

COPY

1. Approving Competent Authority / Country /		2.		AUTHORISED RELEASE CERTIFICATE				3. Form tracking number.	
EASA				EASA FORM 1				0100524409	
4. Organisation Name and address :		[SINGAPORE COMPONENT SOLUTIONS]		Singapore Component Solutions Pte Ltd 11 seletar aerospace lane Singapore 797440				5. Work order / Contract / Invoice 5000377166 / 5L0 STRADE LTD RO-664001 0003201447	
6. Item	7. Description	8. Part No.	9. Qty	10. Serial No.	11. Status / Work				
001	PRIMARY EXCHANGER HEAT	753D0000-01	1	81211-68869	OVERHAULED				
12. Remarks PRIMARY HEAT EXCHANGER OVERHAULED AND TESTED IN ACCORDANCE WITH C.M.M. 21-54-12 REVISION 03 DATED 24 APR 2019. AMDT STATUS: NIL. FOR WORK PERFORMED, REFER TO SHOP FINDING REPORT ATTACHED. TSN: 0 CSN: 0									
13a. Certifies that the items identified above were manufactured in conformity to : ☐ approved design data and are in condition for safe operation ☐ non-approved design data specified in block 12									
14a. ☒ Part - 145.A.50 Release to Service ☐ Other regulation specified in block 12									
Certifies that unless otherwise specified in block 12, the work identified in block 11 and described in block 12 was accomplished in accordance with Part 145 and in respect to that work, the items are considered ready for release to service.									
13b. Authorised signature		13c. Approval / Authorisation No.		14b. Authorised signature		14c. Certificate /Approval Ref. No			
						EASA.145.0777			
13d. Name		13e. Date (dd mmm yyyy)		14d. Name		14e. Date (dd mmm yyyy)			
				HANAFI SUHAIDI		05 Dec 2022			
USER / INSTALLER RESPONSIBILITIES This certificate does not automatically constitute authority to install the item(s). Where the user/installer performs work in accordance with regulations of an airworthiness authority different than the airworthiness authority specified in block 1 it is essential that the user/installer ensures that his/her airworthiness authority accepts items from the airworthiness authority specified in block 1. Statements in blocks 13a and 14a do not constitute installation certification. In all cases aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.									

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1. Approving Civil Aviation Authority / Country : FAA/United States		2.		AUTHORIZED RELEASE CERTIFICATE FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG		3. Form Tracking Number: 0100524410	
4. Organisation Name and address : SINGAPORE COMPONENT SOLUTIONS 11 seletar aerospace lane Singapore 797440				Singapore Component Solutions Pte Ltd Certificate No.: 55CY360D		5. Work Order / Contract / Invoice Number: 5000377166 / 5LO STRADE LTD RO-664001 0003201447	
6. Item:	7. Description:	8. Part Number:	9. Quantity:	10. Serial Number:	11. Status / Work:		
001	PRIMARY EXCHANGER HEAT	753D0000-01	1	81211-68869	OVERHAULED		
12. Remarks: PRIMARY HEAT EXCHANGER OVERHAULED AND TESTED IN ACCORDANCE WITH C.M.M. 21-54-12 REVISION 03 DATED 24 APR 2019. AMDT STATUS: NIL. FOR WORK PERFORMED, REFER TO SHOP FINDING REPORT ATTACHED. TSN: 0 CSN: 0							
13a. Certifies the items identified above were manufactured in conformity to: ☐ Approved design data and are in a condition for safe operation ☐ Non-approved design data specified in block 12 14a. ☒ 14 CFR 43.9 Return to Service Certifies that unless otherwise specified in Block 12, the work identified in Block 11 and described in Block 12 was accomplished in accordance with Title 14, Code of Federal Regulation, part 43 and in respect to that work, the items are approved for return to service. ☐ Other regulation specified in block 12							
13b. Authorized signature:		13c. Approval / Authorization No.:		14b. Authorized signature		14c. Approval/ Certificate No.:	
						55CY360D	
13d. Name (Typed or Printed):		13e. Date (dd mmm yyyy)		14d. Name (Typed or Printed): HANAFI SUHAIDI		14e. Date (dd mmm yyyy) 05 Dec 2022	
USER / INSTALLER RESPONSIBILITIES							
It is important to understand that the existence of this document alone does not automatically constitute authority to install the aircraft engine/propeller/article. Where the user/installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts aircraft engine(s)/propeller(s)/article(s) from the airworthiness authority of the country specified in Block 1. Statements in Blocks 13a and 14a do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.							

COPY

1. Country CAAS/SINGAPORE		2.		3. Form Tracking Number 0100524411	
4. Approved Organisation Name and Address SINGAPORE COMPONENT SOLUTIONS Singapore 797440		5. Work Order/Contract/Invoice 5000377166 / 5L0 STRADE LTD RO-664001 0003201447		6. Item 7. Description 1 PRIMARY EXCHANGER HEAT	
8. Part No. 753D0000-01		9. Quantity 1		10. Serial/Batch No. 81211-68869	
11. Status/Work OVERHAULED		12. Remarks PRIMARY HEAT EXCHANGER OVERHAULED AND TESTED IN ACCORDANCE WITH C.M.M. 21-54-12 REVISION 03 DATED 24 APR 2019. AMDT STATUS: NIL. FOR WORK PERFORMED, REFER TO SHOP FINDING REPORT ATTACHED. TSN: 0 CSN: 0		13. NEW PARTS: Certifies that the items identified above were manufactured in conformity to: ☐ Approved design data and are in condition for safe operation ☐ Non-approved design data specified in block 12	
14a. USED PARTS: ☒ SAR-145.50 Release to Service ☐ Other regulation specified in block 12 Certifies that unless specified in Block 12, the work identified in Block 11 and described in Block 12, was accomplished in accordance with SAR-145 and the Air Navigation Order and in respect to that work the items are considered ready for release to service.		14b. Authorised Signature 		14c. CAAS Approval No. AWI/373	
13b. Authorised Signature		13c. CAAS Approval No.		14d. Name HANAFI Suhaiddi	
13d. Name		13e. Date (dd/mm/yyyy)		14e. Date (dd/mm/yyyy) 05 Dec 2022	

CAAS(AW)95 - Issue 3

USER/INSTALLER RESPONSIBILITIES

Note:

- It is important to understand that the existence of the Certificate alone does not automatically constitute authority to install the part/component/assembly.
- Where the user/installer works in accordance with the national regulations of an Airworthiness Authority different from the Civil Aviation Authority of Singapore (CAAS), it is essential that the user/installer ensures that his/her Airworthiness Authority accepts parts/components/assemblies from the CAAS.
- Statements 13a and 14a do not constitute installation certification. In all cases, the aircraft maintenance record must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.

Singapore Component Solutions Pte Ltd
11 Seletar aerospace lane
Singapore 797440

Phone : +65 62 06 14 00
www.scs.aero

SHOP FINDING REPORT

Customer : 0003261 STRADE LTD
Customer Order: RO-664001
Work Order : 0003201447
MCO : 5000377166
Incoming P/N : 753D0000-01
Outgoing P/N : 753D0000-01
Incoming S/N : 81211-68869
Outgoing S/N : 81211-68869
Designation P/N : PRIMARY EXCHANGER HEAT

Manufacturer :
Date Received : 25/10/2022

DUPLICATA

Reason for removal
RFR OVERHAUL REMOVED FROM A/C N299WG (MSN) DMF MODS ARC: EASA + FAA + UKCAA + CAAS
Findings
VARNISH STRIPPING OFF.
Work Performed
UNIT CLEANED, INSPECTED AND TESTED. PERFORMED LEAKAGE TEST. PERFORMED AIR PRESSURE LOSS TEST. PERFORMED VARNISH REPAIR. PERFORMED CORROSION PROTECTION REPAIR. PERFORMED ELECTRICAL CONTINUITY TEST. PERFORMED WEIGHT CHECK. UNIT WAS INSPECTED AND ALL REMAINING IMPERFECTIONS ARE DEEMED TO BE COSMETIC NATURE ONLY, NOT AFFECTING FIT, FORM OR FUNCTION IAW LIEBHERR SPM. PRIMARY HEAT EXCHANGER OVERHAULED AND TESTED IN ACCORDANCE WITH C.M.M. 21-54-12 REVISION 03 DATED 24 APR 2019. AMDT STATUS: NIL.
Work Warranty Claim Status
Work Status : OVERHAULED Failure : FAILURE CONFIRMED Warranty Requested : NO Warranty Accepted :

Date Report Raised : 05/12/2022

Raised by : HANAFI SUHAIDI

Note : Computer generated certificate requires no signature.

SHOP D060

AIRFRANCE
INDUSTRIES

ICL
THAI AIRWAYS
INTERNATIONAL

sabena
technics



225513801



WORK ORDER NUMBER : 0003201447	REFERENCE NUMBER: 5000377166/000010
CUSTOMER CODE : 0003261	CUSTOMER : STRADE LTD
LOCATION : U/S RECEP	A/C :
REQUESTED DELIVERY : 21/11/2022	CAPA : MCO Type : 5L0
P/N : 753D0000-01	S/N : 81211-68869
DESCRIPTION : PRIMARY EXCHANGER HEAT	ATA : 21
QUANTITY : 1	AIRCRAFT FAMILY : A319/320/321
MANUFACTURER CODE :	MANUFACTURER :
SERVICE : OVERHAUL	RELEASE DOCUMENT : EASA
ETI M3 link n°: NIL	EASA Part 145 Sabena technics asia
Manual : CMM 21-54-12	CN/AD : NIL

	TIME SINCE SERVICE	CYCLE SINCE SERVICE	DATE
METER SINCE NEW	UNKNOWN	UNKNOWN	UNKNOWN
OVERHAUL	UNKNOWN	UNKNOWN	UNKNOWN

☐ Method 3 : Without Quote (Unless excluded, BER) ☐ Method 4 : Without Quote (Eqt under fixed price) ☒ Method 8 : Quote to do ☐ Method 9 : Quote to do (Blocking)	DATE/PRICE NEW : DATE/MARKET PRICE : 29/04/2019 21500 USD
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REASON OF REMOVAL
RFR OVERHAUL REMOVED FROM A/C N299WG (MSN) DMF MODS ARC: EASA + FAA + UKCAA + CAAS

LAST INTERVENTION (None since 24 month.) Date : N/A WO : NIR : SHOP :



5000377166



STRADE Ltd.

Flughofstrasse
Kloten 8302 Switzerland

VENDOR SHIP TO

Singapore Component Solutions Pte Ltd
11 Seletar Aerospace Lane
Singapore 797440 Singapore

REPAIR ORDER

Date 9/5/2022, 9:13 AM
RO # RO-664001
Original Date 9/2/2022

RETURN TO

Sabena Technics Bod (VC FR)
11 Seletar Aerospace Lane
Singapore 0 797440
Singapore
ATTN: ALAN GARDNER
Email: alan.gardner@strade.aero

SHIP METHOD	ACCT #	SHIPPING TERMS	PORT/DEST	TERMS
		DAP		NET 30

LINE	PART NUMBER	SN	DESCRIPTION	COND	QTY
1	753D0000-01	81211-68869	EXCHANGER-HEAT,	UNSV	1
Removed from A/C N299WG (MSN) A/C Type Airbus A321					
RFR Overhaul					
DMF Mods					
Workscope Overhaul					
End user: STRADE					
End user address: 675 River Gardens, Feltham, TW14 0RB, UK					
ECCN = 9A991d					

Comments or Special Instructions

IF PART IS RECEIVED WITH MISSING DOCUMENTS OR THERE ARE OTHER PROBLEMS WITH IDENTIFICATION OF THE PART, PLEASE CONTACT repair_quotes@strade.aero BEFORE PROCEEDING TO INDUCT THE COMPONENT.

IF PART HAS BEEN RETURNED FOR WARRANTY REPAIR AND THE PART HAS NOT BEEN EITHER MANUFACTURED BY YOU OR THE LAST SHOP VISIT HAS NOT BEEN PERFORMED BY YOU, OR THE PART WAS NOT SUPPLIED BY YOU, DO NOT INDUCT THE PART OR PERFORM ANY WORK ON THE PART BEFORE WRITTEN APPROVAL IS PROVIDED BY STRADE.

IF WARRANTY IS REJECTED A DETAILED QUOTATION SHALL BE PROVIDED FOR STRADE REVIEW AND APPROVAL. ALL QUOTATIONS SHALL INCLUDE A FULL BREAKDOWN OF PARTS WHICH WILL BE REPLACED. BREAKDOWN SHALL INCLUDE THE COST OF EACH PART TO BE REPLACED. THE NUMBER OF MANHOURS AND COST PER MANHOUR SHALL ALSO BE DETAILED IN THE QUOTATION.

IF PARTS HAVE BEEN IDENTIFIED TO BE SCRAP OR BEYOND ECONOMICAL REPAIR. A DETAILED SHOPFINDING REPORT INCLUDING REASON SHALL BE PROVIDED. IF PARTS HAVE BEEN IDENTIFIED TO BE MISUSED OR SUBJECT TO REPAIR, REASON AND PHOTOGRAPHS SHALL BE PROVIDED.

N° chrono pré-rcp : 1000338071

Dépôt : LW1

N° lot ou S/N : 812121 - 68869

Quantité : 1

Part number : 753D0000 - 01

Emplacement : U/S RECEP

Client : SR TECHNICS SWITZERLAND LTD

N° container :

Reçu le : 25/10/2022 à : 44420

Par : HASSAN

Designation/Type: PRIMARY HEAT EXCHANGER
Manufacturer : LIEBHERR
P/N: 753D0000-XX

C.M.M. Ref : 21-54-12/ 21-54-12R
Revision : 03/04
Date : Apr 24/19 –Jun 17/22

PN received : 7530 0000 - 01 Delivered (☒ same as delivered) : _____
S/N received : 8121-68869 Delivered (☒ same as delivered) : _____
☐ OH ☒ REP ☐ MOD ☐ BT ☐ Other : _____
N° WO : 0003201447
Customer : SR TECHNIKS SWITZERLAND N° customer : 8003261
CN/AD : Nil SB applied WL

Requested Quote: ☐ YES / ☐ NO
Justified Removal: ☐ YES / ☐ NO
Confirmed Fault: ☐ YES / ☐ NO
Time since new: UNK
Time since OH: UNK
Time since repair: UNK

[illegible]

Reason for removal:
RFR OVERHAUL

For detailed description see annex : ☐

Findings: VARNISH STRIPPING OFF

Photo report attached ☐

Nature of finding(s): WEAR & TEAR

Work Performed: VARNISH WORK PERFORMED

Revision N°	8	Approved Personnel/ signature :  	Certifying Staff/ Signature:  
Prepared by:	K.CHOK		
Approved by:	J. YEAP		
Date:	2 ND S 2022	Date: 5 DEC 22	Date: 05 DEC 2022

Work Performed Summary:				
Testing	Incoming	Stamps and Date	Final Test (if required)	Stamps and Date
CLEANING PERFORMED	N/A-YES- NO	26 OCT 22	N/A-YES- NO	
INTERNAL LEAK TEST	N/A - PASS / FAIL	26 OCT 22	N/A - PASS / FAIL	
LOSS PRESSURE TEST HOT PASS	N/A - PASS / FAIL	27 OCT 22	N/A - PASS / FAIL	
LOSS PRESSURE TEST COLD PASS	N/A - PASS / FAIL	27 OCT 22	N/A - PASS / FAIL	
BONDING CHECK	N/A - PASS / FAIL	27 OCT 22	N/A - PASS / FAIL	

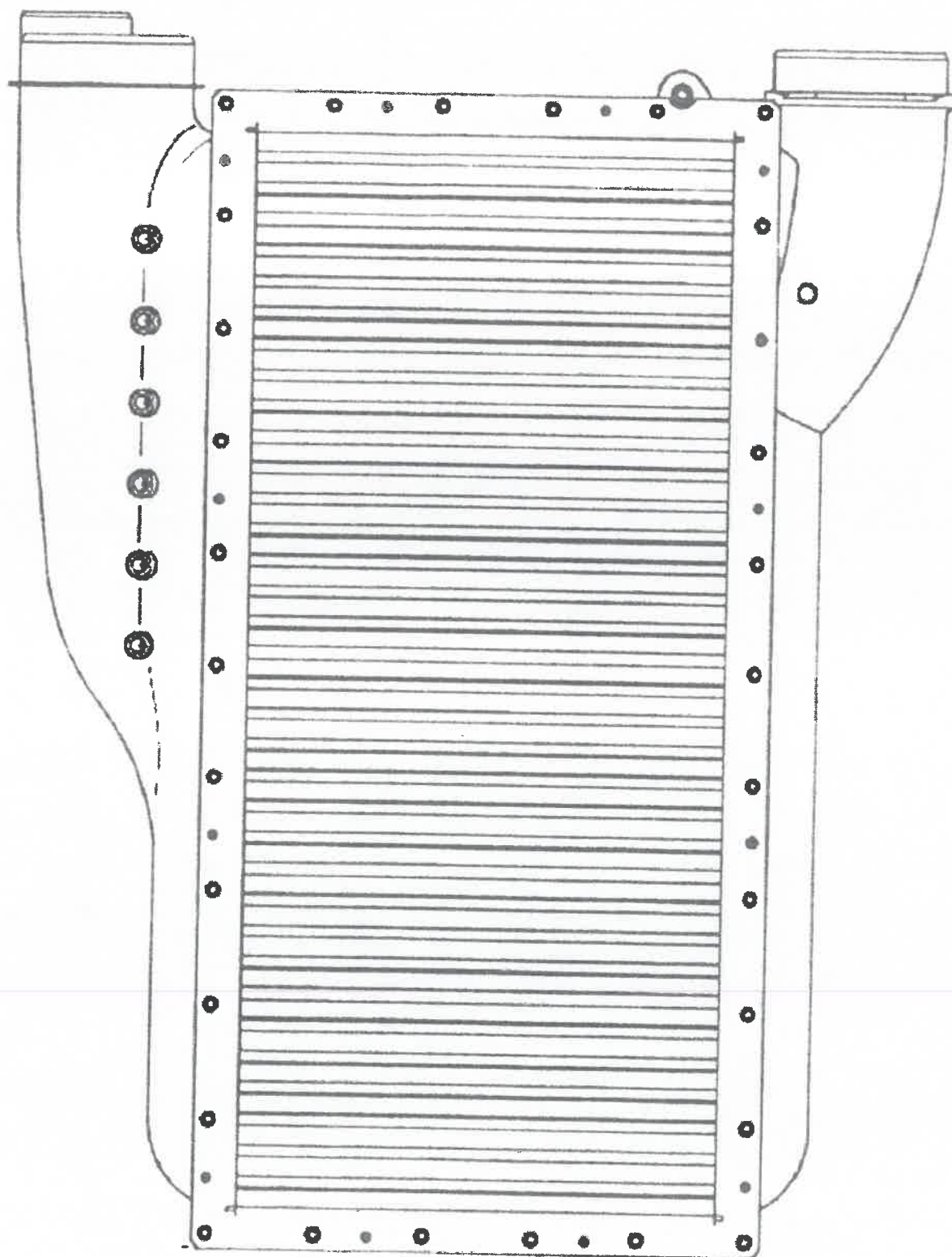
FINDINGS	Tick	WORK PERFORMED	STAMP AND DATE
VARNISH RESTORATION REQUIRED	☒	VARNISH RESTORATION	27 OCT 22
BUSHING DAMAGE OR MISSING	☐	BUSHING REPLACEMENT	
RIVETTING DAMAGE OR MISSING	☐	RIVETTING RESTORATION	
FRAME/FLANGE BENDED OR MINOR SCRATCH	☐	METALWORK FLANGE/FRAME	
CRACKS: 1. _____ 2. _____ 3. _____	☐	WELDING REPAIR	
LEAK TEST FAIL	☐	EPOXY REPAIR	
FRAME/FLANGE DAMAGE OVER SPM REQUIREMENT	☐	FRAME/FLANGE REPLACEMENT	
BRACKET DAMAGE	☐	BRACKET REPLACEMENT	
ID PLATE SUPORT PLATE	☐	SUPPORT PLATE REPLACEMENT	

FINDINGS	Tick	SUBCON	STAMP AND DATE
OVERWEIGHT	☐	RECORE	
LOSS PRESSURE TEST FAILED	☐	RECORE	
DAMAGE ON THE CORE	☐	RECORE	
Others: _____	☐	_____	

Final Inspection	Date: 05/12/2022	Performed: NA – YES – NO	Stamp 
SECTION TO FILL UP BY THE CRS	Varnishing according SPM standard	YES – NO	
	The frame is straight (no distortion)	YES – NO	
	The alodine is correctly applied	YES – NO	
	All the flange on the hot pass are in SPM tolerance	YES – NO	
	All bushing are in place	YES – NO	
	All anchor nut on the band nut are present in Cold pass Inlet (Ensure that the picture in the final inspection shows all the nuts)	YES – NO	
	All anchor nut on the band nut are present in Cold pass Outlet (Ensure that the picture in the final inspection shows all the nuts)	YES – NO	
	Unit released IAW "Heat Exchanger Workscope" table	YES – NO	
Release workscope: ☐ inspected/tested ☐ repair ☐ modification ☒ overhaul			

	IMTE REF (STA XXX)	P/N	S/N	IMTE REF (STA XXX)	P/N	S/N
Calibrated tools used	035	DLR010X	101513275	388	R14-1B2-4 SDT20	SCS-01
	070	500-196-30	A16052081	389	PTX5072 TA+02	5477572
Stamp & Date  27 OCT 22	385	361-0177	01882604213	390	DC24-AIR-FC	196307 85794
	386	448-7467	01883104387	391	XXL02-7	N995
	387	136-5214	HE-01	475	500-196-20	11086144

Appendix 1: External Leak Test (1/2)



Appendix 3: EXTERNAL and Internal LEAK TEST RECORD (1/2)

In some case, only one test is required, in some five.

UNIT CONDITION : AS RECEIVED	
<u>Internal leakage test</u> (Mark the area on the Annexe 1) Flow must be < 57.6 L/min	0L/min

UNIT CONDITION : AFTER 1 st EPOXY	
<u>Internal leakage test</u> (Mark the area on the Annexe 1) Flow must be < 57.6 L/min	
Weight after epoxy repair < 12.63kg	

UNIT CONDITION : AFTER 1 st EPOXY	
<u>Internal leakage test</u> (Mark the area on the Annexe 1) Flow must be < 57.6 L/min	
Weight after epoxy repair < 12.63kg	

UNIT CONDITION : AFTER 2 nd EPOXY	
<u>Internal leakage test</u> (Mark the area on the Annexe 1) Flow must be < 57.6 L/min	
Weight after epoxy repair < 12.63kg	

UNIT CONDITION : AFTER HYDROSTATIC	
<u>Internal leakage test</u> (Mark the area on the Annexe 1) Flow must be < 57.6 L/min	
Weight after epoxy repair < 12.63kg	

UNIT CONDITION :	
<u>Internal leakage test</u> (Mark the area on the Annexe 1) Flow must be < 57.6 L/min	
Weight after epoxy repair < 12.63kg	

Appendix 3: LOSS PRESSURE TEST RECORD

UNIT CONDITION : AFTER first cleaning Record the value on the graph in Appendix 5 & 6						
Circuit	Pressure	Airflow	Temperature	Atmospheric Pressure	$\sigma \Delta P1$	
HOT PASS	1015.1 mbar	0.108 Kg/s	23.8 °C	1007.1 mbar	8.94 mbar	N/A-YES-NO
COLD PASS	1006.5 mbar	0.114 Kg/s	24.1 °C	1006.3 mbar	0.21 mbar	N/A-YES-NO

UNIT CONDITION : AFTER Second cleaning Record the value on the graph in Appendix 5 & 6						
Circuit	Pressure	Airflow	Temperature	Atmospheric Pressure	$\sigma \Delta P1$	
HOT PASS	_____ mbar	_____ Kg/s	_____ °C	_____ mbar	_____ mbar	N/A-YES-NO
COLD PASS	_____ mbar	_____ Kg/s	_____ °C	_____ mbar	_____ mbar	N/A-YES-NO

UNIT CONDITION : AFTER Epoxy repair Record the value on the graph in Appendix 5 & 6						
Circuit	Pressure	Airflow	Temperature	Atmospheric Pressure	$\sigma \Delta P1$	
HOT PASS	_____ mbar	_____ Kg/s	_____ °C	_____ mbar	_____ mbar	N/A-YES-NO
COLD PASS	_____ mbar	_____ Kg/s	_____ °C	_____ mbar	_____ mbar	N/A-YES-NO

UNIT CONDITION : _____ Record the value on the graph in Appendix 5 & 6						
Circuit	Pressure	Airflow	Temperature	Atmospheric Pressure	$\sigma \Delta P1$	
HOT PASS	_____ mbar	_____ Kg/s	_____ °C	_____ mbar	_____ mbar	N/A-YES-NO
COLD PASS	_____ mbar	_____ Kg/s	_____ °C	_____ mbar	_____ mbar	N/A-YES-NO

PROCEDURE – P18 Heat Exchanger Varnish IAW 20-00-02

Designation/Type : Heat Exchanger

C.M.M. Ref : SP 20-00-02

Manufacturer : LIEBHERR

Revision : ref to below table

P/N : 753X0000-0X / 754X0000-0X
755X0000-0X / 756X0000-0X

Date : ref to below table

Special Tools Table

DESCRIPTION	OEM TOOL P/N	CLASS	LOCATION	
N/A	N/A	N/A	N/A	N/A

Standard Tools Table

DESCRIPTION	OEM TOOL P/N	CLASS	LOCATION	
Precision balance for mixing by weight	N/A	OEM TOOL	STRUCTURE SHOP	PRECISION BALANCE
SCALE for mixing by Volume	N/A	OEM TOOL	PAINTING BOOTH	DEKUPS DPC-60
Spatula	N/A	OEM TOOL	PAINTING BOOTH	SPATULA
Zahn Cup 2	K0002210M002C	OEM TOOL	PAINTING BOOTH	K0002210M002C

IMTE

TYPE	STA NUMBER
Oven	STA 391
Timer	STA 268

Ingredient: Refer to process below :

Referential document list (make sure the checked date is < 3MONTH)

Document	Rev and date	SOURCE	Checked Date
Standard Practice 20-00-02	Rev 1 OCT 29/19	LIEBHERR	MAR 25/22

Revision N° :	1		
Prepared by:	K.CHOK		
Approved by :	J.YEAN		
Date :	28 Mar 2022		

PAINTING Procedure:

Preparation surface:

1. Clean with lint free clothe and IPA
2. Apply the Alodine 1132 to protect the reworking surface to be paint
3. Make sure that the area are mask to ensure the continued bonding on the equipment and the core to avoid any FOD. **Please consult the annexe 1**

	P/N: <u>753D0000-01</u>	S/N: <u>81211-68869</u>	WO: <u>0000 3201447</u> <i>Playford</i>	
SP 20-00-02	PAINTING Date: <u>21 NOV. 22</u> Performed: <u>NA - YES</u>			
<u>Initial conditions</u> p6031	20°C ≤ Temperature ≤ 25°C			<u>23.3°C</u>
	Hygrometry ≤ 70%			<u>67.4%</u>
	LRU	CMM	SPM Requirement AFNOR Cup 4	SCS Requirement Zahn Cup 2
	ALL HEX	ALL	20s < V < 21s	26.1s < V < 27.76s
<u>Drying</u> p6032	1. After spray let the HEX dry at ambient temperature for 15-20 min 2. Then put the HEX in the oven for 45 min at temperature 180 °C < T < 190 °C oven for 45 min			
<u>Inspections</u> p6032	Absence of drippings			YES-NO <u>YES</u>
	Varnish appearance is smooth and even			YES-NO <u>YES</u>
	The varnish does not clog on the core			YES-NO <u>YES</u>