

MATERIALS

of the 50th scientific and technical conference of professors, teachers, research workers, postgraduates
and students of Belarusian State Polytechnic Academy

In 2 parts

Part 1

Trends: "AUTOMOTIVE AND TRACTOR INDUSTRY",
"MACHINE INDUSTRY", "INSTRUMENT ENGINEERING",
"ROBOTICS", "METALLURGY", "ARCHITECTURE AND
URBAN PLANNING", "SOCIAL SCIENCES"

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CONCERNING THE DESIGN OF HYDRAULIC BRAKE GEAR

I.I. Lepeshko, Hassan Abdulkadir baba. Section "Motor cars"

The application of antiblock systems in motor cars with hydraulic brake gear requires the usage of external power source (pump station) providing the necessary pressure and working medium consumption.

At present the development of pump station drives is going in accordance with the following trends:

- main engine power take-off;
- power take-off from vehicle-mounted electrical system;
- power take-off from motor car wheels.

The first two methods of power take-off are characterized by the introduction of additional automatic pump station control system into brake gear in order to maintain the pressure within the specified limits and the necessary energy reserve in hydraulic accumulators. The calculation methods regarding such systems are widely described in the technical literature.

The third trend has certain peculiarities that are expressed by the ability of the pump station to work without the creation of energy storage thus excluding hydraulic accumulators from the system of their control.

The main peculiarity for the calculation of such system is the determination of the pump station and matching gearbox parameters between the wheel and the pump station that secure the required braking efficiency and the response time of the brake gear on the whole. It was noted that the brake gear with the pump station drive from the motor car wheels cannot secure the full immobility of the motor car in the case of its stopping, i.e. the car has a "creeping" speed, the value of which depends on the brake gear parameters and the pump station. In order to eliminate this defect it is recommended to introduce the devices securing the full immobility of the motor car in "stop" modes.

I, Mikhail S. Shpakouski, sworn translator, do hereby certify that I am fluent in the English, Russian and Belarusian languages, and that the above document is an accurate and complete translation of the document" made this 8th day of Augusts 2012.

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MINSK AUTOMOBILE PLANT
Board of the Scientific and Technical Association MASHPROM
of the Republic of Belarus

**The Ways for the Improvement
of the Quality and Technical Level
of Heavy Duty Vehicles**

*Head notes of the reports presented at the
republican scientific and practice conference
dedicated to the 50th anniversary of Minsk
Automobile Plant creation.*

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