

Angle Stage ± 10 degrees

t the_buff

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Summary

Adjustable Angle or Tilt Stage with ± 10 degrees from center (Stage Size 80mm x 80mm x 25mm)

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Tags: [angle](#) [tilt](#) [stage](#)

This is a small (80x80x25) angle stage that tilts 10 degrees from center in either direction. It is sized to match the other stages I have uploaded separately. It requires 2.8 turns of the screw to move the stage 1 degree. This is similar to a Goniometer Stage or Goniometric Stage, but the center of rotation distance on this stage is approximately 141 mm.

Linear Stage

<https://www.printables.com/model/453719-linear-stage>

Rotary Stage

<https://www.printables.com/model/457219-rotary-stage>

Mounting Plates

<https://www.printables.com/model/470451-stage-mounting-plates>

Printing Issue:

Layer Line Decisions: The sliding surfaces are curved and my primary concern in orienting the parts for printing was how the opposing sides would slide on one another. Do not print both the Top and Bottom parts on end. Yes, it will look better and not require supports, but trust me it is not worth it. The Top and Bottom sliding surfaces will have parallel layer lines which will make it difficult for the parts to slide past one another, and it will cause them to make a terrible screeching sound when rubbing together. The solution I came up with was to print one on end and the other on its side with supports. I choose to print the Top on end with no supports and the Bottom on its side with bed only supports. The unsupported overhang on the Bottom will sag, as seen in the photos, but the design includes additional clearance so the sagging layer shouldn't impact the RevolvingNut. Just trim the stray filament lines and you should be good to go.

Post Processing:

This model requires some post processing in order to work. The holes in the model are sized for tapping. I used the following tools to complete the model:

M6 Tap (5mm hole RevolvingNut)

M3 Tap (2.5mm holes, Nut, Top and on end of Screw)

2 x M3 socket head cap screws to secure Nut to Top

1 x M3 socket head cap screws to secure Washer to end of Screw

3 x M3 socket head cap screws to adjust the Gib

EDIT:

IPT File uploaded (~52MB). Single IPT contains separate solids for all the parts. WARNING: Model was created by amateur CAD person who doesn't know the importance of dimensions and constraints in sketches.

Model files



angle_stage_top.stl



angle_stage_base.stl



angle_stage_screw.stl



angle_stage_washer.stl



angle_stage_gib.stl



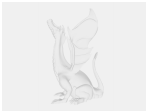
angle_stage_revolvingnut.stl



angle_stage_nut.stl



angle_stage_backclip.stl



goniometer_stage.ipt

☐ WARNING: Created by amateur who doesn't know importance of dimensions and constraints

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