



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	5
1.6 Renewing engine carrier rubber mounting	6
13 - Crankshaft group	8
1 Dismantling and assembling engine	8
1.1 Dismantling and assembling engine	8
1.2 Removing and installing ribbed belt	25
1.3 Removing and installing toothed belt	26
1.4 Checking semi-automatic toothed belt tensioning roller	29
2 Dismantling and assembling cylinder block, crankshaft and flywheel	30
2.1 Dismantling and assembling cylinder block, crankshaft and flywheel	30
2.2 Renewing crankshaft oil seal - pulley end -	34
2.3 Crankshaft dimensions	37
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 Removing and installing cylinder head	51
1.3 Checking compressions	52
2 Servicing valve gear	53
2.1 Servicing valve gear	53
2.2 Reworking valve seats	60
2.3 Removing and installing camshaft oil seal	62
2.4 Checking hydraulic bucket tappets	63
2.5 Removing and installing camshaft	64
2.6 Checking valve guides	66
2.7 Renewing valve guides	66
2.8 Renewing valve stem seals	67
17 - Lubrication	69
1 Removing and installing parts of the lubrication system	69
1.1 Removing and installing parts of the lubrication system	69
1.2 Removing and installing oil sump	83
1.3 Removing and installing Duo-centric oil pump	85
1.4 Checking oil pressure and oil pressure switch	88
19 - Cooling system	91
1 Removing and installing parts of cooling system	91



1.1	Removing and installing parts of cooling system	91
1.2	Parts of cooling system body side	92
1.3	Parts of cooling system - engine side	95
1.4	Draining and filling cooling system	106
20	- Fuel supply system	108
1	Removing and installing parts of fuel supply system	108
1.1	Removing and installing parts of fuel supply system	108
1.2	Removing and installing fuel tank with its attachments	109
1.3	Safety precautions when working on the fuel supply system	114
1.4	Rules for cleanliness	115
1.5	Adjusting throttle cable	115
1.6	Removing and installing fuel delivery unit	115
1.7	Checking fuel pump	116
1.8	Removing and installing parts of the activated charcoal filter system	122
1.9	Checking fuel tank breather	123
26	- Exhaust system	126
1	Removing and installing parts of exhaust system	126
1.1	Removing and installing parts of exhaust system	126