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Volvo XC60, XC90

Volvo Diesel XC60 and XC90 Owners Workshop Manual

Models: XC60, XC90 (2003 to June 2013)

INTRODUCTION

This manual provides comprehensive step-by-step maintenance and repair instructions for Volvo Diesel XC60 and XC90 models produced between 2003 and June 2013. It is designed to assist owners in understanding, caring for, and repairing their vehicles, covering a wide range of mechanical and electrical procedures.

VOLVO Diesel XC60 & XC90



2003 to June 2013 (52 to 13 reg)

Owners Workshop Manual

step-by-step maintenance and repair



The best selling car manuals in the world

Image: Front cover of the Haynes Owners Workshop Manual for Volvo Diesel XC60 and XC90 models, highlighting its focus on step-by-step maintenance and repair.

SEE HAYNES, SEE HOW

Written from hands-on experience gained from the complete strip-down and rebuild of several Volvo XC60 & XC90 models in our Project Workshop, this manual can help you understand, care for and repair your Volvo. We do it ourselves to help you do-it-yourself, and whatever your mechanical ability, the practical step-by-step explanations, linked to over 900 photos, will help you get the job done right. Regular servicing and maintenance of your Volvo can help maintain its resale value, save you money, and make it safer to drive.

HAYNES MANUALS EXPLAIN BEST – SEE HAYNES, SEE HOW



OVER 150 MILLION HAYNES MANUALS SOLD WORLDWIDE

“The most useful tool... is a Haynes Manual”
Land Rover Monthly

“...it’s the paper equivalent of talking to a mate who’s happy to help... a great way for owners to save cash by tackling jobs themselves...”
Auto Express

“...knowledge is power, and that knowledge is in your workshop manual...”
Practical Classics

“...Haynes manuals are legendary...”
Daily Mirror

“...Haynes are the daddies when it comes to automotive manuals...”
Classic Car Weekly

Inside this Manual

Maintenance Simple weekly checks to keep you on the road

Servicing Complete, fully illustrated step-by-step guide

Fault finding Pinpoint specific problems easily

The MoT Step-by-step test checks

Fuel saving Expert advice on maximising mpg

Electrics Easy-to-read wiring diagrams

Haynes tips Valuable short cuts make many tasks easier

ISBN 978 0 85733 630 9



9 780857 336309

Models covered by this Manual

XC60 (two- and four-wheel-drive) & XC90 with 2.0 litre (1984cc) & 2.4 litre (2400/2401cc) turbo-diesel engines

Does NOT cover petrol models

Haynes Publishing, Sparkford, Yeovil, Somerset BA22 7JJ England

UPC CODE



ABCDEFHIJKLMNOPQRSTUVWXYZ 234

www.haynes.co.uk

Image: Back cover of the manual, emphasizing "See Haynes, See How" and listing key benefits such as maintenance, servicing, fault finding, MoT test checks, fuel saving, electrics, and Haynes tips. It also shows an image of a person working on a car engine.

The manual is structured to guide users through various tasks, from routine checks to complex overhauls, with clear illustrations and detailed descriptions. It aims to empower vehicle owners to perform tasks themselves, saving time and money, and ensuring the longevity and reliability of their Volvo vehicles.



WE'VE BEEN HELPING VEHICLE OWNERS TO **DO IT YOURSELF** FOR OVER 60 YEARS

Never used a Haynes manual? This is what we do...



Every manual is based upon a stripdown and rebuild

- See your vehicle as never before, and learn from 700+ pictures and diagrams
- Take on bigger jobs with confidence – we can show you exactly what to do



We only show DIY friendly techniques

- Instructions everybody can follow (novices welcome!)
- Using tools and equipment you have at home



We save you time working out what is wrong!

- Every Haynes manual includes a Fault Finder with 400+ issues covered
- Avoid “dead-ends” when you follow our step-by-step guidance

Image: An illustration of the Haynes philosophy, showing how their manuals are based on stripdown and rebuild, provide DIY-friendly techniques, and help save time by identifying issues with a fault finder.

SAFETY INFORMATION

Always prioritize safety when working on your vehicle. Ensure the vehicle is securely supported on jack stands, the

engine is cool, and the battery is disconnected before performing any electrical work. Wear appropriate personal protective equipment, including gloves and eye protection. Refer to the manual's specific safety warnings before beginning any procedure.

ROUTINE MAINTENANCE AND SERVICING

Regular maintenance is crucial for the optimal performance and longevity of your Volvo. This section outlines routine checks and servicing procedures.

Weekly Checks

- Underbonnet check points
- Engine oil level
- Coolant level
- Brake and clutch fluid level
- Power steering fluid level
- Tyre condition and pressure
- Washer fluid level
- Electrical systems
- Wiper blades
- Battery

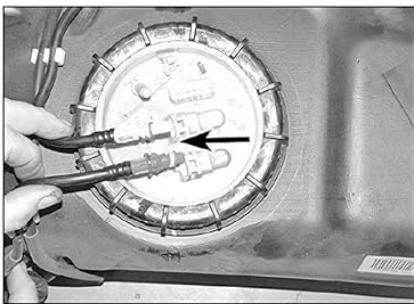
Lubricants and Fluids

Proper fluid levels and types are essential. Refer to the detailed specifications for engine oil, coolant, brake fluid, and other lubricants.

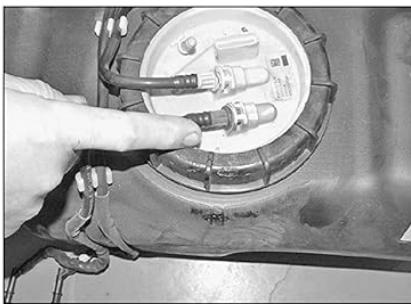
Tyre Pressures

Maintaining correct tyre pressures is vital for safety, fuel efficiency, and tyre longevity. Consult the manual for specific pressure recommendations for your model.

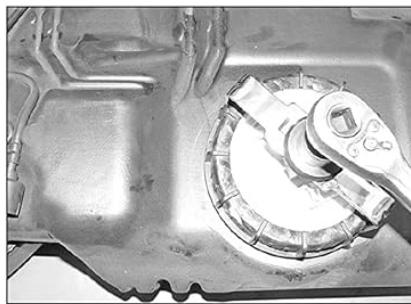
Servicing Specifications



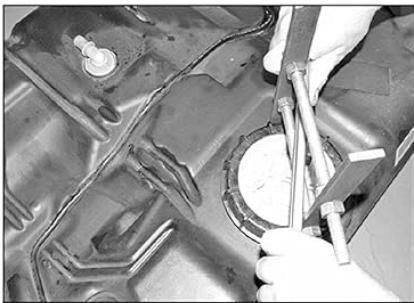
7.3 Disconnect the fuel hoses on top of the sender unit



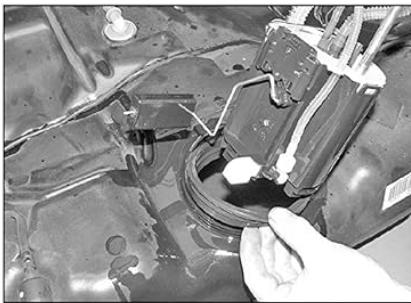
7.4a Sender unit alignment marks



7.4b Remove the sender locking ring using a suitable tool...



7.4c ...or a home-made equivalent



7.5 Withdraw the unit from the fuel tank



7.7 Remove the blanking plate

7 Fuel gauge sender/pump units – removal and refitting



Note: Observe the precautions in Section 1 before working on any component in the fuel system.

Removal

XC60

Note: 2WD models feature a combined level and pump unit, 4WD models have a separate pump and level unit – very similar to XC90 models.

- 1 Disconnect the battery negative lead (see Chapter 5).
- 2 Remove the fuel tank as described in Section 3.
- 3 Make a note of the correct position, then remove any remaining wiring plugs and fuel

lines. Note the position of any seals and be prepared for fuel spillage as the hoses are removed (see illustration).

4 Note the alignment marks between the sender/pump unit and the tank, then remove the locking ring. Volvo use a specific tool (999 7418) but the locking ring can be removed using a suitable home-made tool or a proprietary remover purchased from a motor factors (see illustrations).

5 Carefully withdraw the assembly from the tank, taking care not to bend or damage the float arm. Recover the seal between sender unit and tank (see illustration).

XC 90 models

6 Disconnect the battery negative lead (see Chapter 5).

7 Open the rear doors and with reference to Chapter 11 remove the second row of seats. With the seats removed, partially release the carpet in order to gain access to the blanking

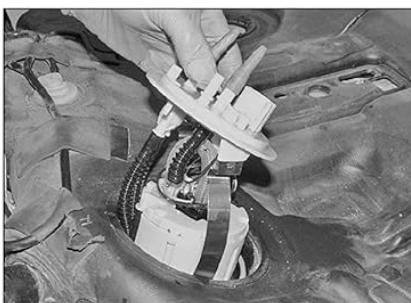
plates that cover the fuel level sensors (see illustration).

8 XC90 models feature a combined lift pump and level sensor in the right-hand side of the tank. A separate sensor is fitted to the left-hand side of the tank. The level sensors work in tandem, with the left-hand sensor measuring the lower fuel levels and the right-hand side measuring higher fuel levels.

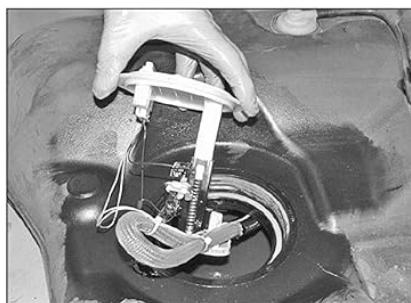
9 The procedure for removing the sensors is the same as XC60 models, once the locking ring(s) have been removed. Note however if the lift pump and 'high' fuel level sensor are to be removed, the right-hand sensor must be removed first as the fuel pump pick-up pipe and the sensor wiring plug are connected to the left-hand sensor (see illustrations). Take care to avoid dropping the wiring loom into the bowels of the fuel tank – connect a length of cord to the loom and tie it to the side of the tank if necessary.



7.9a Remove the locking collar



7.9b Remove the combined level/pump assembly...



7.9c ...and the level sensor from the left-hand side

Image: A page from the manual detailing servicing specifications, including capacities for engine oil, cooling system, fuel tank, and torque wrench settings for various components.

The manual provides detailed specifications for various components, including fluid capacities and torque settings. For example:

Selected Servicing Specifications

Category	Item	Specification

Category	Item	Specification
Engine Oil	2.0 litre (D5204T2/T3)	5.9 litres
Cooling System	XC60 (Up to 2010)	12.65 litres
Fuel Tank	XC60	70 litres
Torque Wrench Settings	Drain plug	35 Nm (26 lbf ft)

REPAIRS AND OVERHAUL

This section covers detailed procedures for repairing and overhauling various vehicle systems.

Engine and Associated Systems

Detailed instructions for engine in-car repair procedures, engine removal and overhaul, cooling and heating systems, fuel and exhaust systems, emission control, and starting/charging systems.

1•2 Servicing specifications

Lubricants and fluids

Refer to *Lubricants and fluids* on page 0•16

Capacities*

Engine oil

Drain and refill including filter change:

2.0 litre (D5204T2/T3)	5.9 litres
2.4 litre:	
D5244T/T2/T3	6.5 litres
D5244T4/T5/T6/T7/T18	5.7 litres

Cooling system

XC60:

Up to 2010	12.65 litres
From 2010	8.9 litres

XC90:

Up to 2011	12.5 litres
From 2011	8.9 litres

Fuel tank

XC60	70 litres
XC90	68 litres

Manual transmission

M66	2.0 litres
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Automatic transmission

Drain and refill	7.1 litres (approx)
------------------------	---------------------

Cooling system

Specified antifreeze mixture	50% antifreeze/50% water
------------------------------------	--------------------------

Note: Refer to Chapter 3 for further details.

Brakes

Brake pad minimum lining thickness	2.0 mm
------------------------------------------	--------

Remote control battery

Type	CR 2032 3V
------------	------------

Torque wrench settings

	Nm	lbf ft
Automatic transmission:		
Drain plug	35	26
Filler plug	35	26
Integrated level plug	8	6
Auxiliary drivebelt tensioner	24	18
Engine oil drain plug	35	26
Fuel filter cover	25	18
Oil filter cover	25	18
Roadwheel bolts	140	103
Transfer pulley (Engines with EHPS)	24	18

* All capacities are approximate. Volvo list a considerable variation in oil capacities. Always check the engine number with the capacity stated in the owners handbook.

Image: A page illustrating the auxiliary belt routing with diagrams and step-by-step instructions for removal and installation, including torque specifications.



26.10a Release and then...



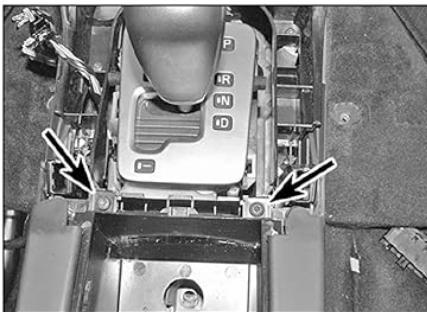
26.10b ...remove the air vent panel



26.11 Remove the panel and then the screws (arrowed)



26.12 Remove the panel

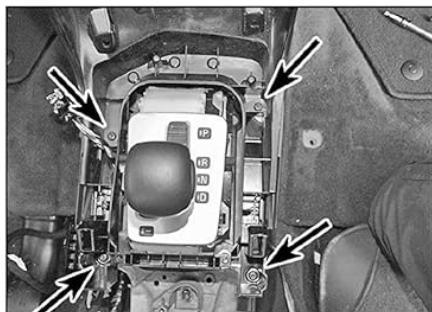


26.13 Remove the screws (arrowed)



26.16 Remove the main section of the centre console

10 Using a broad bladed trim tool remove the central air distribution vents (see illustrations). Disconnect the wiring plug as the vents are removed. Remove the now exposed mounting screws



26.17a Remove the screws (arrowed)...



26.17b ...and lift off the support panel

11 Remove the trim panel from the CD player (see illustration) and then remove the 2 screws.

12 Carefully prise free the heater control panel (see illustration). Disconnect the wiring plug as the panel is removed

13 Remove the 2 screws from the front edge of the centre console (see illustration).

14 Remove the 2 bolts that secure the console upper support to the facia. The left-hand bolt points to the rear of the vehicle and the right-hand bolt points towards the right-hand footwell.

15 Disconnect the wiring plugs from the console support and the gear selector housing.

16 Slide the main section of the console towards the rear of the vehicle and unhook it from the front section (see illustration) disconnecting the assorted wiring plugs as it is removed.

17 Remove a further 4 screws and then carefully remove the trim support panel over the gear selector (see illustrations).

XC90 models

18 Remove the arm rest. On some models this simply unclips (see illustration) on other models there are hidden screws beneath the small rear trim panels.

19 Use a plastic trim tool and remove the now exposed cover and then remove the trim panel from around the gear selector lever (see illustration).

20 Separate the outer trim panel from the inner panel and remove it (see illustration). This is best done by removing the gear selector knob - with a sharp tug. This allows the panel to be turned over and released without straining the wiring.

21 Locate the 6 fixing screws and remove them from the centre console. Disconnect the



26.18 Unclip the arm rest



26.19 Release the trim panel

Image: A page detailing the removal and refitting of the fuel gauge sender and pump unit, with multiple photographic illustrations showing the process.

Transmission

Guidance on clutch, manual transmission, automatic transmission, driveshafts, and transfer box/propeller shaft/final drive.

Brakes and Suspension

Instructions for braking system, suspension, and steering components.

Body Equipment

Procedures for bodywork and fittings, including interior components.

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Image: A page illustrating the removal of various bodywork and interior fittings, such as the air vent panel and center console, with step-by-step photographic guides.

Electrical System

Information on the vehicle's electrical system, including wiring diagrams for Volvo XC60 and XC90 models.

TROUBLESHOOTING AND REFERENCE

This section provides valuable resources for diagnosing issues and general reference information.

Fault Finding

A dedicated section to help identify common problems and their potential solutions.

Glossary of Technical Terms

Definitions of technical terms used throughout the manual to ensure clarity.

General Repair Procedures

Includes guidance on jacking and vehicle support, and recommended tools and working facilities.

SPECIFICATIONS

Key specifications for the Volvo Diesel XC60 and XC90 models covered by this manual.

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WARRANTY AND SUPPORT

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