

## Version 4.1

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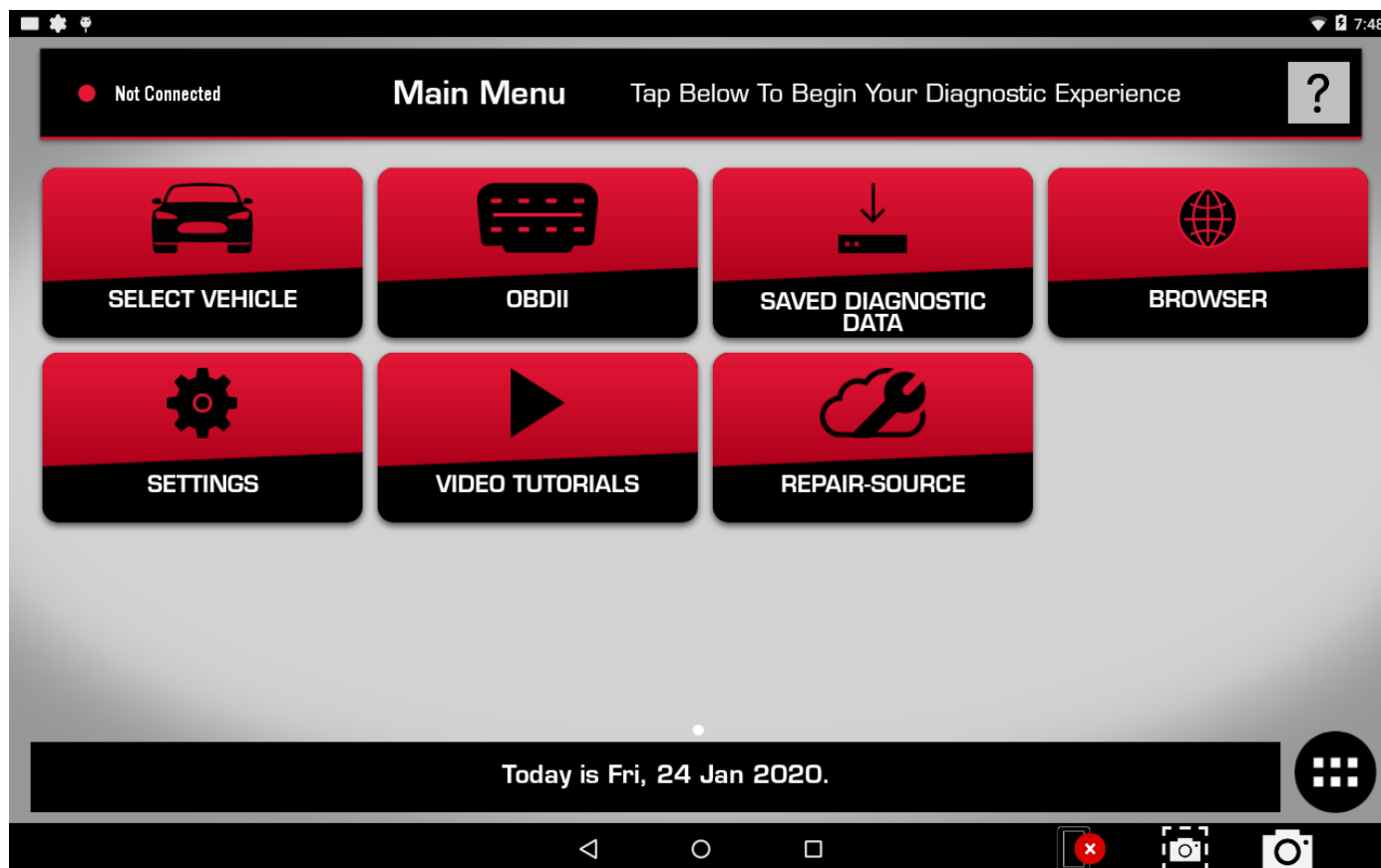
### Overview 4.1.2.6

The new version 4.1.2.6 contains new coverage additions and software improvements. Selected highlights listed below of new special tests and performance enhancements as requested by technicians. Many more included in the software that are just too numerous to identify individually.

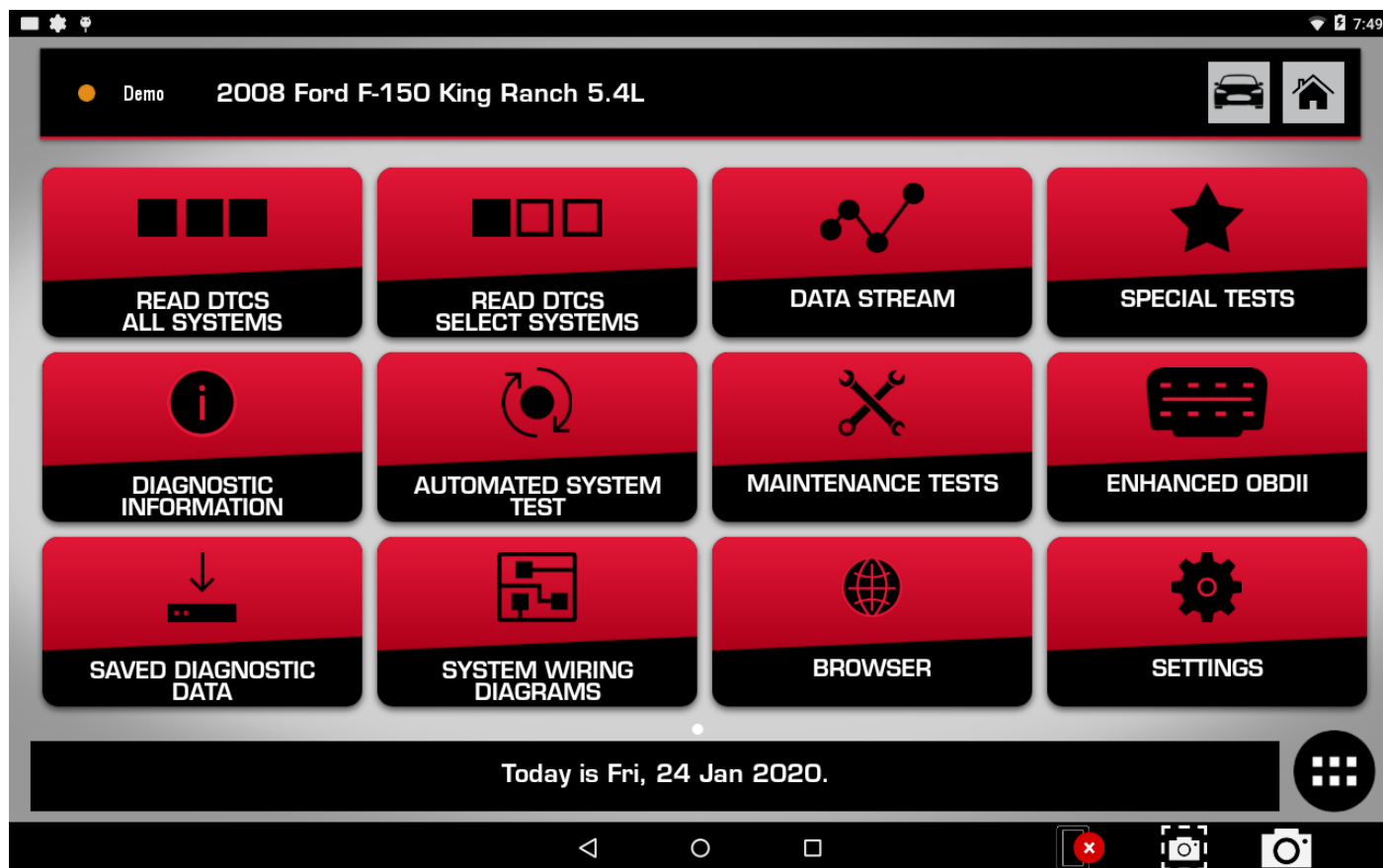
### Overview 4.1.3.1

The new version 4.1.3.1 contains a new user interface for MAC Tools. The Main Menu and Vehicle Diagnostics Menu have been given a refreshing new look.

### Main Menu



## Vehicle Diagnostics



## New Coverage - Summary

- **New Actuation and Adjustment tests for:**
  - Euro: Alfa Romeo, Audi, BMW, Fiat, Mercedes, Volkswagen
  - Domestic/Asian: Chrysler, Jeep, GM and more
- **Updated Diagnostic Information for the following:**
  - DTC Circuit Description for 2017-2018MY Jeep and 2018-2019MY GM
  - DTC Possible Causes for 2016-2018MY Chrysler/Jeep, 2018-2019MY Ford and 2018-2019MY GM
  - Code Info (setting conditions) for 2017-2018MY Chrysler/Jeep, 2018-2019MY Ford and 2018-2019MY GM
  - Code-Assist Library confirmed fixes
  - SymptomAssist
  - Battery Disconnect procedures and reference information
  - Key Programming procedures and reference information

## New Coverage Details – USA Domestic

### Chrysler/Jeep Coverage

- Added coverage for 246 new vehicle-ecu combinations

#### 14 new Adjustment type special tests including:

- **Engine/PCM** - SCR System Wiring Harness Replacement, VGT Actuator PreAlign And Calibration
- **Transmission/Electronic Shifter** - Clear Learning Value, TCC Break In
- **Climate (HVAC)** - Enable/Disable Ambient Sensor, HVAC Update
- **Body Control** - DRL Enable, Program Tire Size

#### 2,236 new Actuation type special tests including:

- **Engine/PCM** – A/C control tests, Alternator Field tests, Cam/Crank Misalign, CNG Injector Relay, Cooler Bypass Valve, Cylinder Deactivation tests, Dual Speed Fuel Pump Relay, Dual Speed Oil Pump, EGR Valve tests, ETC System Test, EVAP tests, Fan tests, Fuel Injector Control tests, Fuel Injector Balance, Injector Enable (All Cylinders), Multiair VVA Solenoid tests, NVLD Forced Monitor Test, Oxygen Sensor tests, Vacuum Pump Relay, VVT Intake and Exhaust Phaser tests, Wastegate Solenoid tests, Transmission Solenoid tests
- **Transmission/Electronic Shifter** - LC Solenoid , Modulator Solenoid Test
- **Hybrid** - Hybrid Battery Device Control tests, APM Status, High Temp Shut-Off Valve
- **ABS** – Inlet and Outlet Valve tests, Pump Motor Tests, Lamp/Indicator tests, Pilot Valve tests, Priming Valve tests, Recirculation Pump Activation, Vehicle Speed Output
- **Safety/Restraint** - Front Passenger Airbag Inhibition, Passenger Occupant Detection Sensor (ODS), Third Row Left Seatbelt Switch
- **Transfer Case** - T-Case Motor Duty Cycle, T-Case Motor Solenoid Lock, T-Case Motor/Motor Lock
- **Instrument Cluster** - Illuminate All VF Display segments, Fuel Gauge Test, Lamps Actuation, Pointer Actuation, Indicator/Lamp tests
- **Climate (HVAC)** - Air Vent/Floor Motor Distribution tests, Circulation Pump, Cabin Temperature Sensor, External Temperature, Humidity Sensor tests, Indicator/Lamp tests, Right Temp. Door Actuator Position, Solar Load Sensor tests
- **Body Control** - Lamp and Buzzer/Warning tests, Door Lock tests, Flash Programming Voltage Control, Window tests, Wiper/Washer tests, Headlight tests, Turn Signal tests, Diesel Fuel Heater Relay, Fuel Level Output, Oil Pressure Output, Vehicle Speed Output
- **Others** - tests for AUDIO, INTEGRATED CENTER STACK, DOOR MODULE, POWER LIFTGATE MODULE

#### Updated Diagnostic Information for the following:

- DTC Circuit Description for 2017-2018MY Jeep
- DTC Possible Causes for 2016-2018MY
- Code Info (setting conditions) for 2017-2018MY

### Ford Coverage

- ADAS Front Radar Dynamic calibration routines

#### 4 new Adjustment type special tests including:

- **Brakes/ABS** - Electronic Integrated Park Brake
- **ADAS/Driver Assist** - Radar Calibration for CRUISE CONTROL MODULE

#### 2 new Actuation type special tests including:

- **Engine/PCM** – Pressure Control Solenoid A
- **Others** - Tests for PARK BRAKE CONTROL MODULE

#### Updated Diagnostic Information for the following:

- DTC Possible Causes for 2018-2019MY
- Code Info (setting conditions) for 2018-2019MY

## General Motors Coverage

#### 598 new Actuation type special tests including:

- **Engine/PCM** –AIR Service Bay Test, APM Set Point Control, Camshaft Actuator tests, Cylinder Deactivation System, Cylinder Power Balance, Depressurize Fuel System, EGR System Seal, Engine Speed Control, EVAP tests, Fuel Pump tests, Fuel Injector Balance, Fuel Injector tests, Fuel Pressure tests, Fuel Pump tests, Fuel Transfer Pump, Glow Plug tests, IAC RPM, Injector Enable (All Cylinders), Intake Manifold Runner Control, Oxygen Sensor tests, Starter Relay
- **Hybrid** - Battery Pack Fan Speed, Hybrid/EV Electronics Coolant Pump, High Voltage Disabling, ICE Only Mode, Negative Contactor, Service Charge
- **Transmission** - Clutch PC Solenoid tests, Line Pressure tests, Pressure Control Solenoid tests, Shift Solenoid tests, TCC Solenoid tests
- **ABS/Parking Brake** – Indicator/Lamp tests, ABS Motor, ABS Relay Test, Solenoid tests, Magnasteer Test, Pump Motor, Requested Torque Test, Steering Position Sensor Test, Rear Brake Caliper Piston Extend and Retract tests, Parking Brake Cable tests
- **Transfer Case** - ATC Motor A Control, ATC Range, Differential Lock Return Test, Engage Front Axle, Motor A Driver – Low, Motor B Driver – Low, Pump Motor, Indicator/Lamp tests, Transfer Case Lock
- **Suspension** - ALC Compressor tests, Shock Absorber Actuator tests, Rear Suspension Position Sensor Trim Height
- **Instrument Cluster** – Indicator/Lamp tests, Fuel Gauge Sweep
- **Climate/HVAC** - A/C Compressor Performance Test, Afterblow Configuration, Auxiliary Mode Door, Blower Motor, Defrost Door, Indicator/Lamp tests, Rear Actuator Position, Recirculation Motor Position, Temperature Door Position
- **Steering** - Magna Steer Test, REAR WHEEL STEER tests, STEERING WHEEL AND COLUMN tests, VES Slew Test
- **Body Control** – Indicator/Lamp tests, Door Lock tests, ASC Motor tests, Inclination Sensor, Headlamp Washer, High Beams, Rear Washer, Sunroof Actuator Control, Top Open/Close
- **Seat** – Lumbar tests, Horizontal Movement tests, Vertical Movement tests, Driver Heated Seat tests, Memory Recall tests, Rear Seat Cushion Heating tests

- **Doors** - Driver Window Motor, Driver Mirror Fold, Driver Mirror Horizontal Motor, Mirror Fold, Passenger Mirror Fold, Window Peak Detect Discharge, Roof, Tonneau Latch, END GATE MODULE tests
- **Other** – tests for LIGHTING systems, HEADLAMP CONTROL MODULE, AMPLIFIER, RADIO, FOLDING TOP MODULE, HEADS UP DISPLAY

#### Updated Diagnostic Information for the following:

- DTC Circuit Description for 2018-2019MY
- DTC Possible Causes for 2018-2019MY
- Code Info (setting conditions) for 2018-2019MY

## New Coverage Details - USA Asian

### Honda/Acura Coverage

#### 10 new Actuation type special tests including:

- **Engine/PCM** - EGR Test
- **Body Control** - Interior Light Cut
- **Others** - Tests for INTEGRATED DRIVER ASSIST SYS

### Hyundai Coverage

- Added coverage for 3 new vehicle-ecu combinations

#### 23 new Adjustment type special tests including:

- **Engine/PCM** - Reset Adaptive Values
- **Hybrid** - HPCU (MCU,GCU) Diagnosis Parameter Initialization, Initialization of the engine clutch inspection line learning, Stabilization of Hydraulic Oil Flow of Engine Clutch
- **ABS/Brakes** - Air Bleeding Mode, Auto Detected Configuration Reset, Longitudinal G Sensor Calibration(HAC/DBC Only), Pressure Sensor Calibration, Steering Angle Sensor(SAS) Calibration
- **Transfer Case/AWD** – Clutch Learning Reset, Clutch Learning Writing
- **Steering** - EPS Type Recognition, Part replacement (Power steering ECU), Set the steering feel torque to zero

#### 26 new Actuation type special tests including:

- **Hybrid** - Electronic Water Pump (EWP) Actuation, LDC Activation Test, HPCU (MCU/GCU) self-diagnosis function
- **Transmission** - Pressure Control Solenoid (LP), Torque Converter Clutch Solenoid Valve
- **ABS/Brakes** – DBC/HAC Brake Lamp Relay (DBC/HAC Only), Electric Shuttle Valve tests, Inlet and Outlet Valve tests, Motor
- **Others** - tests for STEERING COLUMN MODULE

### Kia Coverage

#### 12 new Adjustment type special tests including:

- **Engine/PCM** - Auto Detected Configuration Reset, Reset Adaptive Values
- **Hybrid** - HPCU (MCU,GCU) Diagnosis Parameter Initialization, Initialization of the engine clutch inspection line learning, Stabilization of Hydraulic Oil Flow of Engine Clutch
- **ABS/Brakes** - Air Bleeding Mode, Auto Detected Configuration Reset, Longitudinal G Sensor Calibration(HAC/DBC Only), Pressure Sensor Calibration, Steering Angle Sensor(SAS) Calibration

#### **13 new Actuation type special tests including:**

- **Engine/PCM** - EVAP Leakage Test
- **Hybrid** - LDC Activation Test, Electronic Water Pump (EWP) Actuation, HPCU (MCU/GCU) self-diagnosis function
- **Others** - tests for STEERING COLUMN MODULE

### **Mazda Coverage**

#### **13 new Adjustment type special tests including:**

- **Engine/PCM** - Change Engine Oil Maintenance Monitor Setting, Engine Oil Life Reset, Reset KAM
- **ABS/Brakes** - Brake Fluid Pressure Sensor Initialization, Lateral Acceleration Sensor Initialization, Longitudinal Acceleration Sensor Initialization, Yaw Rate Sensor Initialization
- **Other** - Tire Pressure Sensor Registration

### **Mitsubishi Coverage**

- Added coverage for 6 new vehicle-ecu combinations

#### **11 new Actuation type special tests including:**

- **Engine/PCM** - Alternator Full Field Test, ETC System Test, FS/LR Solenoid, 2-4 Solenoid State
- **Transmission** - Emission Gas Mode, LC Solenoid

### **Nissan/Infiniti Coverage**

#### **11 new Actuation type special tests including:**

- **Engine/PCM** - Purg Vol Cont/V
- **ABS/Brakes** - RR LH ABS SOLENOID(ACT), Stop Lamp On Relay
- **Climate (HVAC)** - ALL SEG, HVAC Test
- **Others** – Lamp/Indicator tests for INTEGRATED/ADAPT CRUISE CONTROL

## **New Coverage Details – USA European**

### **Alfa Romeo Coverage**

#### **223 new Actuation type special tests including:**



- **Engine/PCM** - Air Conditioner Relay Command, Camshaft valve control position intake command, Direct Injection Valve tests, Dump valve command, EGR Valve Command, EVAP tests, Fuel Pump Relay Command, Gearbox Oil Pump Command, Injector tests, Port Injection Valve tests, Waste Gate Valve Command
- **ABS** – Indicator/Lamp tests, Inlet and Outlet Valve tests, Pilot Valve tests, Priming Valve tests, Recirculation Pump Activation
- **Climate (HVAC)** - Air Vent / Floor Motor Distribution tests
- **Instrument Cluster** - Indicator/Lamp tests, Cruise Control Activation, Engine Speed Cluster
- **Body Control** - Lamp and Buzzer/Warning tests, Window tests, Wiper/Washer tests, Door locks
- **Others** – tests for COMFORT REARSEAT MODULE, DRIVER ASSISTANCE SYSTEM MODULE

## Audi Coverage

### 1,533 new Adjustment type special tests including:

- **Engine/PCM** - Activate/Deactivate Start/Stop Function, Adaptation Of Cam Shaft Position Sensor, Adjustment Fuel Feed Pump On Low Fuel Level, Adjustment Injector tests, Adjustment Of Idle Speed, Camshaft Phasing tests, Checking Throttle Valve Adaptation, Disable Of Particulate Filter Regeneration, Exhaust Gas Recirculation Adjustment, Fuel Pump Adaptation, Idle Speed Adjustment, Reset Misfire Adaptation, Resetting Adaptation Variable Oil Pump, Resetting Crankshaft Sensor Wheel Adaptation Values, Resetting Of Learned Values Of Turbocharger, Service Mode Hybrid Drive, Set Mapping For Injectors After ECU Replacement, Throttle Valve Adaption, Transfer Configuration
- **Hybrid** - Battery Serial Number, Charging Flap Cycle Data, Electric Drive Assembly Serial Number, Electric Drive Motor Serial Number, Transfer Configuration
- **ABS/Brakes** - Auto Hold Plus Speed Threshold tests, Basic Setting Hydraulic Connections, Basic Setting Integrated Parking Brake, Basic Setting Steering Angle Sensor, Basic Setting Tire Pressure Monitoring (TPMS), Emergency Braking Intensity, Set And Reset Parking Brake Motor Piston, Transfer Configuration, Vacuum Pump For Brake System
- **Safety/Airbag** - Calibration Data PreCrash tests, Programming Data Pretensioner tests, Seat Occupied Recognition tests
- **Instrument Cluster** - Correction Factor Consumption And Operating Range tests, Service Interval tests, NightVision Video Image Shift,
- **Climate Control/HVAC** - Activation Time Of Basic Adjustment Air Conditioner Compressor, Adaptation -Seat Heating Activation Level, Adaptation -Seat Ventilation Activation Level, Air Conditioner Compressor Inlet Time, Auxiliary Heating Run On Time, Basic Setting A/C Actuator Motor In, Basic Setting A/C Compressor Break In, Basic Setting A/C Flap Door End Stops, Basic Setting A/C Flap Motor, Remote Start temperature setting tests,
- **Suspension** - Body Height Wheelhouse Edge tests, Constant Damper Current tests, Height Calibration tests
- **Steering** - Calibrate Steering Angle Sensor, Electrically Adjustable Steering Column
- **Body Control** - Adaptation Interior Monitoring Sensitivity, Auxiliary Heating Run On Time, Delete Fault Memory, EC Interior Mirror Turn Down, Light Configuration tests, Luggage Compartment Cover tests, Off Timer Inside Light tests, Steering Column tests, Passenger Detection Multi Contour Seat, Rear Lid Minimum Opening Height, Wiper Angle tests, Wiper Motor Control tests

- **Seat** - Intensity Stage Of Massage tests, Multi Contour Seat Additional Functions Adaptation, Production Mode Deactivation, Velocity Of Massage, Velocity Stage Of Massage tests
- **Lights** - Ambient Peak Total Threshold, Brightness Class Headlight Adaption, Curve Light Offset tests, Lower Speed Threshold For Main Beam tests, PWM To Level Scaling Factor tests, Street Light Brightness Threshold tests
- **ADAS/Driver Assist** – tests for CAMERA SYSTEM, DRIVER ASSISTANCE, FRONT SENSORS DRIVER ASSISTANCE
- **Others** – tests for ACCESS STARTSYSTEM INTERFACE BATTERY REGULATION (61), SOUND SYSTEM, NAVIGATION, DOOR ELECTRONICS modules, CAN GATEWAY (19), AUXILIARY PARKING HEATER, TELEMATICS COMMUNICATION UNIT, CENTRAL MODULE COMFORT SYSTEM

## **BMW/Mini Coverage**

- Added coverage for 205 new vehicle-ecu combinations

### **29 new Adjustment type special tests including:**

- **Engine/PCM** - Adjustment, Engine Control – EWS, MSA Starter Exchange/Reset, Remove Valvetronic Servomotor, Reset Adaptation Values
- **Transmission** - Transmission Control Unit - Oil Change
- **Transfer Case/AWD** - Transfer Box - Replace Control Unit, Coding Data Reset Control
- **ABS/Brakes** - Driving Dynamics Sensor Adjustment, Lateral Acceleration Sensor, Pressure Sensors
- **ADAS/Driver Assist** - Initialize Rain Sensor

### **62 new Actuation type special tests including:**

- **Engine/PCM** – EVAP tests, Fan tests, Injector tests, Open and Close Radiator Blind, Turbocharger Coolant Pump, Water Pump Control
- **ABS/Brakes** - Electronic Parking Brake Service Mode Activation, ABS Pump Activation Test (5 seconds), Brake Line Mix-up test
- **Suspension** - Check Air Supply System, Lifting And Lowering Function Check, Rear Lift / Lower Sequence
- **Instrument Cluster** – Instrument Cluster: Control Unit Self-Test, Turn-Signal Indicator Light (Normal Flashing)
- **Climate (HVAC)** – Indicator/Lamp tests, Illumination (LED All) Control, Run in Protection for A/C Compressor, Start Up AC Compressor, Display Test(Activate automatic rear A/C system first)

## **Fiat**

### **346 new Actuation type special tests including:**

- **Engine/PCM** - Air Conditioner Relay Command, Camshaft valve control position intake command, Cylinder Deactivation solenoid tests, Dump valve command, EGR Valve Command, EVAP tests, Fuel Pump Relay Command, Gearbox Oil Pump Command, Injector tests, Ignition Coil tests, Intake Manifold Short Runner Valve (SRV) Solenoid Control State, Intake Manifold Tuning Valve (MTV) Solenoid Control State, MS Solenoid, Multiair VVA Solenoid tests, Oxygen Sensor tests, Port Injection Valve tests, Waste Gate Valve Command, Trans solenoid tests, VVA Cylinder tests, VVT Intake and Exhaust Phaser tests



- **Transmission** - Line Pressure Output Current Value, Linear Solenoid SLB1 Output Current Value, Linear Solenoid SLC3 Output Current Value, Shift Solenoid S1 (ON/OFF Component), Shift Solenoid S2 (ON/OFF Component), Torque Converter Clutch (TCC) Output Current Value
- **ABS** – Indicator/Lamp tests, Inlet and Outlet Valve tests, Pilot Valve tests, Priming Valve tests, Recirculation Pump Activation
- **Climate (HVAC)** - Air Vent / Floor Motor Distribution tests
- **Instrument Cluster** - Indicator/Lamp tests, Cruise Control Activation, Engine Speed Cluster
- **Body Control** - Lamp and Buzzer/Warning tests, Window tests, Wiper/Washer tests, Door locks
- **Others** – tests for ENTERTAINMENT TELEMATIC, DRIVER ASSISTANCE SYSTEM MODULE

## Mercedes Benz

### 23 new Adjustment type special tests including:

- **Transmission** - Adaptation Of Component Torque Converter Lockup Clutch, Calibrate Control Unit ISM for Direct Select Module, Variant Coding Reset, Read and Write Adjust Value tests
- **ABS/Brakes** - Electronic Stability Program Calibration At Standstill
- **Instrument Cluster** – Reinitialize the Active Service System (ASSYST), Reset Of Function 'Ring memory'
- **Suspension** - Move To Calibrated Level
- **Others** – Headlamp Range Adjustment, Control Module for Liftgate Control, Normalization Of Power Window

### 196 new Actuation type special tests including:

- **Engine/PCM** - Activation Of Fuel Pump, Engine and AC Fan, Fuel Injectors, Camshaft Solenoid tests
- **Transmission** - Switch To Normal Mode, Closing Of Torque Converter Lockup Clutch, Display Of Adaptation Values, Oil Level Check
- **ABS/Brakes** – High Pressure And Return Flow Pump
- **Climate (HVAC)** - Air Distribution Flap Actuator Motor, Blower Regulator / Blower Motor, Defroster Flap Actuator Motor, Air Vent Flap Actuator Motor tests
- **Suspension** - AIRMATIC Pressure Relief Valve, AIRMATIC Relay, Dynamic Movement Test, Fill Suspension Strut tests, Damping Valve tests, Release Pressure In Suspension Strut tests, Rodeo Movement Test
- **Others** – tests for SAM MODULE – FRONT, SAM MODULE – REAR, SEAT ADJUSTMENT, SEAT MULTICONTOUR, HEADLAMP CONTROL, AUDIO or COMAND, DOOR MODULE

## Volkswagen Coverage

### 1,505 new Adjustment type special tests including:

- **Engine/PCM** - Activate/Deactivate Start/Stop Function, Adaptation Of Cam Shaft Position Sensor, Adjustment Fuel Feed Pump On Low Fuel Level, Adjustment Injector tests, Adjustment Of Idle Speed, Camshaft Phasing tests, Checking Throttle Valve Adaptation, Disable Of Particulate Filter Regeneration, Exhaust Gas Recirculation Adjustment, Fuel Pump Adaptation, Idle Speed Adjustment, Reset Misfire Adaptation, Resetting Adaptation Variable Oil Pump, Resetting Crankshaft Sensor Wheel Adaptation Values, Resetting Of Learned Values Of Turbocharger, Service

Mode Hybrid Drive, Set Mapping For Injectors After ECU Replacement, Throttle Valve Adaption, Transfer Configuration

- **Hybrid** - Battery Serial Number, Charging Flap Cycle Data, Electric Drive Assembly Serial Number, Electric Drive Motor Serial Number, Transfer Configuration
  - **ABS/Brakes** - Auto Hold Plus Speed Threshold tests, Basic Setting Hydraulic Connections, Basic Setting Integrated Parking Brake, Basic Setting Steering Angle Sensor, Basic Setting Tire Pressure Monitoring (TPMS), Emergency Braking Intensity, Set And Reset Parking Brake Motor Piston, Transfer Configuration, Vacuum Pump For Brake System
  - **Safety/Airbag** - Calibration Data PreCrash tests, Programming Data Pretensioner tests, Seat Occupied Recognition tests
  - **Instrument Cluster** - Correction Factor Consumption And Operating Range tests, Service Interval tests, NightVision Video Image Shift,
  - **Climate Control/HVAC** - Activation Time Of Basic Adjustment Air Conditioner Compressor, Adaptation -Seat Heating Activation Level, Adaptation -Seat Ventilation Activation Level, Air Conditioner Compressor Inlet Time, Auxiliary Heating Run On Time, Basic Setting A/C Actuator Motor In, Basic Setting A/C Compressor Break In, Basic Setting A/C Flap Door End Stops, Basic Setting A/C Flap Motor, Remote Start temperature setting tests,
  - **Suspension** - Body Height Wheelhouse Edge tests, Constant Damper Current tests, Height Calibration tests
  - **Steering** - Calibrate Steering Angle Sensor, Electrically Adjustable Steering Column
  - **Body Control** - Adaptation Interior Monitoring Sensitivity, Auxiliary Heating Run On Time, Delete Fault Memory, EC Interior Mirror Turn Down, Light Configuration tests, Luggage Compartment Cover tests, Off Timer Inside Light tests, Steering Column tests, Passenger Detection Multi Contour Seat, Rear Lid Minimum Opening Height, Wiper Angle tests, Wiper Motor Control tests
  - **Seat** - Intensity Stage Of Massage tests, Multi Contour Seat Additional Functions Adaptation, Production Mode Deactivation, Velocity Of Massage, Velocity Stage Of Massage tests
  - **Lights** - Ambient Peak Total Threshold, Brightness Class Headlight Adaption, Curve Light Offset tests, Lower Speed Threshold For Main Beam tests, PWM To Level Scaling Factor tests, Street Light Brightness Threshold tests
  - **ADAS/Driver Assist** – tests for CAMERA SYSTEM, DRIVER ASSISTANCE, FRONT SENSORS DRIVER ASSISTANCE
  - **Others** – tests for ACCESS STARTSYSTEM INTERFACE BATTERY REGULATION (61), SOUND SYSTEM, NAVIGATION, DOOR ELECTRONICS modules, CAN GATEWAY (19), AUXILIARY PARKING HEATER, TELEMATICS COMMUNICATION UNIT, CENTRAL MODULE COMFORT SYSTEM
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