



For Marine Services

Service Report

Report no.: 103

Report date: May 18, 2025

Location:

SUEZ ANCHORAGE AREA

Vessel Name: GMT ASTRO

IMO no.: 8606056

Final Report

After our Arrival onboard ship at 16:15 we start working.

In the following steps we will explain how the work has been done

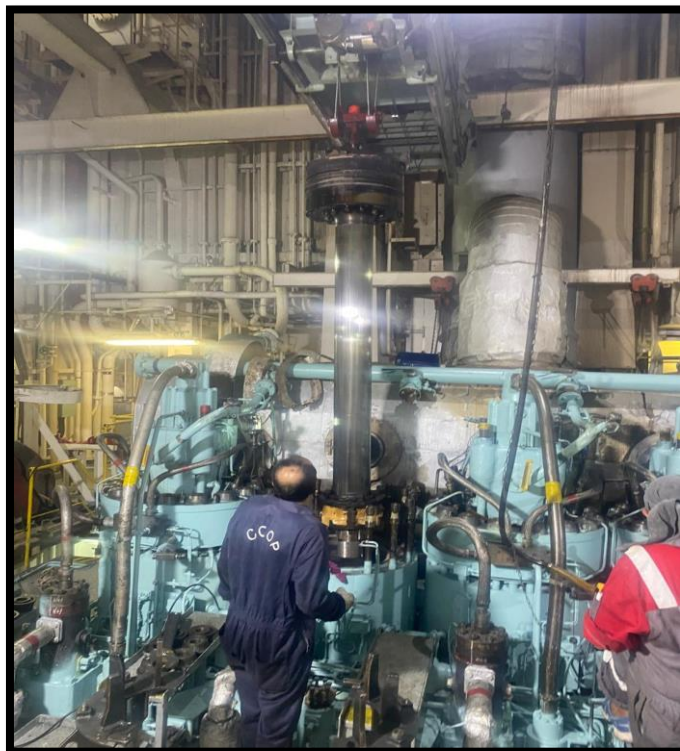
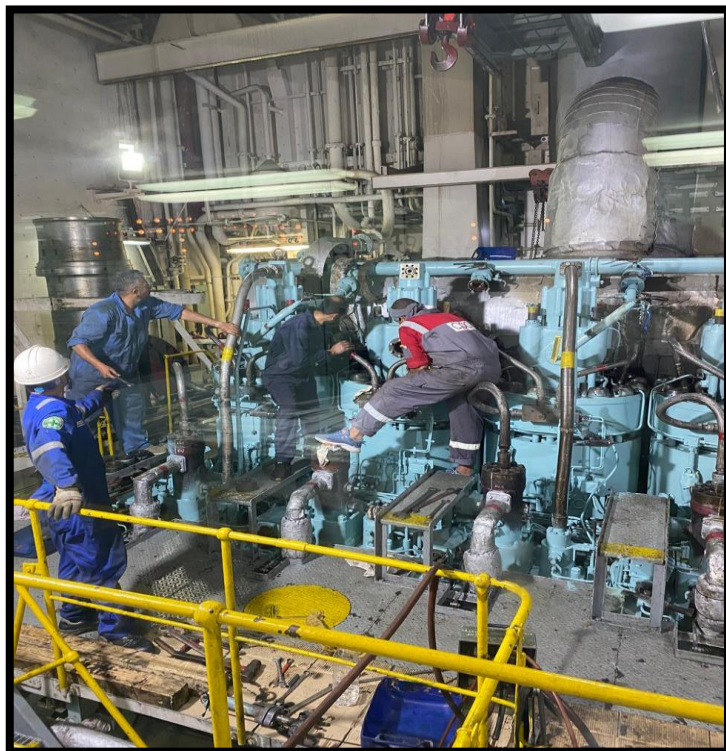
1. Dismantling Cylinder cover, Piston of Unit No. 2

Start dismantling cylinder cover and piston, we find out a damaged in the piston rings

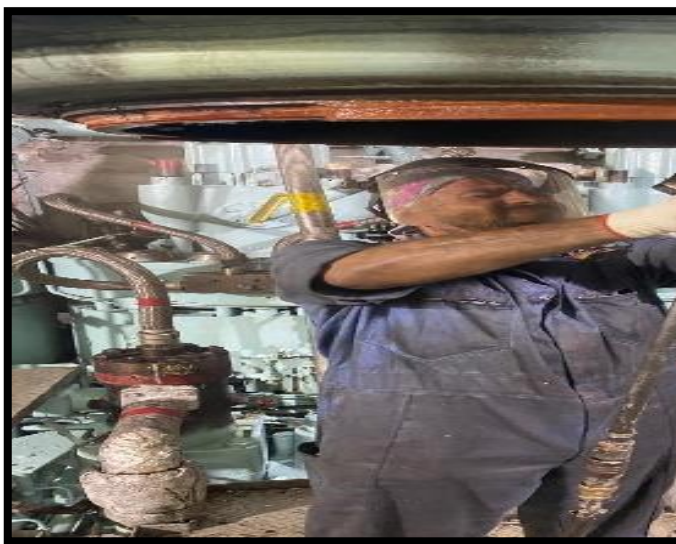
So, we clean the piston, stuffing box and clean all grooves of piston

Then take all our measurements of the piston and rings as shown in the pictures

Finally, we install a new rings, piston and cylinder cover







1 st Ring	0.75
2 nd Ring	2.75
3 rd Ring	4.5
4 th Ring	4.5

The crown clearance was taken at 4 points

Max. = 1.3 mm

Min.= 0.3 mm

All measurements in millimeter (mm)

2. Dismantling Cylinder cover, Piston And cylinder linear of Unit No.1

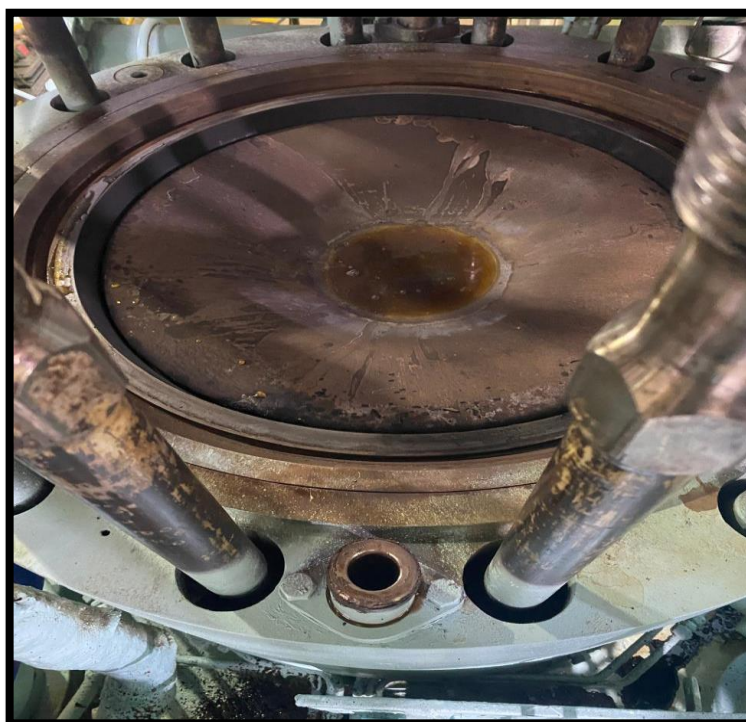
After we finish dismantling cylinder cover and piston, we find out a crack in the cylinder linear so we have to change it.

So, we clean the piston, stuffing box and clean all grooves

Then take all our measurements of the piston, rings and also check the new linear dimensions as shown in the pictures

Linear Wear Clearance

	P. / St.B	Fore. / Aft
Point 1	600	600
Point 2	601.67	601.48
Point 3	600.4	601.32
Point 4	600.28	600.25
Point 5	600.33	600.21







Linear Wear Clearance

	P. / St.B	Fore. / Aft
Point 1	600	600
Point 2	601.47	601.48
Point 3	600.4	601.12
Point 4	600.18	600.25
Point 5	600.33	600.51

Crown Clearance was taken in 4 points
Max.= 1.1 mm Min.= 0.2 mm

All measurements in millimeter (mm)

Vert. Clearance of rings

1 st Ring	0.5
2 nd Ring	0.3
3 rd Ring	0.5
4 th Ring	0.5

3. Dismantling Cylinder cover, Piston And cylinder linear of Unit No.3

Start dismantling cylinder cover but we have found a hydraulic leak in the cylinder cover nut, so we had to cut the nut to replace it.

It took about 4 hours to cut as it was in tight space

Then we dismantle the piston

we find out a damaged in the piston

So, we clean the piston, stuffing box and clean all grooves of piston

Then take all our measurements of the piston as shown in the pictures

Finally, we install a new rings, piston and cylinder cover



**Linear Wear Clearance**

	P. / St.B	Fore. / Aft
Point 1	600	600
Point 2	601.24	601
Point 3	600.26	602.29
Point 4	600.24	600.32
Point 5	600.33	600.34

Vert. Clearance of rings

1 st Ring	1.2
2 nd Ring	0.5
3 rd Ring	0.3
4 th Ring	0.3

The crown clearance was taken in 4 points

Max.= 0.6 mm Min.= 0.5 mm

All measurements in millimeter (mm)

4. Dismantling Cylinder cover, Piston And cylinder linear of Unit No.5

Start dismantling cylinder cover, the piston

we find out a damaged in the piston rings

So, we clean the piston, stuffing box and clean all grooves of piston

Then take all our measurements of the piston as shown in the pictures

Finally, we install a new rings, piston and cylinder cover



Linear Wear Clearance

	P. / St.B	Fore. / Aft
Point 1	600	600
Point 2	603.99	602.84
Point 3	600.71	600.26
Point 4	601.31	601.34
Point 5	600.57	600.95

The crown clearance was taken in 4 points

Max.= 0.6 mm

Min.= 0.5 mm

Vert. Clearance of rings

1 st Ring	0.4
2 nd Ring	0.4
3 rd Ring	0.4
4 th Ring	0.45

All measurements in millimeter (mm)

5. Dismantling Cylinder cover, Piston And cylinder linear of Unit No.6

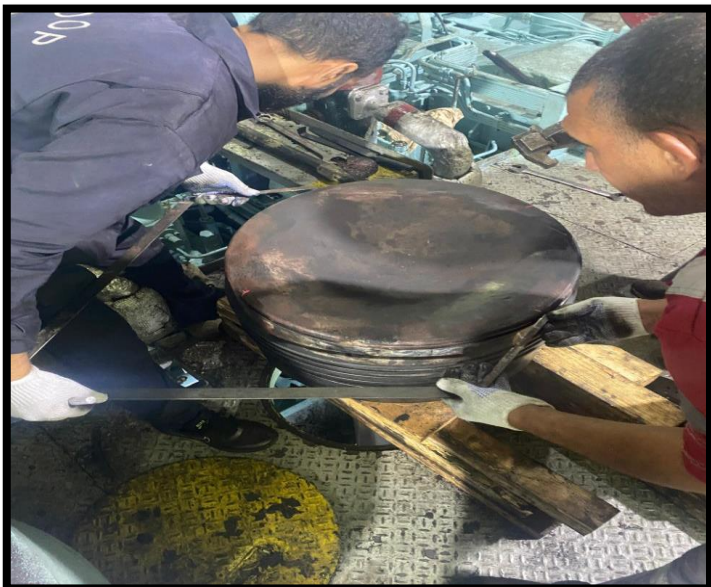
Start dismantling cylinder cover, the piston

we find out a damaged in the piston rings

So, we clean the piston, stuffing box and clean all grooves of piston

Then take all our measurements of the piston as shown in the pictures

Finally, we install a new rings, piston and cylinder cover





Linear Wear Clearance

	P. / St.B	Fore. / Aft
Point 1	600.19	600
Point 2	602.07	601.77
Point 3	600.95	601.16
Point 4	601.64	601.71
Point 5	601.69	601.75

Vert. Clearance of rings

1 st Ring	0.4
2 nd Ring	0.3
3 rd Ring	0.3
4 th Ring	1.7

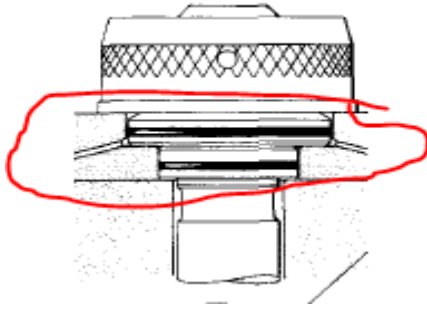
All measurements in millimeter (mm)
The crown clearance was taken in 4 points
Max.= 0.3 mm Min.= 0.1 mm

- Additional work out of our agreement:
- 1. Fix the hydraulic pump
- We fixed the hydraulic pump which used to dismantle and tight the cylinder cover nuts
We take about 3-4 hours to reach 900 bar manually
- 2. Cut the nut of unit No. 2
- Because of O Ring seal leakage, we had to cut the nut and replace the seal and dismantle the nuts



➤ **Observations:**

1. We recommend to change all the hydraulic rings as soon as possible to prevent leakage



2. The spare fire Rings which installed is not standard (different size) so it maybe leakage under cylinder cover

3. We see a huge amount of oil & carbon leakage in the scavenge area

4. The washer lock in the stuffing box is not good, we recommend to change it as soon as possible

5. We recommend to monitor and observe oil consumption because all rings are damaged because of friction

6. We suspect the linear of unit no.1 has been cracked because of thermal stresses

7. We see to much rust and dirty when we dismantle the linear of unit no.1. so, we recommend to blow down the water from the system and chemically treated.

Dirty makes layer between water and the case which lead to overheated the unit

Service Engineer



Ahmed Nasser



Date: 15 May 15, 2025

Vessel Name: GMT ASTRO

Maintenance Report

1. Unit No.1

- ✎ Dismantle unit no.1 cylinder cover, piston and cracked linear
- ✎ Cleaning and put new rings and take measurements
- ✎ Install the new linear, piston and cylinder cover
- ✎ And do checking and everything good condition

2. Unit No.2

- ✎ Dismantle unit no.2 cylinder cover and piston
- ✎ Cleaning and put new rings and take measurements
- ✎ Install the piston and cylinder cover
- ✎ And do checking and everything good condition

3. Unit No.3

- ✎ Dismantle unit no.3 cylinder cover and piston
- ✎ Cleaning and put new rings and take measurements
- ✎ Install the piston and cylinder cover
- ✎ And do checking and everything good condition

4. Unit No.5

- ✎ Dismantle unit no.1 cylinder cover, piston
- ✎ Cleaning and put new rings and take measurements
- ✎ Install the new linear, piston and cylinder cover
- ✎ And do checking and everything good condition

5. Unit No.6

- ✎ Dismantle unit no.1 cylinder cover, piston
- ✎ Cleaning and put new rings and take measurements
- ✎ Install the new linear, piston and cylinder cover
- ✎ And do checking and everything good condition

❖ Additional work out of our agreement

1. Fix the hydraulic pump
2. Cutting the cylinder cover nut

- ❖ Detailed report will be sent (maximum) in the next 72 hours including photos and all measurements



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