



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	4
1.4 Tightening torques	5
1.5 Assembly mountings	6
1.6 Renewing engine carrier rubber mounting	7
1.7 Additional information and removal instructions for vehicles with air conditioner	8
13 - Crankshaft group	9
1 Dismantling and assembling engine	9
1.1 Dismantling and assembling engine	9
1.2 Removing and installing ribbed belt	17
1.3 Removing and installing toothed belt	18
1.4 Checking semi-automatic toothed belt tensioning roller	20
2 Dismantling and assembling cylinder block, crankshaft and flywheel	21
2.1 Dismantling and assembling cylinder block, crankshaft and flywheel	21
2.2 Renewing crankshaft oil seal - pulley end -	24
2.3 Crankshaft dimensions	27
3 Dismantling and assembling pistons and conrods	28
3.1 Dismantling and assembling pistons and conrods	28
3.2 Piston and cylinder dimensions	33
15 - Cylinder head, Valve gear	34
1 Removing and installing cylinder head	34
1.1 Removing and installing cylinder head	34
1.2 Removing and installing cylinder head	38
1.3 Checking compressions	40
2 Servicing valve gear	42
2.1 Servicing valve gear	42
2.2 Reworking valve seats	47
2.3 Removing and installing camshaft oil seal	49
2.4 Checking hydraulic bucket tappets	50
2.5 Removing and installing camshaft	51
2.6 Checking valve guides	52
2.7 Renewing valve guides	53
2.8 Renewing valve stem seals	53
17 - Lubrication	55
1 Removing and installing parts of the lubrication system	55
1.1 Removing and installing parts of the lubrication system	55
1.2 Removing and installing oil sump	66
1.3 Removing and installing Duo-centric oil pump	67
1.4 Checking oil pressure and oil pressure switch	70
19 - Cooling system	72



1	Removing and installing parts of cooling system	72
1.1	Removing and installing parts of cooling system	72
1.2	Parts of cooling system body side	73
1.3	Parts of cooling system - engine side	76
1.4	Draining and filling cooling system	80
1.5	Removing and installing radiator	82
20	Fuel supply system	83
1	Removing and installing parts of fuel supply system	83
1.1	Removing and installing parts of fuel supply system	83
1.2	Removing and installing fuel tank with its attachments	84
1.3	Safety precautions when working on the fuel supply system	94
1.4	Rules for cleanliness	95
1.5	Adjusting throttle cable	95
1.6	Removing and installing fuel delivery unit	95
1.7	Checking fuel pump	96
1.8	Removing and installing fuel tank	101
1.9	Removing and installing parts of the activated charcoal filter system	103
1.10	Checking fuel tank breather	104
26	Exhaust system	107
1	Removing and installing parts of exhaust system	107
1.1	Removing and installing parts of exhaust system	107