Modular Mounting System Arms (Customizable)

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VIEW IN BROWSER

updated 14. 9. 2025 | published 14. 9. 2025

Summary

Customizable arms and knobs for the Modular Mounting System, similar to GoPro's Three-Way Pivot Arm system.

Gadgets > Photo & Video

Tags: camera gopro modular arm cameramount customizable webcam motion webcammount thingiverse modularmount onshape pivot mms pivoting webcamholder goproarm cameraarm modularmountsystem goproaccessories pivotingarm 6d6178 modularmounting modularmountingsystem threewaypivotarm webcamarm

These are **customizable arms and knobs for the Modular Mounting System,** similar to GoPro's Three-Way Pivot Mounting System**.**

The design is entirely based on the Modular Mounting System Arm V4 (thing:3689842) by jtronics but it uses the dimensions of the original Modular Mounting System (thing:2194278) by HeyVye for **better compatibility and fit**.

Additionally, these arms provide the following additional features:

- **Customizable:** The arms are fully parametric and can be easily generated in any custom length in Onshape.
- **Many pre-generated sizes:** All arms come in 30, 45, 60, 90, 120, 150, 180, and 210mm lengths with different numbers of bridges.
- **Rotated arms:** Change the axis in your construction by using an arm with built-in 90-degree rotation so you don't have use a separate component.
- **Structural bridges:** Arms 90mm and longer optionally come with structural bridges to make the arms stronger and stiffer.
- **STEP files:** Easy remixing! Every file is available in STL and STEP format.
- **Cable management:** Compatible **Cable Clips** allow you to route cables along the arms for next-level tidiness.

Check out the #modular_mount and #MMs tags to find compatible accessories.

> **Updates**
>
> **V2 - 2023-08-21**
>
> - Same dimensions and backwards-compatible
> - Improved overhangs for better printability
> - Improved design consistency between straight and rotated arms
> - Easier to customize (single Onshape part studio for all arm types)
> - New set of thumb screw knobs that work with socket head cap screws
> - New 20mm Micro Arm
> - Improved documentation

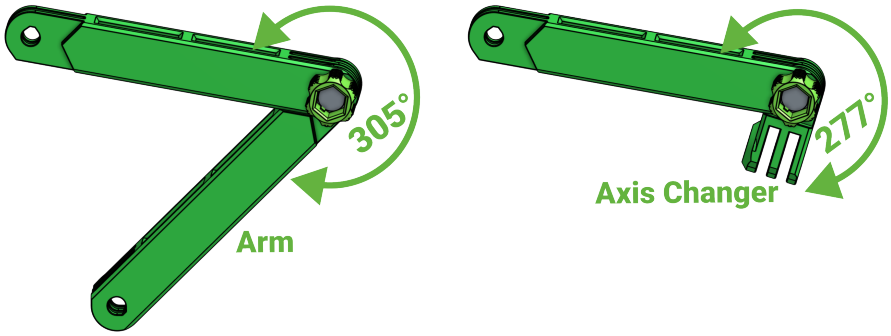
Arms

Pre-generated arms are available in 8 different lengths from 30mm to 210mm and are either straight or have a 90-degree rotation / axis change. Arms ≥90mm optionally have structural bridges that improve strength and stiffness. You can generate arms of any length with any number of structural bridges.

If length is a concern and you don't want to use a 30mm rotated arm you can use an Axis Changer which is a rotated arm that is only 20mm long. However, it allows fewer degrees of motion than regular straight or

rotated arms.
A 20mm version of a straight arm, called a Micro Arm, is also available and has the same range of motion limitation.

An arm to arm connection allows 305 degrees of pivoting motion. A connection with an Axis Changer or a Micro Arm only allows only 277 degrees of pivoting motion.

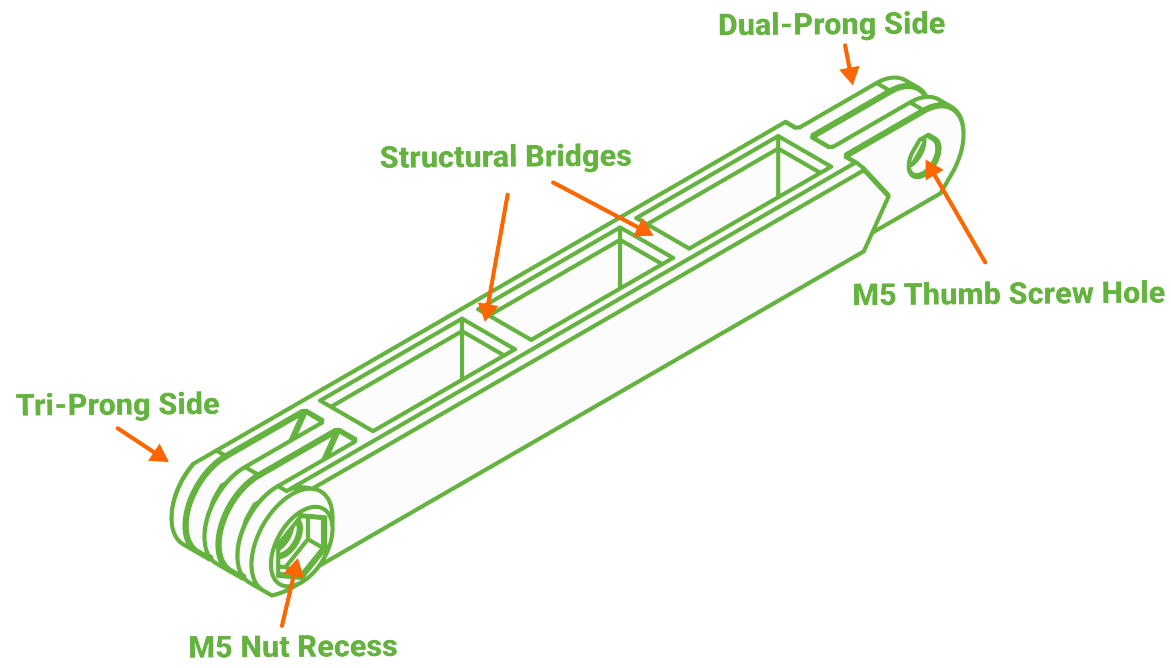


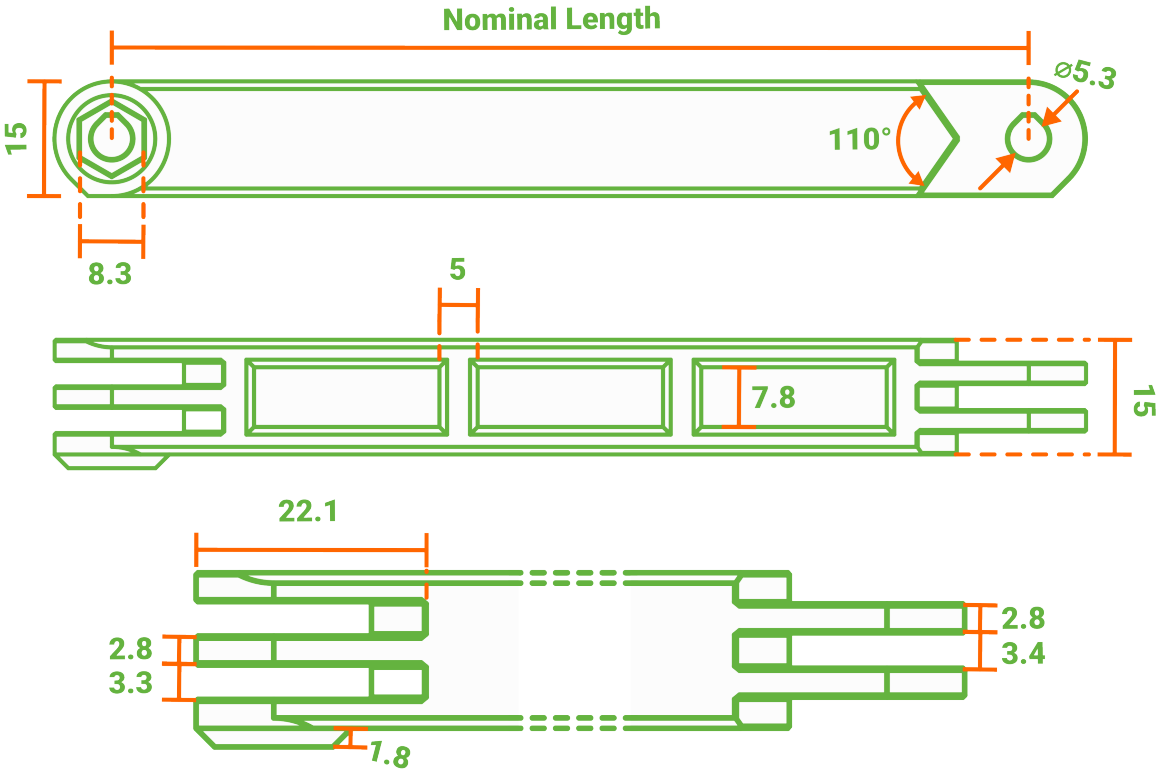
Required Hardware for Arms

Qty	Description	Sourcing
1	M5 Hex Nut DIN 934 / ISO 4032	Aliexpress
1	GoPro-compatible M5 thumb screw (≥16mm exposed screw thread)	See below

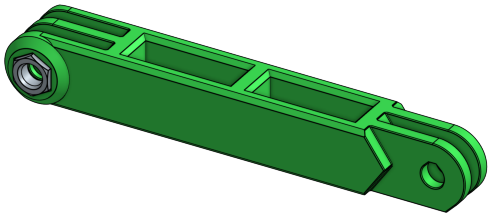
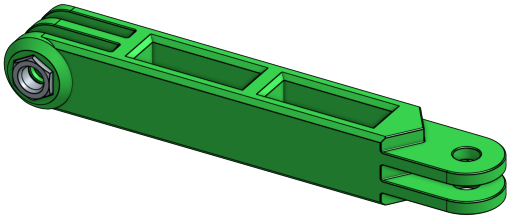
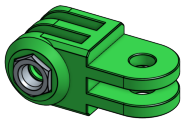
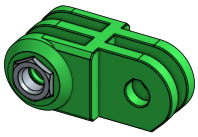
Anatomy

The nominal length of an arm is defined by the center-to-center distance between the screw holes.


Dual-Prong Side
Structural Bridges
M5 Thumb Screw Hole
Tri-Prong Side
M5 Nut Recess


Nominal Length
15
8.3
110°
ø5.3
5
7.8
15
22.1
2.8
3.3
2.8
3.4
1.8

Arm Types

Arm Straight  Various lengths, 305 degrees of motion.	**Arm Rotated**  Various lengths, 305 degrees of motion, changes the pivoting axis.
Axis Changer  20mm only, 277 degrees of motion, changes the pivoting axis.	**Micro Arm**  20mm only, 277 degrees of motion.

Thumb Screw Knobs

Thumb screw knobs come in 3 different grip styles. The “Grippy” style, as the name suggests, provides the best finger grip. Each knob is available for 2 different types of hardware. Knobs can either be used with an M5x20mm hex bolt (recommended) or with an M5x25mm socket head screw and a nut. The Hex Head Knob can also be operated with an 8mm hex key.

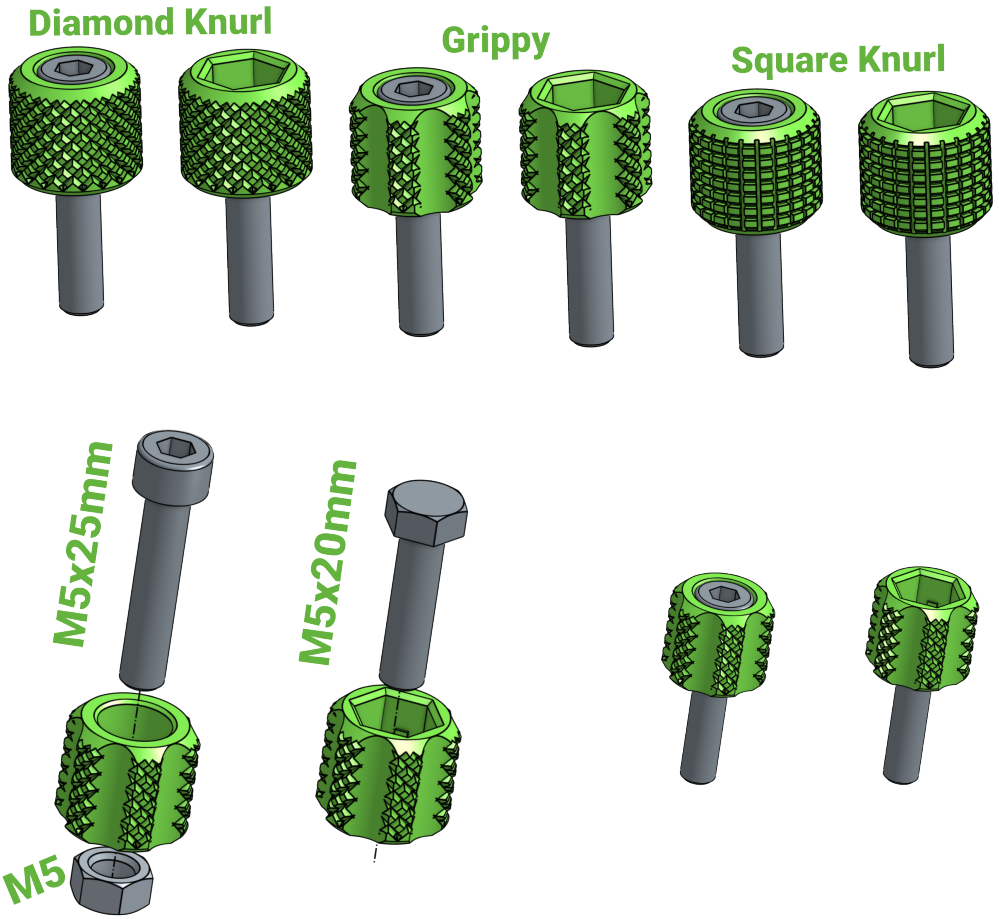
The hex bolt version is a bit more reliable because the screw can't come loose. But you can also superglue teh socket head version to have the same effect.

Hardware for Hex Bolt Thumb Screw

Qty	Description	Sourcing
1	M5x20mm Hexagon Head Bolt DIN 933 / ISO 4017	Aliexpress

Hardware for Socket Head Thumb Screw

Qty	Description	Sourcing
1	M5x25mm Socket Head Cap Screw DIN 912 / ISO 4762	Aliexpress
1	M5 Hex Nut DIN 934 / ISO 4032	Aliexpress



File Naming

There are a lot of files in the download section. To make things easier the files are organized in folders and use a naming scheme:

- Knob_[GRIP_TYPE]_[BOLT_TYPE]
- Axis_Changer_20mm
- Micro_Arm_20mm
- Arm_Straight_[NOMINAL_LENGTH]_[BRIDGES]
- Arm_Rotated_[NOMINAL_LENGTH]_[BRIDGES]

Printing

Print the parts in the original orientation. All STLs are pre-rotated for printing.

For optimal strength, a high number of perimeters is recommended. For best strength, the arms can be printed entirely out of perimeters.

Print Settings

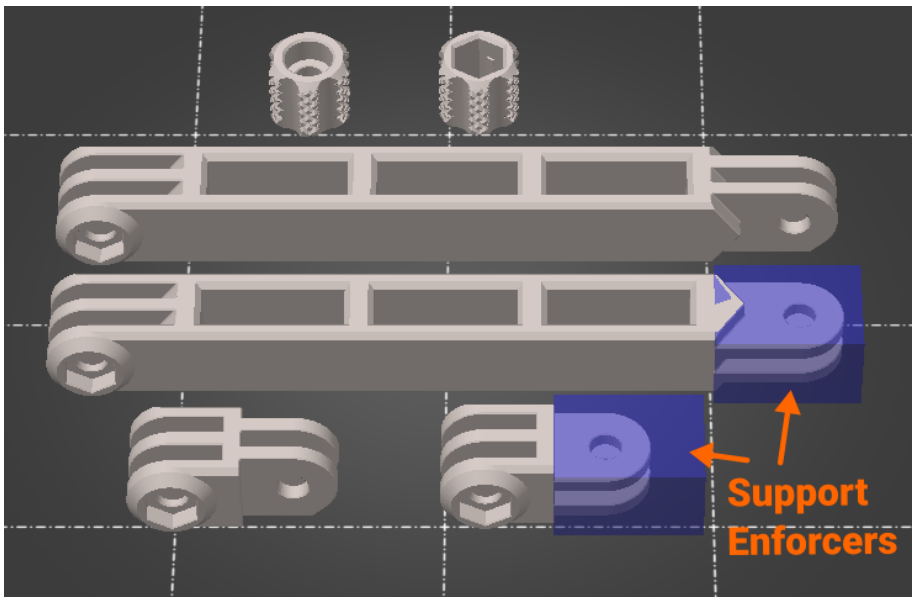
Recommended settings for 0.4mm nozzle:

- Material: PETG, ASA, ABS, PC, PLA, etc.
- Layer height: 0.2mm
- Extrusion width: 0.4 - 0.45mm
- Perimeters: 4
- Infill: 30%
- Top and bottom solid layers: 4

Supports

The thumb screw knobs, straight arms, and micro arm don't require supports. All the overhang angles are kept at or below 45deg.

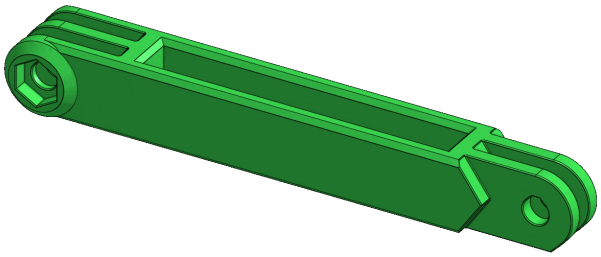
The **rotated arm and axis changer require support** below and in between the floating prongs. Add a support a enforcer to the dual-prong side of the arm.



Customize

While the large collection of pre-generated parts should have you covered in most cases, you can generate custom arms in any length and with any number of structure bridges tailored to your needs. The arms are fully parametric and can be customized in Onshape (no account required).

>> CUSTOMIZE IN ONSHAPE <<



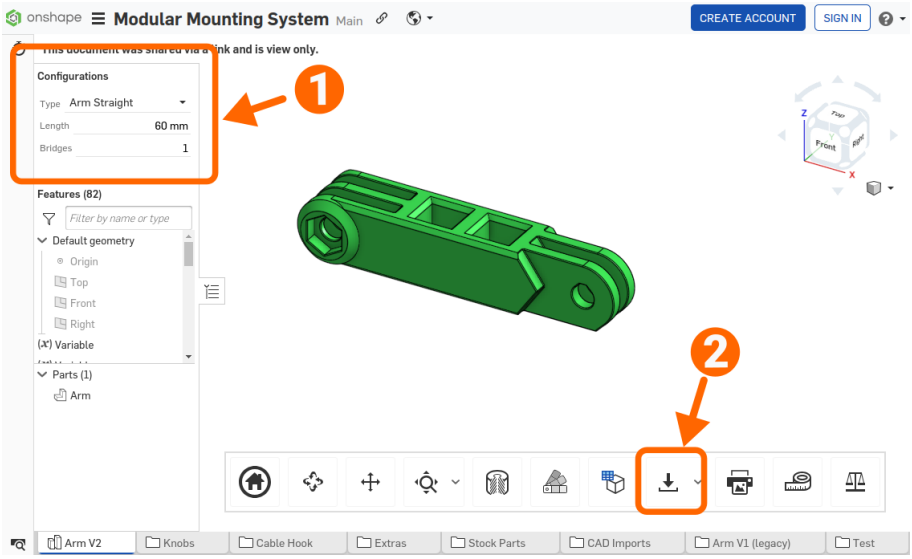
How to Customize

Head over to Onshape using the link above.

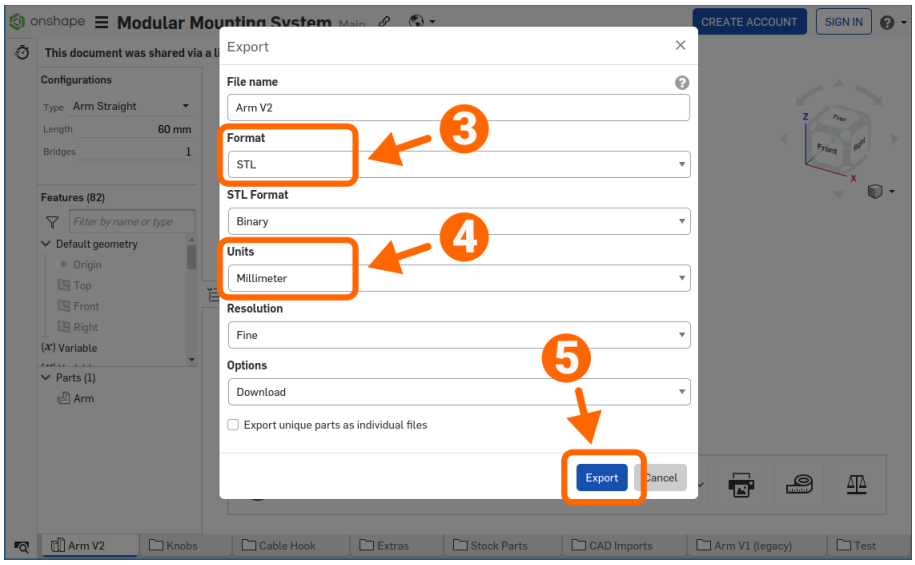
Under “Configurations” at the top in the left-hand sidebar, change the settings to your needs. You may have to resize the Configurations section to see all configuration options.

Select the desired arm type from the drop-down menu. If you select “Arm Straight” and “Arm Rotated” you can change the length (from hole to hole) and the number of structural bridges. The Length and Bridges settings have no effect for “Axis Changer” and “Micro Arm”.

Once you've configured the part to your needs, click on the Export icon in the bottom toolbar top open the Export Dialog.



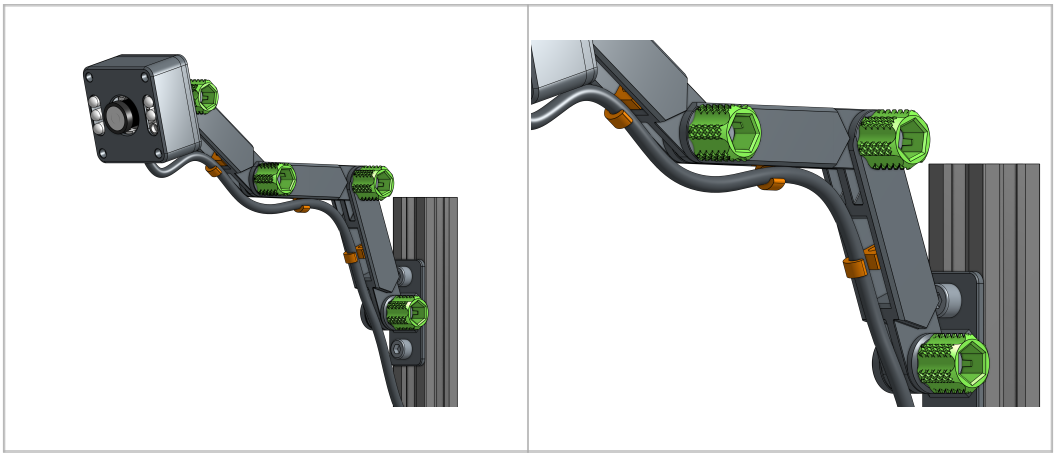
In the Export Dialog, select “STL” from the “Format” drop-down menu. **Change the units to to “Millimeter” in the “Units” drop-down**. Then click the “Export” button to download your part.



Extras

Cable Management

Use these **Compatible Cable Clips** to neatly route any cables along the arms.



This remix is based on

Modular Mounting System

Modular Mounting System

by HeyVye

Modular Mounting System

Modular Mounting System - Arm Straight V4

by jtronics

Model files

Thumb Screw Knobs STL

6 files

knob_diamond_knurl_hex_bolt.stl

For M5x20mm DIN 933 / ISO 4017 hex head bolt

knob_diamond_knurl_socket_head.stl

For M5x25mm DIN 912 / ISO 4762 socket head cap screw and nut

knob_grippy_hex_bolt.stl

For M5x20mm DIN 933 / ISO 4017 hex head bolt

knob_grippy_socket_head.stl

For M5x25mm DIN 912 / ISO 4762 socket head cap screw and nut

knob_square_knurl_hex_bolt.stl

For M5x20mm DIN 933 / ISO 4017 hex head bolt

knob_square_knurl_socket_head.stl

For M5x25mm DIN 912 / ISO 4762 socket head cap screw and nut

Axis Changer STL

1 file

axis_changer_20mm.stl

Micro Arm STL

1 file

micro_arm_20mm.stl

Arm Straight STL

20 files

arm_straight_30mm_0_bridges.stl

arm_straight_45mm_0_bridges.stl

arm_straight_60mm_0_bridges.stl

arm_straight_90mm_0_bridges.stl

arm_straight_90mm_1_bridge.stl

arm_straight_120mm_0_bridges.stl

arm_straight_120mm_1_bridge.stl

arm_straight_120mm_2_bridges.stl

arm_straight_150mm_0_bridges.stl

arm_straight_150mm_1_bridge.stl

arm_straight_150mm_2_bridges.stl

arm_straight_180mm_0_bridges.stl

arm_straight_180mm_1_bridge.stl

arm_straight_180mm_2_bridges.stl

arm_straight_180mm_3_bridges.stl

arm_straight_210mm_0_bridges.stl

arm_straight_210mm_1_bridge.stl

arm_straight_210mm_3_bridges.stl

arm_straight_210mm_2_bridges.stl

arm_straight_210mm_4_bridges.stl

Arm Rotated STL 20 files

arm_rotated_30mm_0_bridges.stl

arm_rotated_45mm_0_bridges.stl

arm_rotated_60mm_0_bridges.stl

arm_rotated_90mm_0_bridges.stl

arm_rotated_90mm_1_bridge.stl

arm_rotated_120mm_0_bridges.stl

arm_rotated_120mm_1_bridge.stl

arm_rotated_120mm_2_bridges.stl

arm_rotated_150mm_0_bridges.stl

arm_rotated_150mm_1_bridge.stl

arm_rotated_150mm_2_bridges.stl

arm_rotated_180mm_0_bridges.stl

arm_rotated_180mm_1_bridge.stl

arm_rotated_180mm_2_bridges.stl

arm_rotated_180mm_3_bridges.stl

arm_rotated_210mm_0_bridges.stl

arm_rotated_210mm_1_bridge.stl

arm_rotated_210mm_2_bridges.stl

arm_rotated_210mm_3_bridges.stl

arm_rotated_210mm_4_bridges.stl

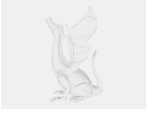
Thumb Screw Knobs STEP 6 files

knob_diamond_knurl_hex_bolt.step

For M5x20mm DIN933 / ISO 4017 hex head bolt

knob_diamond_knurl_socket_head.step

For M5x25mm DIN 912 / ISO 4762 socket head cap screw and nut



knob_grippy_hex_bolt.step

For M5x20mm DIN933 / ISO 4017 hex head bolt

knob_grippy_socket_head.step

For M5x25mm DIN 912 / ISO 4762 socket head cap screw and nut

knob_square_knurl_hex_bolt.step

For M5x20mm DIN933 / ISO 4017 hex head bolt

knob_square_knurl_socket_head.step

For M5x25mm DIN 912 / ISO 4762 socket head cap screw and nut

Axis Changer STEP

1 file

axis_changer_20mm.step

Micro Arm STEP

1 file

micro_arm_20mm.step

Arm Straight STEP

20 files

arm_straight_30mm_0_bridges.step

arm_straight_45mm_0_bridges.step

arm_straight_60mm_0_bridges.step

arm_straight_90mm_0_bridges.step

arm_straight_90mm_1_bridge.step

arm_straight_120mm_0_bridges.step

arm_straight_120mm_1_bridge.step

arm_straight_120mm_2_bridges.step

arm_straight_150mm_0_bridges.step

arm_straight_150mm_1_bridge.step

arm_straight_150mm_2_bridges.step

arm_straight_180mm_0_bridges.step

arm_straight_180mm_1_bridge.step

arm_straight_180mm_2_bridges.step

arm_straight_180mm_3_bridges.step

arm_straight_210mm_0_bridges.step

arm_straight_210mm_1_bridge.step

arm_straight_210mm_2_bridges.step

arm_straight_210mm_3_bridges.step

arm_straight_210mm_4_bridges.step

Arm Rotated STEP 20 files

arm_rotated_30mm_0_bridges.step

arm_rotated_45mm_0_bridges.step

arm_rotated_60mm_0_bridges.step

arm_rotated_90mm_0_bridges.step

arm_rotated_90mm_1_bridge.step

arm_rotated_120mm_0_bridges.step

arm_rotated_120mm_1_bridge.step

arm_rotated_120mm_2_bridges.step

arm_rotated_150mm_0_bridges.step

arm_rotated_150mm_1_bridge.step

arm_rotated_150mm_2_bridges.step

arm_rotated_180mm_0_bridges.step

arm_rotated_180mm_1_bridge.step

arm_rotated_180mm_2_bridges.step

arm_rotated_180mm_3_bridges.step

arm_rotated_210mm_0_bridges.step

arm_rotated_210mm_1_bridge.step

arm_rotated_210mm_2_bridges.step

arm_rotated_210mm_3_bridges.step

arm_rotated_210mm_4_bridges.step

Legacy (V1, obsolete) 34 files

axis_changer_20mm.stl

axis_changer_20mm.step

arm_straight_30mm.stl

arm_straight_60mm.stl

arm_straight_150mm_1_bridge.stl

arm_straight_210mm_2_bridges.stl

arm_straight_90mm_1_bridge.stl

arm_straight_150mm_2_bridges.stl

arm_straight_180mm_1_bridge.stl

arm_straight_180mm.stl

arm_straight_150mm.stl

arm_straight_120mm.stl

arm_straight_120mm_1_bridge.stl

arm_straight_210mm_1_bridge.stl

arm_straight_180mm_2_bridges.stl

arm_straight_210mm.stl

arm_straight_90mm.stl

arm_straight_45mm.stl

arm_straight_90mm_1_bridge.step

arm_straight_30mm.step

arm_straight_45mm.step

arm_straight_60mm.step

arm_straight_90mm.step

arm_straight_180mm.step

arm_straight_210mm_2_bridges.step

arm_straight_210mm.step

arm_straight_180mm_2_bridges.step

arm_straight_210mm_1_bridge.step

arm_straight_150mm.step

arm_straight_150mm_2_bridges.step

arm_straight_120mm_1_bridge.step

arm_straight_120mm.step

arm_straight_180mm_1_bridge.step

arm_straight_150mm_1_bridge.step

Find source .stl files on Thingiverse.com

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