Printables by JOSEF PRUSA

ratcheting mini screwdriver

FreddyZ

VIEW IN BROWSER

updated 19. 9. 2022 | published 19. 9. 2022

Summary

stores 6 bits plus 2 in the chamber ;) freely rotating end cap w/ keychain mount, 30° ratchet

0.96 hrs	7 pcs	0.30 mm	0.40 mm	PLA PET	10 g	Prusa MK3/S/S+

Hobby & Makers > Tools

Tags: keychain miniratchet ratchet screwdriver

I was told that it'd be impossible to fit a ratchet mechanism inside a tiny screwdriver, let alone hold more than a single bit. This is to prove that person wrong ;)

also check out the Print-In-Place version
A reversible ratchet mechanism didn't fit the budget so I opted for the big brain move of simply reversing the screwdriver. Yes there's another receptacle in the back ;)

- fits **4x28mm bits** such as the iFixit ones
- 30° ratchet with clockwise and CCW socket
- freely rotating end cap

- optional keychain attachment point in end-cap
- optional keychain front-cap with tight pressfit
- print in one go (dual color too)

The low budget LTT screwdriver look or any other dual color look for that matter, can be achieved by a simple filament swap at the 2mm mark. **Print time is under 1h** and total cost in Prusament is <40ct which means its only 1/100th of the shipping cost of a real LTT screwdriver to europe

Print everything in one go **.3mm layer height and .5mm extrusion width** (Prusa .3 draft settings). **No supports**. 57min for just the screwdriver + 18min for the optional cap
PETG is the way to go but PLA works too but creeps and I haven't done any long term study on how the compliant springs hold up.

Assembly is dead simple thanks to the 5 piece assembly

1. axle through main-body
2. ratchet onto axle (check orientation)
3. free spinning cap onto axle
4. rear socket onto axle (press hard)

should the tolerance for the rear socket be too tight, fear not I added some variations that are a bit more loosey goosey.

STEP included in case you want to improve the ratchet mechanism or you have a better idea on how to attach a keychain.

0.3mm layer height & 0.5mm extrusion width

otherwise its gonna be wonky

Model files

assemblies 4 files

ratcheting-screwdriver.stl

assembly in correct orientation for everyone else

ratcheting-screwdriver-ps.3mf

PRUSASLICER specific, MK3S+, Prusament PLA, .3 draft profile

ratcheting-screwdriver-standalone.stl

assembly in correct orientation for everyone else

ratcheting-screwdriver-standalone-ps.3mf

PRUSASLICER specific, MK3S+, Prusament PLA, .3 draft profile

raw files

10 files

axle.3mf

hexagonal face down

rear-socket.3mf

square face down

keychain-cap.3mf

hexagonal face down

main-body.3mf

hexagonal face down

rear-cap.3mf

wider face down, with hole for keychain

rear-cap-no-keyring.3mf

ratchet.3mf

flat face down

ratcheting-mini-screwdriver.step

rear-socket-loosey.3mf

additional 0.06mm clearance

rear-socket-loosey-goosey.3mf

additional 0.12mm clearance

Print files

ratcheting-screwdriver-dual-color_03mm_petg_mk3s_57m .gcode

PET 0.40 mm 0.30 mm 0.96 hrs 10 g Prusa MK3/S/S+

keychain attachment point

ratcheting-screwdriver_03mm_petg_mk3s_57m.gcode

PET 0.40 mm 0.30 mm 0.96 hrs 10 g Prusa MK3/S/S+

keychain attachment point

ratcheting-screwdriver-standalone-dual-color_03mm_p... .gcode

PET 0.40 mm 0.30 mm 0.95 hrs 10 g Prusa MK3/S/S+

standalone without keychain attachment

ratcheting-screwdriver-standalone_03mm_petg_mk3s_57m .gcode

PET 0.40 mm 0.30 mm 0.95 hrs 10 g Prusa MK3/S/S+

standalone without keychain attachment

ratcheting-screwdriver_03mm_pla_mk3s_58m.gcode

PLA 0.40 mm 0.30 mm 0.97 hrs 10 g Prusa MK3/S/S+

keychain attachment point

ratcheting-screwdriver-standalone_03mm_pla_mk3s_58m.gcode

PLA 0.40 mm 0.30 mm 0.95 hrs 10 g Prusa MK3/S/S+

standalone without keychain attachment

ratchet-screwdriver-standalone-dual-color_03mm_pla_... .gcode

PLA 0.40 mm 0.30 mm 0.95 hrs 10 g Prusa MK3/S/S+

standalone and color change M600 at 2mm (7min)

License ©

This work is licensed under a
Creative Commons (4.0 International License)

Attribution

✖ | Sharing without ATTRIBUTION
✔ | Remix Culture allowed
✔ | Commercial Use
✔ | Free Cultural Works
✔ | Meets Open Definition