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THE MAIN MALFUNCTIONS THAT OCCUR IN THE ENGINE'S KRIVOSHIP SHATUN AND GAS DISTRIBUTION MECHANISMS

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Abstract: Hermetics of the crankshaft mechanism, compression of the crankshaft mechanism, oil depletion in the engine, gas transfer to the crankcase, oil gauges, adjustment work on the crankshaft mechanism and gas distribution mechanism, engine repair, selection of pistons and bearings, cylinder repair, selection of piston rings.
Key words: Adjustment works in the crank mechanism and gas distribution mechanism, engine repair, selection of piston and bearings, cylinder repair, selection of piston rings.
As a result of the natural wear of parts during operation, malfunctions such as sudden failure and loss of working capacity occur in the cylinder piston group, crankshaft connecting rod mechanism and gas distribution mechanism, other compounds and aggregates.
The main failures of the crankshaft mechanism include corrosion of the cylinders, piston rings and grooves, piston plate walls and holes, connecting rod head bushings, crankshaft journal inserts, and piston rings. Examples of the main breakdowns and failures are broken piston rings, corrosion of the cylinder surface, clogging of the piston, melting of bearings, and the formation of cracks in the cylinder block and its head.
Examples of the symptoms of the failure of the connecting rod mechanism of Krivoship are the loss of compression in the cylinder and noisy operation, a large amount of gases passing into the crankcase, and thick smoke coming out of the oil filler neck [1].
The main malfunctions of the gas distribution mechanism include wear of the pusher and its bushings, valve plates and seats, gears, supporting necks and fists of the gas distribution shaft, violation of the gap between the valve and the rocker arm.
Failures include loss of elasticity and breakage of valve springs, breakage of the gas distribution gear, burning of valves, etc. The noisy operation of the gas distribution mechanism is one of the symptoms of a malfunction.
Dvigatelning krivoship shatun va gaz taqsimlash mexanizmlariga texnik xizmat ko'rsatishda bajariladigan ishlar. In order to prevent the damage of the engine and its malfunctions, comprehensive preventive measures are carried out in motor transport enterprises. These works are fixing, adjusting and lubricating the engine during technical service and during periodic maintenance for modern cars. During the service period, the main attention is paid to fastening and adjustment works. The purpose of tightening is to check the solidity and tightness of engine connections (engine to frame support, cylinder head and crankcase to cylinder block, etc.). It is checked that the cylinder head is fixed to the block so that gas and coolant do not leak. This task is performed according to the instructions of the car manufacturer in the sequence
(Fig. 1) [2].

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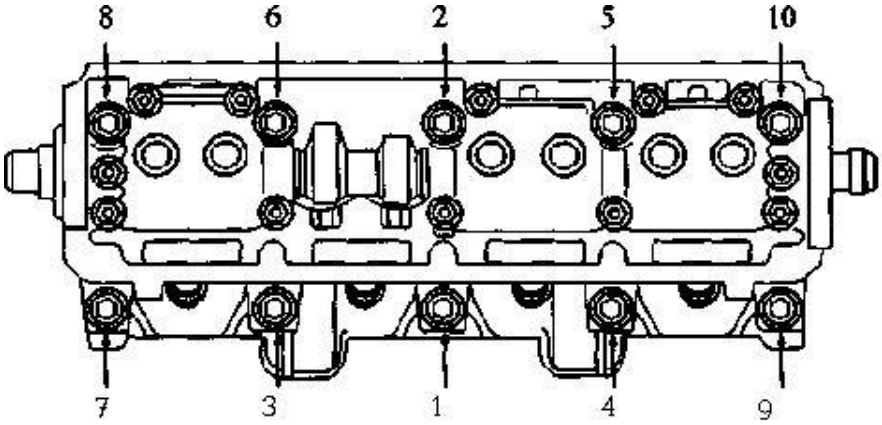

Figure 1. Nexia engine cylinder head nut tightening sequence.

A dynamometric wrench (Fig. 2), auto locksmith tool sets (Fig. 3) are used for fastening work. Cast iron heads are hot-fixed, and aluminum heads are cold-fixed [2].

Adjustment work on the krivoship shatun mechanism and gas distribution mechanism in engines adjusting the slot between the pushers or Shay(koromislo)with the upper part of the valve sterge, hardening of the combination of the engine support with rama consists in the work of hardening the cylinder head and crankcase together with the cylinder block, which is performed according to the result of diagnostic work [3].

Figure 2. Dynamometric keys and their types

Figure 3. Auto locksmith key sets

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Valve clearance adjustments are carried out during 2nd maintenance or as needed to ensure smooth operation of the gas distribution mechanism and filling of the cylinders with the fuel mixture, regulating the gas distribution process, which in turn, allows for increased engine power and compression [4].

The cylinder, cylinder head, rod and other parts of the valve drive mechanism are heated up to 80...150°C, and the valves up to 300...600°C, depending on the temperature of the engine. In this case, the heat gap between the parts is reduced, which causes the parts to be deformed under the influence of heat, and the valves do not fit tightly in their slots [5].

When the engine is running, if the heat gap in the exhaust valve is too small, the disc will overheat, cracks will appear, the valve seat (seat) will soften, and its wear will accelerate due to the escape of gases. Secondly, when the valves work under the influence of high temperature, strong knocks appear, and the details of the gas distribution mechanism begin to eat rapidly [6]. Heat cracking is usually determined with the help of a steel probe at a temperature of 20...25°C (Fig. 4).

For this, the piston in the cylinder is brought to the upper end point during the compression stroke, the gap between the valves and the pistons belonging to the first cylinder is determined with the help of a caliper and, if necessary, adjusted, and the gap between the remaining valves and pistons is performed according to the sequence of operation of the cylinders [7-8].

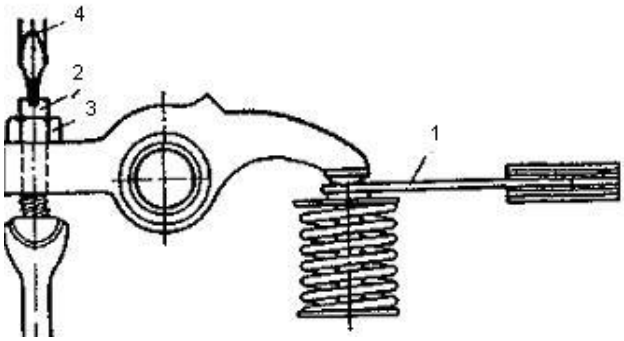

Figure 4. The form of adjustment of the heat gap in the gas distribution mechanisms and inspection with a dipstick:

1-pin, 2-adjustment screw, 3-nut, 4-screwdriver

Modern GM-Uz cars include Nexia, Lacetti, Kobalt, etc. The appearance of hydraulic compensators (Fig. 5) in the structures of the gas distribution mechanism of engines automatically ensures the adjustment of the notch in the valve mechanism, but the hydraulic compensators are very sensitive to the quality of the oil and the level of its purification. Coking of oil, particles of eaten and corroded parts cause hardening of hydraulic thruster. At this time, unaccounted shock loads appear in the mechanism, as a result of which the valve and distribution shaft wear out to the point of being unusable. [9]

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Figure 5. The form of hydrocompensators

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