ISS 3D Printer  
[International Space Station’s 3-D Printer - NASA](https://www.nasa.gov/image-article/international-space-stations-3-d-printer-2/)  
International Space Station’s 3-D Printer — NASA’s website describes how the first 3D printer in space was put into operation on the ISS.  
  
[3D Printing: Saving Weight and Space at Launch - NASA](https://www.nasa.gov/missions/station/iss-research/3d-printing-saving-weight-and-space-at-launch/)  
3D Printing: Saving Weight and Space at Launch — NASA shows how 3D printing helps reduce the need to send spare parts from Earth.  
  
[ESA - ESA launches first metal 3D printer to ISS](https://www.esa.int/Science_Exploration/Human_and_Robotic_Exploration/ESA_launches_first_metal_3D_printer_to_ISS)  
ESA launches first metal 3D printer to ISS — Recent news about sending the first metal printer to the station.  
  
[Astronauts 3D-print 1st metal part while on ISS | Space](https://www.space.com/astronauts-3d-print-first-metal-part-on-iss)  
Astronauts 3D-print 1st metal part while on ISS — Report on successful metal printing in orbit.  
  
summary   
The 3D printer aboard ISS is part of NASA’s **3D Printing in Zero G** experiment and the station’s Additive Manufacturing Facility (AMF). The first plastic 3D printer was sent in 2014 to build tools like wrenches and brackets.   
More recently, ESA sent a metal 3D printer to ISS. This metal printer deposits stainless steel wire melted by a laser, in a controlled, sealed chamber (often with nitrogen environment to prevent oxidation).   
The purpose is to allow on-demand manufacture of spare parts and tools, reducing reliance on Earth resupply, and supporting sustainability in deep-space missions.  
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