



Alert Service Bulletin B787-81205-SB290015-00 HYDRAULIC POWER - Ram Air Turbine System - Ram Air Turbine Pump And Control Module Assembly Replacement

Publication:	B787-81205-SB290015-00	Issue 002, 25 Nov 2014
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ECCN: 9E991

The applicability information below is referenced at the lower left of each page to indicate the page applicability. These references are valid for this print copy only.

PM Applicability (Publication Module applicability)

787-8 Airplanes. Refer to Data Module SB B787-A-29-00-0015-00A-932A-D, Paragraph 1., Effectivity for the list of affected airplanes.

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Alert Service Bulletin B787-81205-SB290015-00***List of Illustrations***

Alert: THIS ALERT SERVICE BULLETIN IS SENT TO THE OPERATORS OF RECORD OF THE AIRPLANES SHOWN IN DATA MODULE SB B787-A-29-00-0015-00A-932A-D, PARAGRAPH 1., EFFECTIVITY. IF AN AIRPLANE HAS BEEN LEASED OR SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OPERATOR. IF APPLICABLE SPARES HAVE BEEN SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OWNER.

Description**Group 1:***Table 1 List of Illustrations - Alert Service Bulletin B787-81205-SB290015-00*

ICN	Used In
ICN-B787-A-000061-A-81205-08641-A-01-1	B787-A-29-00-0015-00A-931C-D Issue 002

Applicable To:
Model 787
See Applicability of this data module

End of data module

B787-A-29-00-0015-00A-00AA-D
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List of Effective Data Modules

Alert: THIS ALERT SERVICE BULLETIN IS SENT TO THE OPERATORS OF RECORD OF THE AIRPLANES SHOWN IN DATA MODULE SB B787-A-29-00-0015-00A-932A-D, PARAGRAPH 1., EFFECTIVITY. IF AN AIRPLANE HAS BEEN LEASED OR SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OPERATOR. IF APPLICABLE SPARES HAVE BEEN SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OWNER.

Description

Group 1:

Table 1 List of Effective Data Modules - Alert Service Bulletin B787-81205-SB290015-00

Data Module – Information Name	Issue	Issue Status	Issue Date
B787-A-29-00-0015-00A-00AA-D – List of Illustrations	002	Changed	2014-11-25
B787-A-29-00-0015-00A-00SA-D – List of Effective Data Modules	002	Changed	2014-11-25
B787-A-29-00-0015-00A-931B-D – Revision Transmittal Information	001	New	2014-11-25
B787-A-29-00-0015-00A-931C-D – Summary	002	Changed	2014-11-25
B787-A-29-00-0015-00A-932A-D – PLANNING INFORMATION	002	Changed	2014-11-25
B787-A-29-00-0015-00A-934A-D – MATERIAL INFORMATION	002	Changed	2014-11-25
B787-A-29-00-0015-00A-933A-D – ACCOMPLISHMENT INSTRUCTIONS	002	Changed	2014-11-25

Applicable To:

Model 787

See Applicability of this data module

End of data module**B787-A-29-00-0015-00A-00SA-D****Issue 002, 25 Nov 2014**

Alert Service Bulletin B787-81205-SB290015-00

Revision Transmittal Information

Alert: THIS ALERT SERVICE BULLETIN IS SENT TO THE OPERATORS OF RECORD OF THE AIRPLANES SHOWN IN DATA MODULE SB B787-A-29-00-0015-00A-932A-D, PARAGRAPH 1., EFFECTIVITY. IF AN AIRPLANE HAS BEEN LEASED OR SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OPERATOR. IF APPLICABLE SPARES HAVE BEEN SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OWNER.

References

Reference	Title
SB B787-A-29-00-0015-00A-932A-D Issue 002, Paragraph 5.	Compliance
SB B787-A-29-00-0015-00A-932A-D Issue 002, Paragraph 1.A.	Airplanes

Description

Group 1:

This revision includes all pages of the service bulletin.

1. COMPLIANCE INFORMATION RELATED TO THIS REVISION

Effects of this revision on Airplanes on which Issue 001 was previously done:

None

2. REASON FOR REVISION

This issue is sent to change the Boeing recommended compliance time from 12 months to 36 months. Further analysis indicates that the compliance time can be extended to give operators more time.

These sections were changed:

1. Data Module SB B787-A-29-00-0015-00A-932A-D, Paragraph 5., Compliance

Change marks are added, except in Data Module SB B787-A-29-00-0015-00A-932A-D, Paragraph 1.A., Airplanes and format changes, to show the location of all content changes.

3. REVISION HISTORY

Table 1

Issue 1:	September 04, 2014
Issue 2:	November 25, 2014

Applicable To:

Model 787

See Applicability of this data module

End of data module

B787-A-29-00-0015-00A-931B-D

Issue 001, 25 Nov 2014

Alert Service Bulletin B787-81205-SB290015-00

Summary

Alert: THIS ALERT SERVICE BULLETIN IS SENT TO THE OPERATORS OF RECORD OF THE AIRPLANES SHOWN IN DATA MODULE SB B787-A-29-00-0015-00A-932A-D, PARAGRAPH 1., EFFECTIVITY. IF AN AIRPLANE HAS BEEN LEASED OR SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OPERATOR. IF APPLICABLE SPARES HAVE BEEN SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OWNER.

References

Reference	Title
SB B787-A-29-00-0015-00A-932A-D Issue 002, Paragraph 1.B.	Spares Affected
SB B787-A-29-00-0015-00A-932A-D Issue 002, Paragraph 5.	Compliance
SB B787-A-29-00-0015-00A-932A-D Issue 002, Paragraph 8.	Weight and Balance Changes
SB B787-A-29-00-0015-00A-932A-D Issue 002, Paragraph 9.	Electrical Load Data
SB B787-A-29-00-0015-00A-932A-D Issue 002, Paragraph 11.	Publications Affected
SB B787-A-29-00-0015-00A-934A-D Issue 002, Paragraph 3.A.	Kits/Parts
SB B787-A-29-00-0015-00A-934A-D Issue 002, Paragraph 3.B.	Parts and Materials Supplied by the Operator
SB B787-A-29-00-0015-00A-934A-D Issue 002, Paragraph 6.	Special Tooling Necessary to do this Service Bulletin
SB B787-A-29-00-0015-00A-932A-D Issue 002, Paragraph 1.	Effectivity
SB B787-A-29-00-0015-00A-932A-D Issue 002, Paragraph 7.	Manpower
SB B787-A-29-00-0015-00A-934A-D Issue 002, Paragraph 1.	Material - Price and Availability

Applicable To:
Model 787
See Applicability of this data module

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Description

Group 1:

1. CONCURRENT REQUIREMENTS

None.

2. BACKGROUND

This service bulletin provides instructions to replace the Ram Air Turbine (RAT) Pump and Control Module Assembly to prevent failure of the hydraulic pump at low air speed. The RAT Assembly provides an emergency source of electrical and hydraulic power for the primary flight control if the left, center and right main hydraulic systems fail. Loss of the RAT Pump and Control Module Assembly could lead to loss of control of the airplane when emergency power from RAT Assembly is needed. If this change is not incorporated on the RAT Assembly and hydraulic power is lost on the left, right and center main hydraulic systems, then the RAT Assembly may not provide sufficient hydraulic power which could result in the loss of many critical control systems that are necessary for safe flight.

The supplier discovered that the RAT Assembly may fail at low airspeeds. The volume fuse on the RAT Assembly may be accidentally activated in flight before the RAT is deployed. This may lead to improper pump offloading when the RAT is needed. Testing from supplier concludes such issues could possibly occur at airspeed below 180 knots equivalent airspeed. The new RAT Pump and Control Module Assembly includes an updated volume fuse design. Incorporation of this service bulletin will improve reliability of the RAT Assembly.

Boeing Service Related Problem (SRP) 787-SRP-29-0102 is related to this service bulletin.

This table is provided to operators for planning purposes only. Refer to the applicable sections for more information.

Table 1

Planning Data	Affected	Data Module Reference
Spares Affected	Yes	Data Module SB B787-A-29-00-0015-00A-932A-D, Paragraph 1.B., Spares Affected
AD Related	Yes	Data Module SB B787-A-29-00-0015-00A-932A-D, Paragraph 5., Compliance
Weight and Balance Changed	No	Data Module SB B787-A-29-00-0015-00A-932A-D, Paragraph 8., Weight and Balance Changes
Electrical Load Changed	No	Data Module SB B787-A-29-00-0015-00A-932A-D, Paragraph 9., Electrical Load Data
Publications Affected	Yes	Data Module SB B787-A-29-00-0015-00A-932A-D, Paragraph 11., Publications Affected
Airplane Flight Operations Affected (Flight Crew Operations Manual and/or FAA Approved Airplane Flight Manual)	No	Data Module SB B787-A-29-00-0015-00A-932A-D, Paragraph 11., Publications Affected
Kits/Parts Required	No	Data Module SB B787-A-29-00-0015-00A-934A-D, Paragraph 3.A., Kits/Parts

Applicable To:

Model 787

See Applicability of this data module

B787-A-29-00-0015-00A-931C-D

Issue 002, 25 Nov 2014

Table 1

Planning Data	Affected	Data Module Reference
Operator Supplied Parts/Material	Yes	Data Module SB B787-A-29-00-0015-00A-934A-D, Paragraph 3.B., Parts and Materials Supplied by the Operator
Special Tooling Required	No	Data Module SB B787-A-29-00-0015-00A-934A-D, Paragraph 6., Special Tooling Necessary to do this Service Bulletin

3. ACTION

(CN-AC43090A)

Replace the RAT Pump and Control Module Assembly or as an option, replace the RAT Assembly.

4. EFFECTIVITY

787-8 Airplanes. Refer to Data Module SB B787-A-29-00-0015-00A-932A-D, Paragraph 1., Effectivity for the list of affected airplanes.

5. COMPLIANCE

The Federal Aviation Administration (FAA) will possibly release an Airworthiness Directive related to this service bulletin. The Airworthiness Directive will make the compliance tasks and times given in this service bulletin mandatory.

Refer to Data Module SB B787-A-29-00-0015-00A-932A-D, Paragraph 5., Compliance.

6. INDUSTRY SUPPORT INFORMATION

Boeing warranty remedies are not available for the configuration changes given in this service bulletin.

7. MANPOWER

Refer to data module Data Module SB B787-A-29-00-0015-00A-932A-D, Paragraph 7., Manpower.

8. MATERIAL INFORMATION

Operator Supplied Parts/Materials.

Refer to Data Module SB B787-A-29-00-0015-00A-934A-D, Paragraph 1., Material - Price and Availability.

Applicable To:

Model 787

See Applicability of this data module

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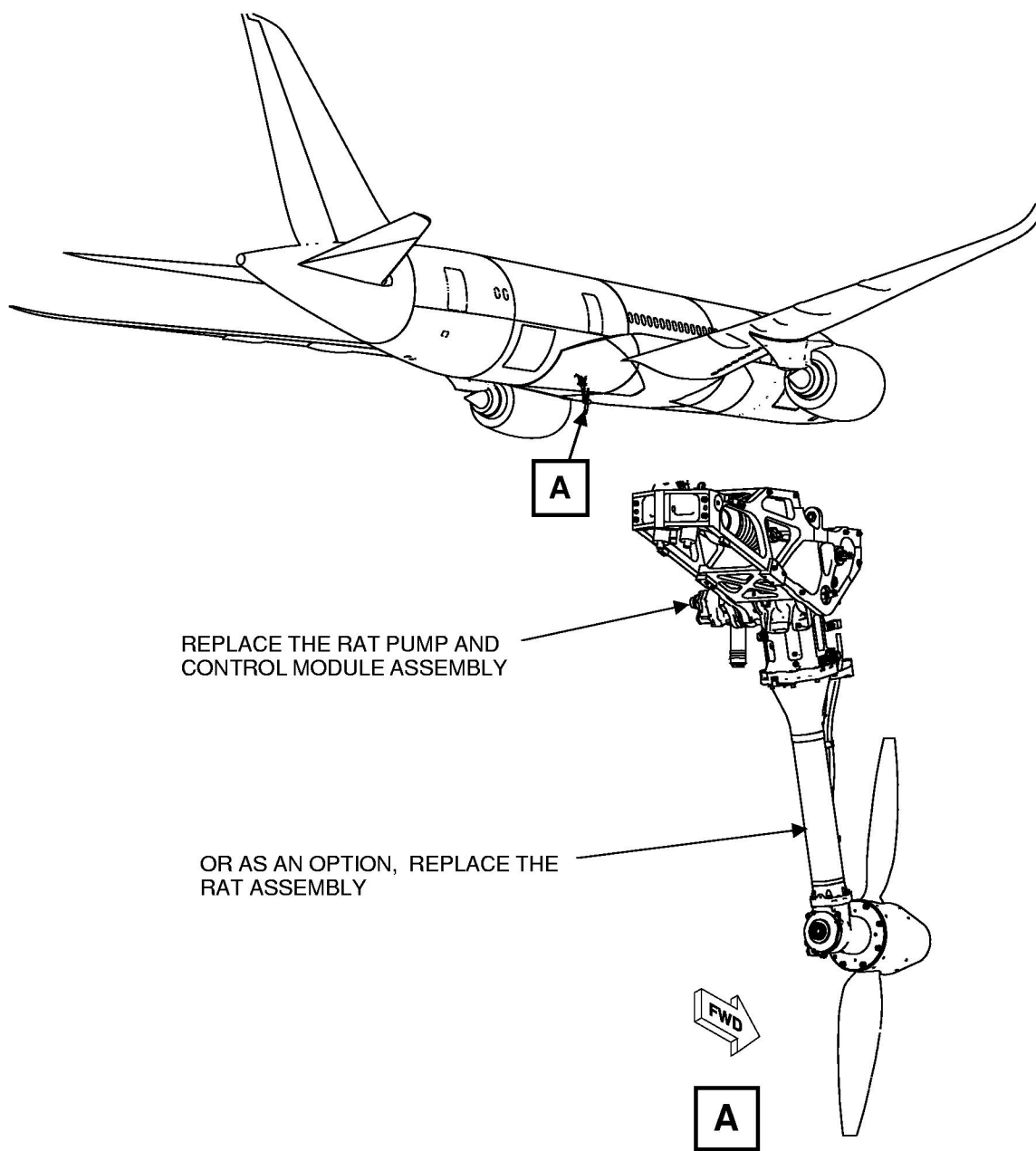


Figure 1

ICN-B787-A-000061-A-81205-08641-A-01-1

2298672

Applicable To:
Model 787
See Applicability of this data module

End of data module

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Alert Service Bulletin B787-81205-SB290015-00**PLANNING INFORMATION**

Alert: THIS ALERT SERVICE BULLETIN IS SENT TO THE OPERATORS OF RECORD OF THE AIRPLANES SHOWN IN PARAGRAPH 1., EFFECTIVITY. IF AN AIRPLANE HAS BEEN LEASED OR SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OPERATOR. IF APPLICABLE SPARES HAVE BEEN SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OWNER.

References

Reference	Title
SB B787-A-29-00-0015-00A-933A-D Issue 002, Step 2.	Work Instructions
SOPM 20-50-05	APPLICATION OF ALUMINUM FOIL AND OTHER MARKERS
SOPM 20-50-10	APPLICATION OF STENCILS, INSIGNIA, SILK SCREEN, PART NUMBERING AND IDENTIFICATION MARKINGS
787 AMM 29-21-01	RAM AIR TURBINE
787 AMM 29-21-02	RAM AIR TURBINE PUMP AND CONTROL MODULE ASSEMBLY

Description**Group 1:****1. Effectivity****A. Airplanes**

This service bulletin is applicable to 787-8 Airplanes, line numbers 6-9,11, 20-21, 23-125,127-132,134-138,140-145,147-168,170-180,182-198 in one group. The Variable Numbers and Group information for the applicable airplanes is given below. An equivalent change is on subsequent production airplanes. Refer to CN-AA43090 for data about this change.

Table 1

GROUP	CONFIGURATION	DESCRIPTION
1	-	787-8 airplanes with Ram Air Turbine System.

Airplane Models: 787-8

Applicable To:

Model 787

See Applicability of this data module

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Table 2

Variable Number	Group
ZA006	1
ZA100-ZA105	1
ZA116-ZA124	1
ZA135-ZA136	1
ZA175-ZA189	1
ZA215-ZA220	1
ZA230-ZA245	1
ZA260-ZA268	1
ZA270-ZA275	1
ZA285-ZA295	1
ZA317-ZA322	1
ZA327	1
ZA334	1
ZA380-ZA389	1
ZA430-ZA437	1
ZA445-ZA448	1
ZA450-ZA457	1
ZA460-ZA474	1
ZA506-ZA516	1
ZA536-ZA542	1
ZA560-ZA565	1
ZA576-ZA580	1
ZA586	1
ZA588	1
ZA610-ZA612	1
ZA650-ZA651	1
ZA655-ZA657	1
ZA695	1
ZA778-ZA779	1
ZA841	1

Applicable To:

Model 787

See Applicability of this data module

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B. Spares Affected

Examine your spares supply for the parts or components identified below . If any parts or components are found, refer to data module Data Module SB B787-A-29-00-0015-00A-933A-D, Step 2., Work Instructions for the recommended action.

Table 3

Part Number	Name
7000011H06	Ram Air Turbine Assembly
7000011H07	Ram Air Turbine Assembly
7001267H04	Ram Air Turbine Pump and Control Module
7001267H05	Ram Air Turbine Pump and Control Module

2. Concurrent Requirements

None.

3. Reason

This service bulletin provides instructions to replace the Ram Air Turbine (RAT) Pump and Control Module Assembly to prevent failure of the hydraulic pump at low air speed. The RAT Assembly provides an emergency source of electrical and hydraulic power for the primary flight control if the left, center and right main hydraulic systems fail. Loss of the RAT Pump and Control Module Assembly could lead to loss of control of the airplane when emergency power from RAT Assembly is needed. If this change is not incorporated on the RAT Assembly and hydraulic power is lost on the left, right and center main hydraulic systems, then the RAT Assembly may not provide sufficient hydraulic power which could result in the loss of many critical control systems that are necessary for safe flight.

The supplier discovered that the RAT Assembly may fail at low airspeeds. The volume fuse on the RAT Assembly may be accidentally activated in flight before the RAT is deployed. This may lead to improper pump offloading when the RAT is needed. Testing from supplier concludes such issues could possibly occur at airspeed below 180 knots equivalent airspeed. The new RAT Pump and Control Module Assembly includes an updated volume fuse design. Incorporation of this service bulletin will improve reliability of the RAT Assembly.

Boeing Service Related Problem (SRP) 787-SRP-29-0102 is related to this service bulletin.

Issue 002 is sent to change the Boeing recommended compliance time from 12 months to 36 months. Further analysis indicates that the compliance time can be extended to give operators more time.

4. Description

Replace the existing RAT Pump and Control Module Assembly or as an option, replace the RAT Assembly.

Effects of this revision on Airplanes on which Issue 002 was previously done:

None

The work in this service bulletin is done in the maintenance zone(s) given below.

Applicable To:

Model 787

See Applicability of this data module

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Table 4

Affected Maintenance Zones	
Model	Zone
787-8	198

5. Compliance

The Federal Aviation Administration (FAA) will possibly release an Airworthiness Directive related to this service bulletin. The Airworthiness Directive will make the compliance tasks and times given in this service bulletin mandatory.

Boeing recommends that the change given in this service bulletin be done within 36 months after the original issue date of this service bulletin.

6. Approval

This service bulletin was examined by the Federal Aviation Administration (FAA). The changes specified in this service bulletin comply with the applicable regulations and are FAA approved, as well as European Aviation Safety Agency (EASA)/Joint Aviation Authorities (JAA) approved for all EASA/JAA approved airplanes listed in the service bulletin effectivity. This service bulletin and its approval were based on the airplane in its original Boeing delivery configuration or as modified by other approved Boeing changes.

If an airplane has a non-Boeing modification or repair that affects a component or system also affected by this service bulletin, the operator is responsible for obtaining appropriate regulatory agency approval before incorporating this service bulletin.

7. Manpower

The table below shows an estimate of the task hours necessary to do this change for each plane. This estimate is for direct labor only, done by an experienced crew. Adjust the estimate with operator task hour data if necessary. The estimate does not include lost time. These are some examples of lost time:

- Time to adjust to the workplace
- Time to schedule the work
- Time to inspect the work
- Time to cure the materials
- Time to make the parts
- Time to find the tools

Table 5

Task	Number of Persons	Task Hours	Elapsed Hours
RAT Assembly Modification			
Open Access	1	0.50	0.50
Replace and Test RAT Pump and Control Module Assembly	3	6.00	2.00

Applicable To:

Model 787

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Table 5

Task	Number of Persons	Task Hours	Elapsed Hours
Close Access	1	0.50	0.50
TOTAL FOR EACH AIRPLANE		7.00	3.00
Option - RAT Assembly Replacement			
Open Access	1	0.50	0.50
Replace and Test the RAT Assembly	2	6.00	3.00
Close Access	1	0.50	0.50
TOTAL FOR EACH AIRPLANE		7.00	4.00

8. Weight and Balance Changes

None.

9. Electrical Load Data

Not changed.

10. References

A. Existing Data:

1. Change Notice CN-AA43090D
2. Aircraft Maintenance Manual (AMM) 787 AMM 29-21-01, 787 AMM 29-21-02
3. Boeing Service Related Problem (SRP) 787-SRP-29-0102
4. Standard Overhaul Practice Manual SOPM 20-50-05, SOPM 20-50-10
5. Hamilton Sundstrand Service Bulletin 7000011-29-2

B. Data Supplied with this Service Bulletin:

None.

C. Installation Requirement Modules Used in the Preparation of this Service Bulletin:

Table 6

Requirement Module	Title
650Z0000-3	Retrofit Kit

The Requirements Modules above were used to prepare this service bulletin. The Requirements Modules are not necessary to make the specified changes, and are not supplied with this service bulletin. The Requirements Modules may not be applicable to all airplane configurations or operators.

Applicable To:

Model 787

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11. Publications Affected*Table 7*

Publication	Chapter-Section
787 Wiring Diagram Manual	ATA 29-21
787 Illustrated Parts Data	ZA1-98

Damage Tolerance Based Structural Inspections:

Boeing has evaluated the repairs and/or changes in this service bulletin for effects on Fatigue Critical Structure (FCS) and for changes to Damage Tolerance Inspections (DTI) required in the Maintenance Program. This service bulletin does not affect FCS, therefore DTIs are not necessary.

12. Interchangeability and Intermixability of Parts

Accomplishment of this service bulletin does not affect interchangeability or intermixability of parts.

13. Software Accomplishment Summary

Not Affected.

Applicable To:
Model 787
See Applicability of this data module

End of data module

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Alert Service Bulletin B787-81205-SB290015-00**MATERIAL INFORMATION**

Alert: THIS ALERT SERVICE BULLETIN IS SENT TO THE OPERATORS OF RECORD OF THE AIRPLANES SHOWN IN DATA MODULE SB B787-A-29-00-0015-00A-932A-D, PARAGRAPH 1., EFFECTIVITY. IF AN AIRPLANE HAS BEEN LEASED OR SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OPERATOR. IF APPLICABLE SPARES HAVE BEEN SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OWNER.

References

Reference	Title
SB B787-A-29-00-0015-00A-932A-D Issue 002, Paragraph 10.	References

Description**Group 1:****1. Material - Price and Availability**

The operator can supply the parts and materials shown in Paragraph 3., Parts Necessary for Each Airplane, and Paragraph 4., Parts Necessary to Change Spares. Refer to Hamilton Sundstrand Service Bulletin 7000011-29-2.

2. Industry Support Information

Boeing warranty remedies are not available for the configuration changes given in this service bulletin.

3. Parts Necessary for Each Airplane**A. Kits/Parts:**

None.

B. Parts and Materials Supplied by the Operator:*Table 1*

Part Number / Specification	QTY	Name	Existing Part Number	Notes
7000011H08	1	RAT Assembly	7000011H()	*[1] *[2]
7001267H06	1	RAT Pump and Control Module	7001267H()	*[3] *[4]
7001801-13	1	Identification Plate	7001801-12 7001801-11	*[4] *[5]

Applicable To:

Model 787

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Table 1

Part Number / Specification	QTY	Name	Existing Part Number	Notes
NAS1611-210A	1	Packing, Preformed O-Ring	NAS1611-210	*[4] *[6] *[7]
NAS1611-241A	1	Packing, Preformed O-Ring	NAS1611-241	*[4] *[6] *[8]

*[1] New part or make a change to the existing part in accordance with Hamilton Sundstrand Service Bulletin 7000011-29-2

*[2] This part is required only if optional RAT Assembly replacement is selected.

*[3] Refer to Hamilton Sundstrand Service Bulletin 7000011-29-2 for instructions to return the existing parts for modification and to get new part.

*[4] This part is required for the RAT Assembly modification.

*[5] This part is necessary if the identification plate replacement option is used. Refer to Hamilton Sundstrand Service Bulletin 7000011-29-2 for instruction to get the part.

*[6] New Packing is required for installation.

*[7] This part is interchangeable with NAS1611-210.

*[8] This part is interchangeable with NAS1611-241.

C. Parts Modified and Reidentified:

The parts shown below are changed as shown in this service bulletin. The quantity (QTY) is the number of parts changed on each airplane.

Table 2

Existing Part Number	QTY	Name	New Part Number	Notes
7000011H()	1	RAT Assembly	7000011H08	*[1]

*[1] Make the change in accordance with Hamilton Sundstrand Service Bulletin 7000011-29-2.

D. Parts Removed and Not Replaced:

None.

4. Parts Necessary to Change Spares

To get the parts shown below, refer to Hamilton Sundstrand Service Bulletin 7000011-29-2.

Table 3

Part Number	Name	QTY
7001267H06	RAT Pump and Control Module	1
7001801-13	Identification Plate	1
NAS1611-210A	Packing, Preformed O-Ring	1
NAS1611-241A	Packing, Preformed O-Ring	1

Applicable To:
 Model 787
 See Applicability of this data module

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5. Special Tooling - Price and Availability

None.

6. Special Tooling Necessary to do this Service Bulletin

No special tools or equipment are necessary to do the change in this service bulletin. But, maintenance and overhaul tools in the manuals given in data module Data Module SB B787-A-29-00-0015-00A-932A-D, Paragraph 10., References, can be necessary. Examine operator tool supply to make sure all necessary tools are available.

Applicable To:

Model 787

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End of data module

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Alert Service Bulletin B787-81205-SB290015-00**ACCOMPLISHMENT INSTRUCTIONS**

Alert: THIS ALERT SERVICE BULLETIN IS SENT TO THE OPERATORS OF RECORD OF THE AIRPLANES SHOWN IN DATA MODULE SB B787-A-29-00-0015-00A-932A-D, PARAGRAPH 1., EFFECTIVITY. IF AN AIRPLANE HAS BEEN LEASED OR SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OPERATOR. IF APPLICABLE SPARES HAVE BEEN SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OWNER.

References

Reference	Title
SB B787-A-29-00-0015-00A-932A-D Issue 002, Paragraph 10.	References
SB B787-A-29-00-0015-00A-932A-D Issue 002, Paragraph 5.	Compliance
SOPM 20-50-10	APPLICATION OF STENCILS, INSIGNIA, SILK SCREEN, PART NUMBERING AND IDENTIFICATION MARKINGS
SOPM 20-50-05	APPLICATION OF ALUMINUM FOIL AND OTHER MARKERS
787 AMM 29-21-02	RAM AIR TURBINE PUMP AND CONTROL MODULE ASSEMBLY
787 AMM 29-21-01	RAM AIR TURBINE

Procedure**Group 1:****1. GENERAL INFORMATION**

CAUTION: KEEP THE WORK AREA, WIRES AND ELECTRICAL BUNDLES CLEAN OF METAL PARTICLES OR CONTAMINATION WHEN YOU USE TOOLS. UNWANTED MATERIAL, METAL PARTICLES OR CONTAMINATION CAUGHT IN WIRE BUNDLES CAN CAUSE DAMAGE TO THE BUNDLES. DAMAGED WIRE BUNDLES CAN CAUSE SPARKS OR OTHER ELECTRICAL DAMAGE.

- NOTE:**
1. Manual titles are referred to by acronyms. Refer to Data Module SB B787-A-29-00-0015-00A-932A-D, Paragraph 10., References, for definition of the acronyms.
 2. Obey all of the warnings and cautions given in the specified manual sections.
 3. Unless shown differently, these dimensions and tolerances are used:

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- Linear dimensions are in inches
 - Tolerance on linear dimensions, other than rivet and bolt edge margins, is plus or minus 0.03 inch
 - Tolerance on rivet and bolt edge margin is plus or minus 0.05 inch
 - Angular tolerance is plus or minus 2 degrees
 - Hole dimensions for standard solid rivets and fasteners are in SRM Chapter 51
 - Torque Values:
 - Values for structural fasteners are given in 787 Structural Repair Manual, Chapter 51.
 - Values for airframe maintenance tasks are included in Chapter 20 of 787 Aircraft Maintenance Manual (AMM).
 - Values for electrical maintenance tasks are included in Chapter 20 of Standard Wiring Practices Manual (SWPM).
 - Values for engine maintenance tasks are included in Chapter 70 of 787 Aircraft Maintenance Manual (AMM).
 - Non-standard torque values for maintenance tasks are included in the applicable installation step.
4. These work instructions refer to procedures included in other Boeing documents. When the words "refer to" are used and the operator has an accepted alternative procedure, the accepted alternative procedure can be used. When the words "in accordance with" are included in the instruction, the procedure in the Boeing document must be used.
5. If it is necessary to remove more parts for access, you can remove those parts. If you can get access without removing identified parts, it is not necessary to remove all of the identified parts. Jacking and shoring limitations must be observed.
6. This service bulletin includes functional test procedures for the systems changed by this service bulletin. More functional tests can possibly be necessary in accordance with standard maintenance practices because of interruption to other airplane systems.
7. If shading is used, shaded areas in Tasks are to separate the non-critical and non-authoritative information from the critical and authoritative information.
8. The compliance times for the actions in Step 2., Work Instructions are in Data Module SB B787-A-29-00-0015-00A-932A-D, Paragraph 5., Compliance.
9. Some steps in the Work Instructions are identified as Required for Compliance (RC). If this service bulletin is mandated by an Airworthiness Directive (AD), then the steps identified as RC must be done to comply with the AD. Alternative procedures for steps not identified with RC can be used if the RC steps can still be done as specified, and the airplane can be put back in a serviceable condition. An Alternative Method of Compliance (AMOC) is not necessary for deviations to steps that are not identified as RC.

2. WORK INSTRUCTIONS

- A. Make a change to the Ram Air Turbine (RAT) assembly in accordance with the RAT Assembly Modification instructions. As an option, replace the RAT assembly in accordance with the Option-RAT Assembly Replacement instructions.

- (1) RAT Assembly Modification

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- (a) RC-Remove and keep the RAT Pump and Control Module Assembly part number 7001267H(). Refer to 787 AMM 29-21-02 as an accepted procedure.
 - (b) RC-Install the RAT Pump and Control Module Assembly part number 7001267H06 and do the installation test. If the installation test fails, accomplish corrective actions and repeat the installation test and applicable corrective actions until the installation test is passed. Use packing, preformed O-rings NAS1611-210A and NAS1611-241A, or NAS1611-210 and NAS1611-241. Refer to 787 AMM 29-21-02 as an accepted procedure.
 - (c) Change part number of the RAT Assembly from 7000011H() to 7000011H08 using one of the following two options:
 - 1) Change the part number on the existing Identification plate. Refer to SOPM 20-50-10 or Hamilton Sundstrand Service Bulletin 7000011-29-2 as an accepted procedure.
 - 2) Remove the existing Identification plate and install a new Identification plate, part number 7001801-13. Refer to SOPM 20-50-05, SOPM 20-50-10, or Hamilton Sundstrand Service Bulletin 7000011-29-2 as an accepted procedure.
- (2) Option - RAT Assembly Replacement
- (a) RC-Remove and keep the existing RAT Assembly, part number 7000011H(). Refer to 787 AMM 29-21-01 as an accepted procedure.
 - (b) RC-Install the new RAT Assembly, part number 7000011H08, and do the installation test. If the installation test fails, accomplish corrective actions and repeat the installation test and applicable corrective actions until the installation test is passed. Refer to 787 AMM 29-21-01 as an accepted procedure.
- B. Put the airplane back to a serviceable condition.