



Purpose – to provide 12 VDC power to charge Model Aircraft related batteries at the field.

What you will need - A charger that uses 12 VDC as its input.

Connections - Two types are available. Banana jacks and Auto accessory. Banana to loop adapters are available for using chargers with alligator clip connections.

How to use

Open Club House and verify the Fire Extinguisher is there.

Remove the rain cover (training required - bungee cords on each end), set somewhere that it will not get stepped on or blow away.

Check left view window to see if you have 12.2 volts or higher. If NOT, see “Using the Generator to charge the batteries”

Turn on the power on the side you are going to use (Yellow lever on 40A Circuit breaker needs to be UP – out of sight)

Plug in your charger and charge your batteries.

Before leaving the field for the day, Turn off the Circuit breaker (press RED button) **PLEASE** make sure the rain cover is on and attached (bungee cords on each end.)



Using the Generator to charge the batteries

IF the DC voltage on the Power Station is 12.2 volts or lower the generator can be used to recharge the Power Station batteries.

The generator is stored inside the Club House. You will need the extension cord that is with it. Carry the generator to the south side of the Club House and make sure it has gas in it.

Start the generator, open the gray box on the south side of the Club House and plug in the extension cord.



Now plug the other end of the extension cord into the generator.

Look through the right window on the front of the power station and see if the charger is charging.



When the voltage reaches 14.5 volts the charger will stop charging.



PLEASE put the generator and extension cord away before leaving the field.

SOLAR power

On the south side of our Club House are the SOLAR panels. The wires from the panels run inside the Club House to a hub and then on to the Power Station. Four 10 gauge solid wires run underground from the Club House to the Power Station.



Inside the Power Station is the SOLAR charge controller.

The LED display shows output volts (battery voltage). The switch on the upper right turns on and off the output to the batteries and front panel.

If the switch is turned **OFF** SOLAR power will not charge the batteries.

Charge Controller Protections

Overcharge: if the battery rises to 14.5 volts controller will shut off power input from SOLAR panels.

Over-discharge: When battery drops to 11 volts controller will shut off the power output to the batteries. This will protect charge controller from exceeding its amp rating.

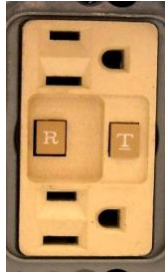
Overload: if output current exceeds 4 amps the fuse (on the back) will blow.

What's on TOP?

The power panel tunnel



AC GF Hobby King strip DC breaker panel Hobby King strip DC Meter



AC GF

This provides access to 120 VAC. The “T” tests the ground fault feature as well as acting like an **OFF** switch. If you press the TEST button, it switches off the power at the GF outlet and the GF duplex inside the power station (the duplex the powers the battery charger). The “R” button resets the GF back to **ON**. (AC ground wiring is connected to an 8 foot ground rod).

DC

Banana plug and Auto accessory outlets are available at different fuse capacities.

On the Hobby King power strip are two 40A un-switched (GREEN cover is for safety), and three 10A switched Banana plug pairs. Also two thumb screws to allow removal of panel to replace fuses that are on the backside of strip.



On the breaker panel are a 40A DC circuit breaker and an Auto accessory outlet that is fused at 10A (can be fused up to 15A) (a white safety cap covers the outlet).

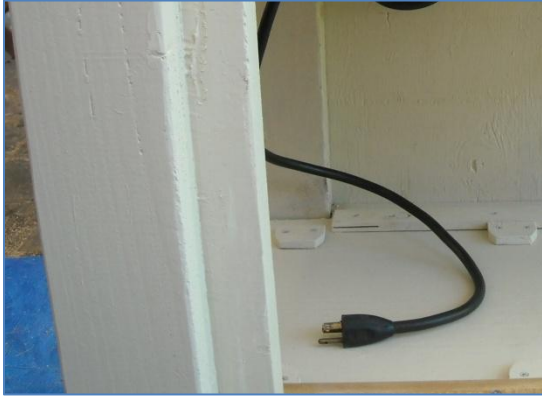
The 40A circuit breaker can be switched off / on (press the **RED** button to turn **OFF**, lift up the **YELLOW** arm to turn **ON**).

PLEASE turn off the BOTH Circuit Breakers if removing a Hobby King power strip to replace a bad fuse (located on the back of the power strips).

A three position switch (ON-OFF-ON) above the meter allows you to see the voltage of either side of the power panel tunnel. 12.5V is nominal, 10v is too low, 15V is too high.



The components



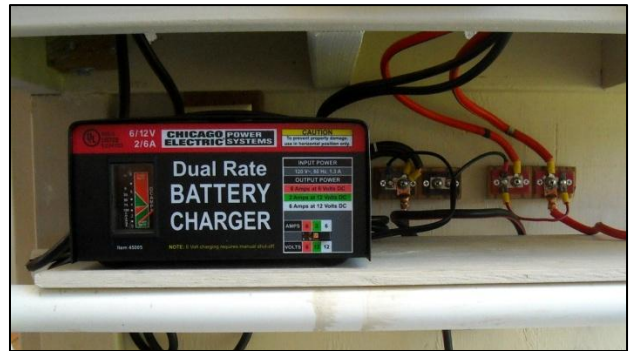
This pigtail plugs into the Generator (or power inverter if we go SOLAR)



and supplies AC to the ground fault duplex.



Black duplex outlet (on left) is AC from the generator



The ground fault duplex provides power to external AC users and to the internal AC duplex that the battery charger is plugged into if using the generator for power. The battery charger connects to the NEG and POS buss mounted on the rear of the Power Station to charge the 12 VDC deep cycle batteries.



On the right is the NEG and POS buss connections. There is a jumper between the two POS busses. That is because to start with we will be only having one source of input – the battery charger. If in the future we decide to try SOLAR, we can separate the two systems, one providing SOLAR power to charge the battery on one system and the a generator to charge other system.



The panel tunnel – Front side – Hobby King power strip, DC CB and Automotive utility outlet (cigarette lighter) with fuse holder that lights if fuse blows, and another Hobby King power strip. All fed from the 40 AMP circuit breaker / switch.

Hobby King Power Strip (power panel)



CH1 40A, CH2 40A, one 40A fuse for BOTH on back of strip.
CH3-5 are switched 10A fused, one 10A fuse for each switched banana pairs.
The two 40A banana pairs are not switched, the GREEN cover is for safety.



The center panel



A 40A circuit breaker / switch and an Automotive utility outlet (cigarette lighter) with fuse holder that lights if fuse blows (initial fuse 10A, can be 15A),

DC volt meter



Function of the three position switch above meter.
Center = OFF Left or Right reads the voltage of the side switch is moved to.

This is where the deep cycle batteries go.



Currently configured with room for four. Can be rearranged to store six.

Expansion

Charging area - If the station top gets crowded an extension table will be added to the south.

AC – if solar is the only source of power, an INVERTER can be installed to provide AC.

SOLAR – Currently there are three 15W solar panels attached to the south side of the Club House. There is space for 30 panels.