



Contents

| | |
|---|-----------|
| 00 - Technical data | 1 |
| 1 Technical data | 1 |
| 1.1 Technical data | 1 |
| 1.2 Engine number | 1 |
| 1.3 Engine data | 1 |
| 10 - Removing and installing engine | 3 |
| 1 Removing and installing engine | 3 |
| 1.1 Removing and installing engine | 3 |
| 1.2 Notes on removing | 3 |
| 1.3 Notes on installing | 5 |
| 1.4 Tightening torques | 6 |
| 1.5 Assembly mountings | 7 |
| 1.6 Aligning engine and gearbox | 8 |
| 1.7 Renewing engine carrier rubber mounting | 9 |
| 1.8 Additional information and removal instructions for vehicles with air conditioner | 9 |
| 13 - Crankshaft group | 11 |
| 1 Dismantling and assembling engine | 11 |
| 1.1 Dismantling and assembling engine | 11 |
| 1.2 Removing and installing ribbed belt | 22 |
| 1.3 Removing and installing toothed belt | 25 |
| 2 Removing and installing sealing flange and pressure plate/drive plate | 28 |
| 2.1 Removing and installing sealing flange and pressure plate/drive plate | 28 |
| 2.2 Renewing crankshaft oil seal - pulley end - | 31 |
| 2.3 Removing and installing drive plate | 32 |
| 3 Removing and installing crankshaft | 36 |
| 3.1 Removing and installing crankshaft | 36 |
| 3.2 Crankshaft dimensions | 38 |
| 4 Dismantling and assembling pistons and conrods | 39 |
| 4.1 Dismantling and assembling pistons and conrods | 39 |
| 4.2 Piston and cylinder dimensions | 45 |
| 15 - Cylinder head, Valve gear | 46 |
| 1 Removing and installing cylinder head | 46 |
| 1.1 Removing and installing cylinder head | 46 |
| 1.2 Removing and installing cylinder head | 53 |
| 1.3 Checking compressions | 54 |
| 2 Servicing valve gear | 56 |
| 2.1 Servicing valve gear | 56 |
| 2.2 Reworking valve seats | 62 |
| 2.3 Removing and installing camshaft oil seal | 64 |
| 2.4 Removing and installing camshaft | 65 |
| 2.5 Checking hydraulic bucket tappets | 66 |
| 2.6 Checking valve guides | 67 |
| 2.7 Renewing valve guides | 68 |
| 2.8 Renewing valve stem seals | 69 |
| 17 - Lubrication | 71 |
| 1 Removing and installing parts of the lubrication system | 71 |
| 1.1 Removing and installing parts of the lubrication system | 71 |
| 1.2 Checking oil pressure and oil pressure switch | 77 |



| | |
|--|------------|
| 19 - Cooling system | 78 |
| 1 Removing and installing parts of cooling system | 78 |
| 1.1 Removing and installing parts of cooling system | 78 |
| 1.2 Parts of cooling system body side | 79 |
| 1.3 Parts of cooling system - engine side | 82 |
| 1.4 Dismantling and assembling coolant pump | 85 |
| 1.5 Draining and filling cooling system | 86 |
| 1.6 Removing and installing radiator and radiator fan | 88 |
| 20 - Fuel supply system | 90 |
| 1 Removing and installing parts of fuel supply system | 90 |
| 1.1 Removing and installing parts of fuel supply system | 90 |
| 1.2 Removing and installing fuel tank with its attachments and fuel filter | 91 |
| 1.3 Safety precautions when working on the fuel supply system | 96 |
| 1.4 Rules for cleanliness | 97 |
| 1.5 Adjusting throttle cable | 97 |
| 1.6 Removing and installing fuel delivery unit | 99 |
| 1.7 Checking fuel pump | 100 |
| 1.8 Servicing the activated charcoal filter system | 105 |
| 1.9 Checking fuel tank breather | 108 |
| 26 - Exhaust system | 111 |
| 1 Removing and installing parts of exhaust system | 111 |
| 1.1 Removing and installing parts of exhaust system | 111 |