



Servo Latch - Geocache Box Servo Latch



Plexi

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Summary

I'm building a Reverse Geo Cache Box which opens when carried to a specific latitude and longitude. For the box to...

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I'm building a Reverse Geo Cache Box which opens when carried to a specific latitude and longitude. For the box to open, it must have a servo operated latch. This is my design for a servo operated latch. It uses a MG90 servo but a SG90 servo should also work. The latch lever mounts with a 3mm x 38mm screw in a see-saw action with a small spring to push it in the latched position. The cam mounts onto the servo splined shaft (20 splines, 5mm diameter) and is retained with the normal horn screw. The cam rotates pushing down on the latch lever to unlatch. The design uses a small coil spring to keep tension on the latch. One of the advantages of this design is that with the servo in the latched position, the cam is not touching the latch lever. This allows the lever to be pushed out of the way from outside the box if you provide a path to push on it. If you don't want this feature, just leave out any way to reach the lever.

The servo latch requires the following parts:

MG90 or SG90 Servo

38mm long x 3mm cap screw and nut (captive nut is best)

small spring. The spring is not critical but should not be too stiff.

The servo mount is a separate piece which makes it stronger and easier to print. Glue it to the latch base with super glue. The cam and latch should be printed with 75% or more infill while the other pieces can be printed with 30-45% infill.

Here's my completed Treasure Quest Design: <https://www.thingiverse.com/thing:4823048>

Print Settings

Printer:

HyperCube

Rafts:

No

Supports:

No

Resolution:

0.1

Infill:

35%

Filament:

HatchBox PLA

Grey

Category: DIY

Model files



servo_latch_base_v3.stl



servo_latch_cam_v3.stl



servo_latch_servo_plate_v3.stl



servo_latch_strike_v2.stl



servo_latch_latch_v3.stl

[Find source .stl files on Thingiverse.com](#)

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