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IE A122 | INDUSTRIAL CASE | MECHANICAL ENGINEERING | COMPRESSOR EQUIPMENT

TREATMENT REPORT UNDER CONTRACT No. 53 OF 02.09.1999

2VM4-24/9S compressor: less friction in the mechanism, machine never opened

Kommunar PA, shop No. 20, production building No. 3 · approved by chief power engineer A. V. Khozhilo and technical director of XADO LLC S. N. Aleksandrov

Ukraine · contract No. 53 of 02.09.1999 · measurements before treatment and after 160 hours of operation

PRODUCT

XADO RVS

XADO repair-and-restoration compound, introduced into the lubrication system

TREATED OBJECT

2VM4-24/9S compressor

stationary unit No. 3, building No. 3 · crank-and-connecting-rod mechanism

DOCUMENT TYPE

Report signed and stamped by Kommunar PA and XADO LLC

EQUIPMENT	TREATED ASSEMBLY	WHAT WAS MEASURED
2VM4-24/9S compressor, stationary unit No. 3, production building No. 3	Crank-and-connecting-rod mechanism; XADO RVS introduced into the lubrication system	Oil pressure and temperature, motor load current — at 375 and 750 rpm

The treatment was carried out in three stages, the compound being introduced into the lubrication system; the mechanism was not disassembled.

Key results

↓ 20 %

oil temperature at 750 rpm, 60 → 48 °C

↓ 13 %

oil temperature at 375 rpm, 46 → 40 °C

↑ 2.2×

oil pressure at 375 rpm, 0.5 → 1.1 kgf/cm²

Measurements of the 2VM4-24/9S compressor at two operating modes

PARAMETER	375 RPM, BEFORE → AFTER	750 RPM, BEFORE → AFTER
Oil temperature, °C	**46 → 40**	**60 → 48**
Oil pressure, kgf/cm²	**0.5 → 1.1**	**1.5 → 1.7-1.8**
Motor load current, A	**240 → 230**	**260 → 260**

Measurements at both modes were taken before the treatment and after 160 hours of operation, with the oil cooling system switched off.

Conclusion

The crank-and-connecting-rod mechanism of the compressor was treated through the lubrication system — the machine was neither opened nor taken off the line for this; the repeat measurements were taken after **160 hours** of operation. Oil pressure rose at both modes: **0.5 → 1.1 kgf/cm²** at 375 rpm and **1.5 → 1.7-1.8 kgf/cm²** at 750 rpm — the restored clearances in the lubrication system hold the head again. Oil temperature meanwhile fell **46 → 40 °C** and **60 → 48 °C**, with the oil cooling switched off in both the first and the second measurement: the heat was reduced in the friction itself, not by the cooler. Motor load current at 375 rpm **240 → 230 A**. The result was obtained on operating shop equipment and approved by the plant's chief power engineer.

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The results relate to the 2VM4-24/9S reciprocating compressor of Kommunar PA and to the 375 and 750 rpm modes with the oil cooling system switched off; on other machines and modes the figures may differ. XADO RVS is an obsolete XADO designation, zero-generation compounds; the current product generation is revitalizants. The original report with signatures and stamps is published in full and available for download.