

Inspection Report

General

To:		Customer:	
Vessel name:		IMO No.:	
Engineer:		Job No. :	SE-240628-46992
Date:	06/07/ 2024	Place:	Xiamen port

1. Job description

Attended on board as per customer's requirement to carry out inspection of hatch covers at Xiamen port.

2. Equipment description

Hatch cover: Hydraulic end folding type hatch covers, 1+2 panels for NO.1, 2+2 panel for No.2-5, total 19 hatch panels for all 5 hatches.

Maker: Macgregor

3. Report

The followings had been found during visit.

3.1 Hatch cover panels

- The hatch cover skirt plate (lower part of hatch cover side plate) were corroded, suggest to be descaled and paint. **Pic01**
- Found 2 section of deformed rubber packing channel in No.1-1 portside ,to be repaired. And all the packing channel need to be descaled and paint after removed the rubber packing. **Pic02**
 - The packing channel need to be checked again after removed rubber packing and repair the corroded and deformed packing channel.
- The hatch cover panel joints structure in hinge joint and meeting joint for all 5 hatches were corroded, need to be sandblasted and paint. **Pic03**
- 5pcs snug for quick acting cleats (near the wheel) were deformed. To be renewed. Location as below: **Pic04**
 No.1 starboard side (panel 1-2) **1pc** No.2 portside Panel 2-2--**1pc** Panel 2-3 **1pc**
 No.4 portside Panel 4-2 **1pc** starboard panel 4-2 **1pc**
- All resting stools (mating plates) were corroded which will damaged the flexipad when closing . suggest to be de-rusted and painted . **Pic05**
- Hatch cover backside plate especially in No.1 were corroded, to be descaled and paint. **Pic06**

- The hatch cover ventilation doors were corroded heavily ,suggest to remove all the ventilation doors for maintenance and renew the rubber packing. **Pic07**

3.2 Sealing

- The permanent compression set of straight packing were 4-6mm, and the rubber packing in hinge joint were dirty with cement. Considering the bad condition of packing channel and flexipads need to be renewed and adjusted. Suggest to be renew all the rubber packing during dry dock. **Pic08-09**
- Rubber corners were deformed/damaged, and rubber corners in hinge joint were installed wrong with missing one flat corner. suggest to rectified during packing renewal.

	
Wrong installation --missing flat corner in hinge Joint	Correct packing installation with one flat corner and one L-standing corner

Notes for rubber packing installation:

- 1) Install rubber corner and rubber end first and then install straight rubber packing.
 - 2) Straight pieces must to be cut to nominal length +1%. Suggest to fit straight rubber packing from bottom to the top when hatch cover opened in "A" position. packing joints should be applied with sikiaflex.
 - 3) Do not mix up the different rubber corners. and straight packing were fixed length need to installed according to the drawing.
- Recommend to lubricate all rubber corner and end pieces by molykote/Vaseline always
 - Hose test/ UT test should be carried out before ship departure from shipyard after repair.

3.3 Bearing pad

- Steel to steel Flexipad pad system. The flexipads were checked and found damaged rubber skin and corrosion. Suggest to renew the flexipads according to the flexipads arrangement in final pages. and shim plate need to be prepared for the height adjustment of bearing pads during hatch cover final test. **Pic10**

Damaged Flexipads: LM 200-7pcs LM 350-20pcs LM 500-30pcs

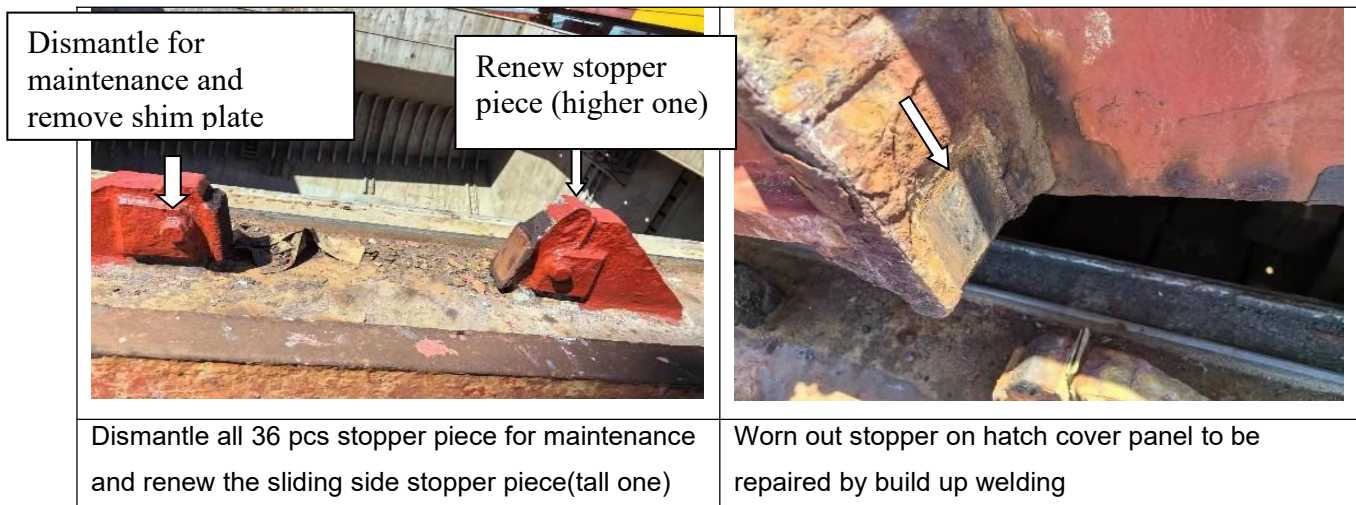
- The shim plates under the flexipads should keep the same thickness when flexipads

renewal.

- All the mating plates should be de-rusted and paint to avoid damaged the rubber shin of flexipads.

3.4 Coaming

- Coaming top were corroded, suggest to be sandblasted and paint. **Pics 11**
- Found 2pcs deformed cleat hole plate in No.4 portside & starboard side, suggest to be repaired by insert plate. **Pics 12**
- Found dent/deformation of compression bar in following position, suggest to be repaired. details as following: **Pics 13**
 - No.1 1section compression bar deformed need to be straightened.
 - No.5 Portside 1dent on center triangular piece need to be repaired by build up welding and grinding to smoothly.
- All the cleats were corroded heavily and the locking nut were unable to removed. Suggest to prepared some spare parts and cleat for renewal and maintenance during drydock. **Pic14**
- The FY stopper were worn out ,Suggest to be repaired as following method
 - All the stopper piece(40pcs) on coaming to be removed and do maintenance and renew the sliding side stopper piece (higher one) .all the shim plates in the stopper piece to be removed and adjusted in hatch cover final test.
 - The FX stopper on hatch cover side suggest to be derusted and repaired the worn out area by build up welding and grinding to smoothly.



- The sliding surface need to be greased to reduce the worn down and smoothly operation.
- Wheel stopper in **No.1AS** and **No.5FS** were deformed/worn out suggest to be renewed. And the wheel stopper in starboard side were stuck, suggest to be free up. **Pic15**

- Running wheels especially flange wheels in No.5 portside were corroded heavily, suggest to be renewed. and other wheels need to be de-rusted and check again. The wasted flange wheel need to be renewed. **Pic16**
- All water drain valves to be removed or plug the drain pipes for protecting the valves from sands/ dirty during dock repair eg. sandblasting. Before ship sailing , all drainage valve to be fit back in position and remove the plug to ensure the water drainage be free.

3.5 Hydraulics & operational

- Checked the working pressure of 2 hydraulic pumps in power station, No.1 280bar, No.2 245 bar which were working in normal condition. **Pic17**
 - Found leaking from one plug of relief valve block , suggest to be repaired.
- Hatch cover control stand working in normal condition, but the control valve block were rust, suggest to do necessary maintenance and renew the corroded emergency quick coupling , pressure test nipple and pressure gauging hose. **Pic18**
- The ball valve under the hatch cover control stands were stuck and handle damaged. Suggest to be free up and renew the damaged handle. **Pic19**
- Found leaking of following hydraulic cylinder suggest to be overhauled. And the hydraulic cylinder body and air plug were corroded which need to be de-rusted and paint. **Pic20**
 3FP 3FS 3AP 4FS
- Found one leaking from hose adaptor in No.1FP hydraulic cylinder bottom, suggest to be repaired. **Pic21**
- The 2pcs warm up valve(bypass valve) were corroded and stuck and have leaking in aft , suggest to renew these 2 warm up valve in drydock. **Pic22**
- Found crack hydraulic hose in following position, need to be renewed immediately . and all the hose coupling were corroded. Suggest to prepare some spare hose and adaptor for emergency use. **Pic23**
 No.1 AS & No.3 AS hydraulic cylinder --2 hoses No.5 control stand 1 hose
- The hydraulic pipes were corroded , suggest to be derusted and paint. And the heavy corroded pipe need to be renewed during drydock. **Pic24**
- No.4 Fwd hatch cover were unable to open fully position, it caused by the worn out end hinges and cylinder hinges. After insert 8mm shim plate in the end hinge , the hatch cover Can be fully open now. **Pic25**
- The top cylinder eye were worn out 5-6mm in following position, suggest to be repaired by build up welding and re-boring . and missing bolt of key plates to be installed. **Pic26**

5mm worn : 1FP 1FS 2FS 2AP 5FP 5FS

6mm worn : 1AP 1AS 2FP

4. Necessary Spare Part

Item	Description	Quantity	Remaks
1	Flexseal,corner flat K100167	38pcs	
2.	Flexseal corner standing K100168	20pcs	
3.	End piece K100169	20pcs	
4	End piece P3-33295	12pcs	
5.	Flexseal 3 way corner K100249	7pcs	
6	Flexseal 3 way corner K101150	7pcs	
7	Flexseal corner flat 135078WD-6011	3pcs	
8	Flexseal corner flat left 135078WD-6013	2pcs	
9	Flexseal corner flat right 135078WD- 6012	2pcs	
10	Fleseal liner KI00168 L=3.6m	18pcs	
11	Fleseal liner KI00168 L=5.5m	18pcs	
12	Fleseal liner KI00168 L=5.7m	2pcs	
13	Fleseal liner KI00168 L=13.6m	1pc	
14	Fleseal liner KI00168 L=18.4m	3pcs	
15	Fleseal liner KI00168 L=20.2m	20pcs	
16	Glue 5kg/can	24can	
17	MCG glue	10pcs	
18	Sikiaflex 221	10pcs	
19	Vanseline 500g/can	10can	
20	Rubber gasket 45x20for ventilator	60m	
21	Drain valve with cap 1019184	5pcs	
22	Snug for cleat M33 1100435	8pcs	
23	Cleat assy M33-L375 K101267	60pcs	
24	Rubber washer for cleat M33	30pcs	
25	Locking nut for M33 cleat	30pcs	
26	Cleat assy M39-L520K101251	45pcs	
27	Rubber washer for cleat M39	30pcs	
28	Locking nut for M39 cleat	30pcs	
29	Locking device 1355078-4110	2sets	
30	Locking device 1355078-4111	2sets	
31	Flexipad LM200/70	10pcs	
32	Shim plate 1mm for Flexpad LM200	15pcs	
33	Shim plate 2mm for Flexpad LM200	15pcs	
34	Shim plate 5mm for Flexpad LM200	5pcs	
35	Flexipad LM350/70	25pcs	
36	Shim plate 1mm for Flexpad LM350	40pcs	
37	Shim plate 2mm for Flexpad LM350	40pcs	
38	Shim plate 5mm for Flexpad LM350	5pcs	
38	Flexipad LM500/70	35pcs	
39	Shim plate 1mm for Flexpad LM500	20pcs	
40	Shim plate 2mm for Flexpad LM500	10pcs	
41	Shim plate 5mm for Flexpad LM500	5pcs	
42	Stud M24-65 1077238	20pcs	
43	M24 Nut and washer	50pcs	
44	Flange wheel with bush 1117641	5pcs	
45	Nut for wheel 1117550	5pcs	
46	Set screw for wheel nut	8pcs	

47	Stopper piece for No.1Fwd item 4062 1355078-4020	2pcs	
48	Shim plate 125x55 x1mm,2mm,3mm	4sets	
49	Stopper piece for No.1aft,2-5 item 4060 1355078-4030	18pcs	
50	Shim plate 175x55 x1mm,2mm,3mm	25sets	
51	locking bolt M20x120 with nut and washer for stopper piece	40pcs	
52	Link plate for No.1aft,245 1355078-3021	5pcs	
53	Link plate for No.1aft,245 1355078-3020	4pcs	
54	End link pin for item2 K100463	5pcs	
55	Spherical bearing for end link pin ID-90	9pcs	
56	End hinge pin item 3	5pcs	
57	Link plate for No.3 1355078-3030	1pc	
58	End link pin for item2 K100465	1pc	
59	Sphrical bearing for end link pin ID-110	1pc	
60	End hinge pin item 3	1pc	
61	Hydraulic pump K102185	1pc	
62	Filter element	3pcs	
63	Ball valve assy Y-16 1102153	2pcs	
64	Seal kits for No.3 hydraulic cylinder	4sets	
65	Cylinder pin for No.3 hydraulic cylinder	3pcs	
66	Spherical bearing for No.3 hydraulic cylinder	3pcs	
67	Seal kits for No.4hydraulic cylinder 1065589	2sets	
68	Cylinder pin for No.4hydraulic cylinder	1pc	
69	Spherical bearing for No.4 hydraulic cylinder	2pcs	
70	Ball valve for control stand K102225	4pcs	
71	Adaptor for ball valve	10pcs	
72	Ball valve handle	10pcs	
73	Pressure gauge for control stand	2pcs	
74	Pressure testing hose with gauge coupling	5pcs	
75	Emergency quick coupling with adaptor for P	5pcs	
76	Emergency quick coupling with adaptor for T	5pcs	
77	Pressure testing nipple in control stand	10pcs	
78	Hose for control stand 1099820	10pcs	
79	Adaptor for hose 1099820	10pcs	
80	Hose for control stand 1099854	6pcs	
81	Adaptor for hose 1099854	6pcs	
82	Hose for No.1 Fwd hydraulic cylinder 1100066L=1200	4pcs	
83	Adaptor for hose 1100066	4pcs	
84	Hose for cylinder No.1aft &2-5 L=1350 1120141	20pcs	
85	Hose for cylinder No.3 L=1400 1099991	8pcs	
86	Adaptor for hose 1120141	20pcs	
87	Plug for hydraulic cylinder	10pcs	
88	Adaptor for control stand	5sets	

5 .Pictures



P1.hatch cover skirt plate corroded



P2. water drain channel in panel joints corroded heavily



P3.Hatch cover panel joints corroded heavily



P4.damaged snug



P5. Mating plate corroded



P6.hatch cover underside rusty



P7. Corroded ventilation doors,



P8. deformed rubber corner



P9 rubber packing dirty with cement



P10. damaged flexipad



P11 coaming top corroded



P12. cleat hole plate deformed



P13 Dent of compression bar on center triangular piece in No.5 P



P14. cleat corroded heavily



P15 wheel stopper worn out



P16. Running wheel corroded heavily



P17 Leaking of plug in Pump station



P18. Hatch cover control stand corroded



P19 Ball valve under control stand corroded and stuck



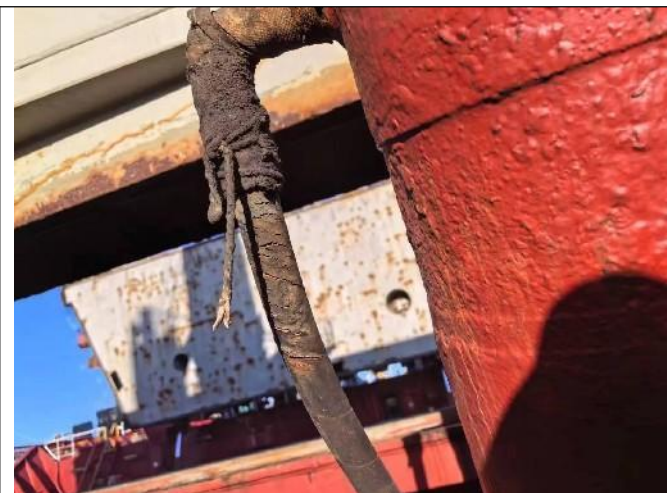
P20. Leaking of hydraulic cylinder



P21 Leaking of bottom hose adaptor of cylinder



P22. leaking of bypass valve



P23 cracked hydraulic hose



P24. corroded hydraulic pipe



P25 hatch cover panel unable to fully open before adjustment



P26. worn out top cylinder eye

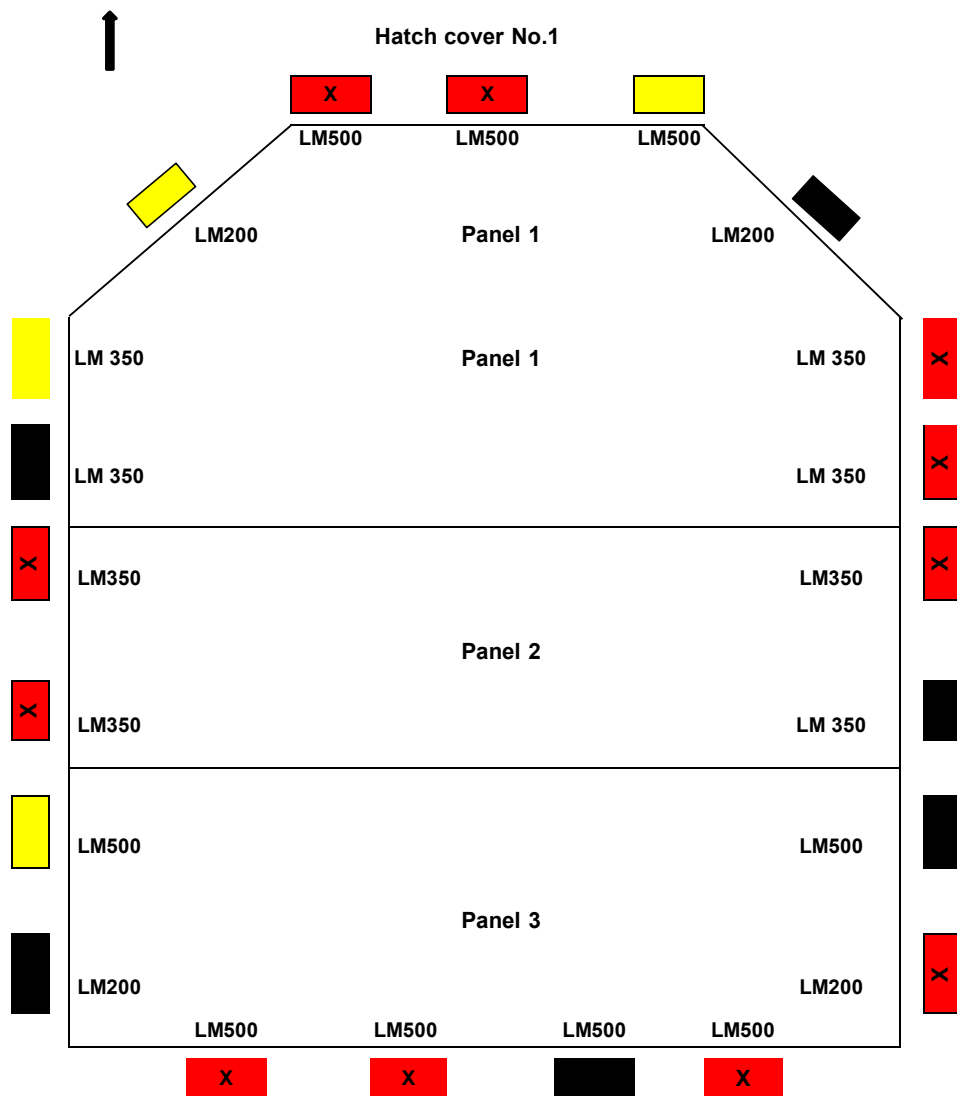


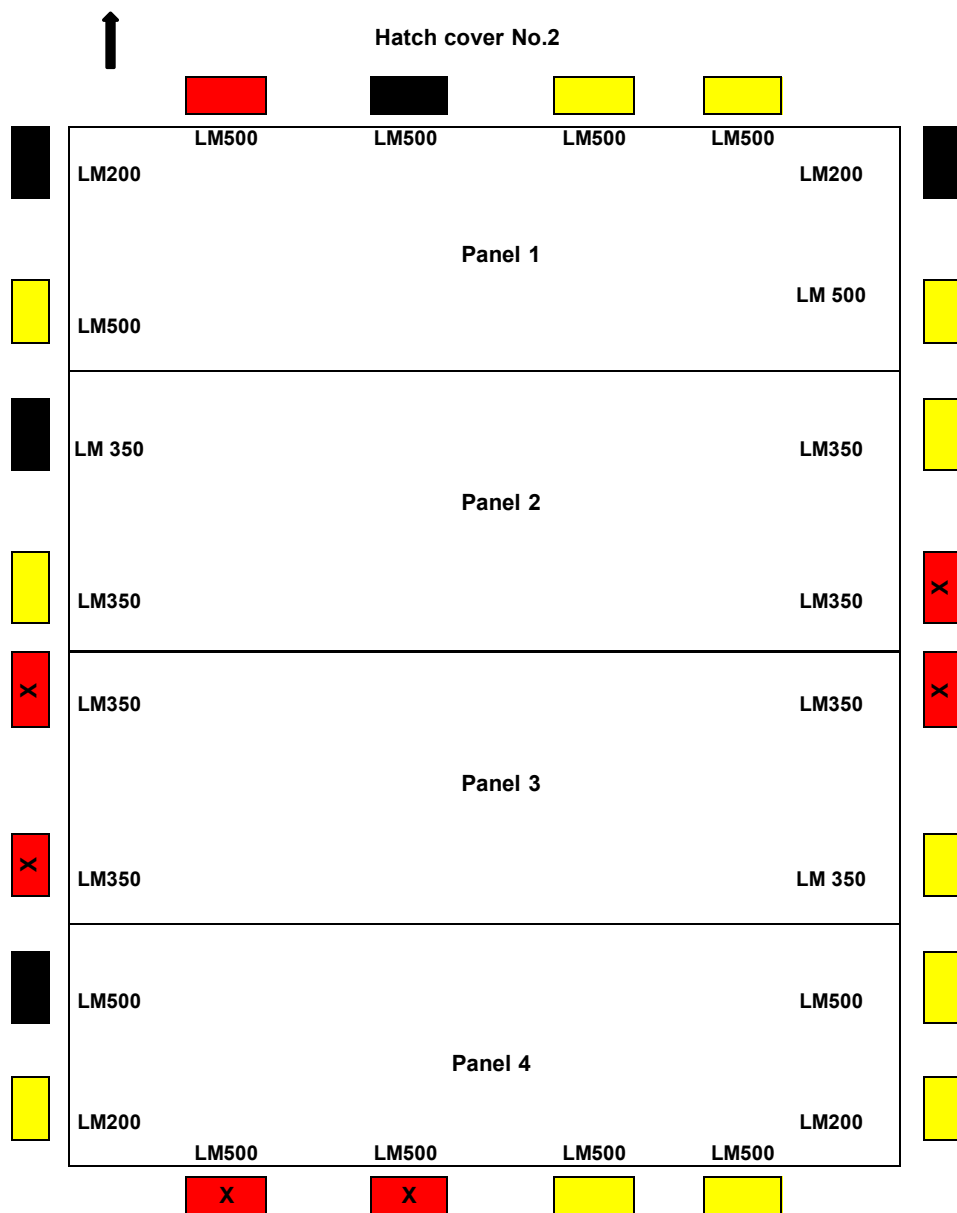
P27 end stopper pin in No.1 Fwd unable to locked And deformed bracket



P28. worn out end hinge link

Flexipad arrangement on coaming

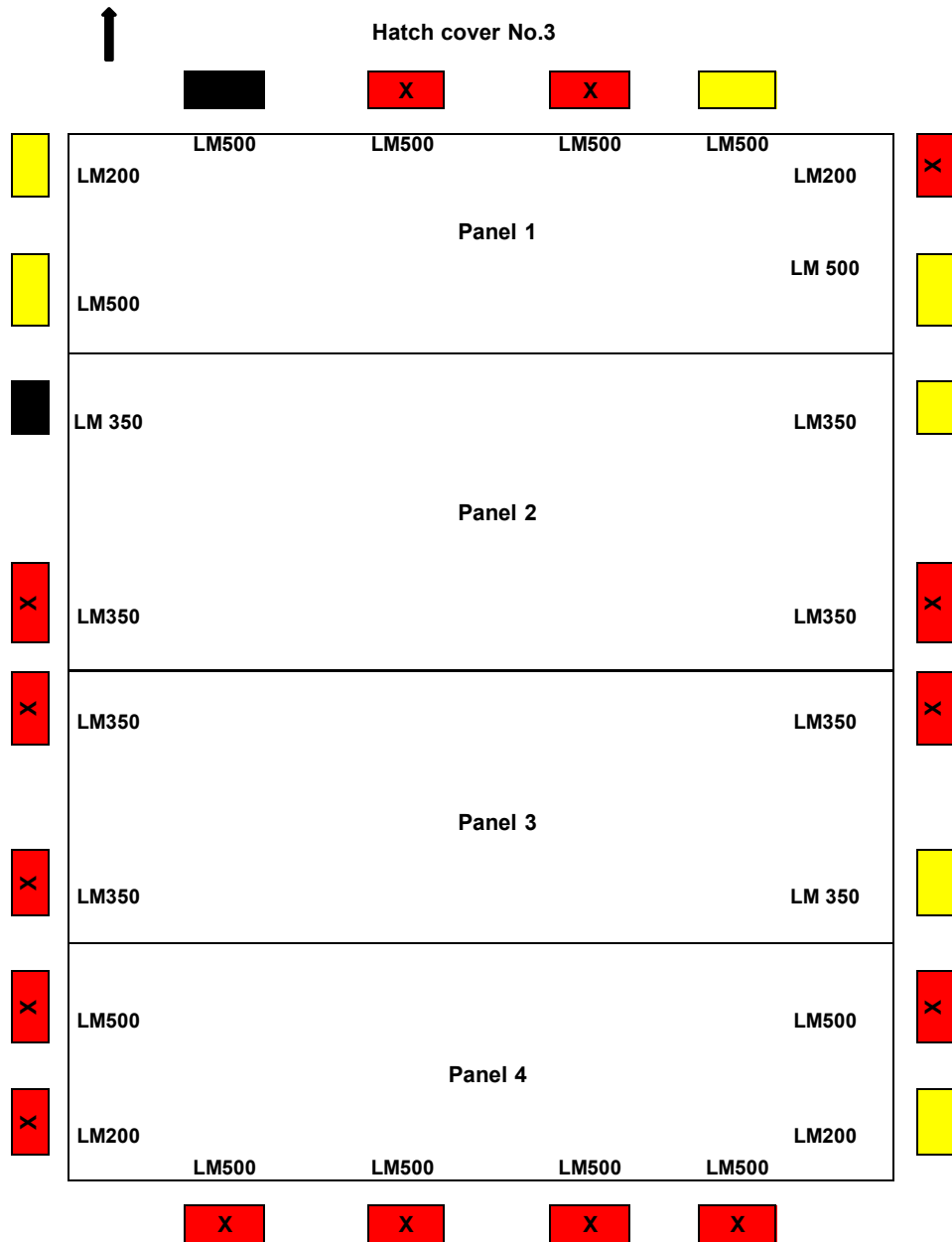




X Flexipads which damaged need to be replaced in this drydock

Flexipads which can be used need keep observation for renewal

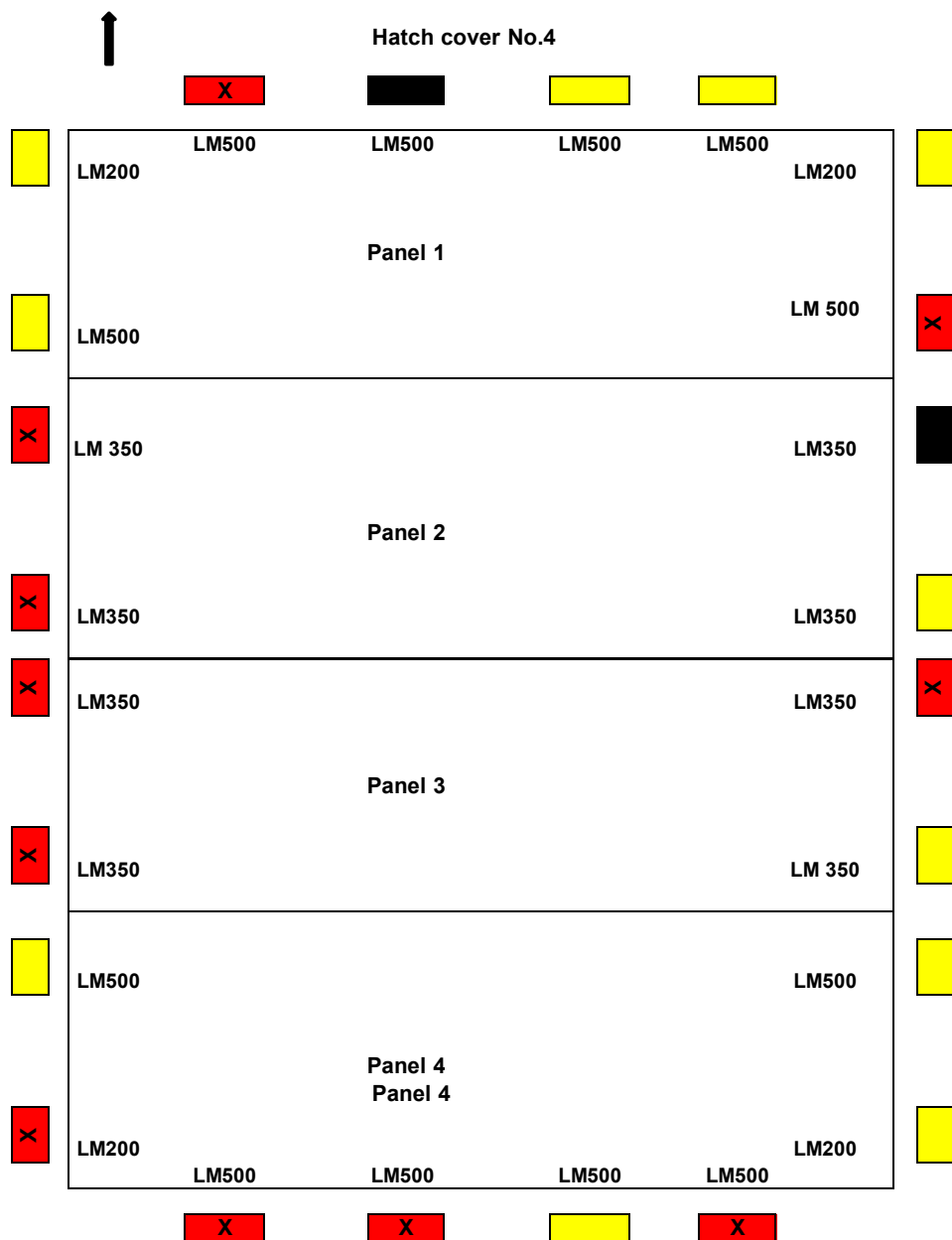
Flexipads which were in normal condition



 Flexipads which damaged need to be replaced in this drydock

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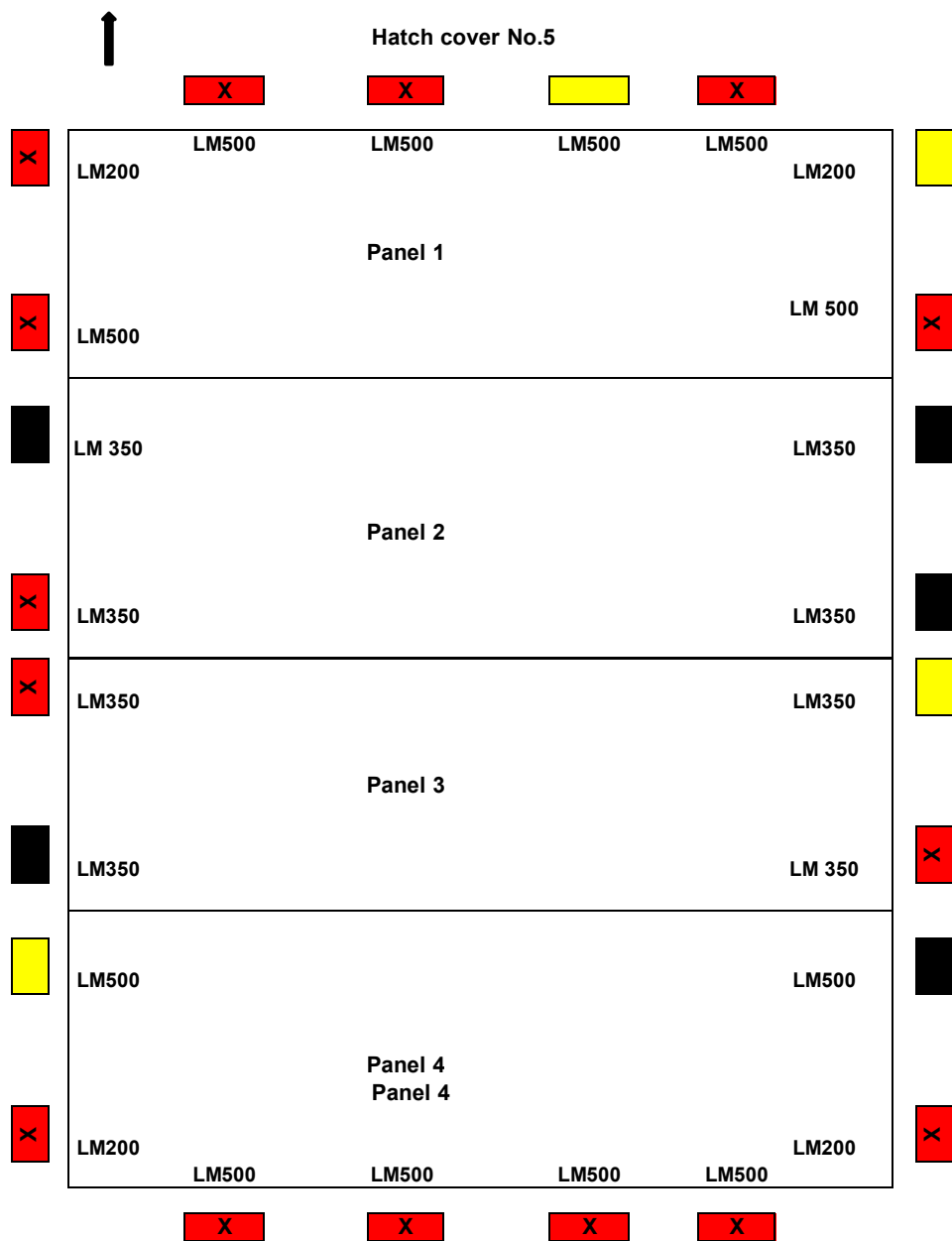
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