Turn your Arduino-compatible Ardweeny into a portable powerhouse!

Give your Ardweeny MUSCLE!
- Ideal for driving multiple servos
- Ground / Voltage / Signal (GVS) pinout for all Ardweeny pins
- Powerful Low-dropout, high current 5V, 5A voltage regulator
- 4-pin I²C / Blink-M header
- 2-position power jack (end or side-mount)
We’ve written this manual **assuming** you have an Ardweeny, soldered it together, and now have a general knowledge of how to solder. If not, go back to your Ardweeny instructions, and build it first!

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**Circuit Diagram**

![Circuit Diagram Image]
We strongly suggest you count the parts in your kit to make sure you have all the parts listed (c’mon - there’s barely a handful of parts, so count them!). If anything is missing, contact Solarbotics Ltd. for replacement parts information.
Construction!

Step 1 - Electrolytic Capacitors: There are 2 types, the high voltage 22µF and low voltage 100µF capacitor. These have to be installed in the right place, and the right-way around.

Install the 22µF capacitor to position ‘C1’ and the 100µF to ‘C2’.

Step 2 - Power Switch: This is installed right beside the capacitors.

Step 3 - Barrel Jack: Time for power! Decide if you want it side-mount, or end-mount. Pick a direction, plug in the jack, and solder it in!

Step 4 - Ardweeny “Nest”: The 28-pin DIP carrier is your Ardweeny socket, or you can go hard-core and solder your Ardweeny directly in. Install the carrier with the notch at the end matching one on the PCB.
**Step 5 - 330 ohm resistor:** This current-limiting LED resistor is tucked into the ‘R1’ position. Bend the legs down close to the body of the resistor to make it fit.

1. Bend the legs down
2. Install at ‘R1’

**Step 6 - Power LED:** Put it in the right-way around. Get it in backwards, and it’ll light up when there’s no power. Make sure the shorter lead (Flat side of the LED) goes into the square pad & matches the outline on the PCB. And yes, we’re joking about the backwards thing. It’ll actually starts beeping the theme to “Super Mario Bros.”

**Step 7 - 4-Pin Female Header:** It isn’t essential, but it gives you a quick interface to I²C devices, such as BlinkM LEDs or other Ardweenys.

**Step 8 - Install the male header pins:** Break up the two male header strips each into a set of 22, 11, and 3 pins (as shown below). Solder the two sets of 22 and place them in the ‘G’ and ‘V’ locations (marked at the end of the PCB). The two sets of 11 are installed in the ‘S’ row, end-to-end.

The spare 3 pin headers can be used for the Gnd / Vin line if desired.
Step 9 - Voltage Regulator & Heatsink: Let’s put these together *before* soldering them to the PCB. Assemble the pair so all the pins are pointed in the same direction. It will be tight, but manageable. Then install this regulator / heatsink package to the PCB, between the chip carrier and power jack.

You won’t be able to install this assembly backwards. If you do, send us a picture (one before you power it up, one of the smoking mess afterwards).

![Image of voltage regulator and heatsink assembly]

Step 10 - Powering it up!
Plug in a 6.5~30VDC 2.1mm (tip positive) adapter into the jack, and hit the power switch. If the power LED lights up, your MultiPack is ready to take an Ardweeny!

Gently plug your Ardweeny into the carrier (LED close to the MultiPack LED). Now you’re ready to go portable with power, and use some of the extra features offered by the MultiPack!

Final Ardweeny MultiPack Installation:
Our standard servo test using ports D2-D13 uses the default Arduino “Servo -> Sweep” Sketch, with the servos hooked up with:

- **G** - Ground - Black or Brown wire
- **V** - +5V from LM1084 - Red wire
- **S** - Signal - Yellow, Orange, or White wire

Analog ports A0-A5 are similarly available, using the sample Arduino sketch “AnalogInput”, hooked up with:

- **S** - Signal - Yellow or White wire
- **V** - +5V from LM1084 - Red wire
- **G** - Ground - Black wire

In short, the Ardweeny Multipack acts exactly like a standard Arduino, in a more compact and powerful package!

**Limitations:**
Before you hook everything on your workbench to the Multipack, there are some limitations to the design. The board is designed for 5A. The voltage regulator / heat sink can push 5A (for a while). What can’t handle 5A is the switch (0.2A @ 30VDC) and barrel jack (2.5A @ 16VDC).

Although limits may be pushed on these parts, be aware that a hard-wire jumper will be safer than the switch/jack at higher currents.

Our 12-Servo exercise lasted 4min45s on 8V input, surging to 3A before the VReg went into thermal shutdown.
The Ardweeny MultiPack: Get that Ardweeny into Action!

Where the Ardweeny succeeds as a great prototyping tool, it fails as an in-the-field tool. But the Ardweeny MultiPack fixes that, and with muscle! Send your Ardweeny into the field as a robot controller. Make it monitor that ear of corn, read that iguana-mounted GPS, and report it back with servo-controlled semaphore flags. You decide!

Don’t forget your Ardweeny! The MultiPack is only useful when mounted to an Ardweeny - the Arduino-compatible microcontroller kit!

Get more info at www.solarbotics.com/product/kardw/

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