

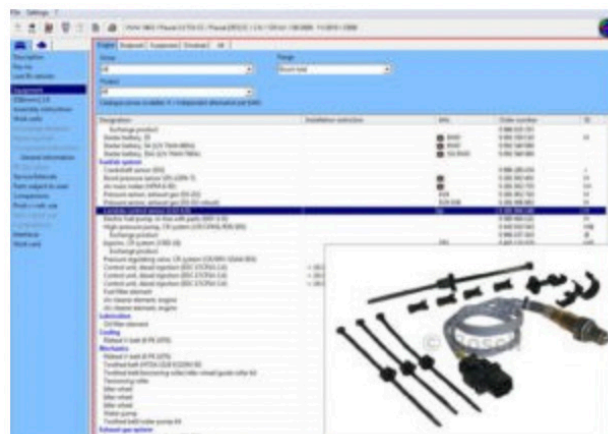


## Diagnostics: Vehicle Service Information



This series of technical articles from Bosch focuses on how to get the best out of its ESI[tronic] 2.0 software, which is used in conjunction with the KTS range of diagnostic tools for vehicle fault diagnosis and service function procedures.

In this latest instalment we'll be looking at the vast amounts of vehicle service information and maintenance data that is available in Bosch ESI 2.0.



If you subscribe to the A, SD, SIS, M, P & TSB complete technical package, this software is often referred to as the 'Master Package'. The in-depth data, detailed descriptions and diagrams, plus other essential information, demonstrates that the Bosch KTS with ESI 2.0 software is so much more than a regular diagnostic 'scan tool'.



# Diagnostics

Once you've selected a vehicle in the ESI[tronic] 2.0 program, you can then choose the 'Maintenance' tab at the top of the screen. Now you will see a row of sub tabs with the many different information sources related to the vehicle's service and maintenance requirements. In fact, there are so many tabs to fit on the screen all at once, the 'show next/previous' arrow soft keys need to be used to scroll across the various available chapters (see below).



## Service schedules

Depending on the vehicle make and model that you've chosen, you now need to select the type of 'service' required. Often at this stage a handy 'pop up' message appears with important timing belt replacement interval data. ESI[tronic] lists the services, including mileage and month intervals, and also provides job times in hours for the service type and additional items (see below).

Miles	Description	Months	Hours	Non EN 590 fuel/biodiesel
10000	Oil service - every 10000 miles or 12 months	12	0.5	
20000	Interval service - every 20000 miles or 24 months	24	0.7	
40000	Inspection service - every 40000 miles or at 36 months and then every 24 months	36	0.9	
	Oil and inspection service combined		1.4	
	Interval and inspection service combined		1.6	
Additional service items				
<input checked="" type="checkbox"/>	Every 36 months regardless of miles/km		0.4	
<input checked="" type="checkbox"/>	At 36 months regardless of miles/km and then every 24 months		0.3	
<input type="checkbox"/>	Every 20000 miles regardless of months		For additional charge	0.20
<input type="checkbox"/>	Every 40000 miles or 24 months		0.1	
<input type="checkbox"/>	Every 40000 miles regardless of months		0.9	
<input type="checkbox"/>	Every 60000 miles regardless of months		0.2	
<input type="checkbox"/>	Every 60000 miles or 72 months		0.1	
<input type="checkbox"/>	At 100000 miles regardless of months and then every 20000 miles		0.1	
<input type="checkbox"/>	Every 120000 miles or 60 months		1.9	
<input type="checkbox"/>	Every 240000 miles or 120 months		0.1	

By clicking on the 'Display operations' soft key in the bottom right hand corner, you can create a specific service check sheet and display it on screen. The check sheet can be printed out and completed manually or electronically throughout the job and printed at the end. This is a nice feature to prevent any greasy fingerprints spoiling the list (see below).

Steps	Notes	Remarks / Test values
<input checked="" type="checkbox"/>	<b>1 VEHICLE ON FLOOR</b>	
<input checked="" type="checkbox"/>	1.0010 Brake servo - Check/report	
<input checked="" type="checkbox"/>	1.0020 Brake servo hoses/check valve - Check	
<input checked="" type="checkbox"/>	1.0040 Footbrake travel - Check/report	
<input checked="" type="checkbox"/>	1.0050 Parking brake travel - Check/adjust	Adjusted
<input checked="" type="checkbox"/>	1.0115 Instruments/warning lamps - Check/report	
<input checked="" type="checkbox"/>	1.0140 Switches/controls - Check/report	
<input checked="" type="checkbox"/>	1.0150 Heater blower - Check/report	
<input checked="" type="checkbox"/>	1.0160 Horn - Check/report	
<input checked="" type="checkbox"/>	1.0180 Interior lamps - Check/report	
<input type="checkbox"/>	1.0190 Front wiper blades - Check/report	
<input type="checkbox"/>	1.0220 Front screen wash - Check/adjust	
<input type="checkbox"/>	1.0230 Rear wiper blade - Check/report	

ESI[tronic] 2.0  
 ESI[tronic] 2.0 10.2.1997 01/07/16

### VW (VOLKSWAGEN) - Passat 2.0 TDI CC - 08/2008 - 11/2010 - Passat [357] CC - CBBB

Robert Bosch Garage Ltd UK  
 North Orbital Road UB95HJ Denham  
 Mr Peter Black

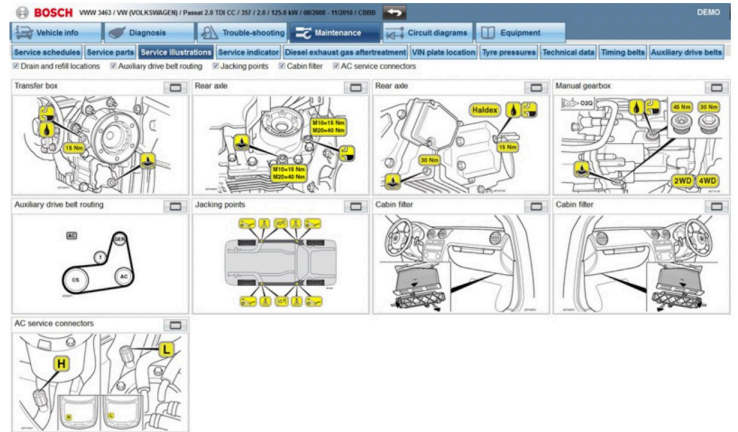
Order no. : 12345  
 Customer no. : 00190  
 Registration : VW59ABC  
 Mileage : 62663  
 First registrat. : 01/09/2009  
 Fitter : Dave H  
 Telephone : 0844 8920115  
 Fax : 654321

Miles	Description	Months	Work units
40000	Inspection service - every 40000 miles or at 36 months and then every 24 months	36	0.9
0	Every 36 months regardless of miles/km	36	0.4
0	At 36 months regardless of miles/km and then every 24 months	36	0.3

- VEHICLE ON FLOOR
- 1.0010 Brake servo - Check/report
  - 1.0020 Brake servo hoses/check valve - Check
  - 1.0040 Footbrake travel - Check/report
  - 1.0050 Parking brake travel - Check/adjust
  - 1.0115 Instruments/warning lamps - Check/report
  - 1.0140 Switches/controls - Check/report
  - 1.0150 Heater blower - Check/report
- Adjusted.*

Once you've selected the required service operations, this activates the 'Service parts' tab. This section will list out the necessary spare parts, such as oil and filters, along with capacities that will be needed to complete the service work on the vehicle.

The next tab - 'Service illustrations' - provides all the available diagrams to aid you whilst servicing the vehicle, such as transmission oil level plugs, auxiliary drive belt routing, cabin filter location and A/C service port locations (see below).



You can expand each individual diagram to full screen, if needed, so that you can view it in more detail and this is really helpful on today's complex vehicles.



# Diagnostics

The 'Service indicator' tab guides you through the service light reset process for the vehicle you're working on (see below).

**Longlife service intervals**

To retain longlife service intervals the service interval indicator must be reset using suitable diagnostic equipment.

**NOTE: Vehicles on longlife service intervals may be reset using the fixed interval servicing method but this will result in the service interval indicator returning to fixed service intervals.**

**Fixed service intervals - type 1**

Switch ignition OFF.  
Press and hold button [A] Fig. 109986.  
Switch ignition ON.  
Release button [A] Fig. 109986.  
Within 20 seconds briefly press button [A] Fig. 109986 again to reset the display.  
Switch ignition OFF.

**Fixed service intervals - type 2**

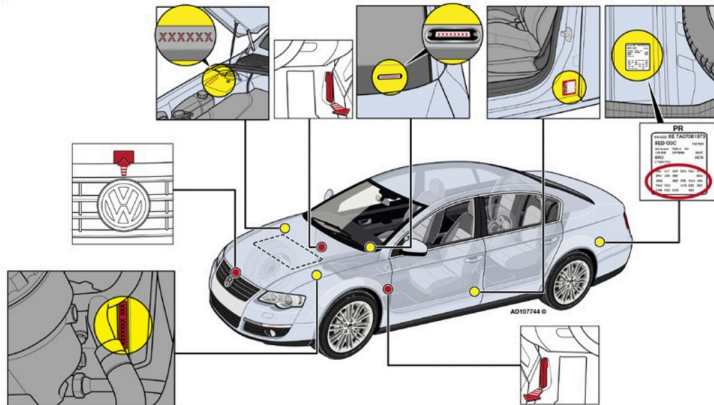
Switch ignition OFF.  
Press and hold button [A] Fig. 114981.  
Switch ignition ON.  
Release button [A] Fig. 114981.  
Within 20 seconds briefly press button [B] Fig. 114981.  
The service interval indicator is now reset.  
Switch ignition OFF.

**Fixed service intervals - type 3**

Switch ignition OFF.  
Press and hold button [A] Fig. 115050.  
Switch ignition ON.  
Release button [A] Fig. 115050.  
Within 20 seconds briefly press button [B] Fig. 115050.  
Wait for display to return to main menu.

This may involve a 'manual' push button reset as described or a diagnostic reset routine where the instructions will contain a hyperlink to take you straight to the correct area within the 'Diagnosis' main tab to perform the task. On diesel vehicles the 'Diesel exhaust gas after treatment' tab will be active and demonstrates how the DPF system works and how to initiate a passive Diesel Particulate Filter Regeneration. DPF problems on vehicles are increasingly common due to short journeys so this is a particularly useful section of data on the tool.

The 'VIN plate location' tab offers a vehicle specific diagram of where to find identification details, such as VIN and engine numbers, as well as the exact position of the bonnet release safety catch, which can be tricky to find on some models (see below).



The 'Tyre pressures' tab lists all of the recommended tyre pressures for the vehicle model selected. In some cases this can be quite a long list due to fitment variations but the search bar can be used to narrow down the options by wheel size or tyre width. The manufacturer specified front and rear tyre pressures are also given in bar and psi for 'laden' and 'un-laden' situations.

The 'Technical data' tab is highly useful as it supplies essential information about all of the following: vehicle designation; fuel injection system; tuning & emissions; starting & charging systems; service checks & adjustments; fluid types & capacities; tightening torque settings; minimum brake component thicknesses and air conditioning system service & repair data. Wherever possible, the list will have icons that will present you

with 'pop up' important information and diagrams that can help you do the job properly and efficiently (see below).

Component	Tightening Torque
Glow plugs	18 Nm
Engine of pressure switch	22 Nm
Oil filter	25 Nm
Chassis lightning torques	
Front hub - wheel bearing housing bolts	70 Nm/90°
Rear hub	30 Nm/90°
Steering wheel	30 Nm/90°
Steering rack/box mounting	50 Nm/90°
Steering track rod end	50 Nm/90°
Brake disc to hub	Front 4 Nm
Brake caliper to carrier	Front 30 Nm
Brake caliper to hub	Front 200 Nm
Brake disc to hub	Rear 4 Nm
Brake caliper to carrier	Rear 35 Nm

In the 'Timing belts/chains' tab you'll find detailed instructions and diagrams for changing the belt, chain or timing gears when they're due for replacement or in the event of an engine re-build. With such a complex task, it's critical to have the correct information to complete the job properly and this section will give you piece of mind that the manufacturer's procedure has been followed (see below).

1. Raise and support front of vehicle.
2. Remove engine upper cover.
3. Disconnect diesel particulate filter (DPF) pressure sensor multi-plug.
4. Remove diesel particulate filter (DPF) pressure sensor bracket.
5. Disconnect:
  - Fuel lift pump multi-plug.
  - Fuel supply and return pipes.
  - Fuel temperature sensor multi-plug.
6. Disconnect fuel pipe from fuel lift pump.
7. Remove fuel lift pump.
8. Disconnect engine coolant temperature (ECT) sensor multi-plug.
9. Remove:
  - Timing belt upper cover [1].
  - RH wheel arch liner.
  - Engine undershield.
  - Auxiliary drive belt. Use tool No.T110060A.
  - Crankshaft pulley bolts [2].
  - Crankshaft pulley [3].
10. Reposition coolant hose from timing belt centre cover. DO NOT disconnect hose.
11. Remove:
  - Timing belt lower cover [4].
  - Timing belt centre cover [5].
12. Turn crankshaft clockwise to TDC on No.1 cylinder.
13. Ensure camshaft sprocket window at approximately 12 o'clock position [6].
14. If not: Turn crankshaft one turn clockwise.

The 'Auxiliary drive belts' tab guides you through the auxiliary drive belt and belt tensioner system operation. You'll find all the details, text and diagrams showing the removal and installation procedure of the system components, as well as tightening torques of the mounting bolts.

In the 'Wheel alignment' section, the recommended suspension geometry measurement values and setting data is displayed. The tolerances and diagrams for the toe-in, camber and caster adjustments to the front and rear wheels of the vehicle (where applicable) are used with suitable wheel alignment measuring equipment to correctly align the wheels on the car.



# Diagnostics

'Key programming' allows you to access all the information, with reference to key battery replacement and remote central locking synchronisation (see below).

It's often quite amazing to see just how many OE quality parts are made by Bosch that are available on many cars today.

**BOSCH** WWW.BOSCH.CO.UK / Power 2.0 TDI CC / 107 (2.0 / 150 kW) / 10/2008 - 10/2010 / C888

Vehicle info | Diagnostics | Troubleshooting | Maintenance | Circuit diagrams | Equipment

Category: Remote central locking

- Remote control added or replaced.
- System malfunction.

**How**

- Remote controls can only be programmed using diagnostic equipment.

**NOTE: A maximum of 4 remote controls can be programmed.**

**Battery replacement**

Fig. 2

**Immobilizer**

**System operation**

- Without keyless entry system: System arms after removing remote control from ignition slot.
- With keyless entry system: Switch ignition OFF. System arms automatically 5 seconds after closing driver's door with remote control removed from vehicle.

**Programming**

**When**

- Remote control added or replaced.
- System malfunction: Switch ignition ON. Digital multifunction display in instrument panel reads "SAFE" or "IMMOBILIZER ACTIVE!".
  - Remote control code not recognised.

**How**

- Immobilizer can only be programmed by using diagnostic equipment.
- Obtain all remote controls to be programmed.

With many cars having 'keyless' entry and start systems, the instructions and diagrams in this section can be a real assistance if any key problems are experienced with a customer's car.

Now we've covered all of the 'Maintenance' section sub-tabs, please remember that you can click the 'Print' icon, next to the 'Main menu' soft key in the top right hand corner of the screen. You can also produce a screen shot of the data or print out the diagrams and text for reference.

The last main tab is the 'Equipment' tab. This opens up a new window on your screen and is the original ESI[tronic] parts list, which in Bosch we refer to as the 'A' content disc. The parts list contains all available information on every component made by Bosch for the vehicle (RB key) that you've selected. This includes descriptions, model year ranges, diagrams, pictures and Bosch part numbers for the components.

The Bosch parts are grouped in the categories of Engine, Bodywork, Suspension and Drivetrain. Depending on the vehicle manufacturer, the parts made by Bosch on the vehicle can range from batteries, alternators, starter motors and engine management sensors to wipers, lighting products, filters, brake components and fuel system pumps or injectors (see below).

File Settings

VW/VW 3403 / Passat 2.0 TDI CC / Passat [507] CC / 2.0 / 125 kW / 08/2008 - 11/2010 / C888

Equipment

Group: All | Range: Bosch total

Product: All

Catalogue picture available: H = Independent aftermarket part (IAM)

Designation	Installation restriction	Info	Order number	SS
Exchange product			0 986 020 357	
Starter battery, 55		BWD	0 982 020 119	H
Starter battery, 54 (12V 74Ah 680A)		BWD	0 982 040 080	H
Starter battery, 55A (12V 75Ah 700A)		SV BWD	0 982 060 080	H
Feed/fuel system				
Crankshaft sensor (DS)			0 986 280 434	>
Boost pressure sensor (DS-DI6-T)			0 281 002 402	H
Air mass meter (AFM-6-0)			0 281 002 735	H+
Pressure sensor, exhaust gas (DS-DI)			0 281 002 710	H
Pressure sensor, exhaust gas (DS-DI subcut)		EU	0 281 000 062	H
Immobilizer control sensor (L24-42)			0 281 004 340	H
Electric fuel pump, inline with parts (6AP-2-0)			0 281 004 322	H
High-pressure pump, CR system (CR/CF43/R35/205)			0 445 010 343	H/D
Exchange product			0 986 437 410	D
Injector, CR system (CRD-18)		PRE	0 445 114 026	h+h
Exchange product				
Pressure regulating valve, CR system (CR/DRV-USAK/205)				
Control unit, diesel injection (EDC 17CP14-2.4)				-> 10/;
Control unit, diesel injection (EDC 17CP14-2.4)				-> 10/;
Control unit, diesel injection (EDC 17CP14-3.4)				-> 10/;
Fuel filter element				
Air cleaner element, engine				
Air cleaner element, engine				
Lubrication				
Oil filter element				
Cooling				
Ribbed V-belt (5 FK 1070)				
Mechanics				
Ribbed V-belt (5 FK 1070)				
Toothed belt (MFA 1244 S 525M 30)				
Toothed belt/tensioning roller/roller wheel/guide roller kit				
Tensioning roller				
Idle wheel				
Idle wheel				
Idle wheel				
Water pump				
Toothed belt/water pump kit				
Exhaust gas system				