



MEASUREMENT REPORT ON BEARINGS No. 3636

Centrifuge bearings: clearance restored, vibration and noise down

Pervomaisk State Enterprise "KHIMPROM", shop 107 · approved by chief mechanic A. A. Pevchenko · for the shop: shop manager V. I. Burlachko, mechanic A. V. Malakhov · for XADO LLC: engineers A. I. Novikov, N. I. Babanskikh

Ukraine · contract No. 20 dated 28.05.2001 · measurements on 20.07.2001 and 29.08.2001

PRODUCT	TREATED OBJECT	DOCUMENT TYPE
XADO compounds restorative repair of bearings under contract No. 20	Bearings No. 3636 caustic soda production centrifuge, shop 107 · two units	Measurement report before and after restorative repair approved by the plant's chief mechanic, chief mechanic's department stamp

OBJECT	CONDITION AT START OF WORK	WHAT WAS MEASURED
Bearing No. 3636, 1st	Housing vibration 190 µm — unit due for repair	Radial clearance, housing vibration
Bearing No. 3636, 2nd	Housing vibration 110 µm	Radial clearance, housing vibration
Centrifuge as a whole	Oil pressure 2.8 atm, noise level 95.5	Oil pressure, noise level

Equipment of a continuous caustic soda production line. 40 days of operation elapsed between the "before" and "after" measurements.

Key results

↓ **64-68 %**

bearing housing vibration, 190 and 110 → 60 and 40 μm

Bearing units No. 3636 — measured unit by unit

PARAMETER	BEARING 1st	BEARING 2nd
Radial clearance, before → after	smaller by 3.3×	smaller by 3×
Housing vibration, μm	190 → 60 (–68 %)	110 → 40 (–64 %)

Measurements taken on 20.07.2001 and 29.08.2001 for each bearing unit; the clearance reduction and the vibration drop were obtained on both.

Centrifuge mechanism as a whole

PARAMETER	BEFORE TREATMENT 20.07.2001	AFTER TREATMENT 29.08.2001
Oil pressure, atm	2.8	2.95
Noise level	95.5	88.0

Oil pressure and noise were measured on the machine as a whole, not on individual units; the noise level unit is given exactly as recorded in the report.

Report conclusion

The commission of Pervomaisk SE "KHIMPROM" and XADO LLC recorded that, under contract No. 20 dated 28 May 2001, "restorative repair of bearings No. 3636 with XADO compounds was carried out". At the first measurement the units were running with elevated housing vibration — **190 µm** on the first bearing and **110 µm** on the second. Forty days later the radial clearance of both bearings had decreased threefold, housing vibration had fallen to **60** and **40 µm**, the noise level of the mechanism had dropped, and oil pressure in the system had risen from **2.8** to **2.95 atm**. The restored bearing geometry is the cause of everything else here: less clearance means lower impact loads, quieter and smoother running. The centrifuge of the continuous caustic soda line gained service life without bearing replacement.



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The results refer to bearings No. 3636 of the caustic soda production centrifuge in shop 107 of Pervomaisk SE "KHIMPROM"; on other units and duty cycles the figures may differ. The original report with signatures and seal is published in full and available for download.