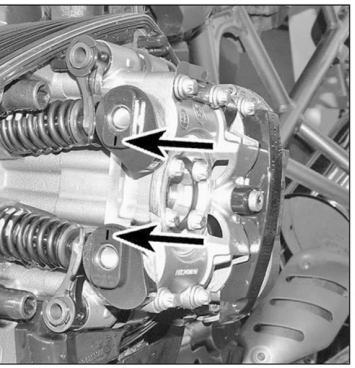
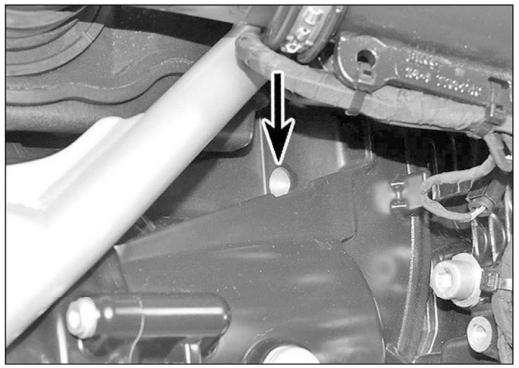
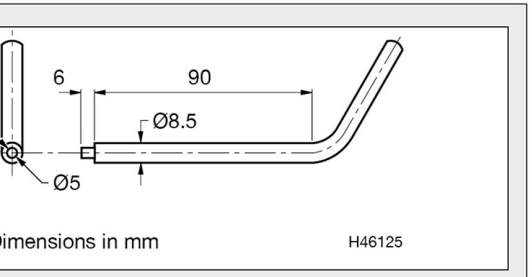


e timing marks are correctly aligned



8.8 Insert the TDC locating pin into the hole (arrowed)



TDC locating pin

this position, select a high gear and have an assistant turn the rear wheel slowly by hand in the normal direction of rotation (forwards). Alternatively, remove the alternator belt cover (see Chapter 1) and turn the crankshaft clockwise with a spanner on the pulley nut.

Caution: Be sure to turn the engine in its normal direction of rotation only.

7 With the piston at TDC on the compression stroke, all four valves will be closed and the timing marks on the ends of the camshafts should face each other **(see illustration)**.

8 Insert the TDC locating pin into the hole in the right-hand side of the gearbox case **(see illustration)**. The pin should pass through the clutch assembly and locate in a hole in the crankcase. BMW produces a service tool (Part No. 112650) for this purpose. Alternatively, a similar tool can be made (see **Tool Tip**).

9 Unscrew the tensioner and lift it out **(see illustrations)** – discard the sealing washer as a new one must be used **(see illustration 8.21c)**. Remove the spring and the piston, then tip the spring guide out of the piston **(see illustrations)**.

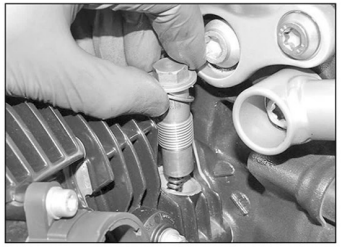
10 Follow the procedure in Steps 16 to 18 to inspect the tensioner.

Right-hand side

11 Remove the valve cover (see Section 7).

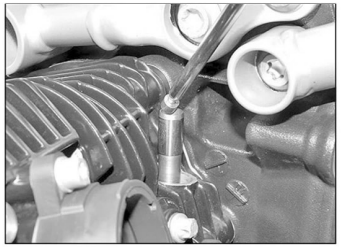
12 Before removing the tensioner, the

the tensioner…

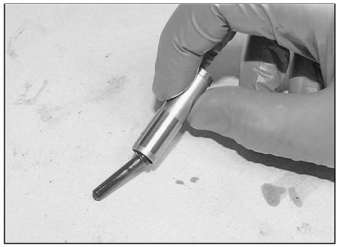


8.9b … and lift it out

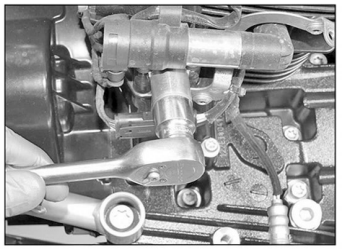
ve the spring



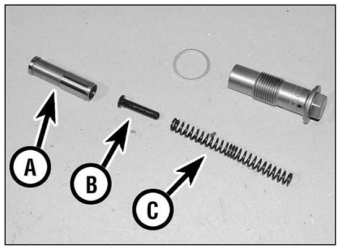
8.9d Use a magnet to lift the piston out



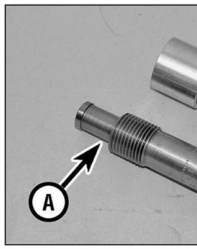
8.9e Tip the spring guide out of the piston



8.15 Unscrew the right-hand tensioner



8.16a Left-hand tensioner piston (A), spring guide (B) and spring (C)



8.16b Right-hand tensio and sleeve

right-hand piston must be at top dead centre (TDC) on the compression stroke. Follow the procedure in Step 6 to turn the engine to this position.

Caution: Be sure to turn the engine in its normal direction of rotation only.

13 With the piston at TDC on the compression stroke, all four valves will be closed and the timing marks on the ends of the camshafts should face each other **(see illustration 8.7)**.

14 Insert the TDC locating pin into the hole in the right-hand side of the gearbox case (see Step 8).

15 Position a drain tray below the engine to catch any residual oil, then unscrew the tensioner and pull it out, noting the sleeve **(see illustration)**.

Inspection

16 Clean the tensioner components and check for signs of wear, scoring or damage **(see illustrations)**.

17 Assemble the left-hand tensioner components. On each tensioner check that the plunger moves freely in and out of the tensioner body, and that the spring tension is good **(see illustration)**.

18 If the any of the tensioner components are worn or damaged a new tensioner must be fitted.

Installation

Left-hand side

19 Make sure that the left-piston is at TDC on the compression stroke and the timing marks

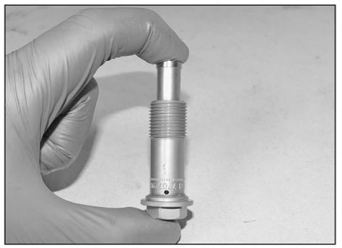
on the ends of the camsha **(see illustration 8.7)**.

20 If removed insert the TI the hole in the right-hand s case **(see illustration 8.8)**.

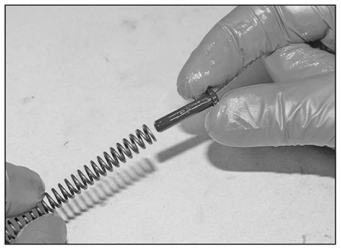
21 Fit the spring guide i then insert them, guide fi **(see illustrations)**. Fit a n onto the tensioner body Fit the piston assembly, tensioner threads with oil, f tighten to 45 Nm **(see illus**

22 Remove the TDC locat

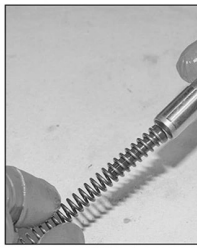
23 Install the remaining c reverse order of removal. C level and top-up as neces *checks*).



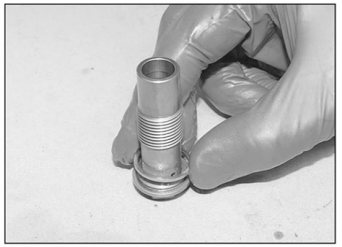
8.17 Checking tensioner action



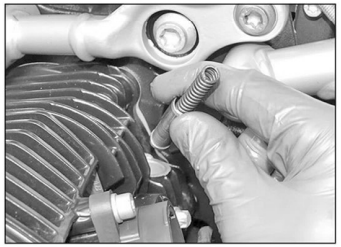
8.21a Fit the guide into the spring…



8.21b …and fit them i



8.21c Fit a new sealing washer



8.21d Fit the piston assembly

8.21e Push down on t compress the spring an threads by