

Mark C. Pope Associates, Inc.

MCP GSE JetLux Ground Power Unit Manual



Table of Contents

1. Introduction
 2. Safety Information
 3. Product Overview
 4. Technical Specifications
 5. Controls & Indicators
 6. Pre-Operation Inspection
 7. Operating Instructions
 8. Routine Maintenance
 9. Troubleshooting Guide
 10. Warranty & Service
 11. Appendix
-

1. Introduction

Thank you for choosing the MCP JetLux Diesel 28.5 VDC Ground Power Unit (GPU). This unit is designed to provide reliable 28.5-volt DC electrical power for aircraft ground servicing, maintenance operations, avionics support, and engine starting applications.

The JetLux GPU combines diesel engine performance with hybrid battery-assisted technology to reduce fuel consumption, lower emissions, and improve operational efficiency.

This manual provides operating instructions, maintenance procedures, and safety information necessary for safe and efficient operation.

2. Safety Information

WARNING

Improper operation may result in:

- Electrical shock
- Severe injury
- Equipment damage
- Aircraft system damage
- Fire or explosion

Only trained personnel should operate this equipment.

General Safety Rules

- Read this manual completely before operation.
- Never operate the GPU in enclosed spaces without ventilation.
- Keep clear of rotating components and hot surfaces.
- Verify aircraft compatibility before connection.
- Disconnect power before maintenance.
- Do not operate with damaged cables or connectors.

Electrical Safety

The GPU produces high-current DC power capable of causing serious injury or equipment damage.

Always:

- Inspect output cables before use
- Confirm correct aircraft voltage requirements
- Turn output OFF before connecting/disconnecting

Fire Safety

Diesel fuel is combustible.

Keep away from:

- Open flames
- Sparks
- Smoking materials

Maintain a charged fire extinguisher nearby during operation.

3. Product Overview

The MCP JetLux GPU is a towable diesel-powered 28.5 VDC aircraft ground power unit designed for:

- Aircraft engine starting
- Avionics testing
- Maintenance operations
- Ramp operations
- FBO and hangar support

The system features:

- Hybrid battery support system
- Digital operator interface
- Continuous regulated DC output
- Towable trailer chassis
- Tier 4 diesel engine compliance

4. Technical Specifications

Specification	Value
Output Voltage	28.5 VDC
Continuous Output	450 Amps
Peak Output	2,000 Amps
Engine	Kubota 1.1L 3-Cylinder Diesel
Engine Power	23.9 HP
Cooling System	Water-cooled

Specification	Value
Emissions Compliance	EPA / CARB Tier 4
Battery System	Carbon Nano Gel Hybrid Batteries
Dimensions	102" L × 63" W × 54" H
Dry Weight	2,305 lbs.
Mounting	Towable Trailer
Operating Type	Diesel / Hybrid

5. Controls & Indicators

- Main Control Panel
 - Engine Start Switch
 - Starts the diesel engine.
 - Engine Stop Switch
 - Stops engine operation safely.
 - Output Enable Switch
 - Activates DC output to aircraft.
 - Voltage Meter
 - Displays output voltage.
 - Current Meter
 - Displays output current draw.
 - Emergency Stop
 - Immediately shuts down engine and output systems.
 - Fault Indicators- alerts operator to:
 - Low oil pressure
 - High coolant temperature
 - Overvoltage
 - Undervoltage
 - Output fault
-

6. Pre-Operation Inspection

Fluid Levels

Check:

- Engine oil
 - Coolant
 - Fuel level
-

7. Operating Instructions

Starting the GPU

- Apply parking brake/chock wheels.
- Turn key to power unit on.
- Press button corresponding to “Start” on display screen.
- Allow engine to reach rated speed.

Enabling Output

- Connect output cable to aircraft receptacle.
- Verify secure connection.
- Press button corresponding to “28VDC On.”



- Amber beacon will flash when output is enabled.
- Blue beacon flashing indicates diesel fuel level is low.



Disconnect Procedure

- Press button corresponding to “28VDC Off.”
- Turn off engine by turning key to “off” position.
- No cool down period required due to engine specifications.
- Disconnect aircraft cable carefully.
- Stow cable properly.

8. Routine Maintenance

Daily

- Inspect cables
- Check fuel level
- Check oil level
- Inspect tires and towbar

Weekly

- Inspect battery terminals
- Clean exterior surfaces
- Check coolant level

Every 200 Hours

- Change engine oil
- Replace oil filter
- Inspect cooling system
- Service engine air filter

Every 400 Hours

- Replace fuel filter and water separator

Recommended Spare Parts for Routine Maintenance

- Oil Filter- Part # JL-HH160-32093
- Fuel Filter- Part # JL-RD159-51022
- Primary Air (large)- Part # JL-2-E1
- Secondary Air (small)- Part # JL-2-E2

Follow engine manufacturer recommendations for service intervals.

9. Troubleshooting Guide

Problem	Possible Cause	Corrective Action
Engine will not start	Low battery	Recharge or replace battery
No output voltage	Output OFF	Enable output
Low voltage output	Excessive load	Reduce load
Overtemperature alarm	Low coolant	Refill coolant
Engine shutdown	Low oil pressure	Check oil level
Excessive ripple	Faulty rectifier	Contact service technician

10. Warranty & Service

The MCP JetLux GPU includes a 2 Year manufacturer warranty coverage for defects in materials and workmanship under normal operating conditions.

Warranty exclusions may include:

- Improper operation
- Unauthorized modifications
- Lack of maintenance
- Accident damage

For service support:

- Contact Mark C. Pope Associates, Inc.
- Headquarters Office Located at: 4910 Martin Court, Smyrna, GA 30082
- By phone: 800-299-2999
- By email: gpusupport@markcpope.com

- Provide serial number and operating hours
 - Record all maintenance performed
-

11. Appendix

Recommended Operating Environment

Condition	Specification
Ambient Temperature	-20°F to 125°F
Humidity	Up to 95% non-condensing
Surface	Level, stable ground

Output Protection Features

- Overvoltage protection
- Undervoltage protection
- Overcurrent protection
- Engine overspeed shutdown
- Low oil pressure shutdown
- High temperature shutdown

This manual is intended as a general operational guide for the MCP JetLux Diesel 28.5 VDC GPU platform. Specifications and features may vary depending on configuration and optional equipment. Always follow local aviation authority regulations and aircraft manufacturer procedures.