Drop-in Build Plate for Makergear M2

PARTS LIST AND ASSEMBLY GUIDE

J. Haupt, 12/1/15

Parts

Front Left Corner Pad

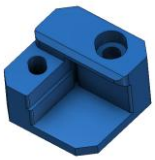
Files:
CornerPad_FrontLeft.stl
CornerPad_FrontLeft.stp

Material used: PETG

Front Right Corner Pad

Files:
CornerPad_FrontRight.stl
CornerPad_FrontRight.stp

Material used: PETG



Rear Left Corner Pad

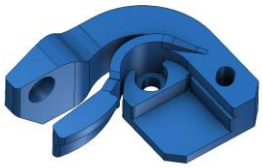
Files:
CornerPad_RearLeft.stl
CornerPad_RearLeft.stp

Material used: PETG
Note: Use support material under leaf spring feature.

Rear Right Corner Pad

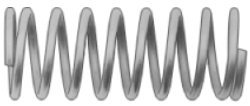
Files:
CornerPad_RearRight.stl
CornerPad_RearRight.stp

Material used: PETG
Note: Use support material under leaf spring feature.



.240” OD Compression Spring

McMaster-Carr Part: 1986K64
Quantity: 1 Pack (2/6 needed)



Suggested Hardware

6x M3x16 Socket Head Cap Screws
2x M3x8 Socket Head Cap Screws

Alternative hardware for use with cable chain upgrade:
6x M3x22 Socket Head Cap Screws (stock hardware)
2x M3x16 Socket Head Cap Screw

Description

These parts replace the stock rubber corner pads for the Heated Build Platform on the Makergear M2 and eliminate the need to retain the build plate with binder clips.

Notes

-The HBP will sit about 1mm closer to the support spider.

-The design of these parts attempt to accommodate slight departures of the build plate dimensions from 8”X10”.

-This upgrade is compatible with either a Zebra Plate or the stock glass plate.

-These parts were designed for an early-2013 model Makergear M2. It is possible that Makergear has made changes to the more recent models that are not accounted for with these models.

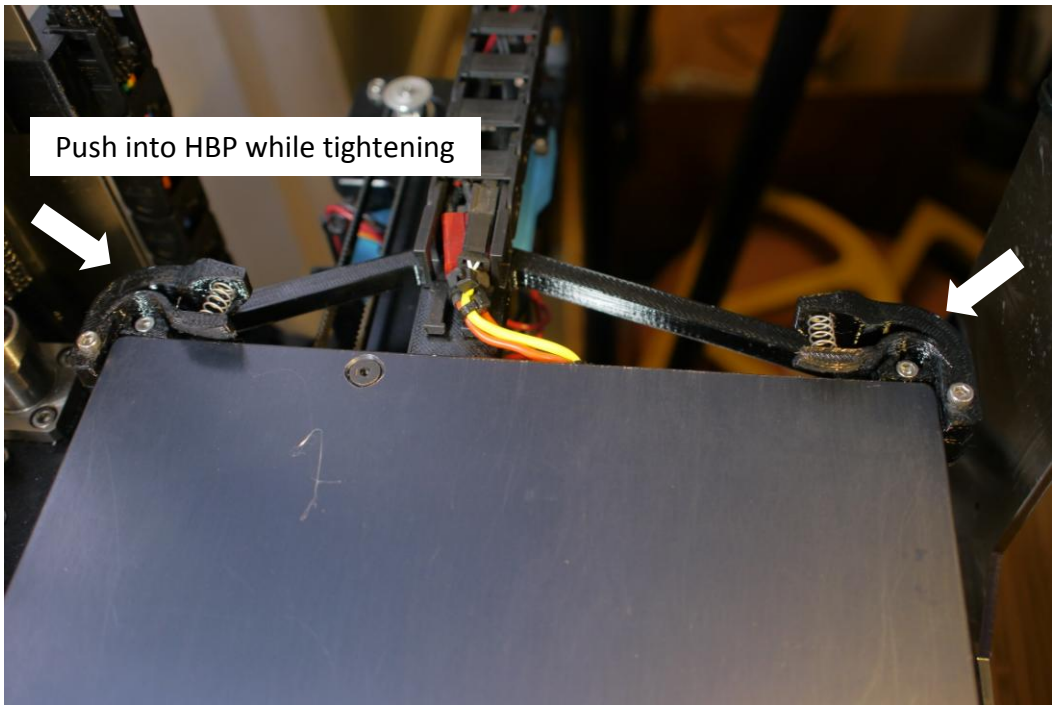
-The Rear Corner Pads will function without the compression springs installed but the heat from the HBP deforms the leaf spring features (build plate contact pads), relieving the spring force. The compression springs ensure long-term functionality. Materials other than PETG, like Polycarbonate, may have better dimensional stability when heated obviating the need for the compression springs.

-The rubber corner pads are no longer used, so a collision of the extruder with the glass build plate is probably more likely to break the glass. Be careful that your Z height is well calibrated.

Legal

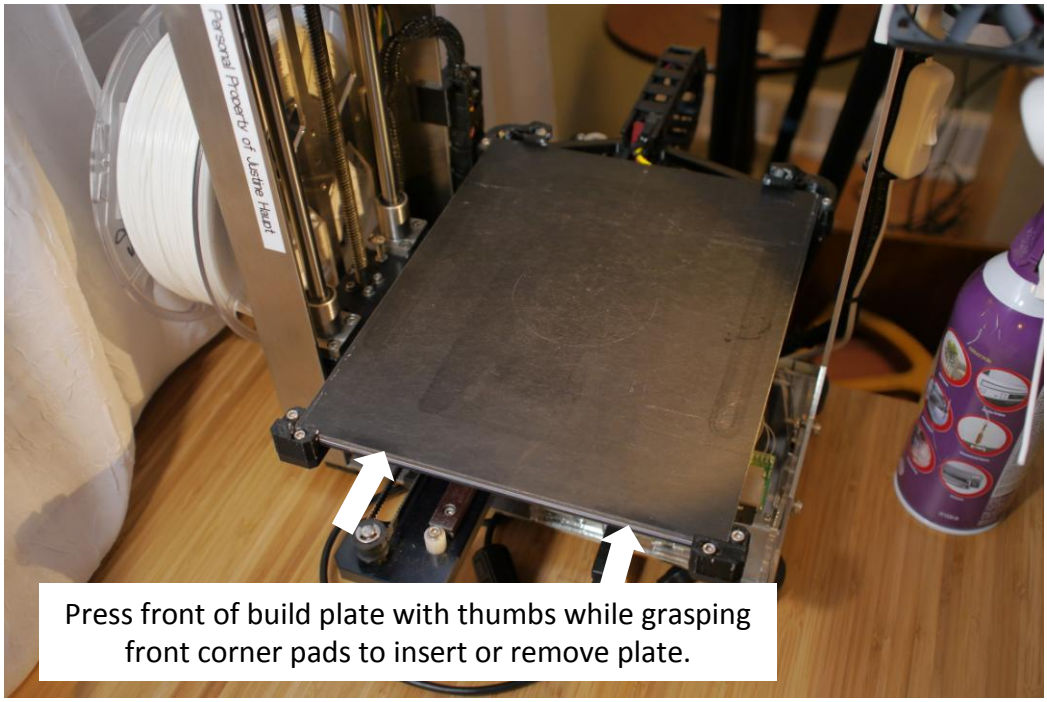
Assembly

1. Insert the .24” OD springs into the blind holes on the rear corner pads.
2. Remove the stock rubber corner pads.
3. Install the new corner pads with screws of appropriate length. Do not tighten the screws.
4. With the aluminum HBP base in place (without the glass plate or Zebra Plate), tighten the corner pad screws while pushing the pads inward against the aluminum plate. The holes in the corner pads are slotted to accommodate this clamping action.



5. With the aluminum HBP base secured in this way, the build plate (glass or Zebra) should install easily and without friction against the corner pads. If the build plate is found to rub against the corner pads so that the leaf springs on the rear corner pads do not push it frontwards freely, loosen and slide the corner pads outward as necessary.

6. IMPORTANT. The position of the y-axis limit switch may need to be adjusted to prevent the extruder from contacting the Front Left Corner Pad when all three axes are homed. Test the motion by moving the HBP by hand until the y-axis limit switch is depressed. A notch in the Front Left Corner Pad allows the extruder to home all the way to the edge of the build plate, but the default homing sequence should be used whereby the x-axis is homed before the y-axis, or else the extruder will contact the Front Left Corner Pad while homing.



Press front of build plate with thumbs while grasping front corner pads to insert or remove plate.

Use

To install the build plate (glass or Zebra Plate) slide the back against the sprung pads on the Rear Corner Pads and press the front edge in with your thumbs, allowing the overhangs on the front corner pads to retain the plate.

To remove the build plate, press the front edge in with your thumbs and lift.