



Innovative methods of long-term use of machine parts and cooling, lubricants

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Abstract: One of the most pressing topics in engineering right now is the work done to prevent the reliability of the machine from being eaten during operation. For efficient and long-term use of automobiles and tractors, it is necessary to know the structure of them, to make adjustments to details, spare parts and timely maintenance of the urgent problems of lubrication and cooling systems.

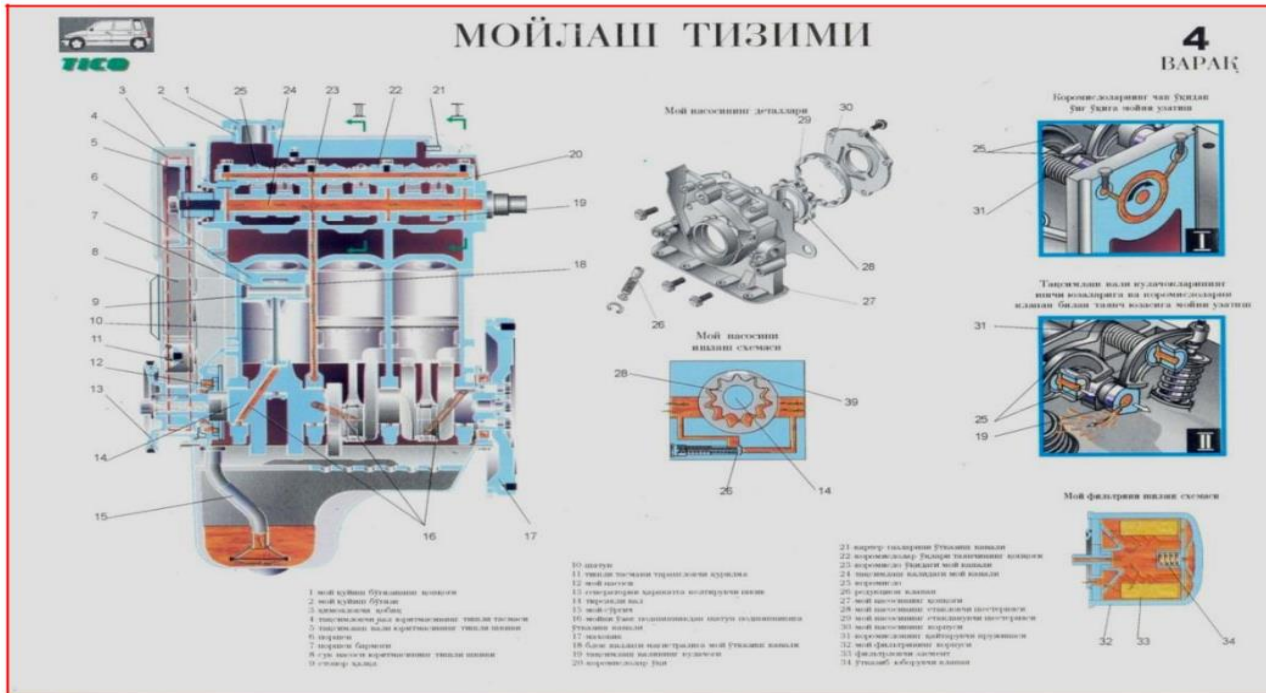
It is necessary to choose the right lubricants and replace the lubricants in a timely manner. Machine details should be provided daily, seasonal maintenance and maintenance-1 (maintenance-1) and maintenance-2 (maintenance-2) on time. The internal combustion engine cooling system must be properly selected and the antifirris replaced.

Key words: - Lubrication System, Engine, Maintenance (Maintenance), Durability, Metal, Cooling System, Magnetic, Friction, Thermostat, Filter.

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Introduction: Techniques of Lubrication System and Maintenance Technology. Defects in the Lubrication System, their Symptoms and Causes. Ways of solving problems with the use of new technology for collecting scrap metal from the lubrication system engine.



Defects in the lubrication system, their symptoms and causes. Engine during operation The oil level in the crankcase will decrease and quality will change. These can cause engine failure and other problems. The engine's deterioration in oil performance is due to its metal particles, oxidation and fuel contamination. In addition, a decrease in the oil content of supplements that provide a good lubricant quality reduces the quality of the oil. A mechanical mixture is an additive of metal particles formed by two gliding surfaces. Mineral compounds (sand, dust) are added to the air (engine) oil, reducing the lubricating properties of oil. The content of the mechanical mixture in oil should not exceed 0.2%. Under the effect of oxygen in the air, the oil becomes oxidized and gets into the crankcase and mixes with the hot and dirty oil. Acids are an oxidizing agent and are a major factor in cylinder wall breakage and corrosion. It also creates an anti-friction environment in bearings. Smells form a laxative precipitate in the piston and piston rings and drastically reduce their mobility. Fine colloids and soluble or damped particles (solid mixtures: carbon, carboids and coke) affect the friction surface through oil channels and tubes (slowing down the oil flow), creating a crushed, scratched surface. The oil level and quality of the crankcase are inspected, and the oil is refined as needed. Filters are also cleaned, filters are replaced, and the oil used is replaced. The coarse oil filter is checked for rotation of the handle on it. In addition, it is necessary to lubricate separate lubricants and mechanisms (after a certain period). Lubricator blade screw and water pump bearing (console, plastic 1-13 or oil-lubricant) and lubricator generator and lubrication of electrical equipment. In addition, the oil in the air filter (oil bath) is replaced. The oil level on the engine crankcase is checked 3-5 minutes after the engine stops operating when the car is on a flat surface. Oil quality in the engine is determined by mechanical mix and fuel volume. Oil contamination can be determined, first of all, by the oil gauge, depending on the color and clarity. If it is found to be dark and dark, the oil should be replaced. Oil replacement in the engine (depending on the operating time, the degree of wear, the quality of the oil, road and climate category) is done after a distance of 1,5 to 10,000 km. The oil resources currently produced by foreign firms (SHELL, MOBIL, CSTROLL, TEXASO, etc.) are



The Peerian Journal

Open Access | Peer Reviewed

Volume 5, April, 2022.

Website: www.peerianjournal.com

ISSN (E): 2788-0303

Email: editor@peerianjournal.com

estimated at 10-50 thousand km. The number of Oil is recommended to be replaced when the engine is heated. After exhausting the exhaust oil from the engine, the lubrication system is washed with a low-viscosity mixture of verethane oil, diesel fuel and diesel fuel, or a 90% white alcohol and 10% acetone wash.

The motor crankcase (depending on the lubricant capacity) is filled with 2.5-3.5l of washing fluid, the engine is sprayed, and after 4 and 5 minutes saline operation at minimum (600-800 rpm) of the elbow shaft, the washing fluid is poured out. and oil is poured. The lubrication system is washed away when the engine runs on salt. This appliance has a gentle filter. The detergent can be used in the future, after having been cleaned several times (by filtering). The lubrication system is certainly washed after a distance of 6-10,000 km (during the second MACH) as well as during the season change. During Maintenance 1, the thin oil filter (swap filter) will be poured out. In carburetor engines, when oil is replaced, filtering elements are also replaced. Over a period of time (after 5-6,000 km), the ventilation path of the crankcase, the fastening of details, the absence of valves in the valves and tubes are checked and the clusters are cleaned every 10-12 thousand km. When the ventilation ducts of the motor crankcase become dirty and contaminated, the pressure increases, causing the oil to leak out of the crankcase. When replacing the engine oil, the air filter housing in the crankcase ventilation system is washed with kerosene and then poured into the filter bath until the specified level. In Nexia cars, oil on the mat is replaced every 10,000 km or twice a year. The oil level is constantly monitored during maintenance and if the oil level is below the "MIN" mark, it will be normalized. It is recommended to use engine oils of SG 5W / 30, SAE 10W / 30, SAE 10W / 40 and SAE 15W / 40 according to the instructions of the plant. The oil is used to pump oil into the engine. Depending on the installation of such devices, it is flexible and movable, depending on the lubrication method: pneumatic and mechanical, as well as manual and electric, mechanical and drive depending on the type of transmission, bulky and fast.

At present, there is a widespread use of a mechanical, fast, motionless machine with mechanical transmission. Lubricants in the 1st Maintenance and Maintenance Classes are about 17-30%, and the vehicle uses engine, transmission, industrial, heated oil and lubricants, as well as working fluids. Lubrication is done based on grease maps for each vehicle. Production capacity of liquid oil distributors is 10-15 l / min. Pressure of 1.5 MPa, equipment for lubricants 10 MPa, production capacity 200 g / min. The number of Fragmented parts of the Porshenli internal combustion engines often cause friction surfaces to be heated and eaten by friction, which results in increased voltage in the joints, noise in the machine and reduced service life. Mechanical energy of a certain size is used to overcome friction. As a result of lubrication, the energy required to cope with friction is reduced, the wear of frictional parts slows down, and the heat released by friction is removed.

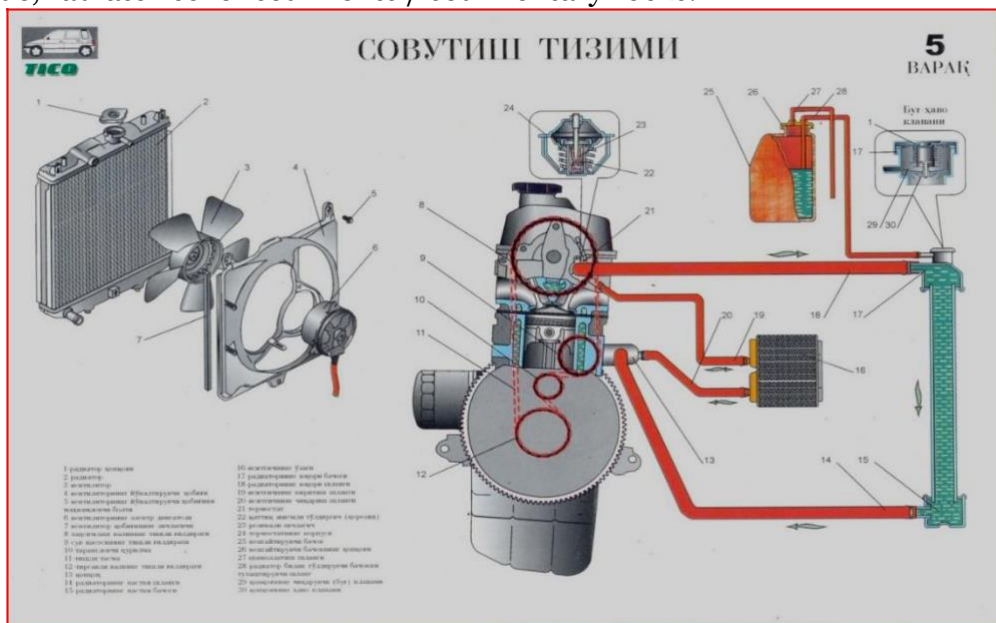
In addition, oil cleanses the wear and dirt on the friction surfaces, preventing the corrosion of surfaces and in some cases joining moving surfaces. Engine lubrication system - it contains several elements that allow the oil to be transported to the bottom of the crankcase, at the appropriate temperature and at a certain pressure, on the friction surfaces. Frost resistance is the property of the material to withstand friction. As the parts are worn, the strength of the parts can be reduced due to the reduction of the cross sections and increased dynamic loads, as well as increased mechanical noise, resulting in increased noise. During the operation of internal combustion engines degradation in the engine components results in accelerating the degradation of the parts due to the rubbing of the details and the rubbing of the details.

In order to prevent this problem, it is advisable to attach a special magnetic magnet to collect the metal scraps on the oil pad and remove it at any time to clean it and place it back in place. It is also important to choose the fuel lubricants used for the engine and to replace the oil in a timely manner. As a result, the exhaust of the engine components will be reduced and the life span of the parts will increase.

Maintenance and Maintenance Technology of Cooling System.

1. The main problems of cooling system, their symptoms and causes.
2. Maintenance and Maintenance Technology of Cooling System.
3. New technology for collecting slag from the boiling water in the cooling system.

Major faults in the heating system: failure of sealant, leakage of fluid from water pump, patrol and other areas, insufficient bandwidth, cracking, breakage, failure of the thermostat valve, openings of the pump blade, radiator cover sediments / sedimentary rocks.



Defects of the cooling system can be attributed to the following external features: Engine is heated for a long time, even when it is not working properly, if the fuel is burned and burned, radiator fluid will boil if the appliances are not adjusted properly. If the thermostat valve is opened slowly or is completely open (after engine start), the engine will warm up more slowly, and if the valve goes on, the engine will warm up faster.

The system is diagnosed before maintenance and repair, to check its fever and seal, the bandwidth, and the operation of the thermostat. In normal operation of the engine, the cooling system fluid temperature should be within the range of 80-95C, and the temperature of the upper and lower parts of the radiator is in the range 8-12C. The leakage of the cooling system fluid can be traced to the fluid traces in the lower parts of the water pump (and other compounds). Control of this is done in the cold state of the engine.



The Peerian Journal

Open Access | Peer Reviewed

Volume 5, April, 2022.

Website: www.peerianjournal.com

ISSN (E): 2788-0303

Email: editor@peerianjournal.com

The tightness of the system is checked by the pressure of air (0.06 Mpa), which is injected into the upper fluid part of the radiator. The voltage of the fan and the bandwidth is checked by checking the tape at a distance between the screws (30-40N power). Thickness of the belt should be 10-20 mm (for different engines).

The removed thermostat is immersed in a heated water bath and checked for performance. At the initial opening of the thermostat valve, the fluid temperature is 65–70C and at full opening 80–85C. Replace defective thermostat.

The cooling system consists of adjusting the fan belt, tightening the hose joints, changing the pump pump if necessary, and cleaning the system. The system is rinsed with water or a mixture of 0.02-0.03 MPa. The washing direction of the system is in the opposite direction to the cooling process. The government worsens the heat exchange process. Scientific studies show that a 1 mm deflection can reduce the cooling intensity by 25%, the power by 6%, and the fuel consumption by 5%. Haki is washed with chemical impurities. Washing the cooling system in a mixture of sulfuric acid softener and foam exchanger is very effective. The mixture is filled into the system for 10-15 minutes and the engine is poured out at 60C and then washed with hot water. To neutralize acid residues, a neutralizer is added to the spray water (soda, 2 chromium potassium).

Maintenance of refrigeration system of UzDEU cars.

The TIKO and DOMAS refrigerant system must be checked for the level of cooling fluid in the system (in the cold state of the engine) with the level between "FULL" and "LOW". If the level is below the "LOW" mark, the fluid level is normalized.

Fluid level for Nexia and ESPERO cars "COLD" should be above the sign.

The cooling system fluid keeps the engine in normal heat mode and prevents rust. Therefore, it is impossible to completely submerge in case of fluid level drop. The fluid in the system is replaced every 2 years.

Repairs on the cooling system are performed according to the diagnostic results. New technology for collecting slag from the boiling water in the cooling system.

Slugs (nails) formed by boiling water in the cooling system, salts from the oxidation of water, air and details accelerate the cooling of the details and spare parts in the cooling system.

In the cooling system, it is possible to use anodic steroids made of aluminum metal to collect slugs formed by boiling fluid, and it is advisable to use coarse and soft filters to clean the cooling system's contents.

During the maintenance period, the engine will be turned off and the engine cooled down. After that the water pump fibers in the cooling system and thermostat help to extend the life. As a result, the cost of spare parts used in the cooling system can be reduced

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The Peerian Journal

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ISSN (E): 2788-0303

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