

1. Approving Civil Aviation Authority / Country: FAA / UNITED STATES		2. AUTHORIZED RELEASE CERTIFICATE FAA FORM 8130-3, AIRWORTHINESS APPROVAL TAG		3. Form Tracking Number: 00000000000003345646 Page 1 of 1	
4. Organization Name and Address: GOODRICH CORPORATION 4115 CORPORATE CENTER DRIVE MONROE NC 28110-1313 (G84R924X) Tel: 704-282-2500 Fax: 704-282-2560		5. Work Order/Contract/Invoice Number: 4200279166		11. Status/Work: REPAIRED	
6. Item:	7. Description:	8. Part Number:	9. Quantity:	10. Serial Number:	
01	FAN, ELECTRIC	7010302H01S01	1	00062	
12. Remarks: Purpose: Approval for Return to Service WORK PERFORMED LISTED IN STRIP REPORT #: 3439939 TSN/CSN: 4316 / 571 IAW: CMM 21-27-19 Rev. 6, 8/15/14.					
Certifies that the work specified in block 11/12 was carried out in accordance with EASA Part 145 and in respect to that work the [product/article] is considered ready for release to service under EASA Part 145 Approval No. EASA 145.5617.					
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 ☐ 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 Title 14, Code of Federal Regulations, Part 43 and in respect to that work, the items are approved for return to service.			
13b. Authorized Signature:		13c. Approval / Authorization No.:		14c. Approval / Certificate No.: G84R924X	
13d. Name (Typed or Printed):		13e. Date (dd/mm/yyyy):		14d. Name (Typed or Printed): DAVID PETERSON 14e. Date (dd/mm/yyyy): 14 APR 2015	
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.					

Goodrich Corporation
4115 Corporate Center Drive
MONROE NC 28110-1313
USA
Repair Station #G84R924X-EASA#5617

STRIP REPORT



Customer JAL AEROPARTS CO., LTD		Cust PO 4200279166
Input Part 7010302H01S01	Input Serial 00062	Qty 1.000
Output Part 7010302H01S01	Output Serial 00062	Workscope REPAIR
Cust Part	Cust Serial	Status/Work REPAIRED
Description FAN, ELECTRIC	Removal Code	Failure Date
Aircraft B787-Common	Engine Type	Tail No JA821J
Date Rec'd 12/01/2014	Quote Date 12/23/2014	Accept Date 01/23/2015
Ship Date	DOM 01/30/2009	
Sales Order 3439939	Work Order 15880515	Notification 301225295
Customer Reason for Return PM CMC EE FWD COOLING SUPPLY FAN 2 HAS INTERNAL FAULT M/MSG SHOWS SEVEERAL LEGS		
Previous Work History		
Conditions REASON FOR RETURN WAS CONFIRMED.		
Preliminary Inspection UNIT RECEIVED DIRTY. NOISY BEARINGS WHEN SPIN IMPELLER.		
Test Results UNIT FAILED TEST (VIBE). REQUOTE: UNIT FAILED FUNCTIONAL TEST (EMI).		
Evaluation Inspection		

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STRIP REPORT



Work Order 15880515	Description FAN, ELECTRIC	Date Rec'd 12/01/2014
Input Part 7010302H01S01	Input Serial 00062	
Cust Part	Cust Serial	
BEARINGS AND CONSUMABLES WERE REPLACED. REQUOTE: MOTOR DRIVE WAS REPLACED.		
Service Bulletins - Outgoing N/A.		
Work Performed THE UNIT WAS INSPECTED, REPAIRED, TESTED, RECERTIFIED AND RETURNED TO SERVICE AS A 7010302H01S01 IAW CMM 21-27-19 Rev. 6, 8/15/14.		
Administrative Notes WARRANTY REQUESTED WARRANTY COVERED 787.		

Components :						
Order	Material	Description	Req Qty	Issued	Reason Code	Stor Loc
15880515	4900397-7-45153	BEARING, BALL	1	1	BAD	NEW1
15880515	4900397-4	BEARING, BALL	1	1	BAD	NEW1
15880515	M25988/3-173	PACKING PREFORM	2	2		NEW1
15880515	MS21043-6	NUT, HEX, SLFLKG, 800F, CRES	1	1		NEW1
15880515	4102627	PLATE, CIRCUIT DIAGRAM	1	1		NEW1
15880515	7001051H06S07	OUTLINE, MOTOR DRIVE 6.75KW	1	1	BAD	NEW1
15880515	4102627	PLATE, CIRCUIT DIAGRAM	1	1		NEW1
15880515	4103231	PLATE, IDENTIFICATION	1	1		NEW1

**UTC Aerospace Systems**Type: **7010302H01S01, H02S01, H03S02**
Desc: **Electrical Fan Assembly**QC8211
Rev. Org
Page 3 of 12Title: **COMPLETE REPAIR**Doc. No. (Rev./Date): **21-27-19**
(Rev. 6, 08/15/14)Serial No.: **00062**Repair Card No.: **3439939****FUNCTIONAL TEST**

Page, Sect.	Para.	Description	Limits	Actual	Tech	Date
1005, 1F	(2)	Retrieve the Fault code and data from motor controller non-volatile memory.	Document codes:	N/A	GOODRICH CORR 380 MONROE	2/24/15
1009, 2B	(5)	Measure the reactance between J1 pins A-B-C and pin D.	≥ -1898 ohms	-1229 Ω		
	(7)	Measure the reactance between J1 pins A-B-C and pin D.	≥ 65 ohms	518 Ω		
1009, 2C	(1c)	Measure the reactance between J1 pins A-B and pin C.	≥ -443 ohms	-228 Ω		
	(1e)	Measure the reactance between J1 pins A-B and pin C.	19 - 43 ohms	35.3 Ω		
1010, 2C	(2c)	Measure the reactance between J1 pins B-C and pin A.	≥ -443 ohms	-228 Ω		
	(2e)	Measure the reactance between J1 pins B-C and pin A.	19 - 43 ohms	35.2 Ω		
	(3c)	Measure the reactance between J1 pins C-A and pin B.	≥ -443 ohms	-240 Ω		
1011, 2C	(3e)	Measure the reactance between J1 pins C-A and pin B.	19 - 43 ohms	35.3 Ω		
1011, 2D	(4)	Measure current.	≤ 30 mA	0.04 mA		
1014, 3A	(2b)	Measure current.	19.5 - 20 A	N/A		
	(2c)	Measure current.	19.5 - 20 A	N/A		
1014, 3B	(1)	Measure the bonding resistance between Point 1 and Point 2. (Refer to Table 1004)	2.0 milliohms Max	0.01 m Ω		
1017, 3C	(2s)	On the Active Faults (AF) window click on Check Faults button.	No Faults	SAT		
	(2v)	Verify fan and motor drive information is correct, for the software installed.	Correct	SAT		
1021, 3D	(2l)	Measure impeller speed	2,100 $\pm$ 150 rpm	2101		
	(2m)	Check for faults on the Active Faults window.	No Faults	SAT		
	(2q)	Measure impeller speed	5,000 $\pm$ 150 rpm	4987		
	(2r)	Check for faults on the Active Faults window.	No Faults	SAT		
	(2v)	Measure impeller speed	12,150 $\pm$ 150 rpm	12208		
	(2w)	Check for faults on the Active Faults window.	No Faults	SAT		
	(2z)	Measure impeller speed	Impeller stopped spinning	SAT		
	(2ac)	Measure Impeller speed	12,150 $\pm$ 150 rpm	12,061		
1022, 3D	(3l)	Measure Impeller speed	2,100 $\pm$ 150 rpm	2101	GOODRICH CORR 380 MONROE	2/24/15

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TEST RESULTS ON
PAGES 3, 4, 5 & 6 ONLY

 UTC Aerospace Systems	Type:	7010302H01S01, H02S01, H03S02	QC8211 Rev. Org Page 5 of 12
	Dscp.:	Electrical Fan Assembly	
Title:		COMPLETE REPAIR	
Doc. No. (Rev./Date): 21-27-19 (Rev. 6, 08/15/14)	Serial No.: 00062	Repair Card No.: 3439939	

FUNCTIONAL TEST

Page, Sect.	Para.	Description	Limits	Actual	Tech	Date
1027, 3F	(2g)	Examine Active Faults window.	No active faults	SAT	GOODRICH CORR 380 MONROE	2/24/15
1028, 3F	(2i)	Make sure that the motor drive stops powering the fan	< 30 seconds	3 sec.		
	(2j)	Go to the Active Faults window and make sure that correct faults are displayed.	Fault(s) displayed listed in Table 1006	SAT		
	(2r)	Examine Active Faults window.	No active faults	SAT		
1030, 3G	(2f)	Examine Active Faults window.	No active faults	SAT		
	(2h)	Examine impeller rotation.	Clockwise rotation looking at fan inlet	SAT		
1031, 3G	(2j)	Measure vibration levels	Shall not exceed 0.30 mil DAD	Fwd: 0.02 Aft: 0.004	GOODRICH CORR 380 MONROE	2/24/15

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 UTC Aerospace Systems	Type: <u>7010302H01S01</u> ⁷⁰¹⁰³⁰² H02S01, H03S02	QC8211
	Desc.: <u>Electrical Fan Assembly</u>	Rev. Org Page 6 of 12
Title: COMPLETE REPAIR		
Doc. No. (Rev./Date): 21-27-19 (Rev. 6, 08/15/14)	Serial No.: <u>00062</u>	Repair Card No.: <u>3439939</u>

FUNCTIONAL TEST

Page, Sect.	Para.	Description	Limits	Actual	Tech	Date
FAN ASSEMBLY, MIXED FLOW TESTING. NOTE: This test is optional based on shop finding						
1033, 4A	(1b)	Connect the ohmmeter between P3 pins 10 and 15 and measure the resistance.	$\leq 1 \text{ Ohm}$	N/A	GODRICH CORR 380 MONROE	2/24/15
	(1c)	Connect the ohmmeter between P3 pins 11 and 12 and measure the resistance.	$\leq 1 \text{ Ohm}$			
	(2b)	Connect the ohmmeter between P3 pins 13 and 14 and measure the resistance.	9.9K to 12.615K Ohms			
1036, 4B	(3)	Measure leakage current.	$\leq 2 \text{ mA}$			
	(6)	Measure leakage current.	$\leq 2 \text{ mA}$			
1037, 4B	(9)	Measure leakage current.	$\leq 2 \text{ mA}$			
1037, 4C	(3)	Measure resistance.	$\geq 40 \text{ megohms}$			
	(6)	Measure resistance.	$\geq 40 \text{ megohms}$			
1038, 4C	(9)	Measure resistance.	$\geq 40 \text{ megohms}$			
1039, 4D	(2b)	Measure and verify the fan speed.	11,650 rpm minimum Clockwise rotation looking at fan inlet			
	(2c)	Measure vibration levels.	Shall not exceed 0.3 mil DAD	Fwd: N/A Aft: N/A		
1039, 4E	(2b)	Measure air flow rate leaking through the fan.	0.4 lbm/min	0.1 lbm/min	GODRICH CORR 380 MONROE	2/24/15

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