

## EQUIPMENT FOR MECHANIZED VEHICLE WASHING

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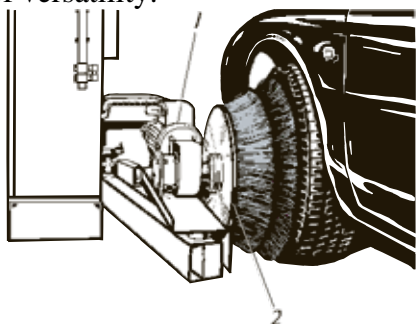
Mechanized equipment is divided into jet, brush and jet-brush equipment.

Jet equipment (without mechanical contact with the vehicle surfaces being cleaned) is used mainly for washing vehicles with a complex configuration: trucks and dump trucks, truck tractors, and some specialized vehicles. Less commonly, it is used for washing vans and cars.

Jet installations for washing passenger cars are made with a swinging arch or in the form of a portal moving on rails. Along the inner perimeter of the arch (portal) there are nozzles through which water or soap solution is supplied. The washing process is carried out with a stationary car and a cyclically swinging arch or a moving portal. The movement is controlled by the operator. A complete washing cycle for one car takes 6...10 minutes.

The disadvantages of these installations are high water consumption (up to 3,000 liters per car) and insufficiently high quality of washing work [1].

Brush equipment (mechanical contact units) is used mainly for washing cars, buses, vans, and also (much less often) trucks with streamlined shapes. The advantages of brush washing systems are improved washing quality, a significant reduction in washing time (2-3 times compared to jet washing systems), and a reduction in the consumption of water and detergents. Disadvantages include the complexity of the design, the possibility of damaging the paintwork of cars when washing, and lack of versatility.



**Fig. 1. Equipment for washing vehicle rims:** 1 - electromechanical drive; 2 - flat brush with integrated water supply nozzle

In such installations, two or four vertical rotating brush drums are used for washing the sides, mounted on rotary arms, and one horizontal one for washing the roof. The diameter of the cylindrical brush in working condition is 0.7...1.0 m, and its rotation frequency is 150...200 min<sup>-1</sup>.

There are rotary and flat brushes. Rotary brushes are divided into pneumatic brushes, brushes with a plastic bristle carrier, brushes using a metal flexible wire rope or a flexible cable made of polymer materials as a shaft, and brushes with different lengths of threads. The material for the brushes is nylon threads or other synthetic material [2,3].

The productivity of washing installations at through posts or production lines (for example, the M-123 installation) is up to 60 cars/hour with a water consumption of 100...150 l, and washing liquid - 0.05...6.1 l per 1 bus (excluding water consumption for washing the lower part).

### **References.**

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