

**Haynes**
*shows you how***BMW 3-Series (92-98) & Z3 (96-98) Haynes Online Manual**

1 Introduction

General information

1 This Chapter is designed to help the home mechanic maintain his/her vehicle for safety, economy, long life and peak performance.

2 The Chapter contains a master maintenance schedule (page 1-6), followed by Sections dealing specifically with each task in the schedule. Visual checks, adjustments, component replacement and other helpful items are included. Refer to the illustrations of the engine compartment and the underside of the vehicle at the beginning of this Chapter for the locations of the various components.

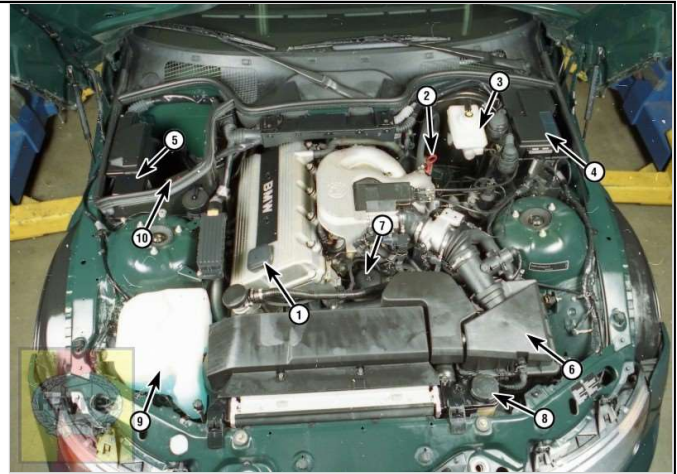
Typical 3-Series engine compartment components (2.8L six-cylinder shown, others similar)

- 1 Engine oil filler cap
- 2 Engine oil dipstick
- 3 Brake/clutch fluid reservoir
- 4 Fuse box
- 5 Power steering fluid reservoir
- 6 Air cleaner housing
- 7 Engine oil filter
- 8 Coolant expansion tank
- 9 Windshield washer fluid reservoir
- 10 Battery jump starting terminal



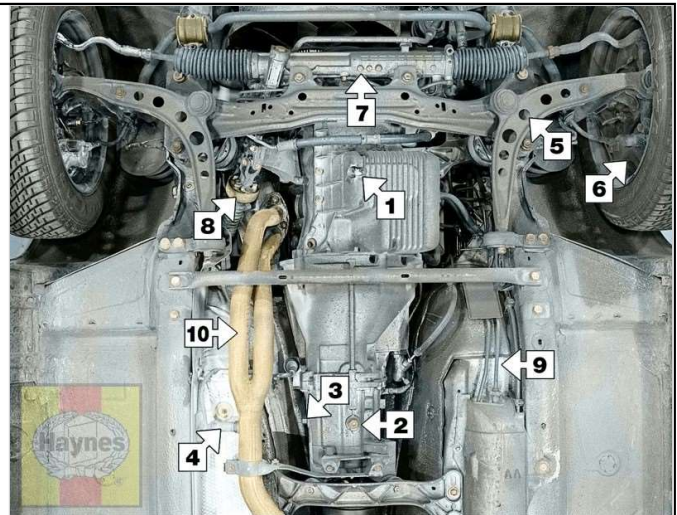
Typical Z3 engine compartment components (1.9L four-cylinder engine shown, others similar)

- 1 Engine oil filler cap
- 2 Engine oil dipstick
- 3 Brake/clutch fluid reservoir
- 4 Fuse box
- 5 Fuse box
- 6 Air cleaner housing
- 7 Engine oil filter
- 8 Coolant expansion tank
- 9 Windshield washer fluid reservoir
- 10 Battery jump starting terminal (1997 and later models)



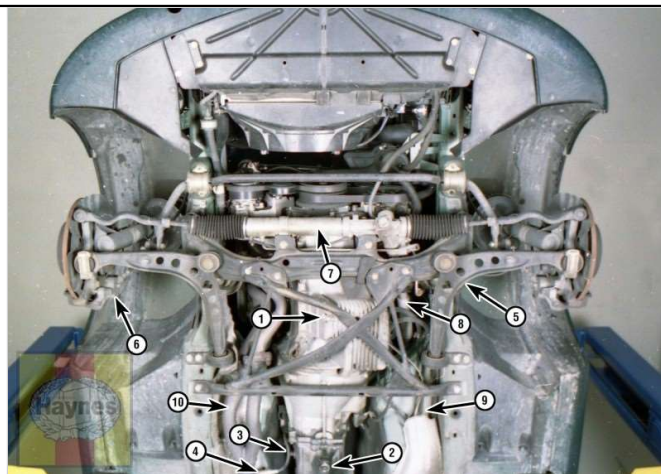
Typical 3-Series front underside components

- 1 Engine oil drain plug
- 2 Manual transmission drain plug
- 3 Manual transmission check/fill plug
- 4 Oxygen sensor
- 5 Lower arm
- 6 Brake caliper
- 7 Steering gear
- 8 Steering column intermediate shaft
- 9 Fuel lines
- 10 Exhaust pipe



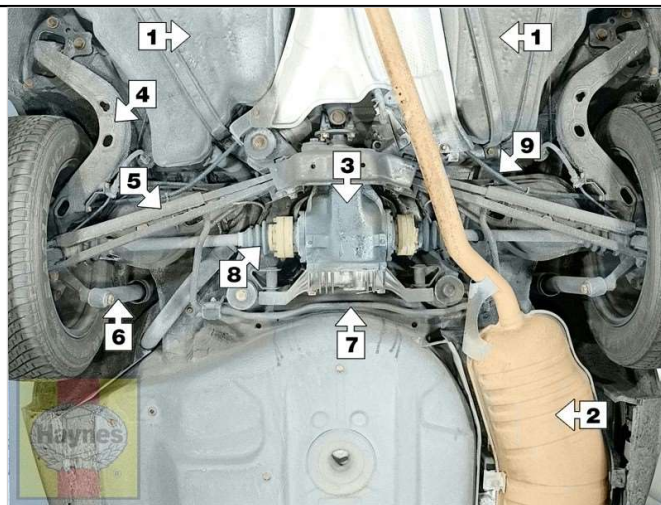
Typical Z3 front underside components

- 1 Engine oil drain plug
- 2 Manual transmission drain plug
- 3 Manual transmission check/fill plug
- 4 Oxygen sensor
- 5 Lower arm
- 6 Brake caliper
- 7 Steering gear
- 8 Steering column intermediate shaft
- 9 Fuel lines
- 10 Exhaust pipe



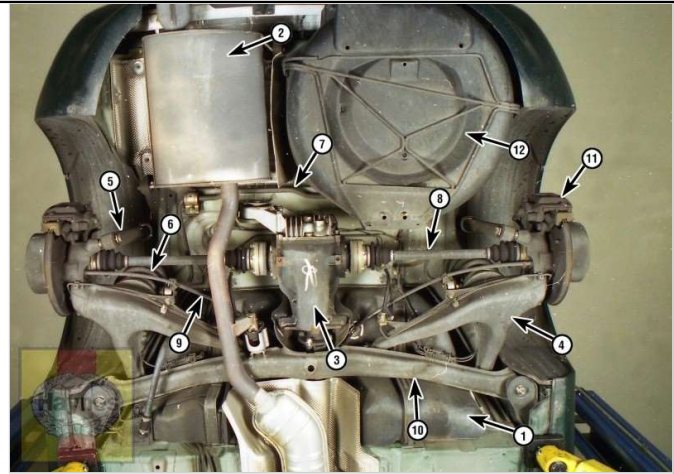
Typical 3-Series rear underside components

- 1 Fuel tank
- 2 Muffler
- 3 Differential
- 4 Trailing arm
- 5 Lower control arm
- 6 Shock absorber
- 7 Stabilizer bar
- 8 Driveaxle
- 9 Parking brake cable



Typical Z3 rear underside components

- 1 Fuel tank
- 2 Muffler
- 3 Differential
- 4 Trailing arm
- 5 Shock absorber
- 6 Coil spring
- 7 Stabilizer bar
- 8 Driveaxle
- 9 Parking brake cable
- 10 Rear axle carrier
- 11 Rear brake caliper
- 12 Spare tire



3 Servicing your vehicle in accordance with the service indicator display and the following Sections will provide a planned maintenance program, which should result in a long and reliable service life. This is a comprehensive plan, so maintaining some items but not others at the specified service intervals, will not produce the same results.

4 As you service your vehicle, you will discover that many of the procedures can - and should - be grouped together, because of the particular procedure being performed, or because of the proximity of two otherwise-unrelated components to one another. For example, if the vehicle is raised for any reason, the exhaust can be inspected at the same time as the suspension and steering components.

5 The first step in this maintenance program is to prepare yourself before the actual work begins. Read through all the Sections relevant to the work to be carried out, then make a list and gather all the parts and tools required. If a problem is encountered, seek advice from a parts specialist, or a dealer service department.

Intensive maintenance

6 If, from the time the vehicle is new, the routine maintenance schedule is followed closely, and frequent checks are made of fluid levels and high-wear items, as suggested throughout this manual, the engine will be kept in relatively good running condition, and the need for additional work will be minimized.

7 It is possible that there will be times when the engine is running poorly due to the lack of regular maintenance. This is even more likely if a used vehicle, which has not received regular and frequent maintenance checks, is purchased. In such cases, additional work may need to be carried out, outside of the regular maintenance intervals.

8 If engine wear is suspected, a compression test (refer to the relevant Part of [Chapter 2](#)) will provide valuable information regarding the overall performance of the main internal components. Such a test can be used as a basis to decide on the extent of the work to be carried out. If, for example, a compression test indicates serious internal engine wear, conventional maintenance as described in this Chapter will not greatly improve the performance of the engine, and may prove a waste of time and money, unless extensive overhaul work is carried out first.

9 The following series of operations are those most often required to improve the performance of a generally poor-running engine:

Primary operations

- A. Clean, inspect and test the battery (See [Section 2](#)).
- B. Check all the engine-related fluids (See [Section 2](#)).
- C. Check the condition and tension of the drivebelt ([Section 7](#)).
- D. Replace the spark plugs ([Section 23](#)).
- E. Check the condition of the air filter, and replace if necessary ([Section 24](#)).
- F. Check the fuel filter ([Section 30](#)).
- G. Check the condition of all hoses, and check for fluid leaks ([Section 6](#)).

5 If the above operations do not prove fully effective, carry out the following secondary operations:

Secondary operations

All items listed under “Primary operations”, plus the following:

- A. Check the charging system (see [Chapter 5A](#)).
- B. Check the ignition system (see [Chapter 5B](#)).
- C. Check the fuel system (see [Chapter 4](#)).