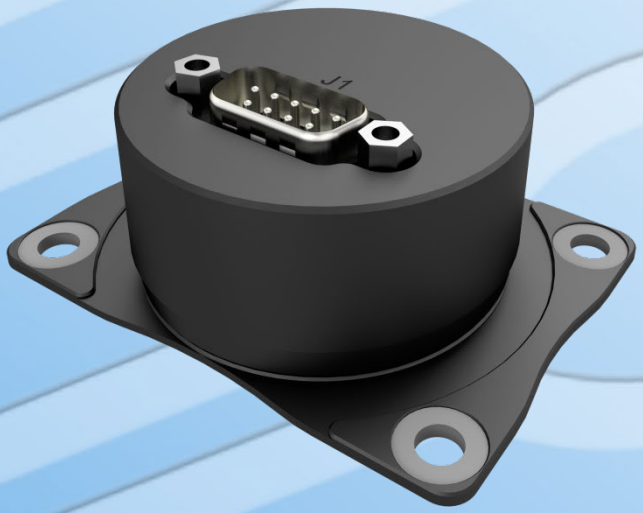
JPC-1032

Power Converter - 10V to 32V Input



Installation Manual

Rev A

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IMPORTANT:

Information in this document is subject to change without notice.

To confirm the current revision status of this manual, visit the JAC website:

www.jupiteravionics.com

RECORD OF REVISIONS			
Revision	**Rev Date**	**Description**	**ECR**
A	Oct 2023	Initial release, Serial number 1001 and higher.	8423

Prepared:	Checked:	Approved:
MPB	JAC 02-09-24 MB	JAC 02-15-24 KDV

Table of Contents

SECTION 1 - DESCRIPTION

1.1 System Overview

The JPC-1032 Power Converter - 10V to 32V Input provides a single output of +28 Vdc @ 2 Amps.

The JPC-1032 can be mounted in any orientation.

1.2 Features Overview

The JPC-1032 has a black anodized finish to resist scratches and nicks during use.

The JPC-1032 provides up to 56 Watts of output power in a small compact unit.

1.3 Inputs and Outputs

Refer to the JPC-1032 connector map for the mating connector designators and pin assignments for the input and output signals.

1.3.1 Inputs

Name	Qty	Type
POWER INPUT	2	Power supply

1.3.2 Outputs

Name	Qty	Type
POWER OUTPUT	2	Power output

1.3.3 Grounds/Spares

Name	Qty	Type
POWER GROUND	1	Power ground
CHASSIS GROUND	1	Chassis ground
SPARES	3	Spares (Main connector)

1.4 Specifications

1.4.1 Electrical Specifications

Power Input

Primary nominal voltage		28 Vdc
Maximum voltage		32.2 Vdc
Minimum voltage		10.0 Vdc
Input current at 28 Vdc		2.5 A max
Input current at 10 Vdc		6.5 A max

Power Output

Output rated current		2.0 A max @ +28 V output
Output rated voltages		+28 Vdc ±5%

1.4.2 Mechanical Specifications

Length		2.52 in [64.0 mm] max
Width		1.87 in [47.0 mm] max
Height (not including connectors)		0.95 in [24.1 mm] max
Weight		0.22 lb [0.10 kg] max
Material		6061 aluminum
Chassis finish		aluminum with black anodized coating
Connectors (1):	J1	One 9-pin D-Sub male lock posts
Mounting		Four 10-32 screws
Bonding		≤ 2.5 mΩ
Installation Kit part number		INST-JPC

SECTION 2 – INSTALLATION

2.1 Introduction

This section contains unpacking and inspection procedures, installation information, and post-installation checks.

2.2 Continued Airworthiness

Maintenance of the JPC-1032 is on condition only. Scheduled inspection and/or periodic maintenance of this unit is not required.

2.3 Unpacking and Inspecting Equipment

Unpack the equipment carefully. Check for shipping damage and report any problems to the relevant carrier. Confirm that the Authorized Release Certificate or Certificate of Conformance is included. Complete the on-line warranty card from the Jupiter Avionics Corporation (JAC) website - www.jupiteravionics.com/warranty

2.3.1 Warranty

This product manufactured by JAC is warranted to be free of defects in workmanship or performance for 2 years from the date of installation by an approved JAC dealer or agency. This warranty covers the cost of all materials and labour to repair or replace the unit, but does not include the cost of transporting the defective unit to and from JAC or its designated warranty repair centre, or of removing and replacing the defective unit in the aircraft. This warranty does not cover failures due to abuse, misuse, accident, or unauthorized alteration or repairs.

THIS WARRANTY IS VOID IF THE PRODUCT IS NOT INSTALLED BY AN AUTHORIZED JAC DEALER. If the on-line warranty card is not completed, the product will be warranted from the date of manufacture.

Contact JAC for return authorization, and for any questions regarding this warranty and how it applies to your unit(s). JAC is the final arbiter concerning warranty issues.

2.4 Installation Procedures

CAUTION: The power input circuitry of the unit may be damaged if the installation does not conform to the wiring instructions in this manual.

2.4.1 Installation Limitations

Those installing the JPC-1032, on or in a specific type or class of aircraft, must determine that the aircraft installation conditions meet standards. The JPC-1032 may be installed only by following the applicable airworthiness requirements.

2.4.2 Cabling and Wiring

All wire shall be selected in accordance with the original aircraft manufacturer's maintenance instructions, or AC43.13-1B Change 1, Paragraphs 11-76 through 11-78. Unshielded wire types shall qualify to MIL-W-22759 as specified in AC43.13-1B Change 1, Paragraphs 11-85, 11-86, and listed in Table 11-11. Follow the Connector Map in Appendix A of this manual.

Maintain wire segregation and route wiring in accordance with the original aircraft manufacturer's maintenance instructions.

Unless otherwise noted, all wiring shall be a minimum of 22 AWG. Refer to the Interconnect drawing for additional specifications. Check that the ground connection is clean and well secured, and that it shares no path with any electrically noisy aircraft accessories such as blowers, turn-and-bank instruments, or similar loads.

2.4.3 Mechanical Installation

The JPC-1032 can be mounted in any attitude and location with adequate space and sufficient clearance for the connector and wiring harness. It requires no direct cooling.

2.4.4 Post Installation Checks

2.4.4.1 Voltage/Resistance checks.

Do not attach this unit until the following conditions are met:

a) Check P1 pins **1** and **2** for +28 Vdc
b) Check P1 pins **6** and **7** for continuity to ground (less than 0.5 Ω).
c) Check P1 pins **3** and **8** for +28 Vdc power output.
d) Check all pins for shorts to ground or adjacent pins.

2.4.4.2 Power on Checks.

Power up the aircraft's systems and confirm normal operation of all functions of the JPC-1032.

When all performance checks are satisfied, complete the necessary regulatory documentation before releasing the aircraft for service. Refer to Appendix B.

2.5 Installation Kit

The kit required to install this unit is not included with the unit.

The installation kit (Part # INST-JPC) consists of the following:

Quantity	Description	JAC Part #
1	9-pin connector D-sub Crimp Socket Housing	CON-3460-0009
1	9-pin clamshell plastic hood	CON-5300-0109
1	D-Sub 4x40 jackscrews	CON-5150-0440

2.5.1 Recommended Crimp Tools

Standard D-Sub Crimp Tool Chart			
Tool Type	**Hand crimping tool**	**Positioner**	**Insertion/extractor tool**
POSITRONIC	9507-0-0-0	9502-5-0-0	4711-2-0-0
DANIELS	AFM 8	K13-1	91067-2
MIL-SPEC	M22520/2-01	M22520/2-08	M81969/1-02

2.6 Installation Drawings

The drawings and documents required for Installation can be found in Appendix A of this manual.

Installation Manual

Appendix A - Installation Drawings

A1 Introduction

The drawings necessary for installation and troubleshooting of the JPC-1032 are in this Appendix, as listed below.

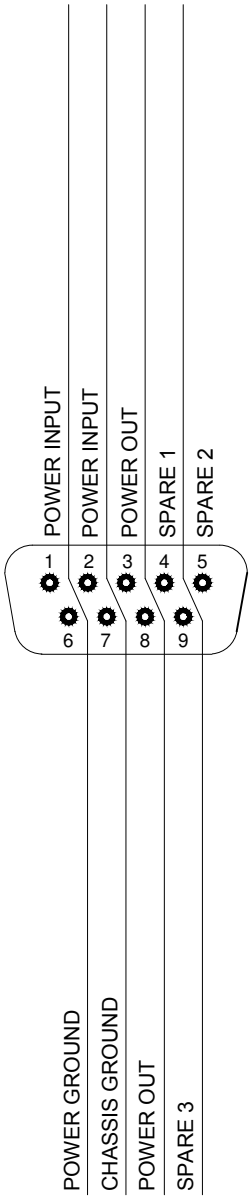
A2 Installation Drawings

DOCUMENT	Rev
JPC-1032 Connector Map	A
JPC-1032 Interconnect	A
JPC-1032 Mechanical Installation (SB0167)	B

MAIN CONNECTOR

P1

9 PIN FEMALE DMIN
MATING CONNECTOR



VIEW IS FROM REAR OF MATING CONNECTOR

PREPARED	KV	JUPITER AVIONICS CORPORATION		
CHECKED		TITLE: Power Converter - 10V to 32V Input P1 - Main Connector		
APPROVED		NCAGE CODE: L00N3	PART NO.: JPC-1032	SHEET: 1/1
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JPC-1032 Connector Map Rev A		

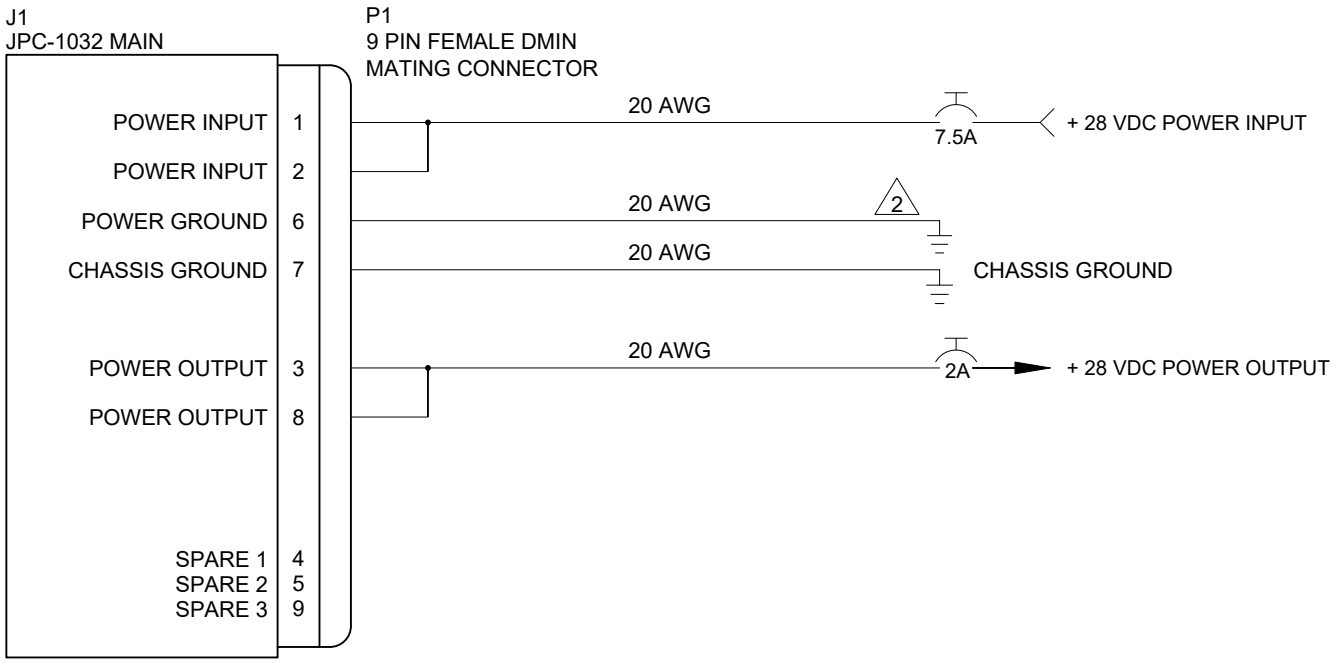
JPC-1032 INTERCONNECT WIRING NOTES

NOTES

1. ALL WIRE SIZE SHOULD BE 20 AWG MIN UNLESS OTHERWISE SPECIFIED. UNSHIELDED WIRE SHOULD BE SELECTED PER FAA AC43.13-1B CHANGE 1 PARA 11-76 TO 11-78. WIRE TYPES SHOULD BE IN ACCORDANCE WITH MIL-W-22759 AS DESCRIBED IN FAA AC43.13-1B CHANGE 1 PARA 11-85 AND 11-86 AND LISTED IN TABLE 11-11 OR 11-12. ALL SHIELDED CABLE SHOULD BE IN ACCORDANCE WITH MIL-DTL-27500 (REVISION H OR LATER).

△2 CONNECTION TO AIRFRAME GROUND SHOULD BE MADE WITH 20 AWG WIRE. LENGTH NOT TO EXCEED 3 FT (0.91 M).

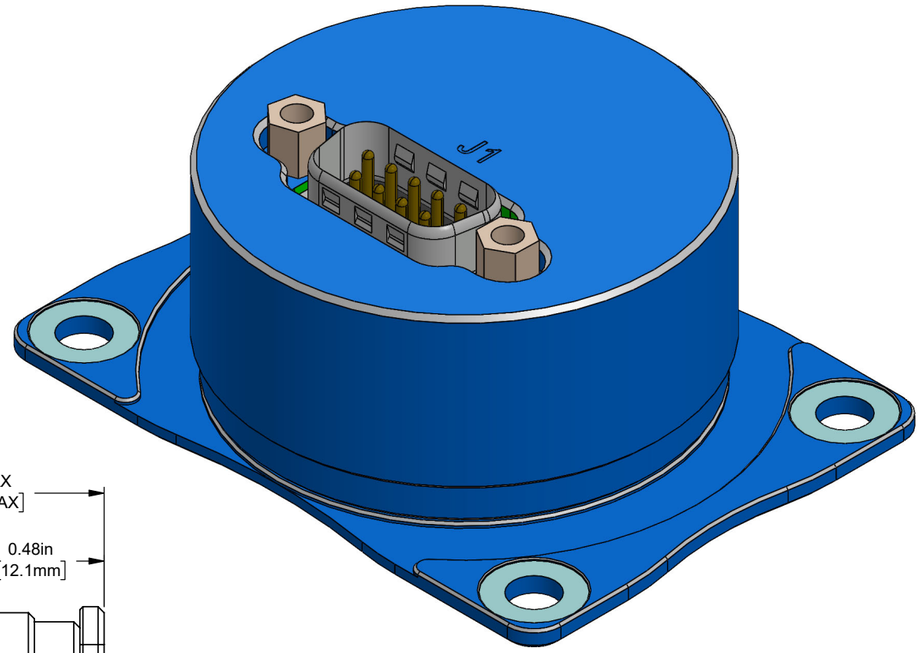
PREPARED	TAT	JUPITER AVIONICS CORPORATION		
CHECKED	JAC 07-20-23 AH	TITLE: Power Converter - 10V to 32V Input		
APPROVED	JAC 07-20-23 KDV	NCAGE CODE: L00N3	PART NO.: JPC-1032	SHEET: 1/2
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JPC-1032 Interconnect Rev A.dwg		

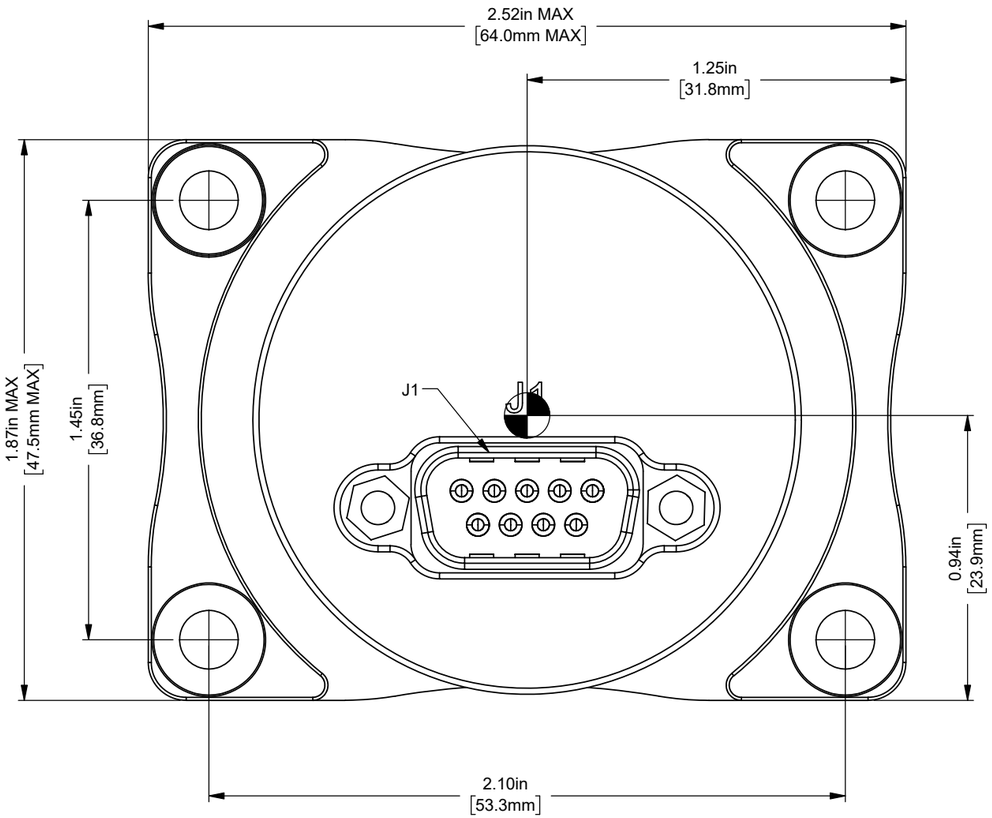


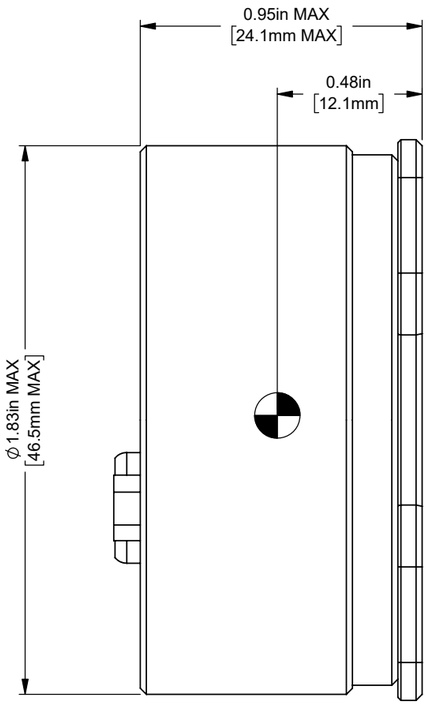
PREPARED	TAT	JUPITER AVIONICS CORPORATION	
CHECKED	JAC 07-20-23 AH	TITLE: Power Converter - 10V to 32V Input	
APPROVED	JAC 07-20-23 KDV	NCAGE CODE: L00N3	PART NO.: JPC-1032 / SHEET: 2/2
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JPC-1032 Interconnect Rev A.dwg	

CENTER OF GRAVITY
±0.03in [0.8mm]

WEIGHT: 0.22 lbs [0.10 kg] MAX.







UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
ANGLES ARE IN DEGREES
TOLERANCES:
1 DEC PLACE: ± 0.1
2 DEC PLACE: ± 0.01
3 DEC PLACE: ± 0.005
ANGLES: ± 0.5 DEG

MATERIAL: N/A

FINISH: N/A

PREPARED	TAT	
CHECKED	JAC 01-02-24 TAT	
APPROVED	JAC 01-03-24 KDV	

CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.

DRAWING NOT TO SCALE

JUPITER AVIONICS CORPORATION

TITLE: Power Converter - 10V to 32V Input

NCAGE CODE	PART NO.	SHEET
L00N3	JPC-1032	1/1

DOC. NO.
JPC-1032 Mechanical Installation (SB0167) Rev B.SLDDRW

Installation Manual

Appendix B - Installation Documents

B1 Airworthiness Approval

Airworthiness approval of the JPC-1032 may require completion of a TCCA Major Modification Report per CAR STD (AWM) 571 Appendix L, or a FAA Form 337. The sample wording for a description of the work is provided to assist the Installing Agency in preparing Instructions for Continued Airworthiness (ICA) when replacing an existing audio panel with a Jupiter Avionics JPC-1032 Power Converter - 10V to 32V Input. This sample may be modified appropriately for new installations. It is the installer's responsibility to determine the applicability of the method used. Installations performed outside Canada must follow the applicable aviation authority's regulations.

Sample Wording:

Removed the existing [model] panel mount charger and replaced with a Jupiter Avionics JPC-1032 Power Converter - 10V to 32V Input in [aircraft location].

See Section 1 of the JPC-1032 Installation Manual.

Installed in accordance with the JPC-1032 Installation Manual, Revision [ ], and AC 43.13-2, Chapters 2, and 3.

The JPC-1032 interfaces with existing aircraft systems per the Installation Manual instructions.

The JPC-1032 Installation Manual provides detailed installation instructions and wiring diagrams (Section 2, and Appendices A and B).

Power is supplied to the JPC-1032 through a [ ]-Amp circuit breaker.

Aircraft equipment list, weights and balance amended. Compass compensation checked and found to conform to applicable regulations.

B2 Instructions for Continued Airworthiness

Maintenance of the JPC-1032 Power Converter - 10V to 32V Input is "on condition" only. Refer to the JPC-1032 Maintenance Manual. Periodic maintenance of the JPC-1032 is not required.

The following sample Instructions for Continued Airworthiness (ICA) provides assistance in preparing ICA for the Jupiter Avionics JPC-1032 unit installation as part of a Type Certificate (TC) or Supplemental Type Certificate (STC) project to comply with CAR STD (AWM) 523/527/525/529.1529 or FAR 23/25/27/29.1529 "Instructions for Continued Airworthiness".

Items that may vary by aircraft make and model are shown in brackets ("[ ]") and should be filled in as appropriate. Some of the checklist items do not apply, in which case they should be marked "N/A" (Not Applicable).

Instructions for Continued Airworthiness, Jupiter Avionics JPC-1032 Power Converter - 10V to 32V Input in an [Aircraft Make and Model]

1. Introduction

[Aircraft that has been altered: Registration number, Make, Model and Serial Number]

Content, Scope, Purpose and Arrangement: This document identifies the Instructions for Continued Airworthiness for a Jupiter Avionics JPC-1032 installed in an [aircraft make and model].

Applicability: Applies to a Jupiter Avionics JPC-1032 installed in an [aircraft make and model].

Definitions/Abbreviations: None, N/A.

Precautions: None, N/A.

Units of Measurement: None, N/A.

Referenced Publications: JPC-1032 Installation Manual
JPC-1032 Maintenance Manual
STC/TC # [applicable STC/TC number for the specific aircraft installation]

Distribution: This document should be a permanent aircraft record.

2. Description of the System/Alteration

Jupiter Avionics JPC-1032 Power Converter - 10V to 32V Input with interface to [include equipment/systems as appropriate]. Refer to Appendix A of this manual for interconnect information. Refer to aircraft manufacturer approved interconnect for actual installation.

3. Control, Operation Information

Refer to section 3 of this manual.

4. Servicing Information

N/A

5. Maintenance Instructions

Maintenance of the JPC-1032 is 'on condition' only. Periodic maintenance is not required. Refer to the JPC-1032 Maintenance Manual.

6. Troubleshooting Information

Refer to the JPC-1032 Maintenance Manual.

7. Removal and Replacement Information

Refer to Section 2 of this manual - the JPC-1032 Installation Manual. If the unit is removed and reinstalled, a functional check of the equipment should be conducted.

8. Diagrams

Refer to Appendix A of this manual - the JPC-1032 Installation Manual - for installation drawings and interconnect examples.

9. Special Inspection Requirements

N/A

10. Application of Protective Treatments

N/A

11. Data: Relative to Structural Fasteners

JPC-1032 and appropriate mounting hardware installation, removal and replacement should be in accordance with applicable provisions of AC 43.13-1B and AC 43.13-2A.

12. Special Tools

N/A

13. This Section is for Commuter Category Aircraft Only

A. **Electrical loads**: Refer to Section 1 of the JPC-1032 Installation Manual.
B. **Methods of balancing flight controls**: N/A.
C. **Identification of primary and secondary structures**: N/A.
D. **Special repair methods applicable to the airplane**: N/A.

14. Overhaul Period

No additional overhaul time limitations.

15. Airworthiness Limitation Section

N/A