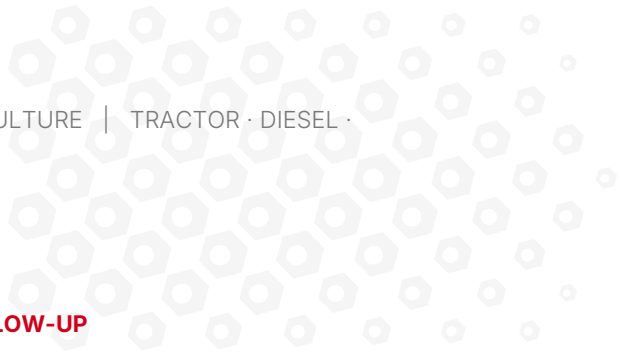




TREATMENT REPORT UNDER XADO TECHNOLOGY · 5 YEARS OF FOLLOW-UP

MTZ-82 tractor: compression evened out, fuel and oil saved

Gavrilenko V.D. Farm Enterprise · report signed by the head of the farm and by engineers of XADO LLC
Fastovetskaya, Tikhoretsk district, Krasnodar region · treatment 05.09–01.11.2003 · report October 2008

PRODUCT	TREATED OBJECT	DOCUMENT TYPE
XADO gel revitalizants for diesel engines (3 stages) · for the injection pump · for gearboxes and final drives · for power steering · XADO Atomic Oil 15W-40 SL/CI-4 engine oil	MTZ-82 tractor, D-240 engine engine · injection pump · transmission units · power steering	Report with signatures and the farm's seal

MACHINE	HOURS RUN AT START OF TREATMENT	WHAT WAS MEASURED
MTZ-82 tractor, reg. No. 2372 ke 23 RUS	2354 engine hours	Compression in all four cylinders, fuel consumption at idle, oil consumption

Control measurements were taken after {{581 engine hours}} of running following treatment; oil consumption — from five further years of service.

Key results

compression evened out across the
cylinders

↑ **12.5-24 %**

compression across the cylinders,
25-28 → 31-32 kgf/cm²

↓ **15.4 %**

fuel consumption at idle, 1.88 → 1.59 l/h

↓ **7×**

oil consumption, 2.2 → 0.3 l over 6 h of heavy work

D-240 engine — compression by cylinder, 581 engine hours of running

CYLINDER	BEFORE TREATMENT	AFTER TREATMENT	CHANGE
I	25.0 kgf/cm ²	31.0 kgf/cm ²	+6.0 kgf/cm ² · +24.0 %
II	27.5 kgf/cm ²	32.0 kgf/cm ²	+4.5 kgf/cm ² · +16.4 %
III	28.0 kgf/cm ²	31.5 kgf/cm ²	+3.5 kgf/cm ² · +12.5 %
IV	26.0 kgf/cm ²	31.5 kgf/cm ²	+5.5 kgf/cm ² · +21.2 %
Engine average	26.6 kgf/cm ²	31.5 kgf/cm ²	+4.9 kgf/cm ² · +18.3 %
Spread between extremes	3.0 kgf/cm ²	1.0 kgf/cm ²	evened out 3×

ZEGA 363 compression tester. The largest gain is in the weakest cylinder: the coating builds up where the wear was, so the cylinders converge on a single value. The report concludes that compression rose by **12-20 %**.

D-240 engine — fuel and oil consumption

PARAMETER	BEFORE TREATMENT	AFTER TREATMENT	CHANGE
Running time on 100 ml of diesel fuel, idle	3 min 12 s	3 min 47 s	+35 s
Specific fuel consumption, idle	1.88 l/h	1.59 l/h	-15.4 %
Oil consumption over 6 hours of heavy work	2.2 l	0.3 l	-1.9 l · 7×

Fuel consumption was measured with a metered portion of **100 ml** after **581 engine hours**; oil consumption — from five years of tractor service following treatment.

What was treated and when

UNIT	TREATMENT	RESULT
D-240 engine	XADO gel revitalizant, 3 stages	Compression rose and evened out, fuel and oil consumption fell
Injection pump	XADO gel revitalizant for injection pumps, 1 stage	Recovery of the plunger pairs — per the report's conclusion, a contribution to fuel savings
Transmission units	XADO gel revitalizant for gearboxes and final drives	5 years of service without failures
Power steering	XADO gel revitalizant for power steering	5 years of service without failures

Treatment was carried out **05.09–01.11.2003** without dismantling the units and without taking the tractor out of service.

Conclusions of the report

The farm and XADO engineers recorded in the report:

1. Measurements of the operating parameters of the D-240 engine fitted to the MTZ-82 tractor showed that, as a result of treating the engine with XADO compounds and running it for 581 hours, compression evened out across all cylinders and increased by **12–20 %**.
2. The rise in compression and its evening out across the cylinders indicate recovery of the existing wear on the working surfaces of engine parts, an increase in engine power and optimisation of the fuel combustion process.
3. The **15 %** reduction in fuel consumption also points to recovery of wear on the injection pump plunger pairs and to a lower friction coefficient of engine parts and transmission units.
4. Over the 5 subsequent years of this tractor's service all engine systems and the transmission worked properly, and oil consumption fell from 2.2 litres to 0.3 l over 6 hours of heavy tractor work, or roughly 7×.

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The results relate to an MTZ-82 tractor with a D-240 diesel engine in field service at a peasant farm enterprise; on other machinery and under different operating conditions the figures may differ. The original report with signatures and seal is published in full and available for download.