XADO

IE A119 | PRODUCTION CASE | CHEMICAL INDUSTRY | COMMERCIAL TRUCKS · ICE

ACT ON THE TREATMENT OF MOTOR TRANSPORT SHOP ENGINES

KamAZ and ZIL-130: higher compression and fuel savings instead of overhaul

STIROL Concern OJSC, motor transport shop · shop commission: Deputy Head of the Motor Transport Shop Yu. I. Probachai, repair service foreman I. I. Prokhorenko, repair fitter A. V. Bugrovoi · approved by the technical director of the plant, seal

Horlivka, Ukraine · act dated 02.12.1999

PRODUCT

XADO RVS

XADO repair-and-restoration formulation · treatment performed by XADO LLC

TREATED OBJECT

Engines of two trucks

KamAZ dump truck, reg. No. 1652 YaN1 · ZIL-130, reg. No. 78-79 YaNA

DOCUMENT TYPE

Company act with signatures and seal

VEHICLE	MILEAGE AT START	WHAT WAS MEASURED
KamAZ dump truck, reg. No. 1652 YaN1	**76,443 km**	Fuel consumption, oil pressure
ZIL-130, reg. No. 78-79 YaNA	**49,426 km**	Compression by cylinder, fuel consumption, oil pressure

Between the measurements the trucks covered 2,357 km (KamAZ) and 3,887 km (ZIL-130) in the shop's regular duty.

Key results

↑ 3.7-10.8 %

compression in the ZIL-130 cylinders, 6.5–8.9 → 7.2–9.5 kgf/cm²; gain in 3 of 4 readings; the rest unchanged

↓ 11.5-13.5 %

fuel consumption of both trucks, 100 ml burned in 45 → 52 and 100 → 113 s

ZIL-130 — compression by cylinder

CYLINDER	BEFORE, kgf/cm²	AFTER, kgf/cm²	GAIN
Cylinder 2	8.2	8.5	+0.3 · +3.7 %
Cylinder 3	8.9	9.5	+0.6 · +6.7 %
Cylinder 4	8.6	8.6	no change
Cylinder 6	6.5	7.2	+0.7 · +10.8 %

Compression is capped by the engine's rated value, so the largest gain came from the most worn cylinder: 6.5 → 7.2 kgf/cm².

Fuel consumption and oil pressure — both trucks

PARAMETER	KAMAZ, BEFORE → AFTER	ZIL-130, BEFORE → AFTER	CHANGE
Time to burn 100 ml of fuel, s	45 → 52	100 → 113	consumption −13.5 % · −11.5 %
Oil pressure, kgf/cm²	3 → 3.5	1 → 1.7	+0.5 · +0.7
Coolant temperature, °C	60 → 60	60 → 60	thermal conditions of the readings identical

Fuel consumption is inverse to the time taken to burn the control portion: the longer it lasts, the more economical the engine.

Conclusion of the plant commission

The engines were treated without disassembly, on trucks that kept hauling cargo: during the observation period the KamAZ covered **2,357 km** and the ZIL-130 **3,887 km**. Before the treatment the ZIL-130 held an oil pressure of **1 kgf/cm²**, and its weakest cylinder delivered **6.5 kgf/cm²**; after the treatment both figures rose, and rose more where the wear was greater — the restored tightness of the cylinder-piston group is what produced the fuel savings on both trucks. The commission of the motor transport shop recorded in the act: «The results obtained show that it is expedient to apply XADO technology for restoring the cylinder-piston group, plain bearings, the crankshaft and other friction pairs instead of a conventional engine overhaul».

XADO

The results refer to the engines of the KamAZ dump truck and the ZIL-130 of the motor transport shop of STIROL Concern OJSC; on other equipment and under other operating conditions the figures may differ. RVS is an obsolete XADO designation, the zero-generation formulations; the current product generation is revitalizants. The original act with signatures and seal is published in full and available for download.