



Inspection Report

Client:

Inspection Date: 15-07-2026

Report Date: 16-07-2026

Review / Approval Date: 16-07-2026

Report Title: Main gearbox

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1. INTRODUCTION

1.1. CONTENTS OF THE REPORT

This report describes all findings detected during the visual inspection. Due to its structure, this report is as complete as possible and aimed at being understandable for both beginners and experts in visual inspections.

1.2. EQUIPMENT

Videoscope: Waygate Mentor Flex
Used probe: 4 mm



Videoscope: Olympus, Tough TG-5 Black
Used for gears and other components.



This report reflects the condition of accessible components as visually observed at the time of inspection. The inspection is non-intrusive and limited to visible areas only. No guarantee is given regarding future performance or failure of components. All operational decisions based on this report remain the responsibility of the asset owner.

2. TECHNICAL INFORMATION GEARBOX

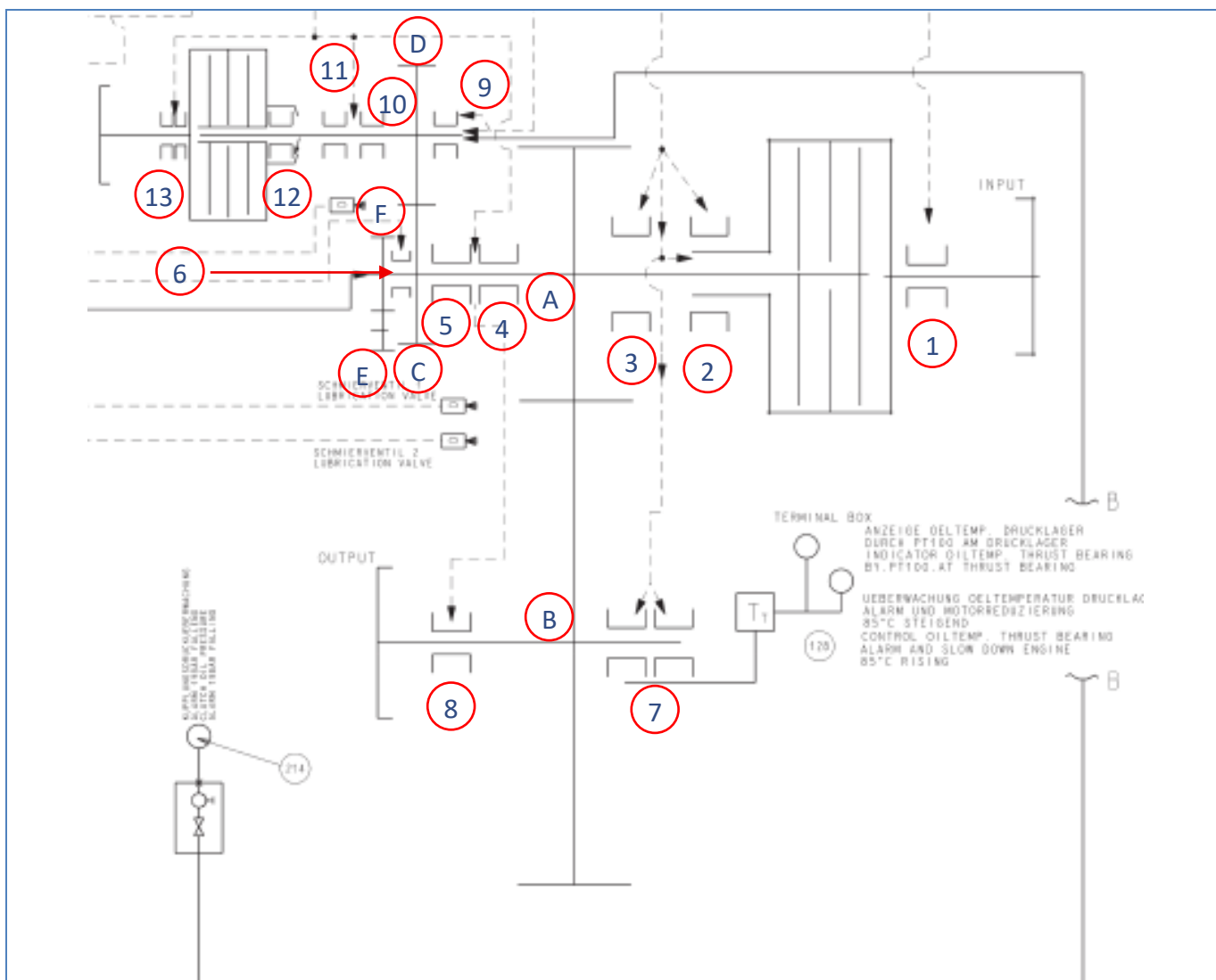


Figure 1.

The configuration shown in Figure 1 is schematic and intended for reference only.

Gears		Bearings	
A	Input shaft, pinion.	1	Input bearing, DE.
B	Output shaft, gear.	2	Input bearing, mid, DE.
C	Input shaft PTO, gear.	3	Input bearing, mid, mid.
D	PTO shaft pinion, gear.	4	Input bearing, mid, NDE.
E	Oil pump, gear.	5	Input bearing, ball bearing.
F	Oil pump, pinion.	6	Input bearing, NDE.
		7	Output shaft DE.
		8	Output shaft NDE.
		9	PTO, DE.
		10	PTO, mid, DE.
		11	PTO, mid, mid
		12	PTO, mid, NDE
		13	PTO, NDE.

Table 1.

3. FINDINGS

During the visual inspection, all accessible gears and bearings were inspected as far as visibility permitted. Rotation of the gearbox was not possible due to the hydraulic coupling installed within the gearbox. Consequently, only the exposed portions of the gears and bearings could be examined.

3.1. MAIN GEARBOX

Gear	Findings	Picture
A	No findings.	1
B	No findings.	2
C	No findings.	3
D	Corrosion, scuffing.	4
E	No findings.	5
F	No findings.	6

Table 1: Gears.

Bearing	Not visible.	-
1	No findings.	1
2	No findings.	2
3	Not inspected.	-
4	Not inspected.	3
5	No findings.	4
6	Not inspected.	-
7	No findings.	5
8	No findings.	6
9	No findings.	7
10	No findings.	8
11	Pitting	9
12	No findings.	10
13	No findings.	11

Table 2: Bearings.

3.2. MISCELLANEOUS

Photo 1, appendix 3: The oil level is at the prescribed operating level.
 Photo 2, appendix 3: The input shaft shows no leakages.
 Photo 3, appendix 3: The output shaft shows no leakages.
 Photo 4, appendix 3: The input PTO shows no leakages.

CONCLUSIONS AND RECOMMENDATIONS

3.3. CONCLUSIONS

False brinelling damage was observed on the PTO mid bearing at the drive end (DE). False brinelling is a wear mechanism caused by small oscillatory movements and vibration under static or lightly loaded conditions. The resulting damage appears similar to true brinelling; however, the damage mechanism is different.

True brinelling is characterized by permanent plastic deformation of the raceway caused by a single overload event. False brinelling, on the other hand, develops gradually due to repeated micro-movements between rolling elements and raceways. These movements displace the lubricant from the contact area, resulting in metal-to-metal contact, wear, and oxidation of wear particles. The generated debris may become abrasive and further accelerate the deterioration process.

General Condition

No significant abnormalities were observed on the remaining bearings and gears. The inspected components were found to be in satisfactory condition, with no noteworthy defects requiring immediate corrective action.

3.4. RECOMMENDATIONS

To prevent further deterioration and reduce the risk of gearbox damage, the following actions are recommended:

1. Replace the PTO shaft bearings.
2. Perform periodic visual borescope inspections on an annual basis.
3. Following gearbox overhaul or bearing replacement, perform vibration measurements to verify the condition of all bearings and gears and to confirm correct assembly and alignment.

APPENDIX 1: MAIN GEARBOX GEARS



Photo 1: Input shaft, pinion. **No deviations have been observed.**



Photo 2: Output shaft, gear. **No deviations have been observed.**

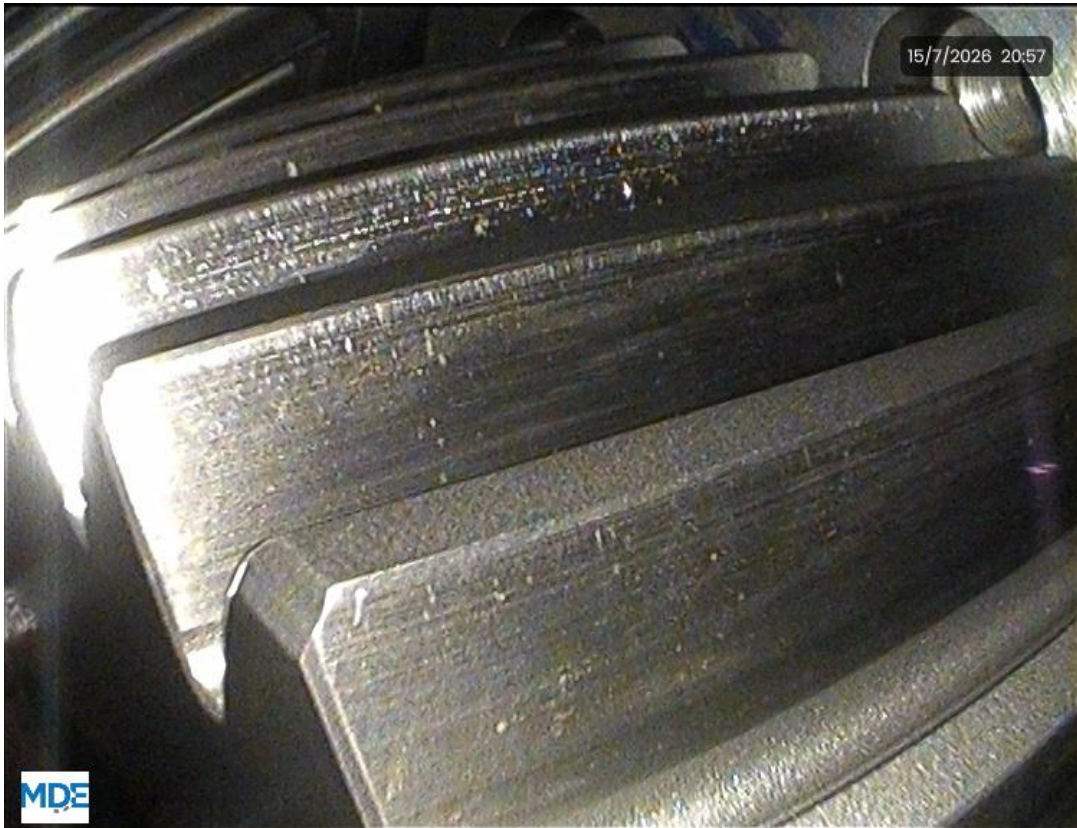


Photo 3: PTO gear. No deviations have been observed.



Photo 4: PTO pinion. Minor corrosion and minor scuffing have been observed.

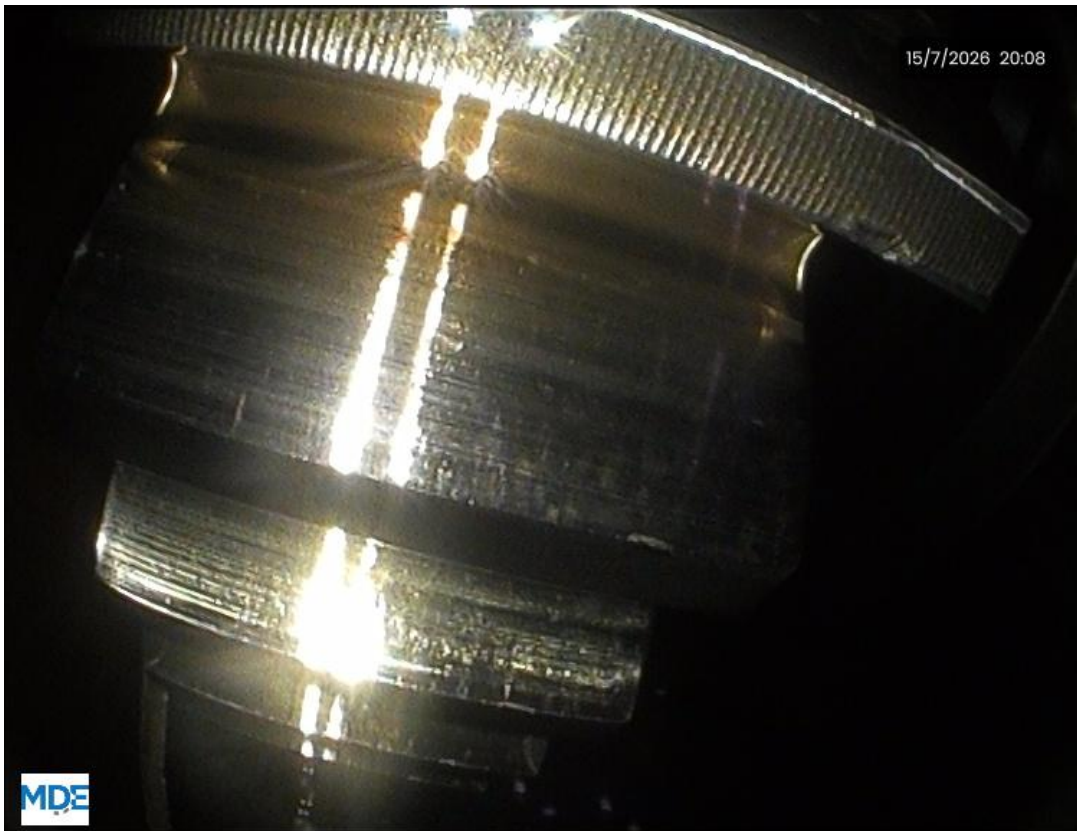


Photo 5: Oil pump gear. No deviations have been observed.

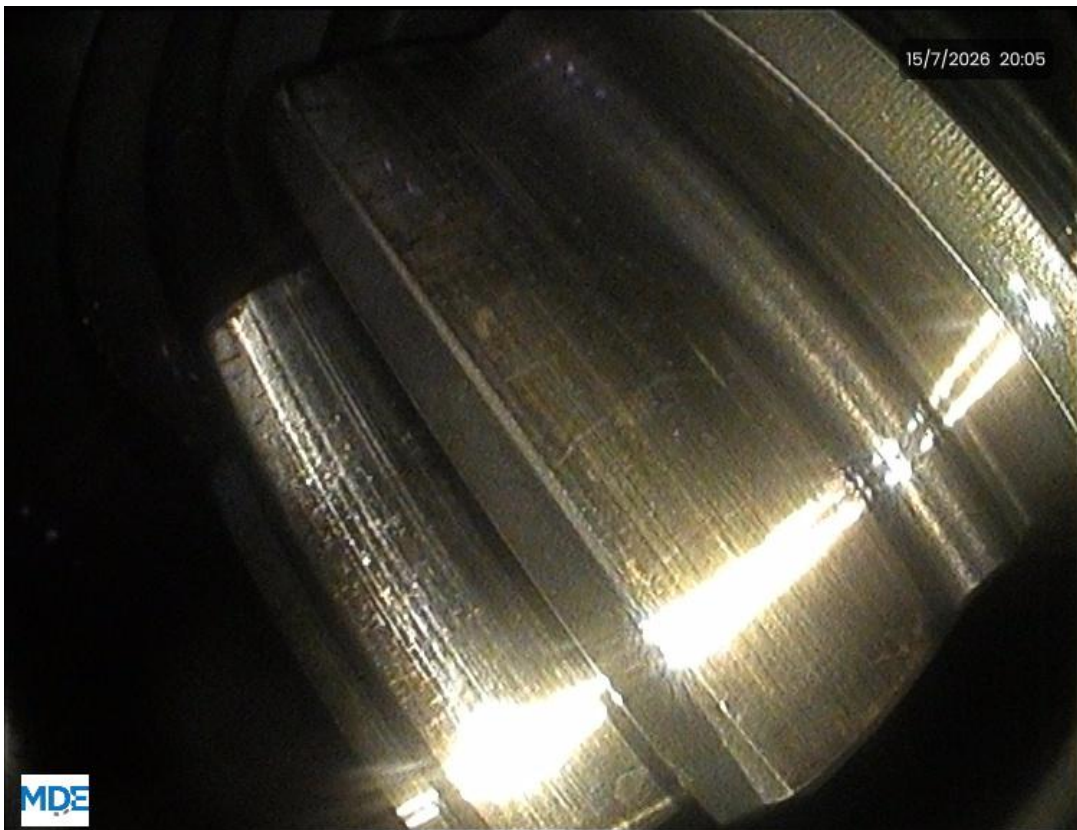


Photo 6: Oil pump pinion. No deviations have been observed.

APPENDIX 2: MAIN GEARBOX BEARINGS

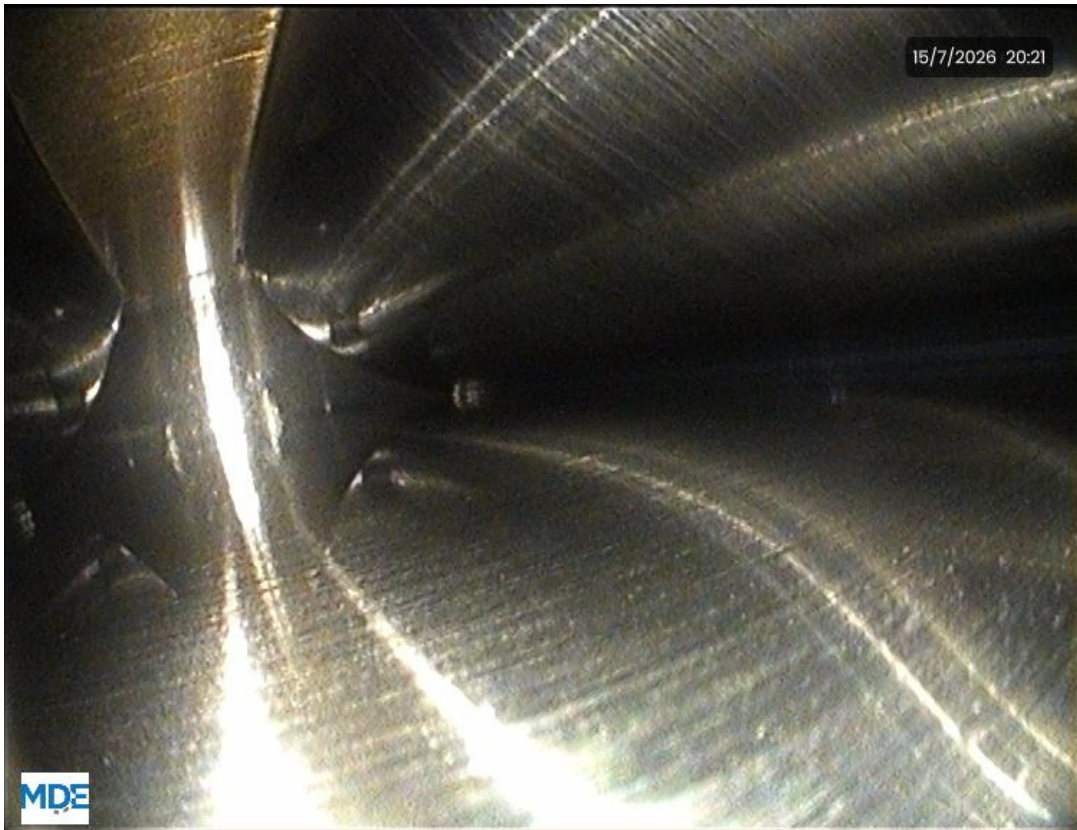


Photo 1: Bearing input shaft, driven end. **No deviations have been observed.**



Photo 2: Bearing input shaft, mid, driven end. **No deviations have been observed.**

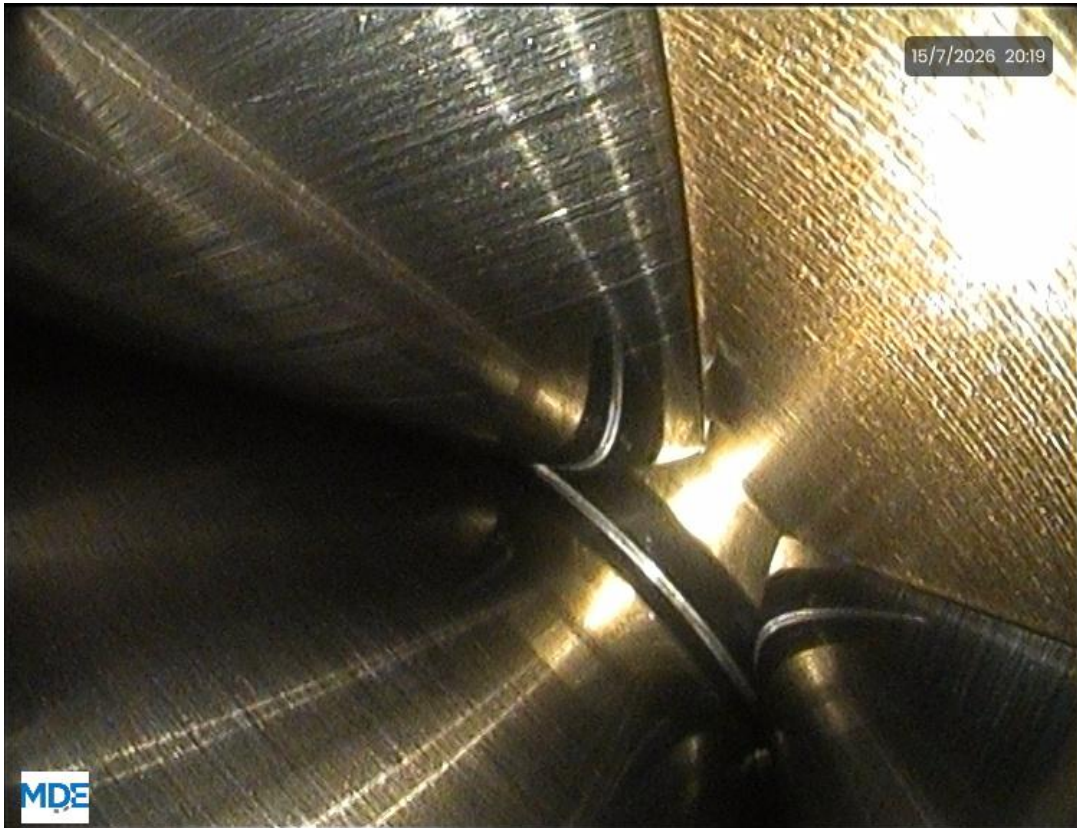


Photo 3: Input bearing, mid, mid. **No deviations have been observed.**

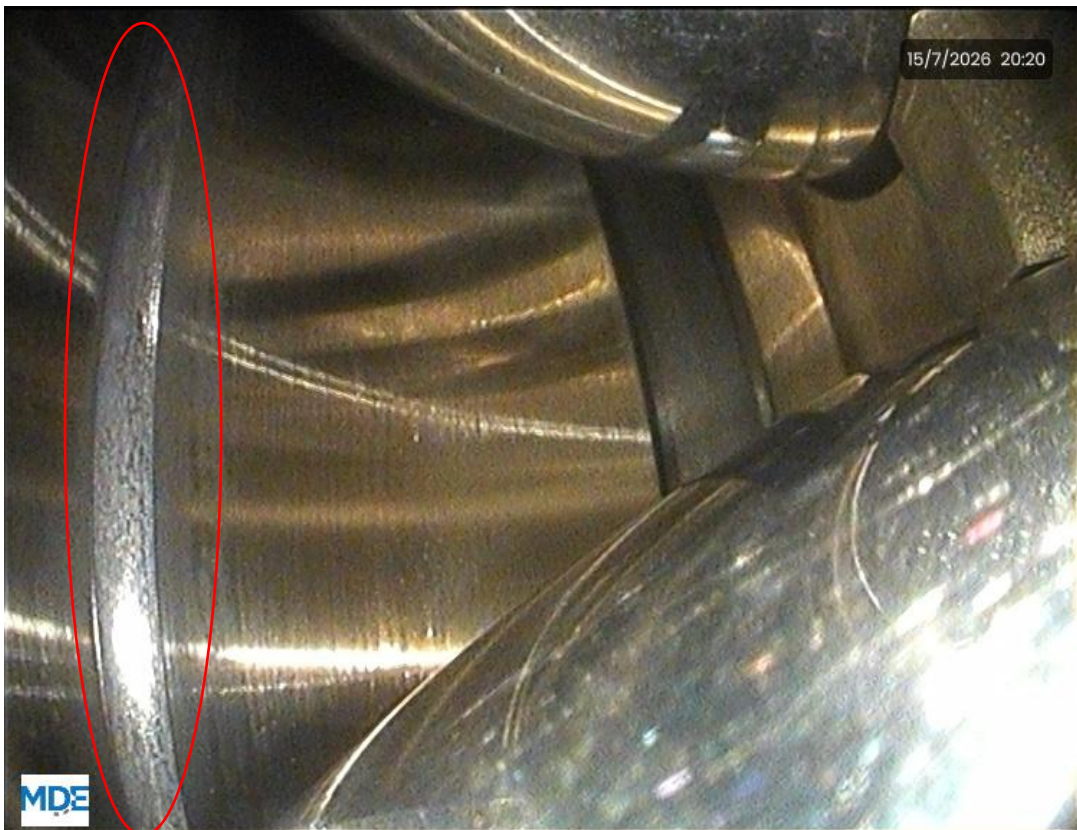


Photo 4: Input bearing, **No deviations have been observed.**

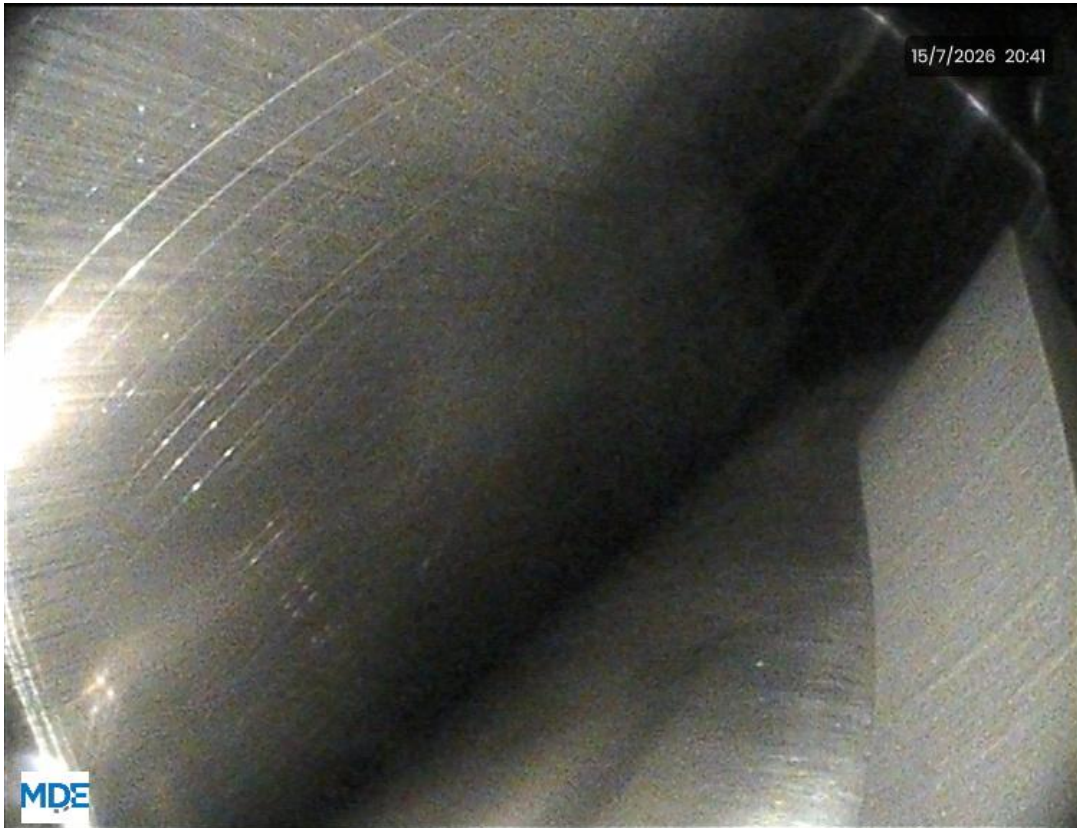


Photo 5: Output shaft, driven end. **No deviations have been observed.**



Photo 6: Output shaft, non-driven end. **No deviations have been observed.**

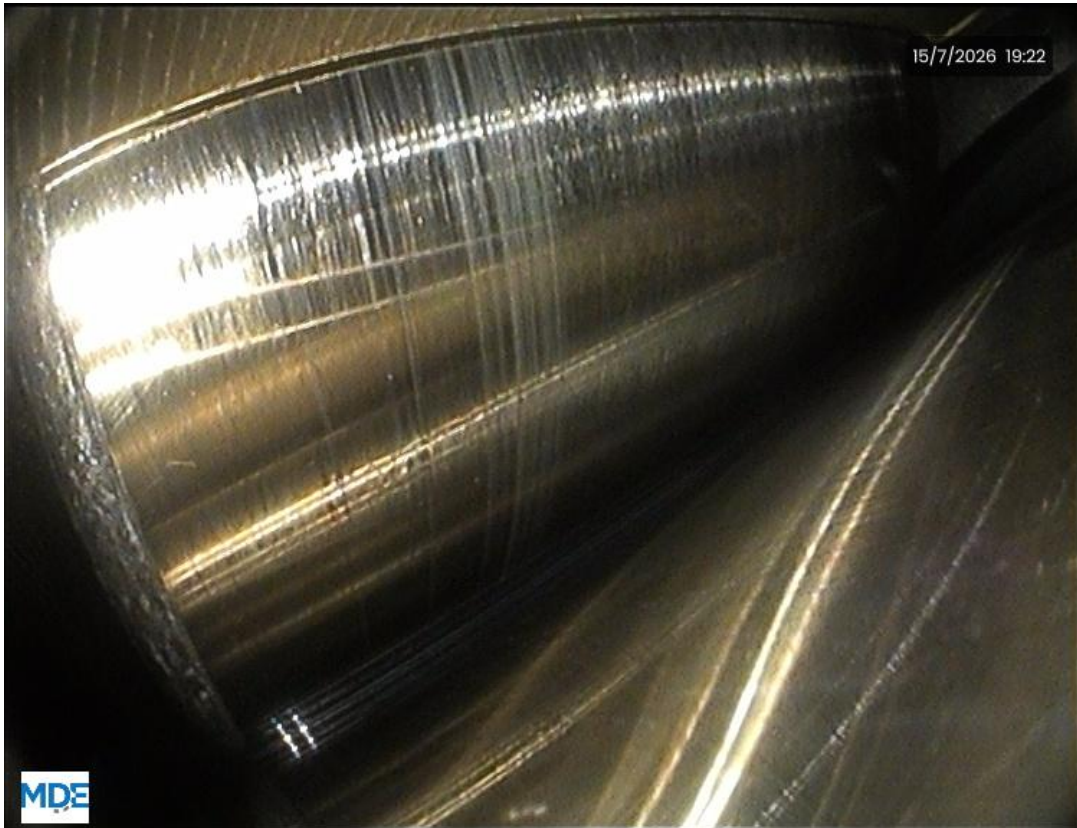


Photo 7: PTO, driven end. No deviations have been observed.



Photo 8: PTO, mid, driven end. No deviations have been observed.



Photo 9: PTO mid, mid, non-driven end. **Pitting, false brinelling have been observed.**

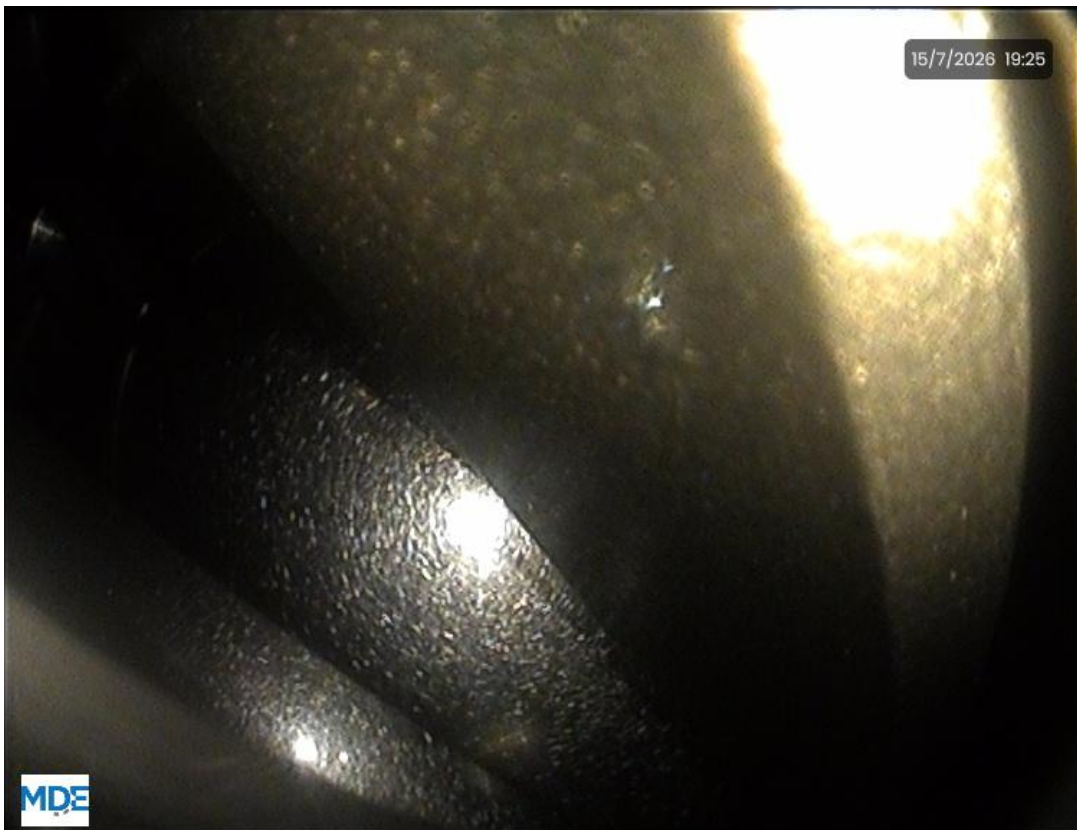


Photo 10: PTO ball bearing NDE. **No deviations have been observed.**



Photo 11: PTO non-driven end. No deviations have been observed.

APPENDIX 3: MISCELLANEOUS



Photo 1: Dipstick. Oil is on the prescribed level.

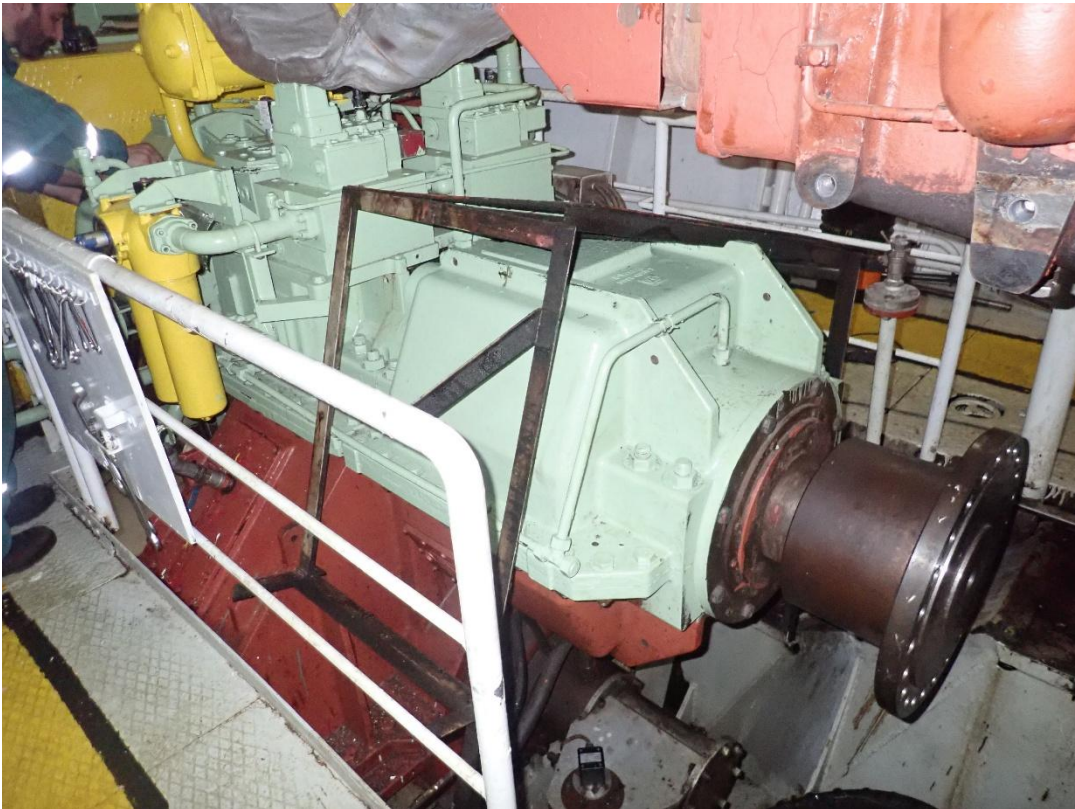


Photo 2: Input shaft. No leakages have been observed.

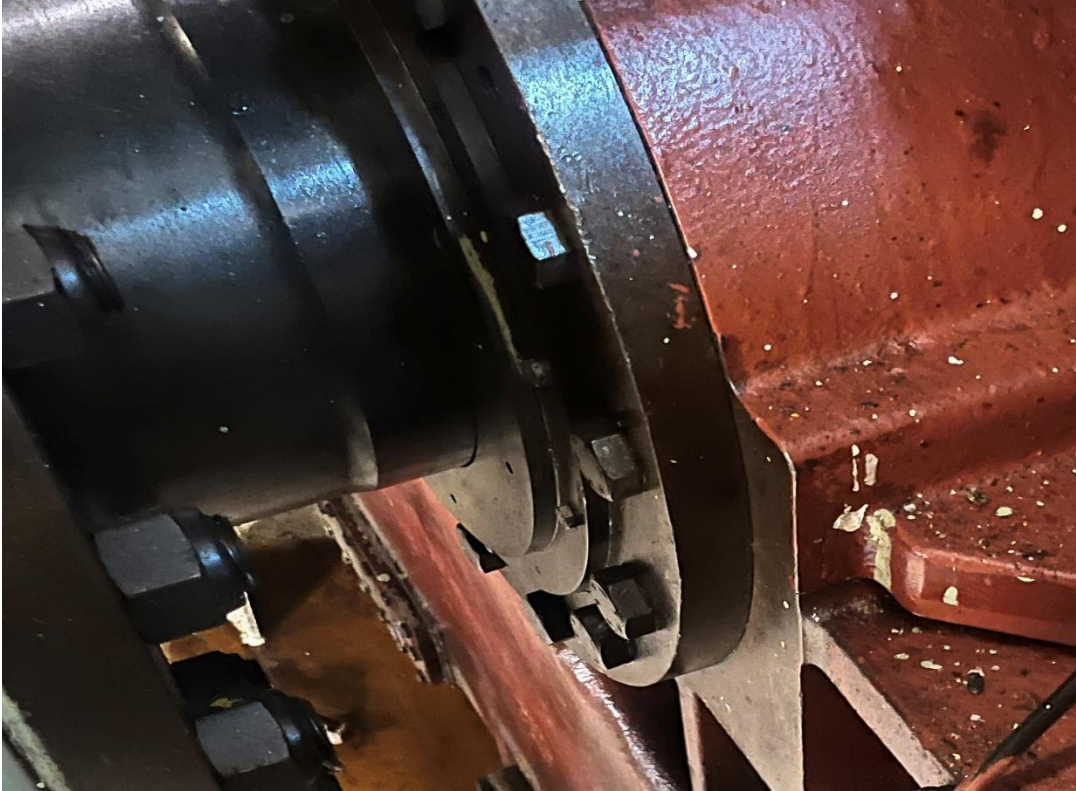


Photo 3: Output shaft. No leakages have been observed.



Photo 4: PTO shaft. No leakages have been observed.