



**Haynes**  
shows you how

**BMW 3-Series and Z4 (99-05) Includes 2006 325ci/330ci Coupe and Convertible models Haynes Online Manual.**

## 6 Timing chain cover - removal and installation

### Warning:

The engine must be completely cool before beginning this procedure.

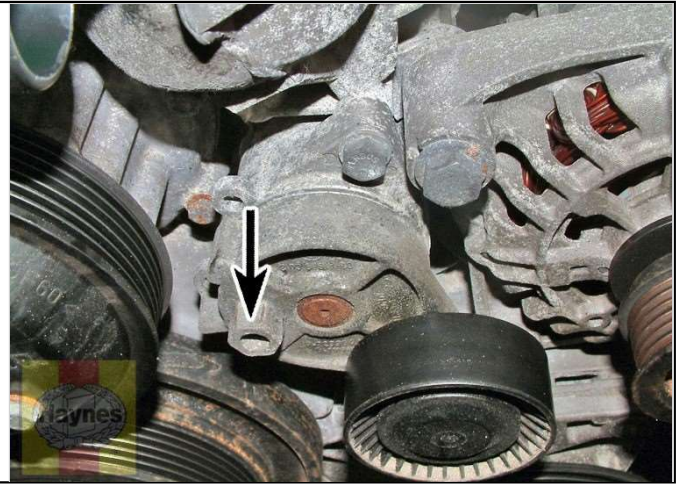
### Note:

New timing cover gaskets and a new crankshaft front oil seal will be required on installation. RTV sealant will be required at the joint where the cover meets the cylinder head/engine block - see text.

## Removal

- 1 Disconnect the cable from the negative terminal of the battery (see [Chapter 5, Section 1](#)).
- 2 Drain the cooling system (see [Chapter 1](#)).
- 3 Remove the valve cover (see [Section 4](#)).
- 4 Remove the drivebelts (see [Chapter 1](#)).
- 5 Remove the thermostat (see [Chapter 3](#)).
- 6 Remove the crankshaft pulley/damper and hub (see [Section 5](#)).
- 7 Remove the oil pan (see [Section 12](#)).
- 8 Remove the two bolts and remove the drivebelt tensioner (see illustration) .

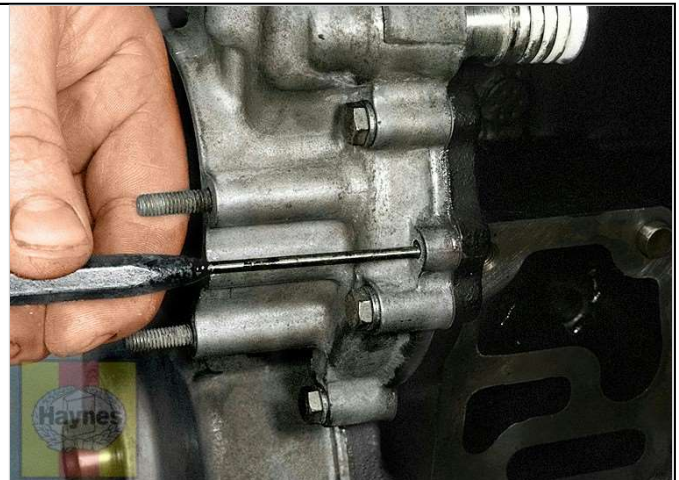
**6.8 Unscrew the tensioner bolts (lower bolt not visible in this photo)**



9 The water pump pulley must now be removed. Prevent the pulley from turning by holding it with a strap wrench, then unscrew the retaining bolts and withdraw the pulley.

10 Working at the top of the timing chain cover, drive out the two cover dowels. Drive out the dowels towards the rear of the engine, using a pin-punch (less than 5.0 mm diameter) (see illustration) .

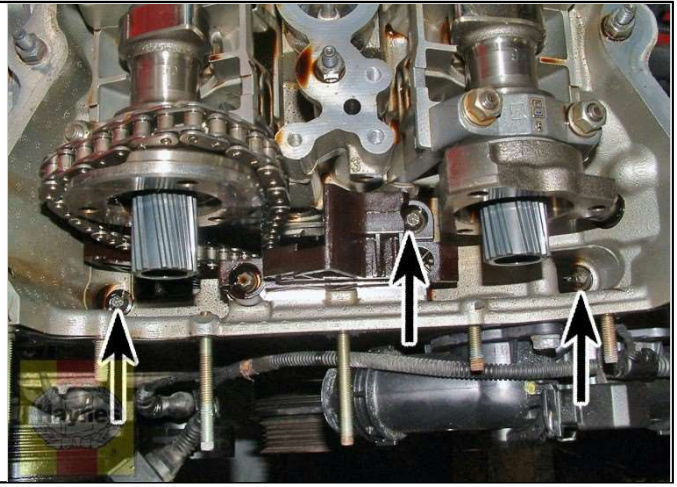
**6.10 Drive the locating dowels out of the timing chain cover**



11 It is now necessary to remove the VANOS adjustment unit (see [Section 9](#) ), for access to the timing chain cover-to- cylinder head bolts.

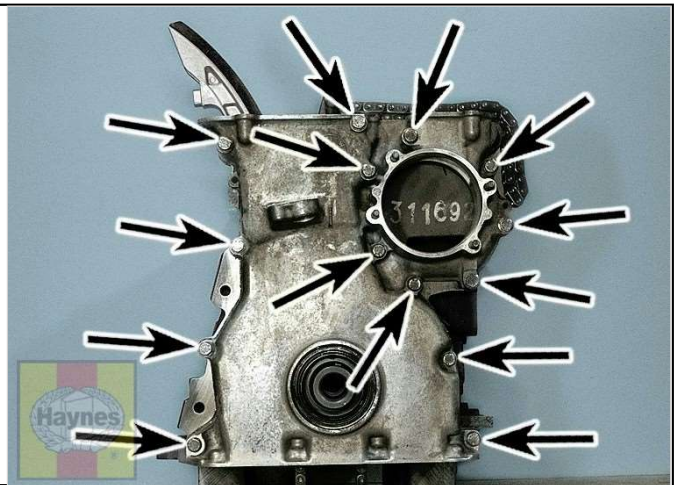
12 Unscrew the three timing chain cover-to- cylinder head bolts, and lift the bolts from the cylinder head. Note that one of the bolts also secures the secondary timing chain guide (see illustration) .

### 6.12 Remove the timing chain cover-to-cylinder head bolts



13 Unscrew the timing chain cover-to-engine block bolts, then withdraw the cover from the front of the engine (see illustration) . Remove the gaskets.

### 6.13 Timing chain cover-to-engine block bolt locations



## Installation

14 Remove the oil seal from the timing chain cover.

15 Thoroughly clean the mating faces of the cover, engine block and cylinder head.

16 Install a new oil seal to the timing chain cover, using a large socket or a block of wood to drive the seal into position (see illustration) .

**6.16 Drive the new oil seal squarely into the timing chain cover**



17 Drive the cover dowels into position in the top of the cover so that they protrude from the rear (engine block mating) face of the cover by approximately 2.0 to 3.0 mm.

18 Position new gaskets on the cover, and hold them in position using a little grease.

19 Apply a little RTV sealant to the cylinder head/engine block joint at the two points where the timing chain cover contacts the cylinder head gasket (see illustration) .

**6.19 Apply sealant to the area where the timing chain cover contacts the cylinder head gasket**



20 Lift the cover into position, ensuring that the gaskets stay in place. Make sure that the dowels engage with the engine block, and install the cover retaining bolts. Tighten the bolts finger-tight only at this stage.

21 Drive in the cover dowels until they are flush with the outer face of the cover.

22 Progressively tighten the cover retaining bolts to the torque listed in [this Chapter's Specifications](#) (do not forget the three cylinder head-to-cover bolts).

23 Reinstall the VANOS adjustment unit as described in [Section 9](#) .

24 Reinstall the crankshaft damper/pulley hub and damper/pulley as described in [Section 5](#) .



25 The remainder of installation is a reversal of removal, bearing in mind the following points.

- A. Ensure the drivebelt hydraulic tensioner strut is installed correctly (see [Chapter 1](#) ). The TOP/OBEN arrow must point upwards.
- B. Install the drivebelts (see [Chapter 1](#) ).
- C. Install the thermostat and housing (see [Chapter 3](#) ).
- D. Install the valve cover (see [Section 4](#) ).
- E. Install the oil pan (see [Section 12](#) ).
- F. On completion, refill the cooling system as described in [Chapter 1](#) .

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