

Rat Rig

02. [Beginner] Linear rail maintenance guide without disassembly

How to clean and lubricate the linear rail and carriage without separating them from one another or disassembling your machine.

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INTRODUCTION

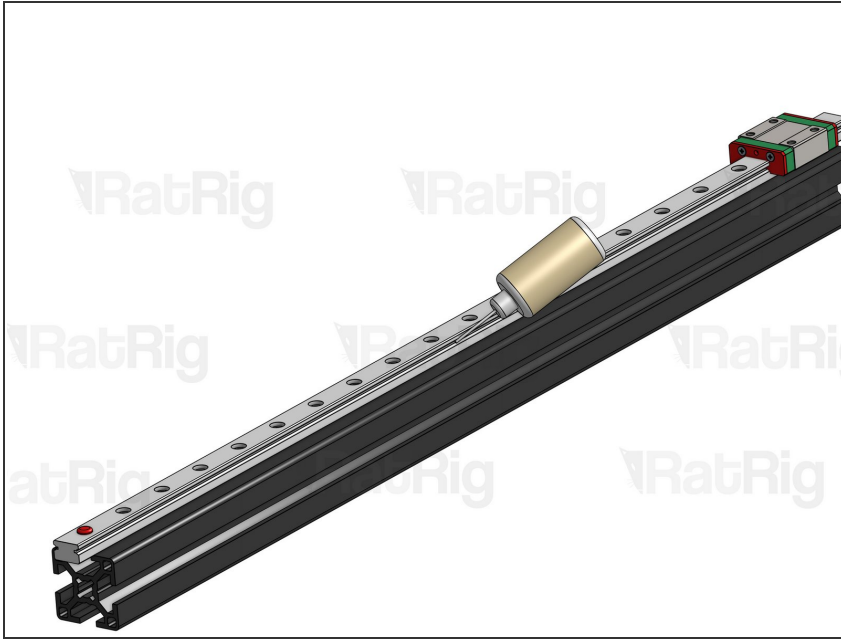
Over time, linear rails and carriages will collect particles of dust and debris, requiring cleaning and maintenance. This guide is designed to show you how to clean and lubricate the linear rail and carriage without separating them from one another. The linear rail does not need to be removed from the printer for this process.

Step 1 — Cleaning the linear rail



- Disassemble and remove anything attached to the carriage of the rail you wish to clean.
- Move the carriage to one end of the linear rail.
- Apply a small amount of 99% isopropyl alcohol to a lint-free paper towel.
- Wipe down the length of the rail with the paper towel, ensuring that you grip the sides of the rail tightly. This will allow the paper towel to clean the groove down the side of the rail, as well as the other surfaces.
- Depending on the amount of dirt and debris present, repeat this as necessary.
- Carefully slide the carriage to the far end of the rail and clean the area previously obscured.

Step 2 — Lubricating the carriage



- Lubrication of the carriage is difficult, but not impossible, without removal from the rail. The easiest method to lubricate whilst installed is to use a light oil such as “3-in-1 oil” or sewing machine oil.
- The most important requirement is that the lubricant must not have an additive. These should not be used for linear rails as the additives can interfere with the precise tolerances which linear rails have. The most common additives are as follows:
 - Polytetrafluorethylene (also known as PTFE or teflon)
 - Graphite
 - Molybdenum disulfide
 - Boron nitride
- Simply apply a drop of light oil into each of the channels on either side of the linear rail and then run the carriage over it. Repeat as necessary.

Step 3 — Reassembly



- Reattach any components to the carriage which were removed in step 1.