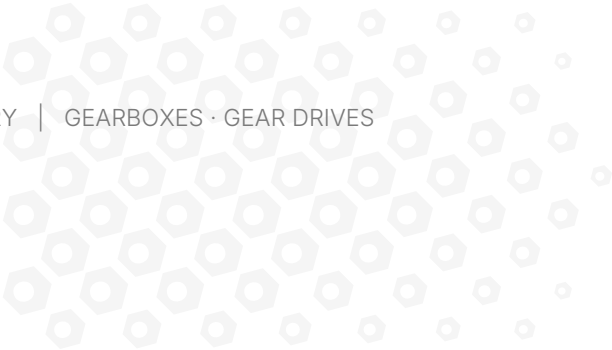




TEST REPORT OF STIROL CONCERN JSC DATED 02.02.2000

Gearboxes R-102-S and R-301-V: tooth thickness grows right in service

STIROL Concern JSC, OZK plant, section K-2 · approved by Technical Director A. V. Tugolukov · signed by plant officials and the regional representative of XADO LLC

Horlivka, Donetsk region, Ukraine · treatment 03.11.1999 · measurements 05.01–01.02.2000 · report 02.02.2000

PRODUCT	TEST OBJECT	DOCUMENT TYPE
XADO RVS XADO repair-and-restoration compound · treatment performed by XADO LLC on 03.11.1999	Pump drive gearboxes R-102-S and R-301-V · OZK plant, section K-2 · four gears in each	Test report of STIROL Concern JSC dated 02.02.2000, with signatures and seal

GEARBOX	OPERATING TIME AFTER TREATMENT	WHAT WAS MEASURED
R-102-S	950 → 1454 h · measurements 05.01 and 01.02.2000	Tooth thickness: 4 teeth on each of the 4 gears
R-301-V	200 → 536 h · measurements 11.01 and 25.01.2000	Tooth thickness: 4 teeth on each of the 4 gears

Both measurements were taken after the treatment: the report records how the tooth keeps growing on a unit that stays in operation.

Key results

**0.095-0.40 mm**

tooth thickness across the four gears of each gearbox, R-102-S over 504 h and R-301-V over 336 h of operation

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measured teeth gained thickness, not a single one lost metal

Gearbox R-102-S — tooth thickness, operating time 950 → 1454 h

GEAR	MEASUREMENT 1, mm	MEASUREMENT 2, mm	AVERAGE GAIN, mm
MSh pos.1	6.66-6.80	7.10-7.16	+0.40
BSh pos.2	6.66-6.70	6.84-6.92	+0.215
MSh pos.3	8.18-8.28	8.44-8.50	+0.24
BSh pos.4	8.04-8.08	8.38-8.42	+0.34

The measurement columns give the spread across the four teeth of the gear; the entire gain was obtained over 504 h of operation between the measurements.

Gearbox R-301-V — tooth thickness, operating time 200 → 536 h

GEAR	MEASUREMENT 1, mm	MEASUREMENT 2, mm	AVERAGE GAIN, mm
MSh pos.1	5.40-5.44	5.50-5.58	+0.12
BSh pos.2	5.46-5.56	5.64-5.82	+0.23
MSh pos.3	8.40-8.50	8.46-8.72	+0.095
BSh pos.4	8.22-8.50	8.42-8.52	+0.12

Gear designations are as in the report; the entire gain was obtained over 336 h of gearbox operation between the measurements.

Conclusion of the plant

STIROL Concern JSC states in the report dated 02.02.2000: after treatment of gearboxes R-301-V and R-102-S with the XADO compound "an average growth of the teeth is observed" — from **+0.095 mm** to **+0.40 mm** across the eight gears of the two gearboxes. The plant makes a special reservation: "gearbox R-102-S ran after the XADO treatment until the first measurement for **950 hours**, and gearbox R-301-V — **200 hours**, therefore the measurement results given in the annex do not fully reflect the restoration processes taking place". What was measured is only the part of the effect that fell within the interval between the two measurements: **504 h** on R-102-S and **336 h** on R-301-V. The metal built up on the teeth of gearboxes that kept running, under the load of the pump drives, in the regular service of the section.



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The results relate to the pump drive gearboxes R-301-V and R-102-S of the OZK plant of STIROL Concern JSC; with other units and operating modes the figures may differ. The original report dated 02.02.2000 with signatures and seal is published in full and available for download. RVS is an obsolete XADO designation, the zero-generation compounds; the current product generation is revitalizants.