HATCHTEC
EXPERT FOR DECK MACHINERY

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Service Report

General

To:		Customer:	
Vessel name:		IMO No.:	
Engineer:		Job No.:	SE-240730-49203
Date:	03/08/2024	Place:	Hua feng shipyard

Job description General inspection for MHI deck cranes

Date of visit **start** 01/08/2024

end 02/08/2024

Equipment type	MFG. No. HDC	Operating duty and climate	Operation hours
30MT*26M (20 °)	6461	Bulk/37℃	2362
30MT*26M (20 °)	6462	Bulk/ 37℃	2210
30MT*26M (20 °)	6463	Bulk/ 37℃	2351
30MT*26M (20 °)	6464	Bulk/ 37℃	2777

Report

1. Limit check and record

CHECK ITEMS		Crane 1	Crane 2	Crane 3	Crane 4
HOISTING LIMIT SWITCH	UPPER	Normal	Normal	Normal	Adjusted to normal
	LOWER	Normal	Adjusted to normal	Adjusted to normal	Normal
LUFFING LIMIT SWITCH	UPPER	Normal	Normal	Normal	Normal
	LOWER	Normal	Normal	Normal	Adjusted to normal
DETECTOR FOR SLACK OF WIRE	HOISTING	Abnormal	Abnormal	Abnormal	Abnormal
	LUFFING	Abnormal	Abnormal	Abnormal	Abnormal

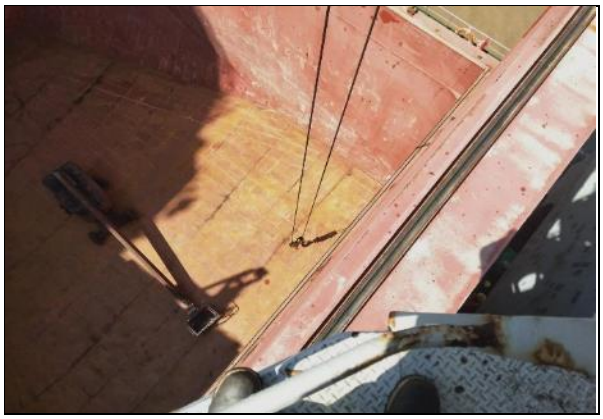
Remark: All crane HO&LU wire slack limit not work. Because the limit switch out of position.

Jib lower limit

Jib angle check

Jib upper limit

Hook upper limit

	
Hook lower limit	Wire slack limit

2. Oil pressure check

CHECK CONTENTS		Crane 1	Crane 2	Crane 3	Crane4
RELIEF VALVE FOR HOISTING	STANDARD SETTING	**20.6 -Mpa**			
	BEFORE ADJUSTMENT	**20.3**	**20.5**	**20.3**	**19.5**
	AFTER ADJUSTMENT				**20.4**
RELIEF VALVE FOR HOISTING-GRAB	STANDARD SETTING	**17.5 -Mpa**			
	BEFORE ADJUSTMENT	**17.3**	**17.5**	**17.4**	**17.2**
	AFTER ADJUSTMENT	—	—	—	—
UNLOADING VALVE		**10.8 -Mpa**			
	BEFORE ADJUSTMENT	**10.6**	**10.5**	**10.8**	**10.5**
	AFTER ADJUSTMENT	—	—	—	—
RELIEF VALVE FOR LUFFING AND SLEWING	STANDARD SETTING	**20.6 -Mpa**			
	BEFORE ADJUSTMENT	**20.4**	**20.3**	**20.5**	**20.3**
	AFTER ADJUSTMENT	—		—	—
PRESSURE SWITCH FOR HOOK	STANDARD SETTING	**20.0-Mpa**			
	BEFORE ADJUSTMENT	**19.8**	**19.5**	**19.7**	**20.1**
	AFTER ADJUSTMENT	—	—	—	—

PRESSURE SWITCH FOR GRAB	STANDARD SETTING	**16.0 -Mpa**			
	BEFORE ADJUSTMENT	**16.7**	**16.4**	**16.5**	**15.8**
	AFTER ADJUSTMENT	—		—	—
REMOTE CONTROL VALVE	STANDARD SETTING	**2.94-Mpa**			
	BEFORE ADJUSTMENT	**2.92**	**2.91**	**2.93**	**2.82**
	AFTER ADJUSTMENT	—	—		**2.95**

Remote control pressure

Unloading valve pressure

Relief valve pressure for luffing and slewing

Relief valve pressure for hoisting

Relief pressure for grab mode

Pressure switch for hoisting

Pressure switch for grab

Test the crane pressure

3. Speed check (without load)

MOTION		Crane 1		Crane 2		Crane 3		Crane 4	
		On Board	Shop Test	On Board	Shop Test	On Board	Shop Test	On Board	Shop Test
HOISTING (m/min)	UP	67	63	65	63	65	63	65	63
	DOWN	64	63	60	63	61	63	58	63
LUFFING (sec)	UP	44	49	46	49	42	49	43	49
	DOWN	43	49	44	49	40	49	41	49
SLEWING (rpm)		0.63	0.6	0.65	0.6	0.65	0.6	0.66	0.6

4. Rocking test

Measurement at back

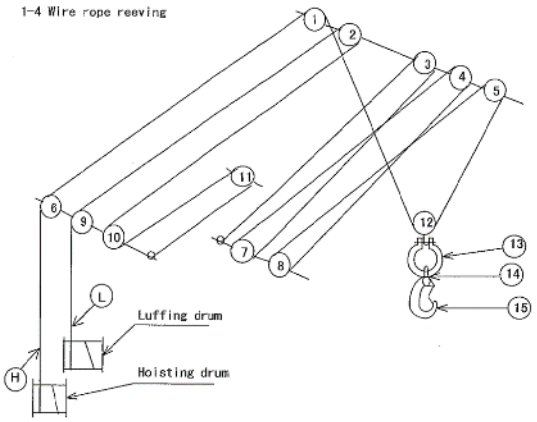
0.6mm of original clearance amount of wear. Maximum allowable amount wear 3mm.

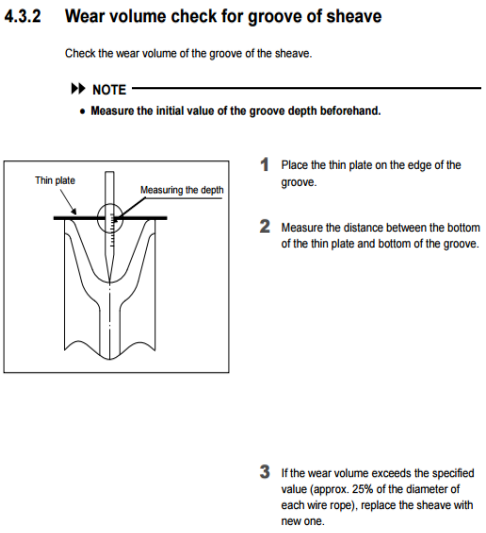
(0.01mm)

Measure point / Crane No.	Forward		Starboard		After		Portside	
	Back	Amount of wear	Back	Amount of wear	Back	Amount of wear	Back	Amount of wear
Crane 1	20	0	25	0	23	0	26	0
Crane 2	25	0	23	0	25	0	30	0
Crane 3	28	0	26	0	30	0	28	0
Crane 4	23	0	25	0	26	0	26	0

Results at normal condition

5. Sheaves condition check (Hoisting wire dia.:33.5mm, Luffing wire dia.: 28.0mm)





sheave size		φ P. C. D.												
		Φ700												
Sheave no / CRANE NO		1	2	3	4	5	6	7	8	9	10	11	12	13
No.1	CONDITION						OK	OK	OK	imprint	imprint	rust	OK	OK
No.2	CONDITION						OK	OK	OK	OK	OK	rust	OK	OK
No.3	CONDITION						OK	OK	OK	OK	OK	rust	OK	OK
No.4	CONDITION						OK	OK	OK	OK	OK	rust	OK	OK

Remarks: Jib center sheaves not accessible to reach only visual checked was found rust

Details report and recommended for all cranes

1 The hinge of front door need de-rust and apply grease, **see figure 1**
   - Suggest de-rust and apply more grease.

2 No.1, No.3 &No.4 crane doorknob of front door stuck. **see figure 2**
   - Suggest do repair job

3 The handrail of house top and crane outer platform rusted. **see figure 3**
   - Suggest remove rust and repair damaged part.

4 House top sheaves wire guard badly corrosion, **see figure 4**
   - Suggest remove rust and repair damaged part.

5 The connector of grease pipe for sheaves shaft badly corrosion. **see figure 5**
   - Suggest renew the connector

6 The vertical ladder outside of crane badly rusted, **see figure 6**
   - Suggest remove rust and do repair job
   - Suggest replace the ladder when necessary

7 Outside surface of cabin need de-rust. **see figure 7**
   - Suggest remove rust and do paint job.

8 The pipe strap of grease pipe (for centre sheave) rusted. **see figure 8**
   - Suggest retighten the grease pipe strap.

9 Hook block sheave cover corrosion badly, **see figure 9**
   - Suggest overhaul hook block and renew sheave covers.

10 No.2 &No.4 crane crosser of Jib rest support lost, No.3 crane(P) support damaged. **see figure 10**
   - Suggest reinstall crosser for No.2&No.4 crane
   - Suggest repair No.3 crane (P) support and reinstall crosser

11 Jib end and end bolts rusted, **see figure 11**
   - Suggest remove rust and do paint job

12 Slewing bearing outer surface and bolts rust, **see figure 12**
   - Suggest remove rust and do paint job

13 The drain valve outer of crane rust and stuck. **see figure 13**
   - Suggest remove rust and activating the valve

14 Air ventilate of machinery room rust. **see figure 14**
   - Suggest de-rust and do paint job

15 Limit switch chain need apply more grease. **see figure 15**
   - Suggest wash the chain and apply grease

16 Machinery room need clean garbage and aged grease**, see figure 16**
   - Suggest do clean job

17 Inner slewing pinion and gear need more fresh grease, **see figure 17**
   - Suggest apply grease by crew at regular interval

18 Some sheaves were found slight imprint, **see figure 18**
   - Suggest keep watch the condition of imprint sheaves
   - And replace sheaves when the condition change badly

19 Luffing and Hoisting wire slack limit not work. **see figure 19**
   - Because the switch out of position
   - Suggest adjust the limit switch position

20 No.2&No.3 crane slewing gearbox oil black color. **see figure 20**
   - Suggest replace the gearbox oil

21 No.2&No.4 crane luffing gearbox oil black color. **see figure 21**
   - Suggest replace the gearbox oil

22 All crane hoisting gearbox oil black color. **see figure 22**
- Suggest replace the gearbox oil

23 No.1, No.2 &No.3 crane operate handle rubber jacket broken. **see figure 23**
- Suggest replace controller link cover

24 No.2, No.3&No.4 crane window wiper not good.**see figure 24**
- Suggest replace window wiper

25 All crane hoisting control valve oil leakage. **see figure 25**
- Suggest do repair job and replace oil seal for control valve

26 No.1 crane window jack bar need repair. **see figure 26**
- Suggest do repair job

27 No.2 craneTime relay for Y-△ not good.**see figure 27**
- Found the crane Y-△ not good
- Suggest replace the time relay for Y-△

28 Oil leakage from No.3 crane hoisting gearbox oil level sight glass. **see figure 28**
- Suggest to do repair job

29 Oil leakage from the sensor of No.3 crane temperature switch, **see figure 29**
- Suggest do repair job

30 All crane cabin room rust. **see figure 30**
- Suggest remove rust and do paint job

31 Check the condition of slip ring box. **see figure 31**
- Found carbon dust in slip ring box
- Suggest check and clean slip ring at regular interval

32 Analysis gear box oil every 6 months,

33 Analysis jib end bearing grease every 3 months

34 Do rocking test every 6 months

Recommended spare parts

Description	Drawing No.	Qty	Remark
WIPER	DSD1104542	4PCS	
SEAL KIT OF HO CONTROL VALVE (50A)	DSD3101963	4KITS	FOR HOISTING CONTROL VALVE
No.18 NUT COVER	DSD6100700	4SETS	FOR HOOK BLOCK
No.4 GREASE NIPPLE	DSD6100700	4PCS	PIN TYPE R1/8
CONTROLLER LINK COVER	DSD4100151	12PCS	DSA4325-1
TIME RELAY	EDC1010630	1PC	SRT-NN, 0.1~60sec, AC440V,60Hz

Pictures for deck cranes

Figure 1 The hinge of front door need de-rust and apply grease

Figure 2 No.1, No.3 &No.4 crane doorknob of front door stuck

Figure 3 The handrail of house top and crane outer platform rusted

Figure 4 House top sheaves wire guard badly corrosion

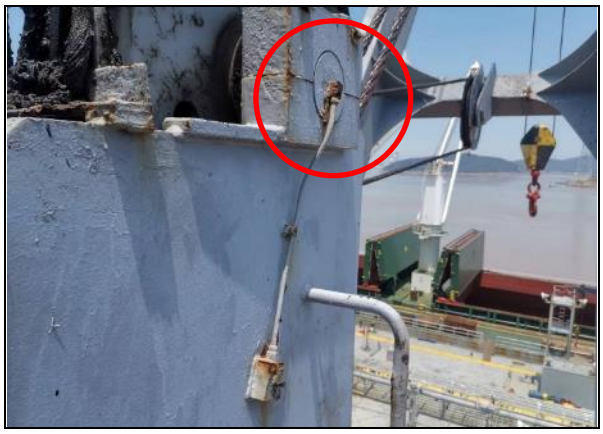


Figure 5 The connector of grease pipe for sheaves shaft badly corrosion

Figure 6 The vertical ladder outside of crane badly rusted

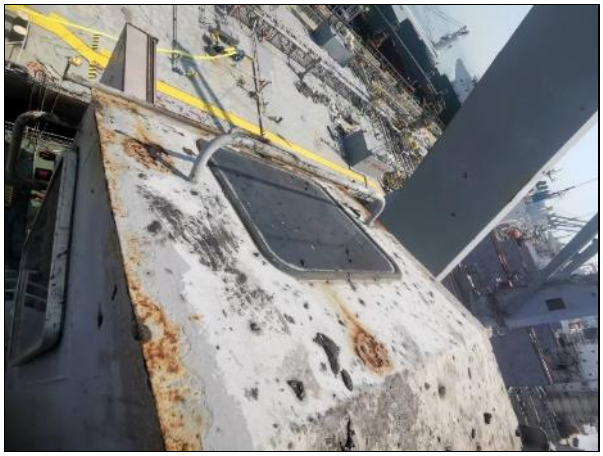


Figure 7 Outside surface of cabin need de-rust

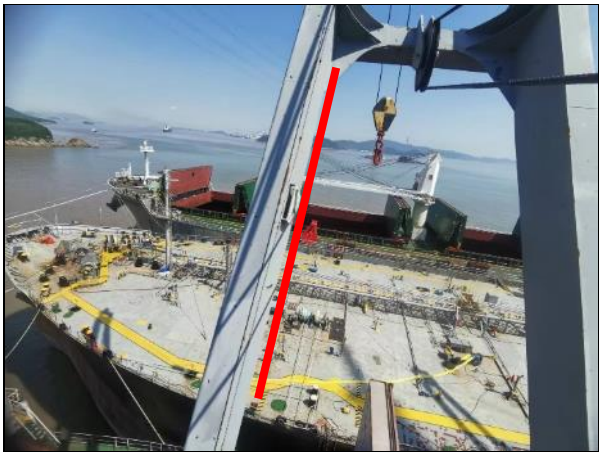


Figure 8 The pipe strap of grease pipe rusted

Figure 9 Hook block sheave cover corrosion badly

Figure 10 No.2 &No.4 crane crosser of Jib rest support lost, No.3 crane(P) support damaged

Figure 11 Jib end bolts rust

Figure 12 Slewing bearing outer surface and bolts rust

Figure 13 The drain valve outer of crane rust and stuck

Figure 14 Air ventilate of machinery room rust

Figure 15 Limit switch chain need apply more grease

Figure 16 Machinery room need clean garbage and aged grease

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Figure 18 Some sheaves were found slight imprint

Figure 19 Luffing and Hoisting wire slack limit not work

Figure 20 No.2&No.3 crane slewing gearbox oil black color

Figure 21 No.2&No.4 crane luffing gearbox oil black color

Figure 22 All crane hoisting gearbox oil black color

Figure 23 No.1, No.2 &No.3 crane operate handle rubber jacket broken

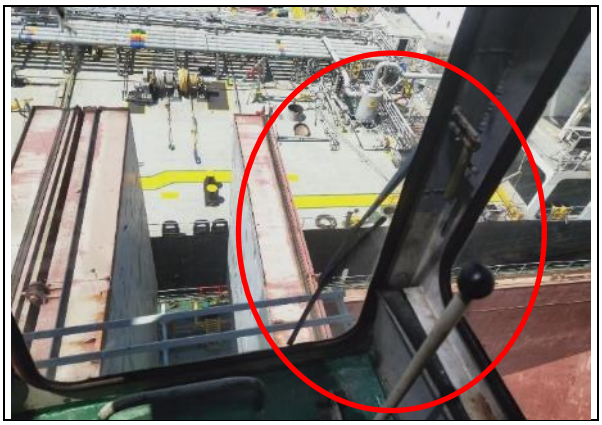

Figure 24 No.2, No.3&No.4 crane window wiper not good

Figure 25 All crane hoisting control valve oil leakage

Figure 26 No.1 crane window jack bar need repair

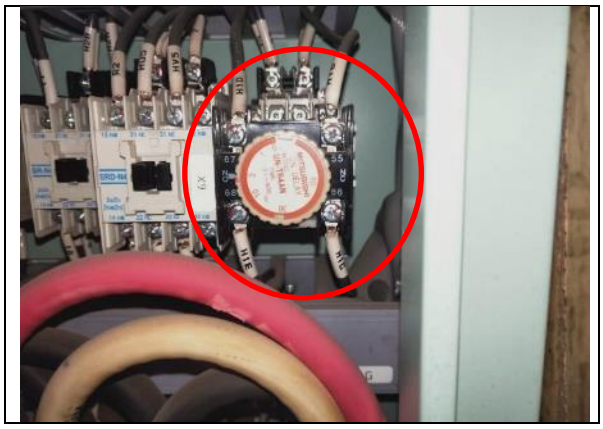

Figure 27 No.2 craneTime relay for ⅄-△ not good

Figure 28 Oil leakage from No.3 crane hoisting gearbox oil level sight glass

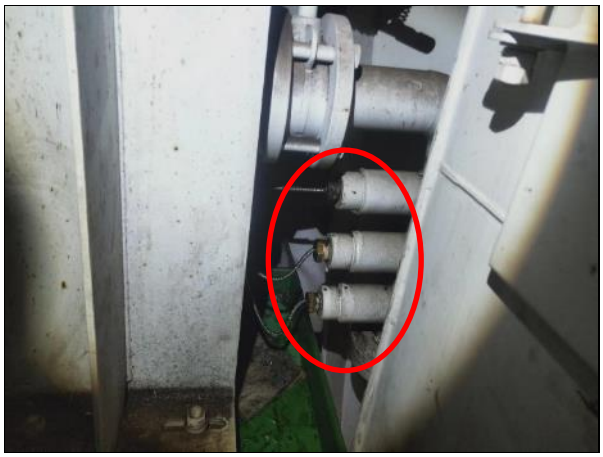

Figure 29 Oil leakage from the sensor of No.3 crane temperature switch

Figure 30 All crane cabin room rust (in machinery room)

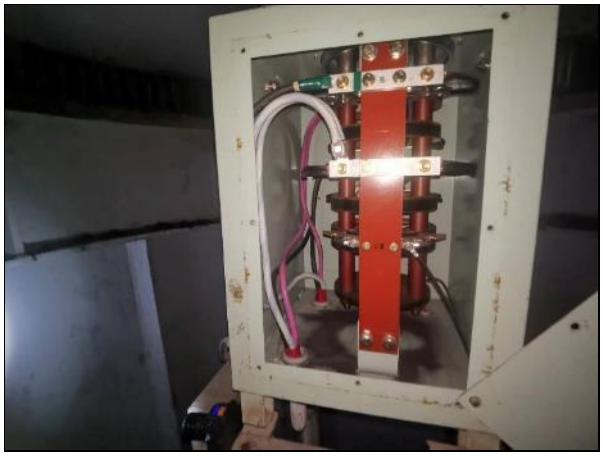

Figure 31 Check the condition of slip ring box