

13.10 LH cylinder head bearing cap tightening sequence

- 10 Repeat steps 7 through 9 to install the LH cylinder head camshafts (see illustration).
- 11 The remaining refitting steps are the reverse of removal.
- 12 Before starting and running the engine, change the oil and fit a new oil filter (see Chapter 1).

## 14 Sump - removal and refitting

### REMOVAL

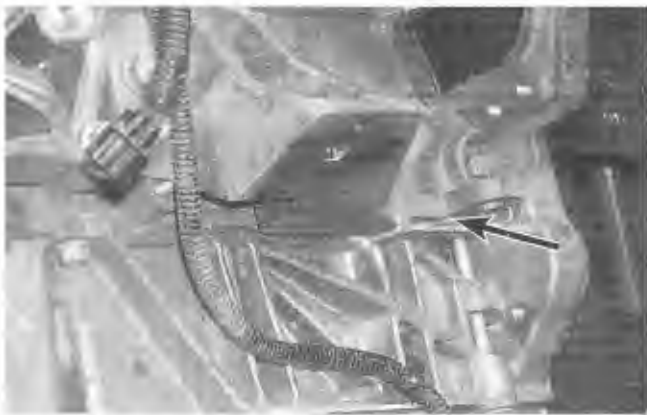
Refer to illustration 14.4

- 1 Disconnect the earth (-) lead from the battery.



**Caution:** On models equipped with the Anti-theft audio system, be sure to have the correct radio code before performing any procedure which requires disconnecting the battery (see the front of this manual).

- 2 Remove the engine assembly from the vehicle (see Chapter 2E).
- 3 Remove the plenum and inlet manifold (see Section 7), valve covers (see Section 4) and timing chain cover (see Section 12).
- 4 With the engine supported on a suitable engine stand, remove the two long bolts retaining the sump to the rear main oil seal housing. Then remove the remaining bolts



14.4 Arrow indicates a lever point to break the seal between the sump and cylinder block. There is another one at the front on the opposite side of the engine

holding the sump to the timing cover and engine block. Lever the sump from the engine block at the illustrated points (see illustration) and as the seal to the block is broken, the oil pickup pipe will disconnect from the oil pump.

- 5 If necessary, the oil level sensor can be removed by unscrewing it from the sump. The baffle inside the sump can be removed after removing the retaining bolts. The oil pickup can be removed once the bolts in the bottom of the sump are removed. Discard the oil pickup oil seal.

### REFITTING

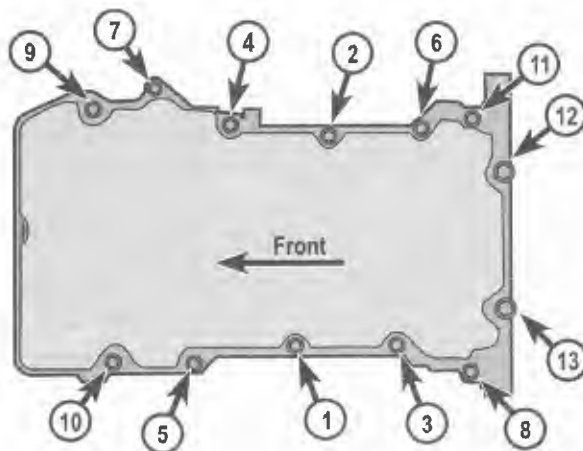
Refer to illustration 14.11

- 6 Thoroughly clean the mounting surfaces of the sump and engine block of old gasket material and sealer. Wipe the gasket surfaces clean with a rag soaked in lacquer thinner, acetone or brake system cleaner.
- 7 Check the oil pump pickup for cracks or signs of leakage. Ensure the screen in the bottom of the pickup is not blocked or damaged.
- 8 Ensure a new oil seal is fitted to the oil pump pickup. Install the oil pickup and tighten the bolts in the bottom of the sump. Fit the baffle to the inside of the sump, tightening the retaining bolts.
- 9 Fabricate two aligning studs from M8 x 1.25 mm bolts with the heads removed and screw them into the sump bolt holes labelled 1 and 2 to allow for correct sump alignment (see illustration 14.11).
- 10 Apply a 3mm wide bead of oxygen sensor safe RTV sealant to the sump mating face with the engine block. Also apply some sealant to the corners of the block where the front cover and the rear cover meet the engine block. Attach the sump, refit the sump and tighten the bolts finger-tight.
- 11 Remove the threaded dowel pins before tightening the sump bolts in the order shown to the torque listed in this Chapter's Specifications (see illustration).



**Note:** Check Specifications for the correct torque. The two bolts holding the sump to the rear main oil seal housing are a different torque to the remaining bolts.

- 12 The remainder of refitting is the reverse of removal.
- 13 Add the proper type and quantity of oil (see Chapter 1), start the engine and check for leaks before placing the vehicle back in service.



14.11 Sump bolt tightening sequence