

TREATMENT REPORT ON TR-11 TYRE BUILDING MACHINES · ROSAVA JSC, 2005

TR-11 building machines: screw pair treatment cut power consumption

Rosava JSC, tyre building shop · approved by chief mechanical engineer V. A. Shepelev; measurements by deputy chief mechanical engineer V. V. Bogdashev and preventive maintenance foreman Ye. V. Podgorny together with XADO LLC specialists

Ukraine · treatment cycle 06.05–07.07.2005 · report approved 12.07.2005

PRODUCT

XADO revitalizants
treatment of the support unit
screw pairs without
disassembling the machine

TREATED OBJECT

TR-11 tyre building
machines
four machines of the building
shop: No. 1, No. 2, No. 14, No.
18 · «screw — nuts» friction
pair, DC drive

DOCUMENT TYPE

Report of Rosava JSC
bearing the «Approved»
stamp

MACHINE**CONDITION AT THE START OF THE TESTS****OPERATING TIME BEFORE
RE-MEASUREMENT**

TR-11 No. 1 In service, axial play **0.41 mm**

535 h

TR-11 No. 2 In service, axial play **0.6 mm**

572 h

TR-11 No. 14 After overhaul on 05.04.2005

548 h

TR-11 No. 18 After overhaul on 03.05.2005

476 h

The «screw — nuts» screw pairs of the right-hand group support unit were treated; measurements were taken before the compound was applied and after the full treatment cycle with the operating time accumulated.

Key results

↓ **42.6-59.7 %**

power consumed per machine work cycle, 1.566-3.098
→ 0.853-1.649 kW

↓ **26.5-37.0 %**

no-load current with the plate travelling forward, 4.8-7.3
→ 3.5-4.6 A

Power consumed per machine work cycle

MACHINE	BEFORE TREATMENT, kW	AFTER TREATMENT, kW	CHANGE
TR-11 No. 1	1.566	0.899	-42.6 %
TR-11 No. 2	3.098	1.649	-46.8 %
TR-11 No. 14	1.714	0.853	-50.2 %
TR-11 No. 18	3.026	1.218	-59.7 %

The sum of the no-load powers for forward and reverse plate travel, calculated from the measured current and voltage.

Drive no-load current and voltage

MACHINE	CURRENT FORWARD, A	CURRENT REVERSE, A	VOLTAGE FORWARD, V	VOLTAGE REVERSE, V
TR-11 No. 1	4.8 → 3.5	5.8 → 3.8	167 → 117	132 → 129
TR-11 No. 2	7.3 → 4.6	6.3 → 5.3	213 → 172	245 → 162
TR-11 No. 14	4.9 → 3.6	4.9 → 4.3	175 → 113	175 → 104
TR-11 No. 18	7.0 → 4.6	6.8 → 4.9	213 → 119	226 → 137

Measured with an ATK 2200 digital instrument on an unloaded plate; the machine drive is a DC motor.

Commission conclusions

The commission of Rosava JSC, with XADO specialists taking part, recorded: «As a result of the treatment of the screw pairs of the right-hand group support unit of TR-11 tyre building machines with XADO compounds, the power consumed per machine work cycle fell to **0.853 kW–1.649 kW**. In one hour of machine operation about **20 work cycles** are performed». The reduction was obtained on all four machines of the shop, including the two overhauled shortly before the treatment, and holds after **476-572 h** of operation — that is, it is not a one-off running-in effect but the state of the drive in service. The commission separately defined the scope of the technology: XADO compounds act on the «screw — nuts» friction pair running in oil that contains the compound and do not change the condition of the other joints of the support unit — from the screw pair to the plate seats.



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The results apply to the TR-11 tyre building machines of Rosava JSC and to the screw pairs of the right-hand group support unit; on other machines and assemblies the figures may differ. The original report of 12.07.2005 is published in full and available for download. The measurements were carried out jointly by specialists of Rosava JSC and XADO LLC.