

REPORT

On the results of renewal work performed to the XADO technology on the side flap reducing gear and the rear axle of the Caterpillar 789 dump truck with the load capacity of 120 tons at the GTTs-1 OJSC "SevGOK"

During the period of 17.08 to 12.10.2001, according to contract No. 2774 of 09.10.200, the XADO technology was employed to perform renewal of the parts of the side flap reducing gear and the rear axle of the Caterpillar 789 dump truck at GTTs-1 OJSC "SevGOK".

Two sun gears and two axles of the r.h. side flap reducing gear were taken as check ones. Prior to renewal, the condition of the parts was as follows:

1. In the gears, the inner races for the bearings were pitted over 70 % of the surface.
2. The diameter of the gears' inner surfaces was 147.2 mm.
3. Up to 45 % of the working surfaces of the teeth selected had irregularities and cavities.

The tooth thickness was as follows: gear No. 1 – 16.85 mm
gear No. 2 – 16.80 mm.

4. The diameter of sites on bearing axles was 101.6 mm.

After operating for 996 motor-hours, the following **positive results** were achieved:

1. The inner races of the bearings in the gears were free of cavities over 90 % of the surface due to formation of a cermet layer.

The inner surface diameter was 146.6. mm on gear No. 1 and 146.8 mm on gear No. 2.

2. Cavities and irregularities on the working surfaces of the teeth disappeared on 90 % of the surface.

The body thickness of selected teeth was as follows:

Gear No. 1 – 17.6 mm

Gear No. 2 – 17.5 mm.

3. On the sites of axles, scores disappeared, and the diameters of the axles were as follows:

Axle No. 1 – 101.9 mm

Axle No. 2 – 161.8 mm.

4. The surfaces of the roller bearing rollers working on the axle inside the sun gear were freed from pitting and became strengthened due to formation of a cermet layer.

Table of sizes (mm)
Of parts of r.h. side flap reducing gear

	Gear No. 1		Gear No. 2	
	Prior to renewal	After renewal	Prior to renewal	After renewal
Tooth thickness	16.85	17.60	16.90	17.5
Inner dia.	147.2	146.6	147.2	146.8
Outer axle dia.	101.6	101.9	101.6	101.8

Taking into account that, structurally, the l.h. side flap reducing gear and the rear axle of this automobile have a common oil lubrication system, all the friction parts of these mechanisms were subject to similar processes. This resulted in that all the friction pairs acquired a cermet layer, and the clearances in the friction parts and their dimensions were optimized, i.e. the rubbing parts of the friction pairs gained in weight.

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28.08.2001