



PUMPING STATION No. 8 · 05.12.2000 – 10.01.2001

Water supply pumps: bearings now run cooler with no shutdown or teardown

OJSC MMK im. Il'icha, water supply shop, pumping station No. 8 · reports approved by V. N. Redya, head of the water supply shop; treatment carried out by Promielektrotekhpостach

Mariupol, Ukraine · treatment on 05.12.2000 and 24-26.12.2000 · monitoring until 10.01.2001

PRODUCT

XADO RVS technology
units treated under normal
operation, without teardown
and without spare parts

TEST OBJECT

Two water supply pumps
pump No. 4 — thrust bearings ·
pump D 6300 No. 16 — babbitt
sleeve bearings

DOCUMENT TYPE

Water supply shop reports
and economic effect
calculation

PUMP AND UNIT	CONDITION BEFORE TREATMENT	WHAT WAS MEASURED	TREATMENT
Pump No. 4, station No. 8 BIS — thrust bearings	Bearing housing heated up to 85-90 °C , constant water cooling was required	Bearing housing temperature	05.12.2000
Pump D 6300 No. 16, station No. 8 — babbitt sleeve bearings	Bearing was due for replacement, oil sump housing at 60-65 °C	Sump and bearing oil temperature, repair costs	24-26.12.2000

Both pumps were treated under normal operation — without shutting down the station, without dismantling the units and without any special equipment.

What was repeated on both pumps

↓ **25 °C**

bearing temperature on both pumps, 85-90 → 60-65 and 60-65 → 35-40 °C

Bearing unit temperature — pump by pump

PUMP AND MEASURING POINT	BEFORE TREATMENT	DURING OPERATION	AFTER STABILIZATION	CHANGE
Pump No. 4 — thrust bearing housing	85-90 °C	70-75 °C, day 3	60-65 °C, day 5	-25 °C
Pump D 6300 No. 16 — oil sump housing	60-65 °C	50-55 °C, day 4	35-40 °C, day 10	-25 °C
Pump D 6300 No. 16 — bearing oil	65 °C	—	35 °C	-30 °C

Ambient air temperature in the pump house did not change over the monitoring period — the drop relates to the units themselves.

Sleeve bearing repair on pump No. 16 — water supply shop calculation

ITEM	CONVENTIONAL REPAIR	XADO RVS TREATMENT
Cost of repairing one bearing	411.77 UAH	96.12 UAH
Bearing replacement	required	not required
Economic effect	—	3.28 UAH per 1 UAH spent

The water supply shop calculation was signed jointly with the contractor; plant prices are from the year 2000, the effect per 1 UAH spent does not depend on them.

Conclusion of the water supply shop commission

Both pumps were treated while running — without shutting down the station, without dismantling and without spare parts. Pump No. 4 was chosen because its thrust bearing housing heated up to 85-**90 °C** and required constant water cooling: on the third day of operation the cooling was discontinued, on the fifth day the temperature stabilized at 60-**65 °C**. The bearing of pump D 6300 No. 16 was queued for replacement — after the treatment the sump temperature dropped to 35-**40 °C** and the oil temperature to **35 °C**, and the shop calculation records: "Bearing replacement is not required". The commission recorded in the reports: "The positive results achieved indicate reduced friction in the sleeve bearings and optimization of the shaft-to-shell clearance, which ultimately led to the temperature drop". Equipment repair by this technology is recommended by the shop for further rollout at OJSC MMK im. Ilichea.



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The results relate to the bearing units of the water supply pumps at pumping station No. 8 of OJSC MMK im. Ilichea and to their operating conditions; on other equipment the figures may differ. RVS is an obsolete XADO designation, the zero-generation compounds; the current product generation is revitalizants. The original reports and the calculation are published in full and available for download.