
เอกสารแนบที่ 40

คู่มือการจัดการสารเคมี

Thailand – Health, Safety, Security and Environment

Dangerous Goods Handling and Transportation

Key Processes and Procedures (KPP)

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Thailand – Health, Safety, Security and Environment

Dangerous Goods Handling and Transportation

Key Processes and Procedures (KPP)



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FPF-003 JASMINE FIELD

FMS DOCUMENTS


CHEMICAL HANDLING

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	Originator by : Suriya Bunkhrob SHE Division Manager	Reviewed by : Ohm Joramas Marine QSHE Manager	Approved by : Rangsarn Phucharoen Deputy Managing Director
HAZARDOUS SUBSTANCES			

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	Date : 02/09/2024	Revision : 5	Ref : P-06-04
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	CARGO AND HAZARDOUS MATERIALS		

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Inventory of Chemical

Daily Chemical Consumption

ALERT !!! ALERT !!! ALERT !!! Inventory too low 7.5 days

FPF-003 (FPSO)

30 November 2024

Chemicals	Supplier Company	Description	Injection rate (gal/day)	Day tank at midnight (gal)	Sum of tote tank onboard (gal)	Total Onboard (gal)	Total Days to finish
Gas Corrosion Inhibitor Gas vent	Nalco	CORR 11020A	0.24	11.69	0	11.69	48.7
Chemical Name	T/T onboard	Remarks					
Remark							

Jasmine BYA		30 November 2024						
Chemicals		Supplier Company	Description	Injection rate (gal/day)	Day tank at midnight (gal)	Sum of tote tank onboard (gal)	Total onboard (gal)	Total days to finish
FW Demulsifier	P HD	MI-SWACO	EB-8884	4.0	251.0	0	251	62.8
Water Clarifier	Water O/L PS	MI-SWACO	WT-1357	10	30	343	373	37.3
Corrosion Inhib.	P HD	Veolia	WCI-8062	5	245	251	496	99.2
Scale inhibitor	P HD	Veolia	SI-9025	10	93	0	93	9.3
Rig Wash	BYA	Veolia	FWA8584	0	0	0	0	zero injection
TCCA tablet 200G	BYA	WSS	Chlorine	0	0	100	100	zero injection
Gas Corr Inhib.	Bi-Fuel skid	Nalco	CORR-11020A	0.5	13.2	20	33.2	27.7
Gas Corr Inhib.	O/L Prod			0.7				
Note :								
Chemical Name		T/T onboard	Remarks					
WCI-8062		1	(1) S/N#227498 (251 gals)					
FWA8584								
WT-510								
CORR-11020A			4 pails x 5 gals.					
SI-9025								
EB-8884								
WT-1357		2	(1) Feed tank S/N#185869, (2) S/N#185876 (343 gals)					
Empty Tote Tank:		1	(1) S/N#32906BM317					

Item Code	ORG	Item Description	Item Description Long	DEPART	BRAND	Part Number	Sub-Inv	Locator	agory (groty	Planning	Onhand QTY (All	Min QTY	Max QTY
1002713	JAS	OIL, TYPE TELLUS S2 M68, VISC RTG 68, FLASH POINT 235DEG C, CONTAINER DRUM 209L, MFG SHELL, P/N TELLUS S2 M68/209L	OIL, TYPE TELLUS S2 M68, VISC RTG 68, FLASH POINT 235 DEG.C, CONTAINER DRUM 209L	Production	SHELL	TELLUS S2 M68/209 L	PROD-A	PROD-A-PA	CHEMICAL	Min-Max	2	2	4
1002713	JAS	OIL, TYPE TELLUS S2 M68, VISC RTG 68, FLASH POINT 235DEG C, CONTAINER DRUM 209L, MFG SHELL, P/N TELLUS S2 M68/209L	OIL, TYPE TELLUS S2 M68, VISC RTG 68, FLASH POINT 235 DEG.C, CONTAINER DRUM 209L	Production	SHELL	TELLUS S2 M68/209 L	SAT-A	SAT-A-PA	CHEMICAL	Min-Max	2	2	4
1002798	JAS	OIL, TYPE MORLINA S2 BL10, VISC RTG 10, FLASH POINT 150 DEG.C, CONTAINER PAIL 20L, MFG SHELL, P/N MORLINA S2 BL10/20 L	OIL, TYPE MORLINA S2 BL10, VISC RTG 10, FLASH POINT 150DEG.C, CONTAINER PAIL 20L	Production	SHELL	MORLINA S2 BL10/20 L	SAT-A	SAT-A-PA	CHEMICAL	Min-Max	9	4	8
1003485	JAS	GREASE, TEMP RTG -30 TO 130DEG.C, THICKENER LITHIUM, VISC RTG 100, COLOR SMOOTH AMBER/18KG, MFG SHELL, P/N GADUS S2 V100 2	GREASE, TYPE GADUS S2 V100 2, TEMP RTG -30 TO 130DEG.C, THICKENER LITHIUM, VISC RTG 100, COLOR SMOOTH AMBER, CONT 18KG	Production	SHELL	GADUS S2 V100 2	SAT-A	SAT-A-PA	CHEMICAL	Not Planne	4	2	4
1002726	JAS	OIL, VISC RTG 150, FLASH POINT 250 DEG.C, CONTAINER PAIL 20L, MFG SHELL, P/N OMALA S2 G150	OIL, TYPE OMALA S2 G150, VISC RTG 150, FLASH POINT 250 DEG.C, CONTAINER PAIL 20L	Production	SHELL	OMALA S2 G150	SAT-A	SAT-A-PA	CHEMICAL	Min-Max	7	0	1
1002716	JAS	OIL, TYPE OMALA S2 G, VISC RTG 460, FLASH POINT 260 DEG C, CONTAINER PAIL/20L, MFG SHELL, P/N OMALA S2 G 460/20 L	OIL, TYPE OMALA S2 G, VISC RTG 460, FLASH POINT 260 DEG C, CONTAINER PAIL/20L	Production	SHELL	OMALA S2 G 460/20 L	SAT-A	SAT-A-PA	CHEMICAL	Min-Max	4	0	1
1002647	JAS	OIL, TYPE TELLUS S2 MX68, VISC RTG 68, FLASH POINT 235DEG C, CONTAINER PAIL 20L, MFG SHELL, P/N TELLUS S2 M68/20L	OIL, TYPE TELLUS S2 MX68, VISC RTG 68, FLASH POINT 235DEG.C, CONTAINER PAIL 20L	Production	SHELL	TELLUS S2 MX68/20L	SAT-A	SAT-A-PA	CHEMICAL	Min-Max	4	2	6
1003486	JAS	GREASE, TYPE GADUS S2 V220 2, TEMP RTG -20 TO 130 DEG C, THICKENER LITHIUM, VISC RTG 160, COLOR BROWN, CONTAINER CAN/18L, MFG SHELL, P/N GADUS S2 V220 2/18 L	GREASE, TYPE GADUS S2 V220 2, TEMP RTG -20 TO 130DEG.C, THICKENER LITHIUM, VISC RTG 160, COLOR BROWN, CONTAINER CAN 18L	Production	SHELL	GADUS S2 V220 2/18 L	SAT-A	SAT-A-PA	CHEMICAL	Not Planne	3	0	0
1002645	JAS	OIL, VISC RTG 220, FLASH POINT 240 DEG.C, CONTAINER PAIL 20L, MFG SHELL, P/N OMALA S2 GX220	OIL, VISC RTG 220, FLASH POINT 240 DEG.C, CONTAINER PAIL 20L, MFG SHELL, P/N OMALA S2 GX220	Production	SHELL	OMALA S2 GX220	SAT-A	SAT-A-PA	CHEMICAL	Min-Max	4	2	6
1003679	JAS	GREASE, TYPE ALBIDA HD 2, TEMP RTG -20 TO 150DEG.C, THICKENER LITHIUM COMPLEX, VISC RTG 460, COLOR LIGHT BROWN/18KG., MFG SHELL, P/N GADUS S3 V460 2	GREASE, TYPE ALBIDA HD 2, TEMP RTG -20 TO 150DEG.C, THICKENER LITHIUM COMPLEX, VISC RTG 460, COLOR LIGHT BROWN, CONT 18KG.	Production	SHELL	GADUS S3 V460 2			CHEMICAL	Not Planne	0	1	2

Loadout Visual Inspection Checklist



No.	Company	miswaco	
	Manifest		
	Destination	Jasmine	
	Vessel	SC Ganya	
	Date	18-12-2024	

Number CCUs	Indicator: Yes = Y, No = N, Not Applicable = N/A									
	S/N 186093		S/N 186056		S/N 186110		S/N 186087		S/N 186057	
	Originator	Verifier	Originator	Verifier	Originator	Verifier	Originator	Verifier	Originator	Verifier
1. CCU are in good condition & secured (frames, doors, seals, locks, plug.) CCU มีสภาพดี หรือไม่งาน (สภาพประตู, กลอนล็อก, ซีล สายไฟ โครงสร้าง, ปลั๊กสายระบายน้ำ)	Y		Y		Y		Y		Y	
2. CCU certificates are valid. Certificates ของ CCU ต้องอยู่ในสภาพที่ใช้งานได้ 2.1 Visual certificate 12 months 2.2 NDT/MPI certificate 12 months	Y		Y		Y		Y		Y	
3. Serial number & MGW marking on CCU or on top of containers. มีการทาสี MGW, เบอร์ซีล, ข้อบ่งชี้ไว้อย่างชัดเจนและถูกต้องบน CCU หรือด้านบนของตู้คอนเทนเนอร์ "คอนเทนเนอร์ชนิด Open-top ต้องมีป้าย สามารถระบุได้ด้านข้างได้"	Y		Y		Y		Y		Y	
4. Tag line condition, Length are suitable and fit for purpose? Tag line must be "Manila Rope". Tag line อยู่ในสภาพพร้อมใช้งาน มีความยาวที่เหมาะสม ไม่สั้นหรือยาวเกินไป และต้องเป็นเชือกมะนิลาเท่านั้น	Y		Y		Y		Y		Y	
5. Specific weight of CCU. CCU is not overload capacity And, load should be balanced. ระบุน้ำหนักของ CCU, CCU ต้องบรรจุสินค้าในเกณฑ์น้ำหนักตามที่ระบุไว้และสินค้าจะต้องจัดวางให้สมดุล	Y		Y		Y		Y		Y	
6. Any Liquid, powder or gas lost from an imperfectly sealed container สินค้าประเภทของเหลว, ผง, ก๊าซ ต้องบรรจุในภาชนะที่ถูกต้องและปิดผนึกอย่างรัดกุม ไม่มีการรั่วไหลของสินค้า	Y		Y		Y		Y		Y	
7. Lid, valve, Valve Cap, seal are in good condition and Canvas are properly installed ฝาถังถัง, วาล์ว, ฝาปิดวาล์ว, ซีลมีสภาพดีพร้อมใช้งาน และมีผ้าใบคลุมอย่างถูกต้องเหมาะสม	Y		Y		Y		Y		Y	
8. All required documents are in place and correct such as SDS, GHS labeling or warning sign เอกสารถูกต้องกับสินค้า เช่น SDS, GHS labeling หรือ ป้ายเตือน อันตรายต่างๆที่อาจเกิดขึ้น	Y		Y		Y		Y		Y	
9. Are cotter pins in place, secured and in good condition. Cotter pin must be "Extended Prong" Type. มีการใช้พินยึดที่ถูกต้องและเหมาะสม ตัวพินต้องมีสภาพพร้อมใช้งาน ชนิดที่ใช่คือ Extended Prong ตามรูป 	Y		Y		Y		Y		Y	
10. Lifting color coded up to date and comply with current color coded campaign รหัสสีถูกต้องและชัดเจน	Y		Y		Y		Y		Y	
11. Check potential dropped object ไม่มีโอกาสเสี่ยงของอุปกรณ์ เศษหิน หรืออื่นๆ	Y		Y		Y		Y		Y	
12. There is no twisted, Trapped slings and snagged equipment สลิงไม่มีลักษณะไขว้ เหน็บหรือพันติดอยู่กับสินค้า	Y		Y		Y		Y		Y	
13. Equipment is not extended over or protrude. If the height is over CCU, it must not over 1/3 of CCU's height. Except it is specific designed of individual cargo. สินค้าไม่ยื่นโผล่สูงหรือยื่นออกด้านข้าง หากยื่นสูงเกินขอบ CCU จะต้องไม่เกิน 1 ใน 3 ของความสูง CCU เว้นแต่จะเป็น CCU ที่ถูกออกแบบมาเฉพาะสินค้านั้นๆ	Y		Y		Y		Y		Y	
14. Sling is not wear and tear, sufficient of lubricant. สลิงมีสภาพดี ไม่เป็นสนิม ไม่สึกหรอหรือขาด และได้รับการทาปาส์อย่างเหมาะสม	Y		Y		Y		Y		Y	
15. Use the appropriated CCU and ensure Cargo/materials are packing properly and securely. เลือก CCU ได้เหมาะสมกับชนิดและขนาดสินค้า และสินค้าได้รับการบรรจุอย่างถูกต้องเหมาะสมและปลอดภัย	Y		Y		Y		Y		Y	
16. Destination labels are properly posted. มีการติดฉลาก/สัญลักษณ์ระบุปลายทางที่ของส่งถึง	Y		Y		Y		Y		Y	
Origin 1st verifier:	(signature)		Name:	Piya N.		Date:	18-12-2024			
Origin 2nd verifier (Optional):	(signature)		Name:			Date:				
Port Verifier:	(signature)		Name:			Date:				
Receipt verified by: (Destination)	(signature)		Name:			Date:				

Loadout Visual Inspection Checklist



No.	Company	MISWACO	
	Manifest		
	Destination	Jasmine	
	Vessel	SC Ganya	
	Date	18-12-2024	

Number CCUs	Indicator: Yes = Y, No = N, Not Applicable = N/A									
	S/N 186060		S/N 185879		S/N		S/N		S/N	
Activity	Originator	Verifier	Originator	Verifier	Originator	Verifier	Originator	Verifier	Originator	Verifier
1. CCU are in good condition & secured (frames, doors, seals, locks, plug.) CCU มีสภาพดี พร้อมใช้งาน (สภาพประตู, กลอนล็อก, ซีล สายไฟ โครงสร้าง, ปลั๊กอุดรูระบายน้ำ)	Y		Y							
2. CCU certificates are valid. Certificates ของ CCU ซึ่งอยู่ในอายุการใช้งานได้ตามที่กำหนดไว้ 2.1 Visual certificate 12 months 2.2 NDT/MPI certificate 12 months	Y		Y							
3. Serial number & MGW marking on CCU or on top of containers. มีการทาสี MGW, เบอร์ซี, หมายเลขซีรียัลอย่างชัดเจนและถูกต้องบน CCU หรือด้านบนของตู้คอนเทนเนอร์ "คอนเทนเนอร์ชนิด Open-top ต้องมีป้าย สามารถระบุไว้ด้านข้างได้"	Y		Y							
4. Tag line condition, Length are suitable and fit for purpose? Tag line must be "Manila Rope". Tag line อยู่ในสภาพพร้อมใช้งาน มีความยาวที่เหมาะสม ไม่สั้นหรือยาวเกินไป และต้องเป็นเชือกมะนิลาเท่านั้น	Y		Y							
5. Specific weight of CCU. CCU is not overload capacity And, load should be balanced. ระบุน้ำหนักของ CCU, CCU ต้องบรรจุสินค้าในเกณฑ์ที่กำหนดไว้และสินค้าจะต้องจัดวางให้สมดุล	Y		Y							
6. Any Liquid, powder or gas lost from an imperfectly sealed container สินค้าประเภทของเหลว, ผง, ก๊าซ ต้องบรรจุในภาชนะที่ถูกต้องและปิดผนึกอย่างรัดกุม ไม่มีการรั่วไหลของสินค้า	Y		Y							
7. Lid, valve, Valve Cap, seal are in good condition and Canvas are properly installed ฝาถัง, วาล์ว, ฝาปิดวาล์ว, ซีลมีสภาพดีพร้อมใช้งาน และมีผ้าใบคลุมอย่างถูกต้องเหมาะสม	Y		Y							
8. All required documents are in place and correct such as SDS, GHS labeling or warning sign เอกสารถูกต้องกับสินค้า เช่น SDS, GHS labeling หรือ ป้ายเตือนอันตรายต่างๆที่อาจเกิดขึ้น	Y		Y							
9. Are cotter pins in place, secured and in good condition. Cotter pin must be "Extended Prong" Type. มีการใส่พินล็อกที่ถูกต้องและเหมาะสม ตัวพินล็อกมีสภาพพร้อมใช้งาน พินล็อกที่ใช้คือ Extended Prong ตามรูป	Y		Y							
10. Lifting color coded up to date and comply with current color coded campaign รหัสสีถูกต้องและชัดเจน	Y		Y							
11. Check potential dropped object ไม่มีโอกาสหลุดของอุปกรณ์ เศษหิน หรืออื่นๆ	Y		Y							
12. There is no twisted, Trapped slings and snagged equipment สลิงไม่มีลักษณะไขว้ เหนียวหรือพันติดอยู่กับสินค้า	Y		Y							
13. Equipment is not extended over or protrude. If the height is over CCU, it must not over 1/3 of CCU's height. Except it is specific designed of individual cargo. สินค้าไม่ยื่นโผล่สูงหรือยื่นออกด้านข้าง หากยื่นสูงเกินขอบ CCU จะต้องไม่เกิน 1 ใน 3 ของความสูง CCU เว้นแต่จะเป็น CCU ที่ถูกออกแบบมาเฉพาะสินค้านั้นๆ	Y		Y							
14. Sling is not wear and tear, sufficient of lubricant. สลิงมีสภาพดี ไม่เป็นสนิม ไม่สึกหรนหรือขาด และได้รับการทาป๊าวาดีอย่างเหมาะสม	Y		Y							
15. Use the appropriated CCU and ensure Cargo/materials are packing properly and securely. เลือก CCU ที่เหมาะสมกับชนิดและขนาดสินค้า และสินค้าได้รับการบรรจุอย่างถูกต้องเหมาะสมและปลอดภัย	Y		Y							
16. Destination labels are properly posted. มีการติดฉลาก/สติกเกอร์ระบุปลายทางที่ชัดเจน	Y		Y							

Origin 1st verifier:	(signature)	Name:		Date:	18-12-2024
Origin 2nd verifier (Optional):	(signature)	Name:		Date:	
Port Verifier:	(signature)	Name:		Date:	
Recipient verified by: (Destination)	(signature)	Name:		Date:	

เอกสารแนบที่ 42


รายละเอียดอุปกรณ์ Marine Breakaway Coupling
ของท่อส่งน้ำมันและการบำรุงรักษา



MARINE BREAKAWAY COUPLING (MBC)

REFURBISHMENT REPORT

SERIAL NUMBER: GTM 1882

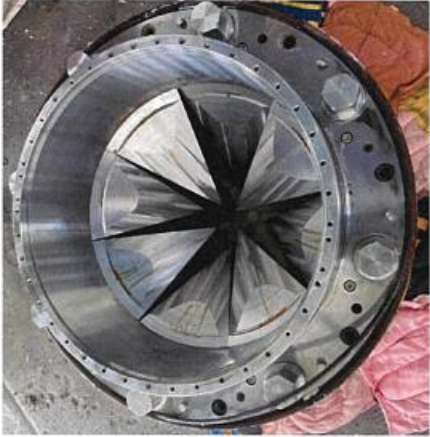
<div> <div> Gall Thomson proven technology </div> <div> Marine Breakaway Coupling & Camlock Coupling Solutions Gall Thomson Environmental Ltd Technology Centre, Saffling Road, Great Yarmouth Norfolk NR30 3QP, United Kingdom Tel: +44 (0) 1493 857936 Fax: +44 (0) 1493 850988 Email: mat@gall-thomson.co.uk Web: www.gallthomson.com </div> </div>					
<div> <div> Refurbishment Report </div> </div>					
<div> <div> Gall Thomson Engineering Report </div> </div>					
Document Number:	SO 4891 RR				
Terminal/Site Location:	FPSO JASMINE				
GTM Reference:	SO4891				
Serial Number:	GTM 1882				
<div> <div> PETROFAC SOUTH EAST ASIA PTE LIMITED </div> </div>					
<div> <div> <div> <div> Client: </div> <div>  </div> <div> Petrofac </div> </div> </div> </div>					
Revision	Date	Status	Author	Checked by	Approved by
A	19/09/2023	FOR RELEASE	TL	SH	CC
<div> <div> Executive Summary </div> <div> This report documents the condition of MBC Serial Number GTM 1882. </div> </div>					
<div> <div> Key: </div> <div> Upstream = Male Half Downstream = Female Half </div> </div>					

4. Comments on MBC Condition and Refurbishment

GTM 1882 was returned to Bangkok, Thailand for refurbishment in a non-activated state. The following provides an overview of the work that has been completed during the refurbishment of this unit:

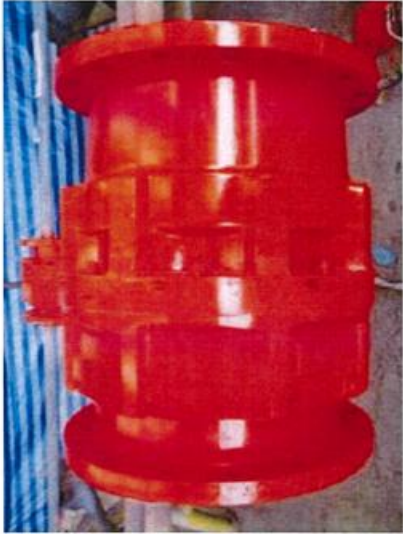
- Receive MBC at factory and log into system
- Initial delivery inspection
- Preparation for blasting
- Blasting clean
- Removal of Breakstud assembly
- Removal of stop ring
- Removal of sleeve
- Complete disassembly of valve components
- Detail inspection of all components and body halves
- Replacement of all springs
- Replacement of all seals
- Reassembly of MBC halves
- Third Party Inspection arranged
- Closure tests as with new unit
- Breakstud destructive testing
- Body integrity test
- Systems pressure test
- Reinstallation of Breakstud assembly
- Painting
- Boxing up

On completion of the refurbishment, re-assembly of GTM 1882 could commence, with components such as springs, seals and Breakstuds all being replaced. After passing the required pressure and function tests, the MBC could be re-painted, and the refurbishment finalised.





Figures GTM 1882 – Showing various stages of refurbishment and testing



Figures GTM 1882 – Showing Painting process.

5. Conclusions and Recommendations

Following the refurbishment of GTM1882, Gall Thomson would recommend the following for your fleet of MBCs

Gall Thomson recommend regular inspections of the MBC when in service within the transfer system, it is recommended to inspect the MBC regularly. The 4 main areas of concern are

1. The Splitline, where the two halves of the MBC meet is called the splitline. It is vital that this area is in good condition. If it becomes compromised, seawater could enter the inner workings of the MBC and detrimentally affect the MBC performance. There are usually two ways a splitline can become compromised, either through corrosion when the paint system has been compromised due to lack of regular refurbishment in line with Gall Thomson's recommendations. Corrosion can also set in the splitline if the MBC has been subject to unusual stress such as an impact from a propeller, support vessel or similar incident. If the splitline has been compromised, there is a risk that the MBC could spuriously activate. Any issues related to corrosion can seriously compromise the life of the unit if not properly repaired. If you have any concerns regarding the condition of the splitline of any of your MBCs please contact Gall Thomson for advice. Gall Thomson has produced a document to understand the fundamentals of corrosion issues on MBCs and how to prevent it in the first place. If you need a copy of this document, please contact us.
2. Flange Condition, if an MBC is installed into the hose string and the studs are over-torqued, in extreme cases it is possible to bend the MBC flange, there is potential for the flanges to become deformed beyond ASME tolerances. Always torque the MBC to the gasket manufacturer recommendations to reduce the possibility of deformed flanges.
3. Stainless Steel Inlays- If an MBC is regularly flushed with seawater, there is likely chance that internal corrosion could develop. When this occurs, the only parts of a coupling which experiences product flow at all times and is therefore most susceptible to Corrosion is the bore of the Stainless-Steel sleeve and an area of the body's material situated at either end of the sleeve. To minimise the amount of Corrosion the MBC sees when put back into service, Gall Thomson would advise the inclusion of Stainless-Steel Inlays at either end of the sleeve. This will ensure that the product flowing through the MBC as well as seawater will only contact Stainless Steel parts; the Carbon Steel body being isolated by the sleeve seals internally and the flange gaskets externally.

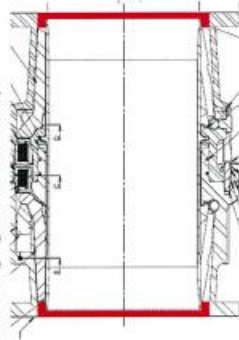


Figure 1 – Drawing Taken from a 16" Petal Valve MBC

4. Paint Condition, if an MBC is dragged across a dockside or collides with the side of a vessel, this will cause the paint system to be compromised. Continued use of the MBC in such condition can lead to unnecessary corrosion on the MBC body. One way to improve lifting and handling techniques is the retrofit option of Lifting Lugs, which is available from Gall Thomson across all MBC sizes and ranges. If you have concerns over the body condition of your MBC, please contact Gall Thomson for advice on MBC maintenance and best handling procedures.
- To reduce the possibility of additional repair works, Gall Thomson recommend refurbishing your MBC within OEM guidelines and recommendations, which is supported in the OCIMF information paper on Marine Breakaway Couplings (2008) a full copy of the information paper is available upon request from Gall Thomson
 - Gall Thomson recommends the retrofitting of the Locking Petal Mechanism. When a Petal valve or Petal17 MBC activates, it may not always be possible to retrieve the MBC from the string as sea and weather conditions can delay offshore operations. During this spell of bad weather and increased wave motion, any product contained within the hose string will be moving along with wave motion and could cause the Petals to flutter open and close. Petal Locking eliminates this potential fluttering of the Petals by locking them in the closed position, fully containing the product within the hose string and allowing the flushing of the hose string and the safe removal of the MBC. Flushing Adaptor spools are also available from Gall Thomson in all MBC sizes and closure types, please contact Gall Thomson for further information of Flushing Adaptor Spools
 - To potentially reduce Body corrosion of the MBC, Gall Thomson would recommend the retrofitting of Anodes, These Anodes are designed to be the point of focus for corrosion rather than the Carbon Steel forging of the MBC. A document produced by Gall Thomson highlighting different levels and types of corrosion found on an MBC and preventive measures can also be issued upon request.
 - MBCs that have not seen active service are still required to be refurbished with OEM guidelines. This is to avoid compression set within the springs and seals.
 - To maintain Gall Thomson 3-year warranty throughout the design life of your MBCs, the OEM recommended service interval of every 3-5 years should be maintained throughout the design life.
 - Next service due no later than September 2028

This certificate confirms that the personnel, procedures, parts and quality controls commissioned for the titled unit was to that expected of the GTAC standard.

Commissioning client: Petrofac South East Asia Pte Limited

Unit type: 16" NB. STD CDC Petal Valve MBC ASME 150lb

Unit serial number: GTM 1882

Summary of certified work: Standard refurbishment programme.

Date of certification: 21 September 2023
Valid until: 12 months from date of installation or 18 months from date of delivery, whichever period expires first.

Certificate number: SO 4891 GC 1



Gall Thomson proven technology <small>Marine Breakaway Coupling & Camlock Coupling Solutions</small>		Gall Thomson Engineering Report
		PETROFAC SOUTH EAST ASIA PTE LIMITED
		SO4891

6. Best Practice Operation

Gall Thomson’s advice is that ideally, an MBC should be refurbished after 3 years of active service. Under some circumstances, this can be extended slightly to allow for maintenance schedules, hose change outs, weather windows, etc. **However, under no circumstances should the MBC remain in active use for more than 5 years.**

Our advice is to keep 100% spares on-site, with the same specifications, particularly regarding closure time, design parting load and transfer medium parameters.

Every 3 years, the spares units should be installed in the hose string and the “active” MBC’s removed. The removed MBC’s should undergo a full inspection, strip-down and rebuild refurbishment, re-testing and re-certification by a GTAC qualified engineer.

Upon their return to the terminal, these units become the “spare”, while the recently-installed MBC’s remain in the line. Operating in this way allows cyclic maintenance, always ensures a terminal can be quickly brought back to full safe operation after an activation and saves the considerable cost of a second work-trip offshore to re-install the newly-refurbished MBCs into the hose string.

The sharing of MBC’s between systems can risk the incorrect settings being used, and therefore considerably damage the environment should the unit be required to activate, or activate spuriously due to the incorrect partition settings being applied.

These recommendations are also backed by the OCIMF who made the following recommendations on Marine Breakaway Couplings in their report of 2008:

- *Manufacturer’s recommendations on MBC installation, handling, visual examination and maintenance, particularly maintenance intervals, should be strictly adhered to. Maintenance intervals should consider the environmental loadings analysed, as well as the frequency of tanker operations that may require a reduction in service life.*
- *Spare MBCs should be onsite, permitting change-out and maintenance while maintaining a consistent standard of protection.*
- *Maintenance contracts with manufacturers should be considered to ensure required maintenance is undertaken by adequately trained personnel, utilising approved parts. Manufacturers should consider licensing local/regional companies to undertake maintenance, thereby facilitating continuation of manufacturer’s warranties.*

A full copy of the report compiled by the OCIMF is available from Gall Thomson upon request

HISTORY DETAILS



FPPF-003/Maintenance

Component Number From: X-2515
Work Order From: 23/144717
Job Class From:
Job Description Code From: S9060
Date From: 5/2/2024
Written By From: JKON

To: X-2515
To: 23/144717
To:
To: S9060
To: 5/2/2024
To: JKON

History

Last Updated: 5/2/2024 08:56:20

History Date: 5/2/2024

Work Order No.: 23/144717

Component No.: X-2515

Component Name: Gall Thompson Breakaway Coupling

Component Type: CRM 12 CDC

Serial No.: GTM 0466

Counter: 12 Month(s)

Written by: J KON

History CommentsS9060 - 12M BREAKAWAY COUPLING
VISUAL INSPECT.

System: 25-02 Offloading Hose

Job Code/Rev: S9060

Job Title: 12M BREAKAWAY COUPLING VISUAL INSPECT.

Unexp. Work: No

Maint. Class: **Process Containment**

Maint. Type: Inspection

Maint. Cause: Corrosion

Date Done: 5/2/2024

Due Date: 5/2/2024

Created By: SSWU

Planned By: SSUU

Work Order No.: 23/144717

Overall visual inspect found to be satisfactory.

- > Remove marine growth. - OK
- > Inspect the floatation collars. - OK.
- > Inspect paint.- OK

see photo in X:\1. Amos Drop Box for Attachments\Marine\Berakaway coupling\Annual inspection
Feb 2024

เอกสารแนบที่ 43



Offloading Hose Inspection & Testing

WORK PACKAGE

TESTING OF OFFLOADING HOSE OFFSHORE

Submit to: FPSO FPF-003



0	24/03/2022	AU	ISSUED FOR APPROVE	-	-	EMC
REV	DATE	BY	DESCRIPTION	CHECK	APPR	COMPANY
TOTAL OR PARTIAL REPRODUCTION AND/OR UTILIZATION OF THIS DOCUMENT ARE FORBIDDEN WITHOUT PRIOR WRITTEN AUTHORIZATION OF THE OWNER						
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		EMC ENTERPRISE COMPANY LIMITED				
DOCUMENT NO.		DOCUMENT NO.		REVISION	STATUS	
-		-		-	Submission	



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		Date: 24/03/22	

CONTENT

Section 1	: General Propose / Project Scope
Section 2	: Testing of Hoses Procedure
Section 3	: Testing procedure (Thai Version Report format)
Section 4	: Tool and Equipment List
Section 5	: Project Organization Chart
Section 6	: Work Methods
Section 7	: Calibration Certificate
Section 8	: Hose test and Lifting certificates

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	WORK PACKAGE	Revise: 1	
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		Date: 24/03/22	

SECTION1 : GENERAL PROPOSE / PROJECT SCOPE





GENERAL PROPOSE

Board FPF-003 Provide EMC Enterprise manpower support for Breakdown Testing of Offloading Hose Petrofac (Offshore). the project timeline detail as follow;

- The Scope of this procedure is applicable for Visual Inspection, Hydrostatic Test, Elongation Check, Electrical Continuity & Dis-Continuity Test and Vacuum Test for these hoses.
- Material arrangement and Work package.
- Offshore operation shall use 23 days for Hose test inspection. So, Phase hose test inspection detail as follow;

PROJECT SCOPE

- To provide Testing of 21 set of offloading hoses.
- To provide and performed leak test & pressure test.
- To Provide and performed Elongation measurement test.
- To provide and performed Vacuum test.
- To provide and performed Electrical continuity test.
- Supply tools and equipment, Consumable for Onshore and Offshore operation.
- Provide Pressure Gauges with Calibration Certificates.
- Provide Pressure Recorder with Calibration Certificates.
- Provide High Pressure Pump (Pressure test)
- Provide Vacuum Pump with calibrated pressure gauge
- Provide Mega Ohms Meter 0-5,000 Voltage DC with Calibration Certificate.
- Provide Transparent Plexiglass Flange 150#, 40 mm. thk. with Gasket and Stud bolts.
- Provide the Skilled Manpower to respond above subject job.

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SECTION 2 : TESTING OF HOSES PROCEDURE

TEST OF HOSE PROCEDURE

Visual Inspection

1. External check

Attention paid to;

- Serious damage to hose cover and body (cut, gouges, or tears, etc.)
- Permanent deformation of hose body
- Cracks or craze on hose surface
- Damage to flange surface

2. Internal check

Look into the end of hose assembly for irregularities in the lining or nipples by utilizing a flashlight.

For lining:

- Blisters, bulges, crack or separation
- Tear, cuts or gouges

For nipples:



- Cracks
- Excessive corrosion

Hydrostatic Test

Each hose should be pressure tested with water to its stated pressure rating. The procedure should be as follows:

1. Lay out the hose as straight as possible on supports that permit the hose to elongate freely.
2. Fill with water, venting to remove all air, and apply a pressure of 0.7 bar (10 psi).
3. Measure the overall length (L1) of the hose assembly.

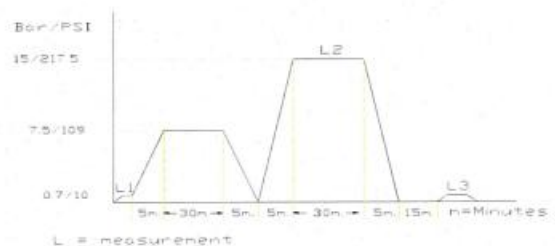
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4. Increase the pressure over a period of 5 minutes, from 0.7 bar (10 psi) to 7.5 bar (109 psi) Hold this pressure for 30 minute, and then reduce the pressure over a period of 5 minutes to zero.
5. Raise the pressure over a period of 5 minutes to 15 bar (217.5 psi) (rate pressure) and hold this pressure for 30 minutes.
6. Before releasing the full test pressure, measure the overall length (L2) of the hose assembly to ascertain the temporary elongation and record the increase as percentage of the original length (L1) measured at 0.7 bar (10 psi).
7. Reduce the pressure over a period of 5 minutes to zero.
8. After an interval of at least 15 minutes raise the pressure again to 0.7 bar (10 psi).
9. Measure the overall length (L3) of the hose assembly to ascertain the permanent elongation. Record the increase as a percentage of the original length measured at 0.7 bar (10 psi).
10. Reduce the pressure to zero and drain the hose.



Examination of elongation

- Temporary elongation (%) = $\frac{L_2 - L_1}{L_1} \times 100$
- Permanent elongation (%) = $\frac{L_3 - L_1}{L_1} \times 100$



Picture Step Pressure with Elongation Test

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Vacuum Test

This test should be carried out on hoses removed from service for hydrostatic pressure tests.

Seal off both ends with transparent Flexiglas plates of sufficient strength, using putty as a sealant or bolt up using a soft rubber gasket. One plate should be fixed for connection to a vacuum source. Lay a Flashlight in this end with its beam directed toward the opposite end. An inspection mirror using sunlight may also be manipulated from outside the plates to provide an alternative light source.

Apply a vacuum of at least -510 millibar gauge (15 inches of mercury), and preferably -680 millibar gauge (20 inches of mercury), for a period of 10 minutes. Inspect the interior of hose for blisters or bulges. Irreparable blisters, bulges or separation of the tube from the carcass or any tear, cut or gouge through the tube is cause to retire the hose from service. Repairs to hoses should only be carried out in accordance with the original Manufacturer's instructions, or in consultation with the original manufacturer.

Electrical Continuity Test

1. Electrically continuous hose

Electrical conductivity should exist between the two end flanges.

Testing method;



- Test Lamp: 4 volt, 0.3 amp lamp
- Battery: 4.5 volt

A dimly lit lamp is sufficient to indicate satisfactory electrical conductivity.

2. Electrical discontinuous hose

The resistance between the two end flanges of hose should be not less than 25,000 ohms.

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SECTION 3 : TESTING PROCEDURE (THAI VERSION REPORT FORMAT)

กระบวนการทดสอบท่ออย่างแรงดันสูง

1. การตรวจสอบด้วยสายตา (Visual Test)

1.1 การตรวจสอบภายนอก (External Check)

- ตรวจสอบความเสียหายแรง บริเวณผิวท่ออย่าง : การฉีกขาด / รอยร้าวเล็ก / การบวมบับ
- ตรวจสอบการเสียดสีของท่ออย่าง
- ตรวจสอบรอยแตกหรือรอยร้าวบนผิวท่ออย่าง
- ตรวจสอบความเสียหายของพื้นผิวหน้าแปลนท่ออย่าง (แตก/ผิวดูปร่งเป็นรอยร้าวเล็ก)

1.2 การตรวจสอบภายใน (Internal Check) :

เพื่อตรวจสอบความผิดปกติในท่ออย่างโดยใช้ไฟฉายส่องดูกับ กล้อง (VDO) สอดภายในท่อ

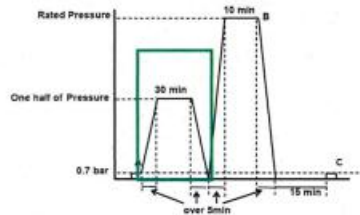
- ตรวจสอบภายในท่อพื้นผิว ผนังท่อ ขุ่นมัว บวม แดงหรือแยกออก
- ตรวจสอบการปิดตัวภายในท่ออย่าง
- ตรวจสอบรอยแตกหรือรอยร้าวบนผิวท่ออย่าง
- ตรวจสอบการกัดกร่อนของท่ออย่างภายใน (ต้องไม่สึกกร่อนเกินไป)

2. การตรวจสอบการทดสอบความดันและการรั่วด้วยน้ำ

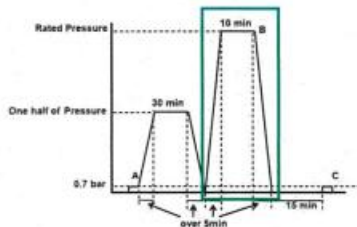
ท่ออย่างแต่ละเส้นจะต้องทดสอบแรงดันและการรั่วด้วยน้ำตามมาตรฐานที่โรงงานกำหนดตามรายละเอียดวิธีดำเนินการดังนี้

- 2.1 ท่ออย่างจะต้องวางในระนาบเดียวกันและสามารถเปิดออกได้อย่างอิสระเมื่อดำเนินการทำการทดสอบแรงดัน
- 2.2 ดำเนินการติดตั้ง Blind flange บริเวณปลายทั้งสองข้างของท่ออย่าง ดำเนินการ เติมน้ำและใส่ลมออกให้หมด หลังจากใส่ลมออกหมดดำเนินการเพิ่มความดันให้อยู่ที่ 0.7 Bar (10 PSI)
- 2.3 วัดความยาวของสาย hose และบันทึกค่า (ดูรายละเอียด Test Result) เพื่อนำไปประกอบในตารางบันทึกการยืด (Elongation Record)
- 2.4 เพิ่มแรงดันจาก 0.7 Bar (10 PSI) เป็น 7.5 Bar (50 %) ของค่าความดันที่โรงงานกำหนด (15 Bar) โดยใช้ระยะเวลาพักไว้ 5 นาทีในการเพิ่มแรงดัน เมื่อความดันถึง 7.5 Bar รักษาแรงดันแรงดัน 30 นาที จากนั้นลดแรงดันจาก 7.5 Bar ลง ค่าแรงดัน 0 Bar โดยใช้ระยะเวลาพักไว้ 5 นาทีในการลดแรงดัน (รายละเอียดกราฟใน Chart recorder ตามกรอบที่เห็นด้วยสีเขียว)

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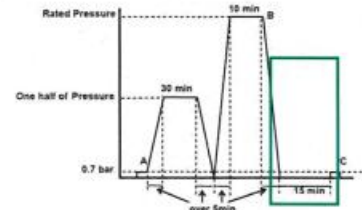


- 2.5 เพิ่มแรงดันจาก 0 Bar เป็น 15 Bar (แรงดันที่โรงงานกำหนด (15 Bar)) โดยใช้ระยะเวลาไม่น้อยกว่า 5 นาทีในการเพิ่มแรงดัน เมื่อความดันถึง 15 Bar รักษาแรงดัน 10 นาที วัดความยาวของสาย hose และบันทึกค่า B (ดูตามตาราง Test Result) เพื่อนำไปกรอกในตารางบันทึกการ test (Elongation Record)
- 2.6 จากนั้นลดแรงดันจาก 15 Bar จน ค่าแรงดัน 0 Bar โดยใช้ระยะเวลาไม่น้อยกว่า 5 นาทีในการลดแรงดัน (รายละเอียดกราฟใน Chart recorder ตามกรอบที่แนบมา)



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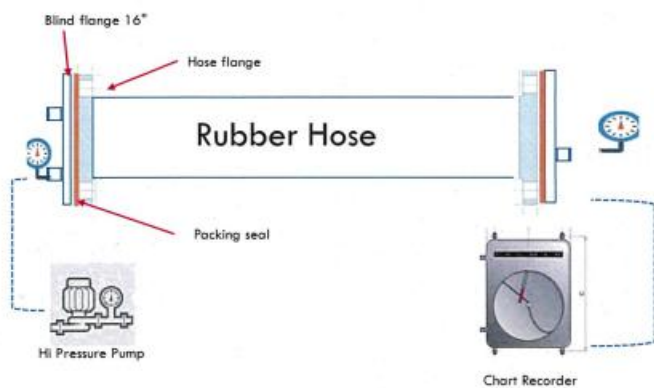
- 2.7 ที่ระยะเวลาอย่างน้อย 15 นาที และให้เพิ่มแรงดันไปที่ 0.7 Bar (10 PSI)
(รายละเอียดกราฟใน Chart recorder ตามกรอบที่แนบมา)



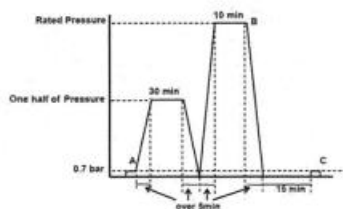
- 2.8 วัดความยาวของสาย hose และบันทึกค่า C (ดูตามตาราง Test Result) เพื่อนำไปกรอกในตารางบันทึกการ test (Elongation Record)
- 2.9 ลดแรงดันให้เหลือที่ 0 Bar และดำเนินการออกจากท่อ

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Hydro pressure test Device Diagram



รูปตัวอย่างลักษณะกราฟที่สมบูรณ์ และ ดูตารางประเมิน Elongation Test




Examination of elongation

- a. Temporary elongation (%) (T) = (B-A) / A x 100
b. Permanent elongation (%) (P) = (C-A) / A x 100

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ตัวอย่างการบันทึก Elongation test (ตัวอย่างสมบูรณ์)

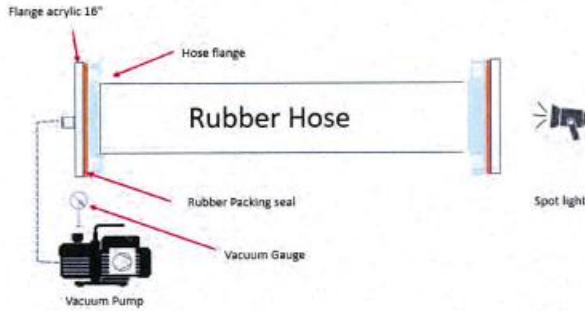
		Inspection & Test Certificate Floating Hose	
Client: Petrofac South East Asia Pte Ltd		Hose No. DETTS	
Certificate No. SV/14076			
Hose Information			
Hose No.	Description	Type	Hose Size mm inch 400 16
05771	TAPER REINFORCED FLOATING HOSE	REINFORCED HOSE	Length meter feet 12.00 39
			Rated Pressure bar 10
			Weight kg 2475
			Temp. as elongated mm 0.521
			Permanent elongation mm 0.010
Delivery Date D M Y 10 04 2016			
Manufacturer: The Yokohama Rubber Co., Ltd. Japan			
Nozzle and Flange Inspection			
No.	Flange Condition	Manufacturer	Remarks
A	024602308	YOKOHAMA RUBBER CO. LTD.	Good AS201 OK/No. 28500015
B	024602308	YOKOHAMA RUBBER CO. LTD.	See Note from manufacturer Flange, Nozzle & Valve only Visual inspected by Division
Test Results			
Result of AS inspection and tests	Rated working pressure	Total length at 0.7 bar	Temp. elongation at 0.7 bar mm 0.521
AS inspection and tests	Rated working pressure	Total length at 0.7 bar	Permanent elongation at 0.7 bar mm 0.010
AS inspection and tests	Rated working pressure	Total length at 0.7 bar	Vacuum applied for a period of 10 minutes mm 0.010
AS inspection and tests	Rated working pressure	Total length at 0.7 bar	Visual inspection OK
AS inspection and tests	Rated working pressure	Total length at 0.7 bar	Electrical conductivity test OK
AS inspection and tests	Rated working pressure	Total length at 0.7 bar	Hose Disconnection test OK
AS inspection and tests	Rated working pressure	Total length at 0.7 bar	Hose Connection test OK
AS inspection and tests	Rated working pressure	Total length at 0.7 bar	Findings 0.010 mm (0.0004 in)
AS inspection and tests	Rated working pressure	Total length at 0.7 bar	Remarks Flange & Valve only Visual inspected by Division
We hereby certify that the above mentioned hose were inspected and tested as per DCP's "Guidelines for the Handling, Storage, Inspection and testing of Hoses in the Field (Second Edition) - (1999)"			
Date	Inspected by	Reviewed by	
27th April 2016			

EMC Enterprise Co., Ltd.

3. การทดสอบการหดตัวเนื่องจากแรงดูด (Vacuum Test)

การทดสอบนี้ควรทำการทดสอบกับท่อยางที่ถอดดำเนินการทดสอบแรงดันจากน้ำแรงหรือโดยดำเนินการปิดปลายทั้งสองด้านของ hose ด้วย blind flange 15" ก่อนดำเนินการใส่ blind flange ใส่จะต้องได้ ประเด็นระหว่างหน้าสัมผัสหน้าแปลนของท่อและ blind flange 15" เตรียมให้สองตัววางด้านหนึ่ง ด้านในของท่อหันแสงให้ส่องผ่านด้านหนึ่งด้านในอีกด้านหนึ่ง

Vacuum test Devices Diagram



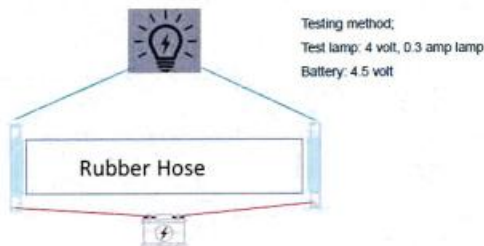
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4. การทดสอบทางไฟฟ้า

4.1 Electrically continuous hose

ต่ออุปกรณ์ test ระหว่าง หน้าแปลนอย่าง 2 ข้างและดูความสว่างของหลอดไฟฟ้า หากหลอดไฟส่องสว่างถือว่าตรวจสอบในหัวข้อนี้ผ่านหรือค่า 4 Vol. ลงตารางความละเอียดด้านล่างอักษรสี แดง


รายละเอียดตัวอย่างการคำนวณการตรวจสอบ Electrically continuous hose ด้านล่าง



		Inspection & Test Certificate Floating Hose	
Client: Petrofac South East Asia Pte Ltd		Form No. 000202	
Certificate No. SV/14078			
Hose Information			
Hose No.	Description	Type	Shore Size
00771	TAPER REINFORCED FLOATING HOSE	REINFORCED HOSE	400
Manufacturer: The Yokohama Rubber Co. Ltd. Japan			
Notches and Flange Inspection			
No.	Flange Certificate	Manufacturer	Remarks
A	00000000000000000000	YOKOHAMA RUBBER CO. LTD.	Page: 00000000000000000000
B	00000000000000000000	YOKOHAMA RUBBER CO. LTD.	Page: 00000000000000000000
Test Results			
Result of All inspection and tests	Rated work pressure	Total length	Overall length
Pass	15.0	100	100
Remarks: Flanges, Notches & Voids Liquid Penetration (DPT) by Petrofac and responsible.			
We have by verifying that the above mentioned hose was inspected and tested as per DCP's "Guidelines for the Handling, Storage, Inspection and testing of Hoses in the Field (Second Edition - 1995)"			
Date	Inspected by	Reviewed by	
27 th April 2022			

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จากนั้นเพิ่ม แรงกด 510 Mill Bar Gauge และ ไม่เกิน 680 Mill Bar Gauge เป็นระยะเวลา 10 นาที จากนั้นเก็บค่าไว้ ตาราง(ตัวอักษรสีแดง)ตามรายละเอียดรูปด้านล่าง และตรวจสอบสภาพภายในท่อโดยใช้ไฟส่องสว่างดูสภาพภายในท่ออย่างตามรายละเอียดการตรวจสอบภายในท่อตามข้อ 1.2

		Inspection & Test Certificate Floating Hose	
Client: Petrofac South East Asia Pte Ltd		Form No. 000202	
Certificate No. SV/14078			
Hose Information			
Hose No.	Description	Type	Shore Size
00771	TAPER REINFORCED FLOATING HOSE	REINFORCED HOSE	400
Manufacturer: The Yokohama Rubber Co. Ltd. Japan			
Notches and Flange Inspection			
No.	Flange Certificate	Manufacturer	Remarks
A	00000000000000000000	YOKOHAMA RUBBER CO. LTD.	Page: 00000000000000000000
B	00000000000000000000	YOKOHAMA RUBBER CO. LTD.	Page: 00000000000000000000
Test Results			
Result of All inspection and tests	Rated work pressure	Total length	Overall length
Pass	15.0	100	100
Remarks: Flanges, Notches & Voids Liquid Penetration (DPT) by Petrofac and responsible.			
We have by verifying that the above mentioned hose was inspected and tested as per DCP's "Guidelines for the Handling, Storage, Inspection and testing of Hoses in the Field (Second Edition - 1995)"			
Date	Inspected by	Reviewed by	
27 th April 2022			



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4.2 Electrically discontinuous hose

การทดสอบความต้านทานระหว่างหน้าแปลนทั้งสองข้างของท่อจะต้องมีค่าไม่น้อยกว่า 25,000 (OHM) และ กรอกค่าลงในข้อนี้เขียว

		Inspection & Test Certificate Floating Hose	
Client: Petrofac South East Asia Pte Ltd		Form No. 000202	
Certificate No. SV/14079			
Hose Information			
Hose No.	Description	Type	Shore Size
00000	FULL FLOTTING LINE HOSE	REINFORCED HOSE	400
Manufacturer: The Yokohama Rubber Co. Ltd. Japan			
Notches and Flange Inspection			
No.	Flange Certificate	Manufacturer	Remarks
A	00000000000000000000	YOKOHAMA RUBBER CO. LTD.	Page: 00000000000000000000
B	00000000000000000000	YOKOHAMA RUBBER CO. LTD.	Page: 00000000000000000000
Test Results			
Result of All inspection and tests	Rated work pressure	Total length	Overall length
Pass	15.0	100	100
Remarks: Flanges, Notches & Voids Liquid Penetration (DPT) by Petrofac and responsible.			
We have by verifying that the above mentioned hose was inspected and tested as per DCP's "Guidelines for the Handling, Storage, Inspection and testing of Hoses in the Field (Second Edition - 1995)"			
Date	Inspected by	Reviewed by	
27 th April 2022			

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	WORK PACKAGE	Revise: 1	Petrofac 
	Testing of Offloading Hose Offshore	Page: 16/21	
		Date: 24/03/22	

SECTION 4 : TOOL AND EQUIPMENT LIST

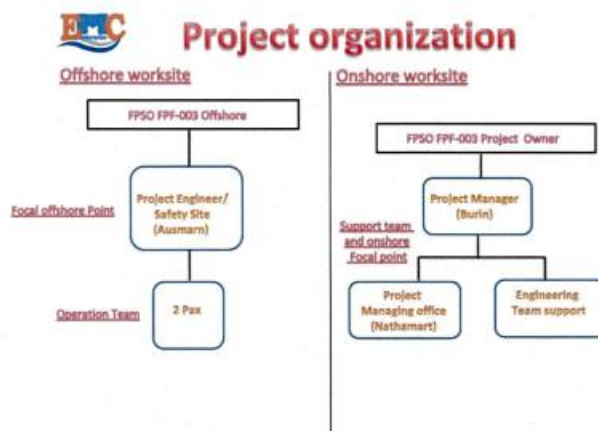
All tools, Equipment and consumable for Hose Testing should be as follows:

Item	Description	Q'ty	Unit
1	Vacuum Pump (Explosion Proof) c/w Certificate	1	Set
2	Sport Lighting	1	Set
3	Steel Blind Flange 16" #150	4	Ea.
4	Transparent Plexiglas Flange 16" #150 40mm. Thk.	6	Ea.
5	Certificate Sheet	1	Lot
6	Vacuum Gauge 0-1,000 mBar with Cert	2	Ea.
7	Diesel Air-Compressor 265 CFM	1	M/C
8	High Pressure Pump (Diesel)	1	Set
9	Pressure Gauge 0 -300 PSI w/valid certificate	4	Ea.
10	Pressure and Temperature recorder 0-1,000 PSI w/ valid Cert.	2	Set
11	Mechanical Tools Container	1	Cont.
12	Meter Tape (Steel 30 meters)	2	Ea.
13	Mega-Ohms Meter w/valid certificate	1	Ea.
14	Instrument Fitting and Tubing	1	Lot



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	WORK PACKAGE	Revise: 1	Petrofac 
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		Date: 24/03/22	

SECTION 5 : PROJECT ORGANIZATION CHART



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	WORK PACKAGE	Revise: 1	Petrofac 
	Testing of Offloading Hose Offshore	Page: 18/21	
		Date: 24/03/22	



SECTION 6 : WORK METHODS

WORK METHODS

Site preparation work.

1. Kick off meeting / JSA discuss / Site preparation.
2. Obtain/Open the permit to work (PTW)
3. Material checks at WORKSITE
4. Site inspection tools and Equipment, Equipment lifting.
5. Pre-Job Evaluation site preparation
6. Site preparation before hose test inspection.
7. Offshore hose test inspection 23 Set.
 - 7.1 Demolish offloading hose.
 - 7.2 Provide test hose refer requirements procedure.
 - 7.3 Re-install offloading hose.
 - 7.4 House keeping at Worksite.

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	WORK PACKAGE	Revise: 1	Petrofac 
	Testing of Offloading Hose Offshore	Page: 19/21	
		Date: 24/03/22	

SECTION 7 : CALIBRATION CERTIFICATE

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משרד הביטחון וההגנה

מסמך מס' 10000000000000000000

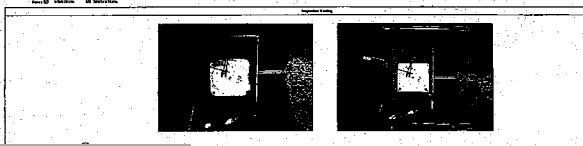
Reference Number No. 1

Project: Training of Offloading Line Officers

Date: 25/02/22

Equipment: Chart recorder

Item	Description	Visual Check										Result
		Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual	
1	Check the equipment is in the right place											
2	Check the equipment is in the right place											
3	Check the equipment is in the right place											
4	Check the equipment is in the right place											
5	Check the equipment is in the right place											
6	Check the equipment is in the right place											
7	Check the equipment is in the right place											
8	Check the equipment is in the right place											
9	Check the equipment is in the right place											
10	Check the equipment is in the right place											



Check for:
 Date: 25/02/22

FW-001-006 : 15/12/2014, Rev.01



משרד הביטחון וההגנה

מסמך מס' 10000000000000000000

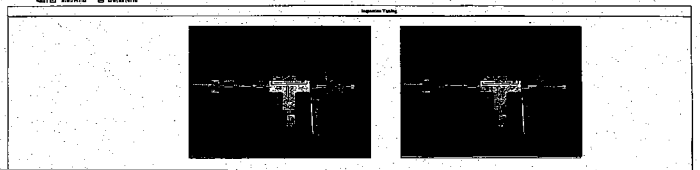
Reference Number No. 1

Project: Training of Offloading Line Officers

Date: 25/02/22

Equipment: Power Supply Unit (PSU)

Item	Description	Visual Check										Result
		Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual	
1	Check the equipment is in the right place											
2	Check the equipment is in the right place											
3	Check the equipment is in the right place											
4	Check the equipment is in the right place											
5	Check the equipment is in the right place											
6	Check the equipment is in the right place											
7	Check the equipment is in the right place											
8	Check the equipment is in the right place											
9	Check the equipment is in the right place											
10	Check the equipment is in the right place											



Check for:
 Date: 25/02/22

FW-001-006 : 15/12/2014, Rev.01



משרד הביטחון וההגנה

מסמך מס' 10000000000000000000

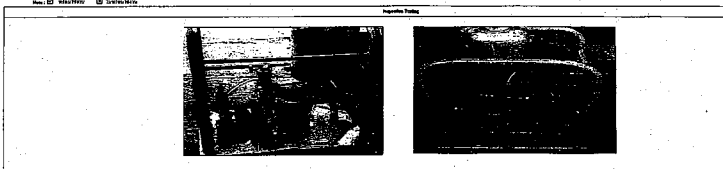
Reference Number No. 1

Project: Training of Offloading Line Officers

Date: 25/02/22

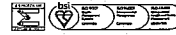
Equipment: Pressure Pump

Item	Description	Visual Check										Result
		Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual	
1	Check the equipment is in the right place											
2	Check the equipment is in the right place											
3	Check the equipment is in the right place											
4	Check the equipment is in the right place											
5	Check the equipment is in the right place											
6	Check the equipment is in the right place											
7	Check the equipment is in the right place											
8	Check the equipment is in the right place											
9	Check the equipment is in the right place											
10	Check the equipment is in the right place											



Check for:
 Date: 25/02/22

FW-001-006 : 15/12/2014, Rev.01



משרד הביטחון וההגנה

מסמך מס' 10000000000000000000

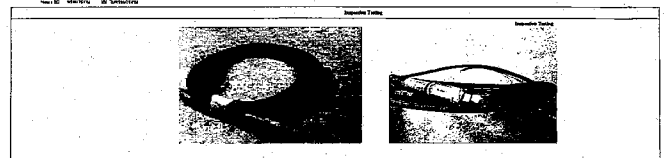
Reference Number No. 1

Project: Training of Offloading Line Officers

Date: 25/02/22

Equipment: High Pressure Hose (HPH)

Item	Description	Visual Check										Result
		Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual	
1	Check the equipment is in the right place											
2	Check the equipment is in the right place											
3	Check the equipment is in the right place											
4	Check the equipment is in the right place											
5	Check the equipment is in the right place											
6	Check the equipment is in the right place											
7	Check the equipment is in the right place											
8	Check the equipment is in the right place											
9	Check the equipment is in the right place											
10	Check the equipment is in the right place											



Check for:
 Date: 25/02/22

FW-001-006 : 15/12/2014, Rev.01



บริษัท อีเอ็มซี จำกัด
EMC Enterprise Co., Ltd.
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Thailand Tel. +66 74 496884, Fax. +66 74 496884, www.experteam.co.th
NSC-TISI-TIS 17025 CALIBRATION 0173

Equipment Request Form

To: Petrofac
Attn: K.Palton
CC: K.Narinhorn
Project: Testing of Offloading Hose Offshore
Responsible: K.Palton
Doc No.: FR-03-001
Request Date: 4/3/2022
Deployment Date: 5/3/2022
Cost Code: ON.014-02-2022
Color Code:

Item	Description	Quantity	Unit	Spec. / Size	Remark
1	Pump 0-1000 psi C/W Cert.	3	EA.	รุ่น 500 ลิตร	รุ่นวันที่ 5/3/22
2	Chart recorder for pressure testing 600-1000 Paig.	2	EA.	รุ่น 500 ลิตร	รุ่นวันที่ 5/3/22
	Circular Chart Pressure & Temperature recorder C/N				
	Pens/chart paper 20 Sheet.				
3	Range 0-1,500 Paig./0-100°C, 1Ea.	6	EA.		
4	FSV"SWAGLOK" Set @500 Paig/5%	6	EA.		
	สายไฮดรอลิก 10,000 Paig.	6	EA.		

Requested By: K.Narinhorn
Position: Purchase
Date: 4/3/2022
Checked By:
Position:
Date:

FW-AF02-001:1506/2018



EXPORTEAM CO., LTD. LABORATORY

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NSC-TISI-TIS 17025 CALIBRATION 0173



Certificate of Calibration

Certificate No.: PCR21017
Equipment: Pressure Chart Recorder
Manufacture: BARTON
Serial No.: 112604317002
ID NO.: R.C.D/BARTON/1500.6

Condition of this result of calibration

1. Calibration Method: Calibration were conducted using in-house calibration procedure: CP-PCR-01 according to DKD R6-1 method, using distilled water as pressure media.

2. Reference Standard Instrument:

Instrument	Model	Serial No.	Certificate No.	Traceability
Digital Test Gauge	DPI 104	2463454	21F2529	TPA

3. This result of calibration was found accurate as shown on date and place for this calibration item only.

4. This certificate is traceable to the International System of Units (SI), through -
- Technology Promotion Association (Thailand - Japan).

5. Condition of calibration item: Good

Result of calibration: (✓) Without adjustment () Before adjustment () After adjustment
Function: Pressure measurement
Range: 0 to 1500 psi

UUC* (psi)	Input Applied (psi)	Error (psi)	Uncertainty
Reading	UP	DOWN	UP DOWN ± psi
0	-0.6	-0.6	0.6 0.6 35
300	300.5	288.5	-0.5 11.5 35
600	603.9	584.9	-3.9 15.1 35
900	906.0	886.4	-6.0 13.6 35
1200	1204.9	1192.0	-4.9 8.0 35
1500	1507.1	1506.2	-7.1 -6.2 35

Remark: UUC* = Unit Under Calibration

= Not Accredited

1 psi = 6894.757 Pa, Mounting position = Vertical, Reference level = At center of scale

The reported expanded uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately

End of calibration certificate

F7.4-03-PCR

Effective Date 06/06/2019 Rev.0



EXPORTEAM CO., LTD. LABORATORY

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NSC-TISI-TIS 17025 CALIBRATION 0173



Certificate of Calibration

Certificate No.: PCR21017
CR No.: 2112005
Equipment: Pressure Chart Recorder
Manufacture: BARTON
Range: 0 to 1500 psi
Resolution: 15 psi
Model: 242E
Serial No.: 112604317002
ID NO.: R.C.D/BARTON/1500.6
Customer: EXPORTEAM CO., LTD.
110,112,114 Rama 2 Rd. Samaedum, Bangkhuntean Bangkok 10150

Page 1 of 2

Environment: Temperature (23 +/- 2)°C, Relative Humidity (55 +/- 25) %
Date of Received: 16 December 2021
Date of Calibration: 21 December 2021
Date of Issue: 21 December 2021
Due Date: 20 June 2022

Calibrated By: Kraisorn K
Approved By: EXPORTEAM CO., LTD.
Testing & Calibration Laboratory

This certificate may not be reproduced other than in full, except with the prior written approval of the Experteam laboratory department.

F7.4-03-PCR

Effective Date 06/06/2019 Rev.0



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Thailand Tel. +66 74 496884, Fax. +66 74 496884, www.experteam.co.th
NSC-TISI-TIS 17025 CALIBRATION 0173



Certificate of Calibration

Certificate No.: ATM21027
R No.: 2112004
Equipment: Analog Thermometer
Manufacture: BARTON
Model: 242E
Serial No.: 112604317002
Range: (0 to 100) °C
Resolution: 1 °C
ID NO.: R.C.D/BARTON/1500.6
Customer: EXPORTEAM CO., LTD.
110,112,114 Rama 2 Rd. Samaedum, Bangkhuntean Bangkok 10150

Page 1 of 2

Environment: Temperature (23 +/- 2)°C, Relative Humidity (55 +/- 25) %
Date of Received: 16 December 2021
Date of Calibration: 21 December 2021
Date of Issue: 24 December 2021
Due Date: 20 June 2022

Calibrated By: Kraisorn K
Approved By: EXPORTEAM CO., LTD.
Testing & Calibration Laboratory

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F7.4-03-PCR

Effective Date 06/06/2019 Rev.0



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Thailand Tel. +66 74 496884, Fax. +66 74 496884, www.experteam.co.th



Calibration Report

Certificate No. : ATM21027 Page 2 of 2

Equipment : Analog Thermometer Serial No. : 112604317002
Manufacturer : BARTON ID NO. : R.C.D/BARTON/1500.6

Condition of this result of calibration

Calibration Method : Calibration were conducted using in-house calibration procedure: CP-ATM-01, comparison measurement with standard Platinum Resistance Thermometer (PRT)

Reference Standard Instrument

Instrument	Model	Serial No.	Certificate No.	Traceability
Geology Well Calibrator	9171	B58790	211423	TPA
Temperature Indicator with Probe	5615	931627	211417	TPA

This result of calibration was found accurate as shown on date and place for this calibration item only.

This certificate is traceable to the International System of Units (SI), through-

Technology Promotion Association (Thailand-Japan)

Condition of calibration item : Good

Result of calibration : ☒ Without adjustment () Before adjustment () After adjustment

Function : Temperature measurement

Immersion Depth	Setting	Standard Reading	UUC* Reading	Error	Uncertainty
mm	°C	°C	°C	°C	± °C
195	20	19.963	20	0.037	1.2
195	40	39.943	39	-0.943	1.2
195	60	59.937	58	-1.937	1.2

Remark : UUC* = Unit Under Calibration

Dimension of probe = Diameter : 6 mm, Length: 295 mm

The reported expanded uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%.

End of calibration certificate

F7.8-03-PCR Effective Date 06/06/2019 Rev.0



EXPERTEAM CO., LTD. LABORATORY

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Thailand Tel. +66 74 496884, Fax. +66 74 496884, www.experteam.co.th



Certificate of Calibration

Certificate No. : PCR21018 Page 2 of 2

Equipment : Pressure Chart Recorder Serial No. : 120155468001
Manufacturer : BARTON ID NO. : R.C.D/BARTON/1500.7

Condition of this result of calibration

1. Calibration Method : Calibration were conducted using in-house calibration procedure: CP-PCR-01 according to DKD R6-1 method, using distilled water as pressure media.

2. Reference Standard Instrument :

Instrument	Model	Serial No.	Certificate No.	Traceability
Digital Test Gauge	DPI 104	2463454	21P2529	TPA

3. This result of calibration was found accurate as shown on date and place for this calibration item only.

4. This certificate is traceable to the International System of Units (SI), through-

Technology Promotion Association (Thailand - Japan).

5. Condition of calibration item : Good

Result of calibration : ☒ Without adjustment () Before adjustment () After adjustment

Function : Pressure measurement Range : 0 to 1500 psi

UUC* (psi)	Input Applied (psi)	Error (psi)	Uncertainty
Reading	UP	DOWN	UP DOWN ± psi
0	-0.7	-0.7	0.7 0.7 35
300	301.4	286.8	-1.4 13.2 35
600	605.7	579.4	-5.7 20.6 35
900	905.8	880.1	-5.8 19.9 35
1200	1202.6	1185.8	-2.6 14.2 35
1500	1498.6	1497.5	1.4 2.5 35

Remark : UUC* = Unit Under Calibration

= Not Accredited

1 psi = 6894.757 Pa, Mounting position = Vertical, Reference level = At center of scale

The reported expanded uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%.

End of calibration certificate

F7.8-03-PCR Effective Date 06/06/2019 Rev.0



EXPERTEAM CO., LTD. LABORATORY

237/4 Moo.1 Tambol Sathingmor, Amphur Singhanakhol, Songkhla 90280
Thailand Tel. +66 74 496884, Fax. +66 74 496884, www.experteam.co.th



Certificate of Calibration

Certificate No. : PCR21018 Page 1 of 2

CR No. : 2112005
Equipment : Pressure Chart Recorder
Manufacturer : BARTON
Range : 0 to 1500 psi
Resolution : 15 psi
Model : 242E
Serial No. : 120155468001
ID NO. : R.C.D/BARTON/1500.7
Customer : EXPERTEAM CO., LTD.
110,112,114 Rama 2 Rd. Samadum, Bangkhuntean Bangkok 10150

Environment : Temperature (23±2)°C, Relative Humidity (55 ± 25) %

Date of Received : 16 December 2021

Date of Calibration : 21 December 2021

Date of Issue : 21 December 2021

Due Date : 20 June 2022

Calibrated By :
Approved By :
EXPERTEAM CO., LTD.
Calibration Laboratory

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F7.8-03-PCR

Effective Date 06/06/2019 Rev.0



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Thailand Tel. +66 74 496884, Fax. +66 74 496884, www.experteam.co.th



Certificate of Calibration

Certificate No. : ATM21028 Page 1 of 2

CR No. : 2112004
Equipment : Analog Thermometer
Manufacturer : BARTON
Model : 242E
Serial No. : 120155468001
Range : (0 to 100) °C
Resolution : 1 °C
ID NO. : R.C.D/BARTON/1500.7
Customer : EXPERTEAM CO., LTD.
110,112,114 Rama 2 Rd. Samadum, Bangkhuntean Bangkok 10150

Environment : Temperature (23±2)°C, Relative Humidity (55 ± 25) %

Date of Received : 16 December 2021

Date of Calibration : 22 December 2021

Date of Issue : 24 December 2021

Due Date : 20 June 2022

Calibrated By :
Approved By :
EXPERTEAM CO., LTD.
Calibration Laboratory

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F7.8-03-PCR

Effective Date 06/06/2019 Rev.0



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Calibration Report

Page 2 of 2

Certificate No. : ATM21028
Equipment : Analog Thermometer
Manufacturer : BARTON
Serial No. : 120155468001
ID NO. : R.C.D/BARTON/1500.7

Condition of this result of calibration

Calibration Method : Calibration were conducted using in-house calibration procedure: CP-ATM-01, comparison measurement with standard Platinum Resistance Thermometer (PRT)

Reference Standard Instrument

Instrument	Model	Serial No.	Certificate No.	Traceability
Geology Well Calibrator	9171	B58790	211423	IPA
Temperature Indicator with Probe	5615	931627	211417	IPA

This result of calibration was found accurate as shown on date and place for this calibration item only.

This certificate is traceable to the International System of Units (SI) through Technology Promotion Association (Thailand-Japan)

Condition of calibration item : Good

Result of calibration : () Without adjustment () Before adjustment () After adjustment

Function : Temperature measurement

Immersion Depth	Setting	Standard Reading	UUC* Reading	Error	Uncertainty
mm	°C	°C	°C	°C	+/- °C
195	20	19.963	20	0.037	1.2
195	40	39.939	40	0.061	1.2
195	60	59.933	60	0.067	1.2

Remark : UUC* = Unit Under Calibration

Dimension of probe = Diameter : 6 mm, Length: 290 mm

The reported expanded uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%

End of calibration certificate

1-01-ATM



Brecht Technology Calibration Co., Ltd.

999/84 Moo. 1, T. Nernpra, A. Muang, Rayong 21000.

Certificate of Calibration

Issued By : Brecht Technology Calibration Co., Ltd. Certificate No. : P0149
Page : 1 of 2

Customer : HKC SOLUTION CO., LTD.
154/13 Sai Ronasithipitvi 4, The sai, Maung, Nonthaburi, 11000

Instrument Description : Chart Recorder
Manufacturer : BARTON
Model / Type : 0 to 1000 PSI, 0 to 100 °C
Serial No. : 2025-12977

Calibration Standards Used
Standards Description : Digital Pressure Gauge
Certificate No. : P2109
Due Date : 10 Nov 2022

Environmental Conditions :
The calibration was performed at an ambient temperature (23 ± 3) deg C with relative humidity (55 ± 15) %.

Calibration Method :
Calibration were conducted using in-house calibration procedure CP-P1301 according to comparison method against Pressure Calibrator, using oil as pressure media.

Traceability of Measurement :
The calibration is traceable to SI units by reference to Technology Promotion Association (Thailand-Japan).

Uncertainty of Measurement :
The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95 %

Result of calibration :
Function : Pressure measurement, (Unit : PSI)

Test Title	UUC Setting	Tol. (+/-)	STD Reading	Error	The Uncertainty of Measurement
0	0	20	0.0	0.0	3.6
200	200	30	200.3	-0.3	3.6
400	400	30	400.5	-0.5	3.6
600	600	30	601.3	-1.3	3.6
800	800	30	801.7	-1.7	3.6
1000	1000	30	1002.5	-2.5	3.6

COPY



Received Date : 25/1/2022

Calibrated Date : 11/2/2022

Issued Date : 11/2/2022



Brecht Technology Calibration Co., Ltd.

999/84 Moo. 1, T. Nernpra, A. Muang, Rayong 21000.

Certificate of Calibration

Issued By : Brecht Technology Calibration Co., Ltd. Certificate No. : P0149
Page : 2 of 2

Customer : HKC SOLUTION CO., LTD.
154/13 Sai Ronasithipitvi 4, The sai, Maung, Nonthaburi, 11000

Instrument Description : Chart Recorder
Manufacturer : BARTON
Model / Type : 0 to 1000 PSI, 0 to 100 °C
Serial No. : 2025-12977

Calibration Standards Used
Standards Description : Dry Block Calibrator
Certificate No. : TP-21-0114
Due Date : 11 Sep 2022

Environmental Conditions :
The calibration was performed at an ambient temperature (23 ± 3) deg C with relative humidity (55 ± 15) %.

Calibration Method :
Calibration were conducted using in-house calibration procedure CP-T1301 according to comparison method against Temperature Calibrator.

Traceability of Measurement :
The calibration is traceable to SI units by reference to Technology Promotion Association (Thailand-Japan).

Uncertainty of Measurement :
The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95 %

Result of calibration :
Function : Temperature measurement, (Unit : °C)

Test Title	UUC Setting	Tol. (+/-)	STD Reading	Error	The Uncertainty of Measurement
0	0	2	-0.35	0.35	0.5
20	20	2	18.90	1.10	0.5
40	40	2	40.15	-0.15	0.5
60	60	2	61.15	-0.15	0.5
80	80	2	81.45	-0.45	0.5
100	100	2	101.75	-0.75	0.5

COPY



Received Date : 25/1/2022

Calibrated Date : 11/2/2022

Issued Date : 11/2/2022



EXPERTEAM CO., LTD. LABORATORY

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Test Report

Page 1 of 2

Test No. : SV22014

CR No. : SV-2201001

Equipment : Pressure Safety Relief Valve

Manufacturer : Swagelok

Type/Model : SS-4R3A

Serial No. : PSV-500.01

Valve Size (Inlet, Outlet) : 1/4"x1/4"

ANSI Flange Class (Inlet, Outlet) : -

ID NO. : N/A

Customer : EXPERTEAM CO., LTD.
110,112,114 Rama 2 Rd. Samsedun, Bangkoktean Bangkok 10150

Environment : Temperature (25 ± 2)°C, Relative Humidity (55 ± 25) %

Date of Received : 4 January 2022

Date of Test : 6 January 2022

Date of Issue : 10 January 2022

Due Date : 5 July 2022

Test By : Komkrit J

Technician

Approved By : N/A

Nateworn Banlang

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**Test Report**

Test No. : SV22014

Page 2 of 2

Equipment : Pressure Safety Relief Valve Manufacture : Swagelok

Type/Model : SS-4R3A Serial No. : PSV.500.01

Valve Size : 1/4"x1/4" ANSI Flange Class (Inlet , Outlet) : -

Set Pressure : 525.00 psi ID. No. : N/A

Condition of this result of test

1.Test Method : Popping pressure and Reseat pressure test according to ASME VIII UG-136(d) ,2015.

: Seat Tightness of Pressure Relief Valves test according to API 527 ,2014.

2.Reference Standard Instrument:

Instrument	Model	Serial No.	Certificate No.	Traceability
Digital test gauge	ADT 681	211H193B0022	21P2531	TPA

3.This result of report was found accurate as shown on date place of test and apply to the PSV as received only.

4. This certificate is traceable to the International System of Units (SI) ,through -
- Technology Promotion Association (Thailand - Japan).

5.Position of test : Vertical

6.Test Fluid : Water

7.Condition of test item : Good

Result of test : Performance Test

(Before)	Pop Pressure (psi)	Back Pressure(psi)	Reseat Pressure (psi)
	529.1	-	496.9

(After)	Pop Pressure (psi)	Back Pressure(psi)	Reseat Pressure (psi)
	-	-	-

Seat Tightness Test:☒ No Visible Leakage ☐ LeakageThe uncertainty of measurement was \pm 1.6 psi**Remark**

1 psi = 6894.757 Pa

The reported expanded uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%.

End of test certificated

F7.8-03-SV

Effective Date 06/06/2019 Rev.0

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**Test Report**

Test No. : SV22013

Page 2 of 2

Equipment : Pressure Safety Relief Valve Manufacture : Swagelok

Type/Model : SS-4R3A Serial No. : PSV.500.02

Valve Size : 1/4"x1/4" ANSI Flange Class (Inlet , Outlet) : -

Set Pressure : 525.00 psi ID. No. : N/A

Condition of this result of test

1.Test Method : Popping pressure and Reseat pressure test according to ASME VIII UG-136(d) ,2015.

: Seat Tightness of Pressure Relief Valves test according to API 527 ,2014.

2.Reference Standard Instrument:

Instrument	Model	Serial No.	Certificate No.	Traceability
Digital test gauge	ADT 681	211H193B0022	21P2531	TPA

3.This result of report was found accurate as shown on date place of test and apply to the PSV as received only.

4. This certificate is traceable to the International System of Units (SI) ,through -
- Technology Promotion Association (Thailand - Japan).

5.Position of test : Vertical

6.Test Fluid : Water

7.Condition of test item : Good

Result of test : Performance Test

(Before)	Pop Pressure (psi)	Back Pressure(psi)	Reseat Pressure (psi)
	530.0	-	491.0

(After)	Pop Pressure (psi)	Back Pressure(psi)	Reseat Pressure (psi)
	-	-	-

Seat Tightness Test:☒ No Visible Leakage ☐ LeakageThe uncertainty of measurement was \pm 1.6 psi**Remark**

1 psi = 6894.757 Pa

The reported expanded uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%.

End of test certificated

F7.8-03-SV

Effective Date 06/06/2019 Rev.0

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**Test Report**

Test No. : SV22013

Page 1 of 2

CR No. : SV-2201001

Equipment : Pressure Safety Relief Valve

Manufacture : Swagelok

Type/Model : SS-4R3A

Serial No. : PSV.500.02

Valve Size (Inlet,Outlet): 1/4"x1/4"

ANSI Flange Class (Inlet,Outlet): -

ID NO. : N/A

Customer : EXPERTEAM CO.,LTD.

110,112,114 Rama 2 Rd. Samaedum, Bangkokun Bangkok 10150

Environment : Temperature (23 \pm 2) $^{\circ}$ C, Relative Humidity (55 \pm 25) %

Date of Received : 4 January 2022

Date of Test : 6 January 2022

Date of Issue : 10 January 2022

Due Date : 5 July 2022

Test By : Komkrit J

Technician

EXPERTEAM CO.,LTD.

Testing & Calibration Laboratory

Approved By :

Nataworn Banlang

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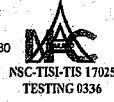
F7.8-03-SV

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**Test Report**

Test No. : SV22012

Page 1 of 2

CR No. : SV-2201001

Equipment : Pressure Safety Relief Valve

Manufacture : Swagelok

Type/Model : SS-4R3A

Serial No. : PSV.500.03

Valve Size (Inlet,Outlet): 1/4"x1/4"

ANSI Flange Class (Inlet,Outlet): -

ID NO. : N/A

Customer : EXPERTEAM CO.,LTD.

110,112,114 Rama 2 Rd. Samaedum, Bangkokun Bangkok 10150

Environment : Temperature (23 \pm 2) $^{\circ}$ C, Relative Humidity (55 \pm 25) %

Date of Received : 4 January 2022

Date of Test : 6 January 2022

Date of Issue : 10 January 2022

Due Date : 5 July 2022

Test By : Komkrit J

Technician

EXPERTEAM CO.,LTD.

Testing & Calibration Laboratory

Approved By :

Nataworn Banlang

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Effective Date 06/06/2019 Rev.0

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Thailand Tel. +66 74 498884 Fax. +66 74 496884 www.experteam.co.th**Test Report**

Page 2 of 2

Test No. : SV22012

Equipment : Pressure Safety Relief Valve Manufacture : Swagelok

Type/Model : SS-4R3A Serial No. : PSV-500.03

Valve Size : 1/4"x1/4"

Set Pressure : 525.00 psi ANSI Flange Class (Inlet, Outlet) : -

ID. No. : N/A

Condition of this result of test

1. Test Method : Popping pressure and Reseat pressure test according to ASME VIII UG-136(d), 2015.
: Seat Tightness of Pressure Relief Valves test according to API 527, 2014.

2. Reference Standard Instrument:

Instrument Model Serial No. Certificate No. Traceability
Digital test gauge ADT 681 211H193B0022 21P2531 TPA

3. This result of report was found accurate as shown on date place of test and apply to the PSV as received only.

4. This certificate is traceable to the International System of Units (SI), through -
- Technology Promotion Association (Thailand - Japan).

5. Position of test : Vertical

6. Test Fluid : Water

7. Condition of test item : Good

Result of test : Performance Test

(Before)	Pop Pressure (psi)	Back Pressure(psi)	Reseat Pressure (psi)
	531.2	-	495.5

(After)	Pop Pressure (psi)	Back Pressure(psi)	Reseat Pressure (psi)
	-	-	-

Seat Tightness Test:

☒ No Visible Leakage ☐ LeakageThe uncertainty of measurement was \pm 2.6 psi

Remark

1 psi = 6894.757 Pa

The reported expanded uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%.

End of test certificated

F73-09-5V

Effective Date 26/10/2019 Rev0

**CERTIFICATE OF CALIBRATION**

CERTIFICATE No. : PRC22-049
 RECEIVED SERVICE No. : PRC-0234
 SUBMITTED BY : EMC ENTERPRISE CO., LTD (HEAD OFFICE)
 76/12 Moo 2 Pantainersingh, A Muang,
 Samutakhon 74000
 EQUIPMENT : STEEL TAPE
 MANUFACTURE : STANLEY
 MODEL : 34-262
 SERIAL No. : 0-12423-65
 ID No. : N/A
 ENVIRONMENT CONDITION : 20 \pm 2 °C (IN-HOUSE)
 55 \pm 20 % RH
 RECEIVED DATE : 24 FEBRUARY 2022
 CALIBRATION DATE : 25 FEBRUARY 2022
 ISSUE DATE : 28 FEBRUARY 2022



CALIBRATION METHOD :

THIS INSTRUMENT WAS CALIBRATED BY COMPARISON WITH PROFILE PROJECTOR AND GAUGE BLOCK SET FOLLOW TO JIS B 7512-1993

MEASUREMENT UNCERTAINTY :

THE REPORTED UNCERTAINTY OF MEASUREMENT WAS BASED ON STANDARD UNCERTAINTY MULTIPLIED BY A COVERAGE FACTOR $K=2$, WHICH EFFECTIVE DEGREE OF FREEDOM $\nu_{eff} > 100$ CORRESPONDS A LEVEL OF CONFIDENCE OF APPROXIMATELY 95 %

CALIBRATED BY

Mr. JARATHORN SINGHAPHAN

PAGE : 1 / 2

**CERTIFICATE OF CALIBRATION**

CERTIFICATE No. : PRC22-049 MODEL : 34-262
 RECEIVED SERVICE No. : PRC-0234 SERIAL No. : 0-12423-65
 EQUIPMENT : STEEL TAPE ID. No. : N/A
 MANUFACTURE : STANLEY CALIBRATION DATE : 25 FEBRUARY 2022

REFERENCE STANDARD :

EQUIPMENT	SERIAL No.	CERTIFICATE No.	DUE DATE
STEEL RULER	N/A	WK2106-299-383	28 AUG 2022
LASER DISTANCE METER	910414148	WK2102-006-137	15 FEB 2022

TRACEABILITY :

- NATIONAL INSTITUTE METROLOGY THAILAND (NIMT), THROUGH OF SRS CALIBRATION CENTER CO., LTD.
- NATIONAL INSTITUTE METROLOGY THAILAND (NIMT)

RESULT OF CALIBRATION :

WITHOUT ADJUSTMENT

RANGE	RESOLUTION	UNCERTAINTY
0 to 2900 cm	0.2 cm	0.2 cm

FUNCTION : LENGTH MEASUREMENT

NOMINAL VALUE	STANDARD READING	UUC* ERROR	UNCERTAINTY OF MEASUREMENT
(cm)	(cm)	(cm)	(\pm cm)
0.0	0.00	0.00	0.153
300.0	300.00	0.00	0.153
600.0	600.00	0.00	0.153
900.0	900.00	0.00	0.153
1200.0	1200.01	-0.01	0.153
1500.0	1500.01	-0.01	0.153
1800.0	1800.01	-0.01	0.153
2100.0	2100.01	-0.01	0.153
2400.0	2400.01	-0.01	0.153
2700.0	2700.02	-0.02	0.153
2800.0	2800.02	-0.02	0.153
2900.0	2900.02	-0.02	0.153

UUC* = UNIT UNDER CALIBRATION

COMMENT : THE RESULT REPORT IN THIS CERTIFICATE REFER TO THE CONDITION OF THE INSTRUMENT ON THE DATE OF THE CALIBRATION AND CARRY ON IMPLICATION READING TO LONG-TERM STABILITY OF THE INSTRUMENT

End Of Report.....
PAGE : 2 / 2**CERTIFICATE OF CALIBRATION**

CERTIFICATE No. : PRC22-067
 RECEIVED SERVICE No. : PRC-0234
 SUBMITTED BY : EMC ENTERPRISE CO., LTD (HEAD OFFICE)
 76/12 Moo 2 Pantainersingh, A Muang,
 Samutakhon 74000
 EQUIPMENT : PRESSURE GAUGE
 MANUFACTURE : NUOVA FIMA
 MODEL : EN837-1
 SERIAL No. : 13735 06/2020
 ID. No. : N/A
 ENVIRONMENT CONDITION : 25 \pm 2 °C (IN-HOUSE)
 50 \pm 20 % RH
 RECEIVED DATE : 24 FEBRUARY 2022
 CALIBRATION DATE : 25 FEBRUARY 2022
 ISSUE DATE : 28 FEBRUARY 2022



CALIBRATION METHOD :

THIS INSTRUMENT WAS CALIBRATED BY COMPARISON WITH PRESSURE CALIBRATOR, ACCORDING TO DKD-R 6-1 MARCH 2003

MEASUREMENT UNCERTAINTY :

THE REPORTED UNCERTAINTY OF MEASUREMENT WAS BASED ON STANDARD UNCERTAINTY MULTIPLIED BY A COVERAGE FACTOR $K=2$, WHICH EFFECTIVE DEGREE OF FREEDOM $\nu_{eff} > 100$ CORRESPONDS A LEVEL OF CONFIDENCE OF APPROXIMATELY 95 %

CALIBRATED BY

Mr. JARATHORN SINGHAPHAN

QUALITY MANAGER

PAGE : 1 / 2

CERTIFICATE OF CALIBRATION

CERTIFICATE No.	PRC22 - P67	MODEL	EN837-1
RECEIVED SERVICE No.	PRC - 0224	SERIAL No.	13735 08/2020
EQUIPMENT	PRESSURE GAUGE	ID. No.	N/A
MANUFACTURE	NUOVA FIMA	CALIBRATION DATE	25 FEBRUARY 2022

REFERENCE STANDARD :			
EQUIPMENT	SERIAL No.	CERTIFICATE No.	DUE DATE
PRESSURE CALIBRATOR	2982137	WK2110-299-352	30 OCT 2022

TRACEABILITY :

- THE MEASUREMENT IS TRACEABLE TO INTERNATIONAL SYSTEM OF UNIT MAINTAINED AT NIMT

RESULT OF CALIBRATION	WITHOUT ADJUSTMENT		
RANGE : 0 to 40 bar	RESOLUTION : 0.5 bar		
UUC*	STANDARD	UUC*	UNCERTAINTY
READING	VALUE	ERROR	OF MEASUREMENT
(bar)	(bar)	(bar)	(+/- bar)
INCREASING			
0	0.000	0.000	0.289
5	4.797	0.203	0.289
15	14.650	0.350	0.289
25	24.931	0.069	0.289
30	29.947	0.053	0.289
35	35.074	-0.074	0.289
40	40.032	-0.032	0.289
DECREASING			
40	40.032	-0.032	0.289
35	35.074	-0.074	0.289
30	29.947	0.053	0.289
25	24.931	0.069	0.289
15	14.650	0.350	0.289
5	4.797	0.203	0.289
0	0.000	0.000	0.289

UUC* = UNIT UNDER CALIBRATION

COMMENT : THE RESULT REPORT IN THIS CERTIFICATE REFER TO THE CONDITION OF THE INSTRUMENT ON THE DATE OF THE CALIBRATION AND CARRY NO IMPLICATION READING TO LONG-TERM STABILITY OF THE INSTRUMENT

End of Report

CERTIFICATE OF CALIBRATION

CERTIFICATE No.	PRC22 - P68
RECEIVED SERVICE No.	PRC - 0224
SUBMITTED BY	EMC ENTERPRISE CO., LTD (HEAD OFFICE) 76/12 Moo 2 Pantanaonng, A.Muang, Sarabkhan 74000
EQUIPMENT	PRESSURE GAUGE
MANUFACTURE	NUOVA FIMA
MODEL	EN837-1
SERIAL No.	13756 08/2020
ID. No.	N/A
ENVIRONMENT CONDITION	25 +/- 2 °C (IN-HOUSE) 50 +/- 20 % RH
RECEIVED DATE	24 FEBRUARY 2022
CALIBRATION DATE	25 FEBRUARY 2022
ISSUE DATE	28 FEBRUARY 2022

CALIBRATION METHOD :

THIS INSTRUMENT WAS CALIBRATED BY COMPARISON WITH PRESSURE CALIBRATOR ACCORDING TO DKD-R 6-1 MARCH 2003

MEASUREMENT UNCERTAINTY :

THE REPORTED UNCERTAINTY OF MEASUREMENT WAS BASED ON STANDARD UNCERTAINTY MULTIPLIED BY A COVERAGE FACTOR K = 2, WHICH EFFECTIVE DEGREE OF FREEDOM ν_{eff} 100 CORRESPONDS A LEVEL OF CONFIDENCE OF APPROXIMATELY 95 %

CALIBRATED BY

Mr. JARATHON SINGHAPAN

CERTIFICATE OF CALIBRATION

CERTIFICATE No.	PRC22 - P68	MODEL	EN837-1
RECEIVED SERVICE No.	PRC - 0224	SERIAL No.	13756 08/2020
EQUIPMENT	PRESSURE GAUGE	ID. No.	N/A
MANUFACTURE	NUOVA FIMA	CALIBRATION DATE	25 FEBRUARY 2022

REFERENCE STANDARD :			
EQUIPMENT	SERIAL No.	CERTIFICATE No.	DUE DATE
PRESSURE CALIBRATOR	2982137	WK2110-299-352	30 OCT 2022

TRACEABILITY :

- THE MEASUREMENT IS TRACEABLE TO INTERNATIONAL SYSTEM OF UNIT MAINTAINED AT NIMT

RESULT OF CALIBRATION	WITHOUT ADJUSTMENT		
RANGE : 0 to 40 bar	RESOLUTION : 0.5 bar		
UUC*	STANDARD	UUC*	UNCERTAINTY
READING	VALUE	ERROR	OF MEASUREMENT
(bar)	(bar)	(bar)	(+/- bar)
INCREASING			
0	0.000	0.000	0.289
5	4.695	0.305	0.289
15	14.695	0.305	0.289
25	25.002	-0.002	0.289
30	29.995	0.005	0.289
35	34.996	0.004	0.289
40	39.954	0.046	0.289
DECREASING			
40	39.954	0.046	0.289
35	34.996	0.004	0.289
30	29.995	0.005	0.289
25	25.002	-0.002	0.289
15	14.695	0.305	0.289
5	4.695	0.305	0.289
0	0.000	0.000	0.289

UUC* = UNIT UNDER CALIBRATION

COMMENT : THE RESULT REPORT IN THIS CERTIFICATE REFER TO THE CONDITION OF THE INSTRUMENT ON THE DATE OF THE CALIBRATION AND CARRY NO IMPLICATION READING TO LONG-TERM STABILITY OF THE INSTRUMENT

End of Report

CERTIFICATE OF CALIBRATION

CERTIFICATE No.	PRC22 - P69
RECEIVED SERVICE No.	PRC - 0224
SUBMITTED BY	EMC ENTERPRISE CO., LTD (HEAD OFFICE) 76/12 Moo 2 Pantanaonng, A.Muang, Sarabkhan 74000
EQUIPMENT	PRESSURE GAUGE
MANUFACTURE	NUOVA FIMA
MODEL	EN837-1
SERIAL No.	13795 08/2020
ID. No.	N/A
ENVIRONMENT CONDITION	25 +/- 2 °C (IN-HOUSE) 50 +/- 20 % RH
RECEIVED DATE	24 FEBRUARY 2022
CALIBRATION DATE	25 FEBRUARY 2022
ISSUE DATE	28 FEBRUARY 2022

CALIBRATION METHOD :

THIS INSTRUMENT WAS CALIBRATED BY COMPARISON WITH PRESSURE CALIBRATOR ACCORDING TO DKD-R 6-1 MARCH 2003

MEASUREMENT UNCERTAINTY :

THE REPORTED UNCERTAINTY OF MEASUREMENT WAS BASED ON STANDARD UNCERTAINTY MULTIPLIED BY A COVERAGE FACTOR K = 2, WHICH EFFECTIVE DEGREE OF FREEDOM ν_{eff} 100 CORRESPONDS A LEVEL OF CONFIDENCE OF APPROXIMATELY 95 %

CALIBRATED BY

Mr. JARATHON SINGHAPAN

CERTIFICATE OF CALIBRATION

CERTIFICATE No.	PRC22 - P70	MODEL	EN837-1
RECEIVED SERVICE No.	PRC - 0224	SERIAL No.	13758 08/2020
EQUIPMENT	PRESSURE GAUGE	ID. No.	N/A
MANUFACTURE	NUOVA FIMA	CALIBRATION DATE	25 FEBRUARY 2022

REFERENCE STANDARD :			
EQUIPMENT	SERIAL No.	CERTIFICATE No.	DUE DATE
PRESSURE CALIBRATOR	2982137	WK2110-299-352	30 OCT 2022

TRACEABILITY :

- THE MEASUREMENT IS TRACEABLE TO INTERNATIONAL SYSTEM OF UNIT MAINTAINED AT NIMT.

RESULT OF CALIBRATION :		WITHOUT ADJUSTMENT	
RANGE :	0 to 40 bar	RESOLUTION :	0.5 bar
	UUC* READING (bar)	STANDARD VALUE (bar)	UUC* ERROR (bar)
INCREASING	0	0.000	0.000
	5	4.594	0.406
	15	14.746	0.254
	25	24.727	0.273
	30	29.877	0.163
	35	34.969	0.031
DECREASING	40	39.945	0.055
	40	39.945	0.055
	35	34.969	0.031
	30	29.877	0.163
	25	24.727	0.273
	15	14.746	0.254
	5	4.594	0.406
	0	0.000	0.000

UUC* = UNIT UNDER CALIBRATION

COMMENT : THE RESULT REPORT IN THIS CERTIFICATE REFER TO THE CONDITION OF THE INSTRUMENT ON THE DATE OF THE CALIBRATION AND CARRY NO IMPLICATION READING TO LONG-TERM STABILITY OF THE INSTRUMENT

End of Report

CERTIFICATE OF CALIBRATION

CERTIFICATE No.	PRC22 - P70
RECEIVED SERVICE No.	PRC - 0224
SUBMITTED BY	EMC ENTERPRISE CO., LTD (HEAD OFFICE) 76/12 Moo 2 Pattanansingh, A.Muang, Samutakhon 74000
EQUIPMENT	PRESSURE GAUGE
MANUFACTURE	NUOVA FIMA
MODEL	EN837-1
SERIAL No.	13758 08/2020
ID. No.	N/A
ENVIRONMENT CONDITION	25 ± 2 °C (IN-HOUSE) 50 ± 20 % RH
RECEIVED DATE	24 FEBRUARY 2022
CALIBRATION DATE	25 FEBRUARY 2022
ISSUE DATE	28 FEBRUARY 2022

CALIBRATION METHOD :

THIS INSTRUMENT WAS CALIBRATED BY COMPARISON WITH PRESSURE CALIBRATOR ACCORDING TO DKD-R 6-1 MARCH 2003

MEASUREMENT UNCERTAINTY :

THE REPORTED UNCERTAINTY OF MEASUREMENT WAS BASED ON STANDARD UNCERTAINTY MULTIPLIED BY A COVERAGE FACTOR K = 2, WHICH EFFECTIVE DEGREE OF FREEDOM ν_{eff} 100 CORRESPONDS A LEVEL OF CONFIDENCE OF APPROXIMATELY 95 %

CALIBRATED BY
Mr JARATHON SINGHAPAN

CERTIFICATE OF CALIBRATION

CERTIFICATE No.	PRC22 - P70	MODEL	EN837-1
RECEIVED SERVICE No.	PRC - 0224	SERIAL No.	13758 08/2020
EQUIPMENT	PRESSURE GAUGE	ID. No.	N/A
MANUFACTURE	NUOVA FIMA	CALIBRATION DATE	25 FEBRUARY 2022

REFERENCE STANDARD :			
EQUIPMENT	SERIAL No.	CERTIFICATE No.	DUE DATE
PRESSURE CALIBRATOR	2982137	WK2110-299-352	30 OCT 2022

TRACEABILITY :

- THE MEASUREMENT IS TRACEABLE TO INTERNATIONAL SYSTEM OF UNIT MAINTAINED AT NIMT.

RESULT OF CALIBRATION :		WITHOUT ADJUSTMENT	
RANGE :	0 to 40 bar	RESOLUTION :	0.5 bar
	UUC* READING (bar)	STANDARD VALUE (bar)	UUC* ERROR (bar)
INCREASING	0	0.000	0.000
	5	4.854	0.146
	15	14.640	0.360
	25	24.961	0.039
	30	30.002	-0.002
	35	35.055	-0.055
DECREASING	40	39.996	0.004
	40	39.996	0.004
	35	35.055	-0.055
	30	30.002	-0.002
	25	24.961	0.039
	15	14.640	0.360
	5	4.854	0.146
	0	0.000	0.000

UUC* = UNIT UNDER CALIBRATION

COMMENT : THE RESULT REPORT IN THIS CERTIFICATE REFER TO THE CONDITION OF THE INSTRUMENT ON THE DATE OF THE CALIBRATION AND CARRY NO IMPLICATION READING TO LONG-TERM STABILITY OF THE INSTRUMENT

End of Report

CERTIFICATE OF CALIBRATION

CERTIFICATE No.	PRC22 - P70
RECEIVED SERVICE No.	PRC - 0224
SUBMITTED BY	EMC ENTERPRISE CO., LTD (HEAD OFFICE) 76/12 Moo 2 Pattanansingh, A.Muang, Samutakhon 74000
EQUIPMENT	PRESSURE GAUGE
MANUFACTURE	NUOVA FIMA
MODEL	EN837-1
SERIAL No.	13704 08/2020
ID. No.	N/A
ENVIRONMENT CONDITION	25 ± 2 °C (IN-HOUSE) 50 ± 20 % RH
RECEIVED DATE	24 FEBRUARY 2022
CALIBRATION DATE	25 FEBRUARY 2022
ISSUE DATE	28 FEBRUARY 2022

CALIBRATION METHOD :

THIS INSTRUMENT WAS CALIBRATED BY COMPARISON WITH PRESSURE CALIBRATOR ACCORDING TO DKD-R 6-1 MARCH 2003

MEASUREMENT UNCERTAINTY :

THE REPORTED UNCERTAINTY OF MEASUREMENT WAS BASED ON STANDARD UNCERTAINTY MULTIPLIED BY A COVERAGE FACTOR K = 2, WHICH EFFECTIVE DEGREE OF FREEDOM ν_{eff} 100 CORRESPONDS A LEVEL OF CONFIDENCE OF APPROXIMATELY 95 %

CALIBRATED BY
Mr JARATHON SINGHAPAN

CERTIFICATE OF CALIBRATION

CERTIFICATE No.	PRC22 - P71	MODEL	EN837-1
RECEIVED SERVICE No.	PRC - 0224	SERIAL No.	13704 08/2020
EQUIPMENT	PRESSURE GAUGE	ID. No.	N/A
MANUFACTURE	NUOVA FIMA	CALIBRATION DATE	25 FEBRUARY 2022

REFERENCE STANDARD :			
EQUIPMENT	SERIAL No.	CERTIFICATE No.	DUE DATE
PRESSURE CALIBRATOR	2982137	WK2110-299-352	30 OCT 2022

TRACEABILITY :

- THE MEASUREMENT IS TRACEABLE TO INTERNATIONAL SYSTEM OF UNIT MAINTAINED AT NIMT.

RESULT OF CALIBRATION :

WITHOUT ADJUSTMENT

RANGE : 0 to 40 bar

RESOLUTION : 0.5 bar

	UUC* READING (bar)	STANDARD VALUE (bar)	UUC* ERROR (bar)	UNCERTAINTY OF MEASUREMENT (± bar)
INCREASING	0	0.000	0.000	0.289
	5	4.817	0.183	0.289
	15	14.774	0.226	0.289
	25	24.949	0.051	0.289
	30	30.051	-0.051	0.289
	35	34.982	0.018	0.289
	40	39.970	0.030	0.289
DECREASING	40	39.970	0.030	0.289
	35	34.982	0.018	0.289
	30	30.051	-0.051	0.289
	25	24.949	0.051	0.289
	15	14.774	0.226	0.289
	5	4.817	0.183	0.289
	0	0.000	0.000	0.289

UUC* = UNIT UNDER CALIBRATION

COMMENT : THE RESULT REPORT IN THIS CERTIFICATE REFER TO THE CONDITION OF THE INSTRUMENT ON THE DATE OF THE CALIBRATION AND CARRY NO IMPLICATION READING TO LONG-TERM STABILITY OF THE INSTRUMENT

End of Report ...

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CERTIFICATE OF CALIBRATION

CERTIFICATE No.	PRC22 - P72
RECEIVED SERVICE No.	PRC - 0224
SUBMITTED BY	EMC ENTERPRISE CO., LTD (HEAD OFFICE) 76/12 Moo 2 Pantanonsingh, A.Muang, Sarutskhan 74000
EQUIPMENT	PRESSURE GAUGE
MANUFACTURE	NUOVA FIMA
MODEL	EN837-1
SERIAL No.	13797 08/2020
ID. No.	N/A
ENVIRONMENT CONDITION	25 ± 2 °C (IN-HOUSE) 50 ± 20 % RH
RECEIVED DATE	24 FEBRUARY 2022
CALIBRATION DATE	25 FEBRUARY 2022
ISSUE DATE	28 FEBRUARY 2022

CALIBRATION METHOD :

THIS INSTRUMENT WAS CALIBRATED BY COMPARISON WITH PRESSURE CALIBRATOR ACCORDING TO DKD-R 6-1 MARCH 2003

MEASUREMENT UNCERTAINTY :

THE REPORTED UNCERTAINTY OF MEASUREMENT WAS BASED ON STANDARD UNCERTAINTY MULTIPLIED BY A COVERAGE FACTOR K = 2, WHICH EFFECTIVE DEGREE OF FREEDOM V=100 CORRESPONDS A LEVEL OF CONFIDENCE OF APPROXIMATELY 95 %

CALIBRATED BY

Mr. JARATHON SINGHAPAN

PAGE : 1 / 2

CERTIFICATE OF CALIBRATION

CERTIFICATE No.	PRC22 - P72	MODEL	EN837-1
RECEIVED SERVICE No.	PRC - 0224	SERIAL No.	13797 08/2020
EQUIPMENT	PRESSURE GAUGE	ID. No.	N/A
MANUFACTURE	NUOVA FIMA	CALIBRATION DATE	25 FEBRUARY 2022

REFERENCE STANDARD :			
EQUIPMENT	SERIAL No.	CERTIFICATE No.	DUE DATE
PRESSURE CALIBRATOR	2982137	WK2110-299-352	30 OCT 2022

TRACEABILITY :

- THE MEASUREMENT IS TRACEABLE TO INTERNATIONAL SYSTEM OF UNIT MAINTAINED AT NIMT.

RESULT OF CALIBRATION :

WITHOUT ADJUSTMENT

RANGE : 0 to 40 bar

RESOLUTION : 0.5 bar

	UUC* READING (bar)	STANDARD VALUE (bar)	UUC* ERROR (bar)	UNCERTAINTY OF MEASUREMENT (± bar)
INCREASING	0	0.000	0.000	0.289
	5	4.785	0.215	0.289
	15	14.769	0.231	0.289
	25	25.026	-0.026	0.289
	30	30.029	-0.029	0.289
	35	34.993	0.007	0.289
	40	40.007	-0.007	0.289
DECREASING	40	40.007	-0.007	0.289
	35	34.993	0.007	0.289
	30	30.029	-0.029	0.289
	25	25.026	-0.026	0.289
	15	14.769	0.231	0.289
	5	4.785	0.215	0.289
	0	0.000	0.000	0.289

UUC* = UNIT UNDER CALIBRATION

COMMENT : THE RESULT REPORT IN THIS CERTIFICATE REFER TO THE CONDITION OF THE INSTRUMENT ON THE DATE OF THE CALIBRATION AND CARRY NO IMPLICATION READING TO LONG-TERM STABILITY OF THE INSTRUMENT

End of Report ...

PAGE : 2 / 2

CERTIFICATE OF CALIBRATION

CERTIFICATE No.	PRC21 - P121
RECEIVED SERVICE No.	PRC - 0505
SUBMITTED BY	EMC ENTERPRISE CO., LTD (HEAD OFFICE) 76/12 Moo 2 Pantanonsingh, A.Muang, Sarutskhan 74000
EQUIPMENT	VACUUM GAUGE
MANUFACTURE	SWISS MADE
MODEL	N/A
SERIAL No.	C13-102
ID. No.	N/A
ENVIRONMENT CONDITION	25 ± 2 °C (IN-HOUSE) 50 ± 20 % RH
RECEIVED DATE	5 MAY 2021
CALIBRATION DATE	6 MAY 2021
ISSUE DATE	10 MAY 2021

CALIBRATION METHOD :

THIS INSTRUMENT WAS CALIBRATED BY COMPARISON WITH PRESSURE CALIBRATOR ACCORDING TO DKD-R 6-1 MARCH 2003

MEASUREMENT UNCERTAINTY :

THE REPORTED UNCERTAINTY OF MEASUREMENT WAS BASED ON STANDARD UNCERTAINTY MULTIPLIED BY A COVERAGE FACTOR K = 2, WHICH EFFECTIVE DEGREE OF FREEDOM V=100 CORRESPONDS A LEVEL OF CONFIDENCE OF APPROXIMATELY 95 %

CALIBRATED BY

Mr. JARATHON SINGHAPAN

ENGINEER

QUALITY MANAGER

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PAGE : 1 / 2

CERTIFICATE OF CALIBRATION

CERTIFICATE No.	: PRC21 - P121	MODEL	: N/A
RECEIVED SERVICE No.	: PRC - 0505	SERIAL No.	: C13-102
EQUIPMENT	VACUUM GAUGE	ID. No.	: N/A
MANUFACTURE	SWISS MADE	CALIBRATION DATE	: 6 MAY 2021

REFERENCE STANDARD :

EQUIPMENT	SERIAL No.	CERTIFICATE No.	DUE DATE
DIGITAL TEST GAUGE	4234132	TTIH-0-35501	1 DEC 2021

TRACEABILITY :

- THE MEASUREMENT IS TRACEABLE TO TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN).

RESULT OF CALIBRATION :

RANGE : 0 to 27 inHg

WITHOUT ADJUSTMENT

RESOLUTION : 1 inHg

	UUC* READING (inHg)	STANDARD VALUE (inHg)	UUC* ERROR (inHg)	UNCERTAINTY OF MEASUREMENT (+/- inHg)
INCREASING				
	0	0.00	0.00	0.579
	-5	-5.56	0.56	0.579
	-10	-10.48	0.48	0.579
	-15	-15.28	0.28	0.579
	-20	-20.38	0.38	0.579
	-25	-25.27	0.27	0.579
	-27	-27.82	0.82	0.579
DECREASING				
	-27	-27.82	0.82	0.579
	-25	-25.27	0.27	0.579
	-20	-20.38	0.38	0.579
	-15	-15.28	0.28	0.579
	-10	-10.48	0.48	0.579
	-5	-5.56	0.56	0.579
	0	0.00	0.00	0.579

UUC* = UNIT UNDER CALIBRATION

COMMENT : THE RESULT REPORT IN THIS CERTIFICATE REFER TO THE CONDITION OF THE INSTRUMENT ON THE DATE OF THE CALIBRATION AND CARRY NO IMPLICATION READING TO LONG-TERM STABILITY OF THE INSTRUMENT

End of Report ...

PAGE : 2 / 2

CERTIFICATE OF CALIBRATION

CERTIFICATE No.	: PRC21 - P122
RECEIVED SERVICE No.	: PRC - 0505
SUBMITTED BY	: EMC ENTERPRISE CO., LTD (HEAD OFFICE) 76/12 Moo 2 Pantanasirasingh, A.Muang, Samutakorn 74000
EQUIPMENT	: VACUUM GAUGE
MANUFACTURE	: SWISS MADE
MODEL	: N/A
SERIAL No.	: C13-101
ID. No.	: N/A
ENVIRONMENT CONDITION	: 25 +/- 2 °C (IN-HOUSE) 50 +/- 20 % RH
RECEIVED DATE	: 5 MAY 2021
CALIBRATION DATE	: 6 MAY 2021
ISSUE DATE	: 10 MAY 2021



CALIBRATION METHOD :

THIS INSTRUMENT WAS CALIBRATED BY COMPARISON WITH PRESSURE CALIBRATOR ACCORDING TO DKD-R 6-1: MARCH 2003

MEASUREMENT UNCERTAINTY :

THE REPORTED UNCERTAINTY OF MEASUREMENT WAS BASED ON STANDARD UNCERTAINTY MULTIPLIED BY A COVERAGE FACTOR K = 2, WHICH EFFECTIVE DEGREE OF FREEDOM ν_{eff} 100 CORRESPONDS A LEVEL OF CONFIDENCE OF APPROXIMATELY 95 %

CALIBRATED BY

MR. JARATHON SINGHAPAN

ENGINEER

QUALITY MANAGER

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PAGE : 1 / 2

CERTIFICATE OF CALIBRATION

CERTIFICATE No.	: PRC21 - P122	MODEL	: N/A
RECEIVED SERVICE No.	: PRC - 0505	SERIAL No.	: C13-101
EQUIPMENT	VACUUM GAUGE	ID. No.	: N/A
MANUFACTURE	SWISS MADE	CALIBRATION DATE	: 6 MAY 2021

REFERENCE STANDARD :

EQUIPMENT	SERIAL No.	CERTIFICATE No.	DUE DATE
DIGITAL TEST GAUGE	4234132	TTIH-0-35501	1 DEC 2021

TRACEABILITY :

- THE MEASUREMENT IS TRACEABLE TO TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN).

RESULT OF CALIBRATION :

RANGE : 0 to 27 inHg

WITHOUT ADJUSTMENT

RESOLUTION : 1 inHg

	UUC* READING (inHg)	STANDARD VALUE (inHg)	UUC* ERROR (inHg)	UNCERTAINTY OF MEASUREMENT (+/- inHg)
INCREASING				
	0	0.00	0.00	0.579
	-5	-5.46	0.46	0.579
	-10	-10.54	0.54	0.579
	-15	-15.40	0.40	0.579
	-20	-20.84	0.84	0.579
	-25	-25.30	0.30	0.579
	-27	-27.14	0.14	0.579
DECREASING				
	-27	-27.14	0.14	0.579
	-25	-25.30	0.30	0.579
	-20	-20.84	0.84	0.579
	-15	-15.40	0.40	0.579
	-10	-10.54	0.54	0.579
	-5	-5.46	0.46	0.579
	0	0.00	0.00	0.579

UUC* = UNIT UNDER CALIBRATION

COMMENT : THE RESULT REPORT IN THIS CERTIFICATE REFER TO THE CONDITION OF THE INSTRUMENT ON THE DATE OF THE CALIBRATION AND CARRY NO IMPLICATION READING TO LONG-TERM STABILITY OF THE INSTRUMENT

End of Report ...

PAGE : 2 / 2



PPS STEEL CO., LTD.

8/88 Moo 10, Bangpla, Bangpla, Samutprakarn, 10510
 Tel : (02) 752-5151 (Auto) Fax : (02) 752-5250 / E-mail : pps@ppssteel.com

Issued to :

EMC ENTERPRISE CO., LTD.
 76/12 Moo 2 Pantanasirasingh A.Muang
 Samutakorn 74000
 Tel : (034) 865-740 Fax : (034) 865-738

Certificate No. : 11622
 Group No. : SC6501102
 Ref. Invoice No. : 0501174
 Date : 01 March 2022

CERTIFICATE OF LIFTING EQUIPMENT TESTING

Item No.	Serial No.	Description of goods and size	Standard Lift (MT)	Working Load Limit (MT)	Proof Load (MT)	Quantity
1	WS011510	WEBBING SLING SIZE 1.0 MT x LENGTH 1.50 M.	11N x 1.5H	1.0 MT	2.0 MT	1 EA
3	WS011511	WEBBING SLING SIZE 1.0 MT x LENGTH 1.50 M.	11N x 1.5H	1.0 MT	2.0 MT	1 EA

Inspect thoroughly before re-use. Do not exceed safe working load

I CERTIFY, ON BEHALF OF PANZER, GERMANY
 THAT THE ABOVE PRODUCT HAD BEEN EXAMINED AND TESTED BY THE UNDERSIGNED ACCORDING
 TO MANUFACTURER SPECIFICATION AND WARE FREE FROM DEFECTS.

**PPS STEEL CO., LTD.**

8/88 Moo 10 , Bangla, Bangkh, Samutprakarn, 10540
Tel : (02) 752-5151 (Auto) Fax : (02) 752-5250 / E-mail : pps@ppssteel.com

Issued to :

EMC ENTERPRISE CO.,LTD.
76/12 Moo 2 Pantakrasingh A.Muang
Samutprakarn 74000
Tel : (034) 865-740 Fax : (034) 865-738

Certificate No. 11623
Group No. SO6501102
Ref. Invoice No. 6501174
Date 01 March 2022

CERTIFICATE OF LIFTING EQUIPMENT TESTING

Item No.	Serial No.	Description of goods and size	Standard LRT (H)	Working Load Limit (MT)	Proof Load (MT)	Quantity
1	WS0212/028	WEBBING SLING SIZE 2.0 MT x LENGTH 1.50 M.	21N x 1.5M	2.0 MT	4.0 MT	1 EA
3	WS0212/069	WEBBING SLING SIZE 2.0 MT x LENGTH 1.50 M.	21N x 1.5M	2.0 MT	4.0 MT	1 EA

Inspect thoroughly before re-use. Do not exceed safe working load

I CERTIFY, ON BEHALF OF PANZER, GERMANY
THAT THE ABOVE PRODUCT HAD BEEN EXAMINED AND TESTED BY THE UNDERSIGNED ACCORDING
TO MANUFACTURER SPECIFICATION AND WARE FREE FROM DEFECTS.

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FM-SA-10_Rev.00

**PPS STEEL CO., LTD.**

8/88 Moo 10 , Bangla, Bangkh, Samutprakarn, 10540
Tel : (02) 752-5151 (Auto) Fax : (02) 752-5250 / E-mail : pps@ppssteel.com

Issued to :

EMC ENTERPRISE CO.,LTD.
76/12 Moo 2 Pantakrasingh A.Muang
Samutprakarn 74000
Tel : (034) 865-740 Fax : (034) 865-738

Certificate No. 11625
Group No. SO6501102
Ref. Invoice No. 6501174
Date 01 March 2022

CERTIFICATE OF LIFTING EQUIPMENT TESTING

Item No.	Serial No.	Description of goods and size	Standard LRT (H)	Working Load Limit (MT)	Proof Load (MT)	Quantity
1	100	WEBBING SLING SIZE 3.0 MT x LENGTH 3.0 M.	31N x 3.0M	3.0 MT	6.0 MT	1 EA
3	108	WEBBING SLING SIZE 3.0 MT x LENGTH 3.0 M.	31N x 3.0M	3.0 MT	6.0 MT	1 EA

Inspect thoroughly before re-use. Do not exceed safe working load

I CERTIFY, ON BEHALF OF PANZER, GERMANY
THAT THE ABOVE PRODUCT HAD BEEN EXAMINED AND TESTED BY THE UNDERSIGNED ACCORDING
TO MANUFACTURER SPECIFICATION AND WARE FREE FROM DEFECTS.

www.ppssteel.com

FM-SA-10_Rev.00

**PPS STEEL CO., LTD.**

8/88 Moo 10 , Bangla, Bangkh, Samutprakarn, 10540
Tel : (02) 752-5151 (Auto) Fax : (02) 752-5250 / E-mail : pps@ppssteel.com

Issued to :

EMC ENTERPRISE CO.,LTD.
76/12 Moo 2 Pantakrasingh A.Muang
Samutprakarn 74000
Tel : (034) 865-740 Fax : (034) 865-738

Certificate No. 11624
Group No. SO6501102
Ref. Invoice No. 6501174
Date 01 March 2022

CERTIFICATE OF LIFTING EQUIPMENT TESTING

Item No.	Serial No.	Description of goods and size	Standard LRT (H)	Working Load Limit (MT)	Proof Load (MT)	Quantity
1	WS0203/074	WEBBING SLING SIZE 2.0 MT x LENGTH 3.0 M.	21N x 3.0M	2.0 MT	4.0 MT	1 EA
2	WS0203/191	WEBBING SLING SIZE 2.0 MT x LENGTH 3.0 M.	21N x 3.0M	2.0 MT	4.0 MT	1 EA
3	WS0203/286	WEBBING SLING SIZE 2.0 MT x LENGTH 3.0 M.	21N x 3.0M	2.0 MT	4.0 MT	1 EA
4	WS0203/295	WEBBING SLING SIZE 2.0 MT x LENGTH 3.0 M.	21N x 3.0M	2.0 MT	4.0 MT	1 EA

Inspect thoroughly before re-use. Do not exceed safe working load

I CERTIFY, ON BEHALF OF PANZER, GERMANY
THAT THE ABOVE PRODUCT HAD BEEN EXAMINED AND TESTED BY THE UNDERSIGNED ACCORDING
TO MANUFACTURER SPECIFICATION AND WARE FREE FROM DEFECTS.

www.ppssteel.com

FM-SA-10_Rev.00

**PPS STEEL CO., LTD.**

8/88 Moo 10 , Bangla, Bangkh, Samutprakarn, 10540
Tel : (02) 752-5151 (Auto) Fax : (02) 752-5250 / E-mail : pps@ppssteel.com

Issued to :

EMC ENTERPRISE CO.,LTD.
76/12 Moo 2 Pantakrasingh A.Muang
Samutprakarn 74000
Tel : (034) 865-740 Fax : (034) 865-738

Certificate No. 11626
Group No. SO6501102
Ref. Invoice No. 6501174
Date 01 March 2022

CERTIFICATE OF LIFTING EQUIPMENT TESTING

Item No.	Serial No.	Description of goods and size	Standard LRT (H)	Working Load Limit (MT)	Proof Load (MT)	Quantity
1	018	WEBBING SLING SIZE 5.0 MT x LENGTH 6.0 M.	51N x 6.0M	5.0 MT	10.0 MT	1 EA
3	032	WEBBING SLING SIZE 5.0 MT x LENGTH 6.0 M.	51N x 6.0M	5.0 MT	10.0 MT	1 EA

Inspect thoroughly before re-use. Do not exceed safe working load

I CERTIFY, ON BEHALF OF PANZER, GERMANY
THAT THE ABOVE PRODUCT HAD BEEN EXAMINED AND TESTED BY THE UNDERSIGNED ACCORDING
TO MANUFACTURER SPECIFICATION AND WARE FREE FROM DEFECTS.

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FM-SA-10_Rev.00



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PHOTO REPORT

Project : Testing of Offloading Hose Offshore
Client Name : Petrofac South East Asia Pte Ltd
Contractor : EMC Enterprise Co., Ltd

Report No. : EMC-QC-PHTR-2022-161420
Date : 21 March 2022
Refer Document No. : Cert. No.: EMC-HT-2022-161420

Hose No. : 361420 Testing Duration : 15-Mar-2022 Resulted : Passed



Visual Inspection (External)



Hydro Pressure Test / Elongation Hose Measurement



1st Stage Pressure Test

2nd Stage Pressure Test

3rd Stage Pressure Test



L1 Elongation Measure

L2 Elongation Measure

L3 Elongation Measure



Vacuum Test

Visual Inspection (Internal)

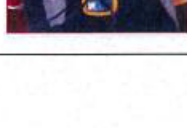


Chart Recorder

Electrical Continuity Test

INSPECTION AND TEST CERTIFICATE FLOATING HOSE



Client Name : Petrofac South East Asia Pte Ltd Location : PFF-023 Inspection Date : 15-Mar-2022
Cert. No. : EMC-HT-2022-161423

Hose Serial No.	Description	Hose Type Ref.	Base Size	Length	Rated Pressure	Actual Hose Weight	Temporary Elongation at Factory	Permanent Elongation at Factory	Adhesion Test Data
35 (161422)	Full Floating Hose Tether Kall Huse	SEAFLEX SUPER 300 33 3070Y	400 10"	12 39'	15	1804	0.99%	0.07%	22 Nov 2022

Manufacturer: The Yokohama Rubber Co., Ltd. Japan

No.	Range Cert. No.	Range Cert. No.	Range Acceptance Test	Flange Manufacturer	Build-in Flange Type	Remarks
A	014-1400114002Y	Range: 05	-	YOKO 2504040 CO. LTD.	ADVE 120 T F W N	Flange: Nylon Hose + O-R
B	Range: 05	Range: 05	-	-	-	-

Test Results	Result of All Inspection and tests incl. sample & flanges	Rated working pressure (MPa)	Total holding time 50% of hose RWP	Total holding time at hose RWP	Overall length at 0.7 bar (m)	Overall length at 15 bar (m)	Overall length at 30 bar (m)	Temporary elongation at RWP	Permanent elongation at 0.7 bar	Vacuum applied for a period of 15 minutes at ambient temp	Visual inspection at pressure & vacuum test	Electrical continuity test
Pass / Fail	Pass	15	30	30	12293	12292	12289	1.00997136	0.12007028	Good	Good	Good
Pass	15	30	30	30	12293	12292	12289	1.00997136	0.12007028	Good	Good	Good

Remarks:

We have by verifying that the above mentioned hose were inspected and tested as per ISO 9001:2015 "Guidelines for Handling, Storage, Inspection and Testing of Hoses in the Field (Second Edition: 2002)



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PHOTO REPORT

Project : Testing of Offloading Hose Offshore
Client Name : Petrofac South East Asia Pte Ltd
Contractor : EMC Enterprise Co., Ltd

Report No. : EMC-QC-PHTR-2022-161422
Date : 21 March 2022
Refer Document No. : Cert. No.: EMC-HT-2022-161422

Hose No. : 361422 Testing Duration : 15-Mar-2022 Resulted : Passed



Visual Inspection (External)



Hydro Pressure Test / Elongation Hose Measurement



1st Stage Pressure Test

2nd Stage Pressure Test

3rd Stage Pressure Test



L1 Elongation Measure

L2 Elongation Measure

L3 Elongation Measure



Vacuum Test

Visual Inspection (Internal)



Chart Recorder

Electrical Continuity Test

INSPECTION AND TEST CERTIFICATE FLOATING HOSE



Client Name : Petrofac South East Asia Pte Ltd Location : PFF-023 Inspection Date : 16-Mar-2022
Cert. No. : EMC-HT-2022-161423

Hose Serial No.	Description	Hose Type Ref.	Base Size	Length	Rated Pressure	Actual Hose Weight	Temporary Elongation at Factory	Permanent Elongation at Factory	Adhesion Test Data
35 (161422)	Full Floating Hose Tether Kall Huse	SEAFLEX SUPER 300 33 3070Y	400 10"	12 39'	15	1804	0.99%	0.06%	22 Nov 2022

Manufacturer: The Yokohama Rubber Co., Ltd. Japan

No.	Range Cert. No.	Range Cert. No.	Range Acceptance Test	Flange Manufacturer	Build-in Flange Type	Remarks
A	014-1400114002Y	Range: 05	-	YOKO 2504040 CO. LTD.	ADVE 120 T F W N	Flange: Nylon Hose + O-R
B	Range: 05	Range: 05	-	-	-	-

Test Results	Result of All Inspection and tests incl. sample & flanges	Rated working pressure (MPa)	Total holding time 50% of hose RWP	Total holding time at hose RWP	Overall length at 0.7 bar (m)	Overall length at 15 bar (m)	Overall length at 30 bar (m)	Temporary elongation at RWP	Permanent elongation at 0.7 bar	Vacuum applied for a period of 15 minutes at ambient temp	Visual inspection at pressure & vacuum test	Electrical continuity test
Pass / Fail	Pass	15	30	30	12293	12292	12289	0.99994935	0.12006981	Good	Good	Good
Pass	15	30	30	30	12293	12292	12289	0.99994935	0.12006981	Good	Good	Good

Remarks:

We have by verifying that the above mentioned hose were inspected and tested as per ISO 9001:2015 "Guidelines for Handling, Storage, Inspection and Testing of Hoses in the Field (Second Edition: 2002)



บริษัท อีเอ็มซี จำกัด

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70/12 Moo 2 Pathumwanong, Mueang Samut Sakhon District, Samut Sakhon Province 11000 Telephone 034-885740 Fax 034-885738

PHOTO REPORT

Project : Testing of Offloading Hose Offshore

Report No. : EMC-QC-PTR-2022-161426

Client Name : Petrofac South East Asia Pte Ltd.

Date : 21 March 2022

Contractor : EMC Enterprise Co., Ltd.

Refer Document No. : Cert. No. : EMC-HT-2022-161426

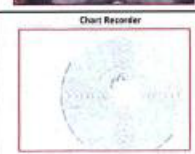
Hose No. : 161426

Testing Duration : 16-Mar-2022

Resulted : Passed



Hydro Pressure Test / Elongation Hose Measurement



INSPECTION AND TEST CERTIFICATE FLOATING HOSE



Client Name : Petrofac South East Asia Pte Ltd. Location : FPP-005 Inspection Date : 17-Mar-2022
Cert. No. : EMC-HT-2022-161427

Hose Serial No.	Description	Hose Type Ref.	Bore Size	Length	Rated Pressure	Actual Hose Weight	Temporary Elongation at Failure	Permanent Elongation at Failure	Adhesion Test Data
161427	Full Floating Hose Tether Rail Hose	SEAFLEX SUPER 300-15 3070P	400 mm	100' 11"	12.5 MPa	2700 kg	0.50%	0.00%	22 Mar 2022

Welding and Flange Inspection	Welding Date	Welding No.	Welding Description	Welding Manufacturer	Welding Type	Remarks
A	04/10/2021	000001	Welding of 15" x 15" flange	TOPIC INDUSTRIAL CO. LTD.	Welding	Flange, High Neck 40"

Test Results	Result of All Inspection and tests incl. rigging & fittings	Rated working pressure MPa	Total loading time 20% at hose MPa	Total loading time at hose MPa	Overall length at 0.7 bar (m)	Overall length at 1.5 bar (m)	Overall length at 2.0 bar (m)	Temporary elongation at 0.7 bar (%)	Permanent elongation at 0.7 bar (%)	Permanent elongation at 1.5 bar (%)	Permanent elongation at 2.0 bar (%)	Vacuum applied for 15 minutes at 0.7 bar (mm Hg)	Visual inspection before pressure & vacuum test	Electrical continuity test
Pass / Fail	Pass	15	30	18	11700	12212	12185	1.200 (0.83%)	0.000 (0.00%)	0.000 (0.00%)	0.000 (0.00%)	15.000 (0.00%)	Pass	Pass

Remarks:

We hereby certify that the above mentioned hose were inspected and tested as per GCMP "Guidelines for Handling, Storage, Inspection and Testing of Hoses in the Field" (Second Edition - 2008)



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PHOTO REPORT

Project : Testing of Offloading Hose Offshore

Report No. : EMC-QC-PTR-2022-161427

Client Name : Petrofac South East Asia Pte Ltd.

Date : 21 March 2022

Contractor : EMC Enterprise Co., Ltd.

Refer Document No. : Cert. No. : EMC-HT-2022-161427

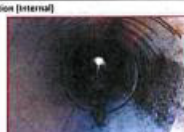
Hose No. : 161427

Testing Duration : 17-Mar-2022

Resulted : Passed



Hydro Pressure Test / Elongation Hose Measurement



INSPECTION AND TEST CERTIFICATE FLOATING HOSE



Client Name : Petrofac South East Asia Pte Ltd. Location : FPP-005 Inspection Date : 17-Mar-2022
Cert. No. : EMC-HT-2022-161428

Hose Serial No.	Description	Hose Type Ref.	Bore Size	Length	Rated Pressure	Actual Hose Weight	Temporary Elongation at Failure	Permanent Elongation at Failure	Adhesion Test Data
161428	Full Floating Hose Tether Rail Hose	SEAFLEX SUPER 300-15 3070P	400 mm	100' 11"	12.5 MPa	2700 kg	0.50%	0.00%	22 Mar 2022

Welding and Flange Inspection	Welding Date	Welding No.	Welding Description	Welding Manufacturer	Welding Type	Remarks
A	04/10/2021	000001	Welding of 15" x 15" flange	TOPIC INDUSTRIAL CO. LTD.	Welding	Flange, High Neck 40"

Test Results	Result of All Inspection and tests incl. rigging & fittings	Rated working pressure MPa	Total loading time 20% at hose MPa	Total loading time at hose MPa	Overall length at 0.7 bar (m)	Overall length at 1.5 bar (m)	Overall length at 2.0 bar (m)	Temporary elongation at 0.7 bar (%)	Permanent elongation at 0.7 bar (%)	Permanent elongation at 1.5 bar (%)	Permanent elongation at 2.0 bar (%)	Vacuum applied for 15 minutes at 0.7 bar (mm Hg)	Visual inspection before pressure & vacuum test	Electrical continuity test
Pass / Fail	Pass	15	30	18	11700	12212	12185	1.200 (0.83%)	0.000 (0.00%)	0.000 (0.00%)	0.000 (0.00%)	15.000 (0.00%)	Pass	Pass

Remarks:

We hereby certify that the above mentioned hose were inspected and tested as per GCMP "Guidelines for Handling, Storage, Inspection and Testing of Hoses in the Field" (Second Edition - 2008)





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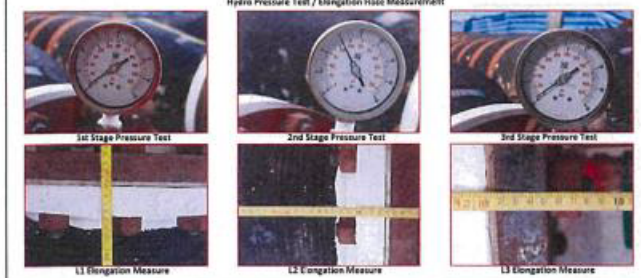
PHOTO REPORT

Project : Testing of Offloading Hose Offshore
Client Name : Petrofac South East Asia Pte Ltd.
Contractor : EMC Enterprise Co., Ltd.
Report No. : EMC-OC-PHTR-2022-161428
Date : 21 March 2022
Refer Document No. : Cert. No. EMC-HY-2022-161428

Hose No. : 161428 Testing Duration : 17-Mar-2022 Resulted : Passed



Hydro Pressure Test / Elongation Hose Measurement



EMC Enterprise Co., Ltd.

INSPECTION AND TEST CERTIFICATE FLOATING HOSE



Client Name : Petrofac South East Asia Pte Ltd. Location : TPP-003 Inspection Date : 17-Mar-2022

Cert. No. : EMC-HY-2022-161428

Hose Information	Description	Hose Type Ref.	Size	Length	Test Pressure	Actual Hose Weight	Temperature Elongation at Test	Permeation Elongation at Test	Adhesion Test Date
161428	Full Floating Hose Tanker Ref Hose	SEAFLEX SUPER 300 12 21787	400 18"	12 89'	22	1844	0.80%	0.07%	30 Nov 2019
Manufacturer: The Yokohama Rubber Co., Ltd. Japan									

Apples and Flange Inspection	Apples	Flange	Apples and Flange	Apples and Flange	Apples and Flange	Apples and Flange	Apples and Flange	Apples and Flange	Apples and Flange
A	SHF100R11100077	Hose No.	161428	Apples and Flange	Apples and Flange	Apples and Flange	Apples and Flange	Apples and Flange	Apples and Flange
B	SHF100R11100077	Hose No.	161428	Apples and Flange	Apples and Flange	Apples and Flange	Apples and Flange	Apples and Flange	Apples and Flange

Test Results	Area of all inspection and test results	Test Results	Test Results	Test Results	Test Results	Test Results	Test Results	Test Results	Test Results
Area of all inspection and test results	Test Results	Test Results	Test Results	Test Results	Test Results	Test Results	Test Results	Test Results	Test Results
Area of all inspection and test results	Test Results	Test Results	Test Results	Test Results	Test Results	Test Results	Test Results	Test Results	Test Results

Remarks:

We hereby certify that the above mentioned hose was inspected and tested as per EMC's "Underwater Hose Handling, Storage, Inspection and Testing of Hose in the Field (General Edition: 2006)"



EMC-161428_Rev.01/22



บริษัท อีเอ็มซี เอ็นเตอร์ไพรส์ จำกัด

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76/12 หมู่ 2 Pantakongkhong, Muang Samut Sakhon District, Samut Sakhon Province 74000 Telephone 034-865740 Fax 034-865738

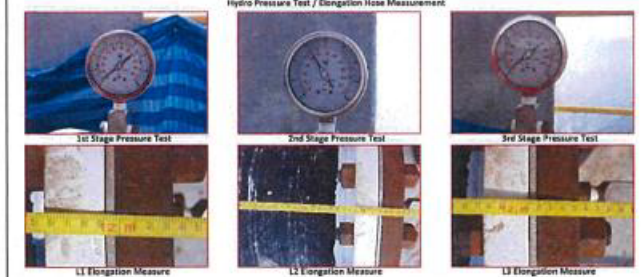
PHOTO REPORT

Project : Testing of Offloading Hose Offshore
Client Name : Petrofac South East Asia Pte Ltd.
Contractor : EMC Enterprise Co., Ltd.
Report No. : EMC-OC-PHTR-2022-161429
Date : 21 March 2022
Refer Document No. : Cert. No. EMC-HY-2022-161429

Hose No. : 161429 Testing Duration : 17-Mar-2022 Resulted : Passed






Hydro Pressure Test / Elongation Hose Measurement










EMC Enterprise Co., Ltd.

Pressure Testing offloading Hose Strings . (26-Sep-24)

Item	Appearance	Description
1		<ul style="list-style-type: none"> ➤ Operate Water High pressure for de-rusting and remove barnacle
2		<ul style="list-style-type: none"> ➤ Hang Off chain found good condition not any link worn out.
3		<ul style="list-style-type: none"> ➤ Renew pick up rope

Pressure Testing offloading Hose Strings . (26-Sep-24)

4		<ul style="list-style-type: none"> ➤ Pressure test at 6.0 bar and the pressure stabilized at 5.8 bar for 1 hour
5		<p><u>Condition of the hose string during the pressure test</u></p> <ul style="list-style-type: none"> ➤ 1st of FPSO Hose and 2nd & 3rd FPSO Hose (submarine hose) are satisfactory condition. <ul style="list-style-type: none"> - No leaks & seepage - No external deformation - No blistering of the cover. <p>Integrity of flange bolts in good condition</p>
4		<p><u>Condition of the hose string during the pressure test</u></p> <ul style="list-style-type: none"> ➤ 4th FPSO Hose in satisfactory condition. <ul style="list-style-type: none"> - No leaks - Buoyancy of hoses, floating level at the normal height. - Found Minor Marine growth on the hose.
5		<p><u>Condition of the hose string during the pressure test</u></p> <ul style="list-style-type: none"> ➤ Main line hoses are in satisfactory condition. <ul style="list-style-type: none"> - No leaks - Buoyancy of hoses, floating level at the normal height. - Found Minor Marine growth on the hose

6		<p><u>Condition of the hose string during the pressure test</u></p> <ul style="list-style-type: none">➤ Break away coupling is in satisfactory condition.<ul style="list-style-type: none">- No leaks- Found Minor Marine growth
7		<p><u>Condition of the hose string during the pressure test</u></p> <ul style="list-style-type: none">➤ Tail hoses are in satisfactory condition.<ul style="list-style-type: none">- No leaks- Buoyancy of hoses, floating level at the normal height.- Found Minor Marine growth on the hose
8		<p><u>Condition of the hose string during the pressure test</u></p> <ul style="list-style-type: none">➤ Tanker rail Hose is in satisfactory condition.<ul style="list-style-type: none">- No leaks- Outer cover is in good condition

เอกสารแนบที่ 44

คู่มือการทำงาน
และตัวอย่างเอกสารการตรวจสอบอุปกรณ์ที่ใช้ในการยก

Thailand – Health, Safety, Security and Environment

Portable Lifting Equipment Operating Practice

Safe Work Practices (SWP)

Electronic Version is Current—Uncontrolled Hard Copy Valid Only at the Time of Printing

Additional Metadata	
Record Number	GN006: Policies, Procedures, Standard and manual
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Function	Thailand
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Discipline	Health, Safety and Environment (HS)
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Updated on	22-Sep-2023
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Reviewed on	22-Sep-2023
Document Approvers	
Approved on	22-Sep-2023
Additional Comments	

Thailand – Health, Safety, Environment

Portable Lifting Equipment Operating Practice

Safe Work Practices (SWP)

Unpublished

Document Number:
CO-GEN-XXX
Revision R1

CHANGE SHEET

All major changes to the document at this current revision are recorded below.

(Does not include correction of typos or formatting changes)

Revision:	Date:	Originator:	Description of Change:
0	10 Feb 09	Thanagon T.	- First issued as SOP
0	28 Jul 11	Nuttawut K.	- Converted to SWP - Modified content, added inspection manifest form
R1	Apr 14	Thaweesak P.	- Formatted to EDMS template
R2	31 Mar 15	Natamon N.	- Changed company logo in Appendix 2: Lifting Manifest
R3	21 Jun 16	Thaweesak P.	- Item 4.2.4 Adding: Any CCU where fabricate by metal shall install wooden or rubber chock at bottom of the CCU to prevent metal-metal contact between the CCU and platform deck. The metal-metal contact may possible damage platform deck surface and resulted in corrosion, spark potential when lifting on the area where oil contained and possibly spark and fire.
R4	28 Nov 19	Pakdee A.	- Update of content in (4.1.4) Planning Lifting Operations - Update content in (4.3.1) Personnel Transfer Basket from X-800 to X904
R5	28 May 23	Alisa J.	- Updated logo, cover and header

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Thailand – Health, Safety, Security and Environment

Inspection of Lifting Equipment Procedure

Procedure (PRC)

PUBLISHED



Thailand – Health, Safety, Security and Environment

Inspection of Lifting Equipment Procedure
Procedure (PRC)

Electronic Version is Current—Uncontrolled Hard Copy Valid Only at the Time of Printing

Additional Metadata	
Record Number	GIN006;Policies, Procedures, Standard and manual
Document Type	Procedure (PRC)
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Asset	General
Function	Thailand
Department	HSSE & AIM
Discipline	Quality Assurance (QA)
Review Period	5 Years

Document Lifecycle	
Approval Status	Approved
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Document Reviewers Reviewed on	L1 : Vichai Tachavarakul 25-Jul-2023
Document Approvers Approved on	<div></div> 25-Jul-2023
Additional Comments	

CHANGE SHEET

All major changes to the document at this current revision are recorded below.
(Does not include correction of typos or formatting changes)

Revision	Date:	Originator:	Description of Change:
1	25 Aug 2022	Pradit B.	<ul style="list-style-type: none"> Initiate to replace the document no. TH-POT-AI-QA-PRC-0132-R7 due to changing of document property "Legal" from POT to GEN Content remains unchanged
2	19 May 2023	Pradit B.	<ul style="list-style-type: none"> Updated new company's name and logo Change Mubadala to Valeura Energy Change MPTL to VE
3	19 Jul 2023	Pradit B.	<p>Section 5</p> <ul style="list-style-type: none"> Change interval from 6 to 12 month Update part of crane as per Thai Law new Rev. 2021 <p>Section 8</p> <ul style="list-style-type: none"> Color Coding is changed from 2 to 4 years rotation <p>Appendix A: Updated Thai Legal Requirement Form</p> <p>Appendix B: Change interval from 6 to 12 month</p> <p>Appendix C: Change interval from 6 to 12 month</p> <p>Updated company's name from VE to the Company</p>

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Petrofac Facilities Management System
FPF – 003

JASMINE - RIGGING & LIFTING MANUAL

FPF-003-O-M-1101

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PREFACE

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Lifting Equipment Register
PETROFAC - FPF-003 OFFSHORE - MARCH 2023

Item	Equipment Type	Brand/Model	Equipment Description	Tag No.	Serial No	Location of Equipment	SWL / WLL	Inspection Date	Recommended Next Inspection Date	Report No.	Status	Remark
1	Air Hoist	Mini 1000	Chain Air Hoist	BF-091	-	Food Store	1 MT	23-Mar-2024	23-Mar-2025	2403020-CAH-001	In Use	
2	Air Hoist	Mini 1001	Chain Air Hoist	BF-092	N400715	Container	1 MT	23-Mar-2024	23-Mar-2025	2403020-CAH-002	In Use	
3	Air Hoist	TCR1000	Chain Air Hoist	CBAH-01	6L099	Container	1 MT	23-Mar-2024	23-Mar-2025	2403020-CAH-003	In Use	
4	Beam Clamp	Boss	Boss Beam Clamp	BC 01	BF 897	Container	2 MT	22-Mar-2024	22-Mar-2025	2403020-BC-001	In Use	
5	Beam Clamp	Boss	Boss Beam Clamp	BC 02	BF 896	Container	2 MT	22-Mar-2024	22-Mar-2025	2403020-BC-002	In Use	
6	Beam Clamp	Oz Blok	Oz Blok Beam Clamp	BC 03	GN 0488	Container	5 MT	22-Mar-2024	22-Mar-2025	2403020-BC-003	In Use	
7	Beam Clamp	Camlok	Camlok Beam Clamp	BC-04	DM054470	Container	15 MT	23-Mar-2024	23-Mar-2025	2403020-BC-004	In Use	
8	C Clamp	Record	Record C Clamp 12"	CC-01	CC 01	Container	N/A	22-Mar-2024	22-Mar-2025	2403020-CC-001	In Use	
11	Cargo Net	-	Cargo Net	-	-	Container	2t	23-Mar-2024	23-Mar-2025	2403020-CN-001	In Use	
12	CCU	-	Cargo Basket	MMY-BK-2017	MMY-BK-01/2017	Offtake Toolbox	MGW 1.00t	23-Mar-2024	23-Mar-2025	2403020-CCU-001	In Use	
13	CCU	-	Container	PSEA-RL-01	PSEA-RL-01	Container	MGW: 5.00MT	24-Mar-2024	24-Mar-2025	2403020-CCU-002	In Use	
14	Chain Block	Vital	Chain Block	CB-001	-	Container	3 MT	22-Mar-2024	22-Mar-2025	2403020-CB-001	In Use	
15	Chain Block	Vital	Chain Block	CB-002	-	Container	3 MT	22-Mar-2024	22-Mar-2025	2403020-CB-002	In Use	
16	Chain Block	Elephant K-75	Chain Block	CB-003	K6179	Container	3 MT	22-Mar-2024	22-Mar-2025	2403020-CB-003	In Use	
17	Chain Block	Vital	Chain Block	CB-004	-	Container	2 MT	22-Mar-2024	22-Mar-2025	2403020-CB-004	In Use	
18	Chain Block	Vital	Chain Block	CB-005	3120	Container	2 MT	22-Mar-2024	22-Mar-2025	2403020-CB-005	In Use	
19	Chain Block	Guteklass	Chain Block	CB-006	-	Container	2 MT	22-Mar-2024	22-Mar-2025	2403020-CB-006	In Use	
20	Chain Block	Elephant K-75	Chain Block	CB-007	K4077	Container	1 MT	22-Mar-2024	22-Mar-2025	2403020-CB-007	In Use	
21	Chain Block	Vital	Chain Block	CB-008	147024	Engine Room	1 MT	22-Mar-2024	22-Mar-2025	2403020-CB-008	In Use	
22	Chain Block	Elephant	Chain Block	CB-013	21803	Container	1.5 MT	22-Mar-2024	22-Mar-2025	2403020-CB-009	In Use	
23	Chain Block	Vital	Chain Block	CB-014	-	Container	2 MT	22-Mar-2024	22-Mar-2025	2403020-CB-010	In Use	
24	Chain Block	Vital	Chain Block	CB-018	-	Container	5 MT	22-Mar-2024	22-Mar-2025	2403020-CB-011	In Use	
25	Chain Block	Vital	Chain Block	CB-019	1078	Container	5 MT	22-Mar-2024	22-Mar-2025	2403020-CB-012	In Use	
26	Chain Block	Vital	Chain Block	CB-024	-	Container	2 MT	22-Mar-2024	22-Mar-2025	2403020-CB-013	In Use	
27	Chain Block	Vital	Chain Block	CB-027	146547	Engine Room	1 MT	27-Mar-2024	27-Mar-2025	2403020-CB-014	In Use	
28	Chain Sling	Crosby	2 Legs chain sling	SNCA-10	-	Toolbox oftake	12.80 MT	24-Mar-2024	24-Mar-2025	2403020-CHS-001	In Use	
29	Flat Sling	Ribbons	Flat Sling 2M	-	170863	Rescue Boat	2 MT	24-Mar-2024	24-Mar-2025	2403020-FS-001	In Use	
30	Flat Sling	Ribbons	Flat Sling 2M	-	170864	Rescue Boat	2 MT	24-Mar-2024	24-Mar-2025	2403020-FS-001	In Use	
31	Flat Sling	Ribbons	Flat Sling 2M	-	170865	Rescue Boat	2 MT	24-Mar-2024	24-Mar-2025	2403020-FS-001	In Use	
32	Flat Sling	Ribbons	Flat Sling 2M	-	170866	Rescue Boat	2 MT	24-Mar-2024	24-Mar-2025	2403020-FS-001	In Use	
33	Flat Sling	DSR	Flat Sling 3M	-	3TH 13101079	Hawser Rack	3 MT	24-Mar-2024	24-Mar-2025	2403020-FS-002	In Use	
35	Flat Sling	DSR	Flat Sling 3M	-	3TH 13111074	Hawser Rack	3 MT	24-Mar-2024	24-Mar-2025	2403020-FS-002	In Use	
36	Flat Sling	DSR	Flat Sling 3M	-	3TH 13101079	Deck crane	3 MT	25-Mar-2024	25-Mar-2025	2403020-FS-003	In Use	
37	Flat Sling	S-NEX	Flat sling 5M with master link both end	FS-033	17052247	Container	3 MT	23-Mar-2024	23-Mar-2025	2403020-FS-004	In Use	
38	Flat Sling	S-NEX	Flat sling 5M with master link both end	FS-034	17052245	Container	3 MT	23-Mar-2024	23-Mar-2025	2403020-FS-004	In Use	
39	Flat Sling	S-NEX	Flat sling 5M with master link both end	FS-035	17052246	Container	3 MT	23-Mar-2024	23-Mar-2025	2403020-FS-004	In Use	

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Item	Equipment Type	Brand/Model	Equipment Description	Tag No.	Serial No	Location of Equipment	SWL / WLL	Inspection Date	Recommended Next Inspection Date	Report No.	Status	Remark
40	Flat Sling	Technotex	Flat Sling 5M	FS-047	800038745	Store Container	8 MT	23-Mar-2024	23-Mar-2025	2403020-FS-005	In Use	
42	Flat Sling	Stark Sling	Flat Sling 5M	FS-052	FS-052-B5TL5M	Offtake Toolbox	5 MT	23-Mar-2024	23-Mar-2025	2403020-FS-006	In Use	
43	Flat Sling	Stark Sling	Flat Sling 5M	FS-053	FS-053-B5TL5M	Offtake Toolbox	5 MT	23-Mar-2024	23-Mar-2025	2403020-FS-006	In Use	
44	Flat Sling	TQD	Flat sling 2M	FS-060	-	Container	2 MT	27-Mar-2024	27-Mar-2025	2403020-FS-007	In Use	
46	Flat Sling	Technotex	Flat Sling 3M	FS-044	301313002	Container	3 MT	27-Mar-2024	27-Mar-2025	2403020-FS-008	In Use	
48	Flat Sling	Technotex	Flat Sling 6M	FS-074	102426466	Store Container	1 MT	27-Mar-2024	27-Mar-2025	2403020-FS-009	In Use	
49	Flat Sling	Technotex	Flat Sling 6M	FS-075	102317722	Store Container	1 MT	27-Mar-2024	27-Mar-2025	2403020-FS-009	In Use	
51	Flat Sling	Technotex	Flat Sling 10M	FS-049	400218076	Offtake Toolbox	4 MT	23-Mar-2024	23-Mar-2025	2403020-FS-010	In Use	
52	Flat Sling	Technotex	Flat Sling 5M	FS-073	502052413	Offtake Toolbox	5 MT	23-Mar-2024	23-Mar-2025	2403020-FS-011	In Use	
53	Flat Sling	Technotex	Flat Sling 2M	FS-070	203794943	Offtake Toolbox	2 MT	27-Mar-2024	27-Mar-2025	2403020-FS-012	In Use	
56	Handlift	-	Hacker Handlift PT305	MSR19-00151 No. 1	SNTNTP305-481	Main Deck	3 MT	25-Mar-2024	25-Mar-2025	2403020-HL-001	In Use	
58	Hook	Crosby/SJI	Anchor Hook with safety latch	AH-01	-	Offtake Toolbox	12 MT	24-Mar-2024	24-Mar-2025	2403020-HK-001	In Use	
59	Hook	Crosby/SJI	Anchor Hook with safety latch	AH-02	-	Container	12 MT	22-Mar-2024	22-Mar-2025	2403020-HK-001	In Use	
60	Hook	Noble	Anchor Hook with tag line master link	AH-02	-	Container	15 MT	22-Mar-2024	22-Mar-2025	2403020-HK-002	In Use	
61	Hook	Noble	Anchor Hook with tag line master link	AH-003	-	Container	15 MT	22-Mar-2024	22-Mar-2025	2403020-HK-002	In Use	
62	Hook	Gunneboekn/22-8HB2	Anchor Hook with safety latch	AH-04	-	Offtake Toolbox	15 MT	24-Mar-2024	24-Mar-2025	2403020-HK-003	In Use	
63	Hook	Noble/B24	Self locking Hook	AH-06	-	Container	13 MT	22-Mar-2024	22-Mar-2025	2403020-HK-004	In Use	
64	Hook	Noble/B24	Self locking Hook	AH-07	-	Container	13 MT	22-Mar-2024	22-Mar-2025	2403020-HK-004	In Use	
65	Hook	Noble/B24	Self locking Hook	AH-08	-	Container	13 MT	22-Mar-2024	22-Mar-2025	2403020-HK-004	In Use	
66	Hook	Patent/LBNO	Anchor Line Hook with tag line	SKB-141	SKB141	Offtake Toolbox	15 MT	24-Mar-2024	24-Mar-2025	2403020-HK-005	In Use	
67	Hook	Johnson Block/L10S14BTB	Provision Crane Hook	-	-	Provision Crane	5 MT	25-Mar-2024	25-Mar-2025	2403020-HK-006	In Use	
68	Hook	-	Overhead Crane Hook	-	-	Engine Room	6 MT	27-Mar-2024	27-Mar-2025	2403020-HK-007	In Use	
69	Hook	McKissick/M025516M	Deck Crane Hook	-	0467530	Deck crane	25 MT	25-Mar-2024	25-Mar-2025	2403020-HK-008	In Use	
70	Hook	Noble	Anchor Hook with tag line master link	AH-03	-	Store Container	15 MT	22-Mar-2024	22-Mar-2025	2403020-HK-002	In Use	
71	Lever Hoist	Vital/30	Lever Hoist	-	144594V	Offtake Toolbox	3.2 MT	23-Mar-2024	23-Mar-2025	2403020-LCH-001	In Use	
72	Lever Hoist	Vital/30	Lever Hoist	-	144630V	Offtake Toolbox	3.2 MT	23-Mar-2024	23-Mar-2025	2403020-LCH-002	In Use	
73	Lever Hoist	Vital/30	Lever Hoist	-	177678V	Offtake Toolbox	3.2 MT	23-Mar-2024	23-Mar-2025	2403020-LCH-003	In Use	
74	Lever Hoist	Vital/30	Lever Hoist	-	384044V	Offtake Toolbox	1.6 MT	23-Mar-2024	23-Mar-2025	2403020-LCH-004	In Use	
75	Lifeboat lifting set	BG-7	Lifeboat Hook	-	B1091481	Lifeboat 1	7 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-001	In Use	
76	Lifeboat lifting set	BG-7	Lifeboat Hook	-	B1091482	Lifeboat 1	7 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-001	In Use	

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Item	Equipment Type	Brand/Model	Equipment Description	Tag No.	Serial No	Location of Equipment	SWL / WLL	Inspection Date	Recommended Next Inspection Date	Report No.	Status	Remark
77	Lifeboat lifting set	-	Winch wire rope sling Dia 25.4 x 64 mm W/H thimble one end	LT-2983	-	Lifeboat 1	8.5 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-002	In Use	
78	Lifeboat lifting set	-	Winch wire rope sling Dia 25.4 x 74 mm with thimble one end	LT-2984	-	Lifeboat 1	8.5 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-002	In Use	
79	Lifeboat lifting set	-	Single leg wire rope sling Dia 25.4 mm x 1.55m with both thimble end	-	OD06PD1195 NO.1	Lifeboat 1	90 KN	24-Mar-2024	24-Mar-2025	2403020-LLS-003	In Use	
80	Lifeboat lifting set	-	Single leg wire rope sling Dia 25.4 mm x 1.55m with both thimble end	-	OD06PD1195 NO.2	Lifeboat 1	90 KN	24-Mar-2024	24-Mar-2025	2403020-LLS-003	In Use	
81	Lifeboat lifting set	-	Fabricated Padeye	LB01-PE-01	-	Lifeboat 1	6 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-004	In Use	
82	Lifeboat lifting set	-	Fabricated Padeye	LB01-PE-02	-	Lifeboat 1	6 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-004	In Use	
83	Lifeboat lifting set	Crosby	Screw pin anchor Dee Shackle	SH-3	-	Lifeboat 1	13.5 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-005	In Use	
84	Lifeboat lifting set	Crosby	Screw pin anchor Dee Shackle	SH-4	-	Lifeboat 1	13.5 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-005	In Use	
85	Lifeboat lifting set	-	Single leg wire rope sling Dia 25.4 mm x 2.3m with both thimble end termination	7912	-	Lifeboat 2	6 MT	25-Mar-2024	25-Mar-2025	2403020-LLS-006	In Use	
86	Lifeboat lifting set	-	Single leg wire rope sling Dia 25.4 mm x 2.3m with both thimble end termination	7913	-	Lifeboat 2	6 MT	25-Mar-2024	25-Mar-2025	2403020-LLS-006	In Use	
87	Lifeboat lifting set	JXN-1C	Lifeboat Hook	-	QF 14122	Lifeboat 2	93.2 KN	25-Mar-2024	25-Mar-2025	2403020-LLS-007	In Use	
88	Lifeboat lifting set	JXN-1C	Lifeboat Hook	-	QF 14123	Lifeboat 2	93.2 KN	25-Mar-2024	25-Mar-2025	2403020-LLS-007	In Use	
89	Lifeboat lifting set	-	Winch wire rope sling Dia 25.4 x 70 mm with thimble one end	RT-01	RT1016.1	Lifeboat 2	8.9 MT	25-Mar-2024	25-Mar-2025	2403020-LLS-008	In Use	
90	Lifeboat lifting set	-	Winch wire rope sling Dia 25.4 x 70 mm with thimble one end	RT-02	RT1016.2	Lifeboat 2	8.9 MT	25-Mar-2024	25-Mar-2025	2403020-LLS-008	In Use	
91	Lifeboat lifting set	-	Fabricated Padeye	LB02-PE-01	LB02-PE01	Lifeboat 2	6 MT	25-Mar-2024	25-Mar-2025	2403020-LLS-009	In Use	
92	Lifeboat lifting set	-	Fabricated Padeye	LB02-PE-02	LB02-PE02	Lifeboat 2	6 MT	25-Mar-2024	25-Mar-2025	2403020-LLS-009	In Use	
93	Lifeboat lifting set	-	Fabricated Padeye	LB02-PE-03	LB02-PE03	Lifeboat 2	6 MT	25-Mar-2024	25-Mar-2025	2403020-LLS-009	In Use	
94	Lifeboat lifting set	-	Fabricated Padeye	LB02-PE-04	LB02-PE04	Lifeboat 2	6 MT	25-Mar-2024	25-Mar-2025	2403020-LLS-009	In Use	

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95	Lifeboat lifting set	Crosby	Screw pin anchor bow Shackle	A-25	-	Lifeboat 2	12 MT	25-Mar-2024	25-Mar-2025	2403020-LLS-010	In Use	
96	Lifeboat lifting set	Crosby	Screw pin anchor bow Shackle	LB2-01	-	Lifeboat 2	12 MT	25-Mar-2024	25-Mar-2025	2403020-LLS-010	In Use	
97	Lifeboat lifting set	Crosby	Screw pin anchor bow Shackle	LB2-02	-	Lifeboat 2	12 MT	25-Mar-2024	25-Mar-2025	2403020-LLS-010	In Use	
98	Lifeboat lifting set	Crosby	Screw pin anchor Dee Shackle	LB2-03	-	Lifeboat 2	13.5 MT	25-Mar-2024	25-Mar-2025	2403020-LLS-011	In Use	
99	Lifeboat lifting set	Crosby	Screw pin anchor bow Shackle	LB2-04	-	Lifeboat 2	6.5 MT	25-Mar-2024	25-Mar-2025	2403020-LLS-012	In Use	
100	Lifeboat lifting set	Crosby	Screw pin anchor bow Shackle	LB2-05	-	Lifeboat 2	6.5 MT	25-Mar-2024	25-Mar-2025	2403020-LLS-012	In Use	
101	Lifeboat lifting set	BG-7	Lifeboat Hook	-	B1091483	Lifeboat 3	7 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-013	In Use	
102	Lifeboat lifting set	BG-7	Lifeboat Hook	-	B1091484	Lifeboat 3	7 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-013	In Use	
103	Lifeboat lifting set	-	Boat Chain	GR100 NO-1	GR100 NO.1	Lifeboat 3	6 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-014	In Use	
104	Lifeboat lifting set	-	Boat Chain	GR100 NO-2	GR100 NO.2	Lifeboat 3	6 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-014	In Use	
105	Lifeboat lifting set	-	Winch wire rope sling Dia 25.4 x 70 mm with thimble one end	RT-03	RT 1016.03	Lifeboat 3	8.9 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-015	In Use	
106	Lifeboat lifting set	-	Winch wire rope sling Dia 25.4 x 70 mm with thimble one end	RT-04	RT 1016.04	Lifeboat 3	8.9 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-015	In Use	
107	Lifeboat lifting set	-	Fabricated Padeye	LB03-PE-01	-	Lifeboat 3	3 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-016	In Use	
108	Lifeboat lifting set	-	Fabricated Padeye	LB03-PE-02	-	Lifeboat 3	3 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-016	In Use	
109	Lifeboat lifting set	Crosby	Bolt Anchor bow Shackle	0810	-	Lifeboat 3	8.5 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-017	In Use	
110	Lifeboat lifting set	Crosby	Bolt Anchor bow Shackle	PTF-007	-	Lifeboat 3	8.5 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-017	In Use	
111	Lifeboat lifting set	Crosby	Bolt Anchor bow Shackle	SKB-046	-	Lifeboat 3	8.5 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-017	In Use	
112	Lifeboat lifting set	Crosby	Screw pin anchor Bow Shackle	SH13-1	-	Lifeboat 3	13.5 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-018	In Use	
113	Lifeboat lifting set	Crosby	Screw pin anchor Bow Shackle	SH13-2	-	Lifeboat 3	13.5 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-018	In Use	
114	Lifeboat lifting set	Crosby	Screw pin anchor Bow Shackle	SK-005	-	Lifeboat 3	9.5 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-019	In Use	

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115	Lifeboat lifting set	Crosby	Screw pin anchor Bow Shackle	SKB-039	-	Lifeboat 3	8.5 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-020	In Use	
116	Lifeboat lifting set	Crosby	Screw pin anchor Bow Shackle	SKB-045	-	Lifeboat 3	8.5 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-020	In Use	
117	Lifeboat lifting set	Crosby	Screw pin anchor Bow Shackle	SKB-047	-	Lifeboat 3	8.5 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-020	In Use	
118	Lifeboat lifting set	Crosby	Screw pin anchor Bow Shackle	SKB-048	-	Lifeboat 3	8.5 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-020	In Use	
119	Lifeboat lifting set	Crosby	Screw pin anchor Bow Shackle	SKB-062	-	Lifeboat 3	8.5 MT	24-Mar-2024	24-Mar-2025	2403020-LLS-020	In Use	
120	Lifting Bar	Bulivants Lifting products	Lifting bar 8.5" OD-8.0M No. B167958 with pad eye	YE-2304	1337460	Lifting Bar	3 MT	25-Mar-2024	25-Mar-2025	2403020-LB-001	In Use	
121	Lifting Bar	Bulivants Lifting products	Lifting bar 8.5" OD-8.0M No. B167958 with pad eye	YE-2305	1337460	Lifting Bar	3 MT	25-Mar-2024	25-Mar-2025	2403020-LB-001	In Use	
122	Lifting Bar	Bulivants Lifting products	Lifting bar 8.5" OD-8.0M No. B167958 with pad eye	YE-2306	1337460	Lifting Bar	3 MT	25-Mar-2024	25-Mar-2025	2403020-LB-001	In Use	
123	Lifting Bar	Bulivants Lifting products	Lifting bar 8.5" OD-8.0M No. B167958 with pad eye	YE-2307	1337460	Lifting Bar	3 MT	25-Mar-2024	25-Mar-2025	2403020-LB-001	In Use	
124	Lifting Bar	Bulivants Lifting products	Lifting bar 8.5" OD-8.0M No. B167958 with pad eye	YE-2308	1337460	Lifting Bar	3 MT	25-Mar-2024	25-Mar-2025	2403020-LB-001	In Use	
125	Lifting Bar	Bulivants Lifting products	Lifting bar 8.5" OD-8.0M No. B167958 with pad eye	YE-2309	1337460	Lifting Bar	3 MT	25-Mar-2024	25-Mar-2025	2403020-LB-001	In Use	
126	Lifting Bar	Bulivants Lifting products	Lifting bar 8.5" OD-8.0M No. B167958 with pad eye	YE-2310	1337460	Lifting Bar	3 MT	25-Mar-2024	25-Mar-2025	2403020-LB-001	In Use	
127	Masterlink	-	Masterlink 0.5"	FRC ML-001	-	Rescue Boat	9000 LBS	24-Mar-2024	24-Mar-2025	2403020-ML-001	In Use	
128	Masterlink	-	Masterlink 0.5"	FRC ML-002	-	Rescue Boat	9000 LBS	24-Mar-2024	24-Mar-2025	2403020-ML-001	In Use	
129	Masterlink	-	Masterlink 1.75"	ML-001	-	Container	13 MT	22-Mar-2024	22-Mar-2025	2403020-ML-002	In Use	
130	Masterlink	-	Masterlink 1.75"	ML-002	-	Offtake Toolbox	13 MT	23-Mar-2024	23-Mar-2025	2403020-ML-002	In Use	
131	Masterlink	Taiyo 50	Masterlink 2.0"	ML-010	-	Container	14 MT	22-Mar-2024	22-Mar-2025	2403020-ML-003	In Use	
133	Masterlink	Taiyo 50	Masterlink 2.0"	ML-012	-	Container	14 MT	22-Mar-2024	22-Mar-2025	2403020-ML-003	In Use	
134	Masterlink	Taiyo 50	Masterlink 2.0"	ML-013	-	Container	14 MT	22-Mar-2024	22-Mar-2025	2403020-ML-003	In Use	
135	Masterlink	-	Masterlink	ML-04	-	Offtake Toolbox	5 MT	23-Mar-2024	23-Mar-2025	2403020-ML-004	In Use	
136	Masterlink	-	Masterlink 1.75"	ML-003	-	Offtake Toolbox	13 MT	23-Mar-2024	23-Mar-2025	2403020-ML-005	In Use	
137	Padeye	-	Swing Jib Padeye	FMR FJ-01	-	Swing Jib FWD	1 MT	25-Mar-2024	25-Mar-2025	2403020-PE-001	In Use	
138	Padeye	-	Fabricated Padeye	H-001	-	Food Store	1 MT	23-Mar-2024	23-Mar-2025	2403020-PE-002	In Use	
139	Padeye	-	Fabricated Padeye	H-002	-	Food Store	1 MT	23-Mar-2024	23-Mar-2025	2403020-PE-002	In Use	
140	Padeye	-	Fabricated Padeye	PE-C-001	-	Main Deck Crane	TBC	25-Mar-2024	25-Mar-2025	2403020-PE-003	In Use	
141	Padeye	-	Fabricated Padeye	PE-SAE-01	-	Pilot Ladder-Port Aft	0.5 MT	25-Mar-2024	25-Mar-2025	2403020-PE-004	In Use	
142	Padeye	-	Fabricated Padeye	PE-SAE-02	-	Pilot Ladder-Port Aft	0.5 MT	25-Mar-2024	25-Mar-2025	2403020-PE-004	In Use	
143	Padeye	-	Fabricated Padeye	YE-1114	-	Engine Room	1 MT	27-Mar-2024	27-Mar-2025	2403020-PE-005	In Use	
144	Padeye	-	Fabricated Padeye	YE-1125	-	Engine Room	1 MT	27-Mar-2024	27-Mar-2025	2403020-PE-005	In Use	

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145	Padeye	-	Fabricated Padeye	YE-1129	-	Engine Room	1 MT	27-Mar-2024	27-Mar-2025	2403020-PE-005	In Use	
146	Padeye	-	Fabricated Padeye	YE-1130	-	Engine Room	1 MT	27-Mar-2024	27-Mar-2025	2403020-PE-005	In Use	
147	Padeye	-	Fabricated Padeye	YE-1302	-	Engine Room	1 MT	27-Mar-2024	27-Mar-2025	2403020-PE-005	In Use	
148	Padeye	-	Fabricated Padeye	YE-1120	-	Engine Room	1.5 MT	27-Mar-2024	27-Mar-2025	2403020-PE-006	In Use	
149	Padeye	-	Fabricated Padeye	YE-1121	-	Engine Room	1.5 MT	27-Mar-2024	27-Mar-2025	2403020-PE-006	In Use	
150	Padeye	-	Fabricated Padeye	YE-1123	-	Engine Room	1.5 MT	27-Mar-2024	27-Mar-2025	2403020-PE-006	In Use	
151	Padeye	-	Fabricated Padeye	YE-1146	-	Engine Room	1.5 MT	27-Mar-2024	27-Mar-2025	2403020-PE-006	In Use	
152	Padeye	-	Fabricated Padeye	YE-1306	-	Engine Room	0.5 MT	27-Mar-2024	27-Mar-2025	2403020-PE-007	In Use	
153	Padeye	-	Fabricated Padeye	YE-1307	-	Engine Room	0.5 MT	27-Mar-2024	27-Mar-2025	2403020-PE-007	In Use	
154	Padeye	-	Fabricated Padeye	YE-2201	-	Pump Room	2 MT	27-Mar-2024	27-Mar-2025	2403020-PE-008	In Use	
155	Padeye	-	Fabricated Padeye	YE-2202	-	Pump Room	2 MT	27-Mar-2024	27-Mar-2025	2403020-PE-008	In Use	
156	Padeye	-	Fabricated Padeye	YE-2203	-	Pump Room	2 MT	27-Mar-2024	27-Mar-2025	2403020-PE-008	In Use	
157	Padeye	-	Fabricated Padeye	YE-2206	-	Pump Room	2 MT	27-Mar-2024	27-Mar-2025	2403020-PE-008	In Use	
158	Padeye	-	Fabricated Padeye	YE-2207	-	Pump Room	2 MT	27-Mar-2024	27-Mar-2025	2403020-PE-008	In Use	
159	Padeye	-	Fabricated Padeye	YE-2209	-	Pump Room	2 MT	27-Mar-2024	27-Mar-2025	2403020-PE-008	In Use	
160	Padeye	-	Fabricated Padeye	YE-2210	-	Pump Room	2 MT	27-Mar-2024	27-Mar-2025	2403020-PE-008	In Use	
161	Padeye	-	Fabricated Padeye	YE-2212	-	Pump Room	2 MT	27-Mar-2024	27-Mar-2025	2403020-PE-008	In Use	
162	Padeye	-	Fabricated Padeye	YE-2214	-	Pump Room	2 MT	27-Mar-2024	27-Mar-2025	2403020-PE-008	In Use	
163	Padeye	-	Fabricated Padeye	YE-2215	-	Pump Room	2 MT	27-Mar-2024	27-Mar-2025	2403020-PE-008	In Use	
164	Padeye	-	Fabricated Padeye	YE-2216	-	Pump Room	2 MT	27-Mar-2024	27-Mar-2025	2403020-PE-008	In Use	
165	Padeye	-	Fabricated Padeye	YE-2217	-	Pump Room	1 MT	27-Mar-2024	27-Mar-2025	2403020-PE-009	In Use	
166	Padeye	-	Fabricated Padeye	YE-2218	-	Pump Room	1 MT	27-Mar-2024	27-Mar-2025	2403020-PE-009	In Use	
167	Padeye	-	Fabricated Padeye	YE-2219	-	Pump Room	1 MT	27-Mar-2024	27-Mar-2025	2403020-PE-009	In Use	
168	Padeye	-	Fabricated Padeye	YE-2220	-	Pump Room	1 MT	27-Mar-2024	27-Mar-2025	2403020-PE-009	In Use	
169	Padeye	-	Fabricated Padeye	YE-2222	-	Pump Room	2 MT	27-Mar-2024	27-Mar-2025	2403020-PE-010	In Use	
170	Padeye	-	Fabricated Padeye	YE-2223	-	Pump Room	2 MT	27-Mar-2024	27-Mar-2025	2403020-PE-010	In Use	
171	Padeye	-	Fabricated Padeye	YE-2227	-	Pump Room	2 MT	27-Mar-2024	27-Mar-2025	2403020-PE-010	In Use	
172	Padeye	-	Fabricated Padeye	YE-2228	-	Pump Room	2 MT	27-Mar-2024	27-Mar-2025	2403020-PE-010	In Use	
173	Padeye	-	Fabricated Padeye	YE-2229	-	Food Store	2 MT	23-Mar-2024	23-Mar-2025	2403020-PE-011	In Use	
174	Padeye	-	Fabricated Padeye	YE-2230	-	Food Store	2 MT	23-Mar-2024	23-Mar-2025	2403020-PE-011	In Use	
175	Padeye	-	Fabricated Padeye	YE-2250	-	Hatch Cover	1 MT	24-Mar-2024	24-Mar-2025	2403020-PE-012	In Use	
176	Padeye	-	Fabricated Padeye	YE-2251	-	Hatch Cover	1 MT	24-Mar-2024	24-Mar-2025	2403020-PE-012	In Use	
177	Padeye	-	Fabricated Padeye	YE-2252	-	Hose Rack	5 MT	24-Mar-2024	24-Mar-2025	2403020-PE-013	In Use	
178	Padeye	-	Fabricated Padeye	YE-2253	-	Hose Rack	5 MT	24-Mar-2024	24-Mar-2025	2403020-PE-013	In Use	
179	Padeye	-	Fabricated Padeye	YE-2254	-	Hose Rack	25 MT	24-Mar-2024	24-Mar-2025	2403020-PE-014	In Use	
180	Padeye	-	Fabricated Padeye	YE-2255	-	Poop Deck	3.5 MT	23-Mar-2024	23-Mar-2025	2403020-PE-015	In Use	
181	Padeye	-	Fabricated Padeye	YE-2301	-	Poop Deck	TBC	23-Mar-2024	23-Mar-2025	2403020-PE-016	In Use	
182	Padeye	-	Fabricated Padeye	YE-2302	-	Poop Deck	TBC	23-Mar-2024	23-Mar-2025	2403020-PE-016	In Use	
183	Padeye	-	Fabricated Padeye	YE-2303	-	Poop Deck	3 MT	23-Mar-2024	23-Mar-2025	2403020-PE-017	In Use	
184	Padeye	-	Fabricated Padeye	YE-2275	-	Emergency Hang Off	0.5 MT	23-Mar-2024	23-Mar-2025	2403020-PE-018	In Use	
185	Padeye	-	Fabricated Padeye	YE-2281	-	Main Deck	10 MT	25-Mar-2024	25-Mar-2025	2403020-PE-019	In Use	
186	Padeye	-	Fabricated Padeye	YE-2282	-	Main Deck	10 MT	25-Mar-2024	25-Mar-2025	2403020-PE-019	In Use	

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187	Padeye	-	Fabricated Padeye	YE-2283	-	Main Deck	10 MT	25-Mar-2024	25-Mar-2025	2403020-PE-019	In Use	
188	Padeye	-	Fabricated Padeye	YE-4061	-	Hawser Rack	5 MT	23-Mar-2024	23-Mar-2025	2403020-PE-020	In Use	
189	Padeye	-	Fabricated Padeye	YE-4062	-	Hawser Rack	5 MT	23-Mar-2024	23-Mar-2025	2403020-PE-020	In Use	
190	Padeye	-	Fabricated Padeye	YE-4063	-	Hawser Rack	5 MT	23-Mar-2024	23-Mar-2025	2403020-PE-020	In Use	
191	Padeye	-	Fabricated Padeye	YE-4064	-	Hawser Rack	5 MT	23-Mar-2024	23-Mar-2025	2403020-PE-020	In Use	
192	Padeye	-	Fabricated Padeye	YE-4065	-	Hawser Rack	5 MT	23-Mar-2024	23-Mar-2025	2403020-PE-020	In Use	
193	Padeye	-	Fabricated Padeye	YE-4066	-	Hawser Rack	5 MT	23-Mar-2024	23-Mar-2025	2403020-PE-020	In Use	
194	Padeye	-	Fabricated Padeye	YE-4067	-	Hawser Rack	5 MT	23-Mar-2024	23-Mar-2025	2403020-PE-020	In Use	
195	Padeye	-	Fabricated Padeye	YE-4068	-	Hawser Rack	5 MT	23-Mar-2024	23-Mar-2025	2403020-PE-020	In Use	
196	Padeye	-	Fabricated Padeye	YE-4069	-	Hawser Rack	5 MT	23-Mar-2024	23-Mar-2025	2403020-PE-020	In Use	
197	Padeye	-	Fabricated Padeye	YE-5005	-	Turret	5 MT	26-Mar-2024	26-Mar-2025	2403020-PE-021	In Use	
198	Padeye	-	Fabricated Padeye	YE-5006	-	Turret	5 MT	26-Mar-2024	26-Mar-2025	2403020-PE-021	In Use	
199	Padeye	-	Fabricated Padeye	YE-5007	-	Turret	5 MT	26-Mar-2024	26-Mar-2025	2403020-PE-021	In Use	
200	Padeye	-	Fabricated Padeye	YE-5008	-	Turret	5 MT	26-Mar-2024	26-Mar-2025	2403020-PE-021	In Use	
201	Padeye	-	Fabricated Padeye	YE-5009	-	Turret	5 MT	26-Mar-2024	26-Mar-2025	2403020-PE-021	In Use	
202	Padeye	-	Fabricated Padeye	YE-5010	-	Turret	5 MT	26-Mar-2024	26-Mar-2025	2403020-PE-021	In Use	
203	Padeye	-	Fabricated Padeye	-	-	Turret	25 MT	26-Mar-2024	26-Mar-2025	2403020-PE-022	In Use	
204	Padeye	-	Fabricated Padeye	YE-2260	-	Chain Table	2 MT	26-Mar-2024	26-Mar-2025	2403020-PE-023	In Use	
205	Padeye	-	Fabricated Padeye	YE-2261	-	Chain Table	2 MT	26-Mar-2024	26-Mar-2025	2403020-PE-023	In Use	
206	Padeye	-	Fabricated Padeye	YE-2257	-	Chain Table	2 MT	26-Mar-2024	26-Mar-2025	2403020-PE-024	In Use	
207	Padeye	-	Fabricated Padeye	YE-2258	-	Chain Table	2 MT	26-Mar-2024	26-Mar-2025	2403020-PE-024	In Use	
208	Padeye	-	Fabricated Padeye	YE-2259	-	Chain Table	2 MT	26-Mar-2024	26-Mar-2025	2403020-PE-024	In Use	
209	Padeye	-	Fabricated Padeye	YE-2262	-	Chain Table	2 MT	26-Mar-2024	26-Mar-2025	2403020-PE-024	In Use	
210	Plate Clamp	Super DLC 05	Plate Clamp	LP-002	-	Container	0.5 MT	22-Mar-2024	22-Mar-2025	2403020-PC-002	In Use	
211	Plate Clamp	Crosby	Plate Clamp D-20mm	LP-001	-	Container	1 MT	22-Mar-2024	22-Mar-2025	2403020-PC-001	In Use	
212	Plate Clamp	Super DLC 06	Plate Clamp	LP-004	-	Engine Room	0.5 MT	27-Mar-2024	27-Mar-2025	2309007-PC-003	In Use	
213	Round Sling	Techno Tex	Round sling 2M	RS-065	-	Offtake Toolbox	2 MT	27-Mar-2024	27-Mar-2025	2309007-RS-001	In Use	
215	Round Sling	Techno Tex	Round Sling 5M	RS-056	-	Poop Deck	5 MT	23-Mar-2024	23-Mar-2025	2403020-RS-004	In Use	
216	Round Sling	Techno Tex	Round sling 2M	RS-073	20923884	Container	2 MT	23-Mar-2024	23-Mar-2025	2403020-RS-002	In Use	
217	Round Sling	Technotex	Round Sling 2M	RS-084	102533745	Engine Room	1 MT	23-Mar-2024	23-Mar-2025	2403020-RS-011	In Use	
219	Shackle	Vanbeest	Bolt type Anchor Bow Shackle 1.75"	004BFX-77	-	Container	25 MT	22-Mar-2024	22-Mar-2025	2403020-SK-001	In Use	
220	Shackle	Vanbeest	Bolt type Anchor Bow Shackle 1.75"	SK-124	-	Container	25 MT	22-Mar-2024	22-Mar-2025	2403020-SK-001	In Use	
221	Shackle	Kondo	Screw Pin Anchor bow shackle 1.125"	SK-004	-	Hatch Cover	9.5 MT	22-Mar-2024	22-Mar-2025	2403020-SK-002	In Use	
222	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	BIH-35	-	Hawser Rack	3.25 MT	24-Mar-2024	24-Mar-2025	2403020-SK-003	In Use	
223	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	BIH-71	-	Hawser Rack	3.25 MT	24-Mar-2024	24-Mar-2025	2403020-SK-003	In Use	
224	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	BIH-77	-	Hawser Rack	3.25 MT	24-Mar-2024	24-Mar-2025	2403020-SK-003	In Use	
225	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SK-029	-	Hawser Rack	2 MT	24-Mar-2024	24-Mar-2025	2403020-SK-004	In Use	
226	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SK-34	-	Hawser Rack	2 MT	24-Mar-2024	24-Mar-2025	2403020-SK-004	In Use	
227	Shackle	Crosby	Screw pin anchor Bow Shackle 7/8"	SKB-132	-	Hawser Rack	6.5 MT	23-Mar-2024	23-Mar-2025	2403020-SK-005	In Use	
228	Shackle	Crosby	Screw pin anchor Bow Shackle 7/8"	SKB-141	-	Offtake Toolbox	6.5 MT	24-Mar-2024	24-Mar-2025	2403020-SK-005	In Use	
229	Shackle	Crosby	Screw pin anchor Dee Shackle 1.5"	MDSH-1703	-	Poop Deck	17 MT	23-Mar-2024	23-Mar-2025	2403020-SK-006	In Use	
230	Shackle	Crosby	Screw pin anchor Dee Shackle 2.5"	SK-050	-	Poop Deck	35 MT	23-Mar-2024	23-Mar-2025	2403020-SK-007	In Use	

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Item	Equipment Type	Brand/Model	Equipment Description	Tag No.	Serial No	Location of Equipment	SWL / WtL	Inspection Date	Recommended Next Inspection Date	Report No.	Status	Remark
232	Shackle	Kondo	Screw pin anchor Bow Shackle 5/8"	SK-02	-	Container	3.25 MT	22-Mar-2024	22-Mar-2025	2403020-SK-008	In Use	
234	Shackle	Kondo	Screw pin anchor Bow Shackle 5/8"	SK-05	-	Container	3.25 MT	27-Mar-2024	27-Mar-2025	2403020-SK-008	In Use	
235	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SK-894	-	Container	3.25 MT	22-Mar-2024	22-Mar-2025	2403020-SK-008	In Use	
236	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SKB-159	-	Container	3.25 MT	22-Mar-2024	22-Mar-2025	2403020-SK-009	In Use	
237	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SKB-165	-	Offtake Toolbox	3.25 MT	22-Mar-2024	22-Mar-2025	2403020-SK-009	In Use	
238	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SKB-201	-	Container	3.25 MT	23-Mar-2024	23-Mar-2025	2403020-SK-009	In Use	
239	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SKB-203	-	Container	3.25 MT	23-Mar-2024	23-Mar-2025	2403020-SK-009	In Use	
241	Shackle	Crosby	Bolt type Anchor Bow Shackle 5/8"	SKB-217	-	Hatch Cover	3.25 MT	24-Mar-2024	24-Mar-2025	2403020-SK-010	In Use	
242	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SK-807	-	Rescue Boat	3.25 MT	24-Mar-2024	24-Mar-2025	2403020-SK-011	In Use	
243	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SKB-196	-	Engine Room	3.25 MT	27-Mar-2024	27-Mar-2025	2309007-SK-012	In Use	
244	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SKB-197	-	Pilot Ladder-STBD	3.25 MT	25-Mar-2024	25-Mar-2025	2403020-SK-013	In Use	
245	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SKB-199	-	Pilot Ladder-STBD	3.25 MT	25-Mar-2024	25-Mar-2025	2403020-SK-013	In Use	
246	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SKB-892	-	Pilot Ladder-Port Aft	3.25 MT	25-Mar-2024	25-Mar-2025	2403020-SK-014	In Use	
247	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SKB-896	-	Pilot Ladder-Port Aft	3.25 MT	25-Mar-2024	25-Mar-2025	2403020-SK-014	In Use	
248	Shackle	Crosby	Screw pin anchor Bow Shackle 1/2"	SKB-160	-	Container	2 MT	22-Mar-2024	22-Mar-2025	2403020-SK-015	In Use	
249	Shackle	Crosby	Screw pin anchor Bow Shackle 1/2"	SKB-161	-	Container	2 MT	22-Mar-2024	22-Mar-2025	2403020-SK-015	In Use	
250	Shackle	Crosby	Screw pin anchor Bow Shackle 1/2"	SKB-162	-	Container	2 MT	22-Mar-2024	22-Mar-2025	2403020-SK-015	In Use	
251	Shackle	Crosby	Screw pin anchor Bow Shackle 1/2"	SKB-192	-	Container	2 MT	22-Mar-2024	22-Mar-2025	2403020-SK-015	In Use	
252	Shackle	Crosby	Screw pin anchor Bow Shackle 1/2"	SKB-194	-	Container	2 MT	27-Mar-2024	27-Mar-2025	2403020-SK-015	In Use	
253	Shackle	Crosby	Screw pin anchor Bow Shackle 1/2"	SKB-195	-	Container	2 MT	27-Mar-2024	27-Mar-2025	2403020-SK-015	In Use	
254	Shackle	Crosby	Screw pin anchor Bow Shackle 3/4"	SKB-02	-	Container	4.75 MT	22-Mar-2024	22-Mar-2025	2403020-SK-016	In Use	
257	Shackle	Crosby	Screw pin anchor Bow Shackle 3/4"	SKB-208	-	Container	4.75 MT	27-Mar-2024	27-Mar-2025	2309007-SK-016	In Use	
258	Shackle	Crosby	Screw pin anchor Bow Shackle 3/4"	SKB-018	-	Rescue Boat	4.75 MT	24-Mar-2024	24-Mar-2025	2403020-SK-017	In Use	
259	Shackle	Crosby	Screw pin anchor Bow Shackle 7/8"	SK-018	-	Rescue Boat	6.5 MT	24-Mar-2024	24-Mar-2025	2403020-SK-018	In Use	
260	Shackle	Crosby	Screw pin anchor Bow Shackle 7/8"	SKB-070	-	Rescue Boat	6.5 MT	24-Mar-2024	24-Mar-2025	2403020-SK-018	In Use	
262	Shackle	Crosby	Screw pin anchor Bow Shackle 7/8"	SKB-156	-	Container	6.5 MT	23-Mar-2024	23-Mar-2025	2403020-SK-019	In Use	
263	Shackle	Crosby	Screw pin anchor Bow Shackle 7/8"	SKB-209	-	Container	6.5 MT	22-Mar-2024	22-Mar-2025	2403020-SK-019	In Use	
264	Shackle	Crosby	Screw pin Anchor Dee Shackle 7/8"	SKD-071	-	Container	6.5 MT	27-Mar-2024	27-Mar-2025	2309007-SK-020	In Use	
265	Shackle	Kondo	Screw Pin Anchor bow shackle 1.125"	SKB-219	-	Hatch Cover	9.5 MT	22-Mar-2024	22-Mar-2025	2403020-SK-022	In Use	
266	Shackle	Crosby	Bolt anchor Dee shackle 1.25"	SK-011	-	Container	12 MT	22-Mar-2024	22-Mar-2025	2403020-SK-023	In Use	
267	Shackle	Crosby	Screw pin anchor Bow Shackle 1.325"	SKB-142	-	Offtake Toolbox	13.5 MT	23-Mar-2024	23-Mar-2025	2403020-SK-024	In Use	
268	Shackle	Crosby	Screw pin anchor Bow Shackle 1.325"	SKB-130	-	Offtake Toolbox	13.5 MT	23-Mar-2024	23-Mar-2025	2403020-SK-024	In Use	
269	Shackle	Vanbeest	Screw pin anchor Bow Shackle 1.5"	SK-131	-	Offtake Toolbox	17 MT	27-Mar-2024	27-Mar-2025	2309007-SK-025	In Use	
270	Shackle	Vanbeest	Screw pin anchor Bow Shackle 1/2"	SK-132	-	Offtake Toolbox	17 MT	27-Mar-2024	27-Mar-2025	2309007-SK-025	In Use	
271	Shackle	Crosby	Dee shackle bolt type 1/2"	SK-157	-	Container	2 MT	23-Mar-2024	23-Mar-2025	2309007-SK-026	In Use	
274	Shackle	Crosby	Bolt anchor Bow Shackle 1.25"	SKB-180	-	Container	12 MT	22-Mar-2024	22-Mar-2025	2403020-SK-027	In Use	
275	Shackle	Crosby	Screw pin anchor Dee Shackle 1.25"	SK-144	-	Container	12 MT	22-Mar-2024	22-Mar-2025	2403020-SK-028	In Use	
276	Shackle	Crosby	Screw pin anchor Dee Shackle 1.25"	SKD-012	-	Poop Deck	12 MT	23-Mar-2024	23-Mar-2025	2403020-SK-029	In Use	

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277	Shackle	Thaiyo	Bolt anchor Dee shackle 2"	SKD-153	-	Container	35 MT	22-Mar-2024	22-Mar-2025	2403020-SK-030	In Use	
278	Shackle	Thaiyo	Bolt anchor Dee shackle 2"	SKD-154	-	Container	35 MT	22-Mar-2024	22-Mar-2025	2403020-SK-030	In Use	
279	Shackle	Crosby	Bolt Anchor bow Shackle 1/2"	SKB-N54	-	Store Container	2 MT	22-Mar-2024	22-Mar-2025	2403020-SK-031	In Use	
280	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SKB-214	-	Store Container	3.25 MT	23-Mar-2024	23-Mar-2025	2403020-SK-032	In Use	
281	Shackle	Crosby	Screw pin anchor Bow Shackle 1/2"	SKB-211	-	Store Container	2 MT	22-Mar-2024	22-Mar-2025	2403020-SK-033	In Use	
282	Shackle	Crosby	Bolt anchor Dee shackle 1.375"	SKD-157	-	Offtake Toolbox	13.5 MT	23-Mar-2024	23-Mar-2025	2403020-SK-034	In Use	
283	Shackle	Crosby	Bolt anchor Bow shackle 1.25"	SKB-183	-	Offtake Toolbox	12 MT	23-Mar-2024	23-Mar-2025	2403020-SK-035	In Use	
284	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SKB-198	-	Food Store	3.25 MT	23-Mar-2024	23-Mar-2025	2403020-SK-032	In Use	
287	Shackle	Crosby	Bolt anchor Bow shackle 1.25"	SKB-175	-	Offtake Toolbox	12 MT	25-Mar-2024	25-Mar-2025	2403020-SK-035	In Use	
288	Snatch Block	Crosby/Mckissick	Snatch Block 6" BB-5/8" Dia with hook suspension	SB-001	-	Container	1t	22-Mar-2024	22-Mar-2025	2403020-SB-001	In Use	
289	Snatch Block	Crosby/Mckissick	Snatch Block 6" BB-5/8" Dia with hook suspension	SB-003	-	Container	12t	23-Mar-2024	23-Mar-2025	2403020-SB-002	In Use	
290	Snatch Block	Crosby/Mckissick	Snatch Block 6" BB-5/8" Dia with shackle suspension	SB-004	-	Container	12t	23-Mar-2024	23-Mar-2025	2403020-SB-003	In Use	
291	Snatch Block	Crosby/Mckissick	Snatch Block 6" BB-3/4" Dia with shackle suspension	SB-005	-	Container	12t	22-Mar-2024	22-Mar-2025	2403020-SB-004	In Use	
292	Snatch Block	Crosby/Mckissick	Snatch Block 6" BB-3/4" Dia with shackle suspension	SB-006	-	Container	12t	22-Mar-2024	22-Mar-2025	2403020-SB-005	In Use	
293	Snatch Block	Crosby/Mckissick	Snatch Block 6" BB-3/4" Dia with hook suspension	SB-007	-	Container	12t	22-Mar-2024	22-Mar-2025	2403020-SB-006	In Use	
295	Snatch Block	-	Snatch Block eye suspension	SB-011	-	Hawser Rack	10t	24-Mar-2024	24-Mar-2025	2403020-SB-007	In Use	
296	Snatch Block	-	Snatch Block eye suspension	SB-012	-	Hawser Rack	10t	24-Mar-2024	24-Mar-2025	2403020-SB-008	In Use	
297	Snatch Block	Crosby/Mckissick	Snatch Block 6" BB-3/4" Dia with shackle suspension	SB-16	-	Pump Room	12t	27-Mar-2024	27-Mar-2025	2403020-SB-009	In Use	
298	Snatch Block	Crosby/Mckissick	Snatch Block 6" BB-3/4" Dia with shackle suspension	SB-017	-	Container	12t	22-Mar-2024	22-Mar-2025	2403020-SB-010	In Use	
299	Snatch Block	Crosby/Mckissick	Snatch Block 6" BB-3/4" Dia with shackle suspension	SB-018	-	Container	12t	22-Mar-2024	22-Mar-2025	2403020-SB-011	In Use	
300	Snatch Block	Crosby/Mckissick	Snatch Block 6" BB-3/4" Dia with shackle suspension	SB-019	-	Hawser Rack	12t	24-Mar-2024	24-Mar-2025	2403020-SB-012	In Use	
301	Trolley	-	Beam Trolley	MR-07	-	Container	2t	23-Mar-2024	23-Mar-2025	2403020-TLY-001	In Use	
302	Trolley	elephant	Beam Trolley	MR-05	4773	Turret	3t	26-Mar-2024	26-Mar-2025	2403020-TLY-002	In Use	
303	Trolley	Pacific Hoist	Beam Trolley 90-216 mm flange width	MR-06	1773	Container	2t	23-Mar-2024	23-Mar-2025	2403020-TLY-003	In Use	
304	Trolley	-	Beam Trolley	YB-2607	-	Engine Room	0.5t	27-Mar-2024	27-Mar-2025	2403020-TLY-004	In Use	
305	Trolley	-	Beam Trolley	YB-2610	-	Engine Room	1t	27-Mar-2024	27-Mar-2025	2403020-TLY-005	In Use	
306	Trolley	-	Beam Trolley	YB-2609	-	Engine Room	1t	27-Mar-2024	27-Mar-2025	2403020-TLY-006	In Use	
307	Wire Rope Hoist	Toyo	Wire rope hoist	WH-02	90825	Offtake Toolbox	1.60 MT	23-Mar-2024	23-Mar-2025	2403020-WRH-001	In Use	
308	Wire Rope Hoist	Super TIL	Wire rope hoist	WH-03	172124	Offtake Toolbox	1.60 MT	23-Mar-2024	23-Mar-2025	2403020-WRH-002	In Use	
309	Wire Sling	Thaimui	Single leg sling 0.5M with thimble both end	5572	-	Rescue Boat	1.6t	24-Mar-2024	24-Mar-2025	2403020-WS-001	In Use	

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310	Wire Sling	Thaimui	Single leg sling 0.5M with thimble both end	5573	-	Rescue Boat	1.6t	24-Mar-2024	24-Mar-2025	2403020-WS-001	In Use	
311	Wire Sling	Thaimui	2 Legs wire rope Sling Dia 18.00 mm-6M C/W thimble both ends and master link	2L-01	-	Container	6t	23-Mar-2024	23-Mar-2025	2403020-WS-002	In Use	
312	Wire Sling	Thaimui	Single leg sling dia 25.4 mm-1.5M C/W hook and master link with thimble both end	CS-01	-	Provision Crane	8.6t	25-Mar-2024	25-Mar-2025	2403020-WS-004	In Use	
314	Wire Sling	Thaimui	Single leg sling dia 36.0 mm-4.0M C/W hook and master link with thimble both end	TL10-00361	-	Deck crane	16.6t	25-Mar-2024	25-Mar-2025	2403020-WS-005	In Use	
315	Wire Sling	Thaimui	4 Legs wire rope Sling Dia 14.00 mm-2M C/W thimble both ends and master link	4L-02	-	Store Container	4.5 MT	23-Mar-2024	23-Mar-2025	2403020-WS-003	In Use	
316	Wire Sling	Thaimui	Single leg sling dia 25.4 mm-1.0M C/W hook and master link with thimble both end	CS-06	-	Offtake Toolbox	8.6t	24-Mar-2024	24-Mar-2025	2309007-WS-006	In Use	
317	Lever Hoist	Vital/VLH1	Lever Hoist Vital	-	470447V	Engine Room	1.6t	27-Mar-2024	27-Mar-2025	2403020-LCH-005	In Use	
320	Round Sling	Techno Tex	Round sling 2M	RS-081	21394115	Offtake Toolbox	2 MT	23-Mar-2024	23-Mar-2025	2403020-RS-005	In Use	
323	Round Sling	Techno Tex	Round sling 2M	RS-061	-	Offtake Toolbox	2 MT	27-Mar-2024	27-Mar-2025	2403020-RS-006	In Use	
324	Masterlink	Crosby	Masterlink 3/4 inch	ML-25	-	Offtake Toolbox	11.5T	23-Mar-2024	23-Mar-2025	2403020-ML-006	In Use	
325	Masterlink	Crosby	Masterlink 3/4 inch	ML-27	-	Offtake Toolbox	11.5T	23-Mar-2024	23-Mar-2025	2403020-ML-006	In Use	
326	LOK-A-LOY	Crosby	Crosby 8/10"	AL-47	-	Offtake Toolbox	16T	26-Mar-2024	26-Mar-2025	2403020-AL-001	In Use	
327	LOK-A-LOY	Crosby	Crosby 8/10"	AL-49	-	Offtake Toolbox	16T	26-Mar-2024	26-Mar-2025	2403020-AL-001	In Use	
328	Tripod	IKAR GmbH	Tripod DB-A 1/2 /DB-AR	Tripod 01	1643889	Main Deck	300 kg	26-Mar-2024	26-Mar-2025	2403020-TP-001	In Use	
329	Tripod	IKAR GmbH	Tripod DB-A 1/2 /DB-AR	Tripod 02	1643888	Main Deck	300 kg	26-Mar-2024	26-Mar-2025	2403020-TP-001	In Use	
330	Shackle	Crosby	Bolt anchor Bow shackle 1.25"	SKB-192	-	Offtake Toolbox	12 MT	27-Mar-2024	27-Mar-2025	2309007-SK-036	In Use	
331	Shackle	Crosby	Bolt anchor Bow shackle 1.25"	SKB-193	-	Offtake Toolbox	12 MT	27-Mar-2024	27-Mar-2025	2309007-SK-036	In Use	
332	Wire Rope Hoist	Toyo	Wire rope hoist	WH-01	1904033	Offtake Toolbox	1.60 MT	23-Mar-2024	23-Mar-2025	2403020-WRH-003	In Use	
333	Chain Block	Vital	Chain Block	CB-25	-	Container	1 MT	22-Mar-2024	22-Mar-2025	2403020-CB-015	In Use	
334	Shackle	Crosby	Bolt anchor Bow shackle 1.25"	SKB-210	-	Container	12 MT	22-Mar-2024	22-Mar-2025	2403020-SK-037	In Use	
335	Shackle	Crosby	Bolt anchor Bow shackle 1.25"	SKB-211	-	Container	12 MT	22-Mar-2024	22-Mar-2025	2403020-SK-037	In Use	
336	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SK-997	-	Container	3.25MT	22-Mar-2024	22-Mar-2025	2403020-SK-038	In Use	
337	Shackle	Crosby	Screw pin anchor Bow Shackle 3/4"	SKB-217	-	Container	4.75 MT	22-Mar-2024	22-Mar-2025	2403020-SK-039	In Use	
338	Shackle	Crosby	Screw pin anchor Bow Shackle 3/4"	SKB-202	-	Container	4.75 MT	22-Mar-2024	22-Mar-2025	2403020-SK-039	In Use	
339	Shackle	Crosby	Screw pin anchor Bow Shackle 3/4"	SKB-190	-	Container	4.75 MT	22-Mar-2024	22-Mar-2025	2403020-SK-039	In Use	
340	Shackle	Crosby	Screw pin anchor Bow Shackle 5/8"	SKB-18	-	Container	3.25MT	22-Mar-2024	22-Mar-2025	2403020-SK-040	In Use	
341	Shackle	Crosby	Snatch Block 6" BB-5/8" Dia with hook suspension	SB-01	-	Container	2MT	22-Mar-2024	22-Mar-2025	2403020-SK-041	In Use	
342	Shackle	Kondo	Screw pin anchor Bow Shackle 7/8"	SKD-01	-	Container	6.5MT	22-Mar-2024	22-Mar-2025	2403020-SK-042	In Use	
343	Round Sling	Techno Tex	Round sling 6M	RS-85	-	Container	1 MT	23-Mar-2024	23-Mar-2025	2403020-RS-007	In Use	

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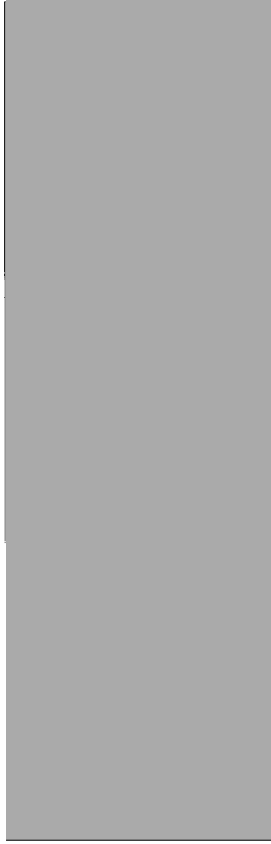
Item	Equipment Type	Brand/Model	Equipment Description	Tag No.	Serial No	Location of Equipment	SWL / WLL	Inspection Date	Recommended Next Inspection Date	Report No.	Status	Remark
344	Round Sling	Techno Tex	Round sling 5M	RS-75	-	Container	5 MT	23-Mar-2024	23-Mar-2025	2403020-RS-008	In Use	
345	Round Sling	Techno Tex	Round sling 6M	RS-82	-	Container	1 MT	23-Mar-2024	23-Mar-2025	2403020-RS-007	In Use	
349	Round Sling	Techno Tex	Round sling 2M	RS-99	-	Container	2 MT	23-Mar-2024	23-Mar-2025	2403020-RS-009	In Use	
350	Round Sling	Techno Tex	Round sling 4M	RS-105	-	Container	3 MT	23-Mar-2024	23-Mar-2025	2309007-RS-010	In Use	
351	Round Sling	Techno Tex	Round sling 4M	RS-104	-	Container	3 MT	23-Mar-2024	23-Mar-2025	2309007-RS-010	In Use	
352	Round Sling	Techno Tex	Round sling 2M	RS-100	-	Container	2 MT	23-Mar-2024	23-Mar-2025	2403020-RS-009	In Use	
353	Round Sling	Techno Tex	Round sling 2M	RS-96	-	Container	2 MT	23-Mar-2024	23-Mar-2025	2403020-RS-009	In Use	
354	Round Sling	Techno Tex	Round sling 2M	RS-97	-	Container	2 MT	23-Mar-2024	23-Mar-2025	2403020-RS-009	In Use	
355	Round Sling	Techno Tex	Round sling 2M	RS-101	-	Container	2 MT	23-Mar-2024	23-Mar-2025	2403020-RS-009	In Use	
356	Round Sling	Techno Tex	Round sling 2M	RS-108	-	Container	2 MT	23-Mar-2024	23-Mar-2025	2403020-RS-009	In Use	
357	Round Sling	Techno Tex	Round sling 5M	RS-057	-	Container	5 MT	23-Mar-2024	23-Mar-2025	2403020-RS-008	In Use	
358	Flat Sling	Technotex	Flat Sling 5M	FS-072	-	Container	5 MT	23-Mar-2024	23-Mar-2025	2403020-FS-014	In Use	
359	Flat Sling	DSR	Flat Sling 3M	FS-054	-	Hawser Rack	3MT	24-Mar-2024	24-Mar-2025	2403020-FS-015	In Use	
360	Handlift	HECKER	Hacker Handlift PT305	MSR23-00428 No. 1	TNTPT305572	Main Deck	3 MT	25-Mar-2024	25-Mar-2025	2403020-HL-002	In Use	
361	Handlift	HECKER	Hacker Handlift PT305	MSR23-00428 No. 2	TNTPT305570	Main Deck	3 MT	25-Mar-2024	25-Mar-2025	2403020-HL-003	In Use	

	Date : 01/09/2018	Revision : 5	Ref: P-06-06
	Originator by : Wittaya Kasamsawat Operation Manager	Reviewed by : Itiranunt Chuaychoo OAS Manager	Approved by : Dusadee Chantaramongkol Senior Vice President
LIFTING AND HOISTING OPERATIONS			


SECTION 6 : OPERATIONS AND THE MANAGEMENT OF CONTRACTOR

P-06-06

Lifting and Hoisting Operations




Document Types	Copy No.	Issued to	Date of Issue
Controlled			
Uncontrolled			

	Date : 01/09/2018	Revision : 5	Ref: P-06-06
	Originator by : Wittaya Kasamsawat Operation Manager	Reviewed by : Itiranunt Chuaychoo OAS Manager	Approved by : Dusadee Chantaramongkol Senior Vice President
LIFTING AND HOISTING OPERATIONS			

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	Date : 01/09/2018	Revision : 5	Ref: P-06-06
	Originator by : Wittaya Kasamsawat Operation Manager	Reviewed by : Itiranunt Chuaychoo QAS Manager	Approved by : Dusadee Chantaramongkol Senior Vice President
LIFTING AND HOISTING OPERATIONS			

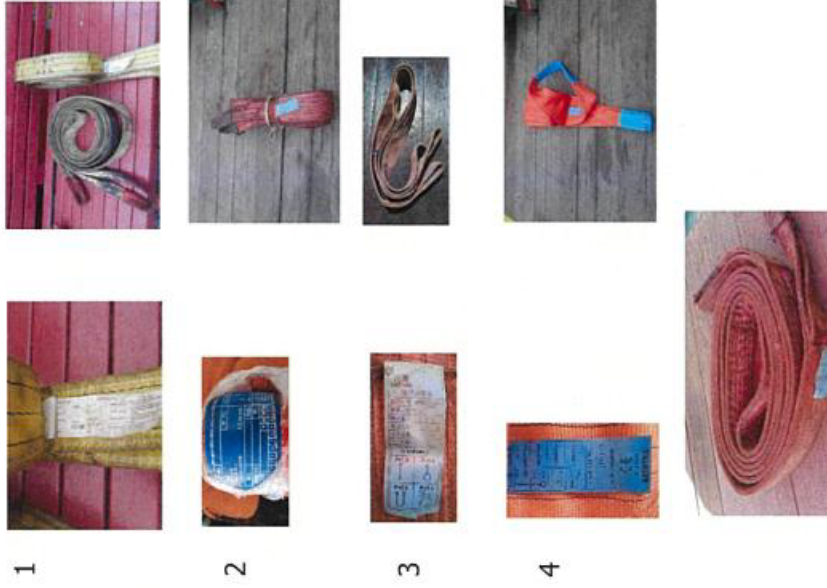
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Cargo Securing Equipment

No.	Size	Brand	Length (m)	Quantity	SWL	Location	Condition	Maintenance & repairs	Ref.Cert.
Flat Webbing Sling									
1	2T	Fosmaker	5	2 pcs	2T	Main Deck	90%	Roll & kept away from sun & sea spray	JY14E03737_03
2	3T	Fosmaker	6	1 pcs	3T	Main Deck	80%	Roll & kept away from sun & sea spray	Marathon Ultra
3	10T	Ling Ying	8	1 pc	10T	Main Deck	90%	Roll & kept away from sun & sea spray	JY14E03737_03
4	10T	Mertra	4	2 pcs	10T	Main Deck	95%	Roll & kept away from sun & sea spray	JY14E03737_03

Cargo Lashing Belt & Ratchet

1	2"	Mertra	10	4 set	BS 5 Tons	Deck Store	80%	Greased on the moving part	
2	4"	Mertra	10	8 set	BS 12 Tons	Deck Store	80%	Greased on the moving part	
3	4"	Mertra	30	4 Set	BS 10 Tons	Main Deck	80%	Greased on the moving part	
4	4"	Mertra	15	5 Set	BS 10 Tons	Main Deck	100% Store	Greased on the moving part RCVD on 21.12.23	

Flat Webbing Sling

Cargo Lashing Belt & Ratchet

1



2



3



Maintenance & repairs





INSPECTION CERTIFICATE

Office: Bangkok

Date: 26 June 2024

This Certificate is issued to Siaptek (Thailand) Co., Ltd. address 36/37 Moo 5, 332 Road Phulakong Sathup, Corburi Thailand to certify that a LRQA's Inspector to this society did attend at the premise of SC Ganya request to services for equipment of SC Management Co., Ltd. to carry out scope of inspection for the equipment as described below:-

Scope of inspection: Witness Proof Load Test & Visual Inspection
Reference Standards or Documents: As per Client Requirement

A) Description:
Equipment: PROVISION CRANE
Dimension Boom: 9.0 m. Length
SWL: 3.00 MT
Load Test at: 3.00 MT
Serial No.: YQ 14059



B) Results:
1. Inspection with a thorough visual inspection and revealed no visible defect that time of inspection.
2. Require of MPI on hook (attached)

Date of Inspection: 26 June 2024
Name of Inspector: Manop Pattanasakrom
LRQA Representative



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Siam Marine Supply and Services Company Limited

Head Office : 39/313 neighbours home, Soi Sukapiban 5 soi 82, Sukapiban 5 Road, West samua Subdistrict, Klong samwa District, Bangkok 10510

Branch 00001 : 120/15 Village No.8 Thasathanon Road, Khao Rup Chang Subdistrict, Muang District, Songkhla Province, 90000
Tel. +(66) 61 069 6965, +(66) 84 300 2991 Email : admin@siammarines.com

Tax ID : 0105555121287

Test Certificate

Customer : SC Management Co., Ltd. Rev. : 1 Issue Date : 29 July 2020
Intended for : Page : 1 of 1
Certificate no. : SNR2020-0779 Witness By : ABS Consulting
Place of Test : Thaimul Warehouse, Samutpraburi, Thailand PO No. : 2020064608
Name of Product : Single Leg Wire Rope Sling Test Style : Breaking Test
Standard Reference : "CLIENT REQUIREMENT"

Item	Serial No.	Qty.	Description	Breaking Strength (Nominal or Specified)	Breaking Load Applied
1	Tow Wire	1	"SC GANYA" Single Leg Wire Rope Sling c/w alum ferrules form A Soft eye both end Size : 56 MM x L 3.50 MTR Core : Gal 6x36(W5)TWRC+RIIRL Grade 1770 Kgf/mm2	-	218.88 Tonne
Test Results : <input type="radio"/> Pass <input type="radio"/> Fail			Next Visual Inspection : None applicable		
Intended for : SC GANYA			Photo Attachment For : Single Leg Wire Rope Sling		



We hereby Certify that the goods described have been tested to a Proof Load Test of not less than that stated and Subsequently examined.



Equipment Name : Horizontal Tensile Testing Machine - Manufacturer : WITROP
Serial No. : 1241 - Capacity Load : 400 Tons

Siam Marine Supply and Services Company Limited

Head Office : 39/313 Neighbours home, Soi Sukapiban 5 soi 82, Sukapiban 5 Road, West samwa Subdistrict, Klong samwa District, Bangkok 10510

Branch 000001 : 120/15 Village No.8 Thinsulanon Road, Khao Rup Chang Subdistrict, Muang District, Songkhla Province, 90000
Tel. +(66) 61 069 6965, +(66) 84 300 2991 Email : admin@siammarines.com

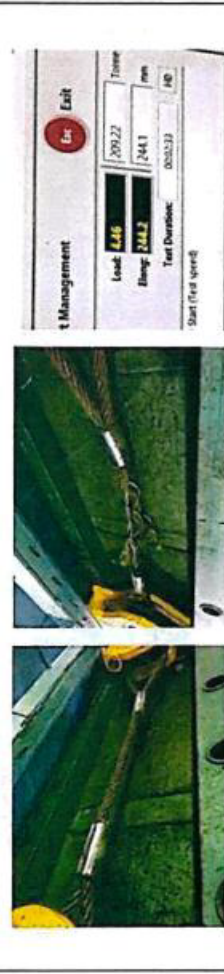
Tax ID. : 0105555121287

Test Certificate

Customer :	SC Management Co., Ltd.	Rev. :	1	Issue Date :	29 July 2020
Intended for :	-	Page :	1 of 1		
Certificate no. :	SHR2020-0780	Witness By :	ABS Consulting		
Place of Test :	Thaimul Warehouse, Samudprakram, Thailand	PO No. :	2020064608		
Name of Product :	Single Leg Wire Rope Sling	Test Style :	Breaking Test		
Standard Reference :	"CLIENT REQUIREMENT"				

Item	Serial No.	Qty.	Description	Breaking Strength (Nominal or Specified)	Breaking Load Applied
1	Spare Tow Wire	1	"SC GANYA" Single Leg Wire Rope Sling c/w alum ferrules form A Soft eye both end Size : 56 MM x L 3.50 MTR Const : Gal 6x36(WS)IWRC+RHRL Grade 1770 Kgf/mm2	-	209.22 Tonne

Test Results :	<input type="radio"/> Pass <input type="radio"/> Fail	Next Visual Inspection : None applicable
Intended for :	SC GANYA	
Photo Attachment For :	Single Leg Wire Rope Sling	



We hereby Certify that the goods described have been tested to a Proof Load Test of not less than that stated and Subsequently examined.



Equipment Name : Horizontal Tensile Testing Machine - Manufacturer : WTRCOP
Serial No. : 1241 - Capacity Load : 400 Tons

Siam Marine Supply and Services Company Limited

Head Office : 39/313 Neighbours home, Soi Sukapiban 5 soi 82, Sukapiban 5 Road, West samwa Subdistrict, Klong samwa District, Bangkok 10510

Branch 000001 : 120/15 Village No.8 Thinsulanon Road, Khao Rup Chang Subdistrict, Muang District, Songkhla Province, 90000
Tel. +(66) 61 069 6965, +(66) 84 300 2991 Email : admin@siammarines.com

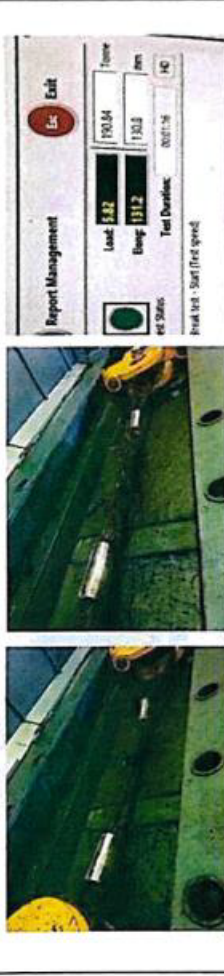
Tax ID. : 0105555121287

Test Certificate

Customer :	SC Management Co., Ltd.	Rev. :	1	Issue Date :	29 July 2020
Intended for :	-	Page :	1 of 1		
Certificate no. :	SHR2020-0778	Witness By :	ABS Consulting		
Place of Test :	Thaimul Warehouse, Samudprakram, Thailand	PO No. :	2020064608		
Name of Product :	Single Leg Wire Rope Sling	Test Style :	Breaking Test		
Standard Reference :	"CLIENT REQUIREMENT"				

Item	Serial No.	Qty.	Description	Breaking Strength (Nominal or Specified)	Breaking Load Applied
1	Work Wire	1	"SC GANYA" Single Leg Wire Rope Sling c/w alum ferrules form A Soft eye both end Size : 56 MM x L 3.50 MTR Const : Gal 6x36(WS)IWRC+RHRL Grade 1770 Kgf/mm2	-	190.84 Tonne



Test Results :	<input type="radio"/> Pass <input type="radio"/> Fail	Next Visual Inspection : None applicable
Intended for :	SC GANYA	
Photo Attachment For :	Single Leg Wire Rope Sling	



We hereby Certify that the goods described have been tested to a Proof Load Test of not less than that stated and Subsequently examined.



Equipment Name : Horizontal Tensile Testing Machine - Manufacturer : WTRCOP
Serial No. : 1241 - Capacity Load : 400 Tons



Inspection, Certification, Non Destructive Testing,
Helicopter surveys, Maintenance and Cleaning Services

Doc ID: SKTH-OPP-NOT-F-001
Revision No: 04
Effective Date: 01-08-2023
Page: 1 of 1

MAGNETIC PARTICLE INSPECTION CERTIFICATE

Customer: SC Management Co., Ltd.
Work Location: SC GANYA
Ordered by: K.Muchai Khankaw

Date of Service: 26 June 2024
Mission Order No.: MOSTH1240285
Report No.: MOSTH1240285-001

Description: HOOK OF PROVISION CRANE (SN: HQ 14059)
SWL: 3.00 T.

Serial Number: N/A

Material: CARBON STEEL

Method of Inspection
☒ White Contrast Paint
☒ Black Magnetic Ink
☐ Fluorescent
☐ Color Contrast
☐ Dry
☐ Wet
☐ Continuous
☐ Residual

Procedure/Specification
☒ SKTH-OPP-NOT-MT-002
☐ ASTM E-709
☐ ASME SEC V ART 7
☐ Others

Equipment
☒ Permanent Yoke S/N:
☐ A/C Yoke S/N: 24804
☐ DC Coil S/N:
☐ Full Body
☐ Stress Area
☐ Hook

Area Inspected
☐ Weldment of lifting point
☐ Shackles
☐ DC Coil S/N:
☐ Full Body
☐ Stress Area
☐ Hook

Acceptance Criteria/Relevant Standard
☒ ASME V
☐ ASME B30.10
☐ DNV GL-ST-E271
☐ Free of Crack

Time of Inspection
☐ After Visual
☐ Before Load Test
☐ After Hydro Test
☐ After Hydro Test

Surface Preparation
☐ Grinding
☐ Others

Viewing Conditions of Examination
☐ Natural Light / Sunlight
☐ Artificial Light / Light Meter S/N:
Intensity: > 1,000 Lux

Pictures:



Results of Inspection/Comments: ☒ Accepted ☐ Rejected ☐ Rejected

Remarks: Free of surface crack at time of inspection.

The results of final inspection reported by the company to the customer represent good faith opinions and are not to be considered warranties or guarantees of quality, durability or suitability of final inspection.

Date of Inspection: 26 June 2024

Inspector Name & Signature:

SK Siaptek (Thailand) Co., Ltd.



Inspection, Certification, Non Destructive Testing,
Helicopter surveys, Maintenance and Cleaning Services

Doc ID: SKTH-OPP-NOT-F-001
Revision No: 04
Effective Date: 01-08-2023
Page: 1 of 1

MAGNETIC PARTICLE INSPECTION CERTIFICATE

Customer: SC Management Co., Ltd.
Work Location: SC GANYA
Ordered by: K.Muchai Khankaw

Date of Service: 27 June 2024
Mission Order No.: MOSTH1240285
Report No.: MOSTH1240285-002

Description: Bolt Type Anchor Shackles 85 TONS
(2 PCS.)

Serial Number: 85-1, 85-2

Material: CARBON STEEL

Method of Inspection
☒ White Contrast Paint
☒ Black Magnetic Ink
☐ Fluorescent
☐ Color Contrast
☐ Dry
☐ Wet
☐ Continuous
☐ Residual

Procedure/Specification
☒ SKTH-OPP-NOT-MT-002
☐ ASTM E-709
☐ ASME SEC V ART 7
☐ Others

Equipment
☒ Permanent Yoke S/N:
☐ A/C Yoke S/N: 24804
☐ DC Coil S/N:
☐ Full Body
☐ Stress Area
☐ Hook

Area Inspected
☐ Weldment of lifting point
☐ Shackles
☐ DC Coil S/N:
☐ Full Body
☐ Stress Area
☐ Hook

Acceptance Criteria/Relevant Standard
☒ ASME V
☐ ASME B30.26
☐ DNV GL-ST-E271
☐ Free of Crack

Time of Inspection
☐ After Visual
☐ Before Load Test
☐ After Load Test
☐ After Hydro Test
☐ After Hydro Test

Surface Preparation
☐ Grinding
☐ Others

Viewing Conditions of Examination
☐ Natural Light / Sunlight
☐ Artificial Light / Light Meter S/N:
Intensity: > 1,000 Lux

Pictures:



Results of Inspection/Comments: ☒ Accepted ☐ Rejected ☐ Rejected

Remarks: Free of surface crack at time of inspection.

The results of final inspection reported by the company to the customer represent good faith opinions and are not to be considered warranties or guarantees of quality, durability or suitability of final inspection.

Date of Inspection: 27 June 2024

Inspector Name & Signature:

SK Siaptek (Thailand) Co., Ltd.



Inspection, Certification, Non Destructive Testing,
Helicopter surveys, Maintenance and Cleaning Services

Doc ID : SKTH-OPP-NOT-1-001
Revision No : 04
Effective Date : 01-06-2023
Page : 1 of 1

MAGNETIC PARTICLE INSPECTION CERTIFICATE

Customer : SC Management Co., Ltd.
Work Location : SC GANYA
Ordered by : K.Monchai Khunkaew

Date of Service : 27 June 2024
Mission Order No. : MOSTH240285
Report No. : MOSTH240285-001

Description : Bolt Type Anchor Shackles 55 TONS
(7 PCS.)

Serial Number : 55-1, 55-2, 55-3, 55-4, 55-5,
55-6, 55-7

Material: CARBON STEEL

Method of Inspection
☒ White Contrast Paint
☒ Black Magnetic Ink
Procedure/Specification
☒ SKTH-OPP-NOT-MIT-002
Equipment
☒ Permanent Yoke S/N: 24804
☒ A/C Yoke S/N: 24804
☒ DC Coil S/N:
Area Inspected
☒ Weldment of lifting point
Acceptance Criteria/Relevant Standard
☒ ASME V
Time of Inspection
☒ After Visual
Surface Preparation
☒ Grinding
Viewing Conditions of Examination
☒ Natural Light / Sunlight

☒ Dry
☒ Wet
☒ Fluorescent
☒ Color Contrast
☒ ASTM E-709
☒ ASME SEC V ART 7
☒ DC Coil S/N:
☒ Full Body
☒ Stress Area
☒ Hook
☒ Free of Crack
☒ Before Load Test
☒ After Hydro Test
☒ Others
Intensity : > 1,000 Lux



Results of Inspection/Comments: ☒ Accepted ☐ Rejected
Remarks: Free of surface crack at time of inspection.
The results of final inspection reported by the customers to the customer represent good faith opinions and are not to be considered warranties or guarantees of quality, condition or suitability of final inspection.

Date of Inspection: 27 June 2024

Inspector Name & Signature :


SK Siaptek (Thailand) Co., Ltd.



Inspection, Certification, Non Destructive Testing,
Helicopter surveys, Maintenance and Cleaning Services

Doc ID : SKTH-OPP-NOT-1-001
Revision No : 04
Effective Date : 01-06-2023
Page : 1 of 1

MAGNETIC PARTICLE INSPECTION CERTIFICATE

Customer : SC Management Co., Ltd.
Work Location : SC GANYA
Ordered by : K.Monchai Khunkaew

Date of Service : 27 June 2024
Mission Order No. : MOSTH240285
Report No. : MOSTH240285-004

Description : Bolt Type Anchor Shackles 35 TONS
(6 PCS.)

Serial Number : 35-1, 35-2, 35-3, 35-4, 35-5, 35-6

Material: CARBON STEEL

Method of Inspection
☒ White Contrast Paint
☒ Black Magnetic Ink
Procedure/Specification
☒ SKTH-OPP-NOT-MIT-002
Equipment
☒ Permanent Yoke S/N: 24804
☒ A/C Yoke S/N: 24804
☒ DC Coil S/N:
Area Inspected
☒ Weldment of lifting point
Acceptance Criteria/Relevant Standard
☒ ASME V
Time of Inspection
☒ After Visual
Surface Preparation
☒ Grinding
Viewing Conditions of Examination
☒ Natural Light / Sunlight

☒ Dry
☒ Wet
☒ Fluorescent
☒ Color Contrast
☒ ASTM E-709
☒ ASME SEC V ART 7
☒ DC Coil S/N:
☒ Full Body
☒ Stress Area
☒ Hook
☒ Free of Crack
☒ Before Hydro Test
☒ After Hydro Test
☒ Others
Intensity : > 1,000 Lux



Results of Inspection/Comments: ☒ Accepted ☐ Rejected
Remarks: Free of surface crack at time of inspection.
The results of final inspection reported by the customers to the customer represent good faith opinions and are not to be considered warranties or guarantees of quality, condition or suitability of final inspection.

Date of Inspection: 27 June 2024

Inspector Name & Signature :


SK Siaptek (Thailand) Co., Ltd.

  	Inspection, Certification, Non Destructive Testing, Helicopter surveys, Maintenance and Cleaning Services	Doc ID : SIPTM-OPP-MDT # 691 Revision No. : 04 Effective Date : 01/08/2023 Page : 1 of 1
	MAGNETIC PARTICLE INSPECTION CERTIFICATE	

Customer :	SC Management Co., Ltd.	Date of Service :	27 June 2024
Work Location :	SC GANYA	Mission Order No. :	MO5TH240285
Ordered by :	K.Montchal Khunkeaw	Report No. :	MO5TH240285-005
Description :	Bulk Type Anchor Shackles 25 TONS (8 PCS.)		
Serial Number :	25-1, 25-2, 25-3, 25-4, 25-5, 25-6		

Material: CARBON STEEL			
Method of Inspection			
<input type="checkbox"/> White Contrast Paint	<input type="checkbox"/> Dry	<input type="checkbox"/> Fluorescent	<input checked="" type="checkbox"/> Continuous
<input type="checkbox"/> Black Magnetic Ink	<input type="checkbox"/> Wet	<input type="checkbox"/> Color Contrast	<input type="checkbox"/> Residual
Procedure/Specification			
<input checked="" type="checkbox"/> SIPTM-OPP-MDT 002	<input checked="" type="checkbox"/> ASTM E-709	<input type="checkbox"/> ASME SEC V ART 7	<input type="checkbox"/> Customer Specs
Equipment			
<input checked="" type="checkbox"/> Permanent Yoke S/N:	<input checked="" type="checkbox"/> A/C Yoke S/N: 24804	<input type="checkbox"/> DC Coil S/N:	<input type="checkbox"/> Black Light S/N:
<input type="checkbox"/> Area Inspected	<input type="checkbox"/> Shackles	<input checked="" type="checkbox"/> Full Body	<input type="checkbox"/> Stress Area
<input type="checkbox"/> Weldment of Wing point	<input type="checkbox"/> ASME V	<input checked="" type="checkbox"/> AWS D1.1	<input type="checkbox"/> Free of Crack
<input type="checkbox"/> Acceptance Criteria/Relevant Standard	<input checked="" type="checkbox"/> ASME B30.26	<input type="checkbox"/> Before Load Test	<input type="checkbox"/> Before Hydro Test
Time of Inspection	<input type="checkbox"/> After Visual	<input type="checkbox"/> After Load Test	<input type="checkbox"/> After Hydro Test
<input type="checkbox"/> Surface Preparation	<input type="checkbox"/> Grinding	<input type="checkbox"/> Others	
<input type="checkbox"/> Wiretine Conditions of Examination	<input type="checkbox"/> Natural Light / Sunlight	<input type="checkbox"/> Artificial Light / Light Meter S/N:	Intensity : > 1,000 Lux



Results of Inspection/Comments:	<input checked="" type="checkbox"/> Accepted	<input type="checkbox"/> Rejected	Remarks : Free of surface crack at time of inspection.
The results of test inspection reported by the company is the customer represent good faith customers and are not to be considered as guarantee of quality, condition or validity of test inspection.			
Date of Inspection	27 June 2024		

Inspector Name & Signature :	
 Siaptek (Thailand) Co., Ltd.	

Certificate no: PRJ11100418957/0452
Page 1 of 1



INSPECTION CERTIFICATE

Office: Bangkok

Date: 04 April 2024

This Certificate is issued to Siaptek (Thailand) Co., Ltd. address 36/37 Moo 5 332 Road Pratuang Sathap, Chonburi Thailand to certify that a LRQA's Inspector to this society did attend at the premise of SC Nara Request to services for equipment of SC Management Co., Ltd. to carry out scope of inspection for the equipment as described below:-

Scope of inspection: Witness Proof Load Test & Visual Inspection

Reference Standards or Documents: As per Client Requirement

A) Description: PROVISION CRANE Y180L-4H
Model: 9.0 m. Length
Dimension Boom: 3.00 MT.
SWL: 3.00 MT.
Load Test at: 140574049



- B) Results:
1. Inspection with a thorough visual inspection and revealed no visible defect that time of inspection.
 2. Require of MPI on hook (attached)

Date of Inspection	4 APRIL 2024
Next Visual Inspection	3 APRIL 2025

Name of Inspector: Manop Pattanaprakorn
LRQA Representative



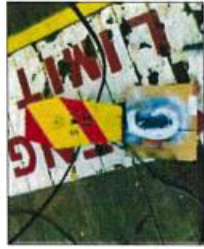
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	Inspection: Certification, Non Destructive Testing Helideck surveys, Maintenance and Cleaning Services	Doc ID: SKTH-OPP-NDT-F-001
		Revision No.: 04
		Effective Date: 01-08-2023
		Page: 1 of 1
MAGNETIC PARTICLE INSPECTION CERTIFICATE		

Customer:	SC MANAGEMENT CO., LTD.	Date of Service:	04 April 2024
Work Location:	SC Nara	Mission Order No.:	MOSTH240162
Ordered by:	K.Monchai Khanawee	Report No.:	MOSTH240162-001
Description:	PROVISION CRANE (HOOK) -HOOK	Serial Number:	140574049

Material: CARBON STEEL			
Method of Inspection	Dry	Fluorescent	Continuous
White Contrast Paint	Wet	Color Contrast	Residual
Black Magnetic Ink	ASTM E-709	ASME SEC V ART 7	Customer Specs
Procedure/Specification	ASTM E-709	DC Coil S/N:	Black Light S/N:
Equipment	Permanent Yoke S/N:	Full Body	Stress Area
Area Inspected	Shackle	AWM D1.1	Hook
Weldment	ASME B30.10	After Load Test	DNV GL-ST-E271
Acceptance Criteria/Relevant Standard	ASME V	Grinding	Free of Crack
Time of Inspection	After Visual	Others	Before Hydro Test
Surface Preparation	Brushing	Artificial Light / Light Meter S/N:	After Hydro Test
Viewing Conditions of Examination	Natural Light / Sunlight	Intensity	> 1,000 Lux

Pictures:



Results of Inspection/Comments:	Accepted	Rejected	Remarks:	Free of surface crack at time of inspection.
The results of this inspection reported by the company to the customer represent good faith opinions and are not to be considered warranties or guarantees of quality, classification or suitability of the inspected item.				
Date of Inspection	04 April 2024			


Inspector Name & Signature:		Siaptek (Thailand) Co., Ltd.
-----------------------------	--	------------------------------

ประจำปี 2567

บริษัท เอส ซี แมนเนจเม้นท์ จำกัด

รายงานสรุปการตรวจสอบส่วนประกอบและอุปกรณ์บนเรือ





Date : 01/01/2018

Revision : 00

Ref : F-04-TEC/06

Planned Maintenance System

Prepare by : Mr.Arayawat M

Inspected by : Capt. Narin P

Ship Name : SC NATA

Date : 31-Dec-24

Date : 31-Dec-24

Month : December-24

Ship Name : SC NATA

ชื่อเรือ

Total running hrs.

Previous M. run. Hrs.

Run. Hrs. from prev. M.

Equipment Code รหัสอุปกรณ์	Job Code รหัสงาน	Job Name / Description ชื่องาน	RH/P	Last M. date	Last M. Hours	R/H (NEXT DUE)	Remark หมายเหตุ
SC001-23-000		Miscellaneous					
		Provision Crane					
SC001-23-000	M/2301	DECK CRANE LOAD TEST (SURVEY)	5 YEARLY	28-Dec-24		27-Dec-29	
SC001-22-000	M/2302	DECK CRANE ANNUAL TEST(VISUAL/LOAD TEST)	YEARLY	28-Dec-24		28-Dec-25	
SC001-22-000		Apply Grease all moving part	Monthly	28-Dec-24		27-Jan-25	
SC001-22-000		Cleaned Hyd.oil filters	3 Month	28-Dec-24		28-Mar-25	
SC001-22-000		Checked and apply grease Slewing gear and bearing	3 Month	28-Dec-24		28-Mar-25	
SC001-22-000		Checked and apply grease for wire and pulley assembly	Monthly	28-Dec-24		27-Jan-25	
SC001-22-000		Test limit switch for hoisting and slewing	Monthly	28-Dec-24		27-Jan-25	
SC001-22-000		Check the wire condition and apply grease	3 Month	28-Dec-24		28-Dec-25	
		Other					
SC001-22-000	M/2303	GANG WAY LOAD TEST (SURVEY)	5 YEARLY	12-Mar-20		11-Mar-25	
SC001-22-000	M/2304	SWING ROPE AND EQUIPMENT LOAD TEST	5 YEARLY	N/A		#VALUE!	
SC001-22-000	M/2305	PAD EYE LACHING POINT (NDT TEST)	YEARLY	N/A		#VALUE!	



APT APT TECHNOLOGY AND CONSULTANT CO.,LTD.

MAINTENANCE CHECK LIST

BOAT DAVIT

Name of Ship	SC NATA	Type of Davit	JY-HSR23116
IMO Number	9720574	Serial Number	14R2313
Name of Owner	SC MANAGEMENT CO., LTD.	Date of Manufacturer	05/2014
Flag	THAILAND	Name of Manufacturer	JIANGYIN WOLONG F.R.P
Class	NK		

No.	Items	Result of Inspection and Servicing	Remarks
01	Frame	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	
02	Davit arms	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	
03	Hinge	<input type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	N/A
04	Sheave	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	
05	Suspension block	<input type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	N/A
06	Davit arm stopper	<input type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	N/A
07	Trigger hook	<input type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	N/A
08	Boat fall	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	
09	Turn buckle	<input type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	N/A
10	Lashing wire rope	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	
11	Deck operation device	<input type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	N/A
12	Remote control device	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	
13	Recovery strap	<input type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	N/A
14	Maintenance pendant	<input type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	N/A
15	Spare parts	<input type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	N/A
16	Welding part with deck	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Part exchange <input type="checkbox"/> Repair	

Notice :

		Service company : APT Technology and Consultant Co., Ltd.
		Certificate Number : 2.04-66-006
		Date of Service : 13-MAR-2024

Effective date: 15 January 2020

FM-OPD-054-REV.02

เอกสารแนบที่ 45

การตรวจสอบเรือและการขนถ่ายน้ำมันดิบ

FPF-003 Terminal (Jasmine field Gulf of Thailand)



Key contacts

1. In Case of Emergency (ICE)

Jasmine Offshore (EC)	
Jasmine Field Manager	+66 (0) 2766 9770
Jasmine FPSO OIM	+66 (0) 2766 9780
Jasmine Medic	+66 (0) 2766 9795
Jasmine FPSO CCR	+66 (0) 2766 9759, 60, 61, 62

Petrofac Emergency Support Team Bangkok.	
Operations Manager	+66 95 506 0040
Sr. Marine Engineer	+66 85 688 7343

Asset Solutions FPF-003

Terminal Information Booklet

FPF-003-O-O-1100

REVISION CONTROL

Rev No.		Owner at Revision	Date
08	Reviewed		Oct 2015
09	Reviewed/Consolidated Document		Jun 2017
10	Reviewed/Change document format	Sr. Marine Engineer	Jun 2021
11	3 Years Interval Reviewed	OIM	Aug 2023
12	Reviewed	OIM	May 2024

DOCUMENT APPLICABILITY

Applicable Area
EPS East

FEEDBACK ON THIS DOCUMENT CAN BE SUBMITTED VIA THE BMS
THE BUSINESS MANAGEMENT SYSTEM GROUP ARE RESPONSIBLE FOR THE CONTROL OF REVISION
FOR LATEST OWNER, APPROVER AND REVIEW DATE PLEASE SEE GMS

HSEQ Advisor

+66 89 168 3288

Fax: +662 4961965
Email: ALLSHIP@ALSANGKOK.COM

5. Pilots. (Mooring Master)
Tel: +6627669759-62 Ext. 8981
E-mail: jasoperations.supervisor@petrofac.com

2. Terminal address and phone number(S).

The location of the FPF – 003 turret is:

Latitude - 11° 19' 19.66" North Longitude - 101° 14' 14.99" East

Physical Address:

Gulf of Thailand B5/27 Boundary Block

Tel: +66-2-7669780

E-mail: jasoim@petrofac.com

3. Radio contact(S).

VHF Ch. 67 / VHF back up Ch. 06

Radio Communication with FPF - 003

FPF - 003 has radio communication 24 hours a day.

FPF - 003 Call sign: 9V9479.

FPF - 003 Telephone No. +66 2 7669759-62

FPF - 003 INMARSAT number for telephone: 456613010

FPF - 003 MMSI No. 566130000

FPF - 003 is on the Indian Ocean or Pacific Ocean Inmarsat depending on conditions. Incoming Offtake Vessels may communicate with the FPF - 003, which shall listen on VHF Channel 67. The Facility shall use VHF Channel 06 and 67 as a working frequency.

The FPF - 003 is equipped with a radio direction finding beacon (RDF) with a frequency of 416 kHz. Call sign is XBUF and the range is about 100 nautical miles. The beacon transmits continuously.

4. Agent(S).

The Vessel Owner(S)/Charterer(S) must appoint a Vessel's agent in Thailand. Valeura Energy's nominated shipping agent in Thailand:

OPERATION - TANKER DEPT.

SIAM THARA AGENCY CO., LTD

M: +66 86 5886388 / +66 61 4146950

F: +66 2 6541471

A: 87/2 ALL SEASONS PLACE UNIT 4401 CRC TOWER 44/F,

WIRELESS ROAD, LUMPINEE, PATHUMWAN, BANGKOK 10330 THAILAND

E: TANKER@SIAMTHARA-AGENCY.COM

Alliance Shipping Services Co., Ltd. - As Agent Only

55/78 Room No. B36,

City Connect Project Kailaprapruk,

Bang Khun Tien, Jom Thong,

Bangkok 10150, THAILAND

Tel: +662 4961961-64

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Valeura Energy Inc.
March 22, 2023 – April 1, 2024

Gallagher Energy Risk Services
Suite 1220, 530 - 8th Avenue S.W.
Calgary, Alberta T2P 3S8
Tel: 1.403.705.5555
Fax: 1.403.705.5556
www.gallagherenergy.ca

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INSURANCE SUMMARY – BLOCK B5-27
VALEURA ENERGY INC.
1ST APRIL 2024 TO 1ST APRIL 2025

เอกสารแนบที่ 47

บันทึกข้อตกลงระหว่างบริษัทฯ กับ OSCT

OFFSHORE SERVICE CONTRACT NO. 1157

1 JUNE 2021

MP B5 (THAILAND) LIMITED

and

OSCT (THAILAND) CO., LTD

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ตัวอย่างการตรวจสอบท่อโดยใช้กระสวย (PIG Report)

Pigging Report

Launching Date 28-Dec-24	Launching Time 9:10
Receiving Date 28-Dec-24	Receiving Time 9:45
Pigging Route WPA to PPB2	Distance, meter 3871
	Travelling time, h:mm 00:35
	Pig velocity, m/s 1.84

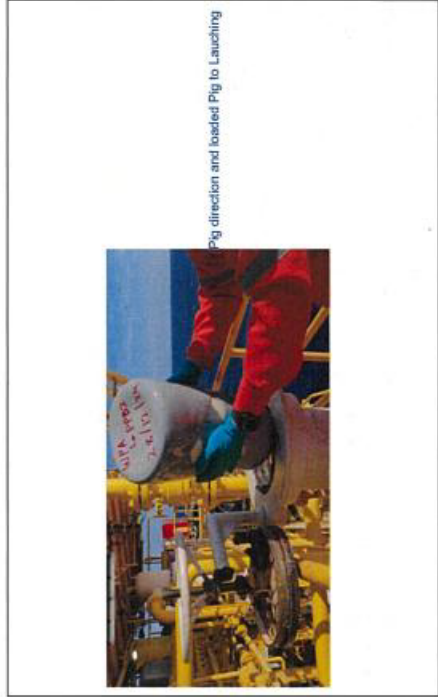
Pig P-number P23404A	Name Catercross pig	Description PIG, CROSS CROSS SWAB P PS-7 EXTRA LENGTH AT 533 mm. W/MS 6.04 P/N 01-1562-008-0621
----------------------------	------------------------	--

Diameter length 8.018" 20.5"	OD = 8.56" (8.435" - 8.685") if not in OD range, Circumference range is required L = 21" (533 mm)	XXX	(50.33-67.33 cm)
---------------------------------------	--	-----	------------------

Process Condition			
Launching Site	Normal flow Four point of the crude oil at export line, F	21,705 BPD 84%	BSW 94%
Receiving Site	Export Pressure Export Temperature	220 Psi 180 F	Discharge pressure of Degasser
	Receiving Temperature Receiving Pressure	143 F 125 Psi	

Check list	
Launching Site	
<input checked="" type="checkbox"/> Drain the liquid at pig launcher (2" Ball valve) and closed valve after finish	<input checked="" type="checkbox"/> Drain the liquid at pig receiver (2" Ball valve) and closed valve after finish
<input checked="" type="checkbox"/> Vent gas at vent line of launcher (1" Ball valve) and closed valve after finish	<input checked="" type="checkbox"/> Vent gas at vent line of launcher (2" Ball valve) and closed 2 ball valve after finish
<input checked="" type="checkbox"/> Record PG 1006 A/B (psi)	<input checked="" type="checkbox"/> Record PG 1028 (psi)
<input checked="" type="checkbox"/> Open the enclosure to put pig in barrel	<input checked="" type="checkbox"/> Open the barrel to put the pig catcher
Use the wood rod to ensure pig in center of launcher	
<input checked="" type="checkbox"/> Properly secure close the enclosure	<input checked="" type="checkbox"/> Properly secure close the enclosure
<input checked="" type="checkbox"/> Line up all fluid to kicker line	<input checked="" type="checkbox"/> XPI 1020 activated at 9:45
<input checked="" type="checkbox"/> Inform to FML/lead and receiver site on the pigging operation	<input checked="" type="checkbox"/> Reroute to normal operation
<input checked="" type="checkbox"/> Put all fluid to kicker line	<input checked="" type="checkbox"/> Drain the liquid at pig receiver (2" Ball valve) and closed valve after finish
<input checked="" type="checkbox"/> XPI 1006 activated at Not activated	<input checked="" type="checkbox"/> Drain the liquid at pig launcher (2" Ball valve) and closed 2 ball valve after finish
<input checked="" type="checkbox"/> Reroute fluid to normal operation	<input checked="" type="checkbox"/> Vent gas at vent line of launcher (2" Ball valve) and closed 2 ball valve after finish
<input checked="" type="checkbox"/> Drain the liquid at pig launcher	<input checked="" type="checkbox"/> Record PG 1020 (psi)
<input checked="" type="checkbox"/> Vent the vent gas at launcher (1" Ball valve) and secure closed 2 ball valve after finish	<input checked="" type="checkbox"/> Record PG 1020 (psi)
<input checked="" type="checkbox"/> Record PG 1006 A/B (psi)	<input checked="" type="checkbox"/> Record PG 1020 (psi)

Comment	
Launching Pig Condition	
Pig indicator not activated	
Received Pig Condition	
Identified the damaged pig as at pig nose, body and tail	
Material recovered	
Actual Gaskel Viper Sand to be reported with weight	
Comment	
WPA shut in well A-04, A-24 and A-42 (high gas), stopped WRR before pigging operation.	



Pig direction and loaded Pig to Launching



PIG indicator after launch (not activated)



Confirm the pig launch out of pig launcher

Launching Site	Receiving Site
----------------	----------------



PIG indicator before pig arrived



PIG indicator After pig arrived



PIG good condition. No wax no sand.

