



TWO ACTS FROM ONE FLEET · 05.07.2001

LAZ and LIAZ engines: on both buses compression evened out, petrol use down

«Avtokolonna 1208» State Unitary Enterprise, Volgograd · treatment and control measurements performed by «TEKHNOSERVIS Group» LLC · acts approved by the director of the enterprise
Volgograd, Russia · treatment and measurements 05.07.2001 · signatures and stamps of both parties

PRODUCT	OBJECTS OF THE SERIES	DOCUMENT TYPE
XADO Technology treatment of fully assembled engines, without dismantling the unit	Two city buses LAZ, reg. No. N 140 RM · LIAZ, reg. No. N 821 NN — petrol engines, 8 cylinders	Two treatment acts signed and stamped by both parties

EQUIPMENT	MILEAGE AT START	WHAT WAS MEASURED	ACT DATE
LAZ bus, reg. No. N 140 RM	45 889 km	Compression in each of the 8 cylinders, petrol consumption	05.07.2001
LIAZ bus, reg. No. N 821 NN	not stated	Compression in each of the 8 cylinders, petrol consumption	05.07.2001

Both buses were treated on the same day. The control measurement on the LAZ was taken after 586 km of running — odometer 45 889 → 46 475 km.

What repeated on both buses

compression evened out across the cylinders

↑ **11-20 %**

mean compression across 8 cylinders, 6.5-7.4 → 7.8-8.2

Compression by cylinder — both buses side by side

CYLINDER	LAZ N 140 RM, BEFORE	LAZ, AFTER	LIAZ N 821 NN, BEFORE	LIAZ, AFTER
1st	6.4	7.4	6.0	7.8
2nd	5.0	7.2	7.0	7.6
3rd	4.9	7.5	7.0	8.5
4th	6.7	8.0	8.0	9.0
5th	7.0	8.0	7.5	8.0
6th	7.6	8.6	8.0	8.0
7th	6.5	7.8	8.0	8.0
8th	8.0	8.0	8.0	9.0

The unit of compression is not stated in the acts — the values are carried over exactly as recorded. The gain came from the worn cylinders; those initially strong stayed at their own level.

Result for each bus

BUS	MEAN COMPRESSION	GAIN	SPREAD BETWEEN CYLINDERS	PETROL CONSUMPTION
LAZ bus, N 140 RM	6.5 → 7.8	+20%	3.1 → 1.4	–5%
LIAZ bus, N 821 NN	7.4 → 8.2	+11%	2.0 → 1.4	–5%

The 5% drop in petrol consumption is the summary figure taken from the conclusions of the acts themselves; the acts give no absolute consumption values.

What the acts recorded

Both acts, signed by representatives of the enterprise and of the contractor, record one and the same result: «As a result of the treatment, petrol consumption dropped by **5%**, compression evened out, the engine began to run more smoothly, the vehicle became more responsive, and its dynamics improved». The tables of the acts confirm this: mean compression rose by **11-20%**, and the spread between cylinders on both buses converged to **1.4**. The gain came from the worn cylinders — on the LAZ the worst one rose from **4.9** to **7.5** and came up to the level of its neighbours — whereas the cylinders that stood at **8.0** stayed where they were: compression does not rise above the nominal value set by the engine manufacturer, and bringing all cylinders to one value is the maximum achievable. On the LAZ this result was obtained over **586 km** of running between measurements, on a vehicle in ordinary city service and without dismantling the engine.



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The results relate to the petrol 8-cylinder engines of the LAZ and LIAZ city buses of the «Avtokolonna 1208» fleet; on other equipment and under other operating conditions the figures may differ. The treatment and control measurements were performed by «TEKHNOSEVIS Group» LLC, the contractor for the work. The originals of both acts, with signatures and stamps, are published in full and available for download.