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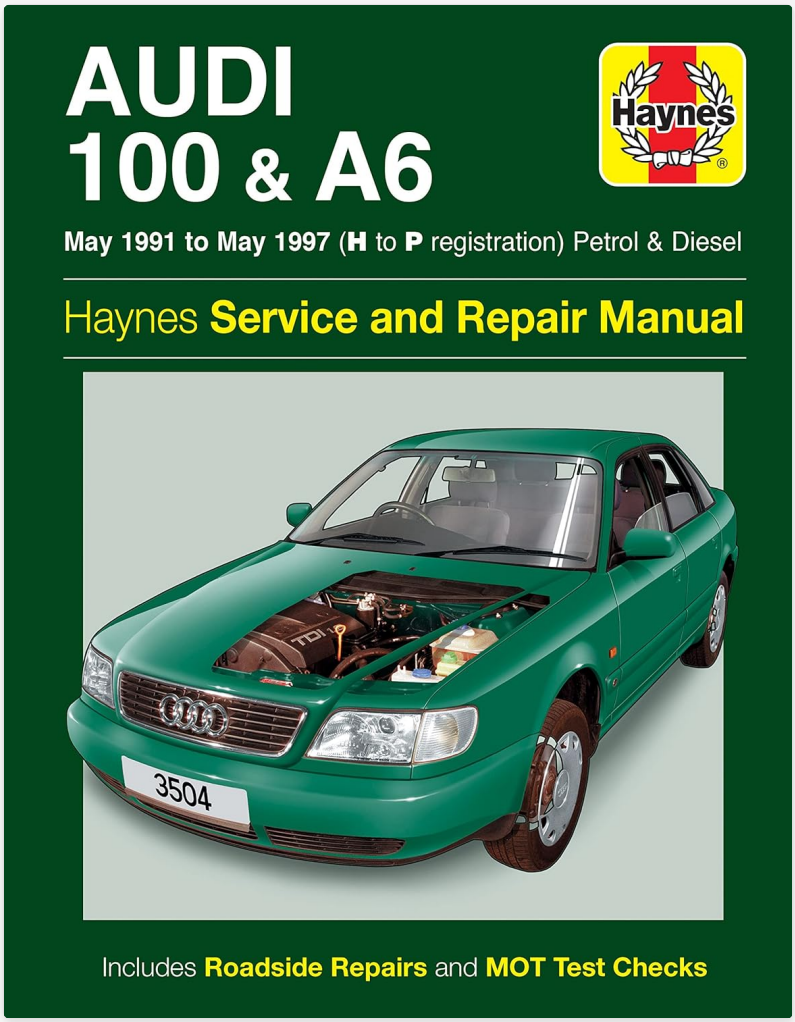
Audi 100 & A6

Audi 100 & A6 Owner's Workshop Manual

Models Covered: May 1991 to May 1997 (H to P registration) Petrol & Diesel

Introduction and Overview



The official Haynes Service and Repair Manual for Audi 100 and A6 models.

This manual provides comprehensive service and repair information for Audi 100 and A6 models manufactured between May 1991 and May 1997. It covers both petrol and diesel engine variants. The content is designed to assist owners and professional technicians in performing maintenance, repairs, and overhauls with clear, step-by-step instructions.
For optimal safety and performance, always adhere to the procedures outlined in this manual and use appropriate tools and safety equipment.

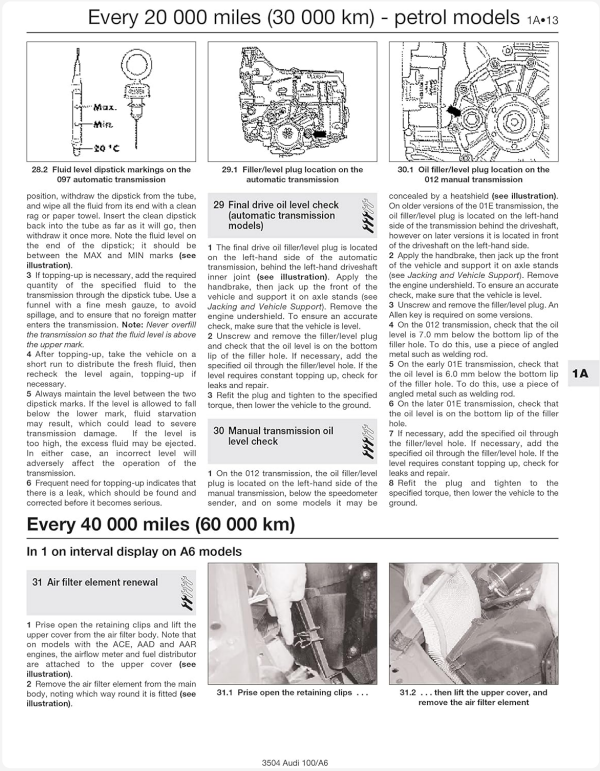
Safety Precautions

Before commencing any work on your vehicle, it is crucial to prioritize safety. Always ensure the vehicle is securely supported on jack stands, the engine is cool, and the battery is disconnected if working on electrical components. Wear appropriate personal protective equipment, including gloves and eye protection.
Refer to the specific safety warnings and precautions detailed at the beginning of each relevant section within the manual. Never work under a vehicle supported only by a jack.

Routine Maintenance and Weekly Checks

Regular maintenance is essential for the longevity and reliable operation of your Audi. This section details routine checks and servicing procedures for both petrol and diesel models, typically performed at specified intervals or as part of weekly inspections.

Petrol Model Fluid Level Checks



Every 20 000 miles (30 000 km) - petrol models 1A•13

28.2 Fluid level dipstick markings on the 097 automatic transmission

29.1 Filler/level plug location on the automatic transmission

30.1 Oil filler/level plug location on the 012 manual transmission

position, withdraw the dipstick from the tube, and wipe all the fluid from its end with a clean rag or paper towel. Insert the clean dipstick back into the tube as far as it will go, then withdraw it once more. Note the fluid level on the end of the dipstick; it should be between the MAX and MIN marks **(see illustration)**.
3 If topping-up is necessary, add the required quantity of the specified fluid to the transmission through the dipstick tube. Use a funnel with a fine mesh gauze, to avoid spillage, and to ensure that no foreign matter enters the transmission. **Note:** *Never overfill the transmission so that the fluid level is above the upper mark.*
4 After topping-up, take the vehicle on a short run to distribute the fresh fluid, then recheck the level again, topping-up if necessary.
5 Always maintain the level between the two dipstick marks. If the level is allowed to fall below the lower mark, fluid starvation may result, which could lead to severe transmission damage. If the level is too high, the excess fluid may be ejected. In either case, an incorrect level will adversely affect the operation of the transmission.
6 Frequent need for topping-up indicates that there is a leak, which should be found and corrected before it becomes serious.

29 Final drive oil level check (automatic transmission models)

1 The final drive oil filler/level plug is located on the left-hand side of the automatic transmission, behind the left-hand driveshaft inner joint **(see illustration)**. Apply the handbrake, then jack up the front of the vehicle and support it on axle stands (see *Jacking and Vehicle Support*). Remove the engine undershield. To ensure an accurate check, make sure that the vehicle is level.
2 Unscrew and remove the filler/level plug and check that the oil level is on the bottom lip of the filler hole. If necessary, add the specified oil through the filler/level hole. If the level requires constant topping up, check for leaks and repair.
3 Refit the plug and tighten to the specified torque, then lower the vehicle to the ground.

30 Manual transmission oil level check

1 On the 012 transmission, the oil filler/level plug is located on the left-hand side of the manual transmission, below the speedometer sender, and on some models it may be concealed by a heatshield **(see illustration)**. On older versions of the 01E transmission, the oil filler/level plug is located on the left-hand side of the transmission behind the driveshaft, however on later versions it is located in front of the driveshaft on the left-hand side.
2 Apply the handbrake, then jack up the front of the vehicle and support it on axle stands (see *Jacking and Vehicle Support*). Remove the engine undershield. To ensure an accurate check, make sure that the vehicle is level.
3 Unscrew and remove the filler/level plug. An Allen key is required on some versions.
4 On the 012 transmission, check that the oil level is 7.0 mm below the bottom lip of the filler hole. To do this, use a piece of angled metal such as welding rod.
5 On the early 01E transmission, check that the oil level is 6.0 mm below the bottom lip of the filler hole. To do this, use a piece of angled metal such as welding rod.
6 On the later 01E transmission, check that the oil level is on the bottom lip of the filler hole.
7 If necessary, add the specified oil through the filler/level hole. If necessary, add the specified oil through the filler/level hole. If the level requires constant topping up, check for leaks and repair.
8 Refit the plug and tighten to the specified torque, then lower the vehicle to the ground.

1A

Every 40 000 miles (60 000 km)

In 1 on interval display on A6 models

31 Air filter element renewal

1 Prise open the retaining clips and lift the upper cover from the air filter body. Note that on models with the ACE, AAD and AAR engines, the airflow meter and fuel distributor are attached to the upper cover **(see illustration)**.
2 Remove the air filter element from the main body, noting which way round it is fitted **(see illustration)**.

31.1 Prise open the retaining clips . . .

31.2 . . . then lift the upper cover, and remove the air filter element

3504 Audi 100/A6

This image illustrates key weekly checks for petrol models, including engine oil dipstick, coolant level, and the location of the oil/level plug for automatic transmission fluid. It also shows the air filter element renewal process. Regular inspection of these items helps prevent major issues and ensures optimal vehicle performance.

- Engine oil level check and top-up
- Coolant level verification
- Automatic transmission fluid level inspection
- Air filter element removal and replacement

Diesel Model Maintenance Procedures

1B•8 Every 10 000 miles (15 000 km) - diesel models

3.11a Removing the oil level dipstick . . .

3.11b . . . and oil filler cap on the 2.5 litre 5-cylinder engine

3.11c Use a funnel when adding oil to the engine

funnel may help to reduce spillage **(see illustrations)**. Pour in half the specified quantity of oil first, then wait a few minutes for the oil to settle in the sump. Continue adding oil a small quantity at a time until the level is up to the lower mark on the dipstick. Adding around 1.0 litre will bring the level up to the upper mark on the dipstick. Refit the filler cap.
12 Start the engine and run it at idle speed for a few minutes; check for leaks around the oil filter seal and the sump drain plug. Note that there may be a few seconds delay before the oil pressure warning light goes out when the engine is started, as the oil circulates through the engine oil galleries and the new oil filter before the pressure builds up. ***Caution: On models with a turbocharger, leave the engine idling until the oil pressure light goes out. Increasing the engine speed with the warning light on will damage the turbocharger!***
13 Switch off the engine, and wait a few minutes for the oil to settle in the sump once more. With the new oil circulated and the filter completely full, recheck the level on the dipstick, and add more oil as necessary.
14 Dispose of the used engine oil safely, with reference to *General repair procedures* in the *Reference* section of this manual.

HAYNES HINT

For a quick check, the thickness of each brake pad can be measured through the aperture in the caliper body

4 Front brake pad check

1 Firmly apply the handbrake, then jack up the front of the car and support it securely on axle stands. Remove the front roadwheels.
2 For a comprehensive check, the brake pads should be removed and cleaned. The operation of the caliper can then also be checked, and the condition of the brake disc itself can be fully examined on both sides. Refer to Chapter 9 **(see Haynes Hint)**.
3 If any pad's friction material is worn to the specified thickness or less, *all four pads must be renewed as a set.*

5 Bulkhead water drain valves clearance

1 Open up the bonnet then unclip the water deflector panel and remove it from behind the engine compartment bulkhead.
2 Remove all leaves and debris from the area around the heater/blower motor housing and check that the drain valve(s) in the base of the bulkhead chamber are unblocked. Check the drain valve(s) function correctly by pouring a little water into the chamber to see that it drains off quickly. If a valve is thought to be faulty it should be renewed.
3 If all is well, refit the water deflector panel making sure it is clipped securely in position

6 Fuel filter drainage

4-cylinder engines

1 The fuel filter is located on the bulkhead at the rear of the engine compartment. First loosen the clips and disconnect the hoses from the right-hand front and left-hand rear of the filter **(see illustration)**.
2 Loosen the clamp nut and lift out the fuel filter without disconnecting the remaining two hoses **(see illustration)**.

6.1 Disconnect these hoses before removing the fuel filter on 4-cylinder engines

6.2 Loosen this clamp nut to remove the fuel filter on 4-cylinder engines

6.3 Water drain screw on the bottom of the fuel filter

3504 Audi 100/A6

This image highlights maintenance procedures specific to diesel models, such as checking the oil dipstick, adding oil via the filler cap, and inspecting the front brake pads. It also shows the process for disconnecting hoses for fuel filter removal, crucial for maintaining fuel system integrity.

- Oil level and top-up procedures
- Front brake pad inspection
- Fuel filter maintenance and replacement

Engine and Associated Systems Repair

This section covers detailed repair and overhaul procedures for the engine and its associated systems, including components like the crankcase and oil system for specific engine types.

5-Cylinder Diesel Engine In-Car Repair Steps

16.3a Unscrew the bolts . . .

16.3b . . . and remove the crankcase ventilation duct (AAT engine)

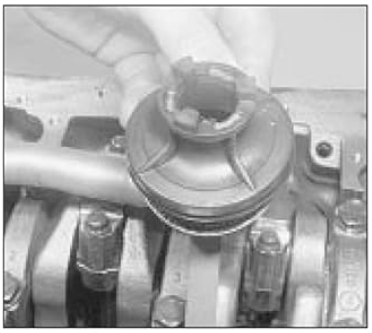
16.4a Using circlip pliers, remove the circlip . . .

remove the crankcase ventilation duct from the bottom of the block **(see illustrations)**.

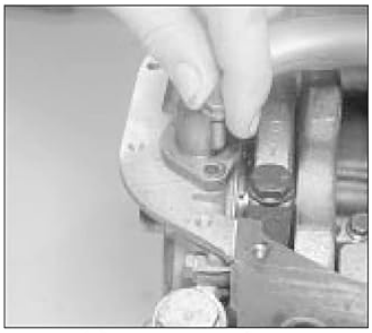
4 Using circlip pliers, expand and remove the circlip from the strainer on the bottom of the oil pick-up tube **(see illustrations)**.

5 Using a screwdriver or similar tool, knock back the tabs on the lockplate. Unscrew the oil pickup tube support bracket bolts on the crankcase, then unbolt the flange from the bottom of the oil pump and recover the lockplate. Withdraw the tube and recover the gasket or O-ring **(see illustrations)**.

6 Unscrew the mounting bolts and withdraw the oil pump over the crankshaft and from the front of the cylinder block. Recover the gasket. Note that the inner timing cover is secured with some of the oil pump mounting bolts **(see illustrations)**.



16.4b . . . followed by the strainer from the oil pick-up tube (AAT engine)



16.5a Unscrew the bolts from the oil pump . . .

16.5b . . . and the bolts from the support bracket . . .

16.5c . . . and remove the oil pickup tube (AAT engine)

16.5d Removing the O-ring seal from the groove (AAT engine)

16.6a The inner timing cover is secured to the oil pump with the long bolts

16.6b Remove the oil pump . . .

16.6c . . . and gasket (AAT engine)

This image sequence illustrates the steps involved in disassembling parts of a 5-cylinder diesel engine while still in the vehicle. Procedures shown include unscrewing bolts, removing the crankcase ventilation duct, extracting the oil pickup tube, and detaching the O-ring from the oil pump. These detailed visuals aid in precise component removal and reassembly, ensuring proper maintenance and repair.

- Crankcase ventilation duct removal
- Oil pickup tube extraction
- O-ring removal from oil pump
- Detailed steps for in-car engine component servicing

Electrical System and Wiring Diagrams

Understanding the vehicle's electrical system is crucial for diagnosing and repairing electrical faults. This section provides detailed wiring diagrams and explanations of key electrical components and circuits.

Typical Starting, Charging, and Horn Wiring

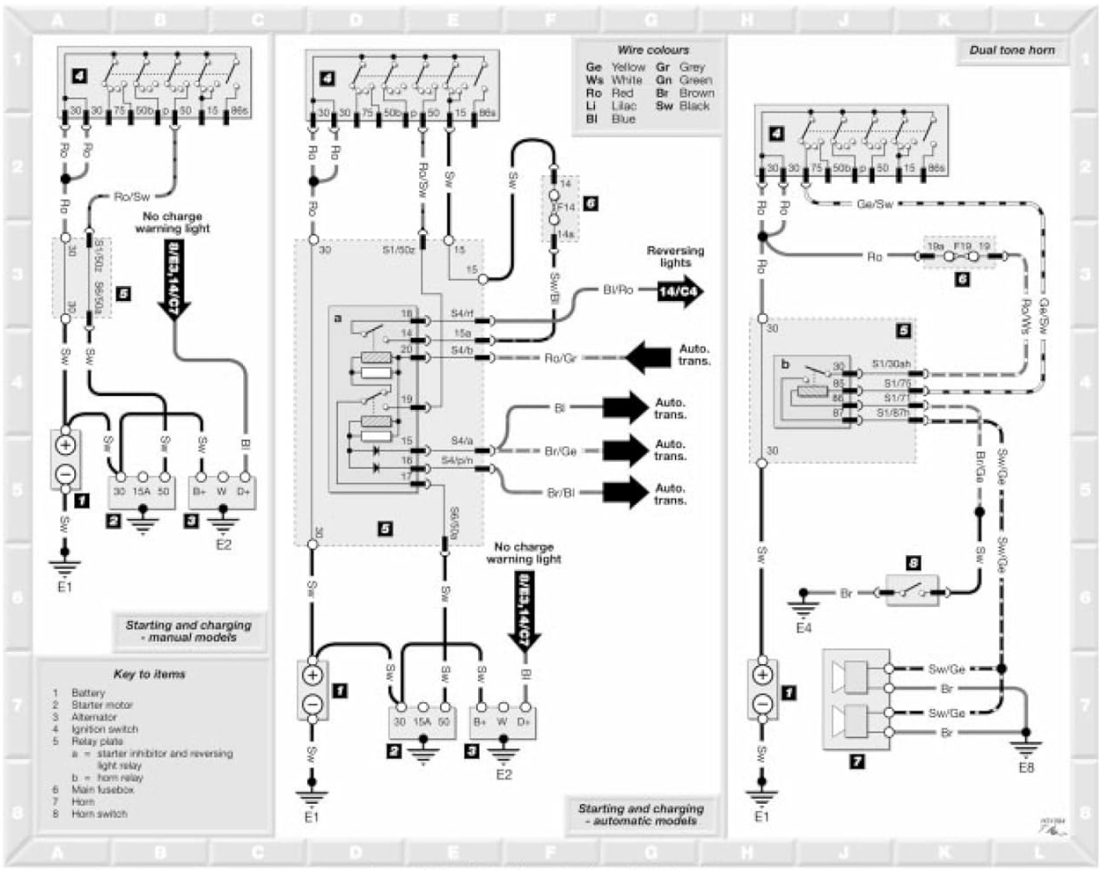


Diagram 2 : Typical starting, charging and dual tone horn

This wiring diagram illustrates the electrical connections for the starting, charging, and dual tone horn systems in the Audi 100/A6. It includes components such as the battery, starter motor, alternator, ignition switch, and various relays. The diagram uses standard electrical symbols and color codes to facilitate troubleshooting and repair of electrical circuits, providing a clear visual guide for electrical diagnostics.

- Battery and charging system connections
- Starter motor and ignition switch wiring
- Dual tone horn circuit and components
- Interpretation of wiring diagram symbols and color codes

Technical Specifications

This section provides detailed technical specifications for various components and systems of the Audi 100 and A6 models, including fluid capacities, torque settings, and dimensions. These specifications are critical for accurate maintenance and repair procedures.

Petrol Model Servicing Specifications Overview

Servicing specifications - petrol models

Lubricants and fluids	Refer to end of *Weekly checks*

Capacities	**4-cylinder engine**	**5-cylinder engine**
Engine oil (including filter)	3.0 litres	4.5 litres
Cooling system	7.0 litres	8.0 litres
Transmission		
Manual transmission	2.4 litres	
Automatic transmission fluid:		
Initial filling	5.5 litres	
Fluid change	3.5 litres	
Automatic transmission final drive	1.0 litre	
Power-assisted steering		
Models with self-levelling rear suspension	2.5 litres	
Models with standard rear suspension	1.1 litre	
Fuel tank		
All models (approximate)	80 litres	

Cooling system	
Antifreeze mixture - 40% antifreeze to water	Protection down to -25°C
Antifreeze mixture - 50% antifreeze to water	Protection down to -35°C

Ignition system		
Ignition timing	Refer to Chapter 5B	
Spark plugs:	**Type**	**Electrode gap**
Engine code ADR	Bosch FR 7 LD+	0.9 mm
Engine codes AAE, AAD and ABK	Bosch WR 7 LT+	1.0 mm
Engine code ACE	Bosch F 6 LTCR	1.0 mm
Engine code AAR	Bosch WR 8 LT+	1.0 mm

Brakes	
Front brake pad friction material minimum thickness	2.0 mm
Rear brake pad minimum thickness (including backing)	7 mm
Rear brake shoe friction material minimum thickness	2.5 mm

Auxiliary drivebelt	
Deflection:	
New alternator V-belt	2.0 mm
Used alternator V-belt	5.0 mm
Power steering V-belt (new or used)	10.0 mm
A/C compressor V-belt	5.0 mm

Torque wrench settings	**Nm**	**lbf ft**
Alternator mounting bolt	35	26
Alternator tensioner link	20	15
Alternator tensioner nut	35	26
Automatic transmission filler tube union nut (097)	80	59
Automatic transmission final drive oil filler/level plug	25	18
Automatic transmission inspection plug (01N)	15	11
Automatic transmission overflow pipe (01N)	2	1
Manual transmission filler/level plug:		
012 transmission	25	18
01E transmission	40	30
Power steering pump mounting	25	18
Roadwheel bolts	110	81
Spark plugs:		
Engine code ADR, AAE, ABK	30	22
Engine code ACE, AAD, AAR	20	15
Sump drain plug	30	22

This image displays a table of servicing specifications for petrol models, including capacities for engine oil, cooling system, and transmission fluids. It also lists ignition system details (spark plugs, electrode gap), brake specifications (pad minimum thickness), auxiliary drivebelt deflection, and critical torque wrench settings for various components like the alternator, tensioner, and wheel bolts. These specifications are vital for accurate maintenance and repair.

Example: Key Servicing Specifications (Petrol Models)

Category	Item	Specification
Capacities	Engine oil (4-cylinder)	3.0 litres
	Cooling system (4-cylinder)	7.0 litres
Brakes	Front brake pad minimum thickness	2.0 mm
Torque Wrench Settings	Alternator mounting bolt	20 Nm

Troubleshooting and Fault Finding

This section provides guidance on diagnosing common issues and identifying potential faults based on symptoms. It includes a fault finder to assist in pinpointing the cause of various operational problems.
For complex or persistent issues, consulting a qualified automotive technician is highly recommended to ensure proper diagnosis and repair.

Support and Additional Resources

For further assistance, genuine Audi parts, or general inquiries, please refer to the following resources:

- Official Audi Owner's Resources: Access to official service information, recalls, and dealer locator.
- Haynes Manuals Official Website: For additional manuals and technical support related to Haynes publications.

This manual serves as a comprehensive guide for maintenance and repair, but it does not replace the need for professional expertise when required.

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