



Fully Printed 608 Bearing

Easy-assembly maker guide, re-written with a Maxxeshop3D visual theme.

A light-duty, fully printed roller bearing that is easy to assemble, easy to tune, and practical for drop-in 608 applications where metal bearings are not required.

608 Bearing

Low friction, tight fit

Runs like a real bearing



Visual theme inspired by Maxxeshop3D branding.

Quick print recipe

- 0.4 mm nozzle, 0.15 mm layer height
- PLA recommended for races, caps and cage
- 2 perimeters, 15% infill, no supports
- Check rollers for elephant foot

Summary & build intent

This bearing is an assembled design rather than a print-in-place model. That makes it easier to tune the fit, inspect the running surfaces, and change roller types when you want to balance tightness, friction, and noise.

Assembly sequence

Outer Race -> Inner Race -> Cage -> 7 Rollers
-> Outer Cap -> Inner Cap

Best use

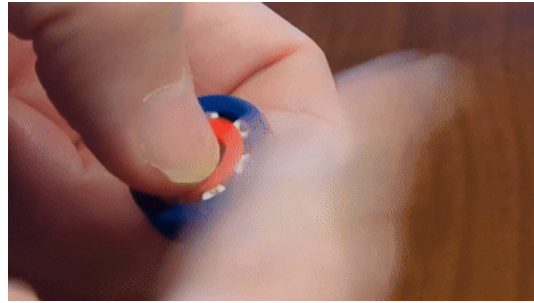
- Light 608 bearing applications
- Decent lateral loads
- Users who want a printable, serviceable bearing

Design note	Recommendation
Not ideal for	High speed, high force, or high heat duty. For those conditions, use a normal purchased 608 bearing.
Tuning options	Swap between solid and hollow rollers, use tight or loose roller variants, or XY-scale rollers in the slicer.

Why this design works

Advantages

- Tighter fit than most print-in-place bearings because no built-in printing clearance is needed.
- Running surfaces can be inspected and lightly finished after printing.
- Roller material can be changed, including PETG and TPU/FLEX.
- The bearing can be disassembled later so roller fit can be re-tuned for the job.



Application details

- Functional roller bearing with a proper cage to separate rollers.
- Hollow rollers add a little elasticity; solid rollers are also available.
- Fits light-duty 608 use cases where a printed solution is appropriate.

Noise & feel guide

PLA rollers	Works well, but can sound a little noisier.
PETG rollers	Recommended for smoother feel and less binding under load over time.
TPU / FLEX rollers	Quietest option; still runs, but with a bit more friction.

Printing setup

Setting	Guidance
Races, caps & cage	PLA is recommended. Other materials may work, but the source guide notes they were not tested.
Nozzle	0.4 mm
Layer height	0.15 mm
Walls / infill	2 perimeters, 15% infill
Supports	Not needed
Helpful slicer settings	Scarf joints on contours and inner perimeters; control elephant foot, especially on the rollers.
Example print time	About 16 minutes on a Prusa Mini or Mk4 when all parts are printed at once.

Post-processing

- Inspect the roller running surfaces on the inner and outer race for bumps or print artifacts.
- A light pass with a small file can smooth the running surfaces if needed.

Assembly & service

1	Place the inner race and outer race down.
2	Place the cage with the ring facing down.
3	Insert 7 rollers; small needle-nose pliers work well.
4	Snap on the outer cap.
5	Snap on the inner cap.

Assembly notes

- Do not lift the assembly before both caps are snapped in place or the rollers can spill out.
- Painter's tape under the races can help hold them together during assembly.
- Lubrication is optional. It is not required, but it can make the bearing run a little nicer.
- Exercise the bearing for a few turns after assembly so the rollers and cage settle in.

Disassembly

- Inner cap: push it out from the inside with a small flat-head screwdriver or another pointy tool.
- Outer cap: slide a small knife into the gap between the cap and outer race, then twist lightly to lift it off.

Use care while disassembling to avoid damaging parts or cutting yourself.

Variants & revision history

Roller variants

- Solid and hollow roller options are included.
- Standard, Tight (+0.05 mm diameter), and Loose (-0.05 mm diameter) versions are available.
- Additional fit tuning can be done by XY scaling the rollers in the slicer.

Revision history

- v1.0 - Mar 20, 2026: Initial public version.
- v1.1 - Mar 23, 2026: thicker inner and outer race walls, roller diameter reduced from 3.8 mm to 3.6 mm, inner-cap disassembly groove added.
- v1.2 - Apr 9, 2026: slight optimization for better lateral stiffness.

Model package & attribution

The original PDF includes one assembly file, five core STL parts, and solid and hollow roller sets. The grouped summary below keeps the package readable without the original storefront styling.

Package group	Included files
Assembly file	608-assembled-bearing-v12.3mf
Core STL files	outer-race-v12.stl, inner-race-v12.stl, cage-v12.stl, outer-cap-v12.stl, inner-cap-v12.stl
Solid rollers	loose-roller-v12.stl, tight-roller-v12.stl, standard-roller-v12.stl
Hollow rollers	standard-roller-v12.stl, tight-roller-v12.stl, loose-roller-v12.stl

Related designer notes

- A filament-roller 608 bearing variant was created by building on this concept.
- A 606 mini bearing variant shows the design can scale down successfully.

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This version removes the original marketplace UI and unrelated styling, then repackages the technical content into a single Maxxeshop3D-themed guide for easier reading and sharing.

Source note: content adapted from the attached 608 Bearing PDF supplied in this chat.