



TECHNICAL REPORT DATED 13.04.2001

Conveyor gearbox: the drive now draws less power with no teardown or shutdown

JSC Gomelsteklo, TsPS shop · report approved by chief mechanical engineer V. Ye. Ryzhkin; signed by the shop manager and the shop mechanic, treatment performed by Sintez-Plus LLC
Gomel, Belarus · treatment 28.03–10.04.2001 · report dated 13.04.2001

PRODUCT	TREATED UNIT	DOCUMENT TYPE
XADO technology tribotechnical treatment without teardown, under normal operating duty	Main drive gearbox TsPS shop conveyor · gear wheel — pinion pairs	Technical report JSC Gomelsteklo

EQUIPMENT	CONDITION AND DUTY	WHAT WAS MEASURED
Main drive gearbox of the TsPS shop conveyor	In service; drive current 50-55 A, traces of corrosion on the metal	Current drawn by the electric drive
Gear wheel — pinion pairs of the gearbox	312 h of running after treatment, then teardown and inspection	Condition of the tooth working surfaces

The treatment was carried out under normal operating duty, without teardown; the drive bearings located outside the oil bath were not treated.

Key result

↓ **20-27 %**

gearbox drive motor current, 50-55 → 40 A

What was recorded after the treatment

PARAMETER	RESULT
Current drawn by the electric drive	50-55 A → 40 A at constant resisting torque on the input shaft and unchanged motor voltage and speed
Tooth working surfaces	The surface of the gear wheel — pinion pairs took on the look of a smooth ground finish
Coating in the tooth contact zone	An attempt to remove the coating that had formed with a fine-cut file brought no result
Gearbox running noise	Dropped considerably
Corrosion of the metal	Traces of corrosion disappeared

The teeth were inspected after teardown of the gearbox, which had run 312 h. By current measurement the reduction was 20-27 %; the report puts the economic effect at 20 % of the power consumed.

Conclusion of the report

The gearbox was treated without teardown, while running; after **312 h** it was taken out of service and inspected. The commission of JSC Gomelsteklo recorded in the report dated 13.04.2001:

1. The use of XADO technology makes it possible to considerably extend the interval between overhauls and to partly replace scheduled preventive repairs with tribotechnical treatment.
2. Reducing the friction coefficient to **0.007** units makes it possible to extend oil service life by at least **3×**, to extend the service life of worn equipment, to prevent wear and to optimise clearances in new equipment.
3. Economic effect — a **20 %** reduction in power consumption. Conclusion of the report: the use of XADO technology makes it possible to cut operating and electricity costs and extends the service life of the equipment.

XADO

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The results relate to the main drive gearbox of the TsPS shop conveyor at JSC Gomelsteklo and to 312 h of running after treatment; on other equipment and under other duties the figures may differ. The values for friction coefficient, oil service life and power consumption are given exactly as recorded in the conclusion of the report. The original report dated 13.04.2001 is published in full and available for download.