

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

## 13 Oil pump and drive chain - removal, inspection and installation

### Oil pump

#### Removal and installation

1 Removal and installation of the oil pump is described in [Section 12](#) as part of the [oil pan](#) removal and installation procedure. Note that the oil pick-up pipe must be fitted to the pump before the pump is refitted. With the oil pump removed, it can be inspected by following the procedure outlined in the following steps.

#### Inspection

**Note:**

A new pick-up pipe gasket, a new relief valve spring cap O-ring and a new relief valve snap-ring will be required on installation.

2 Unbolt the pick-up pipe from the pump. Recover the [gasket](#).

3 Unbolt the cover from the front of the pump (see illustration) .

#### 13.3 Removing the cover from the oil pump

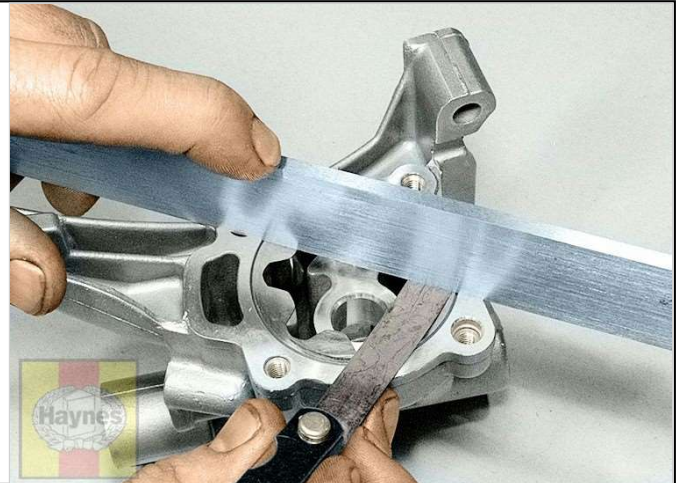


4 Withdraw the [driveshaft](#)/rotor and the outer rotor from the pump body.

5 Check the pump body, rotors and cover for any signs of scoring, wear or cracks. If any wear or damage is evident, fit new rotors or replace the complete pump, depending on the extent of the damage. Note that it is wise to replace the complete pump as a unit.

6 Install the rotors to the pump body, then using feeler gauges, measure the clearance between the outer rotor and the pump body. Using the feeler gauges and a straight edge, measure the clearance (endplay) between each of the rotors and the oil pump cover mating face (see illustration) . Compare the measurements with the values given in the Specifications, and if necessary replace any worn components, or replace the complete pump as a unit.

### 13.6 Measuring the clearance between the outer oil pump rotor and the pump cover mating face



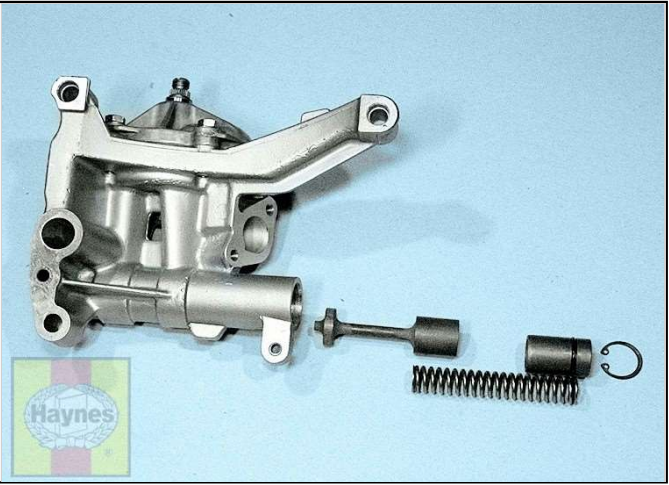
7 To remove the pressure relief valve components, press the valve into its housing slightly, using a metal tool, then extract the snap-ring from the top of the housing using snap-ring pliers (see illustration) . **Warning:** *The relief valve has a strong spring. Take care when removing the snap-ring.*

### 13.7 Extract the snap-ring . . .



8 Withdraw the spring cap, spring and piston from the relief valve housing (see illustration) .

### 13.8 . . . and withdraw the oil pressure relief valve components



9 Measure the free-length of the relief valve spring, and compare it with the value given in the Specifications. Replace the spring if the free-length is not as specified.

10 Fit a new O-ring seal to the top of the relief valve spring cap, then install the components to the housing using a reversal of the removal procedure. Take care not to damage the surface of the spring cap during fitting, and secure the components using a new O-ring.

11 Install the rotors to the pump body, then install the cover to the pump. Ensure that the locating dowels are in position in the pump cover. Install and tighten the cover securing bolts.

12 Thoroughly clean the pick-up pipe strainer, then install the pick-up pipe to the pump using a new gasket. Note that the tab on the gasket must face the pick-up pipe strainer.

## Oil pump drive chain

### Removal

13 Remove the primary timing chain (see [Section 7](#) ).

14 Withdraw the chain from the crankshaft sprocket.

### Inspection

15 Proceed as described for the secondary timing chain in [Section 7](#) .

### Installation

16 Install the chain to the crankshaft sprocket, then install the primary timing chain (see [Section 7](#) ).