

## Inspection Report



### Vamdrup Fjernvarme

Reported by:	Glenn Andersson
Date reported:	2022-02-16
Inspection performed by:	Glenn Andersson
Place of visit:	Nygade 6, Vamdrup.
Country of visit:	Denmark



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Work order no:	WO-791
Date started:	2022-02-15
Date finished:	2022-02-15
Customer ref no:	N/A
Engine type:	Wärtsilä 16V25SG
Generator no:	#1
Engine no:	4099
Engine speed:	1000 Rpm.
Rated power:	3240 kW.
Fuel type:	Gas
Running hours:	54 430 Hrs.

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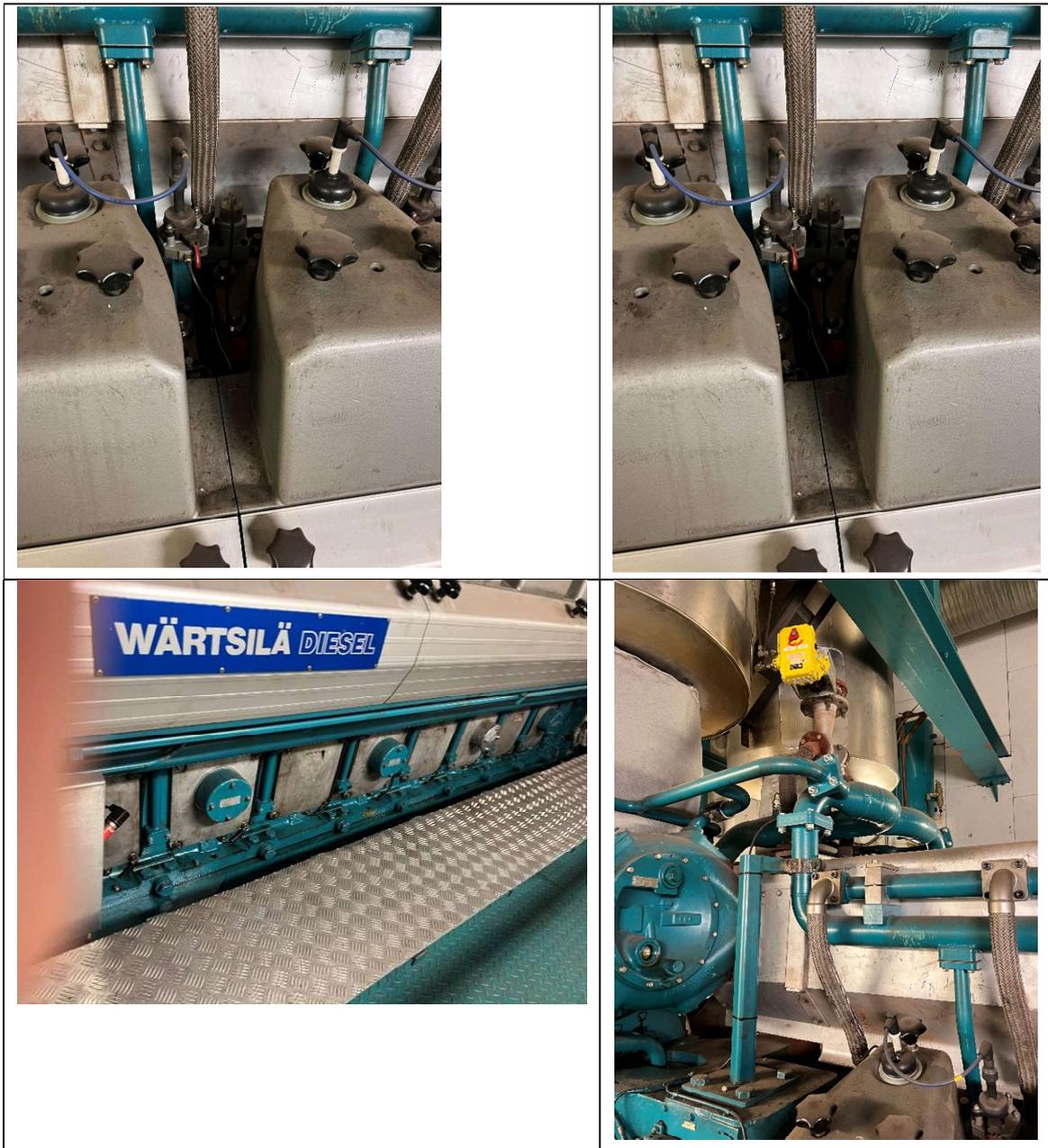
## 1: Introduction

We were requested by our customer Starkos GmbH in Germany to inspect condition on a Wärtsilä 16V25SG on site in Vamdup, Dk.

## 2: Conditions

## 2.1 Overall condition

Engine has been in operation for approx. 55 000 hrs and condition for what you can see by a visual inspection is in general very good, when looking on overall condition and reports it seems to be well maintained. It was not possible to make a test run as engine was disconnected.  
Engine was overhauled at 50 000 hrs, acc. to report from Wärtsilä DK.



## 2.2 Engine block and crankcase

Engine block and crankcase were visually inspected without disassembly. All visible surfaces are in good condition and no water leakages in crankcase or around cylinders were noted.

Crankcase was very clean and honing pattern inside cylinder liners looked intact for as far as visible. Acc. to report from 50 000 Hrs. service engine block has been machined on landing surfaces for cylinder liners, distance has been compensated with shim rings underneath cylinder liner. (This is a very common repair method on Wärtsilä Nohab engines.). 5 pcs cylinder liners were replaced at 50 000 Hrs. service due to cracks.

Crankpin for cylinders 5 and 13 has been grinded 2,00 mm 26/1-2010 for unknown reason.

Missing documentation for this repair. However this hasn't caused any degrading of output on engine and oversized bearings are available.

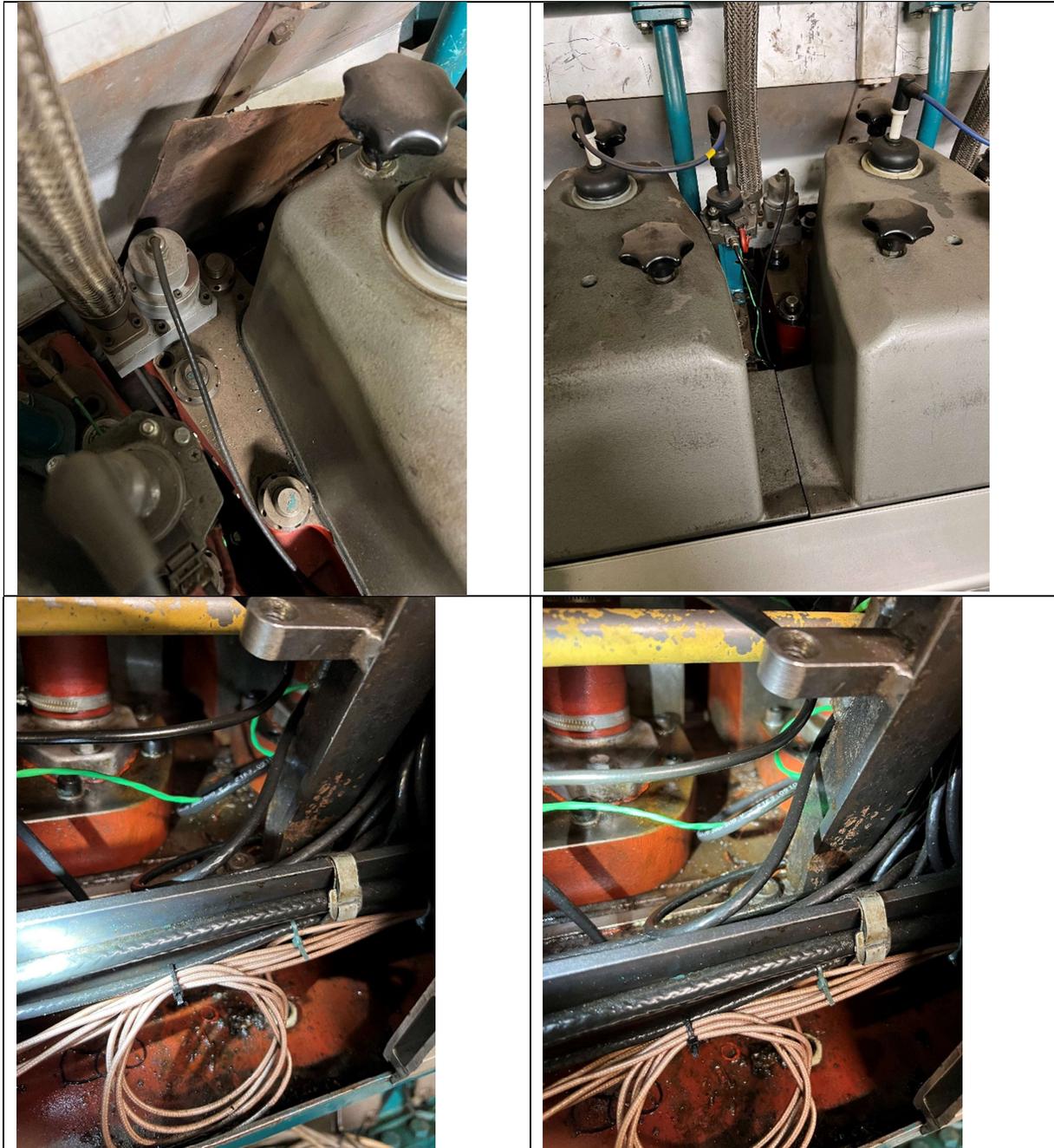


## 2.3. Cylinder heads

All visible surfaces on cylinder heads are in good condition, minor indications of water leaks from connections on some cylinder heads, this might be due to cold condition.

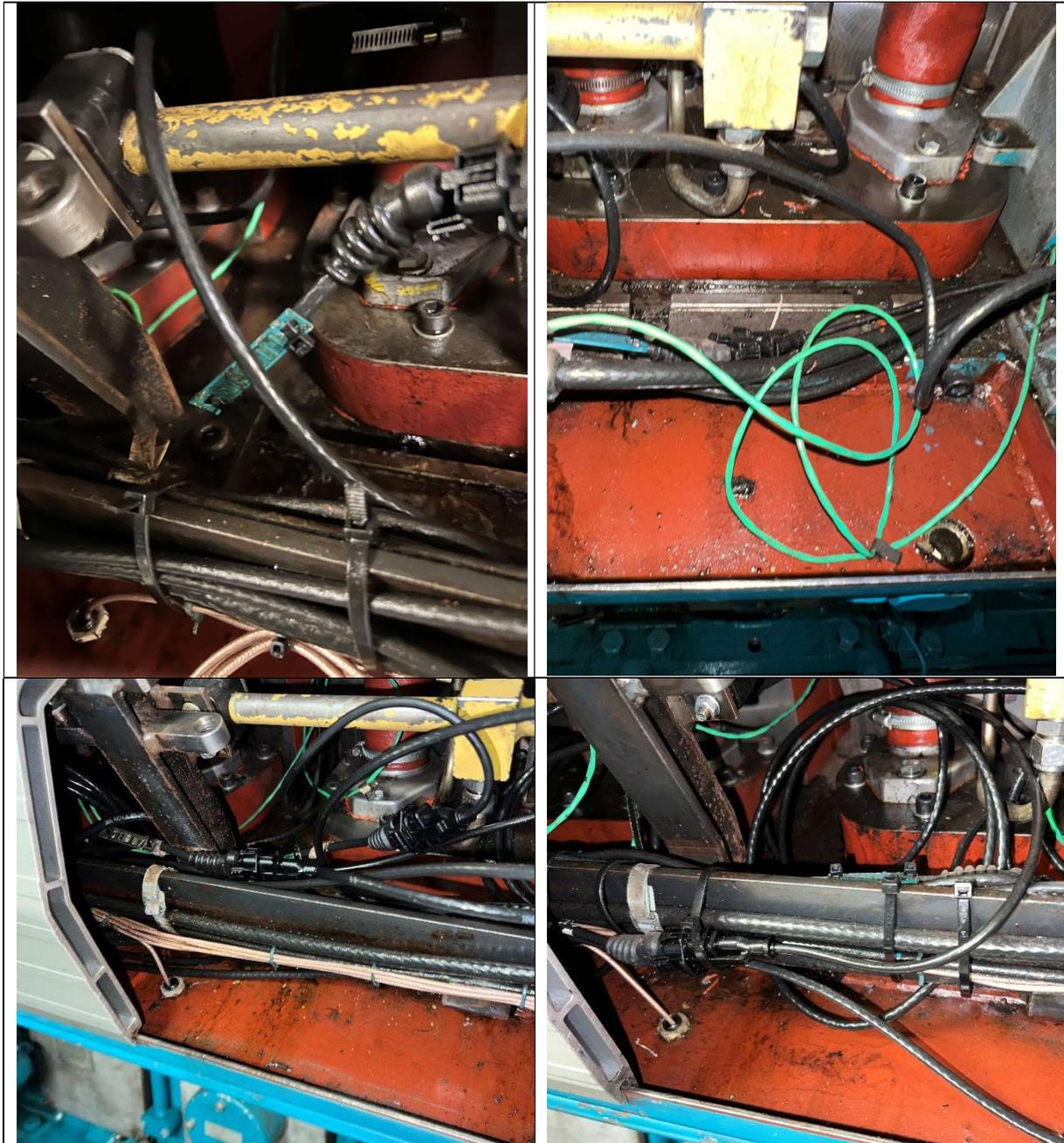
Cylinder heads were overhauled at 50 000 Hrs service acc. to report. Internal parts in cylinder heads were in ok condition acc. to measurement reports and reinstalled.

2x cylinder heads were renewed due to cracks at time of service, remaining cylinder heads were found in good condition.



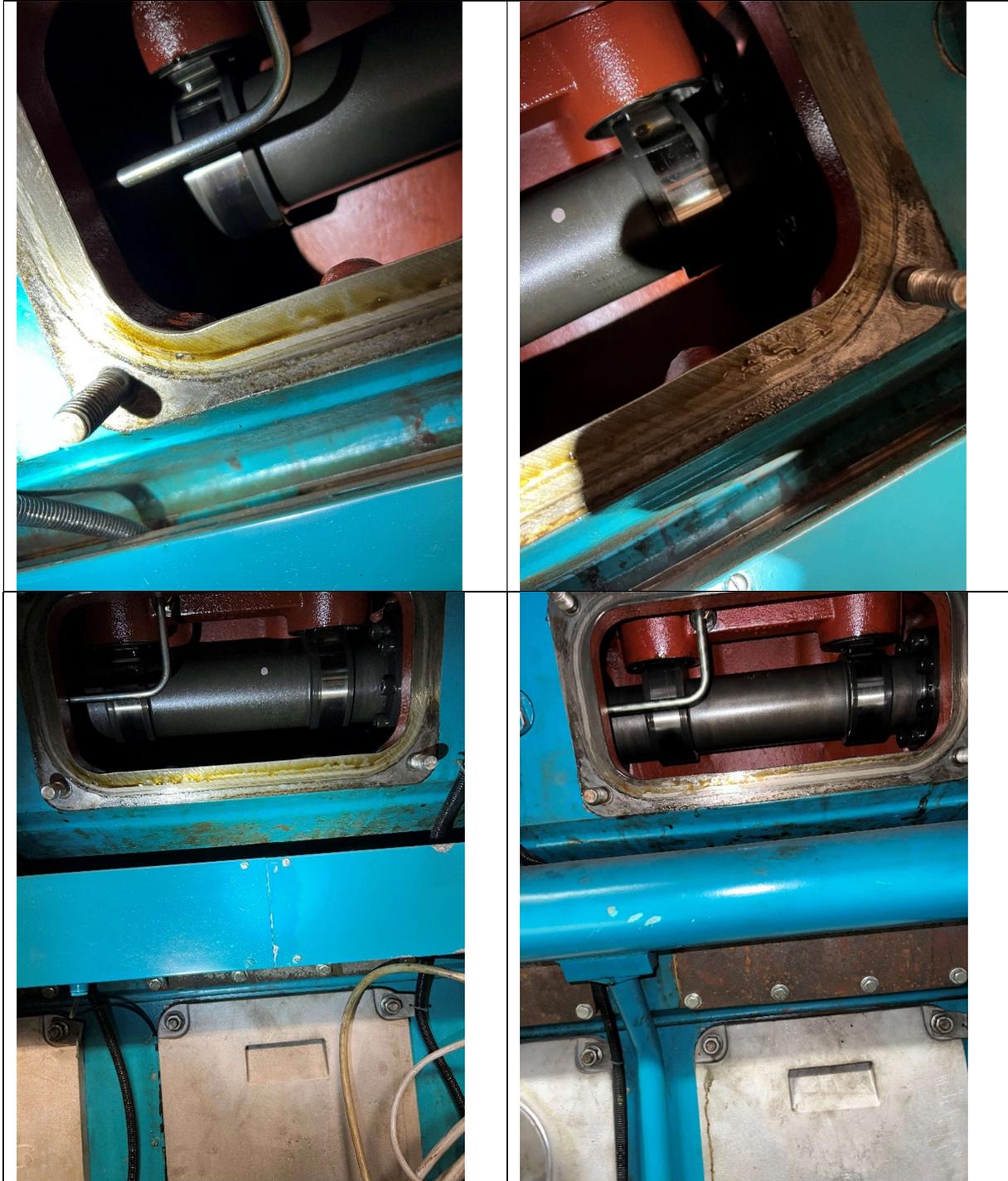
## 2.4 Hotbox

Hot box on both A and B- bank were inspected. Condition of pipings and visable parts was found in ok condition. Minor oil leakages located on and next to valve lifter brackets.



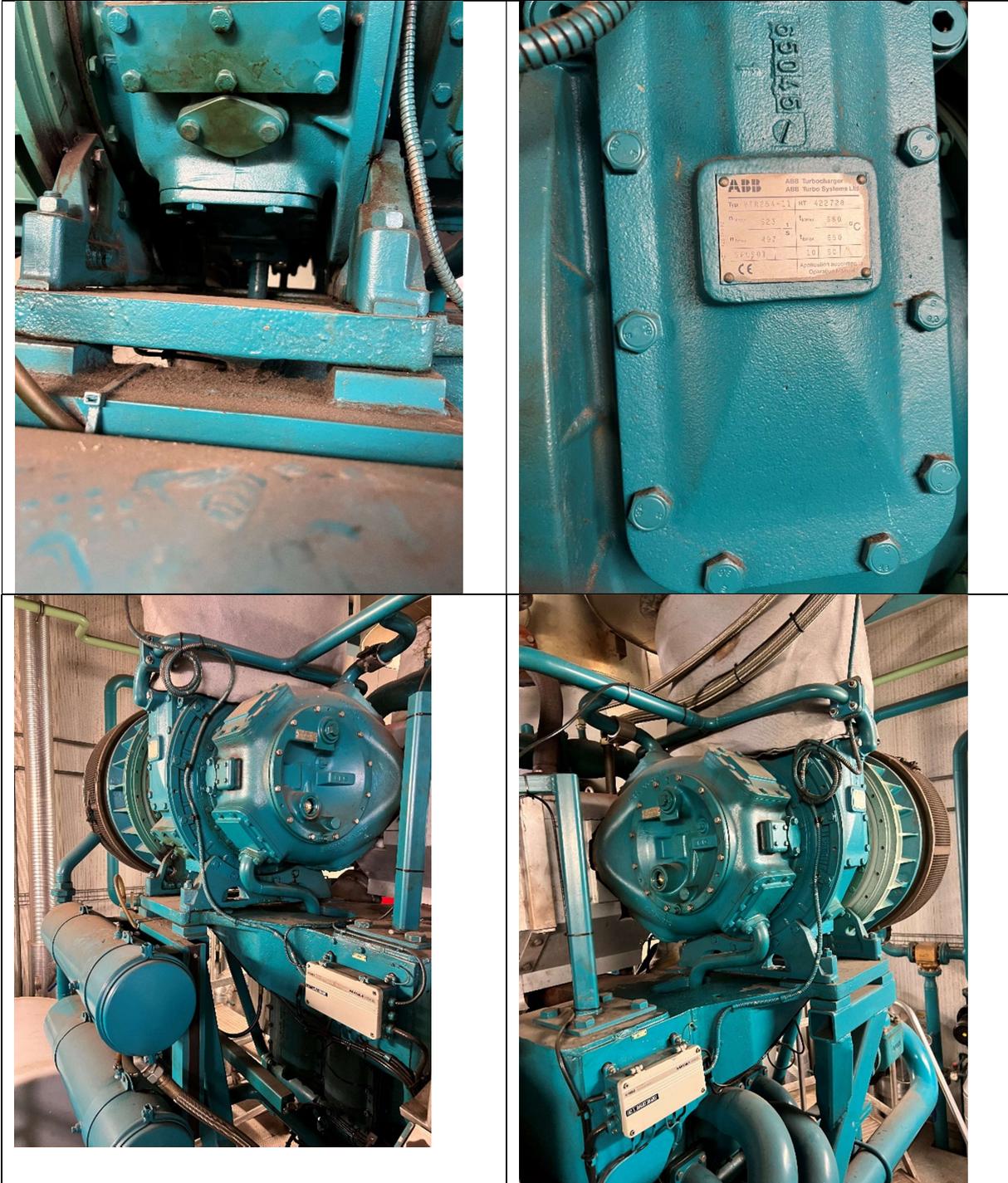
## 2.5 Camshafts

Camshaft sections were inspected and found in good condition.



## 2.6 Turbochargers

Turbochargers were visually inspected from outside and was found intact without damages. Acc. to report from 50 000 service both turbochargers were cleaned, inspected and bearings renewed.



## 2.7 Fore end with engine driven pumps and filters etc.

Lubricating oil pumps – No leakages or discrepancies were noted.

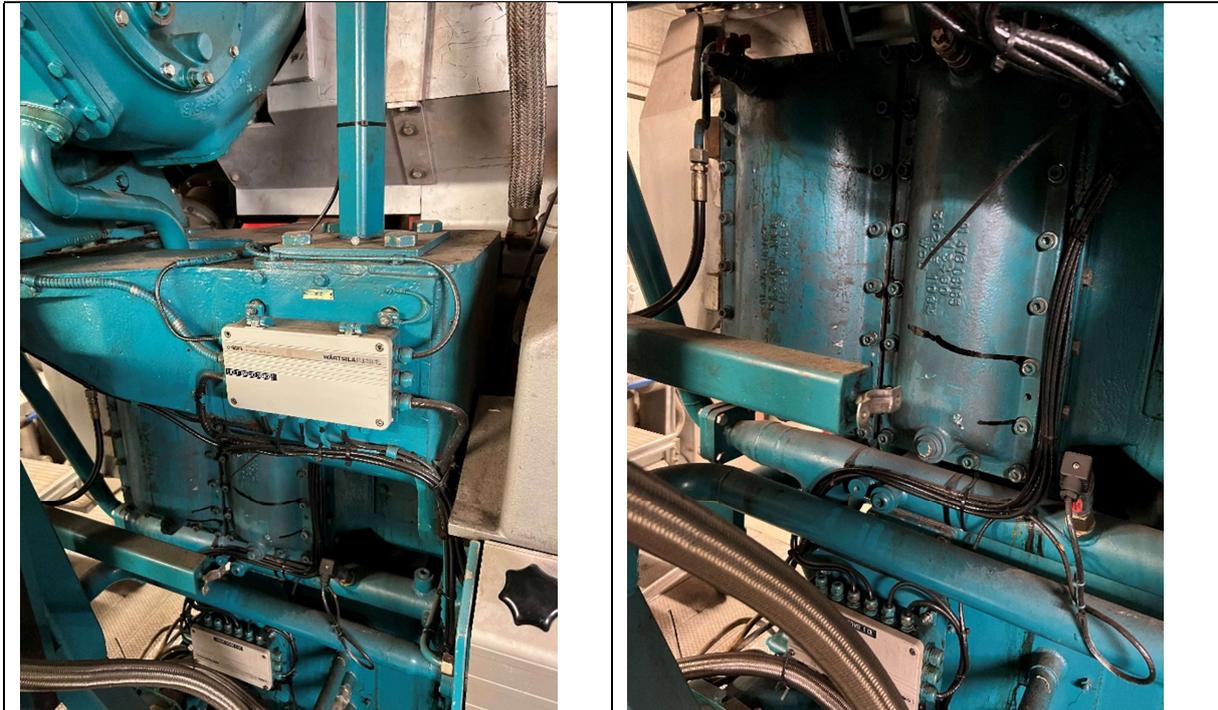
Freshwater pump - No leakages or discrepancies were noted.

Thermostatic valve housing – Good visible condition.

Charge air cooler – Visible outer surfaces was in good condition.

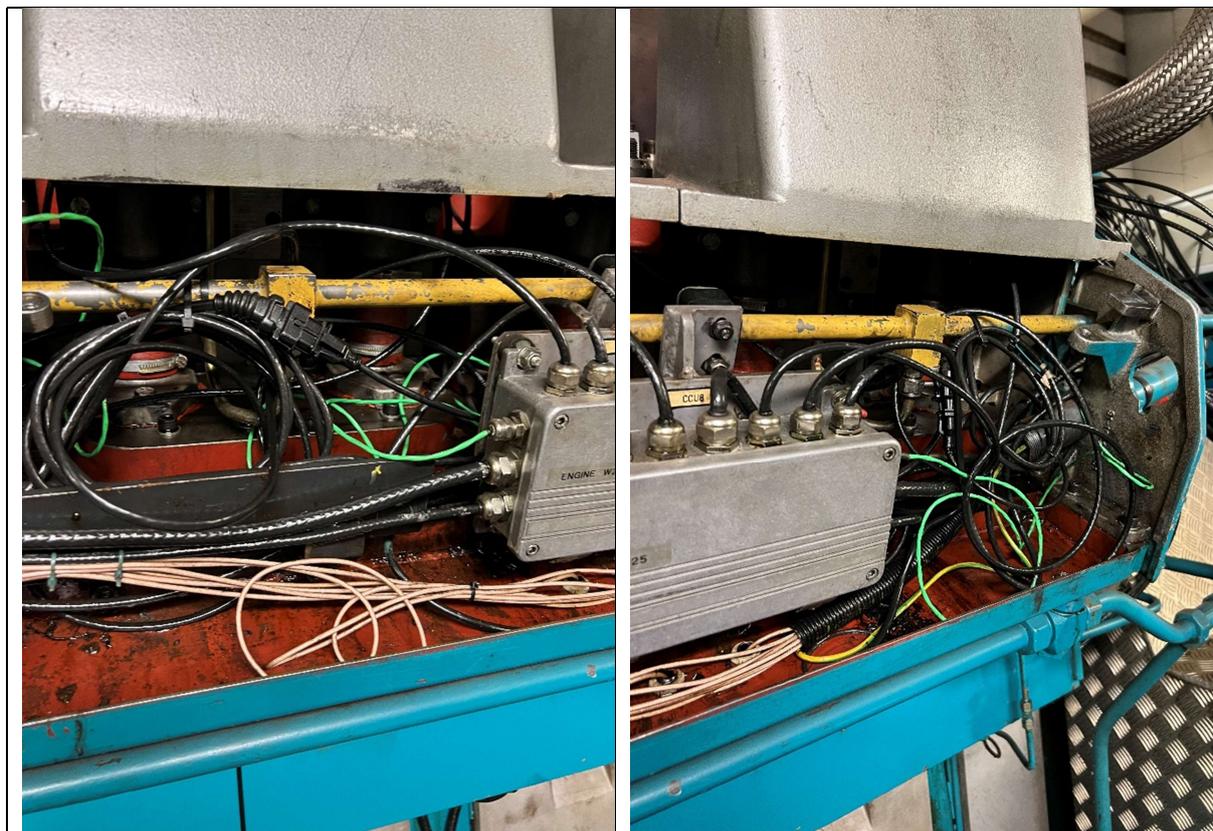
Lube oil filter unit – Good condition.

Pipe connections, fore end – Some leakages in connections noted. Recommend renewing seals.



## 2.8 Electrical equipment

Electrical equipment was visually intact and was working properly when engine was stopped according to staff on site. Wiring from CCU boxes are a bit messy and could be drawn in a better way





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### 3: Recommendations

**3.1 Seal minor leakages were found next to cylinder heads, due to the collar on cylinder heads it is difficult to locate. Such leakages usually stops when engine is heated.**

### 4: Comments

4.1 Only visual inspection has been carried out, to determine internal conditions of engine must be disassembled and critical parts measured and inspected.  
From what is possible to see on external components and over all condition engine is what to be expected for the accumulated running hours. From information in reports and comments from staff on site the engine has been well maintained and working properly when taken out of service.

2022-02-18

X 

Johannes Arvidsson

Service Manager

Signerat av: S-1-12-1-2614920332-1286315706-713667000-2372369488/fda0c570-b432-4583-8d46-03e703221e