

3D MODEL ONLY



Revolver | 2-Speed Screwdriver



Revolver3DPrints

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Summary

Fully 3D printed screwdriver with High Torque or High speed mode for delicate or fast work.

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Tags: [tool](#) [assembly](#) [diy](#) [gear](#) [gadget](#) [toolbox](#) [screw](#)
[bolt](#) [screwdriver](#) [planetary](#) [build](#) [gearbox](#) [revolver](#)
[functionalprint](#) [bitholder](#)

The Revolver

Born from a particularly frustrating weekend of printer maintenance, tinkering and DIY I bring you "The Revolver". A fully 3d printed screwdriver for **1/4" Hex Bits**

What started out as a fun weekend, slowly spiralled into headache after headache as things kept going wrong, so pretty normal in that respect actually. But as any good workman does, I blamed my tools instead of myself and set out to fix them.

The main gripes I had with my screwdriver were

- Struggling to rotate it in awkward spaces
- Dropping the screwdriver, again in awkward spaces
- Accidentally stripping bolts

- Taking ages to remove bolts (my impatience is really the problem here)

I came up with the idea for a screwdriver that might solve these issues with a revolving midsection much like precision screwdrivers, but big enough for general use and with a built in gearbox for both precision work and removing bolts fast. The additional space for a wrist strap is particularly helpful for those like me that can be a bit clumsy 😊.

Speed Mode

4x speed to make those laborious jobs just a little bit quicker

Torque Mode

4x the torque and 1/4 the speed for when you need just a little more umph in those first few degrees, without sacrificing control.

Some have asked how this works if your hand is still the anchor ?

The torque mode increases the torque & rate at which force is applied, which in turn reduces the resistance produced by the screw, which is rate and force dependent. Or put another way, if you think about using a hammer, a quick tap can drive a nail in faster than trying to push the nail in, even if you push really hard. Using a longer handle to increase torque, will also drive the nail in quicker despite your wrist still being the anchor. Your wrist would only take the brunt of the force if the object you were hitting provided a constant resistance. Hope this helps to clarify

Me and the mrs have a little one on the way and we're saving for baby stuff 😊. If you liked the model , please consider donating or purchasing on the store. We're hoping this might do better than a gofundme.

Store Link:

<https://www.printables.com/model/766756-revolver-2-speed-screwdriver>

Paypal

https://www.paypal.com/donate/?hosted_button_id=FWZNBTYKYP2Z2

If you have any issues, please let me know and I'll be on hand to help out or make changes if necessary.

Assembly Guide

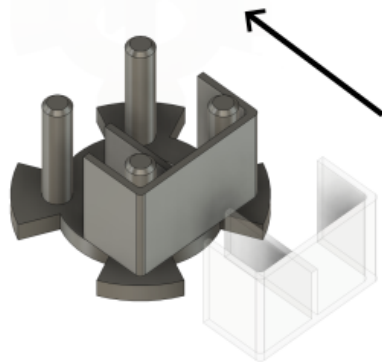
This download includes a complete assembly guide with detailed instructions and diagrams.

(The full assembly guide is a seperate download found under
"OTHER FILES")

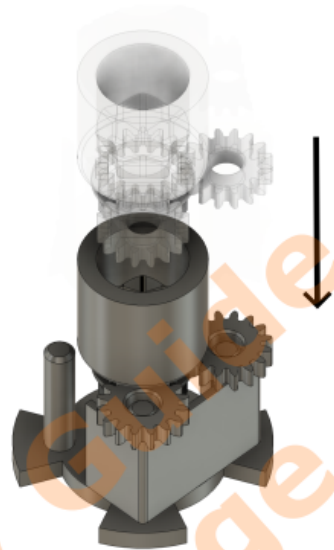
The Revolver

3D PRINTED | 2-SPEED SCREWDRIVER

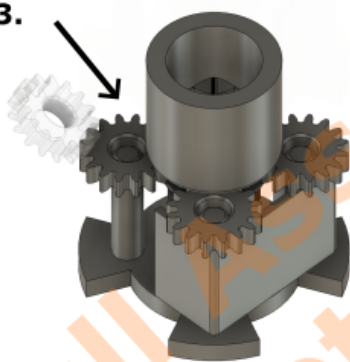
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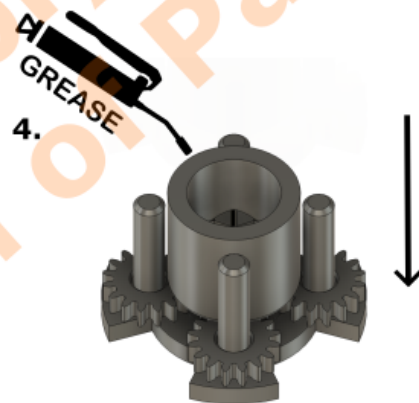
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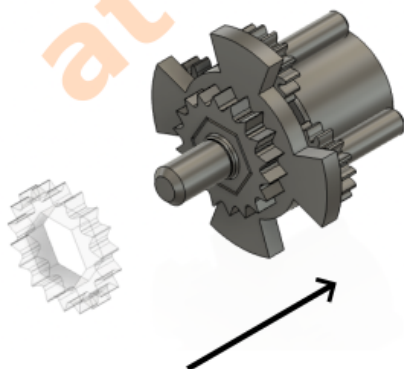
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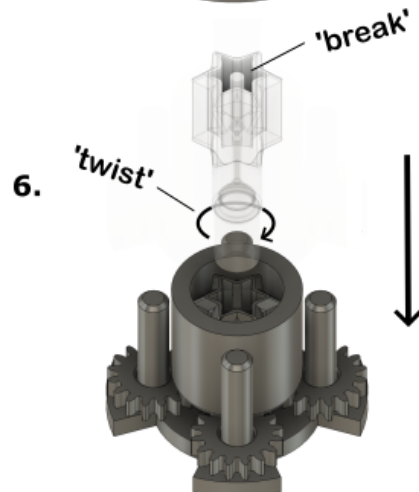
4.



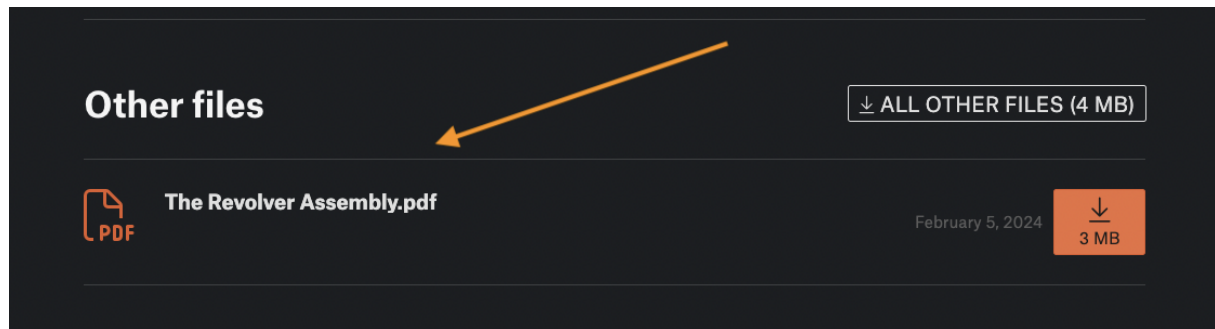
5.



6.



There's a 0.2 clearance selector gear
in the folder if you're having trouble.



Assembly Tips

- Planetary gears may need post processing to ensure they rotate smoothly on carrier. If so just take a small file and clean up the bore hole.
- Make sure you use plenty of grease on parts which require it, especially the **selector gear** and **sun gear** in **step 6**, to ensure smooth operation.
- I recommend using a silicone grease as your lubricant as it's least likely to damage the plastic.
- As for glue, any typical super glue should be fine. I prefer the gel types which do not set immediately and allow for adjustment.
- Some parts are designed to be push fit, but If they're not fitting tight enough. You can also glue the **sun clutch** to the **sun gear (step 5)** and the **carrier** to the **clutch case** for extra security (**step 9**). **DO NOT GLUE SUN CLUTCH TO CARRIER****
- 4x2mm Magnets can be found on amazon or ebay <https://amzn.eu/d/aHha5eZ>

Usage tips

The Revolver

3D PRINTED | 2-SPEED SCREWDRIVER

Operation

Low Speed Mode



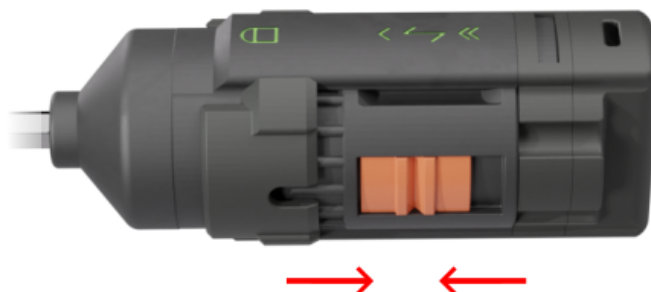
- High torque + Greater control
- For delicate work / tight fastenings

High Speed Mode



- Fast removal / insertion of fastenings
- **DO NOT** use on tight fastenings

Locked Mode



- Lock gearbox for general use
- **DO NOT LOCK** in High Speed Mode

- This screwdriver is intended for use on simple DIY projects, electronics and any other light work. So far I've tested on door

frames, cupboards, bike frames and taking apart my 3d printer and it works well. I wouldn't try to use on any really heavy work as plastic parts do have their limits.

- Sometimes switching modes requires you jiggle the switch a bit or backing off and trying again. This happens when the selector gear doesn't quite mesh with desired output gear. Grease helps to make this meshing smooth.
- Depending on your hand size and preference, you may find it odd using this style of screwdriver. Here are some tips that might help
 - The end is rectangular so it can sit in your palm without slipping
 - Rest outer body on ring finger and twist with middle finger and thumb
 - Thread wrist strap between 2 fingers so it holds outer body in place as your fingers turn the mid section.
 - Experiment with different grip positions in hand.

Printing Tips

- A 3mf file is included with suggested printing orientations.
- I used eSun PLA+ on my builds but feel free to experiment
- I printed at .16 layer height
- As stated in the guide, if you're having trouble freeing up selector gear you may want to try the 0.2mm clearance model and use randomised seam position.
- You may need to use pliers to twist and free up selector gear.
- I'd highly recommend using brims on parts with small contact area on plate to stop them falling over.
- Some people have had trouble with 0.6mm nozzles, I recommend using a 0.4 nozzle.
- Print Input shaft at 90% infill

Change LOG

- Added missing part E to downloads 06/02/2024
- Reuploaded 3mf files with all** parts 06/02/2024
- Added all parts as .stl suggested by user 06/02/2024
- Added chamfer to planetary gears 06/02/2024

Accessories

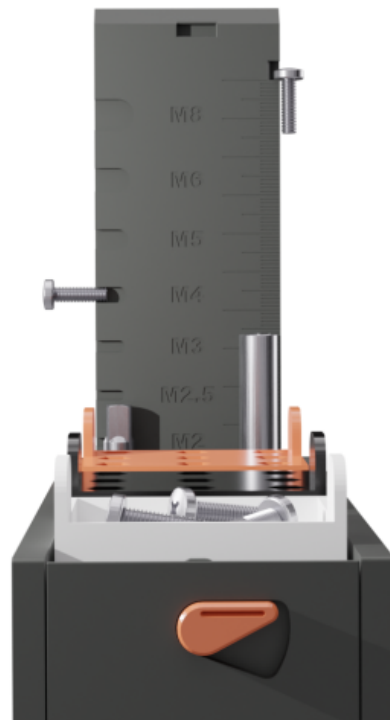
I also created this slightly over engineered storage box/stand which acts as a workstation for your revolver. It helps you organise bits, measure and gauge fastenings, as well as including a tray to put removed fastenings in. Whether it's a gift or just something cool to have on your desk, check it out !

<https://www.printables.com/model/752732-revolver-station>

The Revolver Station

MEASURE | GAUGE | ORGANISE

Also check out the
optional storage box



Awesome Storage Box

<https://www.printables.com/model/789289-revolver-screwdriver-case>

Designed by https://www.printables.com/@MikaelArvids_1833691



Model files

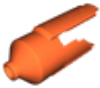
revolver-bambu-studio-project-file.3mf



revolver-all-parts.3mf



helper-tool.stl



a-mainbody.stl



b-mid-body.stl



c-handle.stl



d-ring-lock.stl



e-bearing.stl



f-switch-l.stl



f-switch-s.stl



g-planet-gears.stl



h-sun-clutch.stl



i-selector-gear-016-clearnace.stl



i-selector-gear-02-clearance.stl



j-bottom-body.stl



k-carrier.stl



l-sun-gear.stl



m-input-shaft.stl



n-clutch-case.stl



o-hex-socket.stl

Other files

the-revolver-assembly.pdf

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