

THREE TEST REPORTS · 28.11.2003 — 03.02.2004

Bogdan A091 final drives: noise cut without teardown, effect holds with mileage

SE Bogdan Servis (Kyiv) — service centre for Bogdan A091 buses · commission: SE Bogdan Servis, XADO LLC (Kharkiv), East Consult Trading LLC (Kyiv)

Kyiv, Ukraine · reports of 28.11.2003, 16.12.2003, 03.02.2004 · follow-up after 13.7-14.5 thousand km of mileage

PRODUCT

XADO revitalizant gel
for gearboxes and final
drives

VERYLUBE for gearboxes and
final drives · added to final drive
oil, 3-6 %

TEST OBJECT

Final drive units

Bogdan A091 buses — 6
vehicles, mileage from 242 to
29 818 km

DOCUMENT TYPE

Three technical reports
by a commission of three
organisations

signed by representatives of SE
Bogdan Servis, XADO and East
Consult Trading

BOGDAN A091 BUS	MILEAGE AT START	REPORT	FINAL DRIVE NOISE MEASUREMENTS
Body 001006, new	242 km	28.11.2003	Before treatment
Reg. No. 012-74KA	16 588 km	28.11.2003, 16.12.2003	Before treatment
Reg. No. 004-60KA	11 879 km	28.11.2003	Before treatment
Reg. No. 033-29KA	7 687 km	28.11.2003	Before treatment
Reg. No. 013-94KN	29 818 km	16.12.2003, 03.02.2004	Before treatment, after treatment and after 14 528 km of mileage
Reg. No. 014-15KA	14 101 km	16.12.2003, 03.02.2004	Before treatment, after treatment and after 13 656 km of mileage

The buses were selected by the service centre on a single criterion — elevated final drive noise.

Key result

↓ **7-9 dB**

final drive noise under load, 102-105 → 93-98 dB

Final drive noise: before treatment, after treatment and after mileage

BUS	MEASUREMENT MODE	BEFORE, dB	AFTER TREATMENT, dB	AFTER MILEAGE, dB	CHANGE, dB
Reg. No. 013-94KN	Wheels raised, 40 km/h equivalent	91	89	84	-7
Reg. No. 013-94KN	Wheels raised, 60 km/h equivalent	99	96	90	-9
Reg. No. 013-94KN	Under load, 80 km/h equivalent	105	102	98	-7
Reg. No. 013-94KN	Coast-down, engine off, from 80 km/h	101	95	94	-7
Reg. No. 014-15KA	Wheels raised, 40 km/h equivalent	88	83	81.5	-6.5
Reg. No. 014-15KA	Wheels raised, 60 km/h equivalent	94	87	85	-9
Reg. No. 014-15KA	Under load, 80 km/h equivalent	102	95	93	-9
Reg. No. 014-15KA	Coast-down, engine off, from 80 km/h	95	92	93	-2

Sound level meter model 0024, serial No. 31192, calibration 04.2003. Follow-up measurement — after 14 528 km (013-94KN) and 13 656 km (014-15KA) of scheduled route service.

Commission conclusion

The vehicles were selected by the service centre on a single criterion — elevated final drive noise. The compound was added to the final drive oil, and the buses stayed on their city routes. After ten days the noise dropped on both vehicles in every measurement mode, and after 13.7-14.5 thousand km of scheduled route service the reduction held and in most modes deepened: at the 60 km/h equivalent both final drives became 9 dB quieter, under load — by 7-9 dB. The commission of SE Bogdan Servis, XADO LLC and East Consult Trading LLC recorded in the report of 03.02.2004: "To eliminate and significantly reduce the noise level of the final drives of Bogdan A091 buses, the commission recommends using the XADO special compound — XADO repair revitalizant gel for gearboxes and final drives, as the most effective and economical method".



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The results refer to the final drive units of Bogdan A091 buses in city service; on other equipment and under other measurement modes the figures may differ. The originals of the reports of 28.11.2003, 16.12.2003 and 03.02.2004 are published in full and available for download.