

TECHNICAL REPORT DATED 19.08.2004

Compressor 2VM10-50/8: lower current and heat, higher oil pressure

RUE «PA «Belaruskali», 3rd Mine Group, sylvinite processing plant · approved by: chief engineer of Mine Group 3 I. L. Kozhich · report signed by the chief mechanical engineer, the chief engineer of the processing plant and the shop mechanics

Belarus · treatment 26.05–22.06.2004 · control measurement 18.06.2004 after 100 h of operation

PRODUCT

«XADO technology»
treatment on a running unit,
without disassembly

TEST OBJECT

Compressor 2VM10-50/8
two compression stages ·
lubrication system · drive
electric motor

DOCUMENT TYPE

Technical report of the
enterprise
with signatures and seal

EQUIPMENT

Compressor 2VM10-50/8,
processing plant of the 3rd
Mine Group

**CONDITION AT THE START OF
TESTING**

Released from major overhaul on
20.05.2004; the «before»
measurement was taken the
same day

WHAT WAS MEASURED

Vibration velocity and temperature of
stages I and II, oil pressure, stator
current of the drive

The treatment was carried out in regular operation, without taking the compressor out for repair; control measurement — after 100 h of operation.

Key results

↓ **1A**

drive stator current, 16 → 15 A

↓ **12 °C**

stage I temperature, 149 → 137 °C

↑ **10.3 %**

oil pressure in the system, 3.9 → 4.3
atm

Compression stages — vibration and temperature

PARAMETER	BEFORE TREATMENT	AFTER 100 H
Vibration velocity, stage I	3.5 mm/s	3.04 mm/s
Vibration velocity, stage II	5.5 mm/s	5.04 mm/s
Stage I temperature	149 °C	137 °C
Stage II temperature	128 °C	134 °C

Vibration velocity — root-mean-square value in the 2 to 2000 Hz band; the measurement band is the same before and after treatment.

Lubrication system and drive electric motor

PARAMETER	BEFORE TREATMENT	AFTER 100 H
Oil pressure in the system	3.9 atm	4.3 atm
Oil temperature	52 °C	57 °C
Electric motor stator current	16 A	15 A

Oil pressure was measured in the compressor lubrication system, the current — at the stator of the drive electric motor.

Conclusion of the enterprise commission

The commission of RUE «PA «Belaruskali», under the approval of the chief engineer of the 3rd Mine Group, recorded:

1. The effectiveness of «XADO technology» in restoring worn parts without disassembling the equipment in regular operation has been demonstrated.
2. Recommended for the treatment of equipment within RUE «PA «Belaruskali». The treatment was performed on a compressor that had just come out of a major overhaul — that is, on top of the condition delivered by standard repair — and even so, over **100 h** of operation the drive current dropped, the first stage became cooler by **12 °C**, and the pressure in the lubrication system rose to **4.3 atm**. The unit was never once stopped for disassembly.

XADO

© XADO. All rights reserved.

The results relate to the 2VM10-50/8 reciprocating compressor of the processing plant of the 3rd Mine Group of RUE «PA «Belaruskali»; on other equipment and operating modes the figures may differ. The original technical report with signatures and seal is published in full and available for download.