



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	2
1 Removing and installing engine	2
1.1 Removing and installing engine	2
1.2 Notes on removing	2
1.3 Securing engine to assembly stand	4
1.4 Notes on installing	4
1.5 Tightening torques	5
13 - Crankshaft group	6
1 Dismantling and assembling engine	6
1.1 Dismantling and assembling engine	6
1.2 Removing, installing and tensioning toothed belt	13
1.3 Adjusting alternator V-belt tension	16
2 Dismantling and assembling cylinder block, crankshaft and flywheel	18
2.1 Dismantling and assembling cylinder block, crankshaft and flywheel	18
2.2 Renewing crankshaft oil seal - pulley end -	22
2.3 Crankshaft dimensions	23
3 Dismantling and assembling pistons and conrods	24
3.1 Dismantling and assembling pistons and conrods	24
3.2 Piston and cylinder dimensions	29
15 - Cylinder head, Valve gear	30
1 Removing and installing cylinder head	30
1.1 Removing and installing cylinder head	30
1.2 Removing and installing cylinder head	33
1.3 Checking compressions	34
2 Servicing valve gear	36
2.1 Servicing valve gear	36
2.2 Reworking valve seats	42
2.3 Checking hydraulic bucket tappets	44
2.4 Removing and installing camshaft oil seal	44
2.5 Removing and installing camshaft	45
2.6 Checking valve guides	46
2.7 Renewing valve guides	47
2.8 Renewing valve stem seals	47
17 - Lubrication	50
1 Removing and installing parts of the lubrication system	50
1.1 Removing and installing parts of the lubrication system	50
1.2 Checking oil pressure and oil pressure switch	54
19 - Cooling system	56
1 Removing and installing parts of cooling system	56
1.1 Removing and installing parts of cooling system	56
1.2 Parts of cooling system body side	57
1.3 Parts of cooling system - engine side	61
1.4 Coolant hose connection diagram	63



1.5	Draining and filling cooling system	64
1.6	Checking radiator fan run-on	66
1.7	Removing and installing radiator and radiator fan	66
20	- Fuel supply system	68
1	Removing and installing parts of fuel supply system	68
1.1	Removing and installing parts of fuel supply system	68
1.2	Safety precautions when working on the fuel supply system	71
1.3	Rules for cleanliness	71
1.4	Removing and installing fuel tank	71
1.5	Removing and installing fuel gauge sender	72
1.6	Servicing accelerator mechanism	73
1.7	Adjusting accelerator cable	74
26	- Exhaust system	75
1	Removing and installing parts of exhaust system	75
1.1	Removing and installing parts of exhaust system	75
1.2	Removing and installing clamping springs	77
1.3	Tensioning and relieving tension on clamping springs	77