



Haynes
shows you how

BMW 3-Series 320i & 320xi (12-14), 325i, 325xi, 330i & 330xi (06) & 328i & 328xi (07-14) Haynes Online Manual

6 Timing chain - removal and installation

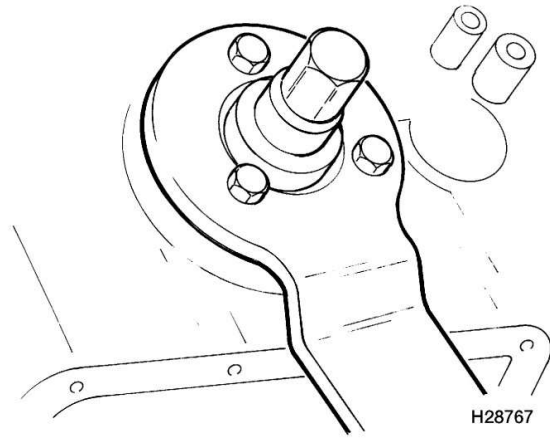
Caution:

The timing system is complex. Severe engine damage will occur if you make any mistakes. Do not attempt this procedure unless you are highly experienced with this type of repair. If you are at all unsure of your abilities, consult an expert. Double-check all your work and be sure everything is correct before you attempt to start the engine.

Removal

- 1 Remove the valve cover (see [Section 4](#)).
- 2 Remove the crankshaft front oil seal (see [Section 1](#)).
- 3 Remove the drivebelt(s) (see Chapter 1).
- 4 Remove the retaining bolt and remove the auxiliary drivebelt tensioner. **Note:** *The bolt is aluminum and must be replaced .*
- 5 Secure the engine at TDC for No 1 cylinder (see [Section 3](#)).
- 6 Unscrew and remove the timing chain tensioner from the right-hand front corner of the cylinder head. **Note:** *A new sealing ring must be installed .*
- 7 The crankshaft pulley hub must now be released. This hub traps the crankshaft timing chain sprocket against the crankshaft shoulder. Once the hub bolt is loosened, the sprocket is free to rotate. Ensure the flywheel/driveplate and camshaft locking tools are in place. **Warning:** *The crankshaft pulley hub securing bolt is very tight. A tool will be required to hold the hub as the bolt is unscrewed. Do not attempt the job using poor quality tools, as injury or damage may result .*
- 8 Make up a tool to hold the pulley hub. A suitable tool can be fabricated using two lengths of steel bar, joined by a large pivot bolt. Bolt the holding tool to the pulley hub using the pulley-to-hub bolts. Alternatively, use special tool 11 9 280 available from BMW dealers or automotive tool specialists (see illustration) .

6.8 BMW special tool used to hold the crankshaft pulley



9 Using a socket and a long breaker-bar, loosen the pulley hub bolt. Note that the bolt is very tight. Unscrew the pulley hub bolt. Discard the bolt; a new one must be used on installation.

10 Withdraw the hub from the end of the crankshaft. If the hub is tight, use a puller to draw it off.

11 Unscrew the plugs from the top left-hand corner and the lower right-hand corner of the timing chain cover (see illustrations) .

6.11 Unscrew the plug from the left-hand corner



12 Remove the two pins securing the timing chain guides now accessible through the plug apertures (see illustration) .

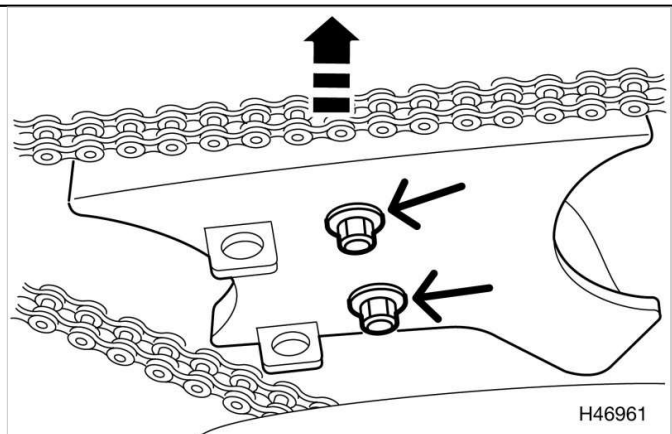
6.12 Unscrew the timing chain guide pins



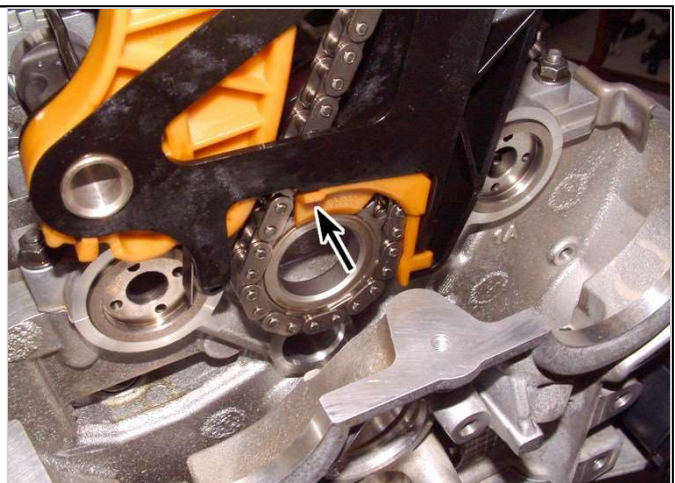
13 Remove the retaining bolts and remove the VANOS adjusting units (see [Section 7](#)).

14 Remove the central mounting bolts and lift up the timing chain module, complete with chain and crankshaft sprocket (see illustrations) . Note the orientation of the crankshaft sprocket (collar towards the crankshaft).

6.14a Remove the bolts and pull the chain, tensioner blade, guide blade and crankshaft sprocket upwards as an assembly



6.14b Pull the timing chain up to trap the crankshaft sprocket against the guide



15 If required, disengage the chain from the sprocket and pull it upwards from the module.

Installation

16 Ensure No 1 piston is still at TDC, with the crankshaft and camshafts locked in position (see [Section 3](#)).

17 Begin replacement by engaging the chain with the crankshaft sprocket. **Note:** *The collar on the sprocket must point towards the crankshaft side. Pull the chain upwards in the module to firmly trap the sprocket.*

18 Lower the timing chain and module in place, and feed the crankshaft pulley hub through the center of the sprocket.

19 Insert the new crankshaft pulley hub retaining bolt. BMW tool No 11 5 200 must now be installed around the central bolt, and tightened onto the hub using the bolts provided. Tighten the hub central bolt to the specified torque. Counterhold the hub using the same method used during removal.

20 Remove the tool from the hub, and install a new oil seal (see [Section 13](#)).

21 Install the mounting bolts securing the timing chain guides, and install the cover plugs

22 Install the VANOS adjusting units to the ends of the camshafts (see [Section 7](#)).

23 Holding it upright, compress the tensioner a couple of times to empty any stored oil. Install and tighten the chain tensioner with a new sealing washer.

24 Remove the flywheel/driveplate and camshaft locking tools, then rotate the crankshaft two complete revolutions clockwise. Check that the flywheel/driveplate and camshaft locking tools can still be inserted. If not, repeat the VANOS adjusting units procedure.

25 The remainder of installation is the reverse of removal, noting the following points:

- A. Replace all gaskets and seals.
- B. Replace all aluminum bolts.
- C. Tighten all fasteners to their specified torque where given.
- D. Install the drivebelt(s) (see [Chapter 1](#)).