ANDERSON AIRMOTIVE
YOUR POWER CONNECTION

GROUND POWER UNIT (GPU) ATTACHABLE HEAD

CUSTOMER SAFETY AND MAINTENANCE MANUAL

Product: Ground Power Unit (GPU) Attachable Head
Date of Issue: 01/28/2025

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1. Introduction

Thank you for purchasing a Ground Power Unit (GPU) Attachable Head from Anderson Airmotive. This manual provides critical safety information, handling guidelines, assembly instructions, and maintenance steps to ensure safe and efficient operation. Please read this document carefully before using the product. Failure to follow these guidelines could result in injury, equipment damage, or voiding of warranties.

For additional support, contact our customer service team at 1-508-646-0950 or sales@andersonairmotive.com.

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2. Safety Information

2.1. Warning: Risk of Electrical Shock and Burns

- **Always disconnect power** before handling or attaching the GPU head to the ground power cable or aircraft. Failure to do so can result in serious injury or death from electrical shock.
- **Inspect before every use:** Check for visible signs of damage, wear, or exposed conductors. Do not use the GPU head if any damage is found. Replace damaged components immediately.
- **Proper Connection:** Ensure that the GPU head is fully engaged and securely connected to both the ground power cable and the aircraft's power port. Improper connection can result in arcing, overheating, and potential fire hazards.

2.2. Warning: Fire and Equipment Damage Hazard

- **Use only as intended:** The GPU head is designed for connection between ground power units and aircraft electrical systems. Misuse or improper installation can lead to overheating, fire, and serious equipment damage.
- **Environmental Conditions:** Operate the GPU head within specified temperature and humidity ranges. Exposure to extreme conditions can degrade insulation, reduce performance, and increase the risk of failure. The unit is designed to withstand temperatures from -67°F to 185°F [-51°C to 85 °C] and impacts of 20 ft-lbs [27 J] at -67°F [-51 °C].

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3. Handling Instructions

- **Transport:** Always transport the GPU head in a protective cover or case to prevent damage. Avoid dragging the cable or GPU head across rough surfaces, as this can compromise the integrity of the insulation and connectors.
- **Attachment:** When attaching or detaching the GPU head, grasp the connector by its designed handholds. Do not pull on the cable itself, as this can cause internal damage that may not be immediately visible.
- **Cable Management:** Store the GPU head and cable in a clean, dry area, ideally on cable reels or appropriate storage racks. Coiling the cable too tightly can stress the internal conductors and insulation.

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4. Environmental and Operational Limits

- **Operating Temperature Range:** This GPU head is designed for operation between -67°F and 185°F [-51°C to 85 °C]. Operating the unit outside these limits can compromise performance and safety. It is also tested to withstand a 20 ft-lb [27 J] impact when cold-soaked at -67°F [-51 °C].
- **Exposure to Chemicals and Fluids:** The GPU head may come into contact with aviation fuel, hydraulic fluid, de-icing agents, and other chemicals. Prolonged exposure can compromise the integrity of the materials. After exposure, clean the head according to the provided cleaning guidelines.
- **Moisture and Water Exposure:** This product has an IP rating of 65. If the GPU head is exposed to moisture or water, dry it thoroughly before use and inspect for signs of water intrusion.

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5. Replacement Parts and Service

- **Authorized Parts Only:** Use only replacement parts that meet the original manufacturer's specifications. Unauthorized parts may not meet safety or performance standards and can void warranties or create unsafe conditions.
- **Service by Qualified Personnel:** Repairs and maintenance should only be conducted by personnel trained and certified in aerospace ground power systems. Improper repair can result in serious injury or damage to aircraft electrical systems.

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6. Assembly Instructions for Attachable® Connectors

Series R67 Plugs (M525486)

Follow these steps for safe assembly of the Attachable® connectors used with Series R67 plugs.

6.1. Tools and Preparation

1. **Identify conductor size**: Use the proper R67 assembly kit. Each kit includes crimp-type barrels for specific conductor sizes.
2. **Strip jackets/Crimping Conductors**: Strip outer jackets of power conductors 1 ¾ inch [45 mm] and inner jackets 1 ¼ inch[32 mm] (Strip off 1 ¼ inch [32 mm] from 1-piece jackets). Crimp barrels on the wire using an MS25441 hydraulic tool and appropriate M590485 die. (Anderson Electric Corp. VC7 is acceptable substitute, make two crimps approx. ½ inch [13 mm] apart and ¼inch from the end of the barrel.)
3. For control conductors, strip outer jackets of two-conductor 12AWG cable 1 ¾ inch [45 mm]and inner jackets ½ inch [13 mm]. Crimp to smaller barrels using an MIL-C-22520/24 hand crimping tool. If control conductors are not used, strip ends of the 12 AWG Jumper (supplied with each plug) ½ inch [13 mm] and crimp barrels as described.

6.2. Heat Shrink and Insulation

4. **Cover Crimp Joints**: For the *Power Conductors* cover crimp joints, exposed conductors, and jackets with *heat- shrink tubing* supplied. Use glass cloth electrical tape 3M #27 or equivalent to cover the crimp joint, exposed conductors and jackets of the control wires (#12AWG).

6.3. Cable Positioning and Mounting

5. **Insert Cables**: Pull cable/lugs through the cable packing and position as needed (use lubricant as required).
6. **Mount Plug**: Secure the plug in a vise behind the contact area.

NOTE FOR "B" STYLE CONTACTS: For the following steps we recommend the use of Assembly Tool Kit 111239G2D. The kit contains threaded pull-rods, and a 3/8 inch [10 mm] drive socket fitted to a 5/32 inch [4 mm] hex rod permitting the use of a torque wrench.

6.4. Contact Installation

7. **Insert Control Contacts**: Insert threaded pull-rods through the E and F control contacts in front of the plug and screw them into appropriate barrels. Pull up barrels until they are seated in their sockets at rear of contacts. Where no control conductors are used proceed as above using the jumper prepared in Step 3 to jumper the E and F contacts.

8. **Install Screws**: Remove the pull-rods, insert socket head screws without lock washers (E and F only) and hand tighten.

9. Insert a pull-rod through the A power contact in the front of the plug and screw it into the barrel of the A conductor. Pull up the barrel until it is seated in the socket at rear of the contact. Remove the pull-rod, insert a socket head screw with lock washer, and hand tighten.

10. **Install Power Contacts**: Repeat Step 9 for the B, C, and N power conductors.

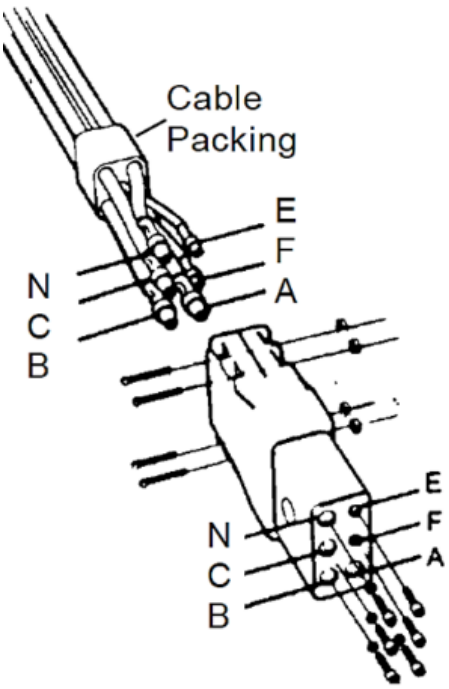

Fig. 1

6.5. Torque and Final Assembly

11. **Torque Screws**: Using a torque wrench fitted to the 3/8 inch [10 mm] drive socket/hex rod and tighten the screw to 45 inch-pounds [5 Nm]. Repeat this operation for the B, C, and N contacts tightening each to 45 inch-pounds [5Nm]. Tighten the screws for the E and F contacts tightening each to 45 inch-pounds [5 Nm], using the torque wrench/hex rod.
12. **Seating Check**: Check the proper seating of the barrels by striking the plug on a solid surface, several times. Retighten as required. (Follow Step 11).
13. **Insert Cable Packing**: Force the cable packing into the rear of the plug, past the lip. If necessary, use a steel bar across the cable packing to seat it into its proper place.
14. Secure the cable packing at rear of the plug with screws and nuts provided; tighten until cable packing holds cable securely.

6.6. Final Checks and Assembly Completion

15. **Insert Catalog Button**: Use rubber cement to affix the red catalog-number button into the plug body's recess.

16. **Continuity Check**: Ensure all connections are wired correctly and test for continuity.
17. **Banding**: Band cables 12 inch [305 mm] from the rear of the plug and every 24 inch [610 Nm] thereafter.

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7. Maintenance Instructions

- **Torque Check**: Periodically recheck the torque on contact screws.
- **Contact Cleaning**: Clean contacts using a 38-caliber brass wire bore brush with a small amount of Neatsfoot foot oil or petroleum jelly, then wipe clean.
- **Wear Inspection**: If the rubber surrounding the contacts is worn and exposes the contacts, replace the head immediately.

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8. Emergency Procedures and Incident Response

- **Electrical Short or Malfunction:** Disconnect power immediately, inspect, and contact qualified maintenance personnel.
- **Fire Safety:** Use a Class C fire extinguisher for electrical fires. Disconnect power if overheating occurs.
- **Incident Reporting:** Report incidents involving the GPU head to Anderson Airmotive and relevant authorities.

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9. Training Requirements and Competency Certification

- **Operator Training:** Ensure operators are trained in handling, electrical safety, and emergency response. Contact Anderson Airmotive for training resources.
- **Certification of Competency:** Employers should certify users, especially in environments requiring adherence to safety protocols.

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10. Labeling and Markings

- **Safety Labels:** Do not remove safety labels indicating voltage, limits, and hazards. Ensure labels are visible and legible.
- **Traceability Markings:** Track product lifecycle through the serial number, manufacturing date, and certifications.

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11. End-of-Life Disposal and Recycling Guidelines

- **Dispose Responsibly:** Follow local regulations for recycling and disposal of the GPU head.
- **Component Breakdown:** Separate connectors, housings, and cables for proper disposal.

12. Legal Compliance and Regulatory Adherence

- **Conformity to Standards:** This GPU head complies with MIL-C-7974. Refer to product markings for compliance. It is the responsibility of the user to ensure the product is deployed in accordance with local laws and regulations applicable in their operating environment.
- Product Liability Disclaimer: This GPU head must be used strictly in accordance with the guidelines and specifications outlined in this manual. Any use outside the stated scope, unauthorized modifications, or failure to adhere to the provided instructions may result in damage, injury, or regulatory violations. We assume no liability for damages, injuries, or non-compliance resulting from:
    - Misuse, improper installation, or unauthorized modifications.
    - Failure to follow the operating, maintenance, or safety guidelines specified in this manual.
    - Operation in environments or conditions not intended for this product.
    - Use of non-approved accessories or components.

13. Feedback and Continuous Improvement

- **Customer Feedback:** Share performance or safety feedback via Phone 1-508-646-0950
- **Updates:** Access the latest manual updates at =>

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14. Warranty and Technical Support

Warranty Information: This product includes a 90 Day warranty from the date of purchase of the GPU head. This warranty does not cover:

- Damage caused by misuse, abuse, accidents, or unauthorized modifications.
- Normal wear and tear, including but not limited to cosmetic damage (scratches, dents, etc.).
- Damage resulting from failure to follow the installation, maintenance, or operational instructions in this manual.
- Use of non-approved accessories, components, or repair services.
- Environmental damage, including but not limited to exposure to extreme temperatures, moisture, or corrosive substances.