XADO

IE A017 | INDUSTRIAL CASE | MINING INDUSTRY | COMPRESSORS · SINTER PLANT

RESTORATIVE REPAIR REPORTS · APRIL — MAY 2000

305 VP 30/8 compressors: faster pressure build-up and lower current on both units

JSC IuGOK — Southern Mining and Processing Plant, sinter shop · reports approved by the plant's chief mechanical engineer I. L. Kramar

Kryvyi Rih, Ukraine · contract No. 158 “a” dated 31.03.2000 · measurements 05.04–16.05.2000

PRODUCT

XADO technology®

restorative repair on the assembled unit, without disassembly and without taking the equipment out of service

TEST OBJECT

305 VP 30/8 piston compressors

station units No. 2 and No. 4, sinter shop

DOCUMENT TYPE

Two measurement reports dated 16.05.2000

seal of JSC IuGOK · summary plant report dated 19.05.2000

COMPRESSOR	BASELINE → CONTROL MEASUREMENT	WHAT WAS MEASURED
305 VP 30/8, station unit No. 2	11.04.2000 → 16.05.2000	Pressure build-up time 0 → 5 atm · current draw at the 5 atm g mode
305 VP 30/8, station unit No. 4	05.04.2000 → 16.05.2000	Pressure build-up time 0 → 6 and 0 → 4 atm · current draw under loading

Both machines were treated on the assembled unit, without disassembly; the control measurement on both was taken on the same day — 16.05.2000.

What repeated on both machines

↓ 25.6-25.9 %

pressure build-up time, 3:43 → 2:46 and 4:15 → 3:09 min:s

↓ 8.3-22.6 %

current draw, 180 → 165 and 155 → 120 A

The plant's conclusion on the results of the whole job

No.	XADO TECHNOLOGY® MAKES IT POSSIBLE TO — PER THE CONCLUSION OF JSC IuGOK
1	Extend the service life of equipment without replacing assemblies and parts
2	Extend the overhaul interval of equipment
3	Cut equipment repair costs
4	Increase equipment output, reduce energy consumption
5	Extend oil service life, prevent wear and optimise clearances in mechanisms

Report of JSC IuGOK dated 19.05.2000 on the results of the work on the plant's equipment (contract No. 158 dated 31.03.2000) — the customer's own assessment, not our measurement.

Pressure build-up time — by machine

COMPRESSOR	BUILD-UP RANGE	BEFORE, MIN:S	AFTER, MIN:S	CHANGE
Station unit No. 2	0 → 5 atm	**3:43**	**2:46**	**−57 s · −25.6 %**
Station unit No. 4	0 → 6 atm	**4:15**	**3:09**	**−66 s · −25.9 %**
Station unit No. 4	0 → 4 atm	**2:26**	**2:04**	**−22 s · −15.1 %**

Measurements before and after the repair were taken with the compressor unit's standard instruments at t = 54°; each machine has its own build-up range, so it is the change that is compared.

Current draw — by machine

COMPRESSOR	MEASUREMENT MODE	BEFORE, A	AFTER, A	CHANGE
Station unit No. 2	5 atm g mode	**180**	**165**	**−15 A · −8.3 %**
Station unit No. 4	Initial loading stage	**155**	**120**	**−35 A · −22.6 %**

Current was read with the unit's standard instruments; the conditions before and after the repair match — t = 54°, the same stage pressures.

Conclusion for the series

Both compressors of the sinter shop — station units No. 2 and No. 4 — were treated on the assembled unit, without disassembly and without being taken out of service; the control measurement on both machines was made on the same day. The result repeated on each: pressure build-up time fell by **25.6 %** and **25.9 %**, current draw fell by **8.3 %** and **22.6 %**. For a compressor station this is two gains at once — air is delivered into the line faster, and the same work takes less electricity. The plant assessed the job more broadly than these two machines: "The positive results achieved demonstrate the effectiveness of applying XADO technology® on industrial equipment", the repair "is carried out under normal operating conditions, requires no special equipment, premises or spare parts", and the technology was recommended for further roll-out at mining industry enterprises (report of JSC IuGOK dated 19.05.2000).

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The results relate to the 305 VP 30/8 piston compressors of the sinter shop at JSC IuGOK and to their operating modes; on other equipment and under other conditions the figures may differ. The original reports are published in full and available for download.