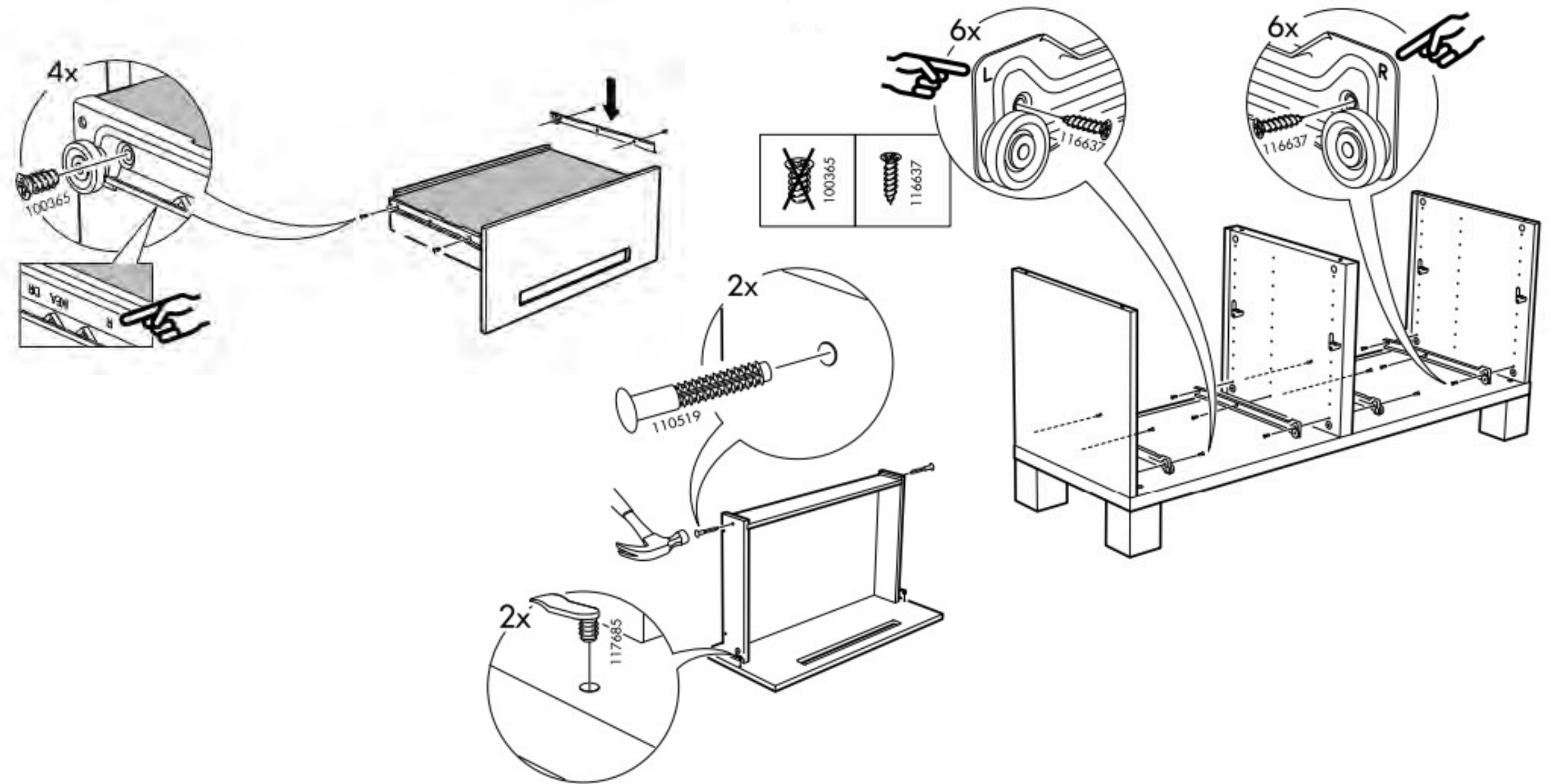# Dozuki

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.
I woman.

Ikea BESTÅ ÅDAL

Ikea BESTÅ ÅDAL

Lincoln Belted Welder 200A

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

The welder frame must be grounded. A stud marked with the symbol ⏚ located inside the control box is provided for this purpose. See the National Electrical Code for 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.)

Recommended Input Wire, Ground Wire and Fuse Sizes
Based on National Electrical Code
For 60 Hertz, 3 Phase Welders at 60% Duty Cycle

Welder Size	Input Voltage	Input Ampere Rating	Copper Wire Size Type 75°C in Conduit		Fuse Size (Super Lag)
			3 Input Wires	1 Ground Wire	
AC Motor SAE 200	230	44	8	8	80
	460	22	12	10	40
	575	18	14	10	30
AC Motor SAE 300	230	62	6	8	100
	460	31	10	10	50
	575	25	10	10	40
AC Motor SAE 400	230	78	6	6	125
	460	39	8	8	70
	575	31	10	10	50
AC Motor SAE 600	220	106	3	6	200
	440	53	8	8	100
	550	42.5	8	8	80
DC-DC SAE 400	230	120	3	6	175
	460	60	6	8	90
	575	48	8	8	70

"BELTED" MODELS

These machines consist of the same generator and controls as the motor-generator models but are driven by a PTO, electric motor or an engine.

The appropriate operating and maintenance instructions in this manual apply to the belted welders.

INSTALLATION

The welder frame must be grounded. A stud marked with the symbol ⏚ located on the welding generator support frame is provided for this purpose. See the National Electrical Code for details on proper grounding methods. The ground connector must be No. 8 or larger wire. (If an older welder does not have a grounding stud, connect the ground wire to an unpainted frame screw or bolt.)

Design the driving system to operate the generator at a steady full load speed (1800 or 1500 RPM as indicated on the nameplate). Build a rigid mounting which maintains accurate alignment through the driving system and minimizes vibrations transmitted to the welder. Use a flexible type coupling when connecting the generator shaft directly to the power source shaft. For belt driven installations, prevent excessive bearing wear by using only enough belt tension to avoid slipping.

Machine Size in Amps	Cable Sizes for Combined Length of Electrode Plus Work Cable (Copper) — 60% Duty Cycle		
	Up to 150 ft.	150 to 200 ft.	200 to 250 ft.
200	2	1	1/0
300	1	1/0	2/0
400	2/0	3/0	4/0
600	3/0	4/0	2-3/0

CONTROL OF WELDING CURRENT
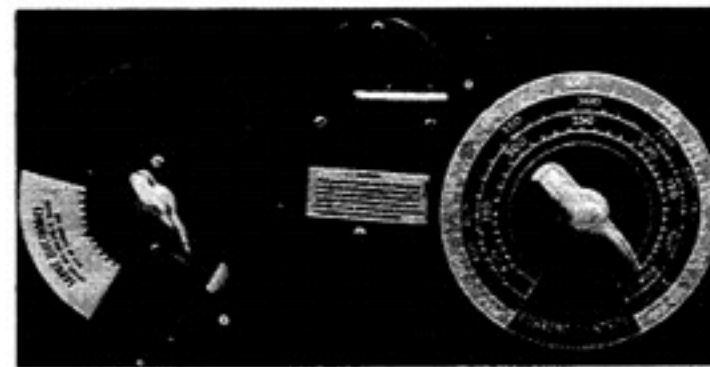
CONTINUOUS CURRENT CONTROL

The Continuous Current Control provides the major adjustment of welding current to suit each particular application. On older machines the Continuous Current Control has a single dial calibrated in amperes and three colored pointers. On the SAE-300, above Code 5006, and the SAE-400, above Code 7638, this control has three separate colored scales. The colored pointers (or scales) correspond

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.

To change polarity on DC motor driven models, interchange the welding cables.

AUXILIARY POWER OUTLET (Optional)

AC motor driven models can be furnished with a 1 KW exciter (1 KW standard on belted welders). This exciter provides 120 volt DC power for operating incandescent lights or DC power tools. When using a belted welder as a power source for tools, run the engine at the normal welding speed.

MAINTENANCE AND TROUBLE SHOOTING

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.

GENERAL INSTRUCTIONS

1. Blow out the welder and controls 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. Reactor brushes are silver graphite and should not be greased. Keep the contacts clean.
3. Rotate the Current Control through its entire range each morning. This cleans the contacts to lessen the possibility of the contact "freezing". Do not do this while welding.
4. The starter on motor driven models should be inspected every six months. Any accumulated dust should be blown out of the starter.
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 machine if the windings reach the maximum safe operating temperature because of frequent overloads, high room temperature plus overload, or abnormally high or low input voltage. Protection is also assured against excessive currents resulting from single phase or unbalanced line conditions.

The thermostat automatically resets when the temperature reaches a safe operating level. Restart 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:**

Models prior to code 3500 equipped with the optional two voltage switch cannot be cooled in this manner without burning out the NVR coil. If the reason for the disconnection was single phase or unbalanced line conditions, correct the situations before attempting to restart the motor. Serious damage will result if the start button is held in with these conditions present.

BEARINGS

Your welder is equipped with double-shield ball bearings having sufficient grease to last indefinitely under normal conditions. Where the welder is used constantly 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 fittings completely clean and use clean grease and equipment. More failures are caused by dirt introduced while greasing than 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 covers. **WARNING:** DO NOT remove or replace these covers while the machine is running.

Commutators require little attention. However, if they are black or appear uneven, have an experienced mainte-

Lincoln Belted Welder 200A

Apple iPhone 4

"Why would you want that?"   "It wouldn't be a good consumer experience."

?

?

Apple iPhone 4

oManual

Open XML-based, procedural documentation standard

oManual

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

Package Example

- ZIP compressed .omanual archive:
  - manifest.xml
  - MacBook-Core-Duo.xml
  - procedure-a/
    - procedure.xml
    - media/
      - step-1.jpg
      - step-2.jpg
  - procedure-n/
    - ...
  - media/
    - document.pdf
    - schematic.psd

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    <summary />
    <image>media/main.jpg</image>
    <author id="1">iRobot</author>
    <time_required />
    <difficulty>Easy</difficulty>
    <categories>
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Cover</a></li></ul></div><div class="tools"><strong>Tools</strong><ul><li><a
href="http://www.ifixit.com/Item/Coin">Coin</a></li><li><a
href="http://www.ifixit.com/Tools/Phillips-00-Screwdriver/IF145-006">Phillips #00
Screwdriver</a></li></ul></div>]]></introduction_rendered>
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Cover</part>
    </parts>
    <flags />
    <documents />
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    </prerequisites>
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along the rear wall of the battery compartment.</line>
                <line bullet="icon_reminder" level="0">The screws are captive to the m
cover.</line>
```

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 Galan ✎   Difficulty: **Difficult**

☆ x 0   💬 x 36   ✔ x 23

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

Sections
Rear Panel steps
Battery steps
Logic Board steps

Formats
📄 PDF
📄 XML
</> Embed

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

View: **Paginated** `Full width` **Slideshow** **Embed**

View huge
Image metadata
Copy to my images

View   **Edit**   **History**

iPhone 4

GSM / 16 or 32 GB capacity / Model A1332 / Black and White

Ask a question

Start a new guide

18	Step-by-step Guides	🔨
574	Solutions	
20	Parts	⚙

Step 1 — Rear Panel   Edit 💬

● 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

iFixit
A Wikipedia of repair

Image rich guides that present a painless path to repair for many devices

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

Make:Projects
build, hack, tweak, share, discover

▼ Eric | Reputation 1

Get Started » | Contribute » | Search

« Back to topic | Page 1 of 1 | View | Edit | History
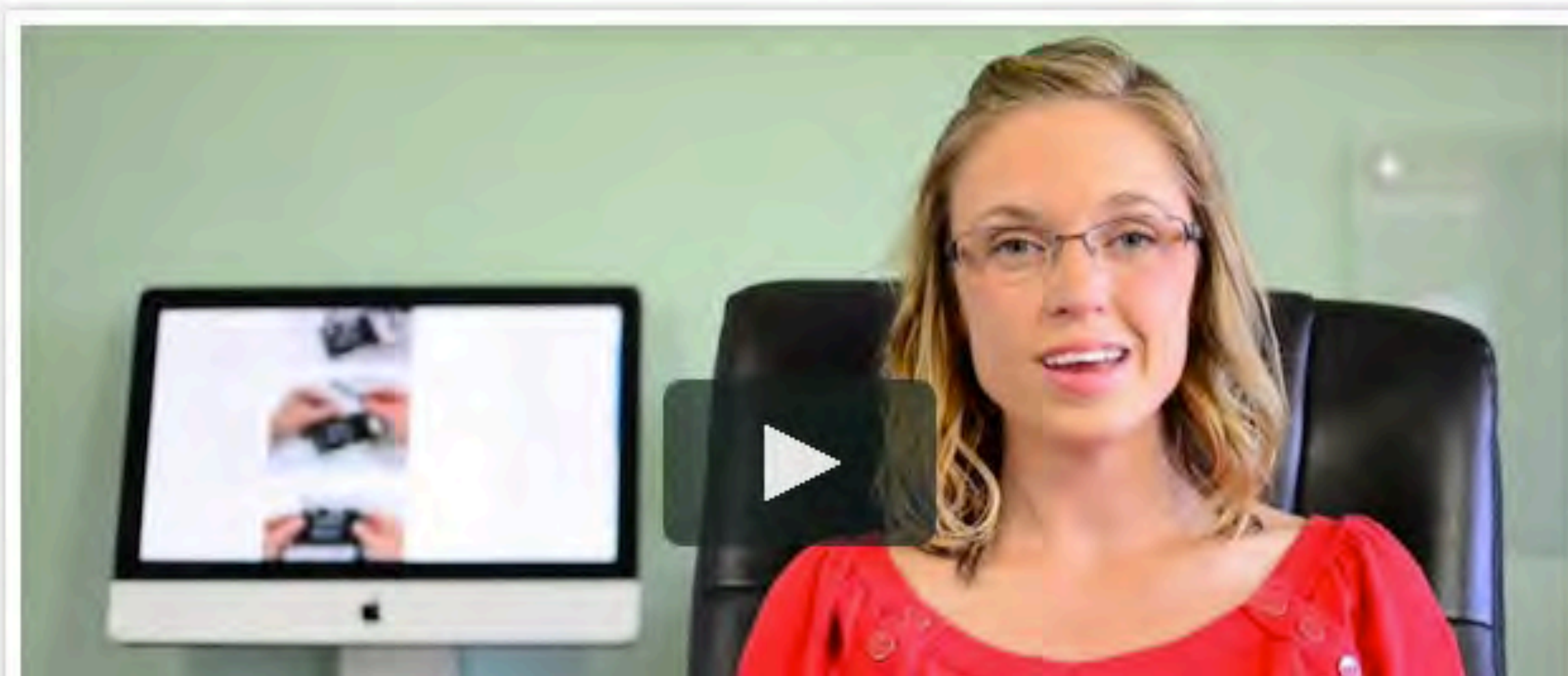
Jellyfish Tank

M: **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 Andon ✎   Time required: **3 to 5 days**   Difficulty: **Easy**

★ x 7   💬 x

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.

Biology

Biology Science.

Start a new guide

6 Projects

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"
Plastic epoxy
Teflon tape
Threaded bulkhead fitting, 1½"
Flexible hose, ½" diameter, 3' length
Mesh screen, cut to (width of tank + 2") × (½ height of

TurtleBot

A wonderful example of an OSH community on MakeProjects

10 Lessons Learned

Rules of engagement from growing the iFixit community.

Step 21   Edit

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

Step 22   Edit

- 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.

Step 5   Edit

- Lift off the top cover.
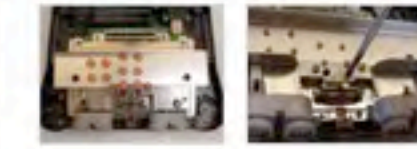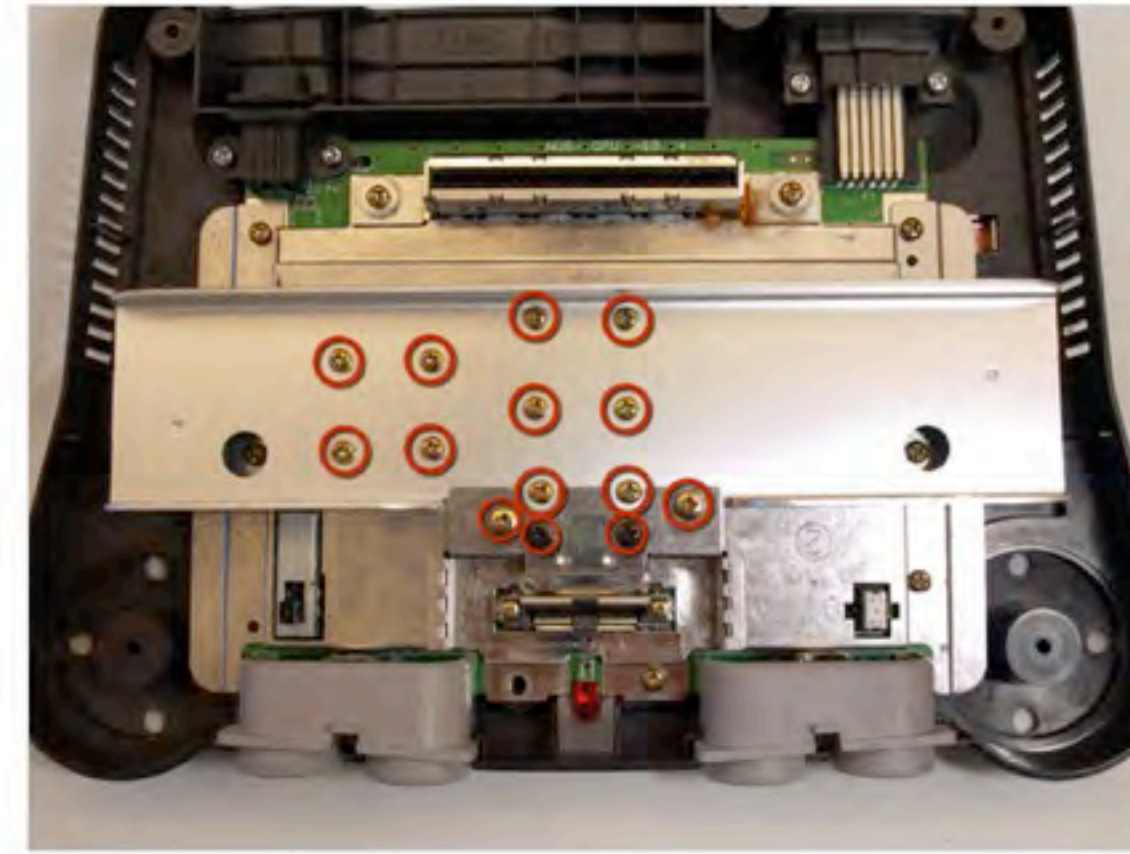
Step 6 — Metal Plate   Edit

- Remove the 14 screws shown using the large Phillips screwdriver.

Which one was submitted by a user? by staff?

July 20, 2011

Time	User	Activity
02:51 PM	michael ◆	Introduction edited
02:51 PM	michael ◆	Introduction edited
02:51 PM	michael ◆	Introduction edited

February 2, 2011

Time	User	Activity
12:14 PM	Andrew Bookholt ◆	Introduction edited
12:13 PM	Andrew Bookholt ◆	Introduction edited
12:12 PM	Andrew Bookholt ◆	Introduction edited

November 17, 2010

Time	User	Activity
01:07 PM	Andrew Bookholt ◆	Step #19 edited: TEXT
01:07 PM	Andrew Bookholt ◆	Introduction edited
12:58 PM	Andrew Bookholt ◆	Introduction edited

November 16, 2010

Time	User	Activity
04:43 PM	Andrew Bookholt ◆	Introduction edited
03:37 PM	Andrew Bookholt ◆	Step # edited: TEXT
01:33 PM	Andrew Bookholt ◆	Step #22 edited: TEXT
01:32 PM	Andrew Bookholt ◆	Introduction edited

November 15, 2010

Time	User	Activity
06:03 PM	Walter Galan ◆	Introduction edited
06:02 PM	Walter Galan ◆	Introduction edited
06:02 PM	Walter Galan ◆	Introduction edited

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.

« Meta Information

Editing step 1   delete step | insert step

- If you need to backup the data on your current hard drive, follow the instructions in this step. Otherwise, continue to the next step.
- On a Windows/OS X/Linux machine, format an external USB hard drive (with enough space available to backup your current hard content) into the FAT32 file system.
- Make sure it's formatted FAT32. The Playstation 3 backup utility will not recognize any other file system.
- Connect your formatted hard drive to the Playstation 3 through a USB port and power the console up.

Formatting help

- Navigate the XMB to the 'Settings' menu and select 'System Settings'
- Select the 'Backup Utility' function to create a backup of your data - this can take up to 2 hours if you have a lot of data on the PS3.

Save

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

A letter of thanks from a super user to a team member who recently left.

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   Edit
- Lift the battery out of the computer.

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

Grandma trying to understand social media
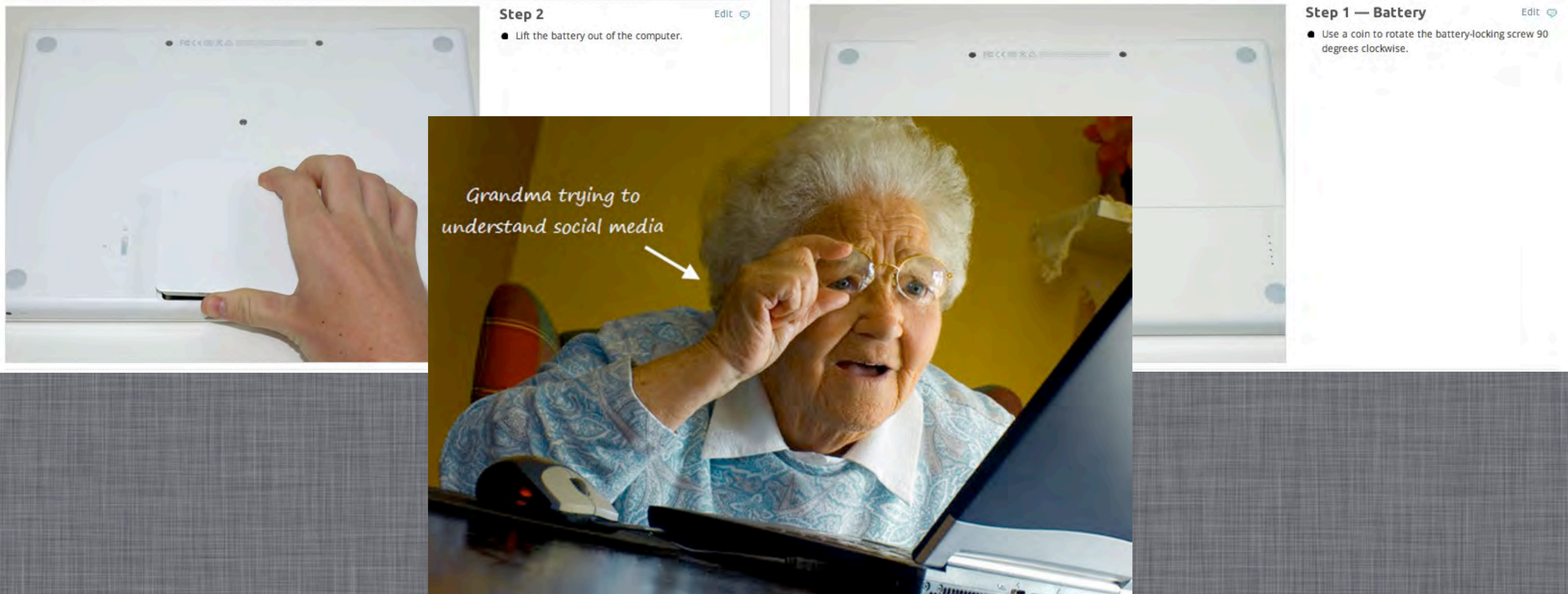
We constantly get thank you's from the elderly and technologically illiterate.

7. Be Accessible (Be Everywhere)
Try to be as portable (as accessible) as you can.

Write It Once… Read It Everywhere!!!

8. Responsiveness to community feedback is not optional
Show how much you respect your users by giving ear to and engaging your users.

ifixit *meta*   🔍   Eric ▾

« Meta Index

▲
6
▼
Score

Kyle Wiens
6.2k

Asked
Jul 9 2010
12:19 AM

Should iFixit staff be exempt from the reputation system?

History • Actions • Add Comment

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 fixing 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 did it' 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 have 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 I'll put the decision to you: 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 /Users 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:

Tags
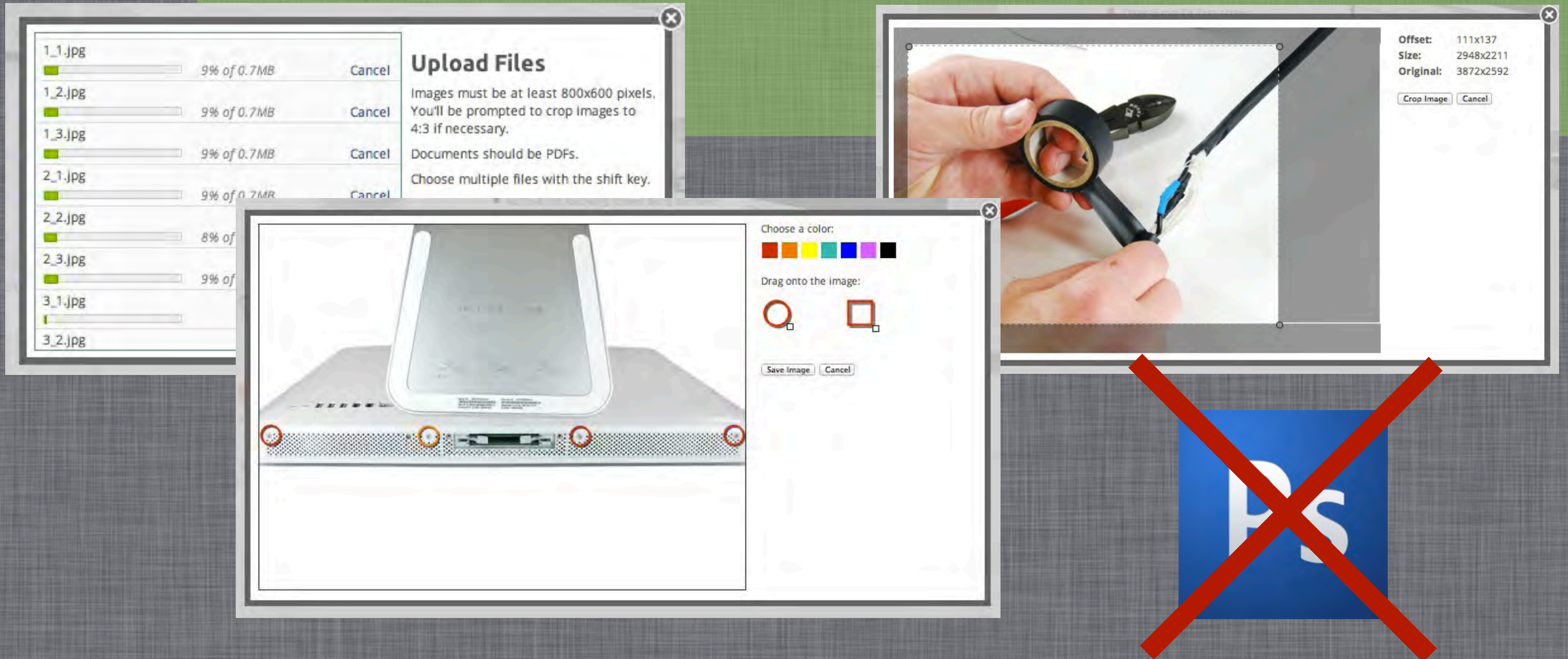community-policy
reputation

Stay involved
⊕ Watch for new responses

Statistics
today	0
this week	15
this month	7
all time	865

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

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.

Dozuki

Eric Craig Doster
Eric@Dozuki.com
@EricDoster