

REPORT on the results of  
**XADO-technology** reconditioning of motor-wheel reduction gear of  
dump truck BelAZ 7512 №27 at ГТЛ - 1 of JSC "SevGOK"

Within the period from 28.08.2001 till 25.10.2001, **XADO-technology** reconditioning of **motor-wheel reduction gear parts of dump truck BelAZ 7512 №27** was carried out at GTC-1 of JSC "SevGOK" as per contract 2774 of 09.10.2000. Prior to the repair, the state of the parts was as follows:

1. **The second line of reduction gear:**
  1. Working surfaces of satellite gear teeth have irregularities and micro-cavities. Thickness of the marked tooth shank amounts 16.7 mm.
  2. Working surfaces of the sun gear shaft teeth have irregularities and micro-cavities. Thickness of the marked tooth shank amounts 16.85 mm.
  3. More than 80% of the surface of rollers of the major thrust bearing has cavities. Diameter of the marked roller equals to 51.95 mm.
2. **The first line of reduction gear:**
  1. More than 80% of the working surfaces of sun wheel teeth had cavities 1.0 - 2.5 mm deep in a form of almost continuous grooves in the pre-root area. Thickness of the marked tooth shank amounts 11.5 mm.
  2. 40 % of the working surfaces of satellite teeth had irregularities and cavities. Thickness of the marked tooth shank amounts 13.25 mm.
  3. The surface layer of the working surfaces of the parts mentioned in items 1 and 2 were not strong enough being treated by smooth-cut file.



Operation during **350** hours after the treatment has resulted in the following **successes**:

1. **The second line of reduction gear:**
  1. Working surfaces of satellite teeth (excluding 3% of the surface which was not engaged into mesh with gear-shaft) have reshaped in a smooth polished surface. Cavities and irregularities have vanished. Thickness of the marked tooth shank amounted 17.4 mm.
  2. Working surfaces of the sun gear shaft teeth have reshaped in a smooth polished surface. Cavities and irregularities have vanished. Thickness of the marked tooth shank amounted 17.6 mm.
  3. Cavities vanished out of the working surfaces of bearing rollers (10% of the surface kept traces of micro-cavities). The surfaces become smooth and polished. Thickness of the marked roller amounted 52.85 mm. Base riding surface of the bearing in the reduction gear casing has no micro-cavities.
2. **The first line of reduction gear:**
  1. As per report "On the results of the preliminary technical measurements of the parts' properties" of 27.08.2001, the sun gear in the mentioned reduction gear had been replaced before the reducer was mounted on the dump truck.
  2. Working surfaces of the satellite teeth has reshaped in a smooth polished surface, irregularities and cavities have vanished. Thickness of the marked tooth shank amounted **13.8 mm**.
3. Working surfaces of the teeth and riding surfaces of the rollers of thrust bearing are covered with a strong cermet layer which is not treatable by smooth-cut file (the file is slipping traceless). According to the measuring results (see below) the treated reducer parts have gained weight.

**Table of results of  
motor-wheel reducer parts' measurements (mm)**

<b>Properties</b>	<b>Before the treatment</b>	<b>After the treatment</b>	<b>+/-</b>
<b>THE FIRST LINE</b>			
Thickness of the satellite tooth	16.70	17.40	+0.70
Thickness of the sun gear shaft tooth	16.85	17.60	+0.75
Diameter of the roller	51.95	52.85	+0.90
<b>THE SECOND LINE</b>			
Thickness of the satellite tooth	13.25	13.85	+0.60

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