Mercedes-Benz E-Class Diesel

Mercedes-Benz E-Class Diesel Service and Repair Manual

Comprehensive Instructions for Models from June 2002 to February 2010

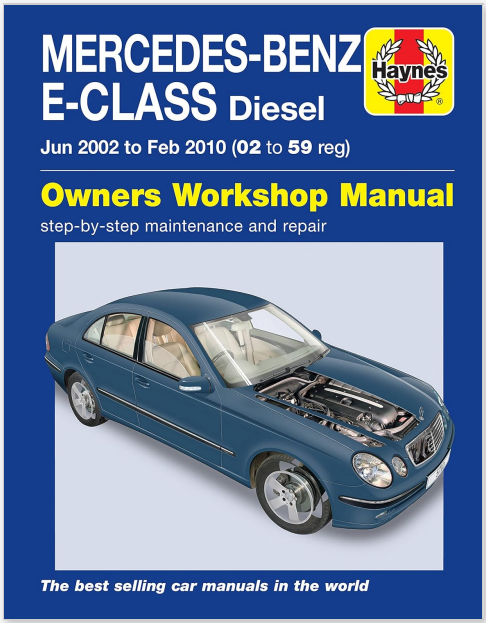


Image: Front cover of the Mercedes-Benz E-Class Diesel Service and Repair Manual, featuring a blue Mercedes-Benz E-Class sedan with its hood open, and the Haynes logo.

Introduction

This manual provides detailed, step-by-step instructions for the maintenance, service, and repair of Mercedes-Benz E-Class Diesel models produced between June 2002 and February 2010. It is designed for both the experienced mechanic and the do-it-yourself enthusiast, offering clear guidance to ensure proper vehicle care and repair.

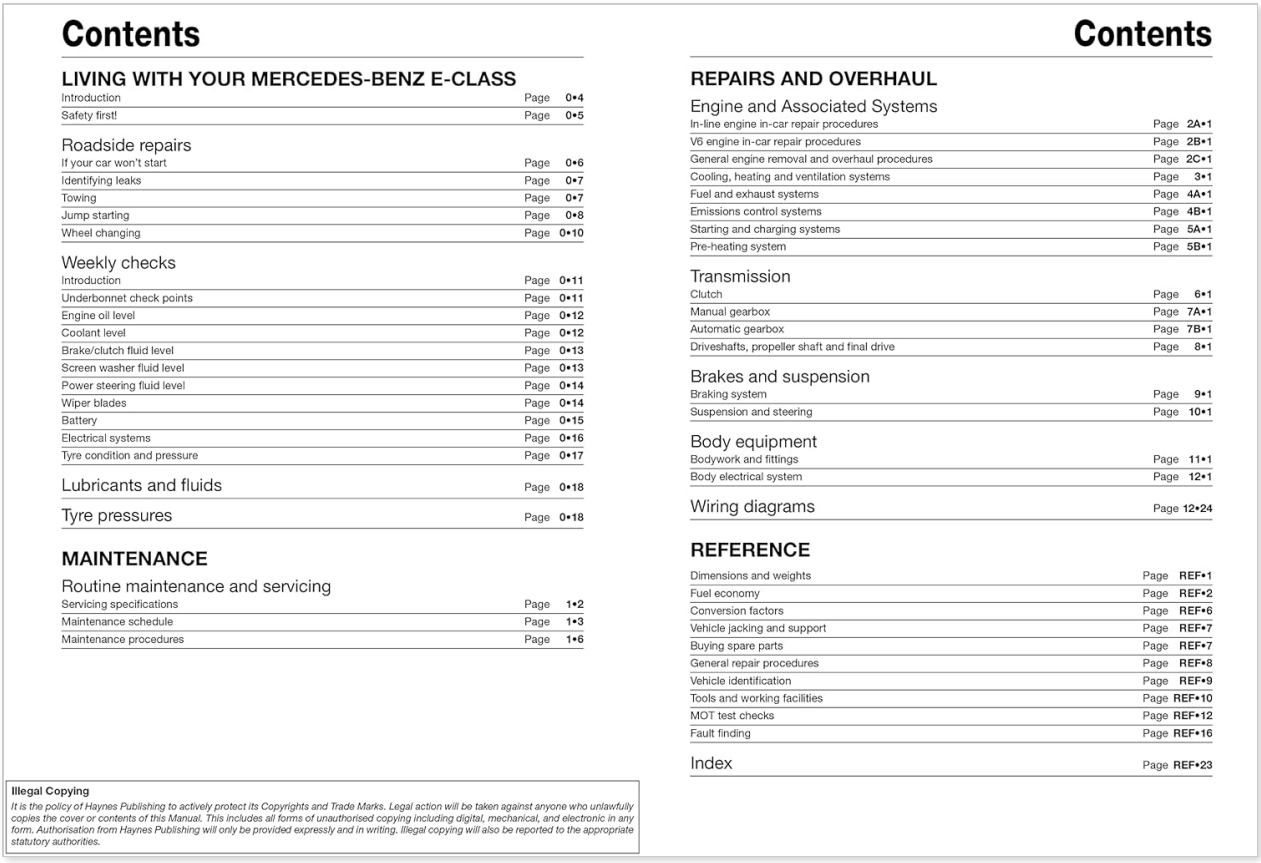
Using This Manual

To effectively utilize this manual, familiarize yourself with its structure. Chapters are organized by vehicle

system, allowing for easy navigation to specific repair or maintenance tasks. Each procedure is accompanied by clear text and illustrative diagrams or photographs.

Navigating Content

The manual is divided into sections covering various aspects of the vehicle. Refer to the contents pages to locate specific topics such as routine maintenance, engine repairs, transmission, braking systems, body equipment, and wiring diagrams.



Contents

Contents

Image: First page of the manual's contents, detailing sections like 'Living with your Mercedes-Benz E-Class', 'Roadside repairs', 'Weekly checks', and 'Lubricants and fluids'.

sump is stuck, use a hide or wooden mallet to tap its sides in order to release it. Do not drive a screwdriver between the sump and cylinder block as this may damage the mating surfaces.

15 It is recommended that the oil and oil filter are renewed whenever the sump is removed. Before refitting the sump, it is a good idea to remove the oil filter in order to allow the oil to drain from the cylinder block oil gallery and internal oilways.

Refitting

16 Thoroughly clean the mating surfaces of the sump and cylinder block.

17 Place the gasket onto the sump and align it with the bolt holes in the cylinder block **(see illustrations)**.

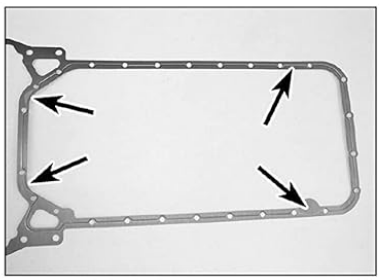
18 With the sump in place, insert all of the bolts finger-tight **(see illustration)**. Make sure all bolts are fitted in the correct position as noted on removal.

19 The bolts can now be tightened securing the transmission to the sump to the specified torque. This will ensure the rear of the sump is correctly aligned with the transmission, as if it is not aligned correctly, vibration and noise may occur.

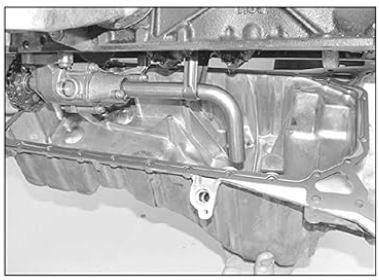
20 Tighten the remaining sump bolts to the specified torque.

21 Complete the rest of the installation by reversing the removal procedure, referring to the relevant Chapters.

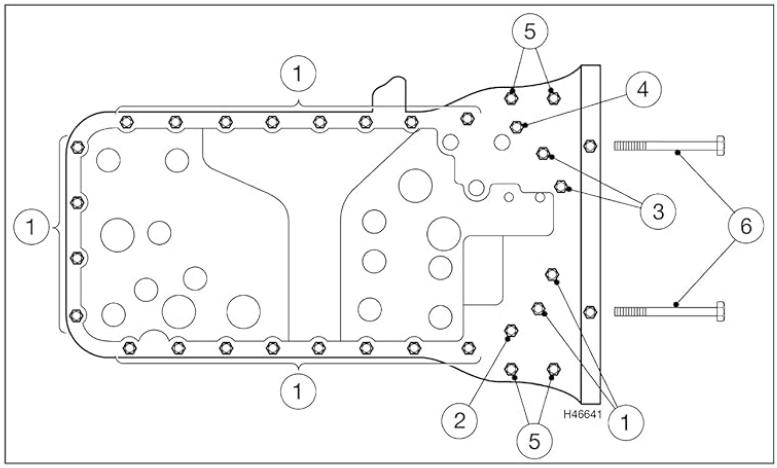
22 When all components are refitted, start the engine and check carefully around the sump for any oil leaks.



11.17a Note the points where sealant is located on the gasket



11.17b Fit the sump using a new gasket



11.18 Sump bolt locations

1 M6x20 2 M6x40 3 M6x80 4 M6x90 5 M8x40 6 M10x40

12 Oil pump – removal, inspection and refitting

Removal

1 Remove the sump as described in Section 11.

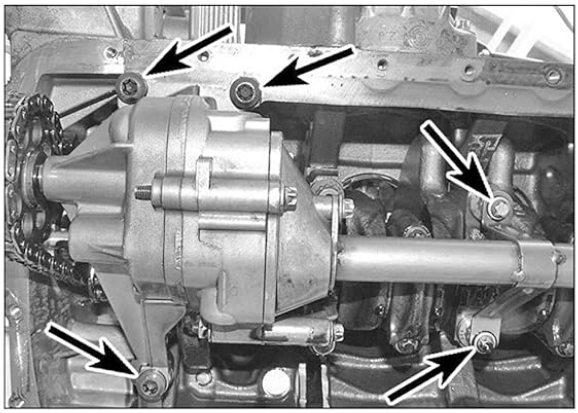
2 The sprocket must be disengaged from the chain as the oil pump is being removed.

3 Unscrew the mounting bolts, withdraw the oil pump from the bottom of the crankcase, and recover the O-ring seal **(see illustration)**.

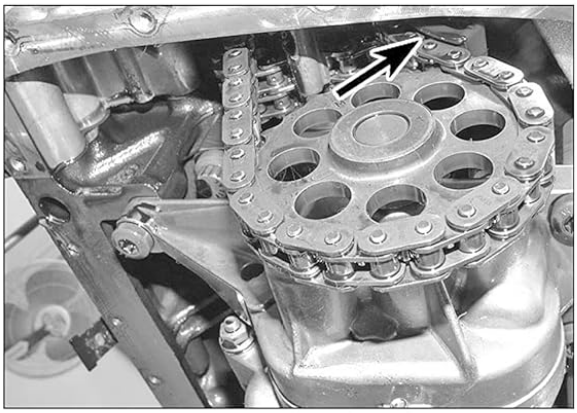
4 Press against the chain tensioner and disengage the sprocket from the chain as the pump is being removed **(see illustration)**.

Inspection

5 With the exception of the oil pressure relief valve components, the oil pump is a sealed unit. To remove the oil pressure relief valve components, proceed as follows.



12.3 Oil pump mounting bolts



12.4 Press against the chain tensioner

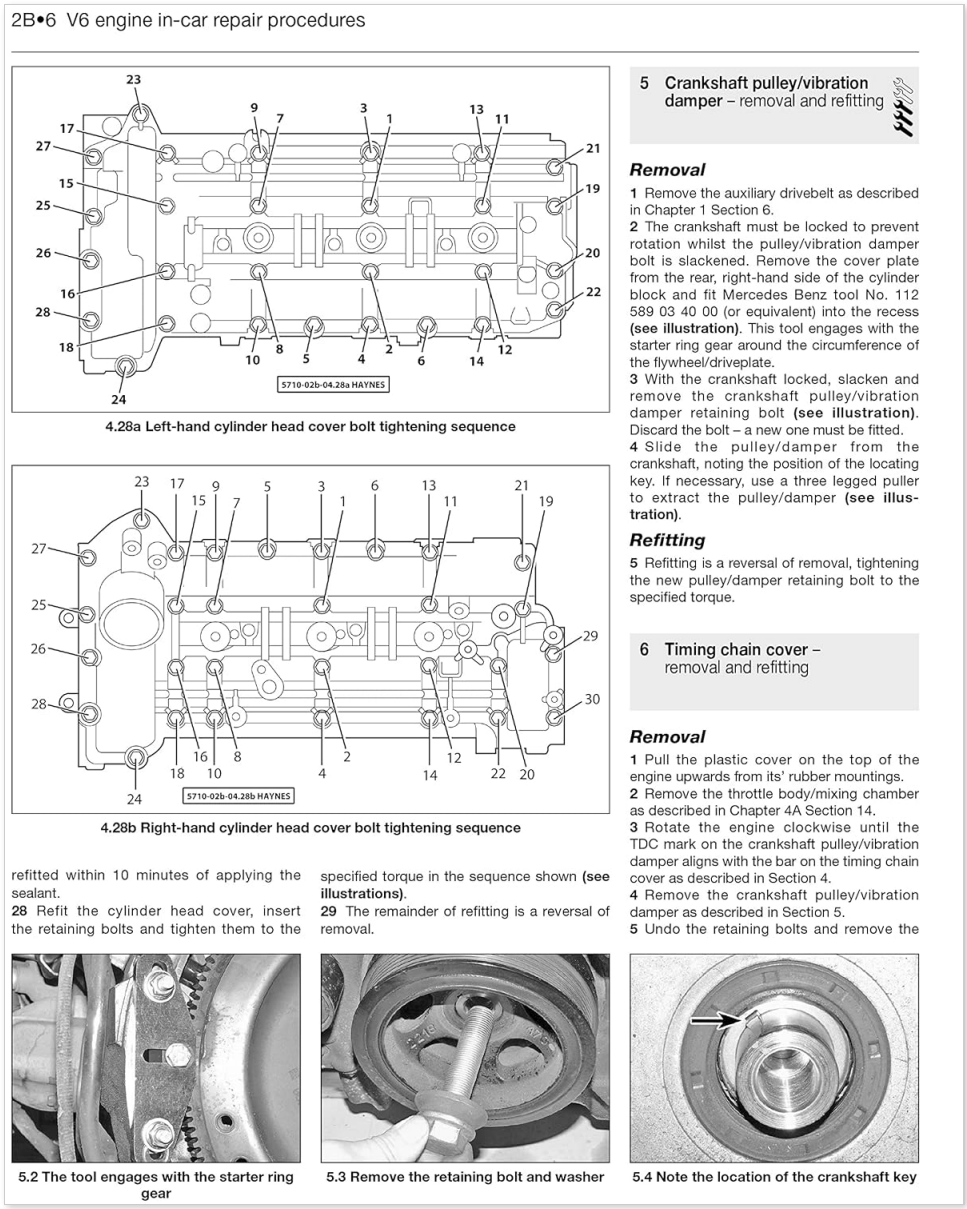
Image: Second page of the manual's contents, detailing sections like 'Repairs and Overhaul', 'Transmission', 'Brakes and suspension', 'Body equipment', 'Wiring diagrams', and 'Reference'.

Maintenance Procedures

The manual provides comprehensive guidance on routine maintenance and servicing. This includes oil changes, fluid checks, filter replacements, and inspections necessary to keep your Mercedes-Benz E-Class Diesel in optimal condition.

Engine Oil Pump Removal and Refitting

Detailed instructions are provided for complex tasks such as the removal and refitting of the engine oil pump. This section includes steps for draining the sump, removing fasteners, and ensuring correct reassembly with proper torque specifications.



2B•6 V6 engine in-car repair procedures

4.28a Left-hand cylinder head cover bolt tightening sequence

4.28b Right-hand cylinder head cover bolt tightening sequence

refitted within 10 minutes of applying the sealant.
28 Refit the cylinder head cover, insert the retaining bolts and tighten them to the specified torque in the sequence shown **(see illustrations)**.
29 The remainder of refitting is a reversal of removal.

5 Crankshaft pulley/vibration damper – removal and refitting

Removal

1 Remove the auxiliary drivebelt as described in Chapter 1 Section 6.
2 The crankshaft must be locked to prevent rotation whilst the pulley/vibration damper bolt is slackened. Remove the cover plate from the rear, right-hand side of the cylinder block and fit Mercedes Benz tool No. 112 589 03 40 00 (or equivalent) into the recess **(see illustration)**. This tool engages with the starter ring gear around the circumference of the flywheel/driveplate.
3 With the crankshaft locked, slacken and remove the crankshaft pulley/vibration damper retaining bolt **(see illustration)**. Discard the bolt – a new one must be fitted.
4 Slide the pulley/damper from the crankshaft, noting the position of the locating key. If necessary, use a three legged puller to extract the pulley/damper **(see illustration)**.

Refitting

5 Refitting is a reversal of removal, tightening the new pulley/damper retaining bolt to the specified torque.

6 Timing chain cover – removal and refitting

Removal

1 Pull the plastic cover on the top of the engine upwards from its' rubber mountings.
2 Remove the throttle body/mixing chamber as described in Chapter 4A Section 14.
3 Rotate the engine clockwise until the TDC mark on the crankshaft pulley/vibration damper aligns with the bar on the timing chain cover as described in Section 4.
4 Remove the crankshaft pulley/vibration damper as described in Section 5.
5 Undo the retaining bolts and remove the

5.2 The tool engages with the starter ring gear

5.3 Remove the retaining bolt and washer

5.4 Note the location of the crankshaft key

Image: A page from the manual illustrating the oil pump removal and refitting process, including a diagram of sump bolt locations and step-by-step text instructions.

Cylinder Head Dismantling and Cleaning

For more involved engine work, the manual covers procedures like cylinder head dismantling, inspection, and cleaning. This includes guidance on removing valve springs, checking for wear, and preparing components for reassembly.

6.4a Remove the valve spring cap...

6.4b...and spring

6.5 Lift off the spring seat

d) Flywheel/driveplate.
e) Sump.
f) Oil pump.
g) Piston/connecting rod assemblies.
h) Balance shaft assembly – V6 engines only.
i) Crankshaft.

6 Before beginning the dismantling and overhaul procedures, make sure that you have all of the correct tools necessary. Refer to Tools and working facilities for further information.

6 Cylinder head – dismantling

Note: *New and reconditioned cylinder heads are available from the manufacturer, and from engine overhaul specialists. Be aware that some specialist tools are required for the dismantling and inspection procedures, and new components may not be readily available. It may therefore be more practical and economical for the home mechanic to purchase a reconditioned head, rather than dismantle, inspect and recondition the original head. A valve spring compressor tool will be required for this operation.*

1 Remove the cylinder head(s) as described in Chapter 2A Section 10 or Chapter 2B Section 10.
2 Remove the exhaust manifold as described in Chapter 4A Section 15.
3 Remove the glow plugs as described in Chapter 5B Section 3.
4 Using a valve spring compressor, compress the spring on each valve in turn until the split collets can be removed. Release the compressor, and lift off the spring cap and spring **(see illustrations)**. If, when the valve spring compressor is screwed down, the spring cap refuses to free and expose the split collets, gently tap the top of the tool, directly over the spring cap, with a light hammer. This will free the retainer.
5 Using a pair of pliers or special removal tool, carefully extract the valve stem oil seal from the top of the guide, then lift off the spring seat **(see illustration)**.
6 Withdraw the valve through the combustion chamber **(see illustration)**.
7 It is essential that each valve is stored with its collets, cap, spring, and spring seat. The valves should also be kept in their correct sequence, unless they are so badly worn that they are to be renewed. If they are going to be kept and used again, place each valve assembly in a labelled polythene bag or similar small container **(see illustration)**. Label each bag No 1 inlet, No 1 exhaust, No 2 inlet, No 2 exhaust, etc, noting that No 1 valve is nearest to the timing chain end of the engine.

7 Cylinder head and valves – cleaning and inspection

1 Thorough cleaning of the cylinder head and valve components, followed by a detailed inspection, will enable you to decide how much valve service work must be carried out during the engine overhaul. **Note:** If the engine has been severely overheated, it is best to assume that the cylinder head is warped – check carefully for signs of this.

Cleaning

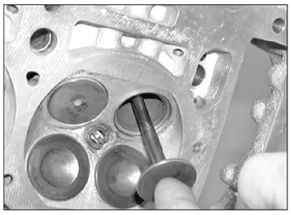
2 Scrape away all traces of old gasket material from the cylinder head.
3 Scrape away the carbon from the combustion chambers and ports, then wash the cylinder head thoroughly with paraffin or a suitable solvent.
4 Scrape off any heavy carbon deposits that may have formed on the valves, then use a power-operated wire brush to remove deposits from the valve heads and stems.

Inspection

Note: *Be sure to perform all the following inspection procedures before concluding that the services of a machine shop or engine overhaul specialist are required. Make a list of all items that require attention.*

Cylinder head

5 Inspect the head very carefully for cracks, evidence of coolant leakage, and other damage. If cracks are found, a new cylinder head should be obtained.
6 Use a straight-edge and feeler blade to check that the cylinder head gasket surface is not distorted **(see illustration)**. If it is, it may be possible to have it machined, provided that the cylinder head is not reduced to less than the specified height.



6.6 Remove the valves from the combustion chamber

6.7 Store the valve components in a labelled bag

7.6 Use a straight-edge and feeler blade to check the cylinder head gasket face for distortion

Image: A page from the manual showing various steps for cylinder head dismantling, including images of removing valve spring caps and lifting off valve springs.

Troubleshooting and Diagnostics

While not a dedicated troubleshooting guide, the manual provides detailed repair procedures that can assist in diagnosing and resolving common issues. By following the systematic steps for component removal, inspection, and reinstallation, users can identify and correct malfunctions.

Electrical System Diagrams

The manual includes comprehensive wiring diagrams to aid in diagnosing electrical faults. These diagrams provide visual representations of the vehicle's electrical circuits, helping to trace connections and identify problematic components.

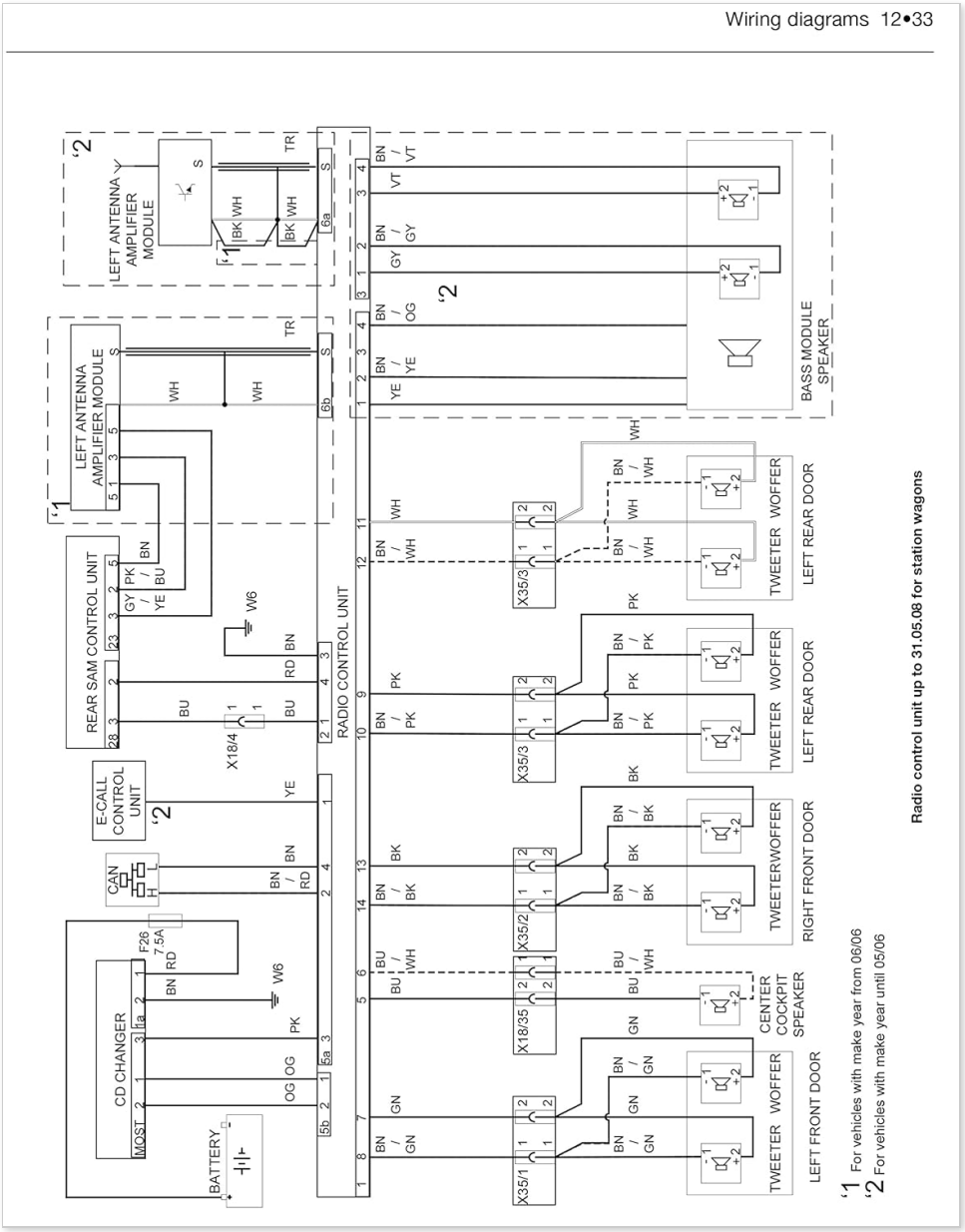


Image: A detailed wiring diagram from the manual, showing connections for various electrical components such as the radio control unit, speakers, and antenna amplifier modules.

Specifications

This section outlines the physical and publication details of the manual itself. For detailed vehicle specifications, refer to the relevant chapters within the book.

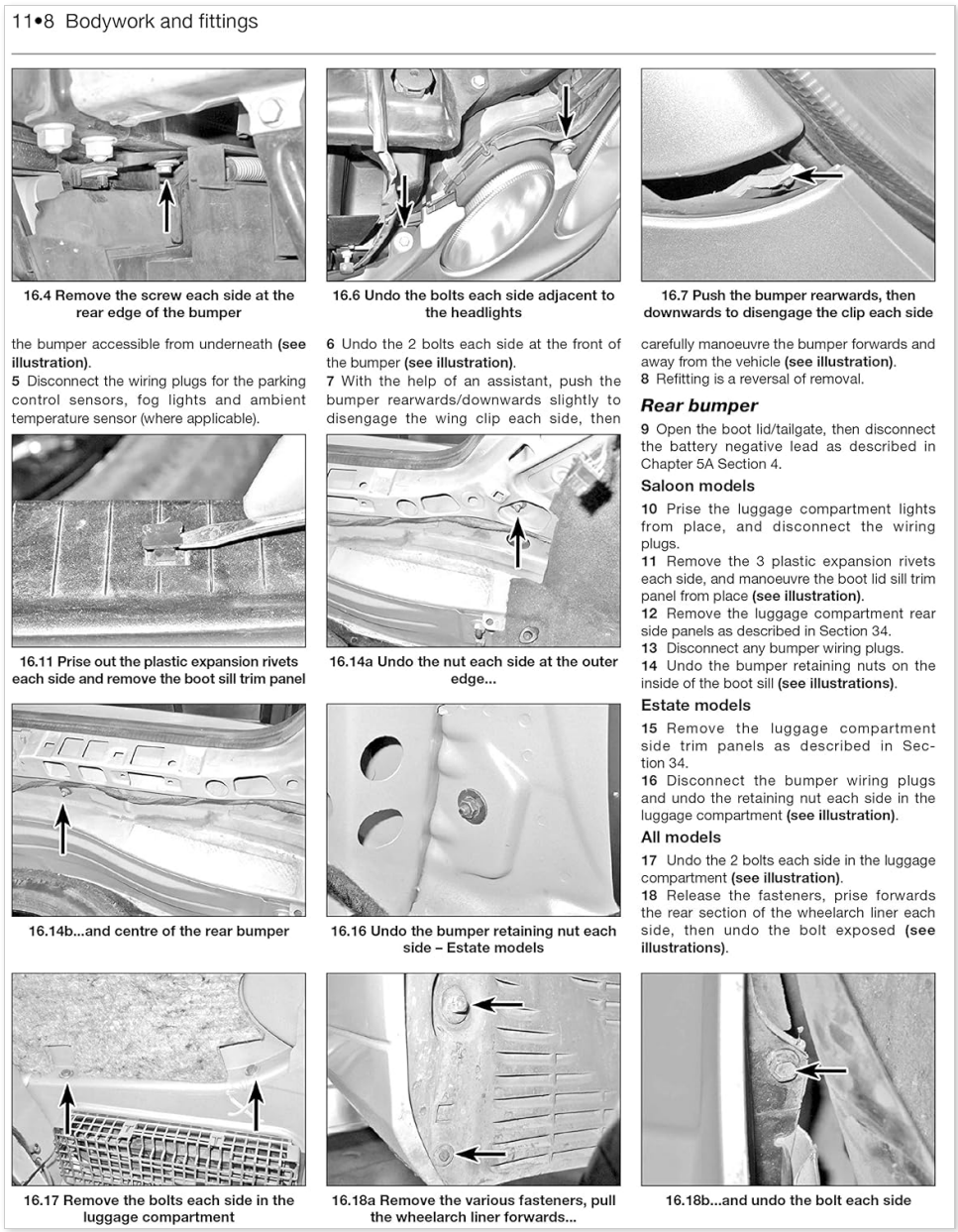
- **Publisher:** J H Haynes & Co Ltd
- **Language:** English
- **ISBN-10:** 0857337106
- **ISBN-13:** 978-0857337108
- **Item Weight:** 2.31 pounds
- **Dimensions:** 8.27 x 0.55 x 10.63 inches

Warranty and Support

This product is a third-party service and repair manual. For any inquiries regarding the content or publication, please contact the publisher, J H Haynes & Co Ltd, directly. Warranty information for the manual itself would typically be provided by the retailer or publisher at the time of purchase. This manual does not provide warranty coverage for the vehicle or its components.

Bodywork and Fittings

The manual also covers procedures for bodywork and interior fittings, providing guidance on removal and installation of various components. This can be useful for repairs after minor collisions or for accessing internal vehicle systems.



11•8 Bodywork and fittings

16.4 Remove the screw each side at the rear edge of the bumper

16.6 Undo the bolts each side adjacent to the headlights

16.7 Push the bumper rearwards, then downwards to disengage the clip each side

the bumper accessible from underneath **(see illustration)**.
5 Disconnect the wiring plugs for the parking control sensors, fog lights and ambient temperature sensor (where applicable).

6 Undo the 2 bolts each side at the front of the bumper **(see illustration)**.
7 With the help of an assistant, push the bumper rearwards/downwards slightly to disengage the wing clip each side, then carefully manoeuvre the bumper forwards and away from the vehicle **(see illustration)**.
8 Refitting is a reversal of removal.

16.11 Prise out the plastic expansion rivets each side and remove the boot sill trim panel

16.14a Undo the nut each side at the outer edge...

Rear bumper

9 Open the boot lid/tailgate, then disconnect the battery negative lead as described in Chapter 5A Section 4.

Saloon models

10 Prise the luggage compartment lights from place, and disconnect the wiring plugs.
11 Remove the 3 plastic expansion rivets each side, and manoeuvre the boot lid sill trim panel from place **(see illustration)**.
12 Remove the luggage compartment rear side panels as described in Section 34.
13 Disconnect any bumper wiring plugs.
14 Undo the bumper retaining nuts on the inside of the boot sill **(see illustrations)**.

16.14b...and centre of the rear bumper

16.16 Undo the bumper retaining nut each side – Estate models

Estate models

15 Remove the luggage compartment side trim panels as described in Section 34.
16 Disconnect the bumper wiring plugs and undo the retaining nut each side in the luggage compartment **(see illustration)**.

All models

17 Undo the 2 bolts each side in the luggage compartment **(see illustration)**.
18 Release the fasteners, prise forwards the rear section of the wheelarch liner each side, then undo the bolt exposed **(see illustrations)**.

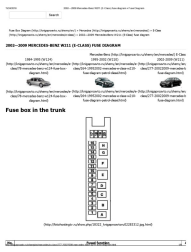
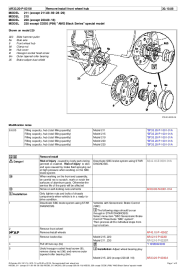
16.17 Remove the bolts each side in the luggage compartment

16.18a Remove the various fasteners, pull the wheelarch liner forwards...

16.18b...and undo the bolt each side

Image: A page from the manual detailing procedures for bodywork and fittings, including images and instructions for removing screws from the bumper and undoing bolts for headlights.

Related Documents - E-Class Diesel

	[Mercedes-Benz E-Class W211 User Manual and Operating Guide] Comprehensive user manual and operating guide for the Mercedes-Benz E-Class W211, covering vehicle controls, safety features, and driving instructions.
	[Mercedes-Benz W211 E-Class: User Manual and Technical Overview] Comprehensive information on the Mercedes-Benz W211 E-Class, including user manual details, technical specifications, engine options, and development history. Covers models from 2002-2009.
	[Operation Manual: SBC Tool for Mercedes-Benz W211 (E-Class) and R230 (SL-Class) with SBC] This operation manual provides detailed instructions for using the SBC Tool with Mercedes-Benz W211 (E-Class) and R230 (SL-Class) vehicles equipped with the Sensotronic Brake Control (SBC) system. It covers safety precautions, deactivation, reactivation, and troubleshooting procedures.
	[Mercedes-Benz E-Class Owner's Manual] Your essential guide to operating, understanding, and maintaining your Mercedes-Benz E-Class vehicle. Discover safety features, controls, driving systems, and more.
	[2002-2009 Mercedes-Benz W211 (E-Class) Fuse Diagram and Function List] Detailed fuse diagram and function list for the 2002-2009 Mercedes-Benz W211 (E-Class) models, covering fuse boxes in the trunk, instrument panel, engine compartment, and prefuse locations. This guide helps identify the purpose of each fuse for electrical system troubleshooting.
	[Remove/Install Front Wheel Hub - Mercedes-Benz Models 211, 215, 220, 230] Detailed instructions for removing and installing the front wheel hub on Mercedes-Benz E-Class (W211), CL-Class (W215), S-Class (W220), and SL-Class (R230) models, including safety precautions, procedure steps, and technical specifications.