



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	8
1.6 Assembly mountings	9
1.7 Additional information and removal instructions for vehicles with air conditioner	10
13 - Crankshaft group	11
1 Dismantling and assembling engine	11
1.1 Dismantling and assembling engine	11
1.2 Removing and installing ribbed belt	21
2 Dismantling and assembling cylinder block, crankshaft and flywheel	23
2.1 Dismantling and assembling cylinder block, crankshaft and flywheel	23
2.2 Crankshaft dimensions	26
2.3 Renewing crankshaft oil seal -belt pulley end-	26
2.4 Renewing crankshaft sealing flange -flywheel end-	28
3 Dismantling and assembling pistons and conrods	37
3.1 Dismantling and assembling pistons and conrods	37
3.2 Piston and cylinder dimensions	43
15 - Cylinder head, Valve gear	44
1 Removing and installing cylinder head	44
1.1 Removing and installing cylinder head	44
1.2 Checking valve timing	49
1.3 Checking semi-automatic toothed belt tensioning roller	52
1.4 Removing, installing and tensioning toothed belts	56
1.5 Removing and installing camshaft housing	63
1.6 Removing and installing cylinder head	66
1.7 Checking compression pressures	69
2 Servicing valve gear	71
2.1 Servicing valve gear	71
2.2 Reworking valve seats	80
2.3 Removing and installing camshaft adjuster and exhaust camshaft sprocket	82
2.4 Renewing camshaft oil seals	90
2.5 Checking valve guides	93
2.6 Renewing valve guides	94
2.7 Renewing valve stem seals	95
17 - Lubrication	98
1 Removing and installing parts of the lubrication system	98
1.1 Removing and installing parts of the lubrication system	98
1.2 Removing and installing oil sump	105
1.3 Removing and installing oil pump	107
1.4 Checking oil pressure and oil pressure switch	110



19 - Cooling system	112
1 Removing and installing parts of cooling system	112
1.1 Removing and installing parts of cooling system	112
1.2 Parts of cooling system body side	113
1.3 Parts of cooling system engine side	116
1.4 Coolant hose connection diagram	121
1.5 Draining and filling cooling system	122
1.6 Removing and installing radiator	124
1.7 Removing and installing coolant pump	126
20 - Fuel supply system	128
1 Removing and installing parts of fuel supply system	128
1.1 Removing and installing parts of fuel supply system	128
1.2 Removing and installing fuel tank with its attachments and fuel filter	129
1.3 Safety precautions when working on the fuel supply system	133
1.4 Rules for cleanliness	134
1.5 Removing and installing fuel delivery unit	134
1.6 Removing and installing fuel tank	135
1.7 Crash fuel shut-off	137
1.8 Checking fuel pump	138
2 Electronic power control (EPC)	144
2.1 Electronic power control (EPC)	144
2.2 Servicing parts of electronic power control (EPC)	144
3 Activated charcoal filter system	145
3.1 Activated charcoal filter system	145
3.2 Servicing parts of the activated charcoal filter system	145
3.3 Checking fuel tank breather	147
24 - Mixture preparation, Injection	149
1 Servicing injection system	149
1.1 Servicing injection system	149
1.2 Fitting locations overview	149
1.3 General notes on injection	155
1.4 Removing and installing parts of the injection system	156
1.5 Dismantling and assembling intake manifold	164
1.6 Dismantling and assembling fuel rail with injectors	167
1.7 Dismantling and assembling air cleaner	170
1.8 Safety precautions	173
1.9 Rules for cleanliness	174
1.10 Technical data	174
2 Checking components	175
2.1 Checking components	175
2.2 Checking injectors	175
2.3 Checking fuel pressure regulator and holding pressure	178
2.4 Adapting components	182
26 - Exhaust system	183
1 Removing and installing parts of exhaust system	183
1.1 Removing and installing parts of exhaust system	183
1.2 Exhaust manifold, front exhaust pipe and catalyst with attachments	183
28 - Ignition system	190
1 Servicing ignition system	190
1.1 Servicing ignition system	190
1.2 General notes on ignition system	190



4-Cyl. injection engine (1.6 ltr., 4 valve) - Edition 04.2001

1.3	Removing and installing parts of the ignition system	191
1.4	Safety precautions	193
1.5	Test data, spark plugs	194