

TECHNICAL REPORT OF THE PERM MOTOR PLANT

RT-2000 CNC lathe: noise and seizing eliminated, spindle bearing not replaced

Perm Motor Plant · report signed by A. V. Drachev, Deputy Chief Mechanical Engineer for Operation
Perm, Russian Federation · fault recorded in October 2011 · report dated 20.11.2012

PRODUCT

XADO greases
"XADO Repair" — 10 kg into the
spindle bearing · then "XADO
CV Joint"

TREATED UNIT

Spindle bearing
RT-2000 "Volenberg" special
CNC lathe (Germany) for
double-sided machining of
disks

DOCUMENT TYPE

Technical report
of the Perm Motor Plant

EQUIPMENT

RT-2000 "Volenberg" CNC lathe,
in service since **1992**

CONDITION AT THE START OF WORK

Knocking and cases of seizing in
the spindle bearing; over a shift the
runout grows from **0.01** to **0.06 mm**

WHAT WAS MEASURED

Spindle bearing runout; noise at
idle and under load

The treatment was carried out without disassembling the unit: the lubrication system was flushed with kerosene, 10 kg of "XADO Repair" grease was added, followed by 80 h of running without load.

Key result

↓ **4×**

spindle bearing runout at the end of the work shift, 0.06 → 0.015 mm

RT-2000 spindle bearing — before and after treatment

PARAMETER	BEFORE TREATMENT	AFTER TREATMENT
Spindle bearing runout, end of work shift	0.06 mm	not more than 0.015 mm
Bearing noise at idle and under load	Knocking	Eliminated

Before the treatment the runout grew during the shift from 0.01 to 0.06 mm; the noise was assessed by ear.

Conclusion of the plant report

The CNC lathe, which by that time had been running for about twenty years, had come close to spindle failure: from October 2011 knocking was audible, seizing occurred, and over a work shift the runout grew from **0.01** to **0.06 mm**. The bearing was neither disassembled nor replaced — the lubrication system was flushed with kerosene and **10 kg** of "XADO Repair" grease was added, after which the machine was run for **80 h** without load. The technical report of the Perm Motor Plant records: as a result of the work performed, the bearing noise at idle and under load has been eliminated, and the bearing runout at the end of the work shift does not exceed 0.015 mm. After **200 h** of machine operation under working conditions, the bearing was flushed with kerosene and "XADO CV Joint" grease was added, and the machine was handed over to the production shop.



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The results refer to the spindle bearing of the RT-2000 "Volenberg" special CNC lathe under the conditions of the Perm Motor Plant; on other units and operating modes the figures may differ. The original technical report is published in full and available for download.