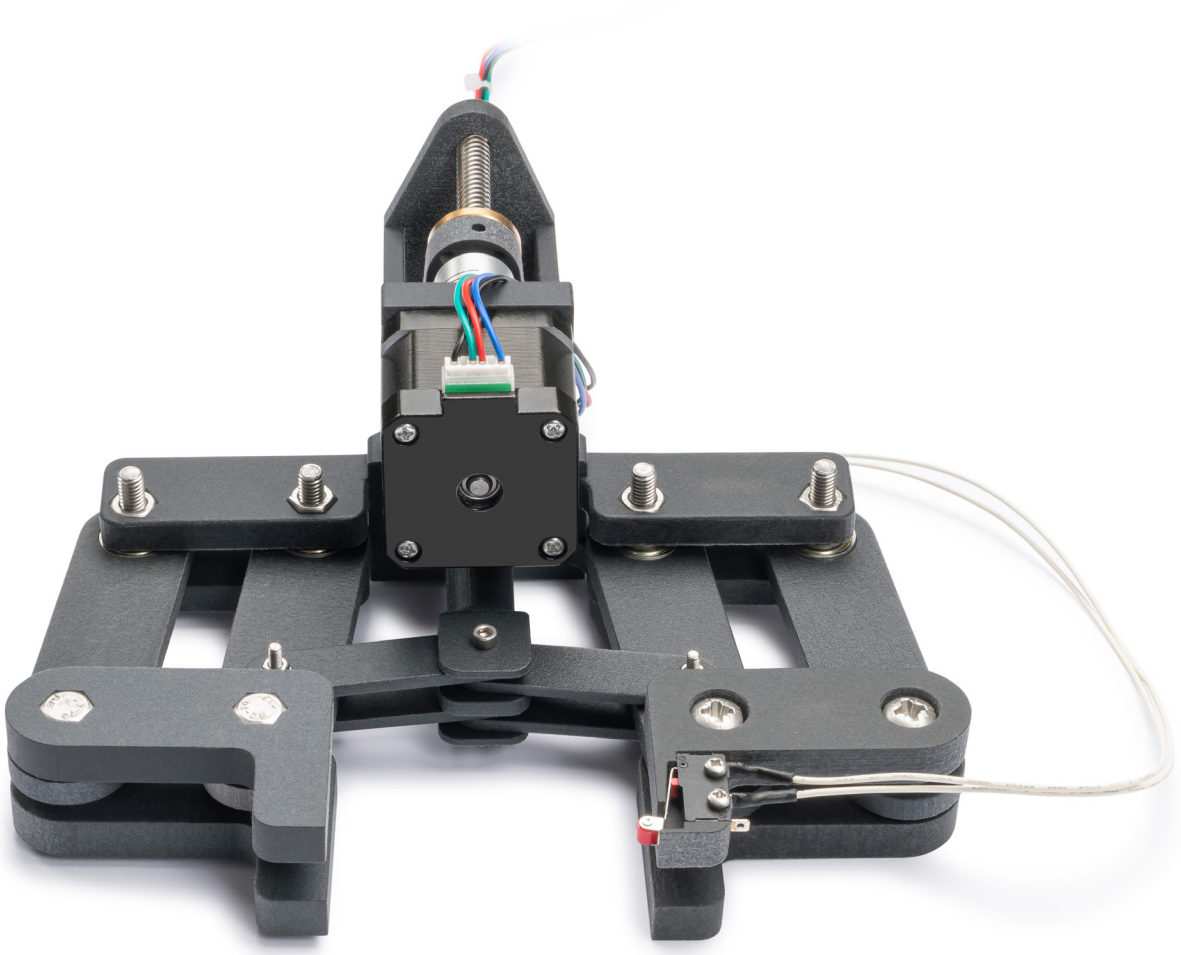

End of Arm Tooling Application Guide: H350 3D Printer

EOAT defining characteristics and functionality

EOAT (End of Arm Tooling) is used by manufacturers to manipulate, assemble and transport components. Located at the end of a robotic arm, EOAT essentially acts as the robot's wrist. This enables the robot to easily interact with machines and processes within the factory.

Based on its primary usage, it is critical that all EOAT (End of Arm Tooling) possess robust mechanical capabilities and exact geometric accuracy. EOAT are frequently assembled and must fit together as planned. Impact and chemical resistance are also significant factors when it comes to EOAT since these applications are commonly utilized within a factory floor environment.

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Technical Application Guide

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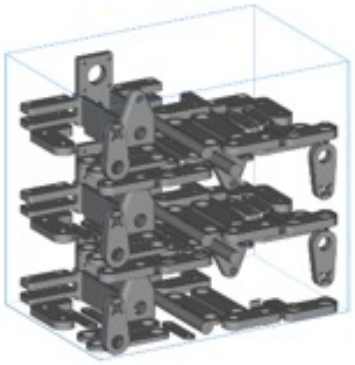


Gripper overview

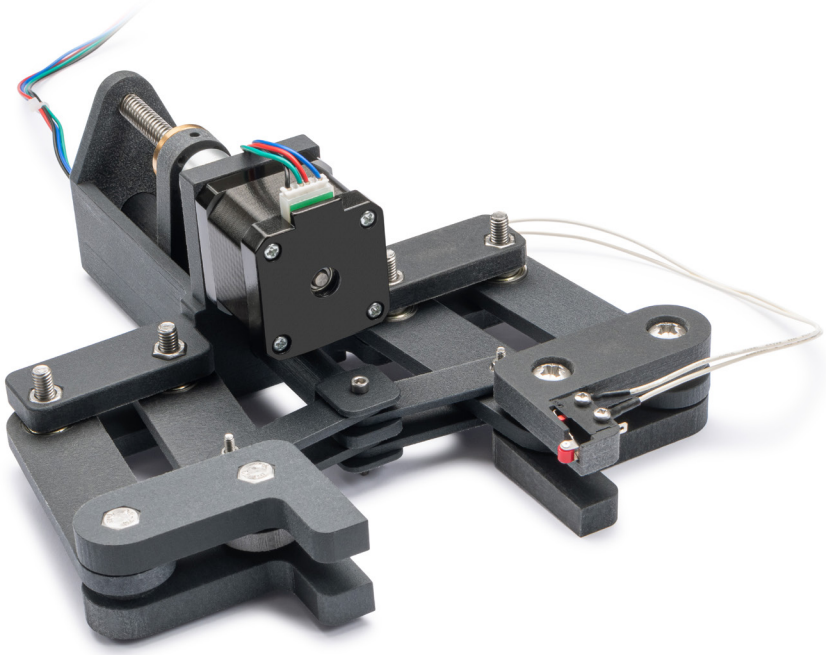
A common and functional example of an EOAT is a gripper which can grasp and hold small objects. The gripper shown above is comprised of 15 separate parts which are assembled using press fit bearings and M3/M6 nuts and bolts. This gripper is powered by a stepper motor with a T8 lead screw. Since the gripper's parts were printed exactly as envisioned, assembly and operation are simple to execute.

Build information

Three full gripper sets were printed on the H350™ 3D printer within 9 hours and 24 minutes. The volume of material used totals 297.4cm^3 for each assembled gripper. This gripper was created based off of a custom design and it was imperative to maintain precise accuracy. Throughout the printing process, SAF™ technology's in-line, unidirectional architecture preserves equal thermal control between fusing and recoating across the bed.

Efficient cost per part

This gripper is unique since the typical metal components are replaced with a compact and lightweight design. This minimizes overall costs and printing time, while enhancing performance and durability. By utilizing High Yield PA11 polymer powder, the parts weigh less than their traditional manufacturing counterparts. Additionally, this enables parts to be printed within a matter of hours.



Tips for printing

Most of the individual components of the gripper are small flat pieces with holes to accommodate nuts and bolts for assembly. It is advised to build these pieces positioned flat in the XY plane. This allows for efficient nesting, consistent circularity and accuracy of the mounting holes.

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Assembly best practices

Once printed, the gripper's assembly is straightforward and easily supported by standardized nuts, bolts and push fit bearings. High Yield PA11 polymer powder can withstand industrial environments which enables the parts to be vapor smoothed, providing a wipe clean surface.

Learn more about the capabilities of the H350 3D printer and SAF technology by visiting:

https://www.stratasys.com/en/3d-printers/printer-catalog/saf/h350/

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