

BLADE PLUG CHARGER BUILDING INSTRUCTION

This is the manual for the Blade Plug Charger only.
It shows how to install the electronics and put together all parts.

only recommended for experienced model builders

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1. Foreword

Thank you for choosing my parts for your own Graflex based Lightsaber project.

The mb-sabers Graflex chassis design has been continuously developed and improved for over 3 years. MB-sabers focused on this one chassis design to create the best possible chassis for Graflex based Lightsaber.

A lot of experience and passion has gone into this design. And of course mb-sabers will continue to work on improving this chassis and adapting it to customer needs in the future.

The Metal Master chassis design allows individual parts to be simply exchanged for the old version after further development. This often allows a complete chassis to be updated without having to re-buy all parts.

For creative design

MB-saber products have a lot room for individual custom designs.

Use the basic parts and add self designed parts and elements to it.

For experienced hobbyists

Editing and assembling the individual parts is not easy. 3D printed parts are not that accurate as CNC machined parts. Adjustments always have to be made. A proper workspace and professional tools are absolutely necessary. I only recommend building one of my chassis for experienced hobbyists.

Responsibility

3D printed metal is conductive. The installation of all electronic parts must be done with care! MB-Sabers cannot be held responsible for improper use or assembly of the Metal Master Saber Chassis.

Print materials

The Metal Master chassis is specially developed for metal 3D printing. Most parts are available as 3D prints. These parts are designed for precious metal materials. These materials have the best accuracy and usability. They can be drilled, cut and tapped very easy.

However, most parts are also available in steel or nylon plastic.

2. Tools

- sandpaper (240 grain and 600 grain)
- small slot screwdriver
- scalpel / small cutter
- glue (Pattex repair EXTREME and Epoxy)
- Loctite 648
- files with diamond grid (small and medium)
- soldering-iron and solder
- shrink tubing
- belt sanders small (for example Proxxon)
- power tool (Dremel or Proxxon)

3. Additional parts

- 7/8" Poly carbonate Tube 42-43mm
- 5.5mm charge port
- Blade connector PCB
- 0.21 mm² (AWG 24) **PTFE** wire

<https://www.mb-sabers.com/shop>

4. 3D print parts

[Blade Plug Charger HEAD](#)

[Blade Plug Charger TUBE](#)

[Blade Plug Charger PLUG](#)



5. Installation

! Safety first !

Please remember that metal materials are conductive! You have to make sure that the battery contacts are well insulated as well as all other electronic parts.

Do not mix up the electronic poles. Install the contacts like shown on the pictures.

Electronic wire

Use PTFE wire. PTFE has the smallest profile.

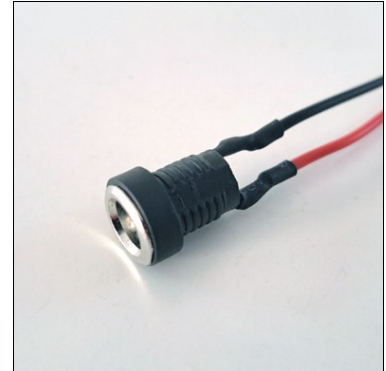
function	AWG	mm ²
speaker	26	0.14
single Pixel	30	0.05
Pixel data	30	0.05
+ battery to + Soundboard	24	0.21
- battery to - Soundboard	22	0.32
+ battery to + pixel blade	22	0.32
- pixel blade to Soundboard	22	0.32
motor	28	0.09
Plasma Gate Pixel PCB	26	0.14
USB port D+/D- to Soundboard	34	0.02
USB port <> charge PCB	28	0.09
Battery <> charge PCB	28	0.09
AUX/ACT switch	34	0.02
Accent smd LEDs	34	0.02

Blade Plug Charger

5.5/2.1 mm charge port

**!!! IMPORTANT !!! Check the polarity of your charger first.
Usually the pin is positive (+) and the tube is negative (-)**

Add wires to the solder points of a 5.5/2.1mm charge port.
Insulate them with shrinking tubes.



Install the charge port into the Blade Plug Head. Add the nut with screw lock.

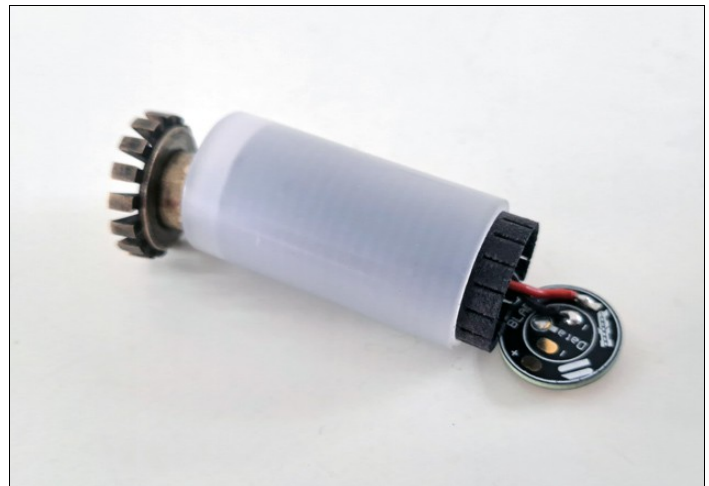


Glue the Blade Plug head with installed charge port onto the 3D printed Blade Plug Charger TUBE.

Guide the wires through the tube. Solder the wires to the solder pads on the back of the connector PCB.

Let the connector PCB snap into the the holder at the end of the 3D printed tube.

Cut a Poly-carbonate tube to 42-43mm length. Make sure the ends are planar and parallel.



Insert the 3D printed tube with installed head and connector into the Poly-carbonate tube.
If it's too tight, sand the 3D printed tube till it fits into the Poly-carbonate tube.

Glue the 3D printed plug into a GRAFLEX cylinder.



DONE :)

