

INSTALLATION GUIDE

Lithium Walkie Pallet Jack DLP-GC2-24V

READ AND SAVE THESE INSTRUCTIONS

DLP-GC2-24V Battery 900-0052

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INTRODUCTION

This document describes installing the DLP-GC2-24V battery and Battery Discharge Indicator (BDI) onto a Lithium Walkie Pallet Jack.

Before using the instructions in this document, review the following for information on the battery and BDI.

- DLP-GC2-24V battery manual
[AES Professional Installation and Operation Manual \(805-0027\)](#)
- Type A Battery Discharge Indicator datasheet
[Type A Battery Discharge Indicator \(CAN Bus\) datasheet \(808-0017\)](#)

1. AUDIENCE, MESSAGES, WARNINGS, GENERAL SAFETY, PERSONAL PROTECTIVE EQUIPMENT

1.1 Audience

Configuration, installation, service, and operating tasks should only be performed by qualified personnel in consultation with local authorities having jurisdiction and authorized dealers. Qualified personnel should have training, knowledge, and experience in the:

- Installation of electrical equipment
- Application of electrical codes, safety, and installation standards
- Analysis and reduction of hazards involved in performing electrical work
- Installation and configuration of batteries

1.2 Warning, Caution, Notice, and Note Messages

Messages labeled on the battery and in this manual are formatted according to this structure.



Additional information concerning important procedures and features of the battery. Read all the instructions before installation, operation, and maintenance.



Important information regarding hazardous conditions.

WARNING

Important information regarding hazardous conditions that may result in personal injury or death.

CAUTION

Important information regarding hazardous conditions that may result in personal injury.

NOTICE

Important information regarding conditions that may damage the equipment but not result in personal injury.

NOTE

Ad hoc information concerning important procedures and features unrelated to personal injury or equipment damage.

1.3 Warnings and General Safety



Do not dispose of the product in a fire or the garbage.



This product is made of recyclable materials and should be recycled.



⚠ WARNING

ELECTRIC SHOCK AND FIRE HAZARD

Do not lay tools or other metal parts across battery terminals or internal components.

Failure to follow these instructions may result in death or serious injury.

⚠ CAUTION

ELECTRIC SHOCK HAZARD

- Do not touch the energized surfaces of any electrical component in the battery system.
- Before servicing, follow all procedures to fully de-energize the battery system.
- Follow [Safe Handling Procedures](#) when working with the battery.

Failure to follow these instructions may result in injury.

1.4 Safe Handling Procedures

Before using the battery, read all instructions and cautionary markings on the units and all appropriate sections of the [AES Professional Installation and Operation Manual \(805-0027\)](#).

- Use personal protective equipment when working with the battery.
- Dispose of or recycle a battery following local regulations.
- Do not modify, re-manufacture, or attempt to insert foreign objects into the battery.
- Do not immerse or expose the battery to water, other liquids, fire, explosion, or other hazards.
- Do not lift or carry while in operation.
- Take precautions when handling electrical cables.
- Do not submerge the battery.
- Do not install the battery with the terminals facing down.
- Do not use the battery with a charging system that exceeds the specifications of the battery. Using batteries or a charging system that exceeds the cable and fuse specifications may present a fire risk or other hazards.
- Do not short-circuit the battery.
- Do not drop the battery.
- If the battery is damaged, take it to a service center for inspection.

1.5 Personal Protective Equipment

When handling or working near a battery:

- Use Personal Protective Equipment, including clothing, glasses, insulated gloves, and boots.
- Do not wear rings, watches, bracelets, or necklaces when handling or working near the battery.

2. REQUIRED PARTS

- (1 to 4) x DLP-GC2-24V, 25.6 V 60 Ah lithium battery (900-0052)
- 1 x BDI Type A with 72" cable (950-0044)
- (1 to 4) x DLP T-connector (950-0041)
- (1 to 3) x DLP TOL-1800, battery to battery 72" cable (950-0036)
- DC cables if using more than one battery

BATTERY DLP-GC2-24V (900-0052)	SOC GAUGE BDI Type A with 72" cable (950-0044)	OPTIONAL ACCESSORIES	
		DLP-T Connector (950-0041)	DLP TOL-1800 (950-0036)
1	1	1	–
2	1	2	1
3	1	3	2
4	1	4	3

NOTE

A multiple battery installation is required for heavy-load applications or for extended runtimes.

3. SYSTEM OVERVIEW

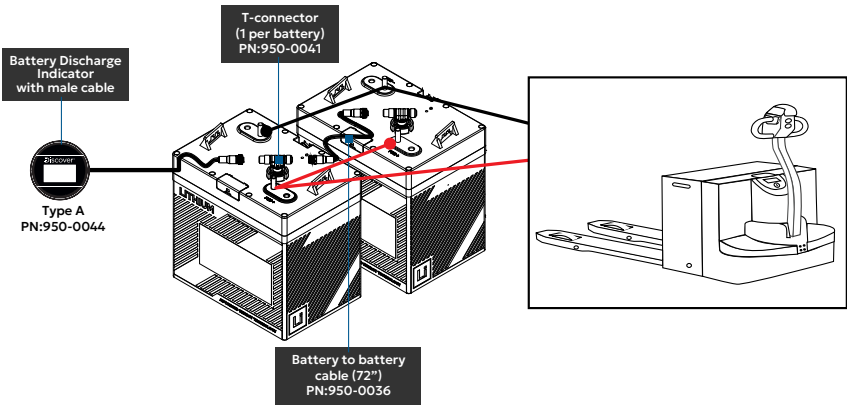


Figure 1. Wiring of communication and power cables

- Communication with batteries is required for the BDI to display the state of charge (SOC) of batteries.

NOTICE

If the system connects multiple batteries and uses the DLP TOL-1800 cable (950-0036), the DLP T-connector (950-0041) is necessary to prevent the cable from bending and getting damaged.

- Do not use a lead-acid battery SOC gauge with the DLP-GC2-24V lithium batteries, as its measurements will be inaccurate.

4. BATTERY INSTALLATION

The DLP-GC2-24V fits in the same space as a GC6-sized lead battery.

- If the tray has batteries inside, remove existing batteries and cabling.
The battery tray may require modifications.



Figure 2. Installing Batteries



Figure 3. Battery Tray

- Keep the batteries OFF (LED is OFF) during installation to prevent short circuits.
- Secure the battery with a bracket or strap.
- Place the battery on the bottom tray, close to the main positive and negative cables.

- Connect the positive and negative cables to the respective terminals of the battery. Ensure the correct torque is used to secure the cable ends to the terminals (10 Nm / 7.4 ft-lb).

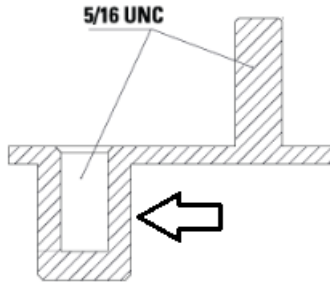


Figure 4. Torque bolt to 10 Nm (7.4 ft-lb) with a torque wrench

NOTE

Acceptable power cable gauges from the Walkie Pallet Jack range from 4 AWG up to a maximum of 1/0 AWG.

- When connecting the BDI or other batteries in the system, connect the DLP-T Connector (950-0041) to the battery COM port on top of the battery. Each battery needs a T-connector to prevent bending and damaging cables.

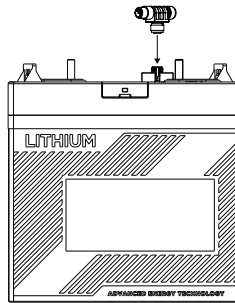


Figure 5. Connect T-Connector to Battery COM Port

- If you are using the external battery ON/OFF key, attach the red eyelet terminal on the BDI gauge on top of the main cables. See [6. External Battery ON/OFF Key](#) for additional instructions.

4.1 Terminal Connections

Note the following when connecting cables to the battery terminal.

- **Connect to the battery terminal.** All power cable lugs must directly contact the battery terminal deck.
- **Stacking connections.** If other cables, such as the red eyelet cable of the BDI gauge, need to be connected to the battery terminal, stack them on top of the power cable lug.

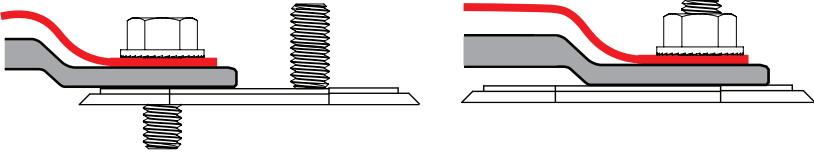


Figure 6. Correct Terminal Installation - Bolt, Post

- **Prevent short circuit.** To prevent short circuits, tape off or cover any exposed posts and terminals.

5. BATTERY DISCHARGE INDICATOR (BDI) DISPLAY

For information about the BDI, refer to the Type A Battery Discharge Indicator datasheet. [Type A Battery Discharge Indicator \(CAN Bus\) datasheet \(808-0017\)](#)

5.1 Installing the BDI

1. Use a 2" hole saw to cut out a hole for the BDI at the front of the Walkie Pallet Jack.
2. Insert the BDI into the cutout.
3. Run the BDI cable from the DLP-GC2-24V battery and plug it into the BDI gauge.
4. Turn ON the batteries. The BDI gauge should illuminate and display the battery information.
5. Before proceeding, thoroughly test the BDI to ensure that it operates as expected.
6. Secure the BDI with the U-bracket to the back of the BDI gauge.
7. If the Walkie Pallet Jack is pressure washed and sanitized, apply a thin line of silicone around the edge of the BDI to seal out water. Additionally, apply silicone to the switch, USB port, and the plug on the backside of the BDI to prevent water ingress.



Figure 7. BDI Display installed on a Walkie Pallet Jack

6. EXTERNAL BATTERY ON/OFF KEY

1. Connect the two floating wires (red and brown) on the BDI Type A harness to either side of the ON/OFF key.
 - Connect the brown wire to the ON/OFF key.
The other end of the brown wire is connected to pin 1 of the 5-pin DIN connector.

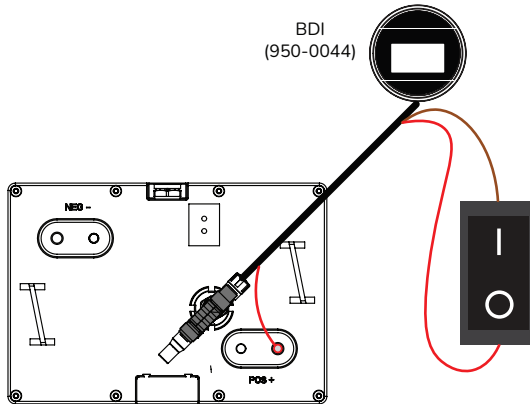


Figure 8. BDI Type A Wiring for ON/OFF Key

- Connect the red wire to the opposite end of the ON/OFF key.
2. On the other end of the red wire, attach its eyelet terminal to the positive bolt or positive post of the DLP-GC2-24V battery. The eyelet terminal must be placed on top of the cable lug and secured under the nut.

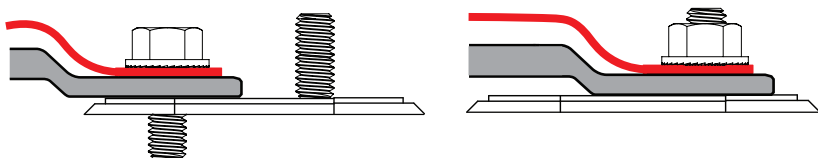


Figure 9. Red Eyelet Terminal on Top of Cable Lug

3. Confirm the switch is working before securing all the cables.
4. In applications where the BDI is exposed to pressure washing or sanitizing, apply silicone to the switch, USB port, and the plug on the backside of the BDI to prevent water ingress.

NOTICE

- You can use a momentary or toggle switch for the external ON/OFF key.
 - Latching is better for multiple battery installations.

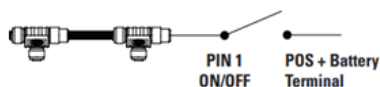


Figure 10. Latching Switch

- If you do not intend to use the brown and red wires for an external ON/OFF key, please tape off and secure the loose ends of the wires and the eyelet terminal to prevent invalid operation.

7. BATTERY ELECTRICAL SPECIFICATIONS

SPECIFICATION	RECOMMENDED SETTING
Nominal Voltage	25.6 V
Energy	1536 Wh
Capacity 1 hr	60 Ah
Fast Charge - Bulk Vdc	28.4 V
Fast Charge - Absorption Vdc	27.6 V
Rate Charge - Bulk Vdc	27.6 V
Rate Charge - Absorption Vdc	27.6 V
Low Voltage Disconnect Recommended	24.0 V
Max Discharge Current (1 hr)	115 A
Max Continuous Discharge Current	30 A
Max Charge Current (1 hr)	58 A
Max Continuous Charge Current	30 A

8. COMMON CHARGERS

The following are some recommended chargers. Set charger parameters to match the battery specifications.

CHARGER	ALGORITHM / SETTINGS	CHARGE TIME (PER BATTERY)
Delta-Q IC650	261	~2 hours
Summit II	BP#22670	~2 hours
Generic Charger	27.6 - 28.4 V bulk / absorption and ~27.2 V float charge	Depends on power

NOTE

If using a larger charger (e.g., greater than 650 W), you may need to increase the DC cable size between the charger and the battery. Please work with your charger supplier to ensure you have at least the minimum cable sizing for the charger on the system.

Contact your support team for the walkie pallet jack if you need more support.