

How Do I Maintain My 3D Printer?

A practical lubrication guide

A 3D printer is a precision motion machine. Keep the rails, screws, bearings and pivots clean and correctly lubricated and it stays quiet, smooth and accurate. Neglect them and you get noise, ringing, layer shifts and wear. Here is what to lubricate, what to use, how, and how often.

Which part, which product

Part	Use	Why / notes
Smooth rods & linear bearings	ICHOREX Oil	Thin oil wicks into ball tracks; grease is too thick
Linear rails (MGN etc.)	SSG 25	Clings to the track; ICHOREX Grease is a clean alternative
Lead screws (Z-axis)	SSG 25	Resists being pushed off under vertical load
Small bearings & pivots	ICHOREX Oil	Clean, light, frees movement without drag
Precision / sealed bearings	ICHOREX Grease	Low-friction, plastic-safe, stays in place
Plastic gears	PGG 20	Plastic-safe, low-noise; avoid mineral EP grease
Hot end / thermal interface	Thermal Grease 12.3	Thermal compound, never a lubricating grease
Belts	NEVER LUBRICATE	Belts grip by friction; lubricant makes them slip
Print bed / build surface	NEVER LUBRICATE	The bed needs adhesion, the opposite of lubrication

How to apply it properly

- 1 Power down and cool.** Never lubricate a powered or hot machine.
- 2 Clean first.** Wipe old lubricant and dust off with a lint-free cloth. A little IPA on metal helps; let it dry.
- 3 Apply a thin film.** A few drops of oil or a thin smear of grease. Needle tip to place, brush tip to spread.
- 4 Work it in.** With the printer off, move the carriage, bed and Z-axis through full travel 20 to 30 times.
- 5 Wipe off excess.** A correct rail looks almost dry. Excess just collects dust.
- 6 Do not mix greases.** Clean off the old grease before applying a different one.

How often?

Most makers: every three to six months, or every 50 to 100 printing hours. Heavy users: every two to three months.

The machine will also tell you, through new noise, visible dryness, or ringing and layer artefacts that were not there before. Inspect rods, bearings and screws for wear while you are there.

The four rules

- Clean old lubricant off first; never mix greases.
- Apply sparingly and wipe off the excess.
- Never lubricate belts or the print bed.
- Follow your equipment maker's lubricant spec.

ICHOREX Oil and Grease cover most routine maintenance jobs. For rails, lead screws, plastic gears and thermal interfaces, the specialist products above are the better call. Test compatibility before use. No manufacturer approvals are claimed unless stated in writing.