



Replicator 2X Bar Mount Replacement Instructions

These are instructions for replacing the bar mount assembly for the MakerBot Replicator 2X's dual extruders. They will require the use of the 2.5 mm hex wrench that came with your printer, a pair of scissors, some tape, and possibly a small flathead screwdriver.

Before you begin, do the following:

- Unload any filament.
- Turn off the MakerBot Replicator 2X.
- Remove the filament guide tubes and spool holders.
- Unplug power and USB cables.

1. Clip the zip tie holding the extruder cable to the plastic guide at the back of the extruders.

Be careful -- make sure you clip only the zip tie and avoid any of the wires going into the extruder cable.

2. Use your 2.5 mm hex wrench to loosen the fan bolts on the left extruder.

These are the two bolts at the lower corners of the left extruders. Loosen them just enough that you can remove the left extruder motor and attached drive block from the dual extruder assembly by sliding them to the left.

3. Remove the motor cable connector from the left extruder motor.

This is the white plastic clip at the top of the motor. Wiggle it free and label it with a piece of tape to identify it as the left motor cable. Set the left extruder motor assembly aside.

4. Remove the two bolts holding the extruders to the extruder carriage.

Use the 2.5 mm hex wrench to unscrew the two bolts holding the extruders to the extruder carriage. One bolt is at the left side of the extruder carriage and the other is at the right.

5. Slide the rest of the dual extruders off of the extruder carriage.

Move the whole assembly to the right and tilt it to free it from the extruder carriage.

6. Free the extruder cable from the clips on the back of the MakerBot Replicator 2X.

Carefully clip the zip tie attaching the extruder cable to the top clip on the back of the MakerBot Replicator 2X. Gently pull the cable free of the other clips. Set the extruders down next to your bot.

7. Remove the left fan assembly.

The wires from the left extruder fan are joined to the fan wires in the extruder cable by a white plastic connector. Disconnect the two sets of leads. Label the connector coming from the extruder cable with a piece of tape to identify it as the left extruder fan connector.

Slide the left extruder fan, fan bolts, heatsink, and spacers out of the bar mount as a group and set them aside with the left extruder motor assembly.

8. Remove the right extruder fan assembly and motor assembly from the bar mount.

Loosen the two bolts at the front of the right extruder fan until you can remove both the motor assembly (motor and drive block) and fan assembly (fan, bolts, spacers and heatsink). Disconnect the fan leads from the extruder cable fan wires and set both assemblies aside.

Make sure to keep the right extruder assemblies separate from the left extruder assemblies. The assemblies are not interchangeable.

9. Disconnect both sets of heater wires from the extruder cable.

Both sets of white heater wires coming from the thermal core are attached to the heater wires in the extruder cable with black plastic connectors. Use your tape to label the extruder cable heater wires for the left extruder.

10. Remove the wire wrapping from the extruder cable.

Find the seam on the extruder cable and unroll the wrapping from the bundle of wires that form the cable. Set it aside.

11. Flip the MakerBot Replicator 2X onto its left side and remove the electronics cover.

Use the 2.5 mm hex wrench to remove the bolts securing the cover. Set the cover and bolts aside.

12. Identify and label the new left thermocouple.

Take out the new bar mount and unwind and separate the thermocouples. Orient the bar mount so that the two sets of white heater wires emerge from the back of the bar mount and the nozzle point downwards. Add a tape label to the very end of the left thermocouple to identify it.

13. Replace the thermocouples in the extruder cable with the ones from the new bar mount.

Lay the thermocouples out next to the bundle of extruder wires with the new bar mount next to the old one and the two sets of red and yellow leads at the Mightyboard end.

The bundle of extruder wires is taped together at intervals. At each point where the bundle is taped, clip the tape, remove the old thermocouples, add the new ones and re-tape the bundle.

14. Remove the old thermocouple leads from the Mightyboard.

The two old thermocouples should be connected to some terminals at the corner of the Mightyboard closest to the Z-axis motor. If these terminals are secured by buttons, push the buttons on the terminals to release the red and yellow leads. If the terminals are secured by screws, use a small flathead screwdriver to loosen the screws until you can remove the leads.

15. Add the new thermocouple leads to the Mightyboard

Two of the terminals are labeled "A" and two are labeled "B". The leads for the left extruder thermocouple go to the "B" terminals and the leads for the right extruder thermocouple go to the "A" terminals. Each set has one terminal labeled "Red" and one terminal labeled "Yellow." It's very important that each lead go into the correct terminal.

For terminals with buttons, press the buttons on the terminals, slide the leads all the way in, and release the buttons. For terminals with screws, slide the leads in and tighten the screws. Tug on the leads to make sure they're secure. You might find that it's easier to reconnect one lead at a time.

16. Return the electronics cover to the bottom of the MakerBot Replicator 2X.

Use the four small bolts and the 2.5 mm hex wrench to secure the cover to the bottom of your bot and flip the printer upright again.

The old bar mount should now be completely disconnected from the Mightyboard, the extruder cable and the extruders. You can discard it.

17. Orient the new bar mount so the nozzles point down and the heater wire leads point away from you.

18. Route the right side thermocouple around the channel in the bar mount

Bend the thermocouple as little as possible.

19. Add the right side motor assembly.

The drive block should sit on top of the bar mount, with the motor at the back of the bar mount. There is a depression in the bottom of the drive block that fits over the cylindrical top of the thermal barrier tube.

20. Add the right side fan assembly to the front of the bar mount.

Insert the ends of the two right side fan assembly bolts into the holes on the right side of the front face of the bar mount such that the bolts are at the bottom edge of the fan and the fan leads emerge from the fan at the lower left corner.

Use the 2.5 mm hex wrench to tighten the fan bolts into the bar mount and motor.

21. Add the bar mount with right extruder to the extruder carriage.

The motor goes at the back of the extruder carriage and the fan goes at the front.

22. Secure the new bar mount to the extruder carriage.

Use the 2.5 mm hex wrench and the two bolts you set aside earlier to attach the new bar mount to the extruder carriage.

23. Connect the new heater leads to the extruder cable.

You should see the two sets of white heater wires coming up through the extruder carriage behind the bar mount.

Find the two corresponding black plastic connectors coming from the extruder cable. You should have labeled the left side connector with some tape. Connect it to the heater wires coming from the left extruder. Connect the unlabeled connector to the heater wires coming from the right extruder.

24. Connect the right extruder fan leads to the extruder cable.

Find the two white plastic connectors coming from the extruder cable. You should have labeled the left side connector with tape, so the unlabeled one is the right side connector. Connect it to the leads coming from the right extruder fan.

25. Route the left side thermocouple around the channel in the bar mount

Bend the thermocouple as little as possible.

26. Add the left side motor assembly.

The drive block should sit on top of the bar mount, with the motor at the back of the bar mount. There is a depression in the bottom of the drive block that fits over the cylindrical top of the thermal barrier tube.

27. Add the left side fan assembly to the front of the bar mount.

Insert the ends of the two left side fan assembly bolts into the holes on the left side of the front face of the bar mount such that the bolts are at the bottom edge of the fan and the fan leads emerge from the fan at the upper right corner.

Use the 2.5 mm hex wrench to tighten the fan bolts into the bar mount and motor.

28. Attach the left extruder fan leads to the extruder cable.

Connect the remaining white plastic connector coming from the extruder cable to the corresponding connector coming from the left extruder fan.

29. Enclose the extruder cable wires in the wire wrapping.

Wrap the wire wrapping around the length of the bundle of extruder wires.

30. Attach the extruder end of the extruder cable to the plastic guide at the back of the extruder.

Pull the zip tie very tight and clip off the excess.

31. Reattach the extruder cable to the back of the MakerBot Replicator 2X.

Move your extruders all the way to the front left corner of the MakerBot Replicator 2X. Zip tie the cable to the clip at the top of the back of your bot, leaving a small amount of slack on the cable. Push the cable into the other guides on the back of the bot.

Your MakerBot Replicator 2X is all set up to print again. Plug it in, turn it on, load up some filament and try out your new bar mount.