

# D070124 DC Power Box Assembly Procedure

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## Purpose:

The purpose of this procedure is to provide step-by-step instruction in the assembly of the "Gold Power Box" DCC# [D070124](#).

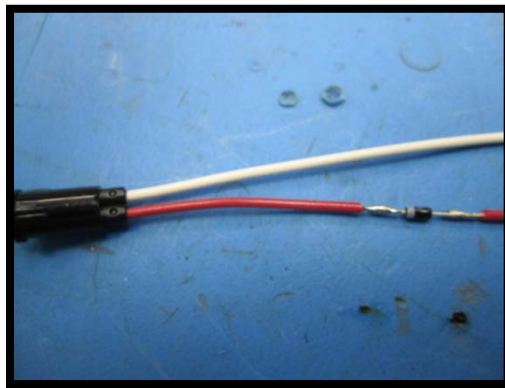
## Materials and Tools:

- [BOM](#) (Power Box Hardware List)
- Phillips Head Screwdriver
- Adjustable wrench or pliers
- Wire strippers
- 1/8" inch shrink wrap
- Heat gun

## Instructions:

### 1. Prepare the LEDs:

- a. Cut the Red LED lead approx. 1 ½" from the diode and strip the insulation from the two ends approx 1/8"
- b. Trim the leads of the 1N5314 current regulating diode to approx. ½"
- c. Solder the diode in between the Red lead pieces with the Cathode (-) towards the LED as shown.

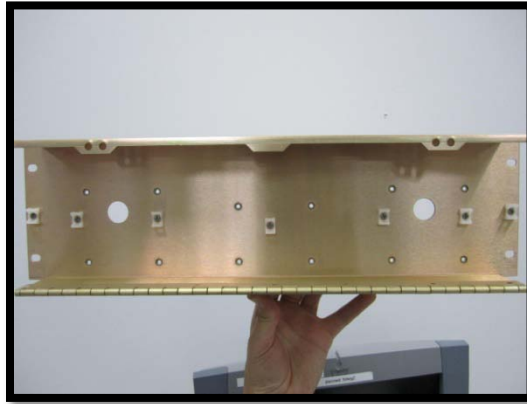


- d. Slide a 1 ½ piece of 1/8" shrink wrap over diode and exposed conductor and apply heat.

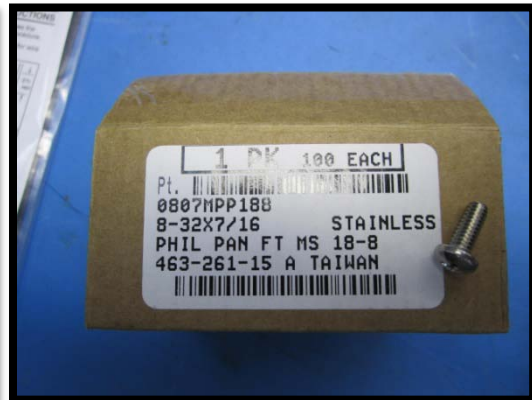
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2. Mount the Tie-Wrap holders(7) to the inside of the Hamilton box with 6/32 x ¼ Phillips flat machine screws



3. Next attach Ground Bars (6) to inside of box using 2ea. 8/32 x 7/16 Phillips Pan head screws.



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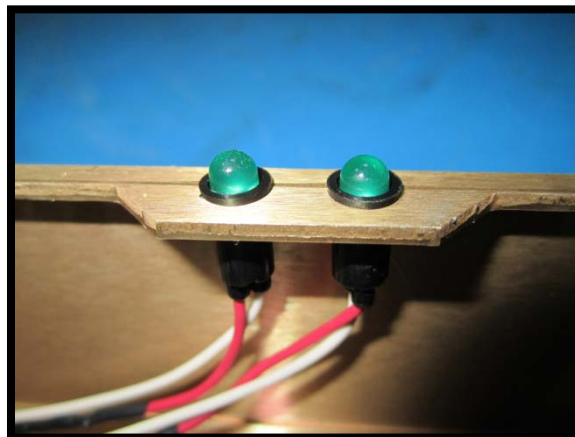
4. Mount 90° elbow conduit onto the exterior of the box and apply washer and nut to inside and tighten. Openings in elbows should point towards hinge on box.



5. Insert the adjustable cam latch through the keyed hole on the lid, slide the nut over the latch and tighten.



6. Insert LEDs through holes in lips of box and press down flush.



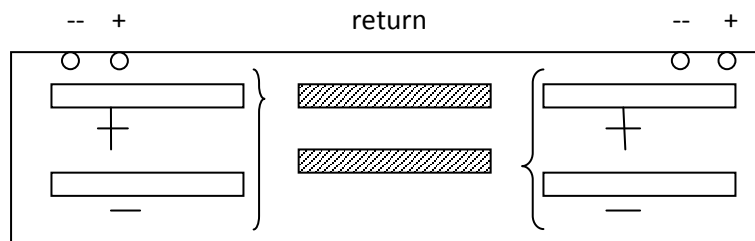
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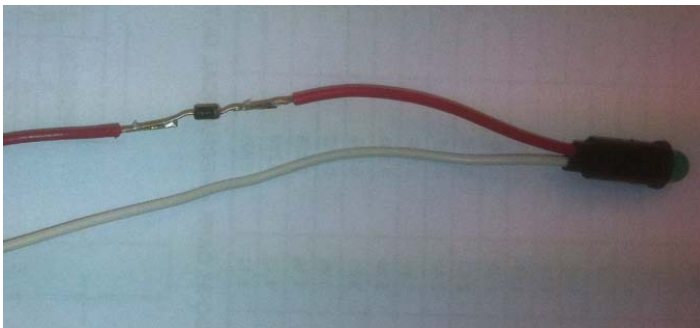
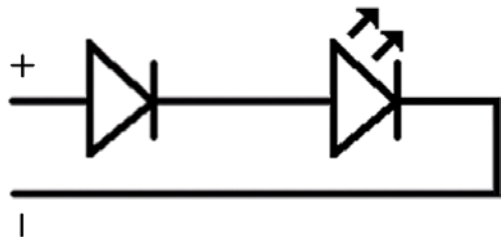
## Wiring:

**Note:** Box may be mounted either side up. For our purposes it is mounted with the hinge down.

1. With box mounted in rack (hinge down), the polarity orientation is as follows:

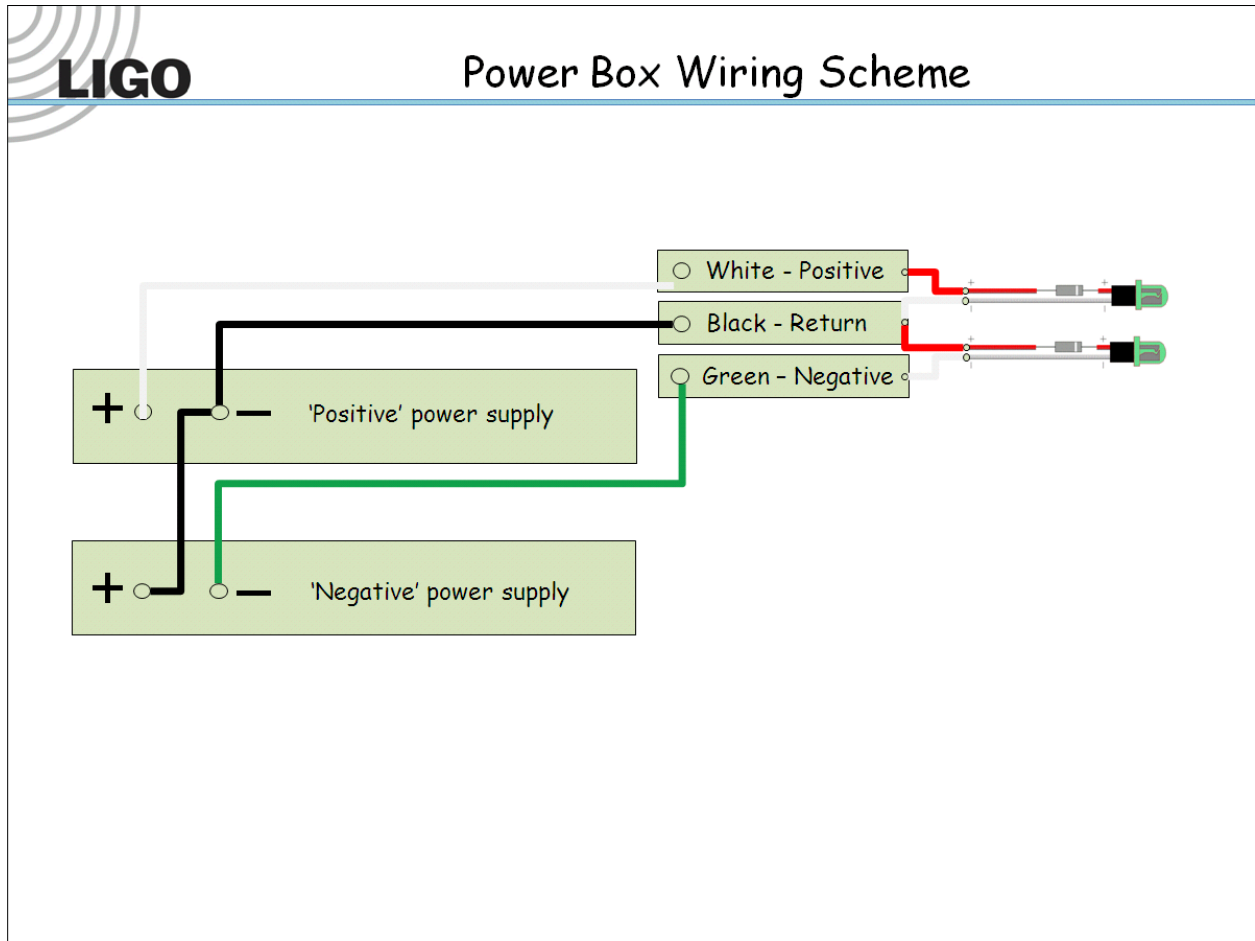


2. Correct wiring for Negative voltage LEDs:
  - a. Positive (Red) wires are connected to their respective return bars.
  - b. Negative (White) wires are connected to their respective negative-voltage bars.
3. Correct Wiring for Positive voltage LEDs:
  - a. Negative (White) wires are connected to their respective return bars.
  - b. Positive (Red) wires are connected to their respective positive-voltage bars.



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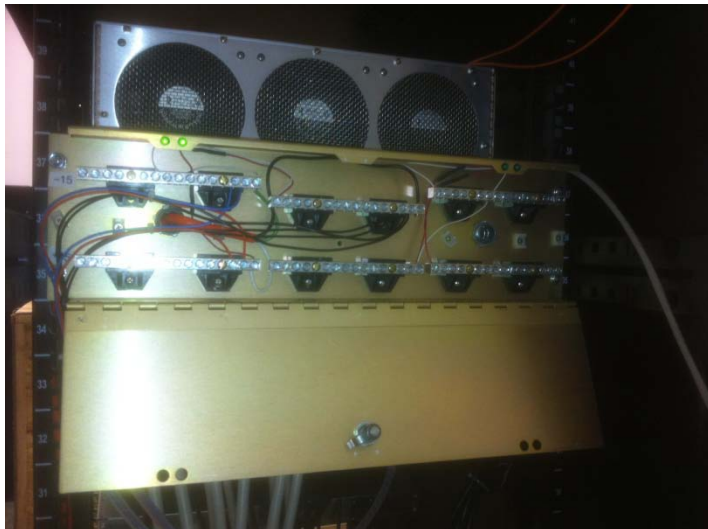
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## Finished Product:



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## Bill of Materials:

D070124 (Power Box) (aka Gold Box)								
Item	Part Type	Description	Designator	Manufacturer	Supplier	Supplier Part Number	Quantity	Unit
1	Fitting	90 Deg Die Cast Zinc Flexible Metal Conduit Fitting 90 Degree Elbow Connector, 3/8" Trade Sizeree Conduit Fitting			McMaster-Carr	7267K33	2	@
2	Latch	Adjustable Compression Miniature Cam Latch, Zinc-plated Steel, Knob Head, 3/32" - 3/8" Grip			McMaster-Carr	1887A52	1	@
3	Screw	18-8 SS Pan Head Phillips Machine Screw, 8-32 thread, 7/16" Length			McMaster-Carr	91772A193	12	@
4	Screw	Type 316 SS Flat Head Phillips Machine Screw, 6-32 Thread, 1/4" Length			McMaster-Carr	91500A144	7	@
5	Diode	Current Regulator Diode 4.7mA		Central Semiconductor	Mouser Electronics	1N5314	4	@
6	LED	Green LED, Leaded, Panel mount		Chicago Miniature Lighting	Digi-Key	L10005-ND	4	@
7	Bus Bar	Power Box Bus Bar		Seimens	Solar Electric Distributor	ECINS6B14	6	@
8	Tie-down	Tie Hold Flat Rivet			Digi-Key	FTH-13R-01-ND	7	@
9	Power Box	Rack Input Power Box		Hamilton Metalcraft, Inc.	Hamilton	D070124-A	1	@
10	Solder		Lab Supplies				1	@
11	Flux		Lab Supplies				1	@
12	Heat Shrink	Heat Shrink Insulation	Lab Supplies				1	@