



BB-8 BUILDERS CLUB CHARTER & RULES

V1 – Updated 10/7/2015

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I. “Mission Statement”:

The “mission” and purpose of The BB-8 Builders Club is two-fold:

1. We will promote interest in ‘Star Wars’ and its fandom by allowing others to become a part of the Maker movement. We truly believe anyone can build their own Droid of some kind (even BB-8), and will do our best to encourage anyone interested in becoming a part of this hobby.
2. We will follow the example set by Lucasfilm Ltd. by giving back to the community via fundraising charity and volunteerism at events and appearances.

II. Our Four (4) Simple High-Level Guidelines:

1. Have fun! Enjoy building and showing your custom fan-built version(s) of BB-8!!
2. Don't be a jerk to other members .
3. Don't employ "mercenary" tactics and/or use this Club for personal profit. Our spirit is one of openness and sharing.
4. Be aware that BB-8 and Star Wars is Lucasfilm Ltd/Walt Disney Company intellectual property, and respect the protection their copyrights provide.

III. BB-8 BUILDERS CLUB RULES

A. ETIQUETTE & BEHAVIOR

Don't be mean or evil. Treat everyone with respect and like how you would like to be treated. Do not engage in personal attacks and do not post obscene, indecent, hateful, offensive, defamatory, abusive, harassing or profane material.

Break this rule (i.e. be a troll or act like a jerk to other members) and you are subject to suspension and/or banning from the Club. [See IV. Rules Enforcement]

B. CLUB DESIGNS, PARTS, PART RUNS & SALES

All official club designs, schematics, plans and documentation are to be released and shared via an open-source license with Share-alike, and are to be attributed and for non-commercial use only. All members of the Club who design our make BB-8 parts are required to conform with our open-source policy and share the plans freely with other Club members.

The Club will strive to create Specifications (or "Specs") for accurate BB-8 Parts that will allow for modular development. While initial parts are being designed and made for 3D Printing, eventually parts will be able to be created in various media (Fiberglass, Aluminum, etc.)

Members will occasionally be allowed to offer individual BB-8 Parts. In specific, "Parts Runs" for those who do not have the ability to create their own parts with 3D Printers, tooling equipment, etc. These Parts Runs will be closely monitored by the Club Administrators. Though the Club will not be held liable or responsible for any transactions between individual private parties we will do our best to ensure fair trade and enforce any rules violations. Club members WILL NOT be allowed to "rip off" other members. To that end, it will be suggested that any monies required for BB-8 Parts in Parts Runs only be accepted when the items in questions are in hand and ready to ship. The prop replica hobby has a dark history of people who have accepted up-front payments for parts runs which were either heavily delayed, or never delivered at all. The BB-8 Builders Club will do its best to prevent this from happening. Further, any BB-8 parts suppliers will be required to properly accredit those who created the plans from which the parts were made. (For example, all current .STL files used for 3D Printed parts are to be credited to The BB-8 Builders Club and Michael Erwin & Tiny Panganiban).

The selling of Complete BB-8 Kits or the private commissioning of complete BB-8s for sale is strictly prohibited by both Lucasfilm/Disney and The BB-8 Builders Club.

Fail to adhere to these Design, Parts and Sales rules and you are subject to suspension and/or a Lifetime ban from the Club. [See IV. Rules Enforcement]

C. CLUB “SWAG”

The BB-8 Builders Club is based on a copyrighted property (‘STAR WARS’) and is not authorized to profit from the sales of merchandise bearing images or ideas from this intellectual property owned by Lucasfilm Ltd (a Walt Disney Company).

Promotional Materials (herein known as “Swag”) created to promote or advertise The BB-8 Builders Club will be available only to members of the Club, and at cost (which can include time spent). “Swag” is **not** to be sold to the general public outside the Club’s official website(s) or social media pages. Any use of the official Club logos will require the following text: © & ™ Lucasfilm Ltd. All rights reserved. Used under authorization.

Fail to adhere to these Club “Swag” rules and you are subject to suspension and/or a Lifetime ban from the Club.
[See IV. Rules Enforcement]

IV. Rules Enforcement

ETIQUETTE & BEHAVIOR VIOLATIONS:

- a. First Offense: Official Warning
- b. 2nd Offense: Temporary Suspension from the Club
- c. 3rd Offense: Banning (depending on the offense, this can be a timed ban, or a lifetime/permanent ban)

VIOLATIONS OF CLUB DESIGN RULES, PARTS & SELLING GUIDELINES/SWAG GUIDELINES OR LEGAL INFRINGEMENT:

- a. Suspension and/or Lifetime Ban from the Club

V. Legal Disclaimers

The BB-8 Builders Club is a not-for-profit Star Wars fan group dedicated to building life-size, working replicas of BB-8 and other Droids from "Star Wars: The Force Awakens" and the Star Wars series. Star Wars, its characters (including BB-8) and all associated items are the intellectual property of Lucasfilm. © & ™ Lucasfilm Ltd. All rights reserved. Used under authorization.

The Club itself is not responsible for the behavior and actions of its individual members and bears no liability, but Club Admins will enforce all stated rules to the best of their ability.

About the *BB-8 Builders Club*

Started in April 2015, The BB-8 Builders Club (or "BB-8 Builders") is already an active international 'Star Wars' fan group dedicated to building life-size, working replicas of the new Star Wars Droid, BB-8. Making its debut with *Star Wars: The Force Awakens*, BB-8 has already captured the hearts and minds of 'Star Wars' fans and others all over the world.

Founded by a handful of current members of the R2-D2 Builders Club, the BB-8 Builders began forming just after Star Wars Celebration Anaheim in April 2015. Ever since that seminal event (in which a working, practical BB-8 rolled out onstage during a special presentation for *The Force Awakens*) the Club has gathered detailed information & photos and has done painstaking analysis from everything available in order to generate and share official sets of Club plans that will assist members in the construction of their own BB-8.

All BB-8 plans created and generated by the Club will be open-source and publicly available for fair use.

The "mission" and purpose of The BB-8 Builders Club is two-fold:

1. We will promote interest in 'Star Wars' and its fandom by allowing others to become a part of the Maker movement. We truly believe anyone can build their own Droid of some kind (even BB-8), and will do our best to encourage anyone interested in becoming a part of this hobby.
2. We will follow the example set by Lucasfilm Ltd. by giving back to the community via fundraising charity and volunteerism at events and appearances.

The BB-8 Builders Club will use the Internet as a common means to communicate as well as gather and share information regarding BB-8 building and all club activities. The Club is organized and policed by a group of Administrators (or "Admins"), including members with direct relationships with Lucasfilm Ltd.

Anyone with an interest in BB-8 or building a Droid is welcome to join the BB-8Builders Club, and there are no Club Dues or Fees.

Online Presence

The official website of The BB-8 Builders Club will be located at www.bb8builders.club

Currently, the full website is under design and development. But to get things underway the Club is using Facebook as its defacto "home" on the internet and the main portal of communication and collaboration. The official **BB-8 Builders Club Facebook Group** can be found at <https://www.facebook.com/groups/BB8BuildersClub/>

Other Internet & Social Media:

- **Twitter:** <https://twitter.com/bb8builders>
- **Instagram:** <https://instagram.com/bb8builders/>

Original Club Founders & Administrators

Cameron Ross
Michael Erwin
Tiny Panganiban
Steele Smith
Carl Cunningham
Geir Sire
Chris James
Lars-Åke Siggelin
Børge Vasshus
Johnathan Burton
Benjamin Lewitt
Chris Lee

Research & Development, Specs and Parts Engineering

Tiny Panganiban (3D Development, Initial Testing)
Michael Erwin (R&D, Engineering, Initial 3D Printing Development & Testing)

Børge Vasshus (Alpha Tester)
Chris James (Alpha Tester)
Brian Munger (Alpha Tester)

Media & PR Inquiries

Carl Cunningham
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Other

Doug Goreas (Club FAQ)
Kurt Zimmerman (Honorary First Official BB-8 Builder – November 2014)



BB-8 Builders Club Facebook Page FAQ

Welcome to the BB-8 Builders Club Facebook page. We are a collective of individuals who are interested in building a 1:1 replica of the BB-8 droid from “Star Wars: The Force Awakens”. This is a place where you can ask questions, get help and offer help to other builders.

We ask that you;

- Be respectful of others by avoiding name-calling or derogatory comments. There are a lot of things to learn and not everyone here has the same knowledge or skill level.
- Please refrain from posting anything that is not related to the building or designing of BB-8 or its associated systems.
- The information and files that are posted here are for your own personal use and are not to be added too or modified for any commercial use (please see the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International Licence in the files package - (READ ME T&M Part – Instructions Guide to 3D Printing, Assembling & Finishing - pages 35-39).

Q: Where do I find the files and documentation?

A: <http://tiny.cc/BB8Builders>

Q: I see people who are building/printing BB-8 and say they are #notbuildingbb8. I am confused...

A: *Chris James says “Right after the very first trailer where BB8 raced across the screen, I kept on being asked if I was building one and I flat out said no. And given that there's around 3 months before the next movie. I really don't think I can get one done so I'm officially #NOTBUILDINGBB8”*

Q: What color orange should I use?

A: *Michael Erwin and group, have tested a plethora of colors from a multitude of sources. Here is the recommendation – (READ ME T&M Part – Instructions Guide to 3D Printing, Assembling & Finishing – page 14)*

Q: Where can I purchase a sphere from?

A: *There are a number of sources - (READ ME T&M Part – Instructions Guide to 3D Printing, Assembling & Finishing - page 33)*

Q: Can a friend buy filament and have me print the parts for them?

A: *Yes. You can also use any commercial printing service to print them (but it might be expensive).(READ ME*

Q: I have a 3D printer and would like to make parts available to other builders. How much should I be charging for my parts?

A: Our interpretation is non negotiable: Non-Commercial. The point is to just cover costs. The focus is to help others build their own BB-8, enjoy the community, and make an exciting new character come to life. (READ ME T&M Part – Instructions Guide to 3D Printing, Assembling & Finishing - page 3-5).

Q: Can I post on the RPF or R2Builders that I am available to print the 3-D files for BB-8 to other members?

A: The PDF guide has guidelines to follow regarding this subject. Also, we are wanting to keep all of this "in-club", and sharing our files with other groups (like the RPF) isn't kosher especially at this point. The current files have been released in good faith for people to use for themselves, not to share with the world or have open commissions, etc. We have no issue with builders printing the dome part files for others with a simple caveat, the files are still beta. We'd recommend you do it for members in this group and only the dome files at this time. This will help all of us answer questions or address issues that may arise. Please keep in mind these parts are our interpretation of what we see and what we estimated the measurements to be. If you haven't read the guide, please follow the guidelines we outlined in the guide (v016). We also recommend you include a printed copy of the guide with the parts you print. If you'd like to invite those wanting the parts to the BB-8 Builders group, that would be fine. As we release the body and hamster part files, we'll announce their GA release here. -T&M.

Q: Is there a BB-8 "Kit" available?

A: As with R2 in the R2-D2 Builders Club & Astromech, we can also not condone the selling of complete "BB-8 Kits". Lucasfilm has made it clear for a very long time that this would not be cool... and that was BEFORE the Disney acquisition. Parts and bits here and there will be fine, but selling completed BB-8s will be a big no-no. This is a BUILDERS club, and the intent is for folks to make (or acquire) parts and make a BB-8 for themselves. Full, turn-key kits will not be permissible. Further, It's still frowned upon (and not permitted by Disney/LFL) to sell a completed R2, unless the builder is getting out of the hobby or is having a financial hardship, etc. It will be the same with BB-8. The only exception is obviously for licensees, and right now only Sideshow and eFX have licenses for full-size droids.

Q: How did you determine the size of the sphere?

A: Through careful examination and comparison of photos and local knowledge we were able to determine that the diameter was either 20" or 500mm. Further research by our technical staff determined that the correct size was in fact 20" and that a certain plastics company in California was the place to buy from.

Q: There seem to be differences in the on screen (stage) version seen at SWCA and the one that was on display in the costume room (static).

A: Yes, we now know (from a reliable source) that there are as many as 8 different versions that were built so far by the Creature FX team in the UK.

Q: How long does it take to print all of the parts here?

A: On a Makerbot Replicator 2, using Makerbot Desktop, with the settings outlined in the Guide, right at 60 hours. It's repeatable, like clockwork. Have a different printer, or using a different slicer, or even different settings, your mileage may vary.

Q: How long does it take to assemble, paint & weather the Dome?

A: Having done several of these now, it takes about 12 hours. It's an easy weekend project.

Q: I have read the guides and the FAQ here and I have a question that's not answered in either of the current DOME PDFs in the file URL, What do I do?

A: Great ask away, just realize you are taking time away from us working on the body files and we have a deadline #121815 to have as many rolling BB-8s as possible. Hopefully, we'll jump in to answer or maybe one of the other initial testers will help.

Q: I love this, now I want to buy a 3D Printer?

A: Fantastic! However this isn't the place to discuss that. See the general 3D printing section (Astromechnet.net). Or find us at a CON, we'll be MORE than glad to give you our opinions on printers and there are numerous variables. This also turns to a religious debate, but it's kind of hard to beat an Ultimaker 2 with Simply3D, from what we have seen.

UPDATE: We know that there are also a lot of other machines that will print just fine. Such as :

FlashForge - <http://www.flashforge-usa.com/> <http://www.ff3dp.com/>

Makerbot - <http://www.makerbot.com/>

Qidi - <http://qidi3dprinter.en.ecplaza.net/> (found on EBAY)

Solidoodle - <http://www.solidoodle.com/>

CTC - <http://www.ctcprinter.com/> (found on EBAY)

Makergear M2 - <http://www.makergear.com/>

NOTE: as long as the print area meets or exceeds the recommended build area (see next Question).

Q: How big does my printer build area need to be to print these files?

A: We recommend 22.5cm x 14.5cm x 15.0cm for the dome. We're trying to optimize the body files for this size as well.

Q: What software do I need for my 3D printer?

A: Some people have been able to use the software that comes with their printer. Things to remember are to make sure that you have the latest version. It has been noted that Cura may be problematic at this time. The majority of people printing use Simply3D (<https://www.simplify3d.com/>) . Yes it costs (\$149.00 USD), but we are getting excellent results and there is a large user group here to answer questions on it.

Q: Can I have the "native" source files?

A: Simple answer: No, why do you need them? Long answer is that we made these as integrated parts, not as large dome or body just to slice. This isn't just a 3d model. We released the STL files to keep things easy for us to support. However, if you wish to import the STL files into your favorite tool, be our guest. Modify, convert them, if you wish. However that implicitly means you agree to the CC International 4.0 BY NC-SA. If you modify them, we're not here to support other people's mods to these files. Maybe later, once we get done with the Body files.

Q: My printer has huge build area and I can print everything in one piece. Can you modify the files for me?

A: No. See above.

Q: Can you just modify file XYZ for me because?

A: Maybe eventually, but we have to get the body done... feel free to import and modify the STL to what you need.

Q: I have John Doe's modified version of your files, and I am having an issue with file XYZ.

A: Please contact John Doe on the issue you are having with file XYZ. We only support our files found at <http://tiny.cc/BB8Builders>

Q: I have John Doe's version of the files and you updated the T&M files. Can you contact John Doe to get them to update their files?

A: Please contact John Doe on the issue you are having with file XYZ. We only support our files found at <http://tiny.cc/BB8Builders>

Q: I don't like the Creative Commons International license, why didn't you release them under GPL or some other license?

A: To us, Creative Commons International 4.0 BY NCSA, best served the BB8 builder community at large. This is not a debate for this thread.

Q: How are you handling QC?

A: Tiny & Michael both test print the files, once they are satisfied on the part design, they release the files to alpha testers, all with different printers. They collect feedback, reiterate the files & repeat. Once they have ALPHA test approval, they open up the files to the 20ish BETA testers. All are experienced droid builders, all highly respected in the Astromech community around the globe. Once they have general approval. They move the files to the public release share. If somehow a GA file, is found with problems, they will pull it & run it back through the cycle if needed. Right now they are in beta testing of the body part files. It's not a small task... They are talking more than 200 print hours. And they won't release the body files until complete and apply a full set of panels on a 506mm sphere. This approach has been extremely fast and agile, and close to ISO9001 compliant.

Q: Is there a beta program to test files and can I be in that?

A: Yes there is a beta testing program. Actually a wide range of beta testers are being used. If you are interested, please PM Michael.

Q: Your Message Inbox is full, again?

A: Tell us about it, that's what happens when you release BB8 files. Please try again in a few days. :-)

Q: When are the Body files, either "Stage" or "Static" versions going to be done?

A: Well actually we don't know. When we are finished testing them, then release, we'll announce it.

Q: I am having trouble printing the files with printer XYZ, what is the problem?

A: We don't know, please follow the recommendations in the guide. This is way off topic to be addressed in this thread.

Q: What filament do you recommend?

A: We don't recommend a specific filament manufacturer. However we have placed some of our notes on various experience s in the guide. (READ ME T&M Part – Instructions Guide to 3D Printing, Assembling & Finishing - page 7).

Q: The files are not in the URL, where did they go?

A: The files are there... check your end, firewall, clear cookies etc.. If your running Windows 10, reboot, get some more San Francisco Bay coffee & try again. Remember CLOUD services, like real atmospheric clouds, are not always there. Wait a few minutes and look up again.

Q: What is appropriate to post on the BB-8 Builders Club Facebook Page?

A: Only post information or questions about building BB-8. There are other general BB-8 pages where you can find other images, caricatures, etcetera such as "Everything BB-8" or "STAR WARS: Facebook'd". Posting of spoilers is strictly forbidden and may result in your removal from the group.

Q: I do not have a 3D printer but would like to view the STL files. What do I need?

A: There a number of options available.

STL Viewers such as 3DEEFAB, Soundforge Open Source STL Viewer (note that these are only examples of the type of viewer available).

BLENDER also allows you to import and view STL files as does OPENSCAD and many other 3D CAD programs.

Repetier, as well as any 3D printer software will let you view STL files.

Printing Tips from Josh Tenny.

Here are some of my notes on bed adhesion and keeping parts from lifting both from printing parts in general, and while printing BB-8 parts.

•Slicing Program:

I use Simplify 3D for a slicer and HIGHLY recommend it. I might even sound like I'm getting paid to advertise for it. It slices fast and has a lot of customization. It's ability to customize support structures alone makes it worth the \$150 price tag in my opinion. I know it's steep compared to free programs, but it was easy for me to learn with no real experience 3D printing and it is awesome IMHO. Even being easy to learn it offers a lot of options for advanced users. I have zero regrets buying it.

Lifting:

- As an alternative to printing helper discs on long and/or wide parts, I use the skirt/brim feature in Simplify 3D. I make it attach to the part by setting the "Skirt Offset from Part" to zero.
- I print 2 skirt layers and 5 skirt outlines on PLA for long/wide parts. I do this only on really long/wide parts. Smaller parts I don't use any skirt/brim on PLA as it has low shrinkage compared to ABS.
- I print 2 skirt layers and 7 skirt outlines on ABS. This makes ABS stick pretty hard to the surface with almost no lifting. The skirt/brim comes off easily by flexing it where it meets the part. This adds quite a bit of surface area.

Bed:

- I have 2 pieces of glass. One for ABS, and one for PLA.
- PLA - I use blue painter's tape on the glass with no glues or any other treatments. Parts stick well, and the bottom has a slight texture that better matches the rest of the part instead of a shiny surface. It also keeps the distance from the tip to the bed the same for my ABS routine so that I do not have to make any physical Z height/end stop adjustments when switching between materials.
- ABS - I use kapton tape with ABS juice. It can be a pain to apply and I have to re-apply often, but I rarely get any lifting, and when I do, it is not much. Simplify 3D allows me to adjust settings at layer heights, so I print the first layer at 110c bed temp, and after the first layer, take it down to 80c. I also use 3 outer layers and a max of 25% infill. This reduces the part's desire to want to warp in the first place. I will also note that environmental temperature is a large factor and that I made a full enclosure for my Makergear M2. I preheat the chamber with a space heater to 40c, close the door, and start the print. With the nozzle and heated bed, it generally stays at 40c +/- 2c unless the room is cold. I will be adding a heating system and temperature control to the enclosure soon. A fancy heating system helps, but simple consistency and some warmth helps a lot.

Nozzle Height and Bed Leveling:

- I like to really press down the first layer as it helps a lot with adhesion. I set my z-stop to one piece of paper bed-to-nozzle height. Simplify 3D allows me to change the first layer percentage height compared to the set layer height. I typically have this set to 75-80% of standard set layer height. This also helps press the first layer down. Note, this relies a lot on a very level bed.
- I make sure my bed is very level. This is another time Simplify 3D comes in handy. It has a bed leveling wizard that helps quite a bit. On one of my first levelings I checked about 9 places on the bed. I found that the middle was slightly lower in the "Y" direction on both sides. I used paper shims to bring that area slightly higher and get the bed really flat.

On behalf of the BB-8 Builders Group, thank you for taking the time to read through our FAQ.

A special thank you to Carl Cunningham, Michael Erwin and Tiny Panganiban for their hard work and dedication to the BB-8 Builders Club.

If you find any mistakes, deletions or additions, or comments on this FAQ please contact Doug Goreas.

Revised October 08, 2015 (ver 1.4)