

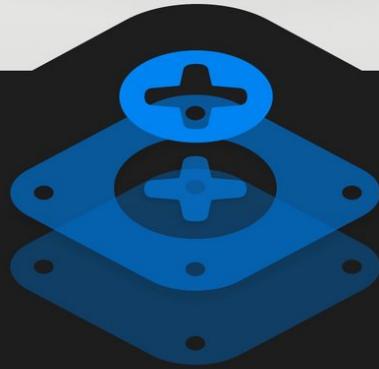


# Lightsaber Teardown

Slothfurnace ANH Obi-Wan Kenobi Lightsaber teardown on May 4, 2015.

Written By: Geoff Wacker

# Lightsaber



# TEARDOWN

## INTRODUCTION

No, we're not having delusions of grandeur—this is the weapon of a Jedi Knight. And we're dying to see how it works. Today, we tear down a lightsaber.

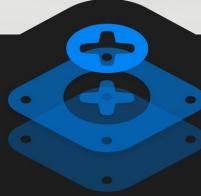
We would be honored if you would join us. Check us out on [Facebook](#), [Instagram](#), or [Twitter](#)!

### TOOLS:

- [Spudger \(1\)](#)
- [Tweezers \(1\)](#)
- [Nylon Tipped Tweezers \(1\)](#)
- [The Force \(1\)](#)
- [64 Bit Driver Kit \(1\)](#)

## Step 1 — Lightsaber Teardown

# Lightsaber



## TEARDOWN

- Listen up, nerfherders: We've got a **lightsaber** on the teardown table. Before we dive in, let's take a look at the specs:
  - Manufacturer: Obi-Wan Kenobi
  - Crystal: single blue Adegan crystal
  - Production date: 22 BBY (Before Battle of Yavin)
  - Length: 15.8 cm

*(i)* While historians debate which was the most effective saber design, our teardown unit hails from the old school: single blade, fixed length. [No fancy crossguards here.](#)

## Step 2



- Do you have the death sentence on twelve systems? Do you frequent wretched hives of scum and villainy? Then you probably don't want to see this saber firing up.
- If only we were Force adepts, we could release this interior clasp with a simple wave of the hand. Instead, we nudge it free with the tip of a spudger, revealing the crystal chamber.
- *(i)* Seeing as this is his [third lightsaber](#), Master Kenobi must have had long-term repairability in mind during its construction—it's incredibly easy to access the crystal chamber, with its single Adegan crystal.

## Step 3



- We'll get back to that crystal chamber a bit later. For now, we set out to open the saber itself.
- Let's start by unscrewing this clamp pin that secures the switch housing cover.
- With the pin removed, we're able to lift the clamp brackets out with no trouble.

**i** It seems Obi-Wan saw fit to include a charging port on his lightsaber. Lucky for us, he decided to use a standard DC barrel jack connector.

- Unscrewing this small retaining ring loosens the port from the housing cover.

## Step 4



- We quickly dispatch a few tiny set screws securing the clamp to the body of the lightsaber.
- With the set screws removed, we extract the [activation stud](#).

**⚠** Pro tip: Sith happens. Fortunately, it's now impossible to ignite this saber by accident. For safety's sake, those of you tearing down a lightsaber at home should follow a similar procedure.

## Step 5



- Turning our attention to the top of the saber, we release the emitter shroud for inspection.
- The shroud appears to contain some sort of magnetic stabilizing ring.

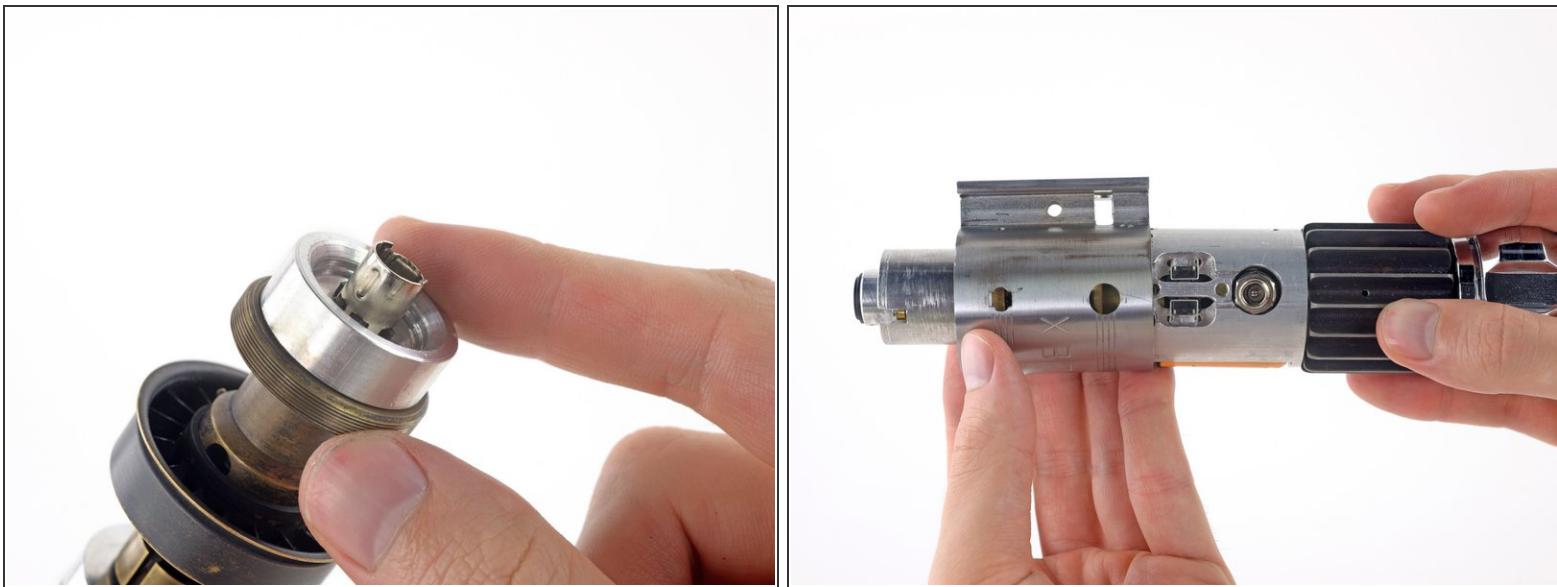
**⚠** We're not 100% sure what a *non-magnetically stabilized* lightsaber beam does, but we're guessing it would be wise to put this back when we're done.

## Step 6



- At first, we're a bit stumped by the crystal chamber cover. Turns out it's quite easy to remove with a half-twist and some well-targeted pressure.
- We subject the cover to a small battery of tests; it's made of an unknown material that is both nonmagnetic and nonconducting.
- With its smooth inner surface and segmented exterior, this looks designed to protect the wielder from the saber's extreme energy output, while possibly providing a small measure of cooling for the internals.

## Step 7



- With the shroud removed, the blade emitter comes into full view.
- Some say this ancient weapon is no match for a good blaster at your side. Whichever view you take, you have to respect this kind of craftsmanship.
- At this point, we've cleared the way to slide the clamp free and expose the switch housing.

*(i)* Being photography buffs, we can't help but notice this clamp bears a striking—but entirely coincidental—resemblance to a 3-cell [Graflex flash handle](#).

## Step 8



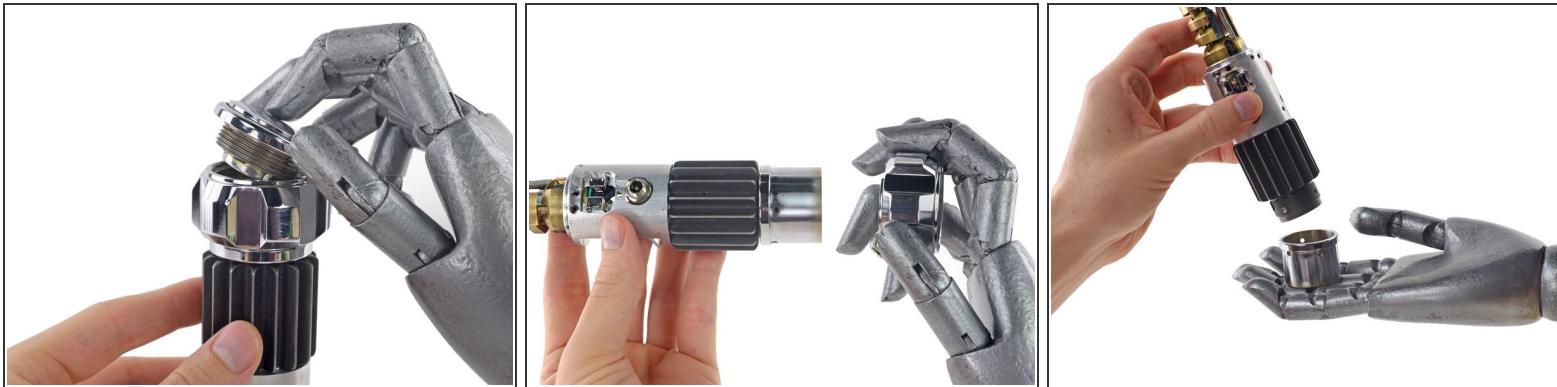
- We carefully remove the activation stud control bar.
- *Stay on target...stay on target...* We use our tweezers to make a trench run and take out a few nuts, loosening the next stage of the cylinder.

## Step 9



- You won't find any regular old lithium ion batteries here! This lightsaber features a [diatium power cell](#).
- *The Force is strong with this one*—the recharge port seems a tad redundant, as a properly-maintained diatium power cell will last indefinitely.
- *i* The parabolic blade continuously recycles the power cell's energy output whenever the saber is not in contact with other objects.

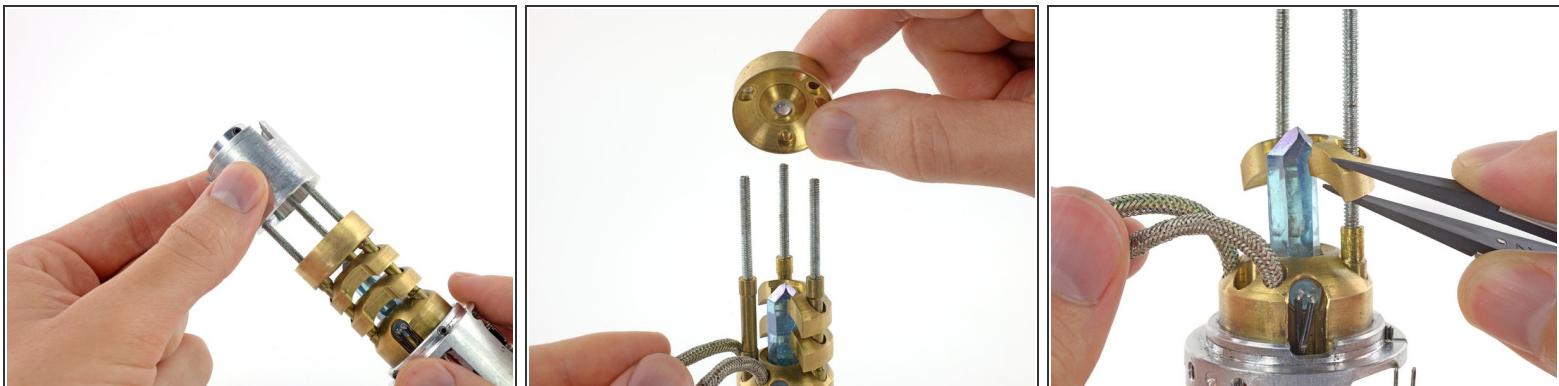
## Step 10



**⚠** We had a slight weapons malfunction, but everything's perfectly all right now. We're fine—we're all fine here now, thank you.

- In case of any more surprises, we [get a hand](#) from a friend.
- **(i)** Lightsabers are the leading cause of dismemberment in the quadrant; be sure to take precautions during repairs.
- Next we unscrew the pommel cap, hoping to find a backup power cell.
  - No luck—we're able to remove an intermediary collar, but we don't find a reserve power cell.
  - Time to get a closer look at that crystal chamber.

## Step 11

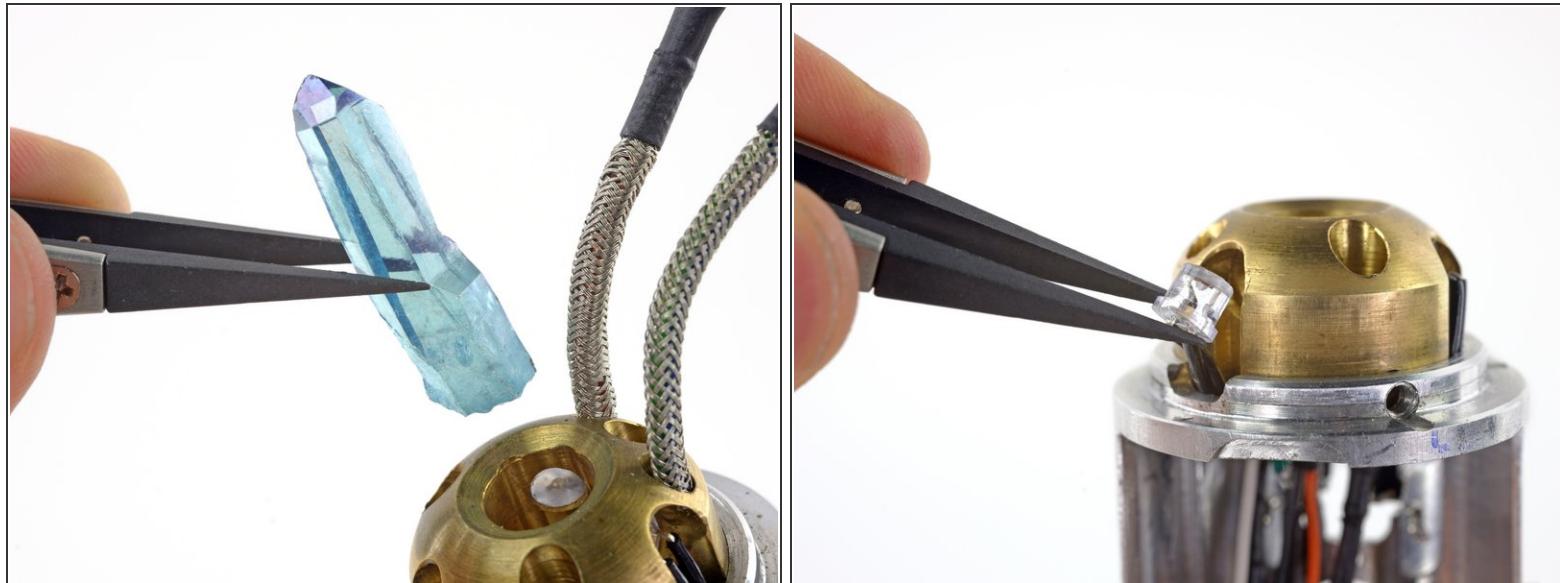


- That's no moon—it's the focusing crystal.
- We gingerly remove both the cycling field energizer and the focusing crystal activator from atop the crystal chamber.

**⚠** Misaligned crystals could cause a lightsaber to explode the instant it's powered on.

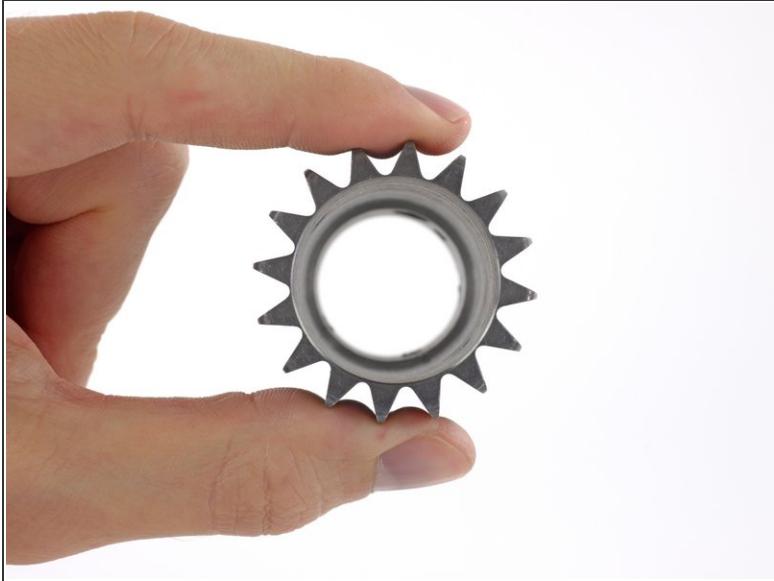
- Excited to get an unobstructed view of the primary crystal, we pull back the energy modulation circuits—and lift away the crystal chamber cooling fins.

## Step 12



- We finally arrive at the heart of the lightsaber, the primary crystal.
- This particular lightsaber uses a blue [Adegan crystal](#), typical of a Jedi. Sith lightsabers are commonly made with synthetic red crystals.
- *(i)* Arguably the most important component, Adegan crystals are known for their Force-sensitive properties. Once properly attuned to the Force, a crystal is built into the lightsaber. Over time, the crystal will form a special bond with its wielder.
- We peel away the three neatly packed crystal energizers from the primary crystal housing.

## Step 13



- We slide the rear grip and inert power insulator from the hilt.
- Though the rear grip resembles a heat sink, this design avoids the dramatic overheating problems seen in [early lightsabers](#).
- Looks like the extra space down here might be for upgrades, or possibly for the expert balance Obi-Wan surely requires of his saber.

① With the disassembly complete, how will this beautifully crafted weapon fare in the repair arena?

## Step 14



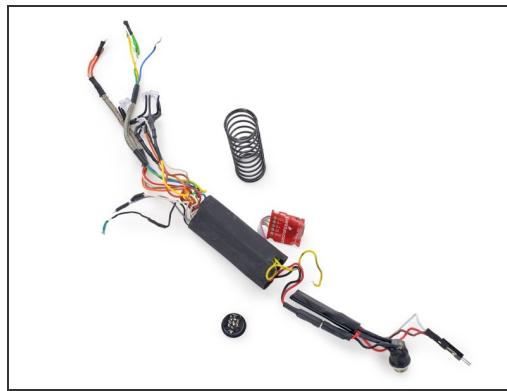
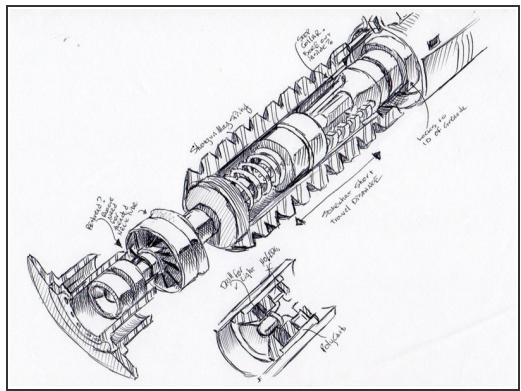
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### REPAIRABILITY SCORE:



- Lightsaber Repairability Score: **10 out of 10** (10 is easiest to repair)
  - Extremely durable components make the need for repair unlikely outside of severe combat damage.
  - Robust diatium power cell lasts the life of the device.
  - Recharge port allows for topping up the power cell in extreme circumstances.
  - No adhesive anywhere; all components are removable with basic tools.
  - Replacing the rare Adegan crystal requires a trip to remote star systems, or paying a hefty fee to an enterprising smuggler.
- Lack of published repair documentation means you'll have to rely on your Jedi abilities to figure all this out. (But the Force has a strong influence on our weak minds, so we're still giving it a 10/10.)

## Step 15



- And now for the bits we didn't show you—because while lightsabers exist in a galaxy far, far away, this particular piece of Jedi kit was built by a true sabersmith here on Earth.
- Many thanks to the amazingly talented Brad Lewis, who generously loaned us one of his hand-crafted, better-than-movie-accurate lightsaber replicas for this teardown. You can see his complete build log for this lightsaber, and many others, at [SlothFurnace.com](http://SlothFurnace.com)—or, check him out on [Facebook](#) or [Twitter](#)!
- Thanks Brad! *And may the Force be with you—always.*