



Re-Keyable Cylinder Lock



LoboCNC

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Summary

This simple key lock can be re-keyed to create 256 different key/lock combinations. It's an interesting example of how...

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This simple key lock can be re-keyed to create 256 different key/lock combinations. It's an interesting example of how locks work and maybe even useful to incorporate into your own projects. This is a great project for those with good eyesight and steady hands.

The lock uses 4 sets of pins, where the overall length of each set of pins is the same, but where the individual pin lengths vary. And there are also 4 different length key pins that go into the key, with a particular length key pin matched to the lengths of the pins in the lock. You'll also need a single thin rubber band to act as the bias spring for all 4 sets of pins.

Print Settings

Printer:

UDIO

Resolution:

0.2mm

Infill:

15%

Notes:

Print 1 each of the parts Lock1, Lock2, Lock3 and Key. You'll need 4 pairs of pins, each pair adding up to a total length of 0.65", plus a total of 4 keypins:

Pairing:

Back Pin----Front Pin---Key Pin

pin400-----pin250----- keypin400

pin350-----pin300-----keypin350

pin300-----pin350-----keypin300

pin250-----pin400-----keypin250

Lightly sand the sides of each pin and key pin to remove any bulges from the printing process.

Post-Printing

Assembly (the fun part!)

1. Assemble the lock2 part (the rotating cylinder) into the lock1 part (the housing) as shown in the 7th photo. Orient both parts in front of you as shown in the photo, with the locking tab of the cylinder rotated all the way CCW.
2. Lay out your sets of pins and key pins as shown in the 8th photo (left to right: back pin, front pin, key pin). You can mix and match any of the rows as long as you keep each row together.
3. Starting with the slot at the 2 O'Clock position (7th photo), insert first the front pin and then the back pin from your first row of pins. Repeat for all 4 sets of pins. When you are done, all pins should protrude from the cylinder by the same amount as shown in the 9th photo.
4. Lay your thin rubber band into the grooves in the back side of lock3 part (the fixed cylinder) and stuff the remainder of the rubber band through the unused slot as shown in 10th photo. Note that the unused slot is aligned with the small tab on the other side of the fixed cylinder, as shown in the 11th photo.
5. Flip the fixed cylinder so that the groove is down and orient it so that its small tab is aligned with the locking tab. Carefully press it onto the

housing until it clicks in place as shown in the 12th photo. The rubber band in the groove should stretch across the back side of each of the back pins. Hook the excess length of rubber band over the small tab and loop it around the body a couple of times as shown in the photo.

6. Take each of the key pins and insert them, in order in the pockets at the base of the key, as shown in the 13th photo. Make sure all the key pins are seated firmly against the bottom of each pocket. The 14th photo shows the key with all the key pins inserted.

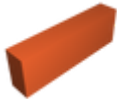
If you haven't mixed anything up, you should now be able to insert the key and rotate it CCW to rotate the locking tab 90 degrees. Note that with this version, you can't remove the key while the lock is in the OPEN position. Rotate it back closed to remove the key.

Category: Engineering

Model files



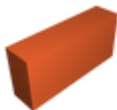
lock2.stl



keypin350.stl



lock3.stl



keypin250.stl



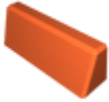
lock1.stl



key_w_hole.stl



key.stl



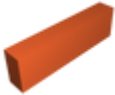
pin400.stl



pin300.stl



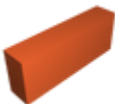
pin350.stl



keypin400.stl



pin250.stl



keypin300.stl

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