



**Haynes**  
shows you how

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

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## 12 Oil pan - removal and installation

### Note:

A new gasket and sealant will be required on installation.

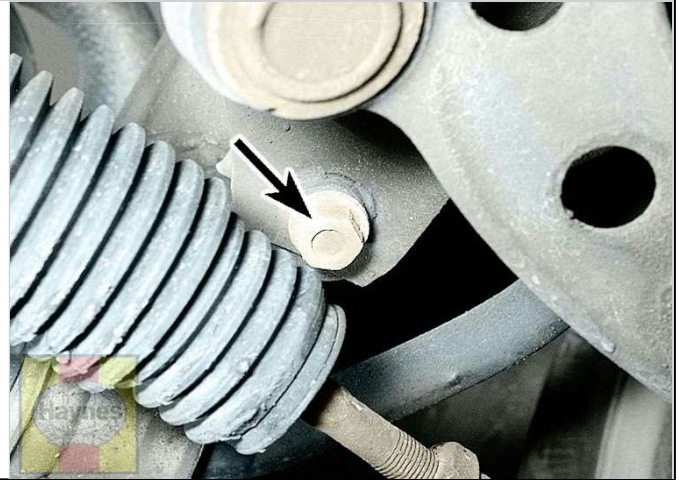
### Removal

- 1 Open the hood, then raise the hood to its fully open position (see [Chapter 11](#) ).
- 2 Drain the engine oil (see [Chapter 1](#) ).
- 3 Apply the parking brake, then jack up the front of the vehicle and support securely on axle stands. Remove any splash shields that are in the way.
- 4 Disconnect the vacuum hose from the brake booster.
- 5 Unscrew the bolt securing the dipstick tube to the intake manifold, then pull the lower end of the tube from the oil pan, and withdraw the dipstick tube assembly.
- 6 Position a hoist and lifting tackle over the engine compartment, and connect the lifting tackle to the front engine lifting bracket.
- 7 Disconnect the steering column shaft from the steering rack (see [Chapter 10](#) ).
- 8 Unbolt the ground lead(s) from the engine mounting bracket(s).
- 9 Working under the vehicle, unscrew the nuts securing the left- and right-hand engine mountings to the brackets on the subframe.
- 10 Raise the lifting tackle to lift the engine approximately 1/4-inch.
- 11 Again working under the vehicle, unscrew the bolts securing the suspension lower arms to the body.
- 12 Support the center of the subframe, using a jack and a block of wood.

13 Unscrew the subframe securing bolts, then lower the subframe slightly using the jack (see illustrations) .

**Caution:** Do not remove the steering gear from the subframe.

**12.13a Unscrew the front . . .**



**12.13b . . . and rear subframe securing bolts (arrow)**

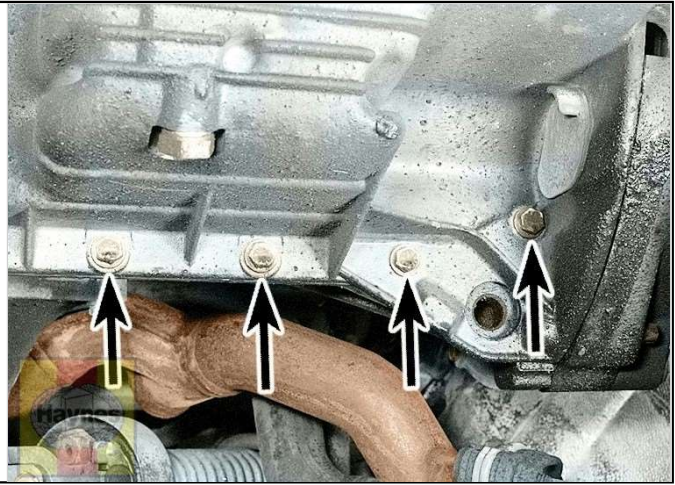


14 Where applicable, unclip the fuel pipes and/or the automatic transmission fluid cooler pipes from the brackets on the oil pan, and move the pipes clear of the working area.

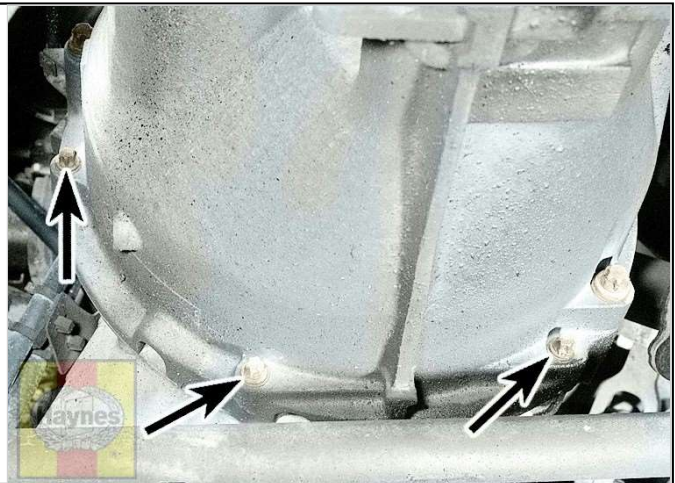
15 Remove the drivebelt from the power steering pump, unbolt the power steering pump bracket and detach the pump and bracket from the engine (see [Chapter 10](#) ). Hang the pump and bracket with a piece of wire to protect the power steering hoses.

16 Working under the vehicle, progressively unscrew and remove all the oil pan securing bolts. Note that the three lower transmission-to-engine bolts must be removed, as they screw into the oil pan (see illustrations) .

**12.16a Four of the oil pan securing bolts (arrows)**



**12.16b The three lower transmission/transmission-to-engine bolts (arrows) must be unscrewed to remove the oil pan**



17 Lower the oil pan, and manipulate it out towards the rear of the vehicle. If necessary, lower the subframe further, using the jack, to give sufficient clearance. Similarly, if necessary, unbolt the oil pick-up pipe to ease oil pan removal. Recover the oil pan gasket, and discard it.

## Installation

18 Commence installation by thoroughly cleaning the mating faces of the oil pan and cylinder block.

19 Lightly coat the areas where the crankshaft rear oil seal housing and the timing chain housing join the cylinder block with a little non-hardening gasket sealant.

20 Place a new gasket in position on the oil pan flange. If necessary, apply more sealant (sparingly) to hold the gasket in place.

21 Install the oil pan to the cylinder block, ensuring that the gasket stays in place, and where applicable, install the oil pick-up pipe using a new gasket.

22 Install the oil pan securing bolts, tightening them finger-tight only at this stage.

23 Progressively tighten the oil pan-to- cylinder block securing bolts to the specified torque.

24 Tighten the oil pan-to-transmission and the transmission-to-engine bolts to the specified torque.

25 Install the power steering pump and bracket and install the power steering pump drivebelt (see [Chapter 10](#) ).

26 Check the condition of the dipstick sealing ring (at the oil pan end of the tube) and replace if necessary. Install the dipstick tube and tighten the bracket securing bolt.

27 On models with automatic transmission, secure the fluid cooler lines to the oil pan. Similarly, where applicable, clip the fuel pipes into position.

28 Raise the subframe using the jack, then install the securing bolts and tighten to the specified torque.

29 Install the bolts securing the suspension lower arms to the body, ensuring that the washers are in place, and tighten the bolts to the specified torque.

30 Lower the engine until the mountings are resting on the subframe, ensuring that the lugs on the engine mountings engage with the corresponding holes in the subframe. Install the engine mounting nuts and tighten them to the specified torque.

31 Disconnect and withdraw the engine lifting tackle and hoist.

32 Reconnect the steering shaft to the steering rack (see [Chapter 10](#) ).

33 Further installation is a reversal of removal, but on completion refill the engine with oil (see [Chapter 1](#) ).