

SIX TECHNICAL ACTS · 4 SEPTEMBER — 9 NOVEMBER 2001

KRAZ, KamAZ, YuMZ-6 diesels: compression and oil pressure rose on every machine

Tatneft JSC, Almeteyevneft oil and gas production division (NGDU), Almeteyevsk Transport Department No. 1 (AUTT-1) · measurements witnessed by the AUTT-1 engineering department, treatment performed by AI-XADO LLC

Almeteyevsk, Republic of Tatarstan, Russia · measurements 4.09.2001 and 9.11.2001 · contract No. 15 of 23.08.2001

PRODUCT

Treatment by XADO technology

no engine disassembly, the machines stayed in service

TEST OBJECT

Diesel engines of six machines

KamAZ-5320 · KRAZ-250 · KRAZ-260 · KRAZ-25551 · KRAZ-65101 · YuMZ-6 tractor excavator

CUSTOMER'S CONCLUSION

"I consider the use of XADO technology for restoring worn mechanisms under normal operating conditions expedient when 25-75 % of the engine service life is used up and there are no oil leaks"

S. A. Brusov, Head of Vehicle Operations, AUTT-1, Almeteyevneft NGDU, 4.09.2001, contract No. 15 of 23.08.2001

MACHINE	PLATE No.	YEAR	ODOMETER AT START	RUN OVER THE CYCLE
KamAZ-5320	V 855 OR	1993	109 951 km	10 154 km
KRAZ-250	V 481AN	1993	89 875 km	3 895 km
KRAZ-65101	V 468RO	1995	41 960 km	2 350 km
KRAZ-260	63-07 TTV	1996	14 274 km	1 456 km
KRAZ-25551	65-84 TTV	1993	10 275 km	2 036 km

MACHINE	PLATE No.	YEAR	ODOMETER AT START	RUN OVER THE CYCLE
YuMZ-6 tractor excavator	57-41 TS	1992	—	390 engine-h

Baseline measurements — 4.09.2001, control measurements — 9.11.2001; cylinder compression and oil pressure were measured on every machine.

What repeated on every machine of the series

↑ 14-22 %

cylinder compression, 17-27.7 → 22-30 kgf/cm²

↑ 11-33 %

oil pressure at 2000 rpm, 2-6 → 4-7.1 kgf/cm²

Cylinder compression — machine by machine

MACHINE	BEFORE TREATMENT	AFTER TREATMENT	AVERAGE GAIN
KamAZ-5320, V 855 OR	23.0-23.4	27.0-30.0	22.3 %
KRAZ-250, V 481AN	23.7-25.1	28.0-29.0	16.8 %
KRAZ-65101, V 468RO	24.0-25.0	28.0	14.3 %
KRAZ-260, 63-07 TTV	23.0-24.0	27.9-28.3	20.1 %
KRAZ-25551, 65-84 TTV	27.0-27.7	28.9-29.1	6 %
YuMZ-6, 57-41 TS	17.0-17.5	22.0	27.53 %

Compression in kgf/cm²; the average gain is taken from the "Results" section of each act. The lower the initial compression, the larger the gain: growth is capped by the factory nominal.

Oil pressure at an engine temperature of 60 °C

MACHINE	IDLE SPEED	2000 RPM
KamAZ-5320, V 855 OR	1.5 → 2.5	2.0 → 4.0
KRAZ-250, V 481AN	5.5 → 6.2	6.0 → 7.1
KRAZ-65101, V 468RO	2.5 → 4.0	4.5 → 5.0
KRAZ-260, 63-07 TTV	2.0 → 4.0	4.5 → 6.0
KRAZ-25551, 65-84 TTV	3.5 → 6.0	6.0 → 7.0

MACHINE	IDLE SPEED	2000 RPM
YuMZ-6, 57-41 TS	1.0 → 2.5	2.0 → 4.0

Pressure in kgf/cm². The increase was recorded on all six machines and in both modes — at idle and under load.

What the acts recorded

The acts of Almet'yevsk UTT-1 record the same thing for every machine: "Compression increased by an average of **16.8 %**, evened out across the cylinders. Oil pressure increased" — so for KRAZ-250, and likewise for the other five, from **6** to **27.53 %**. On not a single machine did compression stay the same, and on not a single one did oil pressure drop. All six engines completed the cycle in regular service, without disassembly and without taking the machines out of work: between the measurements the vehicles covered from **1 456** to **10 154 km**, and the tractor excavator **390 engine hours**. For the KamAZ-5320 the act adds a service observation: "According to the driver the truck became more powerful; previously a hill climb was managed in 3rd gear with difficulty, now it climbs easily in 4th". Following the work, the customer recognised the use of the technology as expedient at **25-75 %** of engine service life used up.

XADO

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The results refer to the diesel engines of KRAZ and KamAZ trucks and a YuMZ-6 tractor excavator under the operating conditions of Almet'yevsk UTT-1; on other equipment and in other duty cycles the figures may differ. The originals of all six technical acts, with signatures and stamps, are published in full and available for download.