

REPORT ON XADO TECHNOLOGY APPLICATION · SJSC "CHERNOMORNEFTEGAZ"

Tessari diesel power plant: oil consumption reduced without engine teardown

SJSC "Chernomorneftegaz", BPO "Vnukovo" · work performed by the XADO center, PPCE "Rigonda" · customer testimonial signed by Dyug A. I., officer responsible for operating the unit; chief mechanic of the gas production division Bochkovoy Yu. A.

Yevpatoria, Ukraine · work carried out 3–29 March 2007

PRODUCT

XADO technology
oil system flush · ring
decarbonizing · triple treatment
of the cylinder-piston group ·
injection pump treatment ·
XADO ANTIGEL+ in the fuel

TEST OBJECT

"Tessari" diesel power
plant, 16 kW
inv. No. 51655 ·
round-the-clock duty

DOCUMENT TYPE

Contractor's report
with customer testimonial

UNIT AND TREATED ASSEMBLIES**CONDITION AT THE START OF WORK****WHAT WAS MEASURED**

"Tessari" diesel power plant, 16
kW, inv. No. 51655

9200 engine hours before the
overhaul and 600 engine hours
after it; round-the-clock duty

Engine oil consumption per
engine hour

Cylinder-piston group of the
engine

An "oil plume" of oil particles in the
exhaust gases, visible to the naked
eye

Engine oil consumption as an
indicator of cylinder-piston
group condition

Injection pump and injectors

Some of the nozzle orifices
delivered no fuel

Injector pressure test — number
of working orifices

The work was carried out from 3 to 29 March 2007 on the running unit, without dismantling the engine.

Key result

↓ **46 %**

engine oil consumption, 120 → 65 ml per engine hour

Cylinder-piston group — engine oil consumption

PARAMETER	BEFORE WORK	AFTER WORK	CHANGE
Engine oil consumption per engine hour	120 ml	65 ml	–46 %

The rated consumption for this unit is 36 ml per engine hour. The same M10G2k oil was used before and after the work, and no engine servicing was performed during this period.

Injection pump and injectors — nozzle pressure test

INJECTOR	BEFORE WORK	AFTER INJECTION PUMP TREATMENT
Two injectors	3 of 4 orifices working	4 of 4 orifices
Third injector	2 of 4 orifices working	3 of 4 orifices

The pressure test data are given in the testimonial of the customer's officer responsible for operating the unit.

How this affected the operation of the unit

OBSERVATION	BEFORE WORK	AFTER WORK
Exhaust gases	An “oil plume” of oil particles, visible to the naked eye	The plume diminished and then disappeared completely
Engine and injection pump operation	Some of the injector nozzle orifices delivered no fuel	Engine and fuel pump operation stabilized, fuel atomization improved

Observations by the contractor and the testimonial of the officer responsible for operating the unit at SJSC “Chernomorneftegaz”.

Report conclusions

The report on the "Tessari" diesel power plant records the following: the cylinder-piston group was restored, oil consumption fell from **120 ml** to **65 ml** per engine hour, which is **46 %**; the excess oil consumption fell from **84 ml** to **29 ml** per engine hour, which is **66 %**. By the start of the work the unit had run **9200 engine hours** before its overhaul and **600 engine hours** after it in round-the-clock duty, and the wear of the cylinder-piston group was visible as an "oil plume" of oil particles in the exhaust gases. The engine was not dismantled: the treatment was performed on the unit in service. The customer's officer responsible for operating the unit stated in the testimonial: "the oil particles in the exhaust gases have disappeared and oil consumption has decreased. The operation of the engine and of the high-pressure fuel pump has stabilized. Fuel atomization has improved".



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The results relate to the "Tessari" diesel power plant rated at 16 kW (inv. No. 51655) of SJSC "Chernomorneftegaz" and to its round-the-clock operating conditions; on other equipment the figures may differ. The report was prepared by the contractor — the XADO center (PPCE "Rigonda", Yevpatoria); the testimonial on the last page is signed by the customer's officer responsible for operating the unit. The original report is published in full and available for download.