LCF Technics Product User Guide

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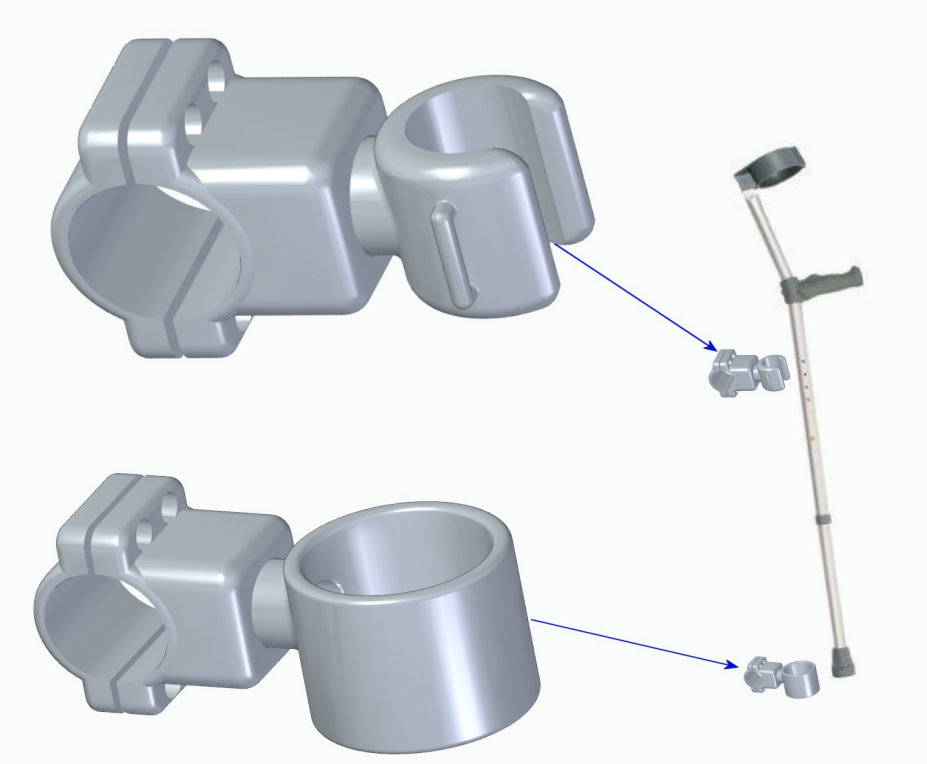
Product: Trike Crutch Holder 3D Download



Thank you for purchasing our 3D Printable Trike Crutch Holder design files. This is a versatile and functional design and the download package contains a number of options to suit your particular installation.

Each crutch holder assembly will require 4 3D printed components.

- Quantity 2 of the 'Frame mount' component of your choice
- Quantity 1 of the 'Crutch Shaft Holder' component of your choice
- Quantity 1 of the 'Crutch Foot Holder'

Frame Mount

The Frame Mount component is used to attach at 2 different locations on the frame. You can choose between the Frame Mount that is attached using cable ties (locally purchased) or the Frame mount that is attached using 4 (locally pirchased) 5mm machine screws and matching lock nuts.

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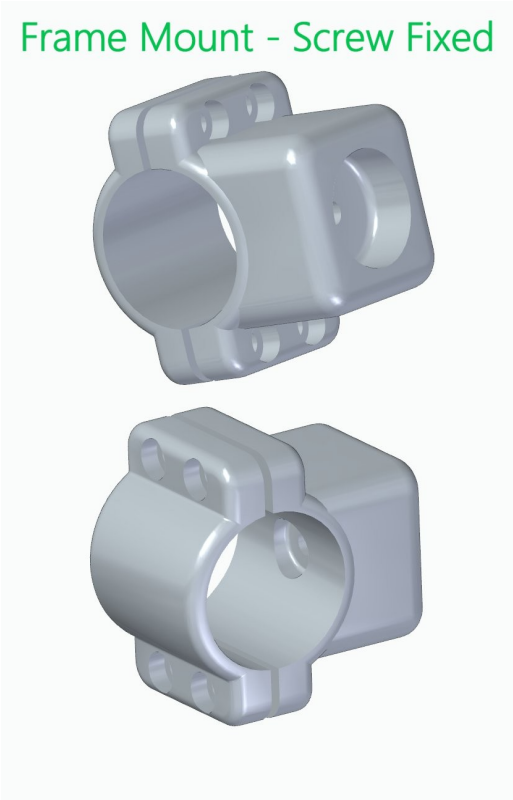


Prior to attaching your Frame Mounts on your trike frame, you should secure your 'Crutch Holder' components to them, using a 5mm pan head machine screw and locknut. Screw should be around 25mm long depending on use of washers.

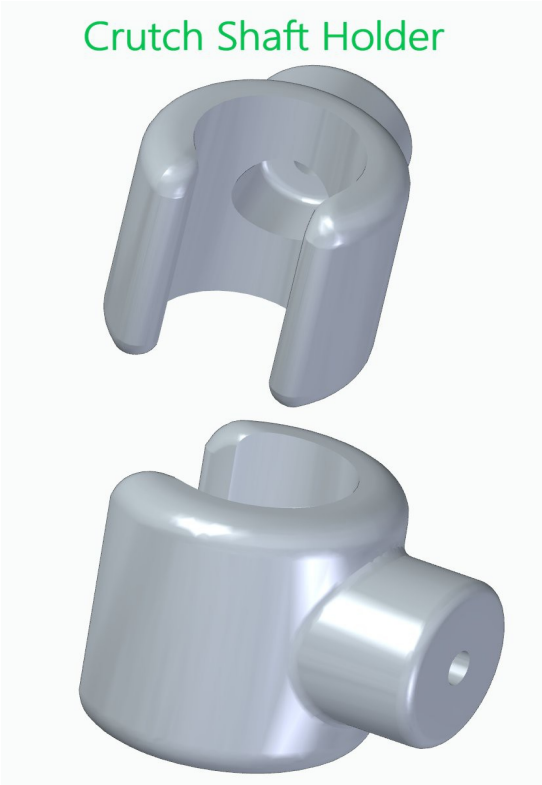
The crutch holder components can be rotated in the frame mount to the optimum position before they are finally tightened in place with the screw and locknut.

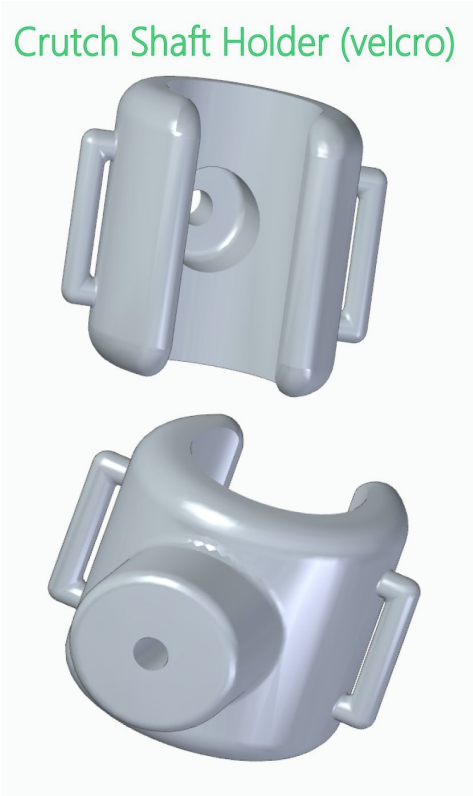
Recesses in the 3D printed components will allow the screw head and lock nut to sit below the functional surfaces of the 3D printed parts. Screw length should be selected to have not more than 3 threads protruding out beyond the end of the locknut once tightened.

For each screw fixed frame mount, 4 machine screws and locknuts will be required. These screws should be 4mm in diameter and 20 - 25mm in length.

Crutch Shaft Holder

The Crutch Shaft Holder comes in 2 versions.





The standard version should work well for most users. If however, you want the extra security of a velcro strap to lock your crutch in place. Perhaps for off-road cycling. The second version has tie points for such a strap.

Crutch Foot Holder

The crutch foot holder has a slight outward taper from the base to the top. This should allow for easy insertion of the crutch base while holding the base securely, without rattle once inserted.

There is a hole in the base to prevent the holder from filling with rain water.

Recommendations for 3D Printing

We have successfully printed all the components of the Trike Crutch Holder using Taulmann Bridge Nylon. This was on a basic 3D printer with a 200mm x 200mm print bed.

Other non-brittle plastics that have good inter-layer bonding and the ability to flex slightly may also work.

We would recommend the following settings for Nylon:

- Dry your filament in an oven at 50 Celcius for at least 2 hours before use
- 30mm brim for each component to ensure good bed adhesion
- Use 'touching bed' supports to ensure protrusions print correctly
- For nylon, spreading glue stick (we used Pritt Stick) on the glass print bed is helpful as it does have a tendancy to curl up off the print bed
- Print head temperature 262 Celsius with heat break fan cooling
- Print bed temperatue of 64 Celsius
- Part cooling fan was Off for the duration of most prints but On for the flag holder (print slowly)
- Filament retraction on (3mm)

Installation

The frame mount was designed to fit on frame tubes of 30 – 35mm diameter. The included diameter adaptor can be used to fit the crutch holder on frame tubes of 23 – 25mm. Depending on your particular frame tube diameter, it may be useful to use a rubber liner between the 3D printed parts and the frame.

We have found that a section cut from and old bicycle tube will serve this purpose quite well. (Clean it with soap and water to remove the slippy PTFE powder from the inside). Other ideas may work, old bicycle grips, garden hose.....