

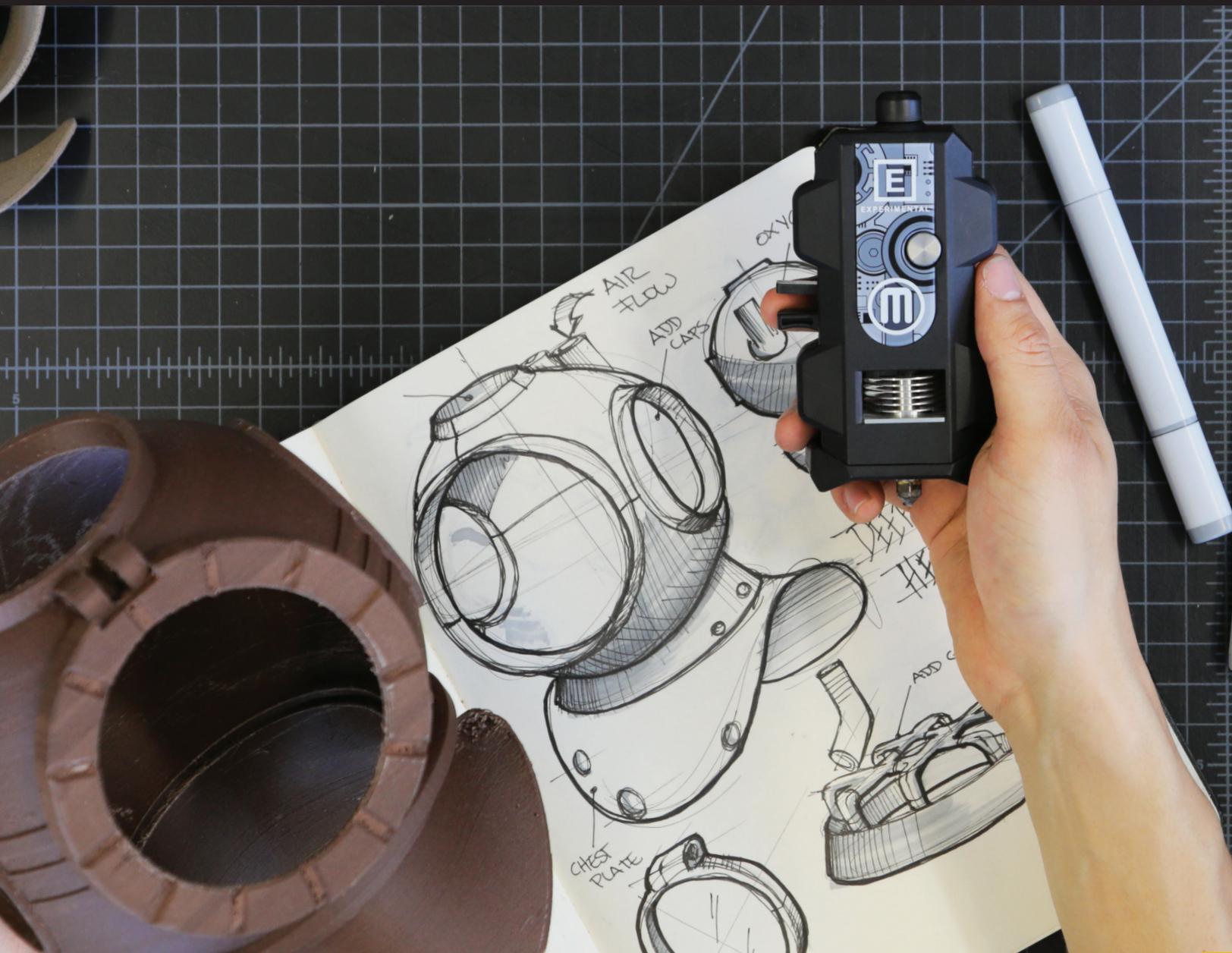
MakerBot® Labs™

# Experimental Extruder

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## CONFIGURATION AND NOZZLE CHANGING GUIDE

**NOTE:** The Experimental Extruder is an experimental product and is not covered under warranty or MakerCare.



## BEFORE YOU START:

Download and 3D print the Experimental Extruder Jig using your standard PLA configuration for a steady base during Nozzle changing. ([thingiverse.com/thing:2557034](https://thingiverse.com/thing:2557034))



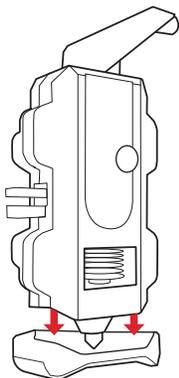
### UPON UNBOXING YOUR EXPERIMENTAL EXTRUDER PACKAGE, YOU SHOULD HAVE THE FOLLOWING COMPONENTS:

- › MakerBot® Labs™ Experimental Extruder
- › Active Cooling Duct (*installed*)
- › MakerBot® Replicator® Z18 Swivel Clip (*installed*)
- › Extruder Top Cap
- › Two Nozzle Wrenches
- › 0.4 mm Brass Nozzle (*installed*)
- › 0.6 mm Brass Nozzle
- › 0.8 mm Brass Nozzle
- › 0.6 mm Stainless Steel Nozzle

### STEP ONE:

Choose your Experimental Extruder configuration:

#### MAKERBOT REPLICATOR Z18 3D PRINTER:

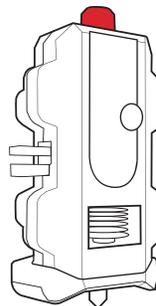


#### Remove the Active Cooling Duct by pulling down.

Ensure the Replicator Z18 Swivel Clip is attached.

You may optionally remove the Replicator Z18 Swivel Clip and replace it with the Extruder Top Cap (*may perform better with certain materials*).

#### MAKERBOT REPLICATOR+, MINI+ REPLICATOR (5TH GEN), MINI 3D PRINTERS:



#### Remove the Replicator Z18 Swivel Clip and replace it with the Extruder Top Cap.

Make sure the Active Cooling Duct is snapped into place — opening toward the back.

## STEP TWO:

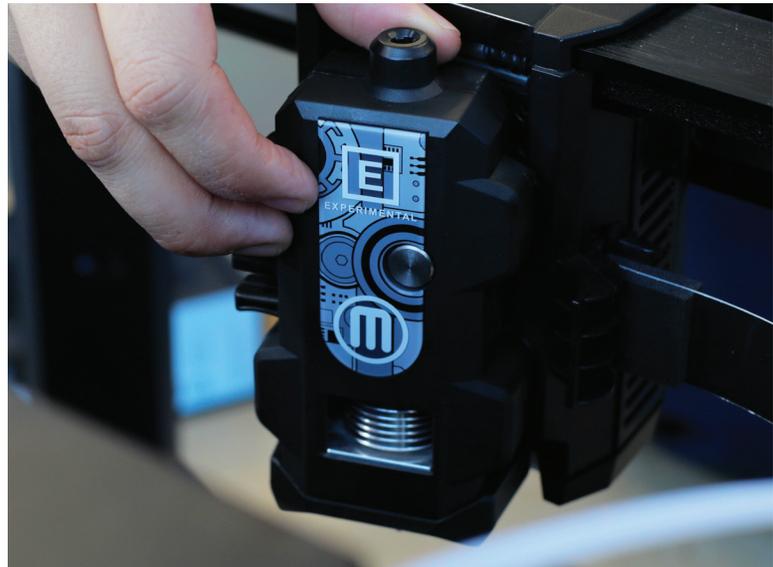
Attach the Experimental Extruder to the carriage of your MakerBot 3D printer and run the Preheat function.



### PRO TIPS:

Some materials may cling to the Nozzle, to avoid this load and then unload MakerBot PLA filament to purge the Nozzle.

Once hot, you may want to scrape any caked filament off of the Nozzle using forceps or another tool.



## STEP THREE:

Wearing heat resistant gloves remove the hot Experimental Extruder from the 3D printer carriage and place into the Experimental Extruder Jig.



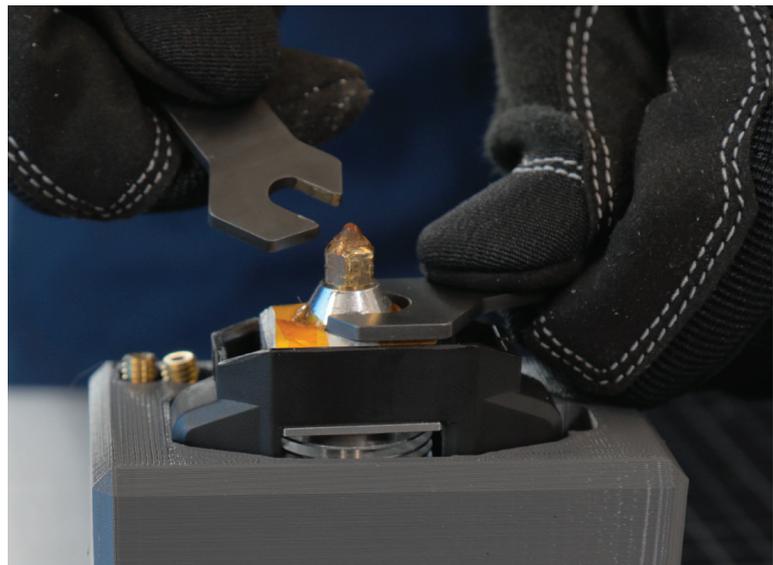
### CAUTION:

Always wear heat resistant gloves and protective eyewear when handling a hot Nozzle.



## STEP FOUR:

Use the large side of one Nozzle Wrench to grasp the flats on the thermal core cone (adjacent to the Nozzle).





### **STEP FIVE:**

Use the small side of the second Nozzle Wrench to grasp the Nozzle.



### **STEP SIX:**

Loosen the Nozzle with the two Nozzle Wrenches but do not completely remove — allow the Nozzle to cool.



### **STEP SEVEN:**

Once the loosened Nozzle has cooled, remove it completely, then screw on the replacement Nozzle of choice and hand-tighten.

## STEP EIGHT:

Heat the Experimental Extruder on your 3D printer using the Preheat function, then place the Experimental Extruder back into the Experimental Extruder Jig and wrench tighten the Nozzle one additional 40° turn.



## STEP NINE:

Reattach the Experimental Extruder to the 3D printer's carriage and run the Z-Calibrate function. You are now ready to load your 1.75 mm diameter filament of choice and print.



For additional resources and up-to-date information, visit [MakerBot.com/Labs](https://www.MakerBot.com/Labs)



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