



EQUIPMENT TREATMENT REPORT · SABSON ENERGY, ADEN

MTU 4000 G63 V16: cylinders back to nominal, power close to rated

Sabson Energy Ltd, diesel power plant · treatment and supervision performed by a XADO Chemical Group engineer; report signed by the customer's technical management

Aden, Yemen · treatment 19–23.04.2020 · monitoring up to 561 h of operation

PRODUCT

XADO Gel-Revitalizant®
for Diesel Engine

5 stages of 520 ml · oil system
flush XADO VitaFlush

TEST OBJECT

MTU 4000 G63 V16 diesel
genset

V16, 76.3 l, 16 cylinders · rated
power 1635 kW (ISO 3046)

DOCUMENT TYPE

Equipment treatment
report

Four signatures of the parties,
seal of Sabson Energy FZE

UNIT**CONDITION AT THE START OF TESTS****WHAT WAS MEASURED**

MTU 4000 G63 V16 diesel
16 cylinders, 76.3 l, 2011

Generator power loss, spread of
pressure across the cylinders, increased
oil consumption; endoscopy of the
cylinder-piston group — multiple
scratches on the cylinder walls

Cylinder pressure, diesel power
output, oil temperature and oil
consumption

Continuously operating diesel genset; treatment performed without disassembling the engine, during regular service.

Key results

↑ **1-2.5 bar**

peak cylinder pressure, 27-29 →
28.5-30 bar (nominal 30)

↑ **5 %**

diesel power output, 1535 → 1612
kW (nominal 1635)

↓ **14 %**

oil temperature, 121 → 104 °C

Peak cylinder pressure, bar — before treatment and after 561 h of operation

CYLINDER	BEFORE TREATMENT	AFTER 561 H
1	27	28.5
2	27	28.5
3	27.5	30
4	27.5	30
5	27.5	30
6	27	28.5
7	28	30
8	28.5	30
9	28	30
10	29	30
11	29	30
12	27	29
13	28	30
14	27.5	29
15	29	30
16	28	30

The nominal 30 bar was reached in 11 of the 16 cylinders, the spread narrowed from 27-29 to 28.5-30 bar. Measured with a compression gauge at 1500 rpm, coolant temperature 55 °C.

Power, oil temperature and oil consumption over operating hours

PARAMETER	BEFORE TREATMENT	AFTER 100 H	AFTER 561 H
Diesel power output, kW	1535	1541	1612
Oil temperature, °C	121	119	104
Oil consumption, l/h	3	2.7	2.5

Measurements taken at 1500 rpm. Between 100 and 561 h four more check measurements were made: power was rising, oil temperature was falling monotonically. Engine rating — 1635 kW (ISO 3046).

Report conclusions

Before treatment, endoscopy of the cylinder-piston group showed multiple scratches on the cylinder walls, none of the 16 cylinders delivered the nominal pressure, and the generator was losing power. Following the treatment and **561 h** of monitoring, the parties recorded:

1. The scheduled cylinder liner replacement interval changed from **≈20 000** to more than **25 000 h** of operation: cavitation wear was reduced, which extended the liner service life by **25 %**.
2. Oil consumption fell from **3.1** to **2.5 l/h**, which is **19.4 %**.
3. Output power rose from **1535** to **1612 kW**, which is **5 %**.
4. Visually, the scratches on the cylinder walls healed over or decreased in size.
5. The amount of wear debris in the oil decreased according to oil analysis data.



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The results refer to an MTU 4000 G63 V16 diesel genset at 1500 rpm under continuous power plant operation; on other equipment and in other duty modes the figures may differ. The report is drawn up on a XADO Chemical Group letterhead and certified by the customer's signatures and seal; the original is published in full and available for download.