



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	4
1.3 Securing engine to assembly stand	7
1.4 Notes on installing	7
1.5 Tightening torques	9
1.6 Assembly mountings	9
1.7 Additional information and removal instructions for vehicles with air conditioner	10
13 - Crankshaft group	12
1 Dismantling and assembling engine	12
1.1 Dismantling and assembling engine	12
1.2 Removing and installing ribbed belt	22
2 Dismantling and assembling cylinder block, crankshaft and flywheel	24
2.1 Dismantling and assembling cylinder block, crankshaft and flywheel	24
2.2 Crankshaft dimensions	27
2.3 Renewing crankshaft oil seal -belt pulley end-	27
2.4 Renewing crankshaft sealing flange -flywheel end-	29
3 Dismantling and assembling pistons and conrods	38
3.1 Dismantling and assembling pistons and conrods	38
3.2 Piston and cylinder dimensions	44
15 - Cylinder head, Valve gear	45
1 Removing and installing cylinder head	45
1.1 Removing and installing cylinder head	45
1.2 Checking valve timing	50
1.3 Checking semi-automatic toothed belt tensioning roller	53
1.4 Removing, installing and tensioning toothed belts	58
1.5 Removing and installing camshaft housing	65
1.6 Removing and installing cylinder head	68
1.7 Checking compression pressures	72
2 Servicing valve gear	74
2.1 Servicing valve gear	74
2.2 Reworking valve seats	83
2.3 Checking camshaft timing adjustment	85
2.4 Removing and installing camshaft adjuster and exhaust camshaft sprocket	89
2.5 Renewing camshaft oil seals	97
2.6 Checking valve guides	100
2.7 Renewing valve guides	101
2.8 Renewing valve stem seals	102
17 - Lubrication	105
1 Removing and installing parts of the lubrication system	105
1.1 Removing and installing parts of the lubrication system	105
1.2 Removing and installing oil sump	112
1.3 Removing and installing oil pump	114



1.4	Checking oil pressure and oil pressure switch	117
19 - Cooling system		119
1	Removing and installing parts of cooling system	119
1.1	Removing and installing parts of cooling system	119
1.2	Parts of cooling system body side	120
1.3	Parts of cooling system engine side	123
1.4	Coolant hose connection diagram	128
1.5	Draining and filling cooling system	129
1.6	Removing and installing radiator	131
1.7	Removing and installing coolant pump	133
20 - Fuel supply system		135
1	Removing and installing parts of fuel supply system	135
1.1	Removing and installing parts of fuel supply system	135
1.2	Removing and installing fuel tank with its attachments and fuel filter	136
1.3	Safety precautions when working on the fuel supply system	141
1.4	Rules for cleanliness	142
1.5	Removing and installing fuel delivery unit	142
1.6	Removing and installing fuel gauge sender	144
1.7	Removing and installing fuel tank	144
1.8	Checking fuel pump	146
2	Electronic power control (EPC)	152
2.1	Electronic power control (EPC)	152
2.2	Function of EPC system	152
2.3	Servicing parts of electronic power control (EPC)	153
2.4	Checking accelerator pedal position sender	154
3	Activated charcoal filter system	157
3.1	Activated charcoal filter system	157
3.2	Function	157
3.3	Servicing parts of the activated charcoal filter system	158
3.4	Checking fuel tank breather	160
26 - Exhaust system		162
1	Removing and installing parts of exhaust system	162
1.1	Removing and installing parts of exhaust system	162
1.2	Exhaust manifold, front exhaust pipe and catalyst with attachments	163
1.3	Checking catalyst	169