH DEMO / # ? [Print] [List]

Diagnosis

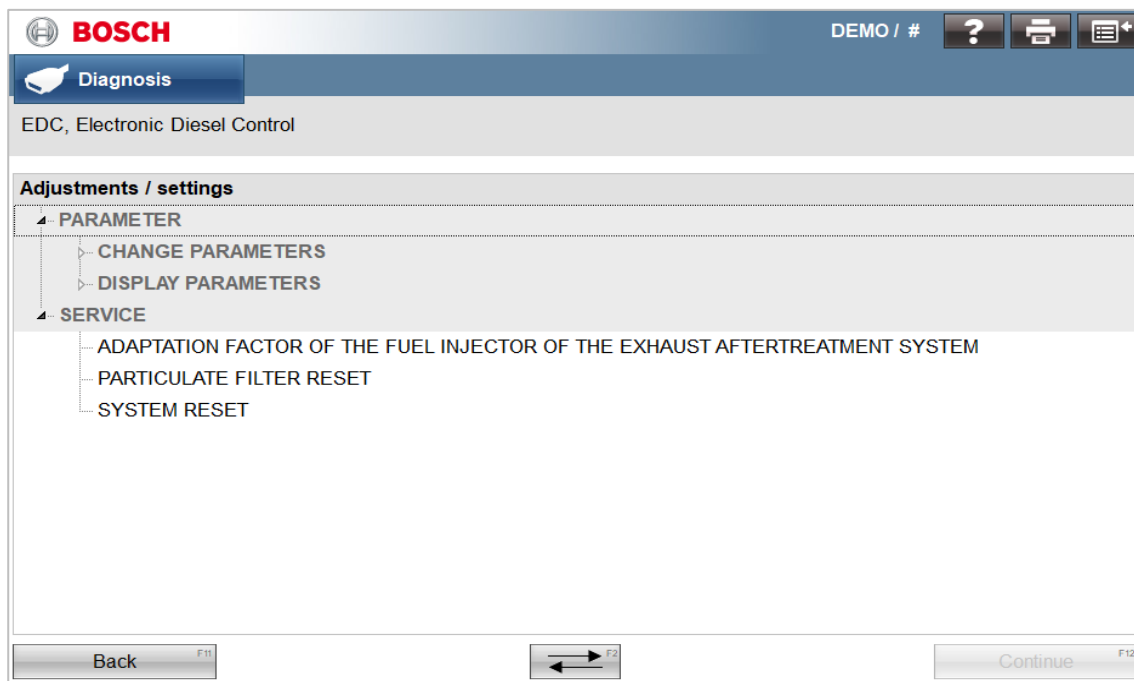
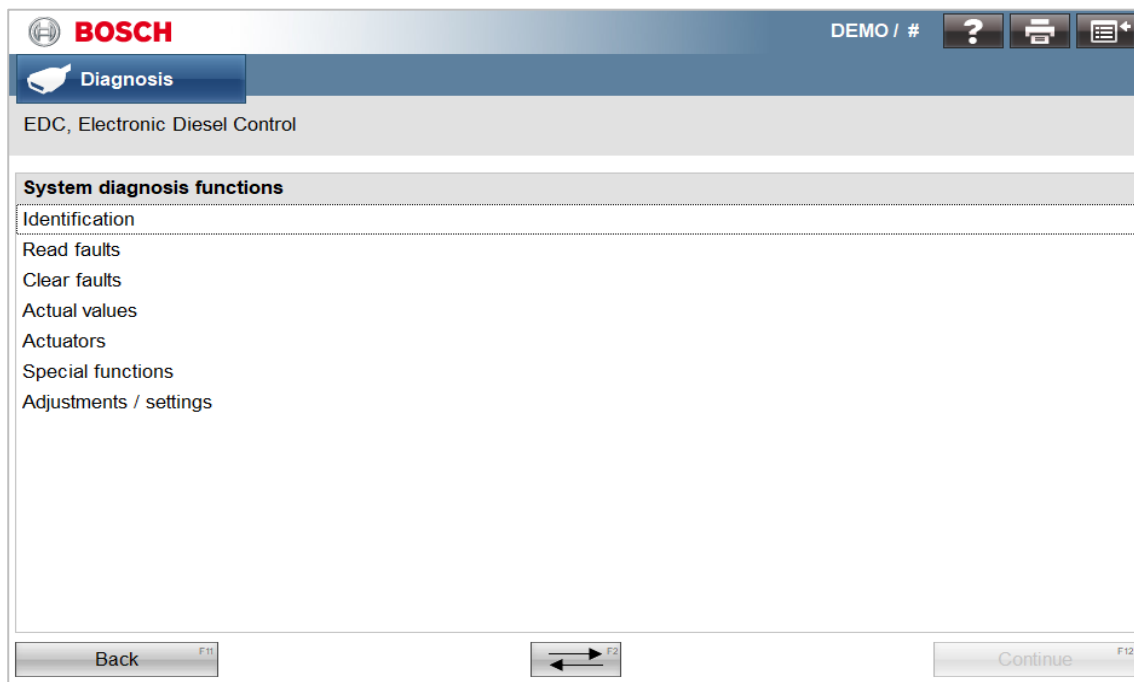
EMS V3, Engine Control Module

Adjustments / settings

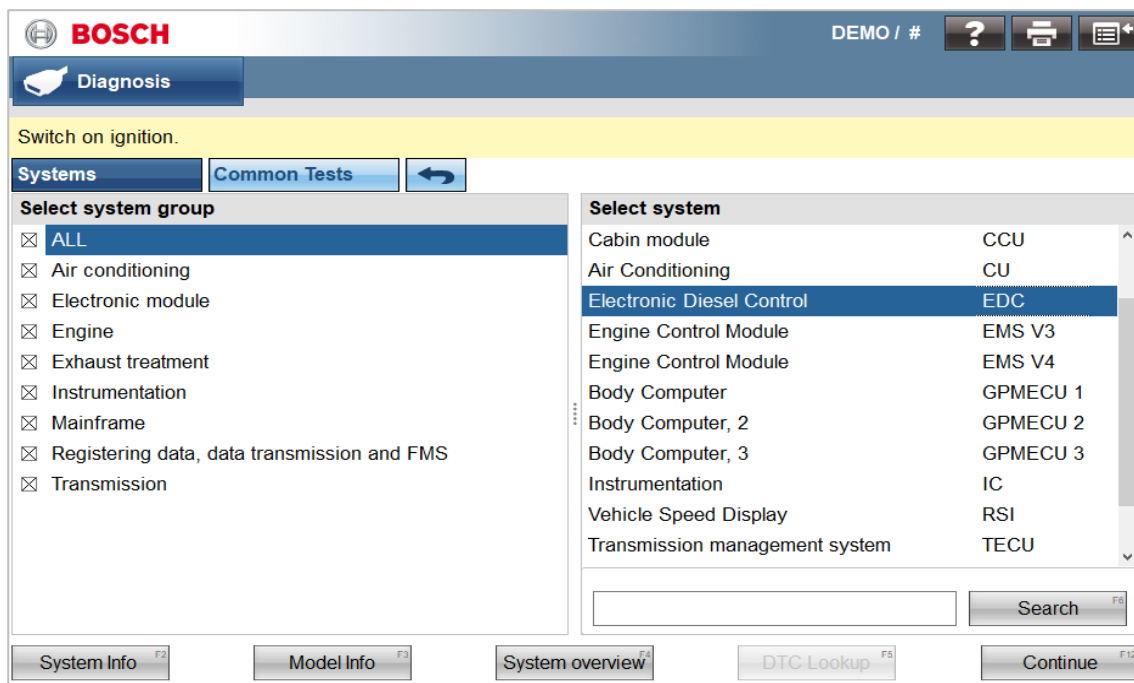
- ▾ PARAMETER
 - CHANGE PARAMETERS
 - DISPLAY PARAMETERS
- ▾ SERVICE
 - PARTICULATE FILTER REGENERATION
 - PARTICULATE FILTER RESET
 - REGENERATION OF THE SCR CATALYTIC CONVERTER
 - RESET OF THE EXHAUST GASES AFTER-TREATMENT SYSTEM
- ▾ CALIBRATION
 - VARIABLE GEOMETRY TURBOCHARGER (VGT)

[Back F11] [↔ F2] [Continue F12]

- New **particulate filter regeneration** and injector code in EDC

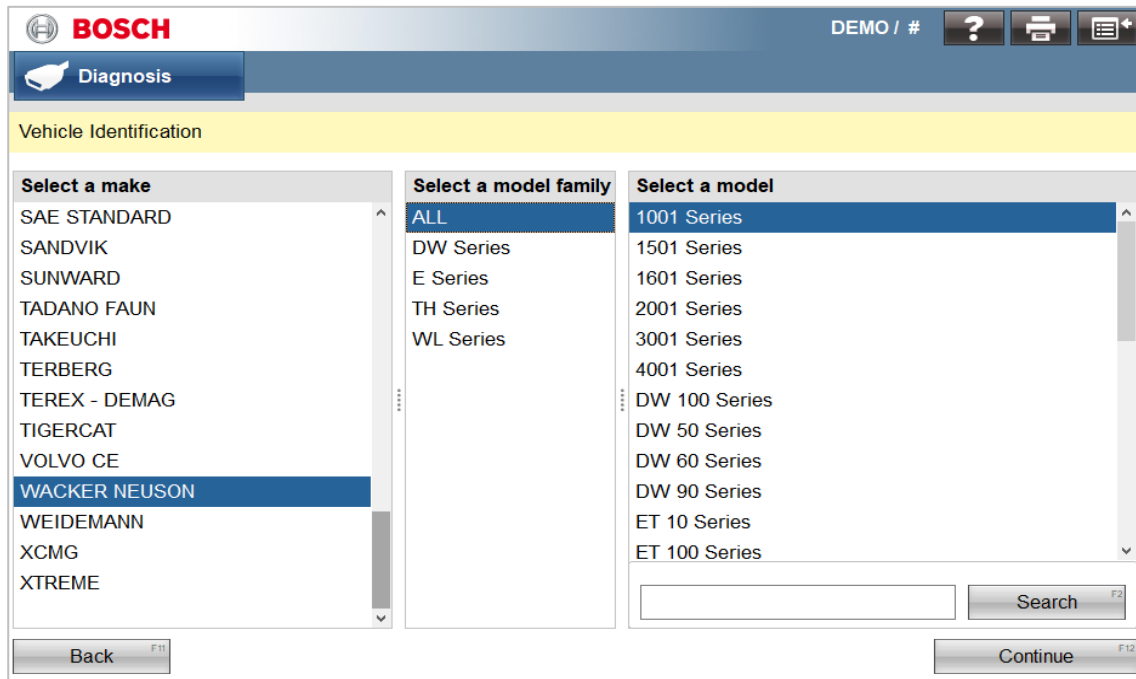


- New systems
 - CCM – Climate Control
 - GPMECU 1 – Body Computer
 - GPMECU 2 – Body Computer 2
 - GPMECU 3 – Body Computer 3

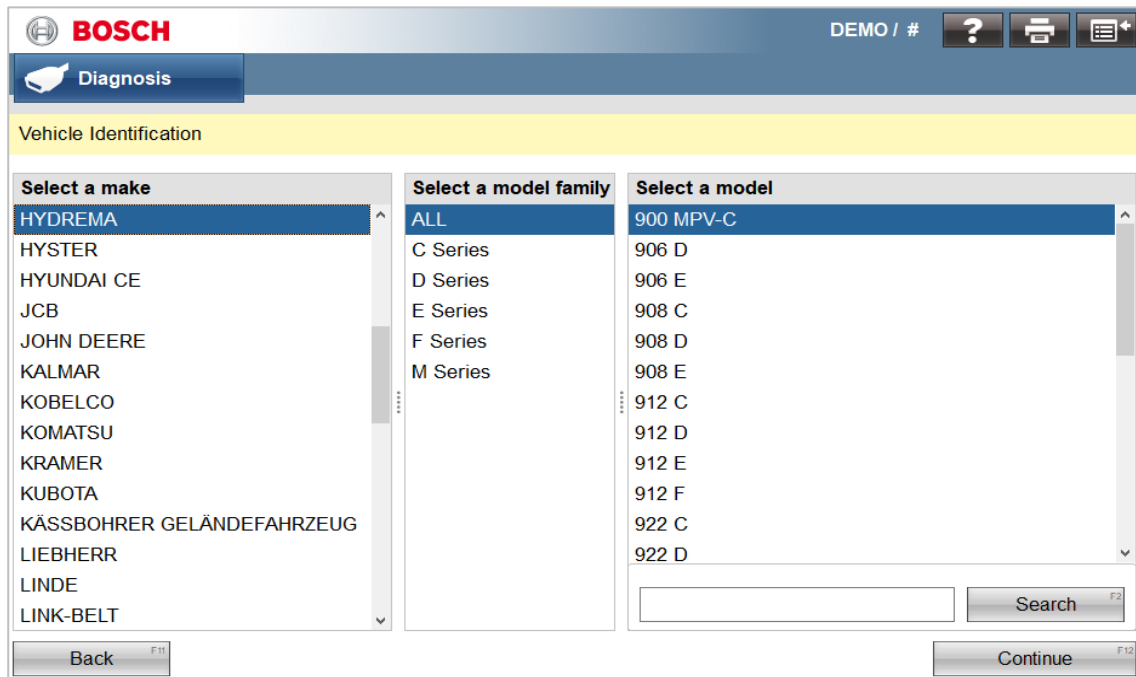


4.8 New brands and models

- **Wacker Neuson:** New 31 models



- **Hydrema:** New 28 models

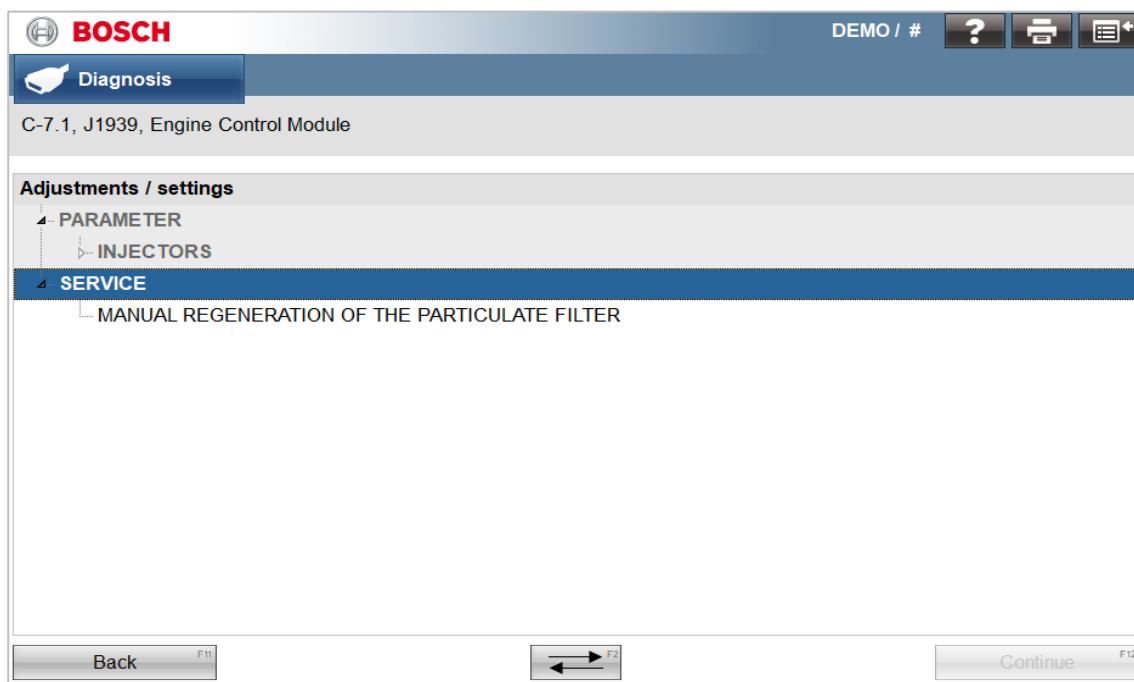


. 5 .

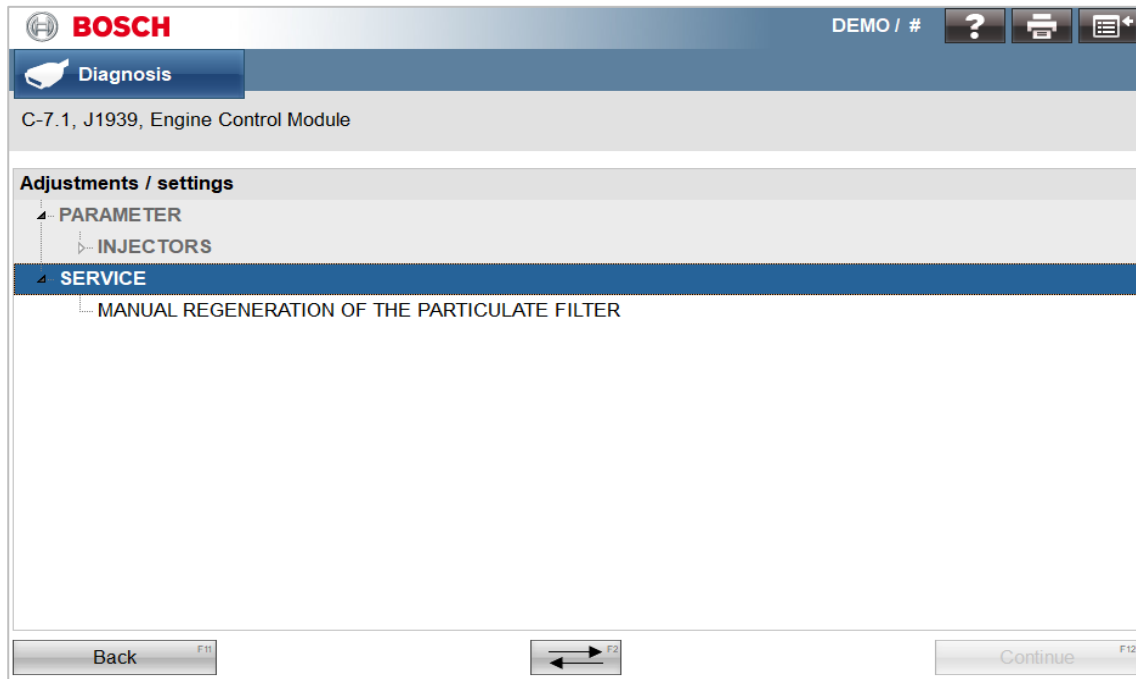
Main new functionalities by brand Stationary engines

5.1 CATERPILLAR

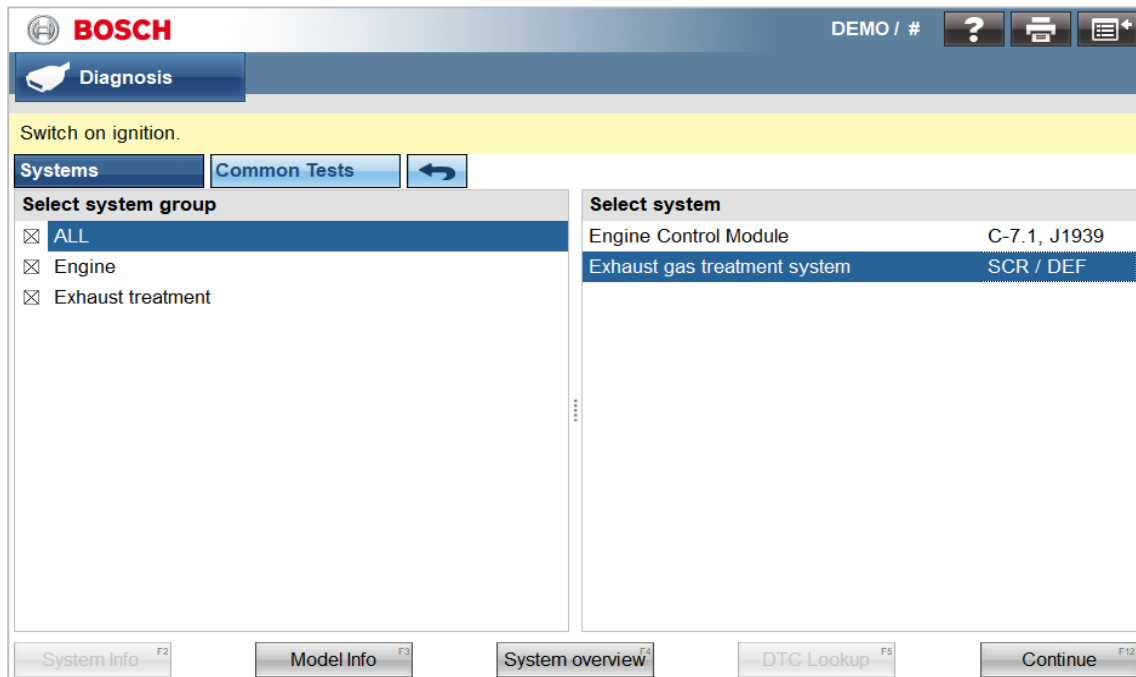
- New function, **injector coding** in J1939 to C-7.1 and C-4.4 / C-6.6 engines.



- New **diesel particulate filter regeneration** in J1939 to C-9.3, C-4.4 / C-6.6 and C-7.1



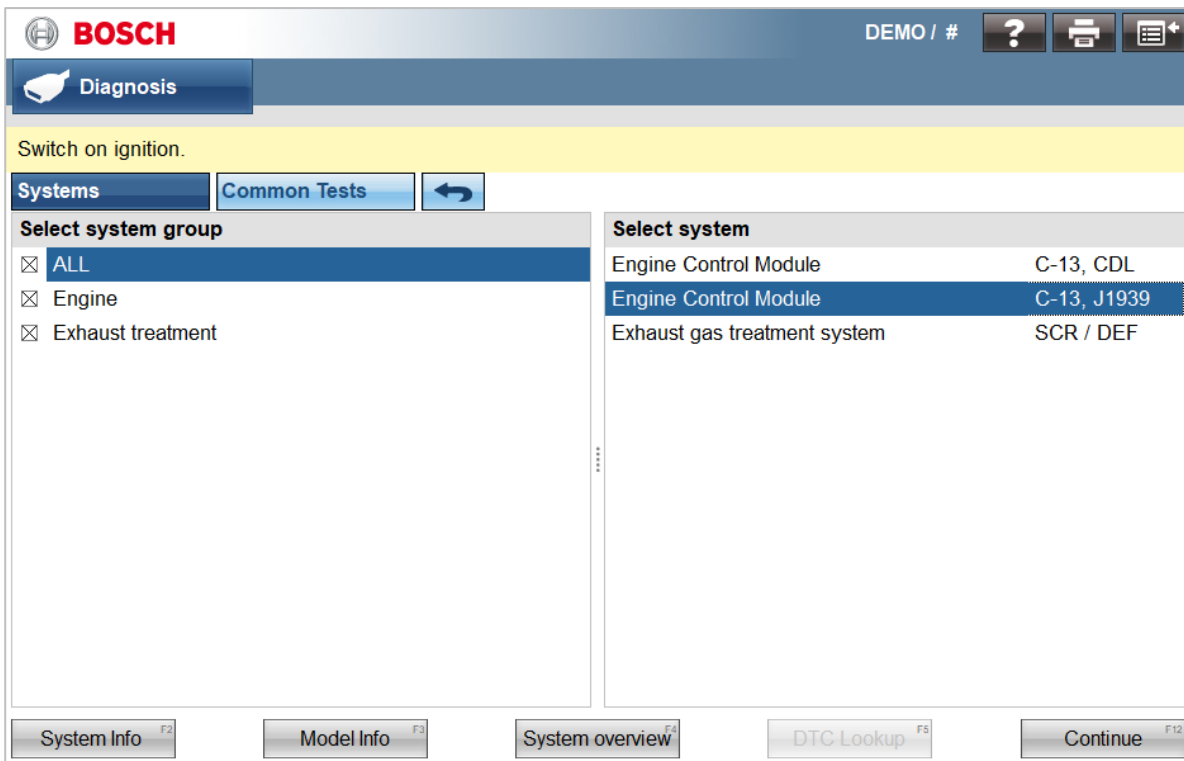
- New system, SCR / DEF – Exhaust gas treatment system



➤ Available in models:

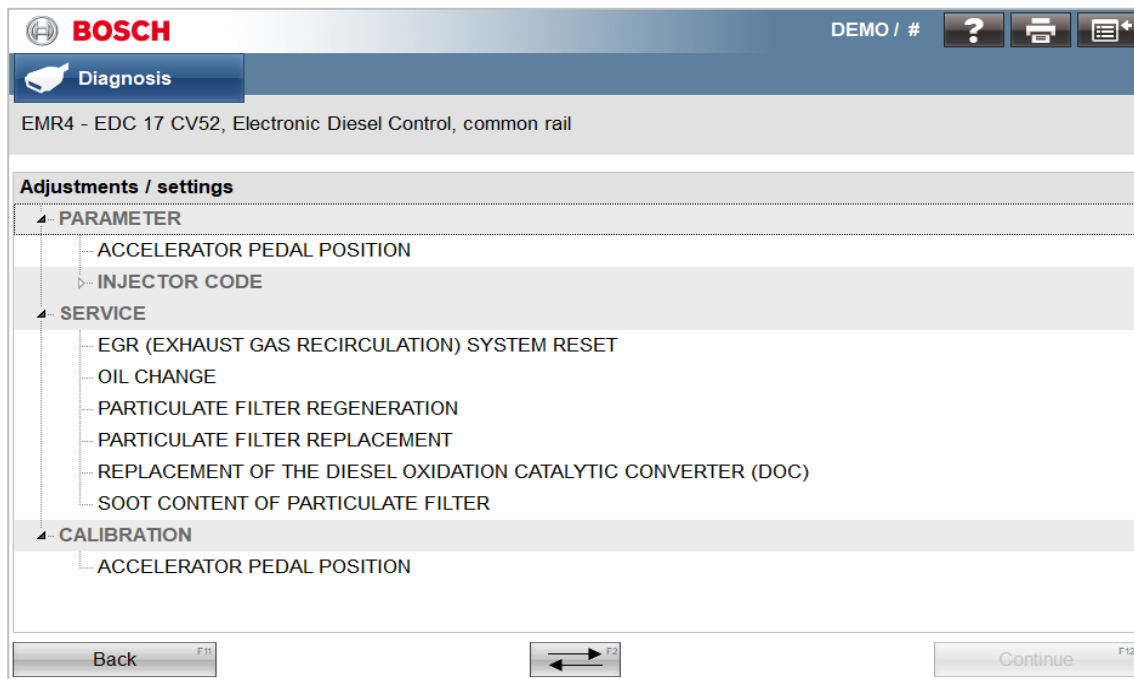
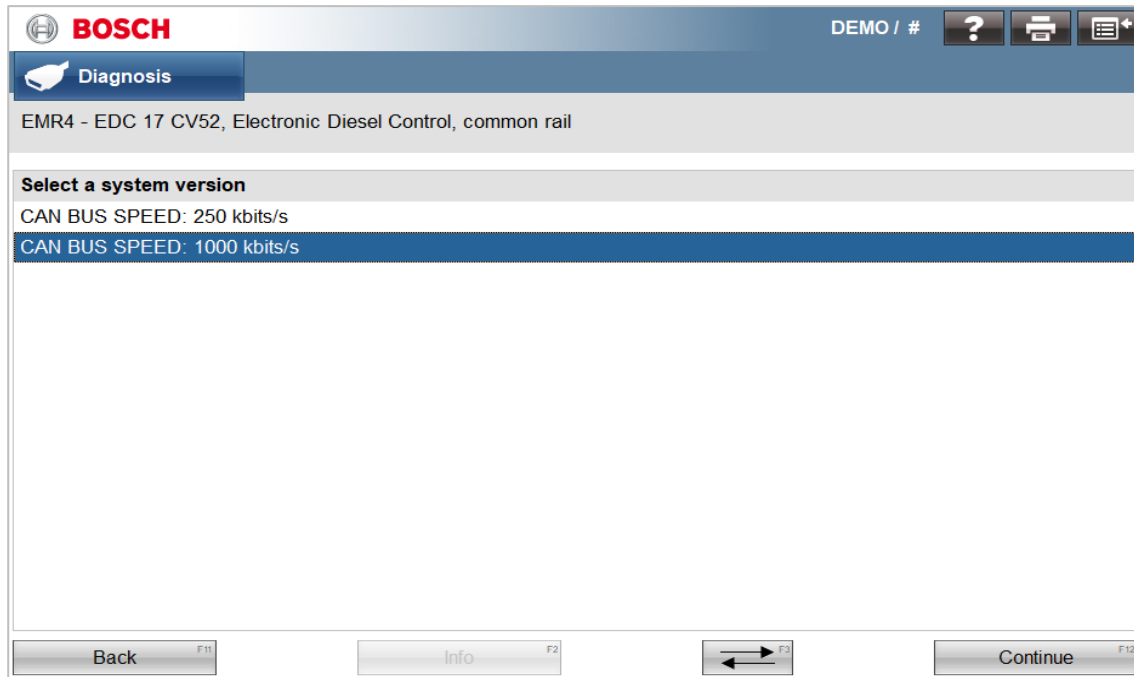
- C-13
- C-15
- C-18
- C-7.1
- C-9.3

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



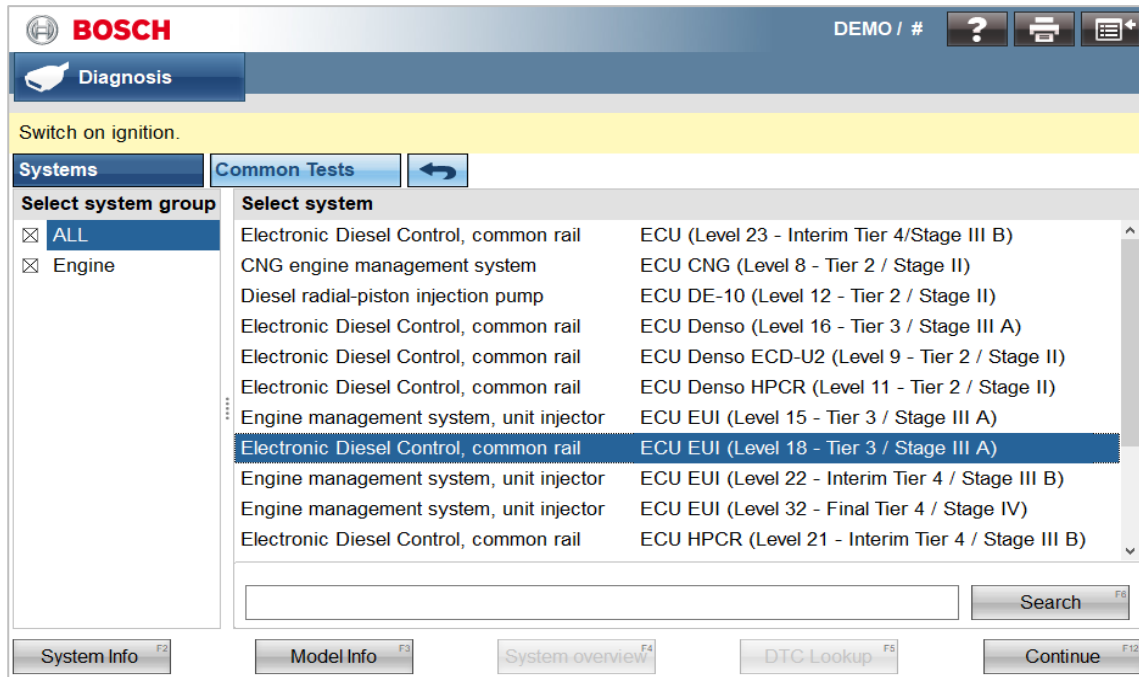
5.2 DEUTZ

- New functions, EMR4 EDC 17 CV52



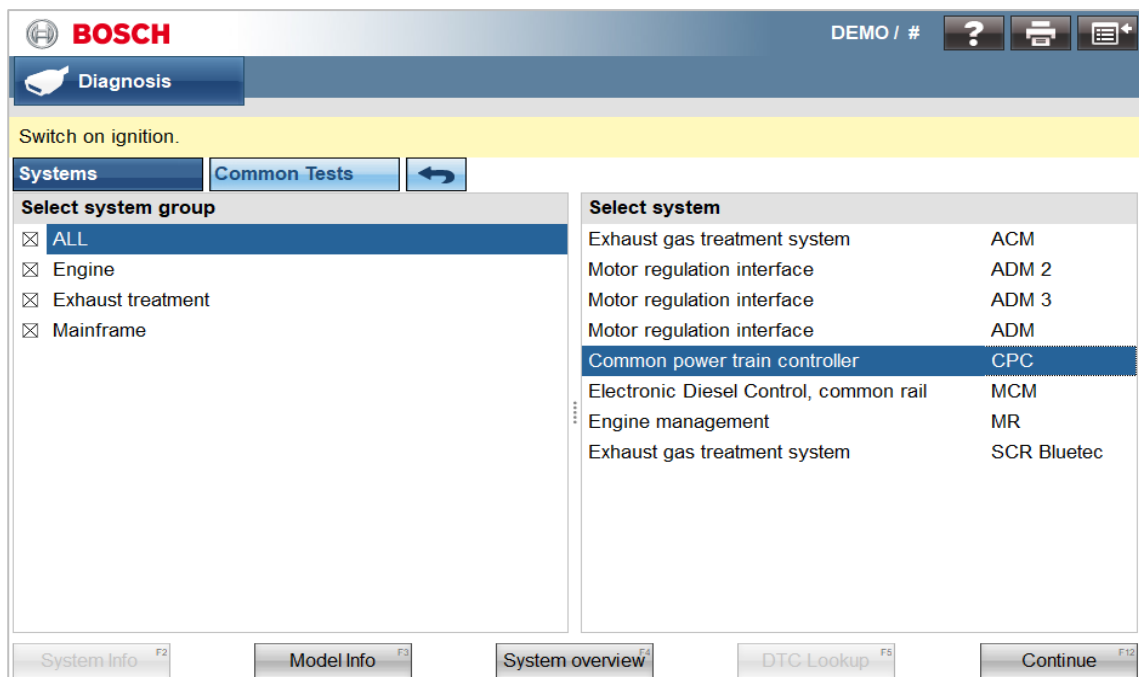
5.3 John Deere

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



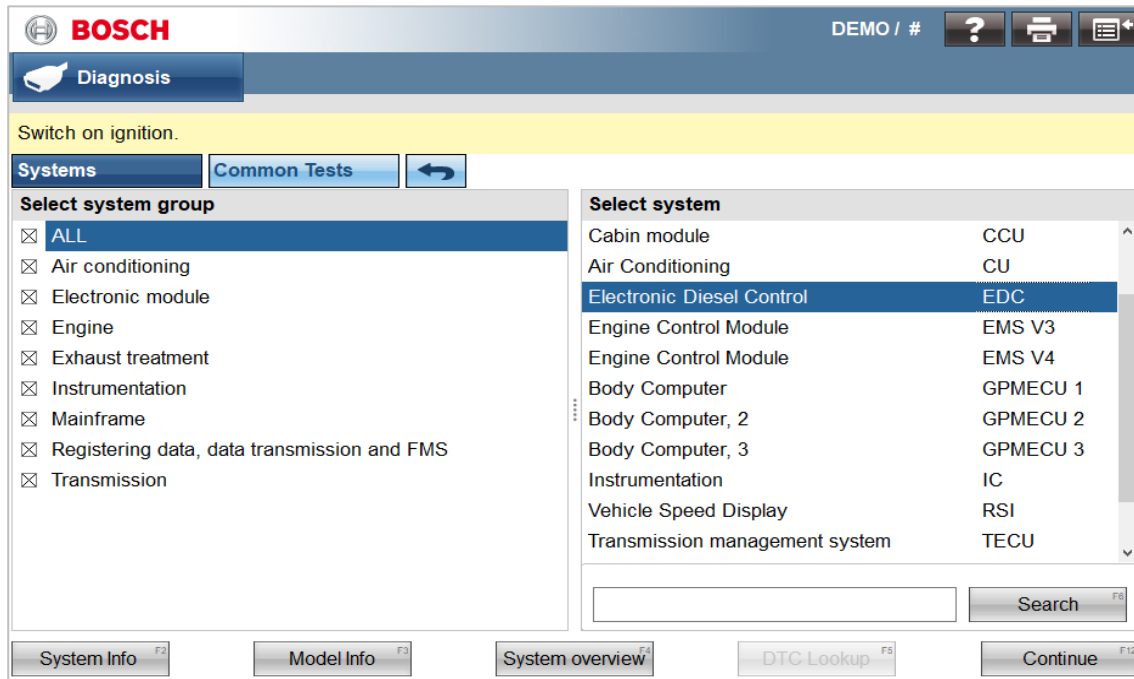
5.4 Mercedes Benz

- New system CPC – Common Powertrain Controller



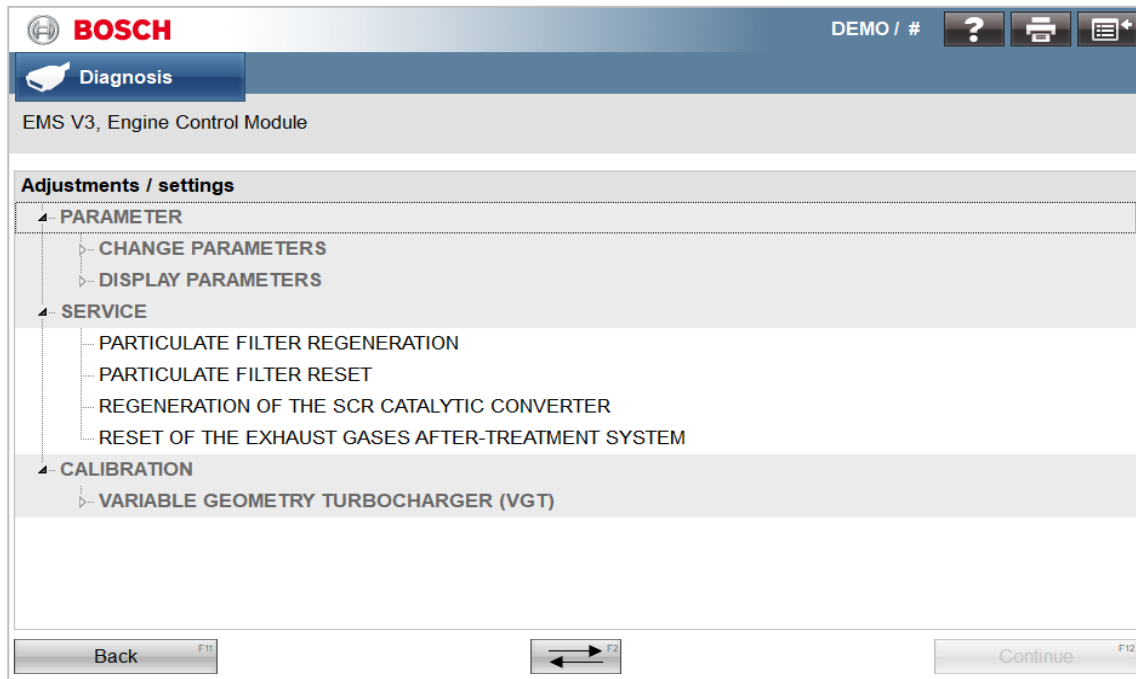
5.5 Perkins

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

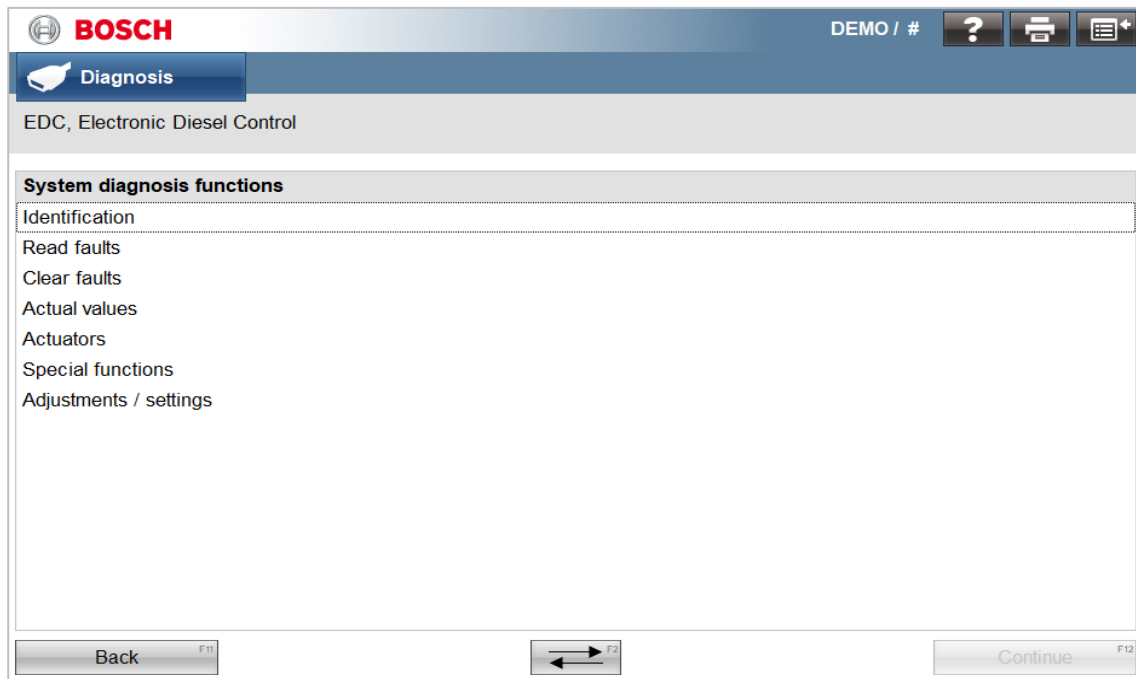






5.6 Volvo Penta


- New **particulate filter regeneration** in EMS V3



- New **particulate filter regeneration** and injector code in EDC




 **BOSCH** DEMO / #   

 **Diagnosis**

EDC, Electronic Diesel Control

Adjustments / settings

- ▾ PARAMETER
 - CHANGE PARAMETERS
 - DISPLAY PARAMETERS
- ▾ SERVICE
 - ADAPTATION FACTOR OF THE FUEL INJECTOR OF THE EXHAUST AFTERTREATMENT SYSTEM
 - PARTICULATE FILTER RESET
 - SYSTEM RESET

Back F11  F12 Continue F12

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Warren, MI 48092
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