Opening up hardware communities

Dozuki / iFixit
Eric Craig Doster
iFixit started in 2004 in a Cal Poly dorm.
We’ve got about 25 kids and 2.5 adults.
1 woman.
Ikea BESTÅÅDAL
Lincoln Belted Welder 200A
iFixit Documentation Examples

Lincoln Belted Welder 200A

Have a qualified electrician connect power to the input panel as stated, as appropriate, in accordance with the National Electrical Code, local codes and the wiring diagram glued to the inside of the door on the sheet metal side of the control box.

The welder frame must be grounded. A stud marked with the symbol for ground is located inside the control box for more details on proper grounding methods. If an old machine does not have a grounding stud, connect the grounding wire to an unpainted frame screw or bolt.

<table>
<thead>
<tr>
<th>Welder Model</th>
<th>Grounded Side</th>
<th>Grounding Wire Size</th>
<th>Phase</th>
<th>Current (Amps)</th>
<th>Voltage (V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Motor</td>
<td>10 AWG</td>
<td>200</td>
<td>110</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>DC Motor</td>
<td>10 AWG</td>
<td>200</td>
<td>150</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>DC Motor</td>
<td>10 AWG</td>
<td>200</td>
<td>220</td>
<td>60</td>
<td>50</td>
</tr>
<tr>
<td>DC Motor</td>
<td>10 AWG</td>
<td>200</td>
<td>250</td>
<td>60</td>
<td>50</td>
</tr>
</tbody>
</table>

### CONTROL OF WELDING CURRENT

The Job Selector dial is divided into four sections. The yellow section marked "Large Electrode" provides a high open circuit voltage. The black section marked "Normal Welding Range" gives a medium-high open circuit voltage. The red section marked "Overhead and Vertical" is a medium-low open circuit voltage. The section marked "Special Applications" provides a low open circuit voltage which is used in conjunction with a minimum setting on the Continuous Current Control.

### CONTINUOUS CURRENT CONTROL

The Continuous Current Control provides the proper adjustment of welding current to suit each particular application. On older machines the Continuous Control has a single dial calibrated to express the form of the current waveform. With the use of the SAE-400, above Code 7638, this control has three separate colored scales. The colored pointer (or needle) correspond with the reading on the scale.

### FUSED MODELS

These machines consist of the same generator and controls as the multi-generator models but are driven by a 3/4 HP, electric motor or engine. The appropriate operating and maintenance instructions in the manual apply to the belted welder.

### INSTALLATION

The welder frame must be grounded. A stud marked with the symbol is located on the welding generator unit. Field personnel should do this purpose. See the National Electrical Code for details on proper grounding methods. The ground connection must be No. 10 AWG wire. If the older welder does not have a grounding stud, connect the ground wire to an unpainted frame screw or bolt.

### GENERAL INSTRUCTIONS

1. Blow out the welder and grounds with an air hose at least once every two months. In particularly dirty locations this cleaning may be necessary once every week. Use low pressure air to avoid driving dirt into the insulation.
2. Brass brushes are silver graphite and should not be greased. Keep the contacts clean.
3. Retain the Current Control through its entire range each morning. This eliminates the contacts and prevents the necessity of the contact "freeing." Do not use air while cleaning.
4. The meters on motor driven models should be inspected every six months. Any accumulated dust should be blown out of the mirror.
5. Keep electrode and ground connections tight.

### MOTOR PROTECTION (AC Motor Driven Only)

The AC motor is protected by a special device operated by both temperature and current. This device stops the motors if the weldings reach the maximum safe operating temperatures because of frequent overload, high room temperature, low or high input voltage. Protection is also ensured against excessive currents resulting from single phase or unbalanced line conditions. The thermostat automatically resets when the temperature reaches the operating level. Reset the motor by pushing the start button.

Cooling of the motor can be speeded by holding in the start button and operating the machine idle. CAUTION: To change polarity on DC motor driven models, interchanger the welding cables.

### AUXILIARY POWER OUTLET (Optional)

AC motor driven models can be furnished with a 1 KW auxiliary (1 kW standard on belt welder). This outlet provides 120 Volt DC power for operating intransient lights or DC power tools. When using a belt welder as a power source for tool, run the engine at the normal welding speed.

### MAINTENANCE AND TROUBLESHOOTING

**WARNING:** Have qualified personnel do the maintenance and trouble shooting work. Turn the power off using the disconnect switch at the fuse box before working inside the machine.

### REPAIRS

Your welder is equipped with double shielded ball bearings having sufficient grease to last indefinitely under normal conditions. Where the welder is used remotely or in excessively dirty locations, it may be necessary to add one ounce of grease per year.

When greasing the bearings, keep all dirt out of the area. Wipe the drive completely clean and use clean grease and equipment. Most failures are caused by dirt introduced while greasing from insufficient grease.

### COMMUTATOR AND BRUSHES

The generator brushes are properly adjusted when the welder is shipped. They require no particular attention. DO NOT SHIFT THE BRUSHES or adjust the rocker setting periodically inspect the commutators and brushes by removing the commutator cover. **WARNING:** DO NOT REMOVE or replace these parts while the engine is running. Commutators require little attention. However, if they are black or appear uneven, have an experienced mainte-
Apple iPhone 4
“Why would you want that?” “It wouldn’t be a good consumer experience.”
**oManual**

is the underlying format used for every guide on iFixit.com and MakeProjects.com.

We want to continue to improve this standard, find out more and join in at:

**www.oManual.org**

*Co-Authored by iFixit & O’Reilly Media*
This is an all-to-familiar sight. We’re here to help with this.
Installing iPhone 4 Logic Board

Replace a dead logic board in your iPhone 4.

Author: Walter Galian Difficulty: Difficult

Use this guide to replace your iPhone 4’s logic board.

**Tools**
- Phillips #00 Screwdriver
- Plastic Opening Tools
- Small Flathead Screwdriver
- Spudger
- iPhone 4 5-Point Pentalobe Screwdriver
- iPhone has external pentalobe screws
- iPhone SIM Card Eject Tool

**Step 1 — Rear Panel**
- Before disassembling your iPhone, be sure it is powered off.
- Remove the two 3.6 mm Phillips screws next to the dock connector.
- Apple has recently substituted the two Phillips screws with 5-Point “Pentalobe” screws. If your iPhone 4 has 5-Point “Pentalobe” screws instead of Phillips, please refer to the second picture.
- Remove the two 3.6 mm Pentalobe screws next to the dock connector.
- During reassembly, we recommend you replace the 5-point screws with equivalent Phillips screws. Our Liberation Kit provides the tools and screws.
Teach Action.

We make technical documentation come to life.

Sign up for the Beta

Guidebook

Community content platform that makes procedural manuals come alive

Answers

Q&A platform that transforms everyday conversations into structured knowledge

Dozuki
Step-by-step guides from your team or your community
Jellyfish Tank

From MAKE Magazine
This project first appeared on the pages of MAKE magazine.

Featured Guide
This project has been found to be exceptionally cool by the MAKE staff.

Convert a regular aquarium into a jellyfish habitat.

Author: Alex Anton  Time required: 3 to 6 days  Difficulty: Easy

I was always terrified of jellyfish as a kid. The thought of a slimy translucent blob just below the water’s surface that could deliver a painful sting kept me out of the ocean most of the summer. It wasn’t until years later when I collected a small jellyfish at the beach and observed it in an aquarium that I realized how stunningly beautiful they are. As it pulsed steadily and allowed its tentacles to flutter behind it, I was completely hypnotized. Soon, I decided to design and build an aquarium that could keep jellyfish alive and well. Convert a regular aquarium into a jellyfish habitat.

Jellyfish can’t live in a regular aquarium because they get sucked into the filtration pumps and liquefied. Using my extensive experience in building aquariums as part of my research projects at Duke and the University of Delaware, I developed a tank with a special water flow to keep jellies suspended in the middle of the tank. The jellyfish aquarium design described in this article has no dead spots for water flow, eliminates strong points of suction, and creates a laminar water flow pattern that sweeps the delicate jellyfish away from the edges of the tank.

Sections
Build the tank (optional).
Assemble the spray bar.
Make the exit screen.
Make the drain.
Assemble the bucket.
Install the spray bar.
Insert the flow sheet.

Relevant parts (continued)
PVC adapter, male pipe thread × slip, 1½”
PVC elbow, slip × slip, 1½”
Flexible epoxy
Teflon tape
Threaded bulkhead fitting, 1½”
Flexible hose, ½” diameter, 3” length
Mesh screen, cut to (width of tank + 2”) × (½ height of tank)

View
Edit
History

Biology
Biology Science.
Start a new guide

6 Projects
TurtleBot

A wonderful example of an OSH community on MakeProjects
10 Lessons Learned

Rules of engagement from growing the iFixit community.
I. Teach your community how to do it right
Teach the community what you’d like to see by setting the example.

Step 21
- The upper and lower cases are held together by seven release latches located on the back of the console. These latches are highlighted in red.

Step 22
- If you do not have an Xbox 360 opening tool, skip to the next step.
- Press the Xbox 360 opening tool down into the clips securing the lower case to the upper case near the I/O ports.
- While pressing down on the tool, push the lower and upper cases apart to separate the retaining clips.

Which one was submitted by a user? by staff?
2. Useful is Forever

Building in resiliency to your community project is invaluable.

Enable it to grow over time by allowing others the freedom to make changes.
Dear Andrew Bookholt,

I would personally like to thank you for all your hard work on creating the magnificent guides you have done over the last couple of years on the occasion of your retirement. These guides and the method of creating them will help a lot of people for a very long time. I wish you all the best as you move on to greater challenges in life. Your future contributions will be appreciated even more now that we're both at the same pay grade ;-) Who knows, you might even earn a tee shirt too.

Best Wishes on your future success,

Richard Mayer
4. If possible, be cause-oriented

Make an emotional connection with your community. Give them a goal.

Case in point:

Kyle is in Africa shooting a documentary right now.
5. Find an Enemy

Teach the community what you’d like to see by setting the example.

For example:

With Dozuki, our stand is against static documentation: it’s prone to irrelevance and error.
6. Be Intuitive

At iFixit, we are thinking of Soccer Moms and your Grandparents when we write our content, tweak our UI, or add functionality.

Step 2
- Lift the battery out of the computer.

Step 1 — Battery
- Use a coin to rotate the battery-locking screw 90 degrees clockwise.

We constantly get thank you’s from the elderly and technologically illiterate.
7. Be Accessible (Be Everywhere)
Try to be as portable (as accessible) as you can.
8. Responsiveness to community feedback is not optional

Show how much you respect your users by giving ear to and engaging your users.

Should iFixit staff be exempt from the reputation system?

There has been some discussion that it's unfair to include iFixit team members in the reputation rankings.

The primary reason this is an issue now is because on April 22, we started awarding reputation to repair manual authors from people facing things using their guides. When people follow a repair guide and click "I did it at the end, 30 points are distributed amongst the guide authors (just like the 30 points awarded for accepting an answer.)

Had we retroactively awarded reputation, our staff members (myself included) would have rocketed to the front of the reputation charts. We didn't think that was fair, so we gave iRobot ownership over legacy repair guides. Since I haven't personally written very many repair guides lately, my reputation is still relatively low.

We currently include our team members because we believe the reputation system is a metric of the community's trust in individual people, and that trust is born out in upvotes on answers and I didn't claims on repair guides. Reputation is just a number, but staff members like Ben and Walter have earned the points they have. Anyone else could do what they have and beat them in the reputation rankings.

That said, they were paid to do it—the guides that they write are how we've always supported our parts business. And I certainly understand the argument that this gives them an advantage. And this is a community-run site, I understand both sides, and I want to do what is best for the community. So let's put the decision to your. Should we exclude ourselves from the reputation system?

First, how things work now: iFixit team members earn and lose reputation like anyone else, and are listed on the iUsers page like everyone else. We have moderator privileges, but they're the same privileges anyone can have access to once their reputation is high enough (plus a few tools to make bulk changes easier).

There are a few options for changing things:

1. One way to make it fair for the team members is to remove them from the reputation system. This is a controversial solution, and it would mean that the team members would no longer have any influence over the reputation of other users. However, it would ensure that the reputation system is fair for all users, and that team members are not given an unfair advantage. This option would be the most straightforward solution, but it would also be the least popular.

2. Another way to make it fair for the team members is to make the reputation system more transparent. This would involve making the reputation rules more clear, and making it easier for users to understand how they can earn reputation. This would be a good solution, but it would require a lot of work to implement.

3. A third option is to have a separate reputation system for the team members. This would involve creating a separate reputation system for the team members, and making it clear that they are not included in the main reputation system. This would be a good solution, but it would require a lot of work to implement, and it would require that the team members be willing to work within the new system.

Whatever solution is chosen, it will be important to make sure that it is fair for all users, and that it is consistent with the goals of the iFixit community.
9. Reduce the community’s need for special tools

Give users what they need to have an seamless experience.

iFixit example: Image upload, markup & cropping = no need for Photoshop
10. Establish a voice

Write, Write, Write

iFixit, for example, focuses on teardowns (a specific type of article) as a content marketing strategy
Growth comes from adoption, Adoption comes from understanding, Understanding is hard.

Getting people who get it to like it is easy... Getting people to get it isn’t.