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Research Article

ORGANIZATION OF TECHNOLOGICAL PROCESSES FOR MAINTENANCE AND REPAIR OF ELECTRIC VEHICLES

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ABSTRACT

An ordinary resident of our country who has a personal vehicle spends a large amount of money on it. This is due to the high cost of combustible fuel, regularly scheduled maintenance, rubber replacement and other minor points. As a result, people are looking for an alternative solution, and an electric car comes to the rescue. The motor of an electric car has practically no drawbacks, its operation is quiet, it does not need a regular change of engine oil, and most importantly, it does not pose a threat to the environment. This article discusses ways to repair and maintain modern electric vehicles.

KEYWORDS

Electric car, battery, electrical equipment, maintenance.

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INTRODUCTION

The maintenance of electric vehicles is almost the same as that of internal combustion engine vehicles, with the significant exception of the power plant, its ancillary systems and transmission. In the design of all-electric machines, the same chassis and suspension, wheel drives, the same basic components of the steering system, braking, lighting, and many others. In this part, the frequency and volume of inspection, adjustment and repair operations will practically not differ. There is an increase in the number of electric cars in our country and the expansion of their range in our secondary markets. Electric cars are based on environmental friendliness, convenience, excellent technical and operational characteristics, low maintenance costs.

THE MAIN PART

The popularity of electric vehicles, the range of which in the specialized market is constantly increasing, is explained by the optimal combination of car environmental friendliness, comfort, excellent technical and operational characteristics, and low maintenance costs. The maintenance of electric vehicles does require significantly less maintenance than the maintenance of vehicles with gasoline and diesel engines.

A prerequisite for the durability of cars with an electric motor is timely maintenance. Many electric vehicle owners ignore maintenance because there is no need to change the engine oil. The rules for charging the battery are also not observed, as a result of which the loss of battery capacity after two years of operation is about 12%. In order for the electric car to serve for a long time and without accidents, maintenance must be carried out in a timely manner. The maintenance of electric vehicles is not much different from the maintenance of ordinary cars, with the exception of the power plant, auxiliary systems and transmission systems, and the battery.

Electric cars are a prerequisite for long-term service, which is timely maintenance (TS). Since there is no need to change the engine oil, most electric car owners do not pay attention to maintenance. Also, as a result of non-compliance with the rules of battery charging, the loss of battery capacity after two years of operation is about 12%. Timely maintenance is required for the long-term and accident-free operation of the electric vehicle. Electric cars, in addition to the power supply, auxiliary and transmission systems, as well as rechargeable batteries, do not have much poorer maintenance than conventional car maintenance.

Experts recommend checking the condition of the electric vehicle before each trip and paying special attention to the condition of the car body and number plates in general, electrical and lighting equipment, steering and brakes, sensors, tires. The planned maintenance is carried out in

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order to properly maintain the electric car, to extend the service life of the vehicle. During the maintenance process, car service specialists perform the following tasks:

- External inspection of the vehicle;
- Inspection of warning and lighting systems;
- Control and brake system inspection;
- Adjusting the brake system by changing the technical fluid or refilling it;
- Lubrication of components and parts of electric vehicles;
- Recharge or replace the battery;
- Tightening the contact connections on the motor;
- Adjust the gap between the contacts;
- Cleaning of the cable sheath from the complications of the work process and the structure;
- Clean the interior from dirt and dust.
- The periodicity of maintenance depends on the operating conditions of the electric vehicle and the wear of parts. Experts recommend that electric vehicles be serviced at least once a year, and in some cases once every six months. There is also scheduled maintenance according to the established rules:
- After the electric car has covered a distance of 12,000 km, it is necessary to check the coolant level of the heating and cooling system for the battery, the power inverter, the charger module. Specialists will also review the brakes, suspension, and steering;
- It is recommended to change the tires every 15,000 km to ensure uniform wear of tires;
- Replacement of the cabin air filter after 50,000 km;

Seasonal maintenance every six months allows the electric car to be prepared for the new weather conditions. Materials required for the maintenance of electric vehicles. During the maintenance of electric vehicles, there may be a need for reducer working fluid, brake fluid, multi-purpose lubricant, air conditioning system refrigerant, cooling oil for the air conditioning system. The brake fluid is replaced every two years or after a distance of 40-60 thousand km. The antifreeze in the battery cooling system is replaced every 5 years. It is necessary to use original quality materials.

CONCLUSION

Maintenance of electric vehicles, in comparison with cars with internal combustion engines, is distinguished by extended service intervals, fewer operations, less total time spent in service, fewer parts and the number of spare parts and consumables. Taken together, this means significant cost savings for owners and reduced revenue for workshops relative to the era of combustion engines.

During the maintenance of electric vehicles, it will be necessary to have a short service life, increase the number of spare parts and materials, and increase the number of electric car parts stores.

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