



Gosiger

Use Case – Dual-Turret Lathe Parts Catcher

Customer Profile

Gosiger is a leading machine tool distributor and manufacturing systems provider, building best-in-class solutions for leading machine tools and accessories. The company provides access to hundreds of qualified technicians and engineers with systems and controls to meet the spectrum of manufacturing and automation needs, including installation, training, maintenance, replacement parts, and technical support.

Challenge

During the machining process in a two-turret lathe, two halves of a finished hose clamp are cut from the raw material bar. Without a way to capture these parts, the two halves would drop to the machine's floor and be carried out of the chip conveyor. A traditional solution involved the creation of an expensive and geometrically limiting parts catcher secured to the machine body. However, this would limit the travel of the lower turret, restrict its functionality and negate its intended purpose of increasing machine efficiency.

Solution

Any alternative to a traditional solution needed to be turret-mounted, resist wear from repeated use, and consume less space. It would also ideally incorporate a blower to remove chips and excess coolant. To meet these requirements, Gosiger engineers 3D printed a device to attach to the lower turret, positioned to catch the parts as they are cut from the bar. The catcher could then be rotated to empty them into the finished parts chute already built into the machine body. The catcher was printed using FDM® Nylon-CF10 carbon fiber material on an F370®CR composite printer. Nylon-CF10 was used due to its wear resistance, good surface finish, and aesthetics.

Impact

3D printing afforded an agile solution that enabled the fast design and manufacture of a turret-mounted catcher. Nylon-CF10 material provided the durability to withstand the lathe's cutting environment, which includes machining fluids. Unlike conventional part catchers, the 3D printed version is smaller and allows full utilization of the lower turret. Additionally, as the catcher drops parts into the chute, the main spindle prepares the bar of raw material for the next cut, increasing efficiency.

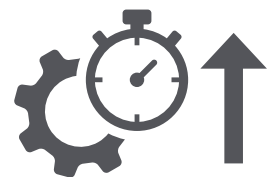


The 3D printed part catcher (gray) is attached to the lathe's lower turret.



The mounting flange of the part catcher shows the surface finish achievable with FDM Nylon-CF10 material.

Tool Efficiency



Increase