water jacket and the provision of numerous fins on the cylinders, crankcase and cylinder heads. Therefore, some recurrent knocks of the valves and tappets, at normal clearances between the valve stem (cap) and the rocker end, as well as an even high-pitched (not shrill) noise produced during operation of the valve timing gear drive should not be regarded as an indication of malfunction.

In the case of partial disassembly involving the removal of the cylinder heads, the thread of the nuts fastening the exhaust pipes, and of the cylinder head fillers should be lubricated during assembly with graphite grease type БВН-1 GOST 5656—60.

After 10000 km run do not fail to check the condition of valves and lap them into their seats, if required.

Lapping the Valves

To lap the valve into the seat of the cylinder head, slip a spring over the stem of the valve to be lapped, apply a thin layer of abrasive paste to the chamfer of valve head and, after inserting the valve with the pressing-out spring into the guide bush, fit an appliance for rotating the valve (a bit brace or a drill) on the end of the valve stem.

Use may be also made of a piece of a petrol hose by turning it between the palms of your hands. Using the above appliance, rotate the valve in either direction in such a manner that the turn in one direction is about twice as long as the turn in the opposite direction, i. e. ensure that the valve is gradually turned in one direction. When changing the direction of turning, the valve must be lifted off its seat.

Lap the valve into the head seat carefully so as not to remove too much metal from the working chamfers as this will reduce the number of permissible repairs. Towards the end of lapping, reduce the amount of paste and, at the last stage, perform lapping with the use of clean oil.

A lustreless uniform colour appearing on the working surfaces of the valve head and seat is an indication of a satisfactory lapping. After lapping, thoroughly wash the valves, the valve seats, guide bushes, filler and compression chamber of the cylinder head until the abrasive paste is completely removed.

Following that, check whether the valves are fitted tightly, for which purpose install the valves in place, and pour kerosene first into the inlet, then into the exhaust port of the cylinder head. The kerosene must not leak out within 30 s after filling. If the kerosene starts to leak before the specified period elapses this means that an additional lapping is required.

Spark Timing

To facilitate the setting of the ignition advance angle, the engine flywheel is provided on the outside with marks and letters "B"

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