

- c) Refit the vacuum pump as described in Chapter 9, Section 20.
- d) Refit the timing belt tensioner as described in Section 8.
- e) Refit the camshaft sprocket as described in Section 8, and refit the timing belt as described in Section 7.
- f) Refit the camshaft cover as described in Section 4.
- g) Refill the engine with oil as described in Chapter 1, Section 3.
- h) Refit the cooling system as described in Chapter 1, Section 30.

14 Sump – removal and refitting



Note: VW sealant (D 176404 A2 or equivalent) will be required to seal the sump on refitting.

Removal

- 1 Firmly apply the handbrake, then jack up the front of the vehicle and support it securely on axle stands (see Jacking and vehicle support).
- 2 Where fitted, undo the retaining bolts and remove the engine undertray.
- 3 Drain the engine oil as described in Chapter 1, Section 3.
- 4 Where fitted, disconnect the wiring connector from the oil level/temperature sender in the sump (see illustration).
- 5 Using a wide-bladed scraper or similar tool inserted between the sump and cylinder block, carefully break the joint to release the sump, then manoeuvre the sump out from under the vehicle.
- 6 If desired, unbolt the oil baffle plate from the cylinder block.

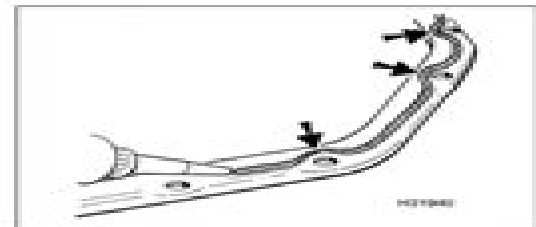
Refitting

- 7 Begin refitting by thoroughly cleaning the mating faces of the sump and cylinder block. Ensure that all traces of old sealant are removed.
- 8 Where applicable, refit the oil baffle plate, and tighten the securing bolts.
- 9 Ensure that the cylinder block mating face of the sump is free from all traces of old sealant, oil and grease, and then apply a 2.0 to 3.0 mm thick bead of silicone sealant (VW D 176404 A2 or equivalent) to the sump (see illustration). Note that the sealant should be run around the inside of the bolt holes in the sump. The sump must be fitted within 5 minutes of applying the sealant.
- 10 Offer the sump up to the cylinder block, then refit the sump-to-cylinder block bolts, and lightly tighten them by hand, working progressively in a diagonal sequence. **Note:** If the sump is being refitted with the engine and transmission separated, make sure that the sump is flush with the flywheel end of the cylinder block.
- 11 Refit the sump-to-transmission casing bolts, and tighten them lightly, using a socket.
- 12 Again working in a diagonal sequence,



14.4 Disconnect the wiring connector from the oil level/temperature sender

- lightly tighten the sump-to-cylinder block bolts, using a socket.
- 13 Tighten the sump-to-transmission casing bolts to the specified torque.
- 14 Working in a diagonal sequence, progressively tighten the sump-to-cylinder block bolts to the specified torque.
- 15 Refit the wiring connector to the oil level/temperature sender (where fitted), then refit the engine undertray, and lower the vehicle to the ground.
- 16 Allow at least 30 minutes from the time of refitting the sump for the sealant to dry, then refill the engine with oil, with reference to Chapter 1, Section 3.



14.9 Apply the sealant around the inside of the bolt holes

15 Oil pump and drive chain – removal, inspection and refitting



Oil pump

Removal

- 1 Remove the sump as described in Section 14.
- 2 Unscrew the securing bolts, and remove the oil baffle from the cylinder block.
- 3 Unscrew and remove the three mounting bolts, and release the oil pump from the dowels in the crankcase (see illustration).



15.3 Sump and oil pump components

- | | | | |
|------------------------|-------------------------------|---------------------|---------------------------------|
| 1 Oil pump | 5 Crankshaft oil seal housing | 9 Seal | 15 Seal |
| 2 Oil pump sprocket | 6 Bolt | 10 Sump drain plug | 16 Oil level/temperature sender |
| 3 Bolt | 7 Drive chain tensioner | 11 Dowels | 17 Bolt |
| 4 Oil pump drive chain | 8 Sump | 12 O-ring | 18 Oil spray jet |
| | | 13 Oil pick-up pipe | 19 Bolt |
| | | 14 Oil baffle | |

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Whitaker's Cumulative Book List ,1977 **Hobbies** ,1944 **Haynes GM N-Cars Owners Workshop Manual, No. 1420** Bob Henderson,J. H. Haynes,1992 MGA John Harold Haynes,Ian M. Coomber,2013* **Toyota Allion/Premio 2000** JPNZ (Firm),2006-01-01 Ford Festiva and Aspire, 1988-1997 John Haynes,1998-07-10 There is a Haynes manual for most popular domestic and import cars trucks and motorcycles By conducting complete tear downs and rebuilds the Haynes staff has discovered all the problems owners will find in rebuilding or repairing their vehicle Documenting the process in hundreds of illustrations and dear step by step instructions makes every expert tip easy to follow From simple maintenance to trouble shooting and complete engine rebuilds it s easy with Haynes *Citroën Owners Workshop Manual* John Harold Haynes,Bruce Gilmour,1986 **Haynes Mini Owners Workshop Manual, No. 527** John Haynes,1965-06-01 Haynes offers the best coverage for cars trucks vans SUVs and motorcycles on the market today Each manual contains easy to follow step by step instructions linked to hundreds of photographs and illustrations Included in every manual troubleshooting section to help identify specific problems tips that give valuable short cuts to make the job easier and eliminate the need for special tools notes cautions and warnings for the home mechanic color spark plug diagnosis and an easy to use index **Ford Edge and Lincoln MKX 2007 Thru 2019 All Models Haynes Repair Manual** John Harold Haynes,2019 Each Haynes manual is written for the do it yourselfer and provides step by step instructions based on a complete disassembly of the vehicle This hands on experience provides the reader with specific and detailed instructions for performing everything from basic maintenance and troubleshooting to a complete engine overhaul This Haynes automotive repair manual includes 700 photos and essential information for Routine maintenance Tune up procedures Engine repair Cooling and heating Air conditioning Fuel and exhaust Emissions control Ignition Brakes Suspension and steering Electrical systems Wiring diagrams Haynes Plymouth Arrow Owners Workshop Manual John Harold Haynes,Alec J. Jones,1965-05 **BSA Unit Singles Owners Workshop Manual, No. 127** John Haynes,1990-06-29 Haynes disassembles every subject vehicle and documents every step with thorough instructions and clear photos Haynes repair manuals are used by the pros but written for the do it yourselfer *Haynes Ford and Mercury Mid-Size Owners Workshop Manual, No. 773* John Haynes,1986-01-03 Ford Mercury Mid Size 1975 86 Shop Manual Haynes 363 pgs 871 ill Allis Chalmers Shop Manual Models B C CA G RC WC WD + Editors of Haynes Manuals,1994-12-01 With a Haynes manual you can do it yourself from simple maintenance to basic repairs Haynes writes every book based on a complete teardown of the vehicle where we learn the best ways to do a job and that makes it quicker easier and cheaper for you Haynes books have clear instructions and hundreds of photographs that show each step Whether you are a beginner or a pro you can save big with a Haynes manual This manual features complete coverage for your Allis Chalmers Tractor Models B C CA G RC WC WD covering routine maintenance tune up procedures engine repair cooling and heating air conditioning fuel and exhaust emissions control ignition brakes suspension and steering electrical

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