

# WHEEL SHAFT

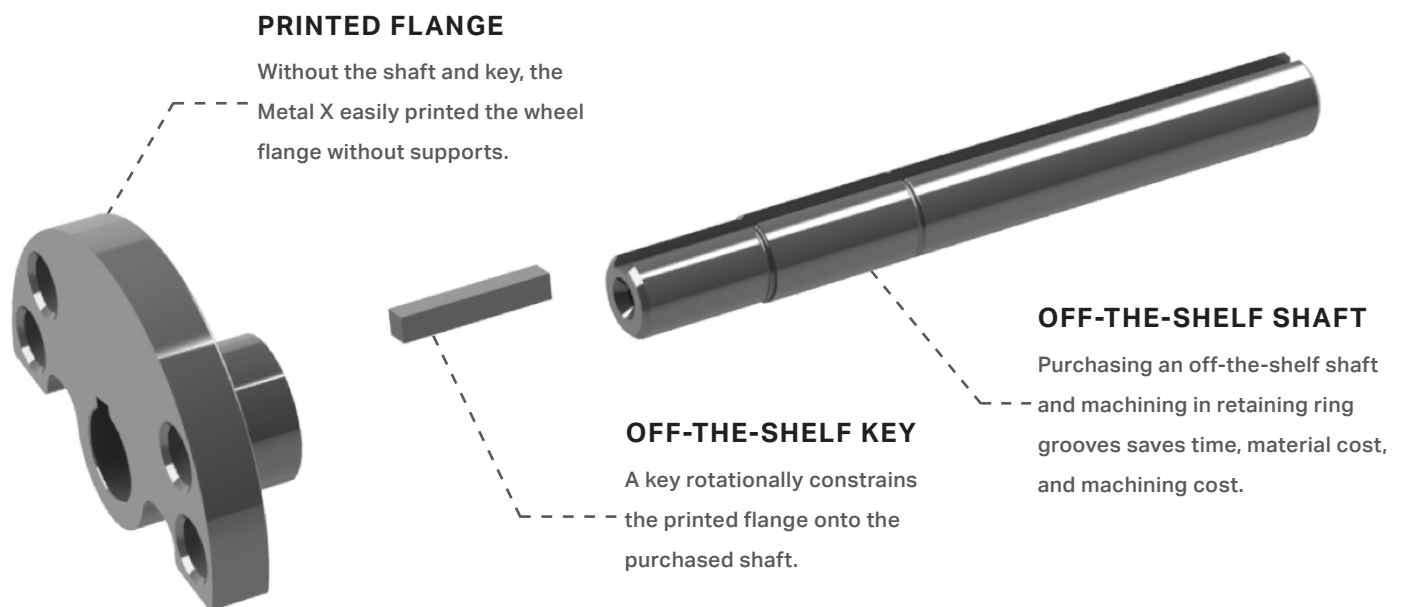
**CRITICAL SUPPORT** — This wheel shaft holds adjustable guide wheels onto a railroad frog grinder.

**ROBUST PART** — Each part is loaded with the full weight of the grinder and subject to shock loads.

**FASTER BUILD** — The Metal X replaced a hard-to-machine part with an easy-to-manufacture assembly.

**MASSIVE SAVINGS** — Stanley Infrastructure achieved up to **25x cost savings** and **50x time savings**.

## The Part



## Efficient Fabrication

Stanley Infrastructure used to machine wheel shafts out of a single block of steel. Because of the diameter of the flange and the length of the shaft, this meant that ~90% of the stock material was wasted in each part. With the help of Markforged engineers, Stanley Infrastructure redesigned the wheel shaft to be a three-part assembly. By purchasing an off-the-shelf shaft and key, they were able to easily print the more complex flange on the Metal X. The new assembly passed both durability and abuse drop testing.

PRODUCTION VOLUME	COST SAVINGS	TIME SAVINGS
Typical Annual Volume	25% - 45%	48%
Single Component Fabrication	96%	98%