

# **MAKERBOT® SMART EXTRUDER**

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## **1. WHAT IS A MAKERBOT REPLICATOR SMART EXTRUDER? WHAT MAKES IT SMART**

The MakerBot Replicator Smart Extruder is the swappable part of your MakerBot Replicator 3D Printer that melts, deposits, and fuses filament in precise layers and create 3D printed objects.

The sophisticated technology inside the Smart Extruder includes a sensor to detect filament absence and automatically pause your print, a motion sensor that detects filament slippage and pauses your print, a positioning sensor to help with automatic build plate leveling (for the MakerBot Replicator Mini) and assisted build plate leveling (for the MakerBot Replicator and MakerBot Replicator Z18).

These three sensors are fully integrated with the software of your MakerBot 3D printer and are designed to help minimize downtime by providing constant feedback to your 3D printer's firmware and sending messages to your MakerBot Desktop and MakerBot Mobile apps. If any unusual event happens on your printer that requires your attention, you will receive instant notification on MakerBot Desktop or MakerBot Mobile

## **2. I HAVE MORE THAN ONE MAKERBOT REPLICATOR 3D PRINTER. WILL THE SAME SMART EXTRUDER WORK ON ALL OF THEM?**

There are two versions: one that's compatible with the MakerBot Replicator Mini Compact 3D Printer and the MakerBot Replicator Desktop 3D Printer and another for the MakerBot Replicator Z18 3D Printer. If you are purchasing a new Smart Extruder, you should get one designed for your specific MakerBot Replicator 3D printer or it will not attach or function correctly.

## **3. HOW IS THE SMART EXTRUDER DIFFERENT FROM THE EXTRUDER ON THE MAKERBOT REPLICATOR 2 DESKTOP 3D PRINTER?**

The MakerBot Replicator 2 extruder has a different design that does not include sensors or technology that communicates directly with your printer and is also not swappable. After listening to our customers about how to improve extruder design and identifying some key concerns, MakerBot created the MakerBot Replicator Smart Extruder to be modular and swappable to help our customers minimize downtime, evolve with technology, and plan ahead for natural wear.

## **4. WHAT FILAMENT MATERIALS CAN THE SMART EXTRUDER WORK WITH?**

At this time, all MakerBot Replicator Smart Extruders are optimized for using MakerBot PLA Filament only. We do not recommend using MakerBot Flexible Filament or ABS Filament with your MakerBot Replicator Smart Extruder.

## **5. WHERE CAN I FIND SMART EXTRUDER INSTRUCTIONS AND TROUBLESHOOTING TIPS?**

For instructions on installing your Smart Extruder, loading and unloading filament, or tips on taking care of your Smart Extruder (like how to unclog your Smart Extruder) and more, visit our helpful Support webpage at [www.makerbot.com/support](http://www.makerbot.com/support) and select your MakerBot 3D printer for printer specific tips.

## **6. HOW LONG WILL MY MAKERBOT REPLICATOR SMART EXTRUDER LAST?**

The rate of wear on the Smart Extruder is dependent on how you use it and the settings it's configured for, over time. If continuous production and minimal downtime is a priority, we recommend you keep at least one spare Smart Extruder on hand so that you can easily swap it into place when you need it. See [this video](#) for tips on correctly using and extending the lifespan our Smart Extruder.

# **MAKERBOT®** **3D PRINTED PRODUCTS** *Continued*

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## **7. WHAT ARE THE SIGNS OF SMART EXTRUDER WEAR?**

Over time, you may notice more frequent clogs in your Smart Extruder and under-extrusion of filament. Under-extrusion can show up as gaps, cracks and “skips” in your 3D print and resolution issues. You may also hear a repetitive clicking noise coming from your Smart Extruder. These are signs of wear and that it’s time to replace your Smart Extruder.

## **8. HOW CAN I EXTEND THE LIFE OF MY EXTRUDER?**

Some of the best ways to prevent issues with your Smart Extruder and extend its lifespan are properly completing cool down and loading/unloading procedures, as well as making sure your build plate is always properly leveled.

To help prevent clogging, always let your 3D printer fully complete the filament loading before turning it off or unloading filament. This process can take a few minutes, but if you turn off your 3D printer before the Smart Extruder is fully cooled, you risk a higher chance of a clog forming or damaging the Smart Extruder’s parts. Never remove filament from the Smart Extruder before instructed to do so by your 3D printer’s control panel or MakerBot Desktop.

If you’re experiencing jams or print-quality issues in your first layers, try experimenting with the ‘z-axis offset’ settings in your MakerBot Desktop Device Preferences panel. Getting the right setting helps level your build plate and can also help reduce wear on your Smart Extruder.

For more Smart Extruder tips, visit [www.makerbot.com/smartextruder](http://www.makerbot.com/smartextruder)

## **9. CAN I GET MY SMART EXTRUDER(S) REPAIRED?**

MakerBot does not offer a Smart Extruder repair service at this time. However, if your Smart Extruder is within the limited warranty period of 90 days from date of delivery and is having issues, please contact MakerBot Support to see if you are eligible to receive a replacement Smart Extruder.

If you have purchased a MakerBot MakerCare Protection Plan, you are covered for up to two Smart Extruder incidents per year for the duration of your Plan.

MakerBot also periodically offers discounts on products and accessories such as Smart Extruders. Check our Special Offers page ([makerbot.com/special-offers](http://makerbot.com/special-offers)) for more information

## **10. WILL THERE BE NEW VERSIONS OF THE SMART EXTRUDER?**

MakerBot strives to continuously improve all of our products and the Smart Extruder is no different. It’s our goal to have the best Smart Extruder available and sometimes that requires refinements. While we’re happy with the sophisticated technology of the Smart Extruder, we always continue to enhance it based on technical innovations, customer feedback, or new filament materials. When upgrades occur, you are well positioned to leverage your current investment in a MakerBot Replicator 3D Printer; You don’t need to purchase a whole new 3D printer — just a new Smart Extruder.

## **11. WHEN DOES THE WARRANTY PERIOD BEGIN?**

The warranty period for your Smart Extruder begins with date of delivery and is in place for 90 days after delivery

## **12. HOW MANY SMART EXTRUDERS CAN I HAVE REPLACED WITH A MAKERBOT MAKERCARE PROTECTION PLAN?**

All MakerCare plans cover two (2) Smart Extruder incidents per year for the duration of the plan you purchased.

# **MAKERBOT®** **3D PRINTED PRODUCTS** *Continued*

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## **13. WILL FUTURE SMART EXTRUDER DESIGNS BE SUPPORTED BY MY MAKERBOT 3D PRINTER?**

Yes. Our latest generation of MakerBot Replicator 3D Printers (including the MakerBot Replicator Desktop 3D Printer, MakerBot Replicator Mini Compact 3D Printer and the MakerBot Replicator Z18 3D Printer) were designed with the ability to swap in new, compatible Smart Extruders. Owners of these 3D printers are well positioned to leverage their current investment to quickly adapt to changes (such as in new filament materials) in this fast-evolving field. If such change occurs, you can simply purchase a new Smart Extruder, rather than a whole new 3D printer.